



PROGETTO PER LA REALIZZAZIONE DI UN IMPIANTO PER LA PRODUZIONE DI ENERGIA MEDIANTE LO SFRUTTAMENTO DEL VENTO NEL TERRITORIO COMUNALE DI SAN GIULIANO DI PUGLIA (CB) E SANTA CROCE DI MAGLIANO (CB)

PROGETTO DEFINITIVO

prima emissione: luglio 2021

REV.	DATA	DESCRIZIONE:
00	Apr 2024	Emesso a seguito delle osservazioni del MASE Prot.467 del 15.01.2024

PROGETTAZIONE



via Volga c/o Fiera del Levante Pad.129 - BARI (BA)
ing. Sebanino GIOTTA - ing. Fabio PACCAPELO
ing. Francesca SACCAROLA - geom. Raffaella TISTI



ARCHITETTURA E PAESAGGIO

VIRUSDESIGN®

arch. Vincenzo RUSSO
via Puglie n.8 - Cerignola (FG)



IMPIANTI ELETTRICI

ing. Roberto DI MONTE



GEOLOGIA

geol. Pietro PEPE

ACUSTICA

ing. Francesco PAPEO

ARCHEOLOGIA

dr.ssa archeol. Domenica CARRASSO

Domenica Carrasso
Via G. Marconi, 19
70017 PUTIGNANO (BA)
C. F. CRR DNC 89144 A748J
P. IVA 08138180724

STUDIO PEDO-AGRONOMICO

dr.ssa Lucia PESOLA - dr. Rocco LABADESSA



ASPETTI FAUNISTICI

dott. nat. Fabio MASTROPASQUA



SIA.ES. STUDI SPECIALISTICI

ES.5.1 ANALISI DELL'EVOLUZIONE DELL'OMBRA INDOTTA DAGLI AEROGENERATORI. SHADOW FLICKERING: RELAZIONE



INDICE

1	INTRODUZIONE	2
2	STUDIO DELL'EVOLUZIONE DELL'OMBRA GIORNALIERA GENERATA DAGLI AEROGENERATORI	4
3	INDIVIDUAZIONE DEI RECETTORI ED IPOTESI DI CALCOLO	6
3.1	Individuazione dei ricettori	6
3.2	Procedure di analisi adottate.....	8
3.3	Base dati e parametri di calcolo.....	9
4	I RISULTATI DEL CALCOLO DELL'EVOLUZIONE DELL'OMBRA	11
4.1	Risultati procedure "Worst case".....	11
4.2	Risultati procedura "Real case"	13
5	CONCLUSIONI E RACCOMANDAZIONI	15
6	ELENCO ALLEGATI	16
7	ALLEGATO 1 – FULL REPORT "WORST CASE"	17
8	ALLEGATO 2 – FULL REPORT "REAL CASE"	18

1 INTRODUZIONE

Il presente elaborato ha lo scopo di valutare in maniera tecnica l'eventuale impatto generato dall'evoluzione dell'ombra derivante dalla futura installazione di un impianto di produzione di energia da fonte eolica in territorio extra urbano del comune di **San Giuliano di Puglia (CB)**. Il progetto è composto da **n°11** aerogeneratori, con potenza unitaria pari a **6.2 MW**, altezza al mozzo pari a **125 m** e diametro rotorico pari a **162 m**.

In particolare, la posizione degli aerogeneratori è la seguente:

WTG	WGS84 (fuso 33)	
	EST	NORD
1	502617,65	4615430,05
2	503323,32	4615646,61
3	501268,92	4614551,64
4	501847,54	4614400,07
5	502350,29	4613775,26
6	500902,63	4616008,85
7	501005,29	4615300,23
8	501579,35	4615183,50
9	502786,80	4614619,89
10	504777,72	4614985,14
11	505256,12	4615607,99

Tab. 1 – Coordinate aerogeneratori



Figura 1: Planimetria dell'impianto

Lo Shadow-Flickering è l'espressione comunemente impiegata in ambito specialistico per descrivere l'effetto stroboscopico delle ombre proiettate dalle pale rotanti degli aerogeneratori eolici quando sussistono le condizioni meteorologiche opportune; infatti la possibilità e la durata di tali effetti dipendono da una serie di condizioni ambientali, tra cui: la posizione del sole, l'ora del giorno, il giorno dell'anno, le condizioni atmosferiche ambientali e la posizione della turbina eolica rispetto ad un recettore sensibile. La valutazione tecnica è eseguita con l'ausilio di un software di simulazione specifico per la progettazione degli impianti eolici WIND PRO®, costituito da un insieme di moduli di elaborazione orientati alla simulazione di una serie di aspetti che caratterizzano le diverse fasi progettuali. Il modulo SHADOW è quello specifico per la valutazione dell'evoluzione dell'ombra e del flickering. In tale report è riportata:

- *La descrizione del caso studio con le posizioni delle turbine e loro caratteristiche tecniche*
- *Una breve descrizione tecnica del fenomeno di shadow flickering*
- *La descrizione dei recettori soggetti al fenomeno per i quali è stata richiesta questa analisi*
- *Sintesi della metodologia di analisi seguita per lo studio*
- *Sintesi dei risultati ottenuti, con allegati grafici ed analitici di dettaglio che descrivono il fenomeno su ognuno dei recettori e da parte di ognuna delle turbine per tutto l'anno solare.*

2 STUDIO DELL'EVOLUZIONE DELL'OMBRA GIORNALIERA GENERATA DAGLI AEROGENERATORI

Le turbine eoliche, come altre strutture fortemente sviluppate in altezza, proiettano un'ombra sulle aree adiacenti in presenza della luce solare diretta. Per chi vive in tali zone prossime all'insediamento eolico può essere molto fastidioso il cosiddetto fenomeno del "flicker" che consiste in un effetto di lampeggiamento che si verifica quando le pale del rotore in movimento "tagliano" la luce solare in maniera intermittente. Una progettazione attenta a questa problematica permette di evitare questo spiacevole fenomeno semplicemente prevedendo il luogo di incidenza dell'ombra e disponendo le turbine in maniera tale che l'ombra sulle zone sensibili non superi un certo numero di ore all'anno.

In Italia, così come nella maggior parte dei paesi Europei ed extraeuropei non esiste una normativa specifica relativa al disturbo generato dal fenomeno di Shadow – Flickering. Esistono delle regolamentazioni locali ma quasi mai comprendono limiti numerici specifici, quanto piuttosto delle raccomandazioni tese a sottolineare che il fenomeno non sia "unreasonable" o "significant".

Il grafico in Figura 2 riporta l'evoluzione annuale dell'ombra di una turbina considerando il caso peggiore di pale sempre in rotazione intorno al mozzo, e orientate sempre ortogonalmente al sole durante la sua evoluzione giornaliera.

Come è evidente dal grafico e dalla legenda le ore annue di ombra sono sempre minori con l'aumentare della distanza dal pilone secondo una particolare geometria dettata dalla posizione geografica; da osservare che l'ombra arriva a proiettarsi anche sino ad una distanza di 1 km, anche se solo per pochi minuti all'anno.

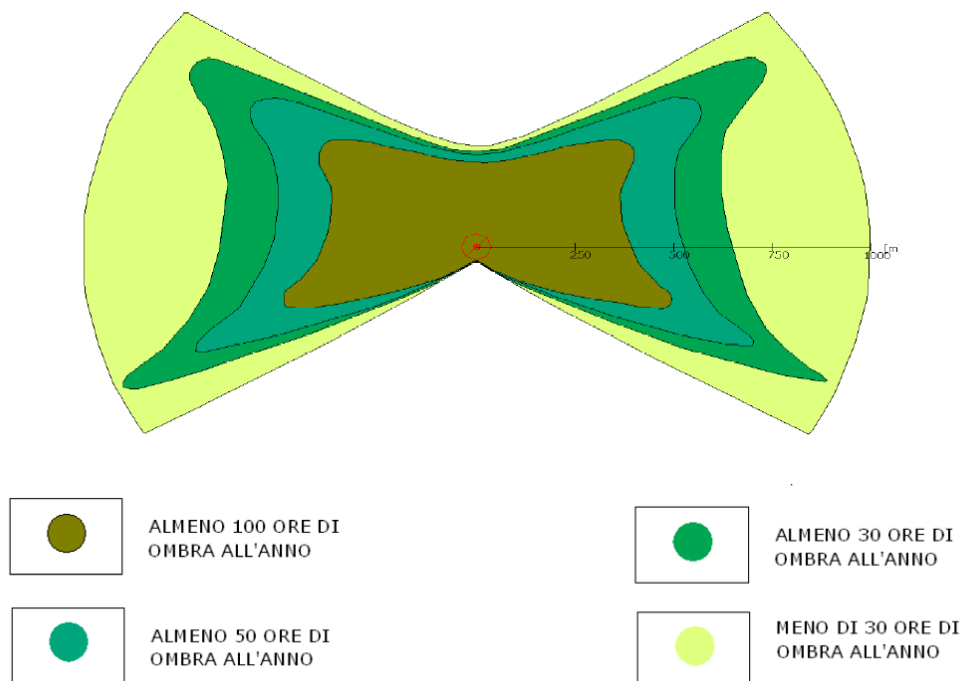


Figura 2: Evoluzione annuale tipo dell'ombra di una pala

Considerati i pochi precedenti esistenti (Germania) e le ipotesi così penalizzanti con cui è stato calcolato tale grafico si ritiene che l'area centrale del grafico, che supera le 100 ore all'anno di ombra dei punti di

installazione, costituisca un limite ragionevole da rispettare. Ciononostante, la verifica eseguita nel presente studio si pone, in via ulteriormente cautelativa, come valori soglia da rispettare, nell'ottica di arrecare il minor disturbo possibile ai recettori, i seguenti limiti:

- **massimo 30h/anno**
- **massimo 30 min/giorno**

3 INDIVIDUAZIONE DEI RECETTORI ED IPOTESI DI CALCOLO

3.1 INDIVIDUAZIONE DEI RICETTORI

Il progetto in esame prevede l'installazione di **11** aerogeneratori nel comune di **San Giuliano di Puglia (CB)**.

L'analisi di shadow-flickering di cui al presente studio è scaturita da una attività di censimento nell'area del parco eolico in progetto così come descritto nell'elaborato ES.7.1 Individuazione recettori.

Da tale studio ne è derivato che i recettori da considerare effettivamente sensibili sono esterni all'intorno di 500 m (distanza pari a 2,5 volte l'altezza complessiva) dall'asse di ciascun aerogeneratore o al limite. Ad ogni modo si è ritenuto opportuno procedere con l'analisi.

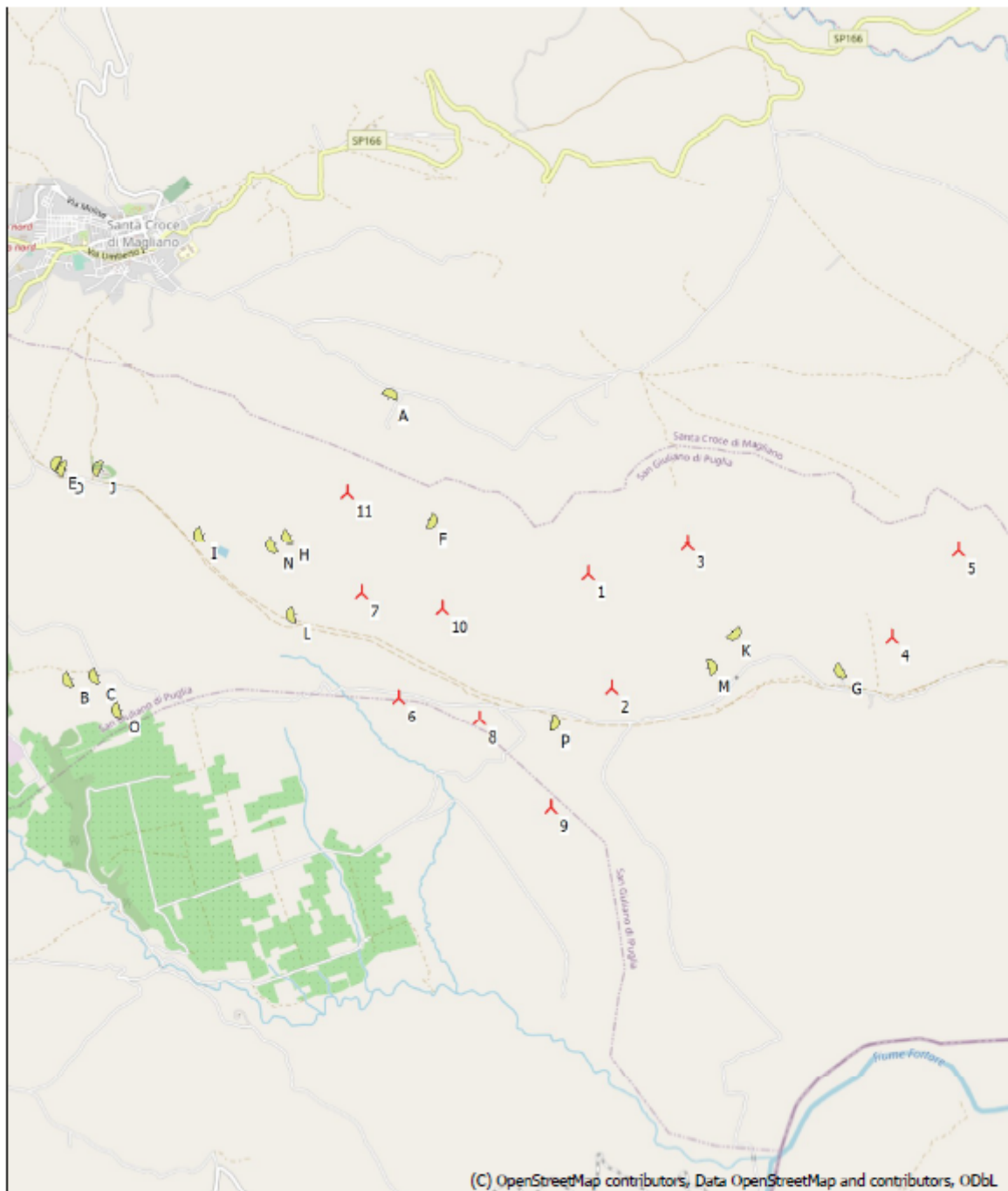
L'analisi è stata elaborata per specifici **16 recettori** che circondano l'impianto per i quali è stata stabilita l'abitabilità.

Denominazione manufatto	Coordinate geografiche UTM WGS84 33N		Abitato	Abitabile	Categoria catastale	Distanza WTG più vicina (m)
	Est	Nord				
1	498.843,95	4.616.208,60	sì	sì	A/4 - D/10	2000
2	498.890,52	4.616.174,45	sì	sì	A/4 - C/6	1980
3	499.146,43	4.616.172,79	sì	sì	A/3 - D/10	1700
4	499.864,18	4.615.707,43	sì	sì	A/3 - A/4 - D/10 - C/6	460
5	500.380,41	4.615.641,47	sì	sì	A/2 - C/6	580
6	500.492,90	4.615.693,16	sì	sì	A/3 - C/2 - C/6	460
7	500.521,85	4.615.141,05	sì	sì	A/4 - C/6	455
8	499.279,42	4.614.463,91	sì	sì	A/4 - D/10	1910
9	499.119,84	4.614.704,45	sì	sì	A/4 - C/3	1970
10	498.923,22	4.615.172,68	no	no	C/2	2080
11	499.346,73	4.614.398,88	no	no	FABB RURALE	1960
12	498.931,04	4.614.687,78	sì	sì	A/4 - C/2	2150
13	502.119,59	4.614.152,30	no	no	FABB DIRUTO	445
14	502.361,14	4.614.369,21	sì	sì	A/4 - D/10	605
15	502.856,70	4.613.746,49	no	no	FABB RURALE	555
16	500.803,05	4.616.841,93	no	no	F/2	895
17	501.198,58	4.616.681,24	sì	sì	A/3 - C/1 - D/10	800
18	501.296,62	4.616.301,12	no	no	C/6	555
19	501.485,75	4.615.810,68	sì	sì	A/4 - C/2 - C/6	635
20	503.029,89	4.615.370,39	no	no	D/10	410
21	503.261,78	4.614.908,10	no	no	D/10	650
22	503.505,81	4.614.899,83	no	no	C/2	850
23	503.480,04	4.614.764,60	sì	sì	A/4	810
24	503.643,76	4.615.020,19	sì	sì	A/4 - C/6	700
25	504.428,86	4.614.747,49	sì	sì	A/4 - C/2 - F/2	420
26	504.409,63	4.614.854,10	no	no	D/10	390
27	505.209,94	4.614.831,39	no	no	C/2	450
28	504.340,82	4.616.608,76	no	no	F/2	1340
29	505.223,00	4.616.892,69	no	no	C/2 - C/6 - F/2	1300
30	503.487,59	4.615.705,40	no	no	D/10	170

Tab. 2 – Coordinate recettori

SHADOW - Map

Calculation: Shadow flickering



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

0 500 1000 1500 2000 m

Map: EMD OpenStreetMap, Print scale 1:40 000, Map center UTM (north)-WGS84 Zone: 33 East: 502 050 North: 4 615 228

🚧 New WTG 🏠 Shadow receptor

Flicker map level: Existing ground

windPRO 4.0.531 by EMD International A/S, Tel. +45 69 16 48 50, www.emd-international.com, support@emd.dk

03/05/2024 16:44 / 49

Figura 3 -Indicazione dei recettori

Nella tabella a seguire sono riportate le distanze minime intercorrenti tra recettori in oggetto e l'aerogeneratore più prossimo.

ID manufatto Windpro	ID Manufatto progetto	Distanza da WTG più vicina (m)	WTG più vicina	ID WTG Windpro
E	1	2000	T06	11
D	2	1980	T06	11
J	3	1700	T06	11
I	4	460	T06	11
N	5	580	T06	11
H	6	460	T06	11
L	7	455	T07	7
O	8	1910	T07	7
C	9	1970	T07	7
B	12	2150	T07	7
P	14	605	T09	2
A	17	800	T06	11
F	19	635	T06	11
M	23	810	T09	2
K	24	700	T09	2
G	25	420	T10	4

Tab. 3 –Distanze delle turbine dai recettori più prossimi

In relazione a ciò, si fa presente che già in fase di scelta delle aree sulle quali ubicare l'impianto si è cercato di allontanarsi il più possibile dall'area urbana e dalle abitazioni ed edifici ritenuti sensibili.

Tale fascia è stata definita in fase di progetto al fine di garantire il rispetto dei limiti in merito non solo all'ombreggiamento ma anche agli impatti acustici, elettromagnetici e in termini di calcolo della gittata.

3.2 PROCEDURE DI ANALISI ADOTTATE

Lo studio, i cui risultati in dettaglio sono riportati di seguito, è stato condotto con uno specifico software (WindPRO).

Il fenomeno dell'ombreggiamento è stato analizzato confrontando due diverse procedure: la procedura "worst case" e la procedura "real case", i cui risultati saranno nel seguito confrontati.

Il primo approccio (*worst case*) simula la peggiore configurazione possibile, trascurando alcuni fattori che nella realtà tendono a mitigare gli effetti che fenomeno di "flickering" provoca nei confronti dei ricettori.

Tra le principali ipotesi alla base del calcolo *worst case*, infatti, si assume che:

- il sole risplende per tutta la giornata dall'alba al tramonto (cioè si è sempre in assenza di copertura nuvolosa);
- il piano di rotazione delle pale è sempre perpendicolare alla linea che passa per il sole e per l'aerogeneratore (l'aerogeneratore "insegue" il sole);
- l'aerogeneratore è sempre operativo.
- Non si considera la presenza degli alberi e di altri ostacoli che bordano le strade "intercettando" l'ombra degli aerogeneratori riducendo il fastidio del flickering.
- Gli infissi degli edifici (elemento che consente l'effettivo verificarsi del fenomeno di "flickering") siano uniformemente disposte lungo tutti i lati del perimetro

Ciò significa che i risultati ottenuti dall'approccio "worst case" sono ampiamente cautelativi rispetto al

reale verificarsi del fenomeno.

Il secondo approccio (*real case*) rispetto al primo introduce alcuni dei fattori sopra elencati, in modo tale da avvicinare i risultati delle analisi alla realtà. In particolare, nel metodo *real case*:

- Si considera la possibilità di copertura nuvolosa, calcolata in base all'eliofania locale;
- il piano di rotazione delle pale è discretizzato in base alla direzione del vento, pertanto non è sempre perpendicolare alla linea di congiunzione Sole-aerogeneratore (l'aerogeneratore insegue il vento e non il Sole).
- l'aerogeneratore non è sempre operativo (nei periodi di inattività il fenomeno del "flickering" non sussiste).
- Non si considera la presenza degli alberi e di altri ostacoli che bordano le strade "intercettando" l'ombra degli aerogeneratori riducendo il fastidio del "flickering".
- Gli infissi degli edifici (elemento che consente l'effettivo verificarsi del fenomeno di "flickering") siano uniformemente disposte lungo tutti i lati del perimetro

Come si può notare dalle ipotesi al contorno, nonostante il metodo "*real case*" si avvicini molto alla reale fenomenologia dell'ombreggiamento, trascurando la presenza di ostacoli e la disposizione degli infissi mantiene un buon margine di sicurezza.

Di seguito si riporta un confronto tabellare tra le due procedure di calcolo:

Ipotesi	WORST CASE	REAL CASE
Eliofania	Non considerata (il Sole risplende per tutta la giornata tutti i giorni)	Considerata (si considera la possibilità di cielo coperto)
Orientamento delle pale	Orientamento sempre perpendicolare alla direzione del Sole	Orientamento variabile in base al vento (indipendente dalla posizione del Sole)
Attività WTG	Aerogeneratore sempre attivo	Aerogeneratore attivo in base al vento
Ostacoli	Non si considera la presenza di alberi o altri ostacoli che possano mitigare l'effetto del flickering	Non si considera la presenza di alberi o altri ostacoli che possano mitigare l'effetto del flickering
Infissi	Si assume che gli infissi degli edifici siano uniformemente distribuiti su tutti i lati del perimetro	Si assume che gli infissi degli edifici siano uniformemente distribuiti su tutti i lati del perimetro
Margine di sicurezza	Estremamente cautelativo	Cautelativo

3.3 BASE DATI E PARAMETRI DI CALCOLO

In base alla metodologia descritta nei paragrafi precedenti, sono stati utilizzati i seguenti dati di input per impostare il modello di simulazione per la valutazione del fenomeno di Shadow-Flickering degli aerogeneratori di progetto:

- a) **Il DTM o Modello del terreno digitale** per caratterizzare l'orografia è stato estrapolato dal grid disponibile in download dal SIT della Regione Puglia, georeferenziato, sovrapposto, confrontato e adeguato con le curve di livello presenti sulla cartografia ufficiale CTR 1:5.000 con uno step di 5 m. Il modello digitale ottenuto copre un'area sufficiente ad inglobare l'area del parco eolico di progetto e trova un buon riscontro con l'andamento orografico verificato in sito.
- b) **Posizioni geografiche di ricettori con dettaglio dimensionale delle aree più esposte.** Sono i ricettori individuati dallo studio acustico e classificati secondo la loro abitabilità e destinazione d'uso. Per tutti i ricettori si è ritenuto opportuno usare l'ipotesi di cautela della modalità "green house mode". Questa scelta è stata operata poiché in talune circostanze anche lo spazio antistante le strutture può essere considerato o adibito a luogo di riposo e relax. La scelta di una singola finestra o di una facciata in alcune condizioni potrebbe risultare riduttiva allo scopo di una vera valutazione d'impatto.
- c) **Posizioni geografiche delle turbine eoliche e loro caratteristiche dimensionali**
Gli aerogeneratori di progetto con le loro caratteristiche dimensionali e tecnologiche
- d) **Nessun ostacolo naturale o artificiale è stato modellato.**

4 I RISULTATI DEL CALCOLO DELL'EVOLUZIONE DELL'OMBRA

4.1 RISULTATI PROCEDURE "WORST CASE"

Nella procedura "Worst case" il fenomeno di shadow/flickering viene calcolato non tenendo conto delle condizioni di soleggiamento del sito e del vento.

Dalle simulazioni effettuate, si evince che gli aerogeneratori di progetto generano maggiormente il fenomeno di shadow/flickering sul recettore "F" individuato nell'analisi che, nelle ipotesi di "Worst case", subisce il fenomeno per un periodo che si avvicina alle **160 ore/anno**, per tutti gli altri rimanenti recettori considerati invece, l'effetto calcolato è più modesto e/o comunque meno rilevante fino a divenire irrilevante e in alcuni casi nullo.

SHADOW - Main Result

Calculation: Worst case

Calculation Results

Shadow receptor

No.	Shadow, worst case		
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]
A	0:00	0	0:00
B	0:00	0	0:00
C	0:00	0	0:00
D	0:00	0	0:00
E	0:00	0	0:00
F	161:48	196	1:03
G	16:58	36	0:35
H	95:28	108	1:02
I	13:50	74	0:19
J	0:00	0	0:00
K	51:21	143	0:33
L	140:30	210	1:09
M	47:12	93	0:52
N	58:53	129	0:57
O	0:00	0	0:00
P	95:25	104	1:17

Anche in relazione all'esposizione minuti/giorno il ricettore **F** risulta essere sempre il più svantaggiato, riportando valori intorno ai **60 min/giorno**.

Nella mappa di seguito riportata si evince come il metodo *worst case* restituisca uno scenario in cui gli effetti complessivi dello shadow flickering prodotto dal parco siano decisamente marcati, con una zona centrale di superamento delle 100h/annue (area gialla) molto estesa.

Tuttavia, si tratta di uno scenario ampiamente cautelativo, dovuto alle stringenti condizioni al contorno impostate, che, come detto, non sono rappresentative della reale fenomenologia dell'ombreggiamento.

Al netto di quanto riportato, quindi, si osserva:

- **Parametro h/anno:** dei 16 recettori individuati 7 presentano un'esposizione al flickering superiore alle 30 h/anno, 2 inferiore e i restanti 7 non sono affetti dal fenomeno;
- **Parametro min/giorno:** dei 16 recettori individuati 8 presentano un'esposizione superiore ai 30 min/giorno, 1 inferiore e i restanti 7 non sono affetti dal fenomeno.

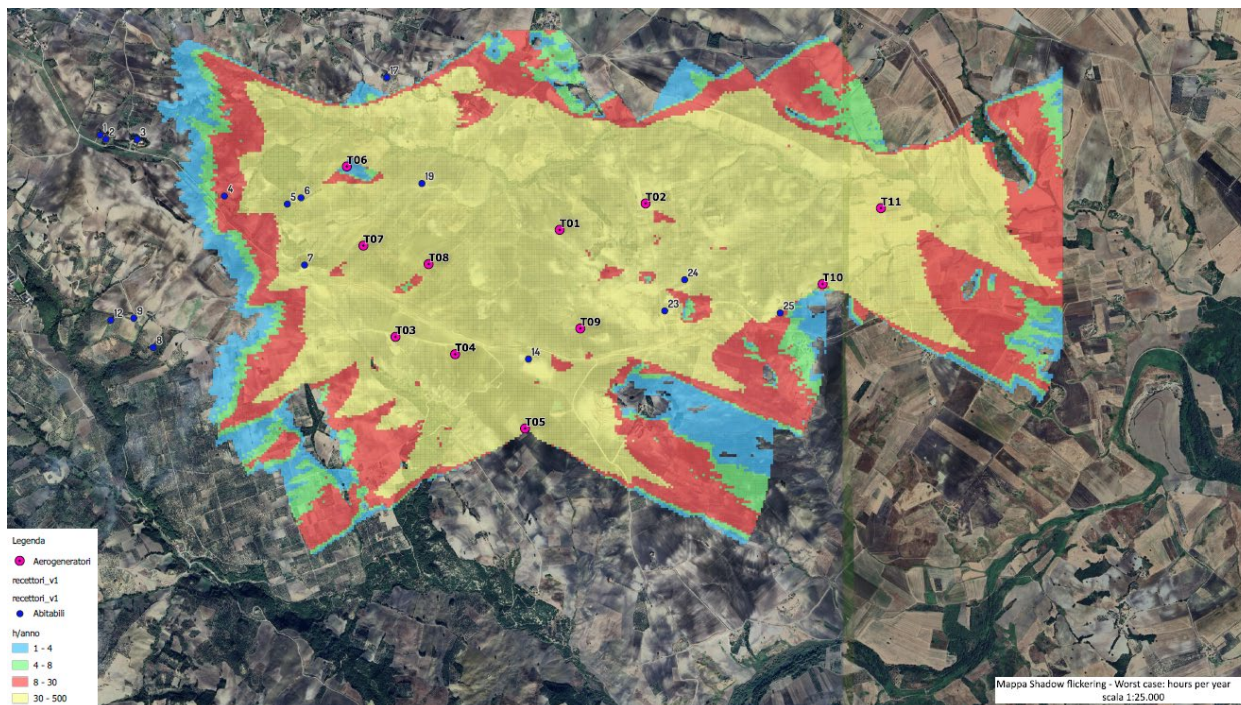


Figura 4 - Mappa worst case hours/year

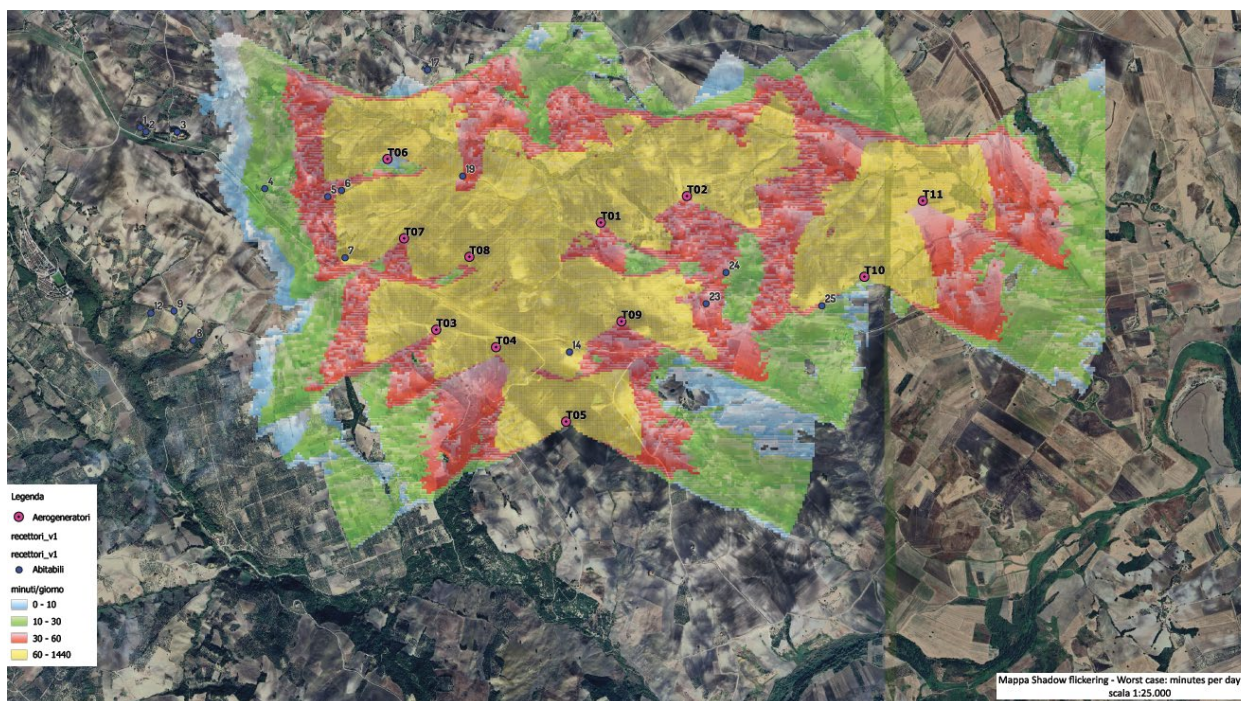


Figura 5 - Mappa worst case minutes/day

4.2 RISULTATI PROCEDURA “REAL CASE”

Nella procedura “Real case” il fenomeno di shadow/flickering viene calcolato, come detto, introducendo delle condizioni di funzionamento mirate a simulare un modello maggiormente realistico rispetto al *worst case*.

In questo caso, infatti, si tiene conto delle condizioni di soleggiamento del sito e delle condizioni di funzionamento degli aerogeneratori.

Dalle simulazioni effettuate, si evince che, anche in questo caso, gli aerogeneratori di progetto generano maggiormente il fenomeno di shadow/flickering sul recettore “F” individuato nell’analisi che, però, nelle ipotesi di “real case”, subisce il fenomeno per un periodo che si avvicina alle **13 ore/anno**, quindi molto ridotto rispetto al caso precedente.

In relazione al parametro minuti/giorno, invece, è possibile evincere dalla relativa mappa come tutti i recettori sensibili siano compresi in zone campite in celeste, corrispondenti a una **esposizione massima di 10 min/giorno**.

Per tutti gli altri rimanenti recettori considerati invece, l’effetto calcolato è più modesto e/o comunque meno rilevante fino a divenire irrilevante e in alcuni casi nullo.

Secondo il modello *real case*, quindi, **nessun ricettore risulta esposto al fenomeno del flickering per più di 30 h/anno e per più di 30 min/giorno**.

SHADOW - Main Result

Calculation: Real case

Calculation Results

Shadow receptor

No.	Shadow, worst case		Max shadow hours per day [h/day]	Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]		Shadow hours per year [h/year]
A	0:00	0	0:00	0:00
B	0:00	0	0:00	0:00
C	0:00	0	0:00	0:00
D	0:00	0	0:00	0:00
E	0:00	0	0:00	0:00
F	161:48	196	1:03	13:10
G	16:58	36	0:35	1:35
H	95:28	108	1:02	7:30
I	13:50	74	0:19	1:09
J	0:00	0	0:00	0:00
K	51:21	143	0:33	4:33
L	140:30	210	1:09	12:31
M	47:12	93	0:52	3:41
N	58:53	129	0:57	4:44
O	0:00	0	0:00	0:00
P	95:25	104	1:17	8:53

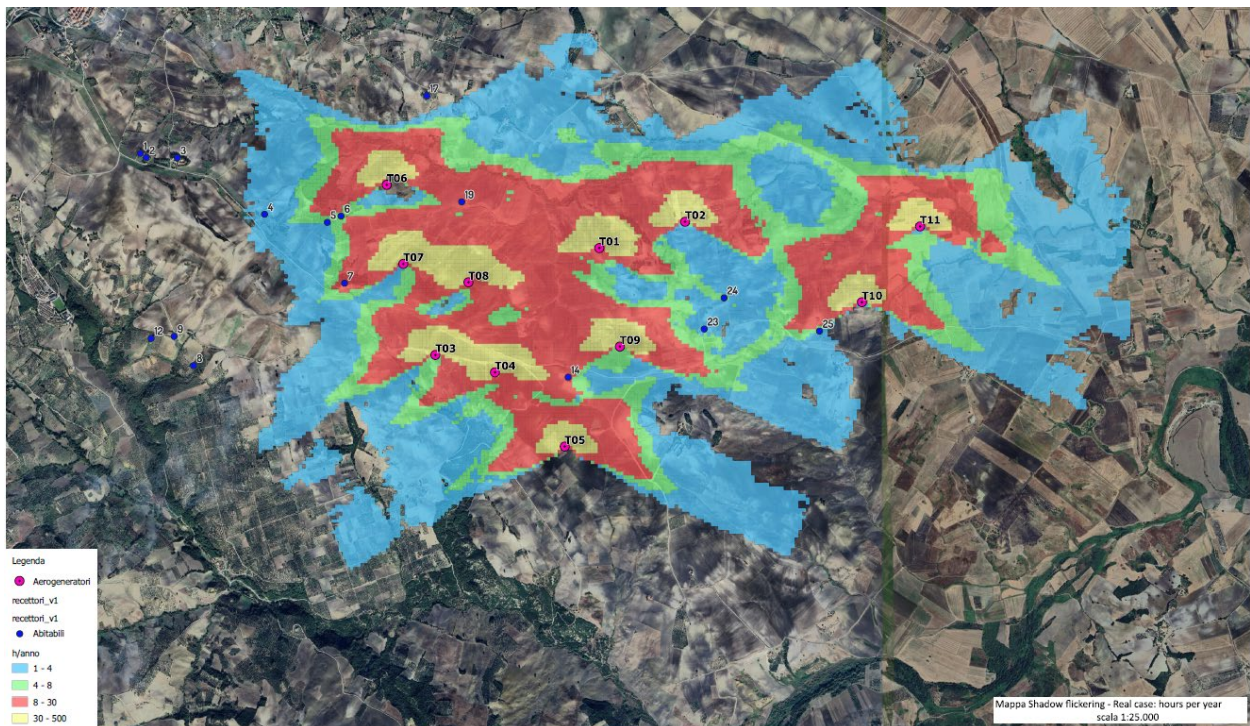


Figura 6 - Mappa real case hours/year

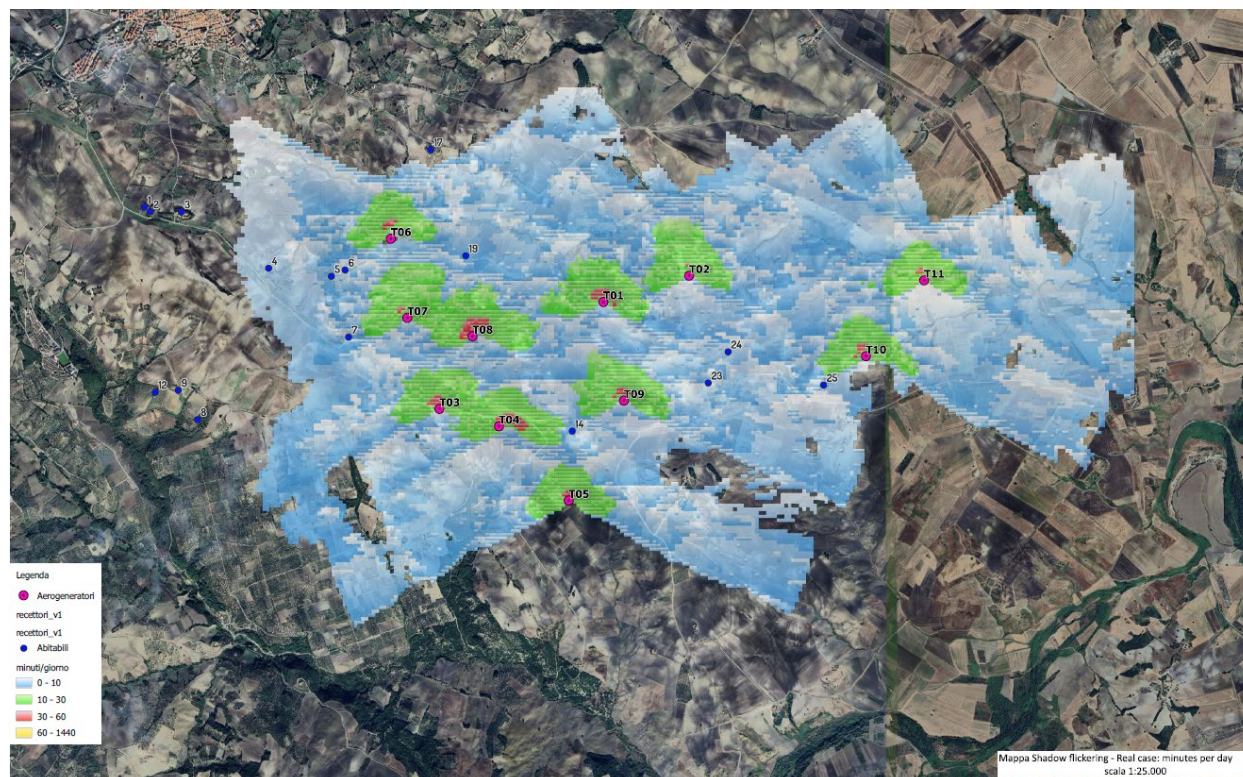


Figura 7 - Mappa real case minutes/day

5 CONCLUSIONI E RACCOMANDAZIONI

In conclusione, si può affermare che la procedura *real case* consente di osservare il fenomeno attraverso un modello più realistico, il quale, si ricorda, non considerando la presenza di vegetazione o altri ostacoli e ipotizzando il ricettore esposto sempre nella direzione più sfavorevole (disposizione degli infissi), mantiene comunque un buon grado di sicurezza restituendo valori peggiorativi rispetto alla reale fenomenologia dell'ombreggiamento.

Sulla base dei risultati ottenuti dalla modellazione, quindi, per la metà dei ricettori individuati gli effetti risultano essere nulli, mentre per la restante metà risultano essere modesti e **inferiori ai valori soglia delle 30 h/anno e 30 min/giorno.**

Inoltre, il fenomeno dell'ombreggiamento interessa marginalmente tratti di strade locali e/o private per un numero di ore all'anno del tutto irrilevanti e cioè pari ad un massimo di 30 ore/anno, ma solo in alcuni tratti. Preme tuttavia evidenziare che nelle simulazioni non si è tenuto conto della possibile presenza di vegetazione capace di offrire un effetto "barriera" ai ricettori e/o alle strade limitrofe. Inoltre, la percezione dell'impianto dalla strada risulterebbe essere "in movimento" e quindi legata alla breve permanenza delle automobili in transito, per cui il fastidio indotto sarebbe temporalmente limitato. A questo si aggiunge che le simulazioni sono state effettuate assumendo le "condizioni peggiori", sovrastimando pertanto l'effetto di flickering.

Infine, c'è, poi, da considerare che l'effetto di lampeggiamento sugli individui è simile a quello che si sperimenterebbe in seguito alle variazioni di intensità luminosa di una lampada ad incandescenza a causa di continui sbalzi della tensione della rete di alimentazione elettrica. A tal proposito, la *British Epilepsy Foundation* riporta che per causare attacchi a persone sensibili a epilessia fotosensibile, le frequenze di flickering devono essere superiori ai 3 Hz. Le raccomandazioni generali in questi casi sono che la frequenza del flickering non debba essere sopra i 2,5 Hz che significa, per una turbina a tre pale, una velocità di rotazione di 50 rpm. Considerato che il modello di aerogeneratore scelto opera in un range di **4,3 – 12,1 rpm**, corrispondente a una frequenza **inferiore a 1 Hz**, si può affermare che durante i periodi di esposizione dei ricettori **l'intermittenza della rotazione non sia tale da poter causare problemi di salute.**

Al netto di tutto quanto sopra considerato, si ritiene, quindi, non necessaria la progettazione di opere di mitigazione, quali a esempio la piantumazione di barriere vegetali o simili, in quanto **il layout del parco risulta essere compatibile con la presenza di potenziali ricettori nella zona.**

Si rimanda all'elaborato "*ES.5.2 Analisi dell'evoluzione dell'ombra indotta dagli aerogeneratori. Shadow flickering: mappe*" per la consultazione di dettaglio dei risultati grafici della modellazione.

6 ELENCO ALLEGATI

1. Full report "Worst case": quadro sintetico dei risultati di calcolo;
2. Full report "Real case": quadro sintetico dei risultati di calcolo;

Ciascuno dei report riporta all'interno:

- Calendar: analisi giornaliera dell'effetto "flickering" ricevuto da ogni recettore;
- Calendar, graphical: grafico dell'analisi giornaliera dell'effetto "flickering" ricevuto da ogni recettore;
- Calendar per WTG: analisi giornaliera dell'effetto "flickering" indotto da ogni aerogeneratore sui recettori;
- Calendar per WTG, graphical: grafico dell'analisi giornaliera dell'effetto "flickering" indotto da ogni aerogeneratore sui recettori;
- Map: mappa dei recettori.

È stato elaborato un calendario dell'ombra riportato in appendice (rif. Appendice Calendar), che riporta in maniera grafica giorno per giorno, per tutto l'anno, la durata giornaliera del fenomeno, l'orario di inizio e di fine del fenomeno, nelle condizioni di caso reale. Dalla lettura del "Calendar" si legge che il fenomeno dell'ombreggiamento si esplica sui recettori con intensità maggiore nel periodo invernale compreso tra Novembre e Febbraio e nel periodo estivo tra Giugno e Agosto nelle prime ore della giornata, oppure al tramonto.

7 ALLEGATO 1 – FULL REPORT “WORST CASE”

Shadow flickering

SHADOW - Main Result

Calculation: Worst case

Assumptions for shadow calculations

Maximum distance for influence
 Calculate only when more than 20 % of sun is covered by the blade
 Please look in WTG table

Minimum sun height over horizon for influence 3 °
 Day step for calculation 1 days
 Time step for calculation 1 minutes

The calculated times are "worst case" given by the following assumptions:

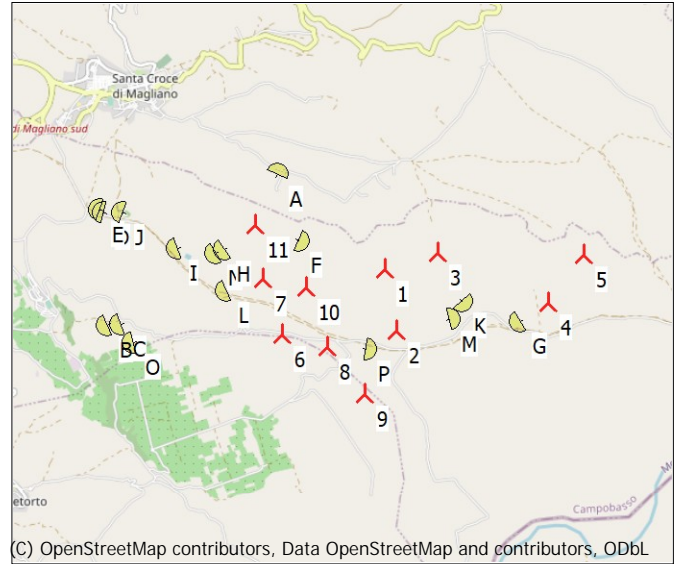
- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:

Height contours used: Existing ground
 Receptor grid resolution: 1,0 m
 Topographic shadow included in calculation

All coordinates are in
 UTM (north)-WGS84 Zone: 33

WTGs



(C) OpenStreetMap contributors, Data OpenStreetMap and contributors, ODbL
 Scale 1:100 000
 ▲ New WTG ● Shadow receptor

Easting	Northing	Z	Row data/Description	WTG type			Shadow data				
				Valid	Manufact.	Type-generator	Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Calculation distance [m]	RPM [RPM]
1	502 618	4 615 430	320,6 VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
2	502 787	4 614 620	351,5 VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
3	503 323	4 615 647	307,4 VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
4	504 778	4 614 985	237,5 VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
5	505 256	4 615 608	181,9 VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
6	501 269	4 614 552	384,5 VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
7	501 005	4 615 300	414,0 VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
8	501 848	4 614 400	353,8 VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
9	502 350	4 613 775	331,1 VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
10	501 579	4 615 184	364,1 VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
11	500 903	4 616 009	381,0 VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Degrees from south cw	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
	[m]	[m]	[m]	[m]	[m]	[m]	[°]	[°]		[m]
A	501 199	4 616 681	402,1	1,0	1,0	1,0	26,4	90,0	Fixed direction	2,0
B	498 931	4 614 688	436,7	1,0	1,0	1,0	-114,2	90,0	Fixed direction	2,0
C	499 120	4 614 704	453,7	1,0	1,0	1,0	-111,2	90,0	Fixed direction	2,0
D	498 891	4 616 174	561,3	1,0	1,0	1,0	-74,0	90,0	Fixed direction	2,0
E	498 844	4 616 209	560,2	1,0	1,0	1,0	-71,8	90,0	Fixed direction	2,0
F	501 486	4 615 811	332,9	1,0	1,0	1,0	-243,8	90,0	Fixed direction	2,0
G	504 429	4 614 747	271,8	1,0	1,0	1,0	-119,4	90,0	Fixed direction	2,0
H	500 493	4 615 693	448,9	1,0	1,0	1,0	-123,5	90,0	Fixed direction	2,0
I	499 864	4 615 707	483,6	1,0	1,0	1,0	-108,8	90,0	Fixed direction	2,0
J	499 146	4 616 173	549,8	1,0	1,0	1,0	-70,2	90,0	Fixed direction	2,0
K	503 644	4 615 020	340,3	1,0	1,0	1,0	-222,4	90,0	Fixed direction	2,0
L	500 522	4 615 141	480,4	1,0	1,0	1,0	-116,7	90,0	Fixed direction	2,0
M	503 480	4 614 765	352,9	1,0	1,0	1,0	74,7	90,0	Fixed direction	2,0
N	500 380	4 615 641	456,0	1,0	1,0	1,0	-118,9	90,0	Fixed direction	2,0
O	499 279	4 614 464	429,7	1,0	1,0	1,0	-104,4	90,0	Fixed direction	2,0
P	502 361	4 614 369	384,8	1,0	1,0	1,0	-259,9	90,0	Fixed direction	2,0

Shadow flickering**SHADOW - Main Result**

Calculation: Worst case

Calculation Results

Shadow receptor

Shadow, worst case

No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]
A	0:00	0	0:00
B	0:00	0	0:00
C	0:00	0	0:00
D	0:00	0	0:00
E	0:00	0	0:00
F	161:48	196	1:03
G	16:58	36	0:35
H	95:28	108	1:02
I	13:50	74	0:19
J	0:00	0	0:00
K	51:21	143	0:33
L	140:30	210	1:09
M	47:12	93	0:52
N	58:53	129	0:57
O	0:00	0	0:00
P	95:25	104	1:17

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]
1	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (1)	33:51
2	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (2)	62:37
3	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (3)	0:00
4	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (4)	16:58
5	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (5)	0:00
6	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (6)	35:56
7	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (7)	331:44
8	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (8)	97:45
9	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (9)	0:44
10	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (10)	13:07
11	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (11)	88:54

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

Shadow flickering

SHADOW - Calendar

Calculation: Worst case Shadow receptor: A - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (114)
 Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:
 The sun is shining all the day, from sunrise to sunset
 The rotor plane is always perpendicular to the line from the WTG to the sun
 The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:58 19:58	05:29 20:28	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	07:28 16:41	07:13 17:16	06:35 17:51	06:43 19:26	05:57 19:59	05:28 20:29	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	07:28 16:42	07:12 17:17	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:40	06:34 16:54	07:09 16:31
4	07:28 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:54 20:01	05:28 20:30	05:31 20:38	05:57 20:16	06:28 19:30	06:59 18:39	06:35 16:53	07:10 16:30
5	07:28 16:44	07:10 17:20	06:31 17:55	06:38 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:58 20:15	06:29 19:29	07:01 18:37	06:36 16:51	07:11 16:30
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31	05:32 20:38	05:59 20:14	06:30 19:27	07:02 18:35	06:37 16:50	07:12 16:30
7	07:28 16:45	07:07 17:23	06:27 17:57	06:35 19:31	05:51 20:04	05:26 20:32	05:32 20:38	06:00 20:12	06:31 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	07:28 16:46	07:06 17:24	06:26 17:58	06:33 19:33	05:50 20:05	05:26 20:33	05:33 20:37	06:01 20:11	06:32 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	07:27 16:48	07:05 17:25	06:24 17:59	06:32 19:34	05:48 20:06	05:26 20:33	05:34 20:37	06:02 20:10	06:33 19:22	07:05 18:30	06:41 16:47	07:15 16:30
10	07:27 16:49	07:04 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:34 20:37	06:03 20:08	06:34 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:02 17:28	06:21 18:01	06:29 19:36	05:46 20:08	05:26 20:34	05:35 20:36	06:04 20:07	06:36 19:19	07:07 18:27	06:44 16:45	07:17 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:25 20:35	05:36 20:36	06:05 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:17 16:30
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:25 20:35	05:37 20:35	06:06 20:04	06:38 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:59 17:31	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:37 20:35	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36	05:38 20:34	06:08 20:02	06:40 19:12	07:11 18:21	06:48 16:41	07:20 16:31
16	07:25 16:55	06:56 17:34	06:12 18:07	06:20 19:41	05:41 20:13	05:25 20:37	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:21 16:31
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	07:24 16:58	06:53 17:36	06:09 18:09	06:17 19:43	05:39 20:15	05:25 20:37	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:38	07:22 16:31
19	07:24 16:59	06:52 17:38	06:07 18:11	06:16 19:45	05:38 20:16	05:25 20:38	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:23 16:32
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38	05:42 20:31	06:13 19:54	06:45 19:03	07:17 18:13	06:54 16:37	07:23 16:32
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 16:33
22	07:22 17:02	06:48 17:41	06:02 18:14	06:11 19:48	05:35 20:19	05:26 20:39	05:44 20:29	06:15 19:51	06:47 18:59	07:20 18:10	06:57 16:36	07:24 16:33
23	07:21 17:04	06:46 17:43	06:00 18:15	06:10 19:49	05:35 20:20	05:26 20:39	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	07:21 17:05	06:45 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:26 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:26	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:26 16:35
26	07:19 17:07	06:42 17:46	05:55 18:18	06:05 19:52	05:32 20:23	05:27 20:39	05:48 20:26	06:19 19:45	06:51 18:52	06:24 17:04	07:01 16:33	07:26 16:35
27	07:18 17:09	06:40 17:47	05:54 18:19	06:04 19:53	05:32 20:24	05:27 20:39	05:49 20:25	06:20 19:44	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	07:17 17:10	06:38 17:49	05:52 18:20	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
29	07:16 17:11		06:50 19:22	06:01 19:55	05:30 20:25	05:28 20:39	05:51 20:23	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:37
30	07:16 17:12		06:49 19:23	06:00 19:57	05:30 20:26	05:29 20:39	05:52 20:22	06:23 19:39	06:55 18:46	06:29 16:59	07:06 16:32	07:27 16:38
31	07:15 17:14		06:47 19:24		05:29 20:27		05:53 20:20	06:24 19:37		06:30 16:58		07:27 16:39
Potential sun hours	296	296	369	400	450	454	461	429	375	345	296	286
Total, worst case												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

Shadow flickering

SHADOW - Calendar

Calculation: Worst case Shadow receptor: B - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (116)
 Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:
 The sun is shining all the day, from sunrise to sunset
 The rotor plane is always perpendicular to the line from the WTG to the sun
 The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:59 19:58	05:29 20:28	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	07:28 16:41	07:13 17:16	06:35 17:51	06:44 19:26	05:57 19:59	05:29 20:29	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	07:28 16:42	07:12 17:18	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:41	06:34 16:54	07:09 16:31
4	07:28 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:55 20:01	05:28 20:30	05:31 20:39	05:57 20:16	06:28 19:31	07:00 18:39	06:35 16:53	07:10 16:31
5	07:28 16:44	07:10 17:20	06:31 17:55	06:39 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:58 20:15	06:30 19:29	07:01 18:37	06:36 16:52	07:11 16:30
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:32	05:32 20:38	05:59 20:14	06:31 19:27	07:02 18:36	06:38 16:50	07:12 16:30
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:32	05:51 20:04	05:27 20:32	05:33 20:38	06:00 20:12	06:32 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	07:28 16:47	07:06 17:24	06:26 17:58	06:34 19:33	05:50 20:05	05:26 20:33	05:33 20:37	06:01 20:11	06:33 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	07:27 16:48	07:05 17:25	06:24 17:59	06:32 19:34	05:49 20:06	05:26 20:33	05:34 20:37	06:02 20:10	06:34 19:22	07:05 18:31	06:41 16:47	07:15 16:30
10	07:27 16:49	07:04 17:27	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:35 20:37	06:03 20:09	06:35 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:03 17:28	06:21 18:02	06:29 19:36	05:46 20:08	05:26 20:35	05:35 20:36	06:04 20:07	06:36 19:19	07:07 18:27	06:44 16:45	07:17 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:26 20:35	05:36 20:36	06:05 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:18 16:30
13	07:26 16:52	07:00 17:30	06:18 18:04	06:25 19:38	05:44 20:10	05:26 20:36	05:37 20:35	06:06 20:05	06:38 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:59 17:32	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:38 20:35	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36	05:38 20:34	06:08 20:02	06:40 19:12	07:12 18:21	06:49 16:41	07:20 16:31
16	07:25 16:55	06:56 17:34	06:12 18:07	06:21 19:41	05:41 20:13	05:25 20:37	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:21 16:31
17	07:25 16:57	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	07:24 16:58	06:53 17:37	06:09 18:09	06:17 19:44	05:39 20:15	05:26 20:38	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:39	07:22 16:32
19	07:24 16:59	06:52 17:38	06:07 18:11	06:16 19:45	05:38 20:16	05:26 20:38	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:23 16:32
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38	05:43 20:31	06:13 19:54	06:45 19:03	07:17 18:13	06:55 16:37	07:23 16:32
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 16:33
22	07:22 17:02	06:48 17:41	06:02 18:14	06:11 19:48	05:36 20:19	05:26 20:39	05:44 20:29	06:15 19:51	06:47 19:00	07:20 18:10	06:57 16:36	07:24 16:33
23	07:21 17:04	06:46 17:43	06:01 18:15	06:10 19:49	05:35 20:20	05:26 20:39	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	07:21 17:05	06:45 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:34 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:27	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:26 16:35
26	07:19 17:07	06:42 17:46	05:55 18:18	06:06 19:52	05:33 20:23	05:27 20:39	05:48 20:26	06:19 19:45	06:51 18:53	06:24 17:04	07:02 16:33	07:26 16:36
27	07:18 17:09	06:40 17:48	05:54 18:19	06:04 19:53	05:32 20:24	05:28 20:39	05:49 20:25	06:20 19:44	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	07:17 17:10	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
29	07:17 17:11	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
30	07:16 17:12	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
31	07:15 17:14	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
Potential sun hours Total, worst case	296	296	369	399	450	454	461	429	375	345	296	286

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Worst case Shadow receptor: C - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (117)
 Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:59 19:58	05:29 20:28	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	07:28 16:41	07:13 17:16	06:35 17:51	06:44 19:26	05:57 19:59	05:29 20:29	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	07:28 16:42	07:12 17:18	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:41	06:34 16:54	07:09 16:31
4	07:28 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:55 20:01	05:28 20:30	05:31 20:39	05:57 20:16	06:28 19:30	07:00 18:39	06:35 16:53	07:10 16:31
5	07:28 16:44	07:10 17:20	06:31 17:55	06:39 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:58 20:15	06:30 19:29	07:01 18:37	06:36 16:52	07:11 16:30
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:32	05:32 20:38	05:59 20:14	06:31 19:27	07:02 18:36	06:38 16:50	07:12 16:30
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:31	05:51 20:04	05:27 20:32	05:33 20:38	06:00 20:12	06:32 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	07:28 16:47	07:06 17:24	06:26 17:58	06:34 19:33	05:50 20:05	05:26 20:33	05:33 20:37	06:01 20:11	06:33 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	07:27 16:48	07:05 17:25	06:24 17:59	06:32 19:34	05:49 20:06	05:26 20:33	05:34 20:37	06:02 20:10	06:34 19:22	07:05 18:31	06:41 16:47	07:15 16:30
10	07:27 16:49	07:04 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:35 20:37	06:03 20:09	06:35 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:03 17:28	06:21 18:02	06:29 19:36	05:46 20:08	05:26 20:34	05:35 20:36	06:04 20:07	06:36 19:19	07:07 18:27	06:44 16:45	07:17 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:26 20:35	05:36 20:36	06:05 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:18 16:30
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:26 20:36	05:37 20:35	06:06 20:05	06:38 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:59 17:32	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:38 20:35	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36	05:38 20:34	06:08 20:02	06:40 19:12	07:12 18:21	06:49 16:41	07:20 16:31
16	07:25 16:55	06:56 17:34	06:12 18:07	06:21 19:41	05:41 20:13	05:25 20:37	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:21 16:31
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	07:24 16:58	06:53 17:37	06:09 18:09	06:17 19:44	05:39 20:15	05:26 20:38	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:39	07:22 16:32
19	07:24 16:59	06:52 17:38	06:07 18:11	06:16 19:45	05:38 20:16	05:26 20:38	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:23 16:32
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38	05:43 20:31	06:13 19:54	06:45 19:03	07:17 18:13	06:55 16:37	07:23 16:32
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 16:33
22	07:22 17:02	06:48 17:41	06:02 18:14	06:11 19:48	05:36 20:19	05:26 20:39	05:44 20:29	06:15 19:51	06:47 19:00	07:20 18:10	06:57 16:36	07:24 16:33
23	07:21 17:04	06:46 17:43	06:01 18:15	06:10 19:49	05:35 20:20	05:26 20:39	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	07:21 17:05	06:45 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:34 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:26	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:26 16:35
26	07:19 17:07	06:42 17:46	05:55 18:18	06:06 19:52	05:33 20:23	05:27 20:39	05:48 20:26	06:19 19:45	06:51 18:53	06:24 17:04	07:02 16:33	07:26 16:36
27	07:18 17:09	06:40 17:48	05:54 18:19	06:04 19:53	05:32 20:24	05:28 20:39	05:49 20:25	06:20 19:44	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	07:17 17:10	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
29	07:17 17:11	06:38 17:49	05:51 18:22	06:02 19:55	05:31 20:26	05:28 20:39	05:51 20:23	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:38
30	07:16 17:12	06:37 17:49	05:50 18:23	06:01 19:56	05:30 20:27	05:29 20:39	05:52 20:22	06:23 19:39	06:55 18:46	06:29 16:59	07:06 16:32	07:27 16:38
31	07:15 17:14	06:36 17:49	05:49 18:24	06:00 19:57	05:29 20:28	05:29 20:39	05:53 20:21	06:24 19:37	06:56 18:45	06:30 16:58	07:07 16:31	07:27 16:39
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Total, worst case												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Worst case Shadow receptor: D - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (119)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:59 19:58	05:29 20:28	05:29 20:39	05:54 20:20	06:25 19:36	06:56 18:44	06:32 16:56	07:07 16:31
2	07:28 16:41	07:13 17:16	06:35 17:51	06:44 19:26	05:57 19:59	05:28 20:29	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	07:28 16:42	07:12 17:18	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:41	06:34 16:54	07:09 16:31
4	07:28 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:55 20:01	05:28 20:30	05:31 20:39	05:57 20:16	06:28 19:31	07:00 18:39	06:35 16:53	07:10 16:31
5	07:28 16:44	07:10 17:20	06:31 17:55	06:39 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:58 20:15	06:30 19:29	07:01 18:37	06:36 16:51	07:11 16:30
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:32	05:32 20:38	05:59 20:14	06:31 19:27	07:02 18:36	06:38 16:50	07:12 16:30
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:32	05:51 20:04	05:27 20:32	05:33 20:38	06:00 20:12	06:32 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	07:28 16:47	07:06 17:24	06:26 17:58	06:34 19:33	05:50 20:05	05:26 20:33	05:33 20:37	06:01 20:11	06:33 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	07:27 16:48	07:05 17:25	06:24 17:59	06:32 19:34	05:48 20:06	05:26 20:33	05:34 20:37	06:02 20:10	06:34 19:22	07:05 18:31	06:41 16:47	07:15 16:30
10	07:27 16:49	07:04 17:26	06:23 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:35 20:37	06:03 20:09	06:35 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:03 17:28	06:21 18:02	06:29 19:36	05:46 20:08	05:26 20:35	05:35 20:36	06:04 20:07	06:36 19:19	07:07 18:27	06:44 16:45	07:17 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:26 20:35	05:36 20:36	06:05 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:18 16:30
13	07:27 16:52	07:00 17:30	06:18 18:04	06:25 19:38	05:44 20:10	05:25 20:36	05:37 20:35	06:06 20:05	06:38 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:59 17:32	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:38 20:35	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:13	05:25 20:36	05:38 20:34	06:08 20:02	06:40 19:12	07:12 18:21	06:49 16:41	07:20 16:31
16	07:25 16:55	06:56 17:34	06:12 18:07	06:21 19:41	05:41 20:14	05:25 20:37	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:21 16:31
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:15	05:25 20:37	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	07:24 16:58	06:53 17:37	06:09 18:10	06:17 19:44	05:39 20:16	05:25 20:38	05:41 20:32	06:11 19:57	06:43 19:07	07:15 18:16	06:52 16:39	07:22 16:32
19	07:24 16:59	06:52 17:38	06:07 18:11	06:16 19:45	05:38 20:16	05:26 20:38	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:23 16:32
20	07:23 17:00	06:51 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38	05:43 20:31	06:13 19:54	06:45 19:03	07:17 18:13	06:55 16:37	07:23 16:32
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 16:33
22	07:22 17:02	06:48 17:41	06:02 18:14	06:11 19:48	05:36 20:19	05:26 20:39	05:44 20:29	06:15 19:51	06:47 19:00	07:20 18:10	06:57 16:36	07:24 16:33
23	07:21 17:04	06:46 17:43	06:01 18:15	06:10 19:49	05:35 20:20	05:26 20:39	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	07:21 17:05	06:45 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:34 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:27	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:26 16:35
26	07:19 17:07	06:42 17:46	05:55 18:18	06:05 19:52	05:33 20:23	05:27 20:39	05:48 20:26	06:19 19:45	06:51 18:53	06:24 17:04	07:02 16:33	07:26 16:35
27	07:18 17:09	06:40 17:48	05:54 18:19	06:04 19:53	05:32 20:24	05:28 20:39	05:49 20:25	06:20 19:44	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	07:17 17:10	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
29	07:17 17:11	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
30	07:16 17:12	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
31	07:15 17:14	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Total, worst case												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Worst case Shadow receptor: E - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (120)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:59 19:58	05:29 20:28	05:29 20:39	05:54 20:20	06:25 19:36	06:56 18:44	06:32 16:56	07:07 16:31
2	07:28 16:41	07:13 17:16	06:35 17:51	06:44 19:26	05:57 19:59	05:28 20:29	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	07:28 16:42	07:12 17:18	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:41	06:34 16:54	07:09 16:31
4	07:28 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:55 20:01	05:28 20:30	05:31 20:39	05:57 20:16	06:28 19:31	07:00 18:39	06:35 16:53	07:10 16:31
5	07:28 16:44	07:10 17:20	06:31 17:55	06:39 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:58 20:15	06:30 19:29	07:01 18:37	06:36 16:51	07:11 16:30
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:32	05:32 20:38	05:59 20:14	06:31 19:27	07:02 18:36	06:38 16:50	07:12 16:30
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:32	05:51 20:04	05:27 20:32	05:33 20:38	06:00 20:12	06:32 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	07:28 16:47	07:06 17:24	06:26 17:58	06:34 19:33	05:50 20:05	05:26 20:33	05:33 20:37	06:01 20:11	06:33 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	07:27 16:48	07:05 17:25	06:24 17:59	06:32 19:34	05:48 20:06	05:26 20:33	05:34 20:37	06:02 20:10	06:34 19:22	07:05 18:31	06:41 16:47	07:15 16:30
10	07:27 16:49	07:04 17:26	06:23 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:35 20:37	06:03 20:09	06:35 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:03 17:28	06:21 18:02	06:29 19:36	05:46 20:08	05:26 20:35	05:35 20:36	06:04 20:07	06:36 19:19	07:07 18:27	06:44 16:45	07:17 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:26 20:35	05:36 20:36	06:05 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:18 16:30
13	07:27 16:52	07:00 17:30	06:18 18:04	06:25 19:38	05:44 20:10	05:25 20:36	05:37 20:35	06:06 20:05	06:38 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:59 17:32	06:16 18:05	06:24 19:39	05:43 20:12	05:25 20:36	05:38 20:35	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:13	05:25 20:36	05:38 20:34	06:08 20:02	06:40 19:12	07:12 18:21	06:49 16:41	07:20 16:31
16	07:25 16:55	06:56 17:34	06:12 18:07	06:21 19:41	05:41 20:14	05:25 20:37	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:21 16:31
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:15	05:25 20:37	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	07:24 16:58	06:53 17:37	06:09 18:10	06:17 19:44	05:39 20:16	05:25 20:38	05:41 20:32	06:11 19:57	06:43 19:07	07:15 18:16	06:52 16:39	07:22 16:32
19	07:24 16:59	06:52 17:38	06:07 18:11	06:16 19:45	05:38 20:16	05:26 20:38	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:23 16:32
20	07:23 17:00	06:51 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38	05:43 20:31	06:13 19:54	06:45 19:03	07:17 18:13	06:55 16:37	07:23 16:32
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 16:33
22	07:22 17:02	06:48 17:41	06:02 18:14	06:11 19:48	05:36 20:19	05:26 20:39	05:44 20:29	06:15 19:51	06:47 19:00	07:20 18:10	06:57 16:36	07:24 16:33
23	07:21 17:04	06:46 17:43	06:01 18:15	06:10 19:49	05:35 20:20	05:26 20:39	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	07:21 17:05	06:45 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:34 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:27	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:26 16:35
26	07:19 17:07	06:42 17:46	05:55 18:18	06:05 19:52	05:33 20:23	05:27 20:39	05:48 20:26	06:19 19:45	06:51 18:53	06:24 17:04	07:02 16:33	07:26 16:35
27	07:18 17:09	06:40 17:48	05:54 18:19	06:04 19:53	05:32 20:24	05:28 20:39	05:49 20:25	06:20 19:44	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	07:17 17:10	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
29	07:17 17:11	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
30	07:16 17:12	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
31	07:15 17:14	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Total, worst case												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Worst case Shadow receptor: F - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (121)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January		February		March		April		May		June	
1	07:28		14:36 (7)	07:14	14:46 (7)	06:37	06:45	05:58			05:29	18:29 (11)
	16:40	46	15:22 (7)	17:15	15:35 (7)	17:50	19:25	19:58			20:28	60 18:29 (11)
2	07:28		14:36 (7)	07:13	14:47 (7)	06:35	06:43	05:57			05:28	18:28 (11)
	16:41	47	15:23 (7)	17:16	15:34 (7)	17:51	19:26	19:59			20:29	61 19:29 (11)
3	07:28		14:36 (7)	07:12	14:48 (7)	06:34	06:42	05:56			05:28	18:29 (11)
	16:42	47	15:23 (7)	17:17	15:34 (7)	17:52	19:27	20:00			20:29	60 19:29 (11)
4	07:28		14:37 (7)	07:11	14:50 (7)	06:32	06:40	05:54			05:28	18:28 (11)
	16:43	47	15:24 (7)	17:19	15:33 (7)	17:53	19:28	20:01			20:30	61 19:29 (11)
5	07:28		14:37 (7)	07:09	14:51 (7)	06:31	06:38	05:53			05:27	18:28 (11)
	16:44	48	15:25 (7)	17:20	15:33 (7)	17:55	19:29	20:02			20:31	62 19:30 (11)
6	07:28		14:37 (7)	07:08	14:51 (7)	06:29	06:37	05:52			05:27	18:29 (11)
	16:45	49	15:26 (7)	17:21	15:31 (7)	17:56	19:30	20:03			20:31	61 19:30 (11)
7	07:28		14:38 (7)	07:07	14:53 (7)	06:27	06:35	05:51			05:26	18:29 (11)
	16:46	49	15:27 (7)	17:23	15:30 (7)	17:57	19:31	20:04			20:32	62 19:31 (11)
8	07:28		14:38 (7)	07:06	14:55 (7)	06:26	06:33	05:50		18:50 (11)	05:26	18:29 (11)
	16:47	49	15:27 (7)	17:24	15:29 (7)	17:58	19:32	20:05	13	19:03 (11)	20:33	61 19:30 (11)
9	07:27		14:38 (7)	07:05	14:57 (7)	06:24	06:32	05:48			05:26	18:29 (11)
	16:48	50	15:28 (7)	17:25	15:28 (7)	17:59	19:34	20:06	21	19:07 (11)	20:33	62 19:31 (11)
10	07:27		14:38 (7)	07:04	15:00 (7)	06:22	06:30	05:47		18:43 (11)	05:26	18:29 (11)
	16:49	50	15:28 (7)	17:26	15:26 (7)	18:00	19:35	20:07	27	19:10 (11)	20:34	62 19:31 (11)
11	07:27		14:38 (7)	07:02	15:02 (7)	06:21	06:28	05:46		18:41 (11)	05:26	18:29 (11)
	16:50	51	15:29 (7)	17:28	15:23 (7)	18:01	19:36	20:08	31	19:12 (11)	20:34	62 19:31 (11)
12	07:27		14:39 (7)	07:01	15:06 (7)	06:19	06:27	05:45		18:39 (11)	05:25	18:30 (11)
	16:51	51	15:30 (7)	17:29	15:20 (7)	18:03	19:37	20:09	35	19:14 (11)	20:35	62 19:32 (11)
13	07:26		14:38 (7)	07:00		06:17	06:25	05:44		18:38 (11)	05:25	18:30 (11)
	16:52	52	15:30 (7)	17:30		18:04	19:38	20:10	37	19:15 (11)	20:35	62 19:32 (11)
14	07:26		14:39 (7)	06:59		06:16	06:24	05:43		18:36 (11)	05:25	18:30 (11)
	16:53	52	15:31 (7)	17:31		18:05	19:39	20:11	41	19:17 (11)	20:36	62 19:32 (11)
15	07:26		14:39 (7)	06:57		06:14	06:22	05:42		18:35 (11)	05:25	18:30 (11)
	16:54	52	15:31 (7)	17:33		18:06	19:40	20:12	43	19:18 (11)	20:36	63 19:33 (11)
16	07:25		14:39 (7)	06:56		06:12	06:20	05:41		18:34 (11)	05:25	18:30 (11)
	16:55	53	15:32 (7)	17:34		18:07	19:41	20:13	45	19:19 (11)	20:37	63 19:33 (11)
17	07:25		14:39 (7)	06:55		06:11	06:19	05:40		18:33 (11)	05:25	18:31 (11)
	16:56	53	15:32 (7)	17:35		18:08	19:42	20:14	47	19:20 (11)	20:37	62 19:33 (11)
18	07:24		14:40 (7)	06:53		06:09	06:17	05:39		18:33 (11)	05:25	18:31 (11)
	16:58	53	15:33 (7)	17:36		18:09	19:43	20:15	48	19:21 (11)	20:37	62 19:33 (11)
19	07:24		14:40 (7)	06:52		06:07	06:16	05:38		18:32 (11)	05:25	18:31 (11)
	16:59	53	15:33 (7)	17:38		18:10	19:45	20:16	50	19:22 (11)	20:38	62 19:33 (11)
20	07:23		14:40 (7)	06:50		06:06	06:14	05:37		18:31 (11)	05:26	18:31 (11)
	17:00	54	15:34 (7)	17:39		18:12	19:46	20:17	52	19:23 (11)	20:38	62 19:33 (11)
21	07:23		14:41 (7)	06:49		06:04	06:13	05:36		18:31 (11)	05:26	18:32 (11)
	17:01	54	15:35 (7)	17:40		18:13	19:47	20:18	52	19:23 (11)	20:38	62 19:34 (11)
22	07:22		14:41 (7)	06:47		06:02	06:11	05:35		18:30 (11)	05:26	18:32 (11)
	17:02	54	15:35 (7)	17:41		18:14	19:48	20:19	53	19:23 (11)	20:38	62 19:34 (11)
23	07:21		14:41 (7)	06:46		06:00	06:10	05:35		18:30 (11)	05:26	18:32 (11)
	17:04	54	15:35 (7)	17:43		18:15	19:49	20:20	55	19:25 (11)	20:39	62 19:34 (11)
24	07:21		14:41 (7)	06:45		05:59	06:08	05:34		18:30 (11)	05:26	18:32 (11)
	17:05	54	15:35 (7)	17:44		18:16	19:50	20:21	55	19:25 (11)	20:39	62 19:34 (11)
25	07:20		14:42 (7)	06:43		05:57	06:07	05:33		18:29 (11)	05:27	18:33 (11)
	17:06	54	15:36 (7)	17:45		18:17	19:51	20:22	56	19:25 (11)	20:39	62 19:35 (11)
26	07:19		14:43 (7)	06:42		05:55	06:05	05:32		18:29 (11)	05:27	18:33 (11)
	17:07	53	15:36 (7)	17:46		18:18	19:52	20:23	57	19:26 (11)	20:39	62 19:35 (11)
27	07:18		14:43 (7)	06:40		05:54	06:04	05:32		18:29 (11)	05:27	18:32 (11)
	17:09	53	15:36 (7)	17:47		18:19	19:53	20:24	57	19:26 (11)	20:39	63 19:35 (11)
28	07:17		14:44 (7)	06:38		05:52	06:03	05:31		18:29 (11)	05:28	18:33 (11)
	17:10	51	15:35 (7)	17:49		18:20	19:54	20:25	58	19:27 (11)	20:39	63 19:36 (11)
29	07:16		14:44 (7)			06:50	06:01	05:30		18:29 (11)	05:28	18:33 (11)
	17:11	51	15:35 (7)			19:22	19:55	20:25	58	19:27 (11)	20:39	62 19:35 (11)
30	07:16		14:45 (7)			06:49	06:00	05:30		18:28 (11)	05:29	18:34 (11)
	17:12	50	15:35 (7)			19:23	19:57	20:26	59	19:27 (11)	20:39	62 19:36 (11)
31	07:15		14:46 (7)			06:47		05:29		18:28 (11)		
	17:14	49	15:35 (7)			19:24		20:27	60	19:28 (11)		
Potential sun hours	296		296		369	399	450			454		
Total, worst case	1583		430				1110			1856		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Worst case Shadow receptor: F - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (121)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July	August	September	October	November	December									
1	05:29	18:34 (11)	05:54	18:51 (11)	06:25	06:56	06:31	14:28 (7)	07:07	14:20 (7)					
	20:39	62	18:36 (11)	20:19	33	19:24 (11)	19:35	18:44	16:56	28	14:56 (7)	16:31	51	15:11 (7)	
2	05:30	18:34 (11)	05:55	18:52 (11)	06:26	06:57	06:33	14:26 (7)	07:08	14:21 (7)					
	20:39	62	19:36 (11)	20:18	30	19:22 (11)	19:34	18:42	16:55	31	14:57 (7)	16:31	50	15:11 (7)	
3	05:30	18:34 (11)	05:56	18:55 (11)	06:27	06:58	06:34	14:24 (7)	07:09	14:21 (7)					
	20:39	62	19:36 (11)	20:17	24	19:19 (11)	19:32	18:40	16:54	35	14:59 (7)	16:31	50	15:11 (7)	
4	05:31	18:35 (11)	05:57	18:58 (11)	06:28	06:59	06:35	14:23 (7)	07:10	14:22 (7)					
	20:38	61	19:36 (11)	20:16	18	19:16 (11)	19:30	18:39	16:53	37	15:00 (7)	16:30	49	15:11 (7)	
5	05:31	18:34 (11)	05:58	19:03 (11)	06:29	07:00	06:36	14:21 (7)	07:11	14:23 (7)					
	20:38	62	19:36 (11)	20:15	8	19:11 (11)	19:29	18:37	16:51	40	15:01 (7)	16:30	49	15:12 (7)	
6	05:32	18:35 (11)	05:59		06:30	07:02	06:37	14:21 (7)	07:12	14:23 (7)					
	20:38	61	19:36 (11)	20:14		19:27	18:35	16:50	42	15:03 (7)	16:30	49	15:12 (7)		
7	05:33	18:35 (11)	06:00		06:31	07:03	06:39	14:19 (7)	07:13	14:24 (7)					
	20:38	61	19:36 (11)	20:12		19:25	18:34	16:49	44	15:03 (7)	16:30	48	15:12 (7)		
8	05:33	18:35 (11)	06:01		06:32	07:04	06:40	14:18 (7)	07:14	14:25 (7)					
	20:37	61	19:36 (11)	20:11		19:24	18:32	16:48	46	15:04 (7)	16:30	47	15:12 (7)		
9	05:34	18:36 (11)	06:02		06:33	07:05	06:41	14:18 (7)	07:15	14:25 (7)					
	20:37	61	19:37 (11)	20:10		19:22	18:30	16:47	47	15:05 (7)	16:30	47	15:12 (7)		
10	05:35	18:35 (11)	06:03		06:34	07:06	06:42	14:17 (7)	07:16	14:26 (7)					
	20:37	61	19:36 (11)	20:08		19:20	18:29	16:46	49	15:06 (7)	16:30	47	15:13 (7)		
11	05:35	18:36 (11)	06:04		06:36	07:07	06:44	14:16 (7)	07:17	14:27 (7)					
	20:36	60	19:36 (11)	20:07		19:18	18:27	16:45	50	15:06 (7)	16:30	46	15:13 (7)		
12	05:36	18:37 (11)	06:05		06:37	07:08	06:45	14:17 (7)	07:17	14:27 (7)					
	20:36	59	19:36 (11)	20:06		19:17	18:26	16:44	50	15:07 (7)	16:30	45	15:12 (7)		
13	05:37	18:37 (11)	06:06		06:38	07:09	06:46	14:16 (7)	07:18	14:28 (7)					
	20:35	60	19:37 (11)	20:04		19:15	18:24	16:43	51	15:07 (7)	16:30	45	15:13 (7)		
14	05:37	18:37 (11)	06:07		06:39	07:10	06:47	14:16 (7)	07:19	14:29 (7)					
	20:35	59	19:36 (11)	20:03		19:13	18:22	16:42	51	15:07 (7)	16:30	44	15:13 (7)		
15	05:38	18:37 (11)	06:08		06:40	07:11	06:48	14:15 (7)	07:20	14:29 (7)					
	20:34	59	19:36 (11)	20:02		19:12	18:21	16:41	53	15:08 (7)	16:31	45	15:14 (7)		
16	05:39	18:38 (11)	06:09		06:41	07:13	06:50	14:16 (7)	07:21	14:29 (7)					
	20:33	58	19:36 (11)	20:00		19:10	18:19	16:40	53	15:09 (7)	16:31	45	15:14 (7)		
17	05:40	18:39 (11)	06:10		06:42	07:14	06:51	14:15 (7)	07:21	14:30 (7)					
	20:33	57	19:36 (11)	19:59		19:08	18:18	16:39	54	15:09 (7)	16:31	44	15:14 (7)		
18	05:41	18:38 (11)	06:11		06:43	07:15	06:52	14:15 (7)	07:22	14:31 (7)					
	20:32	57	19:35 (11)	19:57		19:06	18:16	16:38	54	15:09 (7)	16:31	44	15:15 (7)		
19	05:42	18:39 (11)	06:12		06:44	07:16	06:53	14:16 (7)	07:22	14:31 (7)					
	20:31	56	19:35 (11)	19:56		19:05	18:15	16:38	54	15:10 (7)	16:32	44	15:15 (7)		
20	05:42	18:39 (11)	06:13		06:45	07:17	06:54	14:16 (7)	07:23	14:32 (7)					
	20:31	55	19:34 (11)	19:54		19:03	18:13	16:37	54	15:10 (7)	16:32	44	15:16 (7)		
21	05:43	18:40 (11)	06:14		06:46	07:18	06:56	14:16 (7)	07:24	14:32 (7)					
	20:30	54	19:34 (11)	19:53		19:01	18:12	16:36	54	15:10 (7)	16:33	44	15:16 (7)		
22	05:44	18:41 (11)	06:15		06:47	07:19	06:57	14:16 (7)	07:24	14:33 (7)					
	20:29	53	19:34 (11)	19:51		18:59	18:10	16:36	54	15:10 (7)	16:33	44	15:17 (7)		
23	05:45	18:42 (11)	06:16		06:48	07:21	06:58	14:17 (7)	07:25	14:33 (7)					
	20:28	51	19:33 (11)	19:50		18:58	18:09	16:35	54	15:11 (7)	16:34	44	15:17 (7)		
24	05:46	18:42 (11)	06:17		06:49	07:22	06:59	14:17 (7)	07:25	14:34 (7)					
	20:27	51	19:33 (11)	19:48		18:56	18:07	16:34	53	15:10 (7)	16:34	44	15:18 (7)		
25	05:47	18:43 (11)	06:18		06:50	07:23	07:00	14:17 (7)	07:26	14:34 (7)					
	20:26	49	19:32 (11)	19:47		18:54	17:06	16:34	53	15:10 (7)	16:35	44	15:18 (7)		
26	05:48	18:43 (11)	06:19		06:51	07:24	07:01	14:17 (7)	07:26	14:34 (7)					
	20:25	48	19:31 (11)	19:45		18:52	17:04	16:33	53	15:10 (7)	16:35	44	15:18 (7)		
27	05:49	18:44 (11)	06:20		06:52	07:25	07:03	14:18 (7)	07:26	14:35 (7)					
	20:25	46	19:30 (11)	19:43		18:51	17:03	16:33	52	15:10 (7)	16:36	44	15:19 (7)		
28	05:50	18:45 (11)	06:21		06:53	07:27	07:04	14:19 (7)	07:27	14:35 (7)					
	20:24	44	19:29 (11)	19:42		18:49	17:02	16:32	52	15:11 (7)	16:37	45	15:20 (7)		
29	05:51	18:46 (11)	06:22		06:54	07:28	07:05	14:19 (7)	07:27	14:36 (7)					
	20:23	42	19:28 (11)	19:40		18:47	17:00	16:32	52	15:11 (7)	16:37	44	15:20 (7)		
30	05:52	18:48 (11)	06:23		06:55	07:29		14:35 (7)	07:06	14:20 (7)	07:27	14:36 (7)			
	20:22	39	19:27 (11)	19:39		18:46	16:59	16	14:51 (7)	16:32	51	15:11 (7)	16:38	45	15:21 (7)
31	05:53	18:49 (11)	06:24			06:30		14:31 (7)		07:27		14:36 (7)			
	20:20	36	19:25 (11)	19:37			16:58	22	14:53 (7)		16:39	45	15:21 (7)		
Potential sun hours	461		429		375	345		296		286					
Total, worst case	1707		113		38		1451			1420					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Worst case Shadow receptor: G - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (122)
 Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:
 The sun is shining all the day, from sunrise to sunset
 The rotor plane is always perpendicular to the line from the WTG to the sun
 The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:27 16:40	07:13 17:15	06:37 17:50	06:45 19:25	05:58 19:57	05:29 20:28	05:29 20:39	05:52 (4) 20:19	05:53 19:35	06:25 18:44	06:56 16:56	06:31 16:31
2	07:28 16:41	07:12 17:16	06:35 17:51	06:43 19:26	05:57 19:59	05:28 20:28	05:30 20:39	05:52 (4) 20:18	05:54 19:34	06:26 18:42	06:57 16:55	06:32 16:31
3	07:28 16:42	07:11 17:17	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:38	05:53 (4) 20:17	05:55 19:32	06:27 18:40	06:58 16:54	06:34 16:30
4	07:28 16:43	07:10 17:19	06:32 17:53	06:40 19:28	05:54 20:01	05:27 20:30	05:31 20:38	05:54 (4) 20:16	05:56 19:30	06:28 18:39	06:59 16:52	06:35 16:30
5	07:28 16:43	07:09 17:20	06:30 17:54	06:38 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:54 (4) 20:15	05:57 19:29	06:29 18:37	07:00 16:51	06:36 16:30
6	07:28 16:44	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31	05:32 20:38	05:55 (4) 20:13	05:58 19:27	06:30 18:35	07:01 16:50	06:37 16:30
7	07:28 16:45	07:07 17:22	06:27 17:57	06:35 19:31	05:51 20:04	05:26 20:32	05:32 20:37	05:55 (4) 20:12	06:00 19:25	06:31 18:34	07:02 16:49	06:39 16:30
8	07:27 16:46	07:06 17:24	06:26 17:58	06:33 19:32	05:49 20:05	05:26 20:33	05:33 20:37	05:58 (4) 20:11	06:01 19:23	06:32 18:32	07:04 16:48	06:40 16:30
9	07:27 16:47	07:05 17:25	06:24 17:59	06:32 19:33	05:48 20:06	05:26 20:33	05:34 20:37	06:05 (4) 20:10	06:02 19:22	06:33 18:30	07:05 16:47	06:41 16:30
10	07:27 16:48	07:04 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:34 20:36	06:03 20:08	06:34 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:02 17:28	06:21 18:01	06:28 19:36	05:46 20:08	05:26 20:34	05:35 20:36	06:04 20:07	06:35 19:18	07:07 18:27	06:43 16:45	07:16 16:30
12	07:27 16:51	07:01 17:29	06:19 18:02	06:27 19:37	05:45 20:09	05:25 20:35	05:36 20:35	06:05 20:06	06:36 19:17	07:08 18:25	06:45 16:44	07:17 16:30
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:25 20:35	05:37 20:35	06:06 20:04	06:37 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:58 17:31	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:37 20:34	06:07 20:03	06:38 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:25 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36	05:38 20:34	06:08 20:01	06:39 19:11	07:11 18:21	06:48 16:41	07:20 16:30
16	07:25 16:55	06:56 17:34	06:12 18:07	06:20 19:41	05:41 20:13	05:25 20:37	05:39 20:33	06:09 20:00	06:40 19:10	07:12 18:19	06:49 16:40	07:20 16:31
17	07:25 16:56	06:54 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37	05:40 20:33	06:10 19:59	06:41 19:08	07:14 18:17	06:51 16:39	07:21 16:31
18	07:24 16:57	06:53 17:36	06:09 18:09	06:17 19:43	05:39 20:15	05:25 20:37	05:48 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:38	07:22 16:31
19	07:24 16:59	06:52 17:38	06:07 18:10	06:16 19:44	05:38 20:16	05:25 20:38	05:41 20:31	06:12 19:56	06:44 19:04	07:16 18:14	06:53 16:38	07:22 16:32
20	07:23 17:00	06:50 17:39	06:05 18:11	06:14 19:45	05:37 20:17	05:26 20:38	05:42 20:30	06:13 19:54	06:45 19:03	07:17 18:13	06:54 16:37	07:23 16:32
21	07:22 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:11	06:55 16:36	07:23 16:33
22	07:22 17:02	06:47 17:41	06:02 18:14	06:11 19:48	05:35 20:19	05:26 20:38	05:44 20:29	06:15 19:51	06:47 18:59	07:19 18:10	06:57 16:35	07:24 16:33
23	07:21 17:03	06:46 17:42	06:00 18:15	06:10 19:49	05:34 20:20	05:26 20:38	05:45 20:28	06:16 19:50	06:48 18:58	07:20 18:08	06:58 16:35	07:25 16:34
24	07:20 17:05	06:44 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:26 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:26	06:18 19:47	06:50 18:54	07:23 17:06	07:00 16:34	07:25 16:35
26	07:19 17:07	06:41 17:46	05:55 18:18	06:05 19:52	05:32 20:23	05:27 20:39	05:48 20:25	06:19 19:45	06:51 18:52	07:24 17:04	07:01 16:33	07:26 16:35
27	07:18 17:08	06:40 17:47	05:53 18:19	06:04 19:53	05:32 20:24	05:27 20:39	05:49 20:24	06:20 19:43	06:52 18:51	07:25 17:03	07:02 16:33	07:26 16:36
28	07:17 17:10	06:38 17:48	05:52 18:20	06:02 19:54	05:31 20:24	05:28 20:39	05:51 20:23	06:21 19:42	06:53 18:49	07:26 17:01	07:04 16:32	07:26 16:37
29	07:16 17:11	06:50 17:55	06:01 19:21	06:01 19:55	05:30 20:25	05:28 20:39	05:51 20:22	06:22 19:40	06:54 18:47	07:27 17:00	07:05 16:32	07:27 16:37
30	07:15 17:12	06:48 17:56	06:00 19:56	06:00 20:26	05:30 20:26	05:29 20:39	05:51 20:21	06:23 19:39	06:55 18:45	07:29 16:59	07:06 16:31	07:27 16:38
31	07:14 17:13	06:47 19:24	06:00 20:27	06:00 20:27	05:29 20:27	05:29 20:30	05:53 20:20	06:24 19:37	06:30 18:55	07:30 16:57	07:07 16:39	07:27 16:39
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Total, worst case						822		196				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Worst case Shadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (124)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June		
1	07:28 16:40	07:50 (7) 08:42 (7)	07:14 17:15	07:34 (10) 08:47 (7)	06:37 17:50	06:45 19:25	05:29 20:28	
2	07:28 16:41	07:50 (7) 08:42 (7)	07:13 17:16	07:33 (10) 08:47 (7)	06:35 17:51	06:43 19:26	05:28 20:29	
3	07:28 16:42	07:50 (7) 08:43 (7)	07:12 17:17	07:32 (10) 08:46 (7)	06:34 17:52	06:42 19:27	05:28 20:29	
4	07:28 16:43	07:50 (7) 08:44 (7)	07:11 17:19	07:31 (10) 08:45 (7)	06:32 17:53	06:40 19:28	05:28 20:30	
5	07:28 16:44	07:50 (7) 08:44 (7)	07:10 17:20	07:30 (10) 08:44 (7)	06:31 17:55	06:38 19:29	05:27 20:31	
6	07:28 16:45	07:50 (7) 08:45 (7)	07:08 17:21	07:28 (10) 08:41 (7)	06:29 17:56	06:37 19:30	05:27 20:31	
7	07:28 16:46	07:50 (7) 08:46 (7)	07:07 17:23	07:27 (10) 08:40 (7)	06:27 17:57	06:35 19:31	05:27 20:32	
8	07:28 16:47	07:50 (7) 08:46 (7)	07:06 17:24	07:26 (10) 08:38 (7)	06:26 17:58	06:33 19:33	05:26 20:33	
9	07:27 16:48	07:50 (7) 08:47 (7)	07:05 17:25	07:25 (10) 08:36 (7)	06:24 17:59	06:32 19:34	05:26 20:33	
10	07:27 16:49	07:49 (7) 08:47 (7)	07:04 17:26	07:24 (10) 08:33 (7)	06:22 18:00	06:30 19:35	05:26 20:34	
11	07:27 16:50	07:49 (7) 08:47 (7)	07:02 17:28	07:22 (10) 08:25 (7)	06:21 18:02	06:29 19:36	05:26 20:34	
12	07:27 16:51	07:49 (7) 08:48 (7)	07:01 17:29	07:21 (10) 07:36 (10)	06:19 18:03	06:27 19:37	05:26 20:35	
13	07:26 16:52	07:48 (7) 08:48 (7)	07:00 17:30	07:26 (10) 07:32 (10)	06:17 18:04	06:25 19:38	05:25 20:35	
14	07:26 16:53	07:48 (7) 08:49 (7)	06:59 17:31		06:16 18:05	06:24 19:39	05:25 20:36	
15	07:26 16:54	07:47 (7) 08:49 (7)	06:57 17:33		06:14 18:06	06:22 19:40	05:25 20:36	
16	07:25 16:55	07:48 (7) 08:49 (7)	06:56 17:34		06:12 18:07	06:21 19:41	05:25 20:37	
17	07:25 16:56	07:48 (7) 08:49 (7)	06:55 17:35		06:11 18:08	06:19 19:42	05:25 20:37	
18	07:24 16:58	07:49 (7) 08:50 (7)	06:53 17:36		06:09 18:09	06:17 19:43	05:25 20:37	
19	07:24 16:59	07:49 (7) 08:50 (7)	06:52 17:38		06:07 18:11	06:16 19:45	05:26 20:38	
20	07:23 17:00	07:49 (7) 08:50 (7)	06:50 17:39		06:06 18:12	06:14 19:46	05:26 20:38	
21	07:23 17:01	07:51 (7) 08:51 (7)	06:49 17:40		06:04 18:13	06:13 19:47	05:26 20:38	
22	07:22 17:02	07:51 (7) 08:50 (7)	06:48 17:41		06:02 18:14	06:11 19:48	05:26 20:39	
23	07:21 17:04	07:51 (7) 08:50 (7)	06:46 17:43		06:00 18:15	06:10 19:49	05:26 20:39	
24	07:21 17:05	07:51 (7) 08:50 (7)	06:45 17:44		05:59 18:16	06:08 19:50	05:27 20:39	
25	07:20 17:06	07:53 (7) 08:51 (7)	06:43 17:45		05:57 18:17	06:07 19:51	05:27 20:39	
26	07:19 17:07	07:40 (10) 08:50 (7)	06:42 17:46		05:55 18:18	06:05 19:52	05:27 20:39	
27	07:18 17:09	07:39 (10) 08:50 (7)	06:40 17:47		05:54 18:19	06:04 19:53	05:27 20:39	
28	07:17 17:10	07:38 (10) 08:49 (7)	06:38 17:49		05:52 18:20	06:03 19:54	05:28 20:39	
29	07:16 17:11	07:37 (10) 08:49 (7)			06:50 19:22	06:01 19:55	05:28 20:39	
30	07:16 17:12	07:36 (10) 08:49 (7)			06:49 19:23	06:00 19:57	05:29 20:39	
31	07:15 17:14	07:35 (10) 08:48 (7)			06:47 19:24		05:29 20:27	
Potential sun hours	296		296		369	399	450	454
Total, worst case	1805		553					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Worst case Shadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (124)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July	August	September	October	November	December
1	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:41	06:34 16:54	07:09 16:31
4	05:31 20:38	05:57 20:16	06:28 19:30	06:59 18:39	06:35 16:53	07:10 16:30
5	05:31 20:38	05:58 20:15	06:29 19:29	07:01 18:37	06:36 16:51	07:11 16:30
6	05:32 20:38	05:59 20:14	06:30 19:27	07:02 18:35	06:37 16:50	07:12 16:30
7	05:33 20:38	06:00 20:12	06:31 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	05:33 20:37	06:01 20:11	06:32 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	05:34 20:37	06:02 20:10	06:34 19:22	07:05 18:30	06:41 16:47	07:15 16:30
10	05:35 20:37	06:03 20:09	06:35 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	05:35 20:36	06:04 20:07	06:36 19:19	07:07 18:27	06:44 16:45	07:17 16:30
12	05:36 20:36	06:05 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:17 16:30
13	05:37 20:35	06:06 20:04	06:38 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	05:38 20:35	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	05:38 20:34	06:08 20:02	06:40 19:12	07:12 18:21	06:48 16:41	07:20 16:31
16	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:21 16:31
17	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:39	07:22 16:31
19	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:23 16:32
20	05:42 20:31	06:13 19:54	06:45 19:03	07:17 18:13	06:55 16:37	07:23 16:32
21	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 16:33
22	05:44 20:29	06:15 19:51	06:47 18:59	07:20 18:10	06:57 16:36	07:24 16:33
23	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	05:47 20:26	06:18 19:47	06:50 18:54	07:23 17:06	07:00 16:34	07:26 16:35
26	05:48 20:26	06:19 19:45	06:51 18:53	07:24 17:04	07:02 16:33	07:26 16:35
27	05:49 20:25	06:20 19:44	06:52 18:51	07:25 17:03	07:03 16:33	07:26 16:36
28	05:50 20:24	06:21 19:42	06:53 18:49	07:26 17:02	07:04 16:32	07:27 16:37
29	05:51 20:23	06:22 19:40	06:54 18:47	07:28 17:00	07:05 16:32	07:27 16:37
30	05:52 20:22	06:23 19:39	06:55 18:46	07:29 16:59	07:06 16:32	07:27 16:38
31	05:53 20:21	06:24 19:37	06:56 16:58	07:30 16:57	07:07 16:32	07:27 16:39
Potential sun hours	461	429	375	345	296	286
Total, worst case				49	1713	1608

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Worst case Shadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (125)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:59 19:58	06:18 (11) 20:28
2	07:28 16:41	07:13 17:16	06:35 17:51	06:44 19:26	05:57 19:59	06:17 (11) 20:29
3	07:28 16:42	07:12 17:18	06:34 17:52	06:42 19:27	05:56 20:00	06:15 (11) 20:28
4	07:28 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:55 20:01	06:14 (11) 20:30
5	07:28 16:44	07:10 17:20	06:31 17:55	06:38 19:29	05:53 20:02	06:13 (11) 20:31
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	06:12 (11) 20:31
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:31	05:51 20:04	06:11 (11) 20:32
8	07:28 16:47	07:06 17:24	07:26 (7) 07:27 (7)	06:26 17:58	06:33 19:33	06:14 (11) 20:33
9	07:27 16:48	07:05 17:25	07:25 (7) 07:29 (7)	06:24 17:59	06:32 19:34	05:26 20:33
10	07:27 16:49	07:04 17:26	07:24 (7) 07:30 (7)	06:22 18:00	06:30 19:35	05:26 20:34
11	07:27 16:50	07:03 17:28	07:22 (7) 07:29 (7)	06:21 18:02	06:29 19:36	05:26 20:34
12	07:27 16:51	07:01 17:29	07:21 (7) 07:30 (7)	06:19 18:03	06:27 19:37	05:26 20:35
13	07:26 16:52	07:00 17:30	07:20 (7) 07:31 (7)	06:17 18:04	06:25 19:38	05:25 20:36
14	07:26 16:53	06:59 17:32	07:18 (7) 07:30 (7)	06:16 18:05	06:24 19:39	05:25 20:36
15	07:26 16:54	06:57 17:33	07:17 (7) 07:31 (7)	06:14 18:06	06:22 19:40	05:25 20:36
16	07:25 16:55	06:56 17:34	07:16 (7) 07:31 (7)	06:12 18:07	06:21 19:41	05:25 20:37
17	07:25 16:56	06:55 17:35	07:14 (7) 07:30 (7)	06:11 18:08	06:19 19:42	05:25 20:37
18	07:24 16:58	06:53 17:37	07:13 (7) 07:30 (7)	06:09 18:09	06:17 19:43	05:25 20:38
19	07:24 16:59	06:52 17:38	07:11 (7) 07:29 (7)	06:07 18:11	06:16 19:45	05:26 20:38
20	07:23 17:00	06:50 17:39	07:10 (7) 07:28 (7)	06:06 18:12	06:14 19:46	05:26 20:38
21	07:23 17:01	06:49 17:40	07:08 (7) 07:27 (7)	06:04 18:13	06:13 19:47	05:26 20:38
22	07:22 17:02	06:48 17:41	07:07 (7) 07:26 (7)	06:02 18:14	06:11 19:48	05:26 20:39
23	07:21 17:04	06:46 17:43	07:05 (7) 07:24 (7)	06:01 18:15	06:10 19:49	05:27 20:39
24	07:21 17:05	06:45 17:44	07:06 (7) 07:22 (7)	05:59 18:16	06:08 19:50	05:27 20:39
25	07:20 17:06	06:43 17:45	07:09 (7) 07:18 (7)	05:57 18:17	06:07 19:51	05:27 20:39
26	07:19 17:07	06:42 17:46	05:55 18:18	06:05 19:52	06:05 20:23	05:27 20:39
27	07:18 17:09	06:40 17:47	05:54 18:19	06:04 19:53	06:04 20:24	05:28 20:39
28	07:17 17:10	06:39 17:49	05:52 18:21	06:03 19:54	06:03 20:25	05:28 20:39
29	07:17 17:11		06:50 19:22	06:01 19:55	06:21 (11) 20:25	05:28 20:39
30	07:16 17:12		06:49 19:23	06:00 19:57	06:19 (11) 20:26	05:29 20:39
31	07:15 17:14		06:47 19:24		06:32 (11) 20:27	
Potential sun hours	296	296	369	399	450	454
Total, worst case		230		90	92	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Worst case Shadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (125)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July	August	September	October	November	December
1	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56	06:53 (7) 16:31
2	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	06:55 (7) 16:31
3	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:41	06:34 16:54	06:56 (7) 16:31
4	05:31 20:38	05:57 20:16	06:28 19:30	06:59 18:39	06:35 16:53	07:09 16:30
5	05:31 20:38	05:58 20:15	06:21 (11) 06:29 (11)	07:01 18:37	06:36 16:51	07:11 16:30
6	05:32 20:38	05:59 20:14	06:21 (11) 06:33 (11)	07:02 18:36	06:38 16:50	07:12 16:30
7	05:33 20:38	06:00 20:12	06:22 (11) 06:35 (11)	07:03 18:34	06:39 16:49	07:13 16:30
8	05:33 20:37	06:01 20:11	06:23 (11) 06:36 (11)	07:04 18:32	06:40 16:48	07:14 16:30
9	05:34 20:37	06:02 20:10	06:24 (11) 06:38 (11)	07:05 18:31	06:41 16:47	07:15 16:30
10	05:35 20:37	06:03 20:09	06:25 (11) 06:39 (11)	07:06 18:29	06:42 16:46	07:16 16:30
11	05:35 20:36	06:04 20:07	06:26 (11) 06:39 (11)	07:07 18:27	06:44 16:45	07:17 16:30
12	05:36 20:36	06:05 20:06	06:27 (11) 06:40 (11)	07:08 18:26	06:45 16:44	07:18 16:30
13	05:37 20:35	06:06 20:05	06:28 (11) 06:41 (11)	07:09 18:24	06:46 16:43	07:18 16:30
14	05:38 20:35	06:07 20:03	06:29 (11) 06:41 (11)	07:10 18:22	06:47 16:42	07:19 16:30
15	05:38 20:34	06:08 20:02	06:30 (11) 06:41 (11)	07:12 18:21	06:49 16:41	07:20 16:31
16	05:39 20:33	06:09 20:00	06:31 (11) 06:41 (11)	07:13 18:19	06:50 16:40	07:21 16:31
17	05:40 20:33	06:10 19:59	06:32 (11) 06:42 (11)	07:14 18:18	06:51 16:39	07:21 16:31
18	05:41 20:32	06:11 19:57	06:33 (11) 06:41 (11)	07:15 18:16	06:52 16:39	07:22 16:32
19	05:42 20:31	06:12 19:56	06:34 (11) 06:41 (11)	07:16 18:15	06:53 16:38	07:23 16:32
20	05:42 20:31	06:13 19:54	06:35 (11) 06:41 (11)	07:17 18:13	06:55 16:37	07:23 16:32
21	05:43 20:30	06:14 19:53	06:36 (11) 06:41 (11)	07:18 18:12	06:56 16:36	07:24 16:33
22	05:44 20:29	06:15 19:51	06:37 (11) 06:40 (11)	07:20 18:10	06:57 16:36	07:24 16:33
23	05:45 20:28	06:16 19:50	06:38 (11) 06:40 (11)	07:21 18:09	06:58 16:35	07:25 16:34
24	05:46 20:27	06:17 19:48	06:39 (11) 18:58	07:22 18:09	06:59 16:35	07:25 16:34
25	05:47 20:26	06:18 19:47	06:40 (11) 18:57	07:23 18:07	07:00 16:34	07:26 16:34
26	05:48 20:26	06:19 19:45	06:41 (11) 18:54	07:24 17:06	07:01 16:34	07:26 16:35
27	05:49 20:25	06:20 19:44	06:42 (11) 18:53	07:25 17:04	07:02 16:33	07:26 16:35
28	05:50 20:24	06:21 19:42	06:43 (11) 18:52	07:26 17:03	07:03 16:33	07:27 16:36
29	05:51 20:23	06:22 19:40	06:44 (11) 18:51	07:27 17:02	07:04 16:33	07:27 16:36
30	05:52 20:22	06:23 19:39	06:45 (11) 18:47	07:28 17:00	07:05 16:32	07:27 16:38
31	05:53 20:21	06:24 19:37	06:46 (11) 18:46	07:29 16:59	07:06 16:32	07:27 16:38
Potential sun hours	461	429	375	345	296	286
Total, worst case		187		222	9	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Worst case Shadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (126)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:59 19:58	05:29 20:28	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	07:28 16:41	07:13 17:16	06:35 17:51	06:44 19:26	05:57 19:59	05:28 20:29	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	07:28 16:42	07:12 17:18	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:41	06:34 16:54	07:09 16:31
4	07:28 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:55 20:01	05:28 20:30	05:31 20:39	05:57 20:16	06:28 19:31	07:00 18:39	06:35 16:53	07:10 16:30
5	07:28 16:44	07:10 17:20	06:31 17:55	06:39 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:58 20:15	06:29 19:29	07:01 18:37	06:36 16:51	07:11 16:30
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:32	05:32 20:38	05:59 20:14	06:31 19:27	07:02 18:36	06:38 16:50	07:12 16:30
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:32	05:51 20:04	05:27 20:32	05:33 20:38	06:00 20:12	06:32 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	07:28 16:47	07:06 17:24	06:26 17:58	06:34 19:33	05:50 20:05	05:26 20:33	05:33 20:37	06:01 20:11	06:33 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	07:27 16:48	07:05 17:25	06:24 17:59	06:32 19:34	05:48 20:06	05:26 20:33	05:34 20:37	06:02 20:10	06:34 19:22	07:05 18:31	06:41 16:47	07:15 16:30
10	07:27 16:49	07:04 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:35 20:37	06:03 20:09	06:35 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:03 17:28	06:21 18:02	06:29 19:36	05:46 20:08	05:26 20:35	05:35 20:36	06:04 20:07	06:36 19:19	07:07 18:27	06:44 16:45	07:17 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:26 20:35	05:36 20:36	06:05 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:18 16:30
13	07:27 16:52	07:00 17:30	06:18 18:04	06:25 19:38	05:44 20:10	05:25 20:36	05:37 20:35	06:06 20:05	06:38 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:59 17:32	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:38 20:35	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:13	05:25 20:36	05:38 20:34	06:08 20:02	06:40 19:12	07:12 18:21	06:49 16:41	07:20 16:31
16	07:25 16:55	06:56 17:34	06:12 18:07	06:21 19:41	05:41 20:14	05:25 20:37	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:21 16:31
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:15	05:25 20:37	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	07:24 16:58	06:53 17:37	06:09 18:09	06:17 19:44	05:39 20:15	05:25 20:38	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:39	07:22 16:32
19	07:24 16:59	06:52 17:38	06:07 18:11	06:16 19:45	05:38 20:16	05:26 20:38	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:23 16:32
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38	05:42 20:31	06:13 19:54	06:45 19:03	07:17 18:13	06:55 16:37	07:23 16:32
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 16:33
22	07:22 17:02	06:48 17:41	06:02 18:14	06:11 19:48	05:35 20:19	05:26 20:39	05:44 20:29	06:15 19:51	06:47 19:00	07:20 18:10	06:57 16:36	07:24 16:33
23	07:21 17:04	06:46 17:43	06:01 18:15	06:10 19:49	05:35 20:20	05:26 20:39	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	07:21 17:05	06:45 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:34 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:27	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:26 16:35
26	07:19 17:07	06:42 17:46	05:55 18:18	06:05 19:52	05:32 20:23	05:27 20:39	05:48 20:26	06:19 19:45	06:51 18:53	06:24 17:04	07:02 16:33	07:26 16:35
27	07:18 17:09	06:40 17:48	05:54 18:19	06:04 19:53	05:32 20:24	05:28 20:39	05:49 20:25	06:20 19:44	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	07:17 17:10	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
29	07:17 17:11	06:38 17:50	05:51 18:22	06:02 19:55	05:30 20:26	05:28 20:39	05:51 20:23	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:38
30	07:16 17:12	06:37 17:51	05:50 18:23	06:01 19:56	05:29 20:27	05:29 20:39	05:52 20:22	06:23 19:39	06:55 18:46	06:29 16:59	07:06 16:32	07:27 16:38
31	07:15 17:14	06:36 17:52	05:49 18:24	06:00 19:57	05:28 20:28	05:30 20:39	05:53 20:21	06:24 19:37	06:30 16:58	06:30 16:58	07:07 16:31	07:27 16:39
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Total, worst case												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Worst case Shadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (127)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June			
1	07:27 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:58 19:57	05:29 20:28	19:24 (1) 19:55 (1)		
2	07:28 16:41	07:13 17:16	06:35 17:51	06:43 19:26	05:57 19:59	05:28 20:28	19:25 (1) 19:55 (1)		
3	07:28 16:42	07:11 17:17	16:28 (2) 16:29 (2)	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	30 29	19:26 (1) 19:55 (1)
4	07:28 16:43	07:10 17:19	16:27 (2) 16:30 (2)	06:32 17:53	06:40 19:28	05:54 20:01	05:27 20:30	28	19:26 (1) 19:54 (1)
5	07:28 16:43	07:09 17:20	16:25 (2) 16:31 (2)	06:30 17:54	06:38 19:29	05:53 20:02	05:27 20:31	27	19:27 (1) 19:54 (1)
6	07:28 16:44	07:08 17:21	16:24 (2) 16:33 (2)	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31	26	19:28 (1) 19:54 (1)
7	07:28 16:45	07:07 17:22	16:24 (2) 16:34 (2)	06:27 17:57	06:35 19:31	05:51 20:04	19:27 (1) 19:28 (1)	25	19:29 (1) 19:54 (1)
8	07:27 16:46	07:06 17:24	16:23 (2) 16:36 (2)	06:26 17:58	06:33 19:32	05:49 20:05	19:25 (1) 19:29 (1)	24	19:29 (1) 19:53 (1)
9	07:27 16:47	07:05 17:25	16:23 (2) 16:38 (2)	06:24 17:59	06:32 19:33	05:48 20:06	19:24 (1) 19:30 (1)	24	19:29 (1) 19:53 (1)
10	07:27 16:48	07:04 17:26	16:22 (2) 16:38 (2)	06:22 18:00	06:30 19:35	05:47 20:07	19:23 (1) 19:32 (1)	23	19:30 (1) 19:53 (1)
11	07:27 16:50	07:02 17:28	16:22 (2) 16:40 (2)	06:21 18:01	06:28 19:36	05:46 20:08	19:23 (1) 19:33 (1)	22	19:31 (1) 19:53 (1)
12	07:27 16:51	07:01 17:29	16:22 (2) 16:42 (2)	06:19 18:03	06:27 19:37	05:45 20:09	19:22 (1) 19:35 (1)	21	19:32 (1) 19:53 (1)
13	07:26 16:52	07:00 17:30	16:21 (2) 16:42 (2)	06:17 18:04	06:25 19:38	05:44 20:10	19:22 (1) 19:36 (1)	21	19:32 (1) 19:53 (1)
14	07:26 16:53	06:58 17:31	16:21 (2) 16:44 (2)	06:16 18:05	06:24 19:39	05:43 20:11	19:21 (1) 19:38 (1)	20	19:33 (1) 19:53 (1)
15	07:26 16:54	06:57 17:33	16:21 (2) 16:46 (2)	06:14 18:06	06:22 19:40	05:42 20:12	19:21 (1) 19:39 (1)	20	19:33 (1) 19:53 (1)
16	07:25 16:55	06:56 17:34	16:21 (2) 16:47 (2)	06:12 18:07	06:20 19:41	05:41 20:13	19:21 (1) 19:41 (1)	19	19:34 (1) 19:53 (1)
17	07:25 16:56	06:54 17:35	16:21 (2) 16:48 (2)	06:11 18:08	06:19 19:42	05:40 20:14	19:20 (1) 19:42 (1)	18	19:34 (1) 19:52 (1)
18	07:24 16:57	06:53 17:36	16:22 (2) 16:50 (2)	06:09 18:09	06:17 19:43	05:39 20:15	19:20 (1) 19:43 (1)	18	19:34 (1) 19:52 (1)
19	07:24 16:59	06:52 17:38	16:22 (2) 16:51 (2)	06:07 18:10	06:16 19:44	05:38 20:16	19:21 (1) 19:45 (1)	17	19:35 (1) 19:52 (1)
20	07:23 17:00	06:50 17:39	16:23 (2) 16:53 (2)	06:05 18:12	06:14 19:45	05:37 20:17	19:21 (1) 19:47 (1)	17	19:35 (1) 19:52 (1)
21	07:22 17:01	06:49 17:40	16:23 (2) 16:54 (2)	06:04 18:13	06:13 19:47	05:36 20:18	19:21 (1) 19:48 (1)	17	19:35 (1) 19:52 (1)
22	07:22 17:02	06:47 17:41	16:24 (2) 16:56 (2)	06:02 18:14	06:11 19:48	05:35 20:19	19:21 (1) 19:49 (1)	17	19:36 (1) 19:53 (1)
23	07:21 17:03	06:46 17:42	16:24 (2) 16:56 (2)	06:00 18:15	06:10 19:49	05:35 20:20	19:22 (1) 19:51 (1)	17	19:36 (1) 19:53 (1)
24	07:20 17:05	06:44 17:44	16:26 (2) 16:56 (2)	05:59 18:16	06:08 19:50	05:34 20:21	19:22 (1) 19:52 (1)	18	19:35 (1) 19:53 (1)
25	07:20 17:06	06:43 17:45	16:27 (2) 16:54 (2)	05:57 18:17	06:07 19:51	05:33 20:22	19:22 (1) 19:53 (1)	18	19:36 (1) 19:54 (1)
26	07:19 17:07	06:41 17:46	16:29 (2) 16:52 (2)	05:55 18:18	06:05 19:52	05:32 20:23	19:23 (1) 19:54 (1)	18	19:36 (1) 19:54 (1)
27	07:18 17:08	06:40 17:47	16:31 (2) 16:49 (2)	05:54 18:19	06:04 19:53	05:32 20:24	19:23 (1) 19:55 (1)	20	19:35 (1) 19:55 (1)
28	07:17 17:10	06:38 17:49	16:35 (2) 16:46 (2)	05:52 18:20	06:02 19:54	05:31 20:24	19:23 (1) 19:55 (1)	20	19:36 (1) 19:56 (1)
29	07:16 17:11			06:50 19:21	06:01 19:55	05:30 20:25	19:24 (1) 19:56 (1)	21	19:35 (1) 19:56 (1)
30	07:15 17:12			06:48 19:23	06:00 19:56	05:30 20:26	19:24 (1) 19:55 (1)	21	19:36 (1) 19:57 (1)
31	07:14 17:14			06:47 19:24		05:29 20:27	19:25 (1) 19:55 (1)		
Potential sun hours	296	296	369	399	450	454			
Total, worst case		524			540	647			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Worst case Shadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (127)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July		August		September		October		November		December		
1	05:29		19:35 (1)	05:54		19:33 (1)	06:25	06:56		06:31	15:52 (2)	07:07	
	20:39	22	19:57 (1)	20:19	12	19:45 (1)	19:35	18:44		16:56	16:08 (2)	16:31	
2	05:30		19:35 (1)	05:55		19:33 (1)	06:26	06:57		06:32	15:52 (2)	07:08	
	20:39	22	19:57 (1)	20:18	10	19:43 (1)	19:34	18:42		16:55	16:06 (2)	16:31	
3	05:30		19:35 (1)	05:56		19:34 (1)	06:27	06:58		06:34	15:53 (2)	07:09	
	20:38	23	19:58 (1)	20:17	8	19:42 (1)	19:32	18:40		16:54	16:05 (2)	16:31	
4	05:31		19:35 (1)	05:57		19:35 (1)	06:28	06:59		06:35	15:54 (2)	07:10	
	20:38	24	19:59 (1)	20:16	5	19:40 (1)	19:30	18:39		16:52	16:04 (2)	16:30	
5	05:31		19:34 (1)	05:58		19:36 (1)	06:29	07:00		06:36	15:54 (2)	07:11	
	20:38	25	19:59 (1)	20:15	3	19:39 (1)	19:29	18:37		16:51	16:02 (2)	16:30	
6	05:32		19:34 (1)	05:59			06:30	07:01		06:37	15:56 (2)	07:12	
	20:38	26	20:00 (1)	20:13			19:27	18:35		16:50	16:02 (2)	16:30	
7	05:32		19:34 (1)	06:00			06:31	07:03		06:39	15:57 (2)	07:13	
	20:37	26	20:00 (1)	20:12			19:25	18:34		16:49	3	16:00 (2)	16:30
8	05:33		19:34 (1)	06:01			06:32	07:04		06:40	15:58 (2)	07:14	
	20:37	27	20:01 (1)	20:11			19:24	18:32		16:48	1	15:59 (2)	16:30
9	05:34		19:34 (1)	06:02			06:33	07:05		06:41		07:15	
	20:37	28	20:02 (1)	20:10			19:22	18:30		16:47		16:30	
10	05:34		19:33 (1)	06:03			06:34	07:06		06:42		07:16	
	20:36	29	20:02 (1)	20:08			19:20	18:29		16:46		16:30	
11	05:35		19:33 (1)	06:04			06:35	07:07		06:43		07:16	
	20:36	30	20:03 (1)	20:07			19:18	18:27		16:45		16:30	
12	05:36		19:33 (1)	06:05			06:36	07:08		06:45		07:17	
	20:35	30	20:03 (1)	20:06			19:17	18:25		16:44		16:30	
13	05:37		19:32 (1)	06:06			06:37	07:09		06:46		07:18	
	20:35	31	20:03 (1)	20:04			19:15	18:24		16:43		16:30	
14	05:37		19:32 (1)	06:07			06:38	07:10		17:06 (2)	06:47	07:19	
	20:34	32	20:04 (1)	20:03			19:13	18:22	14	17:20 (2)	16:42	16:30	
15	05:38		19:32 (1)	06:08			06:39	07:11		17:03 (2)	06:48	07:20	
	20:34	33	20:05 (1)	20:02			19:11	18:21	20	17:23 (2)	16:41	16:30	
16	05:39		19:32 (1)	06:09			06:41	07:12		17:00 (2)	06:50	07:20	
	20:33	33	20:05 (1)	20:00			19:10	18:19	25	17:25 (2)	16:40	16:31	
17	05:40		19:32 (1)	06:10			06:42	07:14		16:58 (2)	06:51	07:21	
	20:33	32	20:04 (1)	19:59			19:08	18:18	28	17:26 (2)	16:39	16:31	
18	05:41		19:31 (1)	06:11			06:43	07:15		16:57 (2)	06:52	07:22	
	20:32	31	20:02 (1)	19:57			19:06	18:16	31	17:28 (2)	16:38	16:31	
19	05:41		19:31 (1)	06:12			06:44	07:16		16:56 (2)	06:53	07:22	
	20:31	31	20:02 (1)	19:56			19:05	18:14	31	17:27 (2)	16:38	16:32	
20	05:42		19:31 (1)	06:13			06:45	07:17		16:54 (2)	06:54	07:23	
	20:30	30	20:01 (1)	19:54			19:03	18:13	32	17:26 (2)	16:37	16:32	
21	05:43		19:31 (1)	06:14			06:46	07:18		16:53 (2)	06:56	07:24	
	20:30	29	20:00 (1)	19:53			19:01	18:11	31	17:24 (2)	16:36	16:33	
22	05:44		19:31 (1)	06:15			06:47	07:19		16:52 (2)	06:57	07:24	
	20:29	28	19:59 (1)	19:51			18:59	18:10	30	17:22 (2)	16:35	16:33	
23	05:45		19:32 (1)	06:16			06:48	07:21		16:52 (2)	06:58	07:25	
	20:28	26	19:58 (1)	19:50			18:58	18:08	29	17:21 (2)	16:35	16:34	
24	05:46		19:32 (1)	06:17			06:49	07:22		16:52 (2)	06:59	07:25	
	20:27	25	19:57 (1)	19:48			18:56	18:07	27	17:19 (2)	16:34	16:34	
25	05:47		19:31 (1)	06:18			06:50	06:23		15:51 (2)	07:00	07:25	
	20:26	23	19:54 (1)	19:47			18:54	17:06	27	16:18 (2)	16:34	16:35	
26	05:48		19:31 (1)	06:19			06:51	06:24		15:50 (2)	07:01	07:26	
	20:25	22	19:53 (1)	19:45			18:52	17:04	26	16:16 (2)	16:33	16:35	
27	05:49		19:31 (1)	06:20			06:52	06:25		15:51 (2)	07:02	07:26	
	20:24	21	19:52 (1)	19:43			18:51	17:03	24	16:15 (2)	16:33	16:36	
28	05:50		19:31 (1)	06:21			06:53	06:26		15:51 (2)	07:04	07:27	
	20:23	20	19:51 (1)	19:42			18:49	17:01	22	16:13 (2)	16:32	16:37	
29	05:51		19:32 (1)	06:22			06:54	06:28		15:51 (2)	07:05	07:27	
	20:22	17	19:49 (1)	19:40			18:47	17:00	21	16:12 (2)	16:32	16:37	
30	05:52		19:32 (1)	06:23			06:55	06:29		15:51 (2)	07:06	07:27	
	20:21	16	19:48 (1)	19:39			18:45	16:59	20	16:11 (2)	16:31	16:38	
31	05:53		19:32 (1)	06:24				06:30		15:51 (2)		07:27	
	20:20	14	19:46 (1)	19:37				16:57	18	16:09 (2)		16:39	
Potential sun hours	461			429			375	345		296		286	
Total, worst case		806			38			456		70			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Worst case Shadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (129)
Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	January	February	March	April	May	June				
1	07:28 16:40	23 07:50 (6) 08:13 (6)	07:14 17:15	06:37 17:50	06:45 19:25	9 07:04 (10) 07:13 (10)	05:58 19:58	45 06:18 (7) 07:03 (7)	05:29 20:28	68 05:53 (7) 07:01 (7)
2	07:28 16:41	23 07:50 (6) 08:13 (6)	07:13 17:16	06:35 17:51	06:43 19:26	10 07:02 (10) 07:12 (10)	05:57 19:59	46 06:17 (7) 07:03 (7)	05:28 20:29	67 05:53 (7) 07:00 (7)
3	07:28 16:42	24 07:50 (6) 08:14 (6)	07:12 17:17	06:34 17:52	06:42 19:27	9 07:00 (10) 07:09 (10)	05:56 20:00	48 06:15 (7) 07:03 (7)	05:28 20:29	67 05:53 (7) 07:00 (7)
4	07:28 16:43	24 07:50 (6) 08:14 (6)	07:11 17:19	06:32 17:53	06:40 19:28	9 06:59 (10) 07:08 (10)	05:55 20:01	49 06:14 (7) 07:03 (7)	05:28 20:30	66 05:53 (7) 06:59 (7)
5	07:28 16:44	24 07:50 (6) 08:14 (6)	07:10 17:20	06:31 17:55	06:38 19:29	7 06:57 (10) 07:04 (10)	05:53 20:02	51 06:13 (7) 07:04 (7)	05:27 20:31	65 05:54 (7) 06:59 (7)
6	07:28 16:45	23 07:50 (6) 08:13 (6)	07:08 17:21	06:29 17:56	06:37 19:30	20:03	05:52	52 06:12 (7) 07:04 (7)	05:27 20:31	65 05:55 (7) 07:00 (7)
7	07:28 16:46	23 07:50 (6) 08:13 (6)	07:07 17:23	06:27 17:57	06:35 19:31	05:51	20:04	53 06:11 (7) 07:04 (7)	05:27 20:32	65 05:55 (7) 07:00 (7)
8	07:28 16:47	23 07:50 (6) 08:13 (6)	07:06 17:24	06:26 17:58	06:33 19:33	05:50	20:05	54 06:10 (7) 07:04 (7)	05:26 20:33	64 05:55 (7) 06:59 (7)
9	07:27 16:48	22 07:51 (6) 08:13 (6)	07:05 17:25	06:24 17:59	06:32 19:34	05:48	20:06	55 06:08 (7) 07:03 (7)	05:26 20:33	63 05:56 (7) 06:59 (7)
10	07:27 16:49	19 07:52 (6) 08:11 (6)	07:04 17:26	06:22 18:00	06:30 19:35	05:47	20:07	56 06:07 (7) 07:03 (7)	05:26 20:34	63 05:56 (7) 06:59 (7)
11	07:27 16:50	17 07:54 (6) 08:11 (6)	07:02 17:28	06:21 18:02	06:29 19:36	05:46	20:08	57 06:06 (7) 07:03 (7)	05:26 20:34	62 05:57 (7) 06:59 (7)
12	07:27 16:51	14 07:56 (6) 08:10 (6)	07:01 17:29	06:19 18:03	06:27 19:37	05:45	20:09	58 06:05 (7) 07:03 (7)	05:26 20:35	62 05:57 (7) 06:59 (7)
13	07:26 16:52	8 07:59 (6) 08:07 (6)	07:00 17:30	06:17 18:04	06:25 19:38	05:44	20:10	59 06:04 (7) 07:03 (7)	05:25 20:35	61 05:58 (7) 06:59 (7)
14	07:26 16:53	06:59 17:31	06:16 18:05	06:24 19:39	3 06:42 (7) 06:45 (7)	05:43	20:11	60 06:03 (7) 07:03 (7)	05:25 20:36	61 05:58 (7) 06:59 (7)
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	7 06:41 (7) 06:48 (7)	05:42	20:12	61 06:02 (7) 07:03 (7)	05:25 20:36	61 05:58 (7) 06:59 (7)
16	07:25 16:55	06:56 17:34	06:12 18:07	06:21 19:41	11 06:39 (7) 06:50 (7)	05:41	20:13	62 06:01 (7) 07:03 (7)	05:25 20:37	60 05:59 (7) 06:59 (7)
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	14 06:38 (7) 06:52 (7)	05:40	20:14	63 06:00 (7) 07:03 (7)	05:25 20:37	60 05:59 (7) 06:59 (7)
18	07:24 16:58	06:53 17:36	06:09 18:09	06:17 19:43	17 06:36 (7) 06:53 (7)	05:39	20:15	63 06:00 (7) 07:03 (7)	05:25 20:37	61 05:59 (7) 07:00 (7)
19	07:24 16:59	06:52 17:38	06:07 18:11	06:16 19:45	20 06:35 (7) 06:55 (7)	05:38	20:16	64 05:59 (7) 07:03 (7)	05:26 20:38	61 05:59 (7) 07:00 (7)
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 19:46	23 06:33 (7) 06:56 (7)	05:37	20:17	65 05:58 (7) 07:03 (7)	05:26 20:38	61 05:59 (7) 07:00 (7)
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 19:47	25 06:32 (7) 06:57 (7)	05:36	20:18	65 05:57 (7) 07:02 (7)	05:26 20:38	61 06:00 (7) 07:01 (7)
22	07:22 17:02	06:48 17:41	06:02 18:14	06:11 19:48	28 06:30 (7) 06:58 (7)	05:35	20:19	66 05:56 (7) 07:02 (7)	05:26 20:39	61 06:00 (7) 07:01 (7)
23	07:21 17:04	06:46 17:43	06:00 18:15	06:10 19:49	30 06:29 (7) 06:59 (7)	05:35	20:20	66 05:56 (7) 07:02 (7)	05:26 20:39	61 06:00 (7) 07:01 (7)
24	07:21 17:05	06:45 17:44	05:59 18:16	06:08 19:50	32 06:27 (7) 06:59 (7)	05:34	20:21	67 05:55 (7) 07:02 (7)	05:27 20:39	61 06:00 (7) 07:01 (7)
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	34 06:26 (7) 07:00 (7)	05:33	20:22	67 05:54 (7) 07:01 (7)	05:27 20:39	60 06:01 (7) 07:01 (7)
26	07:19 17:07	06:42 17:46	05:55 18:18	06:05 19:52	36 06:25 (7) 07:01 (7)	05:32	20:23	68 05:54 (7) 07:02 (7)	05:27 20:39	60 06:01 (7) 07:01 (7)
27	07:18 17:09	06:40 17:47	05:54 18:19	06:04 19:53	38 06:23 (7) 07:01 (7)	05:32	20:24	68 05:53 (7) 07:01 (7)	05:28 20:39	60 06:01 (7) 07:01 (7)
28	07:17 17:10	06:38 17:49	05:52 18:20	06:03 19:54	40 06:22 (7) 07:02 (7)	05:31	20:25	68 05:53 (7) 07:01 (7)	05:28 20:39	61 06:01 (7) 07:02 (7)
29	07:16 17:11	06:50 19:22	07:09 (10) 19:22 (10)	06:01 19:55	42 06:21 (7) 07:03 (7)	05:31	20:25	69 05:52 (7) 07:01 (7)	05:28 20:39	61 06:01 (7) 07:02 (7)
30	07:16 17:12	06:49 19:23	07:07 (10) 19:23 (10)	06:00 19:57	43 06:19 (7) 07:02 (7)	05:30	20:26	69 05:52 (7) 07:01 (7)	05:29 20:39	62 06:01 (7) 07:03 (7)
31	07:15 17:14	06:47 19:24	07:06 (10) 19:24 (10)	06:00 19:57	43 07:02 (7) 07:15 (10)	05:29	20:27	69 05:52 (7) 07:00 (7)	05:29 20:39	62 07:03 (7) 07:03 (7)
Potential sun hours	296	296	369	399	450	454				
Total, worst case	267	296	369	47	487	1862	454	1871		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Worst case Shadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (129)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July		August		September		October	November	December			
1	05:29	06:01 (7)	05:54	06:16 (7)	06:25		06:56	06:31	07:07	07:36 (6)		
	20:39	62 07:03 (7)	20:19	58 07:14 (7)	19:35		18:44	16:56	16:31	17 07:53 (6)		
2	05:30	06:01 (7)	05:55	06:17 (7)	06:26		06:57	06:33	07:08	07:35 (6)		
	20:39	63 07:04 (7)	20:18	57 07:14 (7)	19:34		18:42	16:55	16:31	19 07:54 (6)		
3	05:30	06:01 (7)	05:56	06:18 (7)	06:27		06:58	06:34	07:09	07:34 (6)		
	20:39	63 07:04 (7)	20:17	56 07:14 (7)	19:32		18:41	16:54	16:31	22 07:56 (6)		
4	05:31	06:01 (7)	05:57	06:19 (7)	06:28		06:59	06:35	07:10	07:34 (6)		
	20:38	64 07:05 (7)	20:16	55 07:14 (7)	19:30		18:39	16:53	16:30	23 07:57 (6)		
5	05:31	06:01 (7)	05:58	06:20 (7)	06:29		07:01	06:36	07:11	07:35 (6)		
	20:38	64 07:05 (7)	20:15	54 07:14 (7)	19:29		18:37	16:51	16:30	23 07:58 (6)		
6	05:32	06:01 (7)	05:59	06:21 (7)	06:30		07:02	06:37	07:12	07:36 (6)		
	20:38	65 07:06 (7)	20:14	53 07:14 (7)	19:27		18:35	16:50	16:30	23 07:59 (6)		
7	05:33	06:01 (7)	06:00	06:22 (7)	06:31		06:52 (10)	07:03	06:39	07:13	07:37 (6)	
	20:38	66 07:07 (7)	20:12	52 07:14 (7)	19:25	7	06:59 (10)	18:34	16:49	16:30	24 08:01 (6)	
8	05:33	06:01 (7)	06:01	06:23 (7)	06:32		06:53 (10)	07:04	06:40	07:14	07:38 (6)	
	20:37	65 07:06 (7)	20:11	50 07:13 (7)	19:24	9	07:02 (10)	18:32	16:48	16:30	24 08:02 (6)	
9	05:34	06:01 (7)	06:02	06:24 (7)	06:34		06:54 (10)	07:05	06:41	07:15	07:39 (6)	
	20:37	66 07:07 (7)	20:10	49 07:13 (7)	19:22	9	07:03 (10)	18:30	16:47	16:30	24 08:03 (6)	
10	05:35	06:00 (7)	06:03	06:25 (7)	06:35		06:55 (10)	07:06	06:42	07:16	07:40 (6)	
	20:37	67 07:07 (7)	20:09	48 07:13 (7)	19:20	10	07:05 (10)	18:29	16:46	16:30	23 08:03 (6)	
11	05:35	06:00 (7)	06:04	06:26 (7)	06:36		06:56 (10)	07:07	06:44	07:17	07:41 (6)	
	20:36	68 07:08 (7)	20:07	46 07:12 (7)	19:19	9	07:05 (10)	18:27	16:45	16:30	23 08:04 (6)	
12	05:36	06:00 (7)	06:05	06:27 (7)	06:37		06:57 (10)	07:08	06:45	07:17	07:42 (6)	
	20:36	68 07:08 (7)	20:06	45 07:12 (7)	19:17	9	07:06 (10)	18:26	16:44	16:30	23 08:05 (6)	
13	05:37	06:00 (7)	06:06	06:28 (7)	06:38		06:58 (10)	07:09	06:46	07:18	07:42 (6)	
	20:35	69 07:09 (7)	20:04	43 07:11 (7)	19:15	9	07:07 (10)	18:24	16:43	16:30	23 08:05 (6)	
14	05:38	06:00 (7)	06:07	06:29 (7)	06:39		06:59 (10)	07:10	06:47	07:19	07:43 (6)	
	20:35	69 07:09 (7)	20:03	41 07:10 (7)	19:13	8	07:07 (10)	18:22	16:42	16:30	23 08:06 (6)	
15	05:38	06:01 (7)	06:08	06:30 (7)	06:40		07:00 (10)	07:12	06:48	07:20	07:44 (6)	
	20:34	69 07:10 (7)	20:02	40 07:10 (7)	19:12	7	07:07 (10)	18:21	16:41	16:31	23 08:07 (6)	
16	05:39	06:02 (7)	06:09	06:31 (7)	06:41		07:01 (10)	07:13	06:50	07:21	07:44 (6)	
	20:33	68 07:10 (7)	20:00	38 07:09 (7)	19:10	6	07:07 (10)	18:19	16:40	16:31	23 08:07 (6)	
17	05:40	06:03 (7)	06:10	06:32 (7)	06:42		07:02 (10)	07:14	06:51	07:21	07:45 (6)	
	20:33	68 07:11 (7)	19:59	36 07:08 (7)	19:08	5	07:07 (10)	18:18	16:39	16:31	23 08:08 (6)	
18	05:41	06:04 (7)	06:11	06:33 (7)	06:43		07:03 (10)	07:15	06:52	07:22	07:46 (6)	
	20:32	67 07:11 (7)	19:57	34 07:07 (7)	19:06	3	07:06 (10)	18:16	16:39	16:31	23 08:09 (6)	
19	05:42	06:04 (7)	06:12	06:34 (7)	06:44		07:04 (10)	07:16	06:53	07:23	07:46 (6)	
	20:31	67 07:11 (7)	19:56	32 07:06 (7)	19:05	2	07:06 (10)	18:15	16:38	16:32	23 08:09 (6)	
20	05:42	06:05 (7)	06:13	06:35 (7)	06:45			07:17	06:54	07:23	07:47 (6)	
	20:31	67 07:12 (7)	19:54	30 07:05 (7)	19:03			18:13	16:37	16:32	23 08:10 (6)	
21	05:43	06:06 (7)	06:14	06:36 (7)	06:46			07:18	06:56	07:24	07:47 (6)	
	20:30	66 07:12 (7)	19:53	27 07:03 (7)	19:01			18:12	16:36	16:33	23 08:10 (6)	
22	05:44	06:07 (7)	06:15	06:37 (7)	06:47			07:20	06:57	07:24	07:48 (6)	
	20:29	65 07:12 (7)	19:51	25 07:02 (7)	18:59			18:10	16:36	16:33	23 08:11 (6)	
23	05:45	06:08 (7)	06:16	06:38 (7)	06:48			07:21	06:58	07:25	07:48 (6)	
	20:28	65 07:13 (7)	19:50	22 07:00 (7)	18:58			18:09	16:35	16:34	23 08:11 (6)	
24	05:46	06:09 (7)	06:17	06:39 (7)	06:49			07:22	06:59	07:25	07:49 (6)	
	20:27	64 07:13 (7)	19:48	20 06:59 (7)	18:56			18:07	16:34	16:34	23 08:12 (6)	
25	05:47	06:10 (7)	06:18	06:40 (7)	06:50			06:23	07:00	07:26	07:49 (6)	
	20:26	64 07:14 (7)	19:47	17 06:57 (7)	18:54			17:06	16:34	16:35	23 08:12 (6)	
26	05:48	06:10 (7)	06:19	06:40 (7)	06:51			06:24	07:01	07:26	07:49 (6)	
	20:26	63 07:13 (7)	19:45	14 06:54 (7)	18:53			17:04	16:33	16:35	23 08:12 (6)	
27	05:49	06:11 (7)	06:20	06:41 (7)	06:52			06:25	07:03	07:26	07:50 (6)	
	20:25	62 07:13 (7)	19:44	10 06:51 (7)	18:51			17:03	16:33	16:36	23 08:13 (6)	
28	05:50	06:12 (7)	06:21	06:42 (7)	06:53			06:27	07:04	07:27	07:50 (6)	
	20:24	62 07:14 (7)	19:42	7 06:49 (7)	18:49			17:02	16:32	16:37	23 08:13 (6)	
29	05:51	06:13 (7)	06:22	06:43 (7)	06:54			06:28	07:05	07:27	07:50 (6)	
	20:23	61 07:14 (7)	19:40	2 06:45 (7)	18:47			17:00	16:32	7 07:47 (6)	16:38	23 08:13 (6)
30	05:52	06:14 (7)	06:23		06:55			06:29	07:06	07:37 (6)	07:27	07:50 (6)
	20:22	60 07:14 (7)	19:39		18:46			16:59	16:32	14 07:51 (6)	16:38	23 08:13 (6)
31	05:53	06:15 (7)	06:24					06:30			07:27	07:50 (6)
	20:20	59 07:14 (7)	19:37					16:58			16:39	23 08:13 (6)
Potential sun hours	461		429		375		345	296		286		705
Total, worst case	2016		1061		93			21				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Worst case Shadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (132)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June
1	07:27 16:40	07:14 17:15	06:37 17:50	16:58 (2) 17:28 (8)	06:45 19:25	05:58 19:57
2	07:28 16:41	07:13 17:16	06:35 17:51	16:55 (2) 17:29 (8)	06:43 19:26	05:57 19:59
3	07:28 16:42	07:11 17:17	06:34 17:52	16:54 (2) 17:31 (8)	06:42 19:27	05:56 20:00
4	07:28 16:43	07:10 17:19	06:32 17:53	16:52 (2) 17:32 (8)	06:40 19:28	05:54 20:01
5	07:28 16:44	07:09 17:20	06:30 17:54	16:50 (2) 17:32 (8)	06:38 19:29	05:53 20:02
6	07:28 16:44	07:08 17:21	06:29 17:56	16:49 (2) 17:34 (8)	06:37 19:30	05:52 20:03
7	07:28 16:45	07:07 17:22	06:27 17:57	16:48 (2) 17:35 (8)	06:35 19:31	05:51 20:04
8	07:27 16:46	07:06 17:24	06:26 17:58	16:47 (2) 17:34 (2)	06:33 19:32	05:49 20:05
9	07:27 16:47	07:05 17:25	06:24 17:59	16:46 (2) 17:35 (2)	06:32 19:33	05:48 20:06
10	07:27 16:48	07:04 17:26	06:22 18:00	16:45 (2) 17:34 (2)	06:30 19:35	05:47 20:07
11	07:27 16:50	07:02 17:28	06:21 18:01	16:45 (2) 17:35 (2)	06:28 19:36	05:46 20:08
12	07:27 16:51	07:01 17:29	06:19 18:03	16:44 (2) 17:35 (2)	06:27 19:37	05:45 20:09
13	07:26 16:52	07:00 17:30	06:17 18:04	16:43 (2) 17:35 (2)	06:25 19:38	05:44 20:10
14	07:26 16:53	06:59 17:31	06:16 18:05	16:43 (2) 17:34 (2)	06:24 19:39	05:43 20:11
15	07:26 16:54	06:57 17:33	06:14 18:06	16:43 (2) 17:35 (2)	06:22 19:40	05:42 20:12
16	07:25 16:55	06:56 17:34	06:12 18:07	16:43 (2) 17:34 (2)	06:20 19:41	05:41 20:13
17	07:25 16:56	06:54 17:35	06:11 18:08	16:42 (2) 17:34 (2)	06:19 19:42	05:40 20:14
18	07:24 16:57	06:53 17:36	06:09 18:09	16:43 (2) 17:34 (2)	06:17 19:43	05:39 20:15
19	07:24 16:59	06:52 17:38	06:07 18:10	16:43 (2) 17:33 (2)	06:16 19:44	05:38 20:16
20	07:23 17:00	06:50 17:39	06:05 18:12	16:43 (2) 17:32 (2)	06:14 19:45	05:37 20:17
21	07:22 17:01	06:49 17:40	06:04 18:13	16:43 (2) 17:31 (2)	06:13 19:47	05:36 19:10 (10) 20:18
22	07:22 17:02	06:47 17:41	06:02 18:14	16:44 (2) 17:30 (2)	06:11 19:48	05:35 19:09 (10) 20:19
23	07:21 17:03	06:46 17:42	06:00 18:15	16:44 (2) 17:29 (2)	06:10 19:49	05:35 19:10 (10) 20:20
24	07:20 17:05	06:44 17:44	05:59 18:16	16:45 (2) 17:27 (2)	06:08 19:50	05:34 19:10 (10) 20:21
25	07:20 17:06	06:43 17:45	05:57 18:17	16:46 (2) 17:27 (2)	06:07 19:51	05:33 19:11 (10) 20:22
26	07:19 17:07	06:41 17:46	17:20 (8) 05:55 18:18	16:47 (2) 17:25 (2)	06:05 19:52	05:32 19:12 (10) 20:23
27	07:18 17:08	06:40 17:47	17:04 (2) 05:54 18:19	16:48 (2) 17:23 (2)	06:04 19:53	05:32 19:12 (10) 20:24
28	07:17 17:10	06:38 17:49	17:25 (8) 05:52 18:20	16:49 (2) 17:20 (2)	06:02 19:54	05:31 19:15 (10) 20:24
29	07:16 17:11		17:01 (2) 05:52 18:20	16:49 (2) 17:20 (2)	06:02 19:54	05:31 19:16 (10) 20:24
30	07:15 17:12		17:27 (8) 05:50 18:20	17:52 (2) 19:21 18:19 (2)	06:01 19:55	05:30 20:25 20:39
31	07:14 17:14		06:48 19:23 18:15 (2)	17:54 (2) 19:23 17:58 (2)	06:00 19:56	05:30 20:26 20:39
Potential sun hours	296	296	369	399	450	454
Total, worst case		52	1315	15		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Worst case Shadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (132)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July	August	September	October	November	December			
1	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	17:23 (2) 18:14 (2)	06:31 16:56	07:07 16:31		
2	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	17:22 (2) 18:13 (2)	06:32 16:55	07:08 16:31		
3	05:30 20:38	05:56 20:17	06:27 19:32	06:58 18:40	17:23 (2) 18:13 (2)	06:34 16:54	07:09 16:31		
4	05:31 20:38	05:57 20:16	06:28 19:30	06:59 18:39	17:23 (2) 18:12 (2)	06:35 16:52	07:10 16:30		
5	05:31 20:38	05:58 20:15	06:29 19:29	07:00 18:37	17:24 (2) 18:11 (2)	06:36 16:51	07:11 16:30		
6	05:32 20:38	05:59 20:13	06:30 19:27	07:01 18:35	17:24 (2) 18:11 (8)	06:37 16:50	07:12 16:30		
7	05:32 20:37	06:00 20:12	06:31 19:25	07:03 18:34	17:24 (2) 18:11 (8)	06:39 16:49	07:13 16:30		
8	05:33 20:37	06:01 20:11	06:32 19:24	07:04 18:32	17:25 (2) 18:09 (8)	06:40 16:48	07:14 16:30		
9	05:34 20:37	06:02 20:10	06:33 19:22	07:05 18:30	17:26 (2) 18:07 (8)	06:41 16:47	07:15 16:30		
10	05:34 20:36	06:03 20:08	06:34 19:20	07:06 18:29	17:27 (2) 18:05 (8)	06:42 16:46	07:16 16:30		
11	05:35 20:36	06:04 20:07	06:35 19:18	07:07 18:27	17:28 (2) 18:04 (8)	06:43 16:45	07:16 16:30		
12	05:36 20:35	06:05 20:06	06:36 19:17	17:51 (2) 18:01 (2)	07:08 18:25	17:30 (2) 18:03 (8)	06:45 16:44	07:17 16:30	
13	05:37 20:35	06:06 20:04	06:37 19:15	17:46 (2) 18:06 (2)	07:09 18:24	17:32 (2) 18:01 (8)	06:46 16:43	07:18 16:30	
14	05:37 20:34	06:07 20:03	06:38 19:13	17:43 (2) 18:08 (2)	07:10 18:22	17:35 (2) 17:59 (8)	06:47 16:42	07:19 16:30	
15	05:38 20:34	06:08 20:02	19:22 (10) 19:23 (10)	06:39 19:11	17:40 (2) 18:10 (2)	07:11 18:21	17:39 (2) 17:57 (8)	06:48 16:41	07:20 16:30
16	05:39 20:33	06:09 20:00	19:20 (10) 19:22 (10)	06:41 19:10	17:38 (2) 18:12 (2)	07:12 18:19	17:52 (8) 17:56 (8)	06:50 16:40	07:20 16:31
17	05:40 20:33	06:10 19:59	19:18 (10) 19:21 (10)	06:42 19:08	17:36 (2) 18:13 (2)	07:14 18:18	06:51 16:39	07:21 16:31	
18	05:41 20:32	06:11 19:57	19:16 (10) 19:19 (10)	06:43 19:06	17:34 (2) 18:14 (2)	07:15 18:16	06:52 16:38	07:22 16:31	15:43 (9) 15:46 (9)
19	05:41 20:31	06:12 19:56	19:15 (10) 19:18 (10)	06:44 19:05	17:32 (2) 18:14 (2)	07:16 18:14	06:53 16:38	07:22 16:32	15:42 (9) 15:47 (9)
20	05:42 20:30	06:13 19:54	19:15 (10) 19:17 (10)	06:45 19:03	17:31 (2) 18:15 (2)	07:17 18:13	06:54 16:37	07:23 16:32	15:42 (9) 15:48 (9)
21	05:43 20:30	06:14 19:53	19:14 (10) 19:16 (10)	06:46 19:01	17:30 (2) 18:16 (2)	07:18 18:11	06:56 16:36	07:24 16:33	15:42 (9) 15:48 (9)
22	05:44 20:29	06:15 19:51	06:47 18:59	06:47 18:58	17:28 (2) 18:16 (2)	07:19 18:10	06:57 16:36	07:24 16:33	15:43 (9) 15:49 (9)
23	05:45 20:28	06:16 19:50	06:48 18:58	06:48 18:57	17:27 (2) 18:16 (2)	07:21 18:09	06:58 16:35	07:25 16:34	15:43 (9) 15:49 (9)
24	05:46 20:27	06:17 19:48	06:49 18:56	06:49 18:56	17:26 (2) 18:16 (2)	07:22 18:07	06:59 16:34	07:25 16:34	15:44 (9) 15:50 (9)
25	05:47 20:26	06:18 19:47	06:50 18:54	06:50 18:54	17:26 (2) 18:16 (2)	06:23 17:06	07:00 16:34	07:25 16:35	15:45 (9) 15:49 (9)
26	05:48 20:25	06:19 19:45	06:51 18:52	06:51 18:52	17:25 (2) 18:16 (2)	06:24 17:04	07:01 16:33	07:26 16:35	15:46 (9) 15:48 (9)
27	05:49 20:24	06:20 19:43	06:52 18:51	06:52 18:51	17:24 (2) 18:16 (2)	06:25 17:03	07:02 16:33	07:26 16:36	
28	05:50 20:23	06:21 19:42	06:53 18:49	06:53 18:49	17:24 (2) 18:15 (2)	06:26 17:01	07:04 16:32	07:27 16:37	
29	05:51 20:22	06:22 19:40	06:54 18:47	06:54 18:47	17:23 (2) 18:15 (2)	06:28 17:00	07:05 16:32	07:27 16:37	
30	05:52 20:21	06:23 19:39	06:55 18:46	06:55 18:46	17:23 (2) 18:14 (2)	06:29 16:59	07:06 16:31	07:27 16:38	
31	05:53 20:20	06:24 19:37			06:30 16:57			07:27 16:39	
Potential sun hours	461	429	375	782	608	296	286	44	
Total, worst case		16	782	608				44	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Worst case Shadow receptor: N - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (134)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June
1	07:28 16:40	07:14 17:15	07:34 (7) 08:18 (7)	06:37 17:50	06:45 19:25	05:58 20:28
2	07:28 16:41	07:13 17:16	07:33 (7) 08:19 (7)	06:35 17:51	06:43 19:26	05:57 20:29
3	07:28 16:42	07:12 17:17	07:32 (7) 08:19 (7)	06:34 17:52	06:42 19:27	05:56 20:29
4	07:28 16:43	07:11 17:19	07:31 (7) 08:19 (7)	06:32 17:53	06:40 19:28	05:55 20:30
5	07:28 16:44	07:10 17:20	07:30 (7) 08:19 (7)	06:31 17:55	06:38 19:29	05:53 20:31
6	07:28 16:45	07:50 (7) 07:51 (7)	07:28 (7) 08:19 (7)	06:29 17:56	06:37 19:30	05:52 20:31
7	07:28 16:46	07:50 (7) 07:53 (7)	07:27 (7) 08:19 (7)	06:27 17:57	06:35 19:31	05:51 20:32
8	07:28 16:47	07:50 (7) 07:55 (7)	07:26 (7) 08:19 (7)	06:26 17:58	06:33 19:33	05:50 20:33
9	07:27 16:48	07:50 (7) 07:57 (7)	07:25 (10) 08:19 (7)	06:24 17:59	06:32 19:34	05:48 20:33
10	07:27 16:49	07:49 (7) 07:58 (7)	07:24 (10) 08:18 (7)	06:22 18:00	06:30 19:35	05:47 20:34
11	07:27 16:50	07:49 (7) 08:00 (7)	07:22 (10) 08:17 (7)	06:21 18:02	06:29 19:36	05:46 20:34
12	07:27 16:51	07:49 (7) 08:02 (7)	07:21 (10) 08:17 (7)	06:19 18:03	06:27 19:37	05:45 20:35
13	07:26 16:52	07:48 (7) 08:03 (7)	07:20 (10) 08:17 (7)	06:17 18:04	06:25 19:38	05:44 20:35
14	07:26 16:53	07:48 (7) 08:04 (7)	07:18 (10) 08:15 (7)	06:16 18:05	06:24 19:39	05:43 20:36
15	07:26 16:54	07:47 (7) 08:05 (7)	07:17 (10) 08:15 (7)	06:14 18:06	06:22 19:40	05:42 20:36
16	07:25 16:55	07:47 (7) 08:07 (7)	07:16 (10) 08:14 (7)	06:12 18:07	06:21 19:41	05:41 20:37
17	07:25 16:56	07:46 (7) 08:07 (7)	07:14 (10) 08:12 (7)	06:11 18:08	06:19 19:42	05:40 20:37
18	07:24 16:58	07:46 (7) 08:09 (7)	07:13 (10) 08:11 (7)	06:09 18:09	06:17 19:43	05:39 20:37
19	07:24 16:59	07:45 (7) 08:10 (7)	07:11 (10) 08:09 (7)	06:07 18:11	06:16 19:45	05:38 20:38
20	07:23 17:00	07:44 (7) 08:10 (7)	07:12 (10) 08:07 (7)	06:06 18:12	06:14 19:46	05:37 20:38
21	07:23 17:01	07:44 (7) 08:12 (7)	07:39 (7) 08:04 (7)	06:04 18:13	06:13 19:47	05:36 20:38
22	07:22 17:02	07:43 (7) 08:13 (7)	07:42 (7) 08:01 (7)	06:02 18:14	06:11 19:48	05:35 20:39
23	07:21 17:04	07:42 (7) 08:13 (7)	07:48 (7) 07:55 (7)	06:01 18:15	06:10 19:49	05:35 20:39
24	07:21 17:05	07:41 (7) 08:14 (7)		05:59 18:16	06:08 19:50	05:34 20:39
25	07:20 17:06	07:41 (7) 08:15 (7)		05:57 18:17	06:07 19:51	05:33 20:39
26	07:19 17:07	07:40 (7) 08:16 (7)		05:55 18:18	06:05 19:52	05:32 20:39
27	07:18 17:09	07:39 (7) 08:16 (7)		05:54 18:19	06:04 19:53	05:32 20:39
28	07:17 17:10	07:38 (7) 08:17 (7)		05:52 18:20	06:03 19:54	05:31 20:39
29	07:16 17:11	07:37 (7) 08:17 (7)		06:50 19:22	06:01 19:55	05:28 20:39
30	07:16 17:12	07:36 (7) 08:18 (7)		06:49 19:23	06:00 19:57	05:29 20:39
31	07:15 17:14	07:35 (7) 08:18 (7)		06:47 19:24		05:29 20:27
Potential sun hours	296	296	369	399	450	454
Total, worst case	606	1063				159

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Worst case Shadow receptor: N - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (134)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July	August	September	October	November	December
1	05:29 20:39	05:52 (11) 20:19	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56
2	05:30 20:39	05:53 (11) 20:18	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55
3	05:30 20:39	05:53 (11) 20:17	05:56 20:17	06:27 19:32	06:58 18:41	06:34 16:54
4	05:31 20:38	05:54 (11) 20:16	05:57 20:16	06:28 19:30	06:59 18:39	06:35 16:53
5	05:31 20:38	05:54 (11) 20:15	05:58 20:15	06:29 19:29	07:01 18:37	06:36 16:51
6	05:32 20:38	05:55 (11) 20:14	05:59 20:14	06:30 19:27	07:02 18:35	06:38 16:50
7	05:33 20:38	06:00 20:12	06:01 20:12	06:31 19:25	07:03 18:34	06:39 16:49
8	05:33 20:37	06:01 20:11	06:02 20:11	06:33 19:24	07:04 18:32	06:40 16:48
9	05:34 20:37	06:02 20:10	06:03 20:10	06:34 19:22	07:05 18:31	06:41 16:47
10	05:35 20:37	06:03 20:09	06:04 20:09	06:35 19:20	07:06 18:29	06:42 16:46
11	05:35 20:36	06:04 20:07	06:05 20:07	06:36 19:19	07:07 18:27	06:44 16:45
12	05:36 20:36	06:05 20:06	06:06 20:06	06:37 19:17	07:08 18:26	06:45 16:44
13	05:37 20:35	06:06 20:04	06:07 20:04	06:38 19:15	07:09 18:24	06:46 16:43
14	05:38 20:35	06:07 20:03	06:08 20:03	06:39 19:13	07:10 18:22	06:47 16:42
15	05:38 20:34	06:08 20:02	06:09 20:02	06:40 19:12	07:11 18:21	06:48 16:41
16	05:39 20:33	06:09 20:00	06:10 20:00	06:41 19:10	07:13 18:19	06:50 16:40
17	05:40 20:33	06:10 19:59	06:11 19:59	06:42 19:08	07:14 18:18	06:51 16:39
18	05:41 20:32	06:11 19:57	06:12 19:57	06:43 19:06	07:15 18:16	06:52 16:39
19	05:42 20:31	06:12 19:56	06:13 19:56	06:44 19:05	07:16 18:15	06:53 16:38
20	05:42 20:31	06:13 19:54	06:14 19:54	06:45 19:03	07:17 18:13	06:55 16:37
21	05:43 20:30	06:14 19:53	06:15 19:53	06:46 19:01	07:18 18:12	06:56 16:36
22	05:44 20:29	06:15 19:51	06:16 19:51	06:47 18:59	07:20 18:10	06:57 16:36
23	05:45 20:28	06:16 19:50	06:17 19:50	06:48 18:58	07:21 18:09	06:58 16:35
24	05:46 20:27	06:17 19:48	06:18 19:48	06:49 18:56	07:22 18:07	06:59 16:34
25	05:47 20:26	06:18 19:47	06:19 19:47	06:50 18:54	07:23 18:06	07:00 16:34
26	05:48 20:26	06:19 19:45	06:20 19:45	06:51 18:53	07:24 18:04	07:01 16:33
27	05:49 20:25	06:20 19:44	06:21 19:44	06:52 18:51	07:25 18:03	07:02 16:33
28	05:50 20:24	06:21 19:42	06:22 19:42	06:53 18:49	07:26 18:02	07:03 16:32
29	05:51 20:23	06:22 19:40	06:23 19:40	06:54 18:47	07:27 18:00	07:04 16:32
30	05:52 20:22	06:23 19:39	06:24 19:39	06:55 18:46	07:28 17:59	07:05 16:32
31	05:53 20:21	06:24 19:37	06:25 19:37	06:56 18:44	07:29 17:58	07:06 16:32
Potential sun hours	461	429	375	345	296	286
Total, worst case	20			581	1064	40

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Worst case Shadow receptor: O - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (135)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:59 19:58	05:29 20:28	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	07:28 16:41	07:13 17:16	06:35 17:51	06:44 19:26	05:57 19:59	05:29 20:29	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	07:28 16:42	07:12 17:18	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:41	06:34 16:54	07:09 16:31
4	07:28 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:55 20:01	05:28 20:30	05:31 20:38	05:57 20:16	06:28 19:30	07:00 18:39	06:35 16:53	07:10 16:31
5	07:28 16:44	07:10 17:20	06:31 17:55	06:39 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:58 20:15	06:30 19:29	07:01 18:37	06:36 16:52	07:11 16:30
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31	05:32 20:38	05:59 20:14	06:31 19:27	07:02 18:36	06:38 16:50	07:12 16:30
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:31	05:51 20:04	05:27 20:32	05:33 20:38	06:00 20:12	06:32 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	07:28 16:47	07:06 17:24	06:26 17:58	06:34 19:33	05:50 20:05	05:26 20:33	05:33 20:37	06:01 20:11	06:33 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	07:27 16:48	07:05 17:25	06:24 17:59	06:32 19:34	05:49 20:06	05:26 20:33	05:34 20:37	06:02 20:10	06:34 19:22	07:05 18:31	06:41 16:47	07:15 16:30
10	07:27 16:49	07:04 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:35 20:37	06:03 20:09	06:35 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:03 17:28	06:21 18:02	06:29 19:36	05:46 20:08	05:26 20:34	05:35 20:36	06:04 20:07	06:36 19:19	07:07 18:27	06:44 16:45	07:17 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:26 20:35	05:36 20:36	06:05 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:18 16:30
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:26 20:35	05:37 20:35	06:06 20:05	06:38 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:59 17:32	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:38 20:35	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36	05:38 20:34	06:08 20:02	06:40 19:12	07:12 18:21	06:49 16:41	07:20 16:31
16	07:25 16:55	06:56 17:34	06:12 18:07	06:21 19:41	05:41 20:13	05:25 20:37	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:21 16:31
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	07:24 16:58	06:53 17:37	06:09 18:09	06:17 19:44	05:39 20:15	05:26 20:37	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:39	07:22 16:32
19	07:24 16:59	06:52 17:38	06:07 18:11	06:16 19:45	05:38 20:16	05:26 20:38	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:23 16:32
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38	05:43 20:31	06:13 19:54	06:45 19:03	07:17 18:13	06:55 16:37	07:23 16:32
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 16:33
22	07:22 17:02	06:48 17:41	06:02 18:14	06:11 19:48	05:36 20:19	05:26 20:39	05:44 20:29	06:15 19:51	06:47 19:00	07:20 18:10	06:57 16:36	07:24 16:33
23	07:21 17:04	06:46 17:43	06:01 18:15	06:10 19:49	05:35 20:20	05:26 20:39	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	07:21 17:05	06:45 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:34 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:26	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:26 16:35
26	07:19 17:07	06:42 17:46	05:55 18:18	06:06 19:52	05:33 20:23	05:27 20:39	05:48 20:26	06:19 19:45	06:51 18:53	06:24 17:04	07:02 16:33	07:26 16:36
27	07:18 17:09	06:40 17:48	05:54 18:19	06:04 19:53	05:32 20:24	05:28 20:39	05:49 20:25	06:20 19:44	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	07:17 17:10	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
29	07:17 17:11	06:38 17:50	05:51 18:22	06:02 19:55	05:31 20:26	05:28 20:40	05:51 20:23	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:38
30	07:16 17:12	06:37 17:51	05:50 18:23	06:01 19:56	05:30 20:27	05:29 20:41	05:52 20:22	06:23 19:39	06:55 18:46	06:29 16:59	07:06 16:32	07:27 16:38
31	07:15 17:14	06:36 17:52	05:49 18:24	06:00 19:57	05:30 20:28	05:29 20:42	05:52 20:21	06:24 19:37	06:56 18:45	06:30 16:58	07:07 16:31	07:27 16:39
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Total, worst case												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Worst case Shadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (137)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	January	February	March	April	May	June
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	18:12 (8) 05:58	18:09 (8) 05:29
2	07:28 16:41	07:13 17:16	06:35 17:51	06:43 19:26	18:10 (8) 05:57	18:11 (8) 05:28
3	07:28 16:42	07:12 17:17	06:34 17:52	06:42 19:27	18:09 (8) 05:56	18:11 (8) 05:28
4	07:28 16:43	07:10 17:19	06:32 17:53	06:40 19:28	18:09 (8) 05:54	18:12 (8) 05:28
5	07:28 16:44	07:09 17:20	06:30 17:54	06:38 19:29	18:07 (8) 05:53	18:14 (8) 05:27
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	18:06 (8) 05:52	18:15 (8) 05:27
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:31	18:06 (8) 05:51	18:17 (8) 05:26
8	07:27 16:47	07:06 17:24	06:26 17:58	06:33 19:32	18:05 (8) 05:50	18:18 (8) 05:26
9	07:27 16:48	07:05 17:25	06:24 17:59	06:32 19:34	18:04 (8) 05:48	18:20 (8) 05:26
10	07:27 16:49	07:04 17:26	06:22 18:00	06:30 19:35	18:04 (8) 05:47	18:23 (8) 05:26
11	07:27 16:50	07:02 17:28	06:21 18:01	06:28 19:36	18:04 (8) 05:46	18:26 (8) 05:26
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	18:04 (8) 05:45	18:32 (8) 05:25
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	18:03 (8) 05:44	18:39 (8) 05:25
14	07:26 16:53	06:59 17:31	06:16 18:05	06:24 19:39	18:02 (8) 05:43	18:45 (8) 05:25
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	18:03 (8) 05:42	18:52 (8) 05:25
16	07:25 16:55	06:56 17:34	06:12 18:07	06:20 19:41	18:02 (8) 05:41	19:00 (8) 05:25
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	18:03 (8) 05:40	19:08 (8) 05:25
18	07:24 16:58	06:53 17:36	06:09 18:09	06:17 19:43	18:02 (8) 05:39	19:16 (6) 05:25
19	07:24 16:59	06:52 17:38	06:07 18:10	06:16 19:44	18:03 (8) 05:38	19:24 (6) 05:25
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 19:46	18:03 (8) 05:37	19:32 (6) 05:26
21	07:22 17:01	06:49 17:40	06:04 18:13	06:13 19:47	18:03 (8) 05:36	19:40 (6) 05:26
22	07:22 17:02	06:47 17:41	06:02 18:14	06:11 19:48	18:03 (8) 05:35	19:48 (6) 05:26
23	07:21 17:04	06:46 17:43	06:00 18:15	17:37 (8) 06:10	19:20 (6) 05:35	20:19 (6) 05:26
24	07:20 17:05	06:44 17:44	05:59 18:16	17:31 (8) 06:10	19:04 (8) 05:35	20:39 (6) 05:26
25	07:20 17:06	06:43 17:45	05:57 18:17	17:54 (8) 06:08	19:21 (6) 05:34	20:20 (6) 05:26
26	07:19 17:07	06:41 17:46	05:55 18:18	17:27 (8) 06:07	19:04 (8) 05:34	20:34 (6) 05:26
27	07:18 17:09	06:40 17:47	05:54 18:19	17:56 (8) 06:05	19:19 (6) 05:33	20:21 (6) 05:27
28	07:17 17:10	06:38 17:49	05:52 18:20	17:22 (8) 06:04	18:05 (8) 05:33	20:22 (6) 05:27
29	07:16 17:11		06:50 19:21	17:57 (8) 06:03	19:18 (6) 05:32	20:23 (6) 05:27
30	07:15 17:12		06:48 19:23	17:58 (8) 06:03	19:17 (6) 05:31	20:24 (6) 05:28
31	07:14 17:14		06:47 19:24	17:18 (8) 06:03	19:16 (6) 05:31	20:24 (6) 05:28
Potential sun hours	296	296	369	399	450	454
Total, worst case			352	2043	451	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Worst case Shadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (137)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

The sun is shining all the day, from sunrise to sunset

The rotor plane is always perpendicular to the line from the WTG to the sun

The WTG is always operating

	July	August	September	October	November	December		
1	05:29 20:39	05:54 20:19	13 18:40 (8)	06:25 18:53 (8)	68 19:10 (8)	06:56 18:44	06:31 16:56	07:07 16:31
2	05:30 20:39	05:55 20:18	22 18:35 (8)	06:26 18:57 (8)	67 19:34	06:57 18:02 (8)	06:33 16:55	07:08 16:31
3	05:30 20:39	05:56 20:17	26 18:33 (8)	06:27 18:59 (8)	65 19:07 (8)	06:58 18:40	06:34 16:54	07:09 16:31
4	05:31 20:38	05:57 20:16	32 18:30 (8)	06:28 19:02 (8)	64 19:30	06:59 18:02 (8)	06:35 16:53	07:10 16:30
5	05:31 20:38	05:58 20:15	35 18:28 (8)	06:29 19:03 (8)	63 19:05 (8)	07:00 18:37	06:36 16:51	07:11 16:30
6	05:32 20:38	05:59 20:13	39 18:26 (8)	06:30 19:05 (8)	62 19:04 (8)	07:02 18:35	06:37 16:50	07:12 16:30
7	05:33 20:38	06:00 20:12	42 18:25 (8)	06:31 19:07 (8)	61 19:25	07:03 18:02 (8)	06:39 16:49	07:13 16:30
8	05:33 20:37	06:01 20:11	45 18:23 (8)	06:32 19:08 (8)	58 19:01 (8)	07:04 18:32	06:40 16:48	07:14 16:30
9	05:34 20:37	06:02 20:10	47 18:22 (8)	06:33 19:09 (8)	56 19:22	07:05 18:03 (8)	06:41 16:47	07:15 16:30
10	05:35 20:36	06:03 20:08	50 18:20 (8)	06:34 19:10 (8)	55 19:20	07:06 18:58 (8)	06:42 16:46	07:16 16:30
11	05:35 20:36	06:04 20:07	58 18:19 (8)	06:35 19:11 (8)	52 19:18	07:07 18:56 (8)	06:43 16:45	07:17 16:30
12	05:36 20:36	06:05 20:06	62 18:18 (8)	06:36 19:12 (8)	49 19:17	07:08 18:05 (8)	06:45 16:44	07:17 16:30
13	05:37 20:35	06:06 20:04	65 18:16 (8)	06:38 19:13 (8)	48 19:15	07:09 18:53 (8)	06:46 16:43	07:18 16:30
14	05:37 20:34	06:07 20:03	68 18:15 (8)	06:39 19:14 (8)	45 19:13	07:10 18:51 (8)	06:47 16:42	07:19 16:30
15	05:38 20:34	06:08 20:02	70 18:14 (8)	06:40 19:15 (8)	42 19:12	07:11 18:07 (8)	06:48 16:41	07:20 16:31
16	05:39 20:33	06:09 20:00	72 18:13 (8)	06:41 19:16 (8)	38 19:10	07:13 18:47 (8)	06:50 16:40	07:20 16:31
17	05:40 20:33	06:10 19:59	73 18:12 (8)	06:42 19:17 (8)	36 18:46 (8)	07:14 18:18	06:51 16:39	07:21 16:31
18	05:41 20:32	06:11 19:57	75 18:11 (8)	06:43 19:18 (8)	32 18:44 (8)	07:15 18:16	06:52 16:38	07:22 16:31
19	05:42 20:31	06:12 19:56	76 18:10 (8)	06:44 19:19 (8)	28 18:42 (8)	07:16 18:15	06:53 16:38	07:22 16:32
20	05:42 20:30	06:13 19:54	76 18:10 (8)	06:45 19:03	23 18:40 (8)	07:17 18:13	06:54 16:37	07:23 16:32
21	05:43 20:30	06:14 19:53	77 18:08 (8)	06:46 19:01	18 18:39 (8)	07:18 18:12	06:56 16:36	07:24 16:33
22	05:44 20:29	06:15 19:51	77 18:07 (8)	06:47 19:24 (6)		07:19 18:10	06:57 16:36	07:24 16:33
23	05:45 20:28	06:16 19:50	76 18:06 (8)	06:48 19:22 (6)		07:21 18:09	06:58 16:35	07:25 16:34
24	05:46 20:27	06:17 19:48	75 18:06 (8)	06:49 19:21 (6)		07:22 18:07	06:59 16:34	07:25 16:34
25	05:47 20:26	06:18 19:47	74 18:05 (8)	06:50 19:19 (6)		06:23 17:06	07:00 16:34	07:25 16:35
26	05:48 20:25	06:19 19:45	73 18:05 (8)	06:51 19:18 (6)		06:24 17:04	07:01 16:33	07:26 16:35
27	05:49 20:24	06:20 19:43	72 18:04 (8)	06:52 19:16 (8)		06:25 17:03	07:03 16:33	07:26 16:36
28	05:50 20:23	06:21 19:42	71 18:04 (8)	06:53 19:15 (8)		06:26 17:02	07:04 16:32	07:27 16:37
29	05:51 20:22	06:22 19:40	71 18:03 (8)	06:54 19:14 (8)		06:28 17:00	07:05 16:32	07:27 16:37
30	05:52 20:21	06:23 19:39	69 18:03 (8)	06:55 19:12 (8)		06:29 16:59	07:06 16:32	07:27 16:38
31	05:53 20:20	06:24 19:37	68 18:03 (8)	06:55 19:11 (8)		06:30 16:58		07:27 16:39
Potential sun hours	461	429		375		345	296	286
Total, worst case			1849		1030			

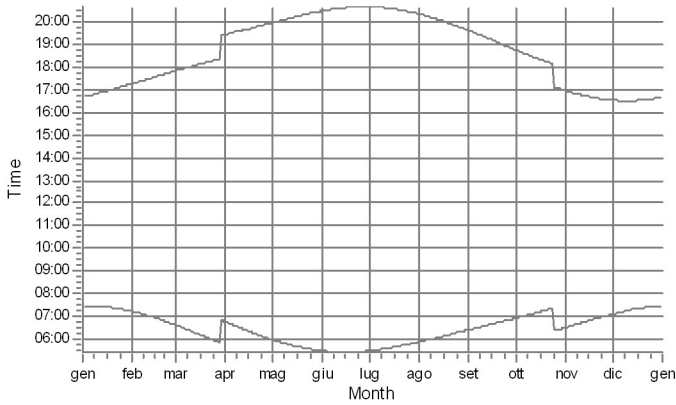
Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

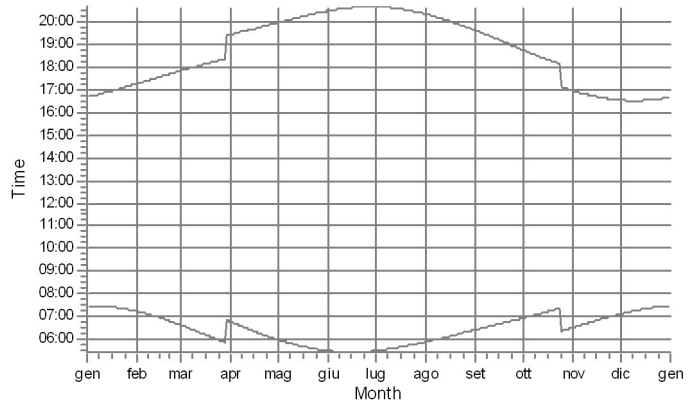
SHADOW - Calendar, graphical

Calculation: Worst case

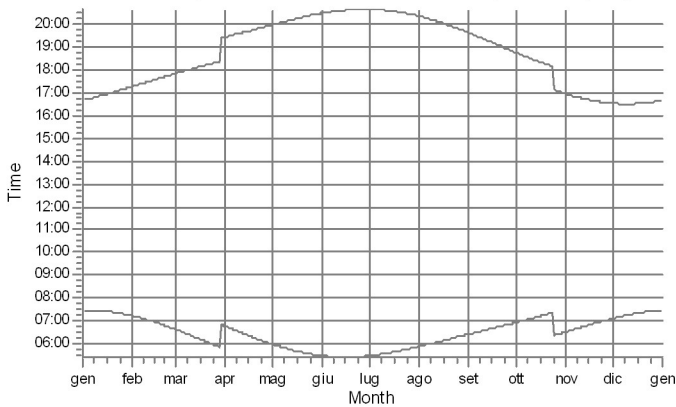
A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (114)



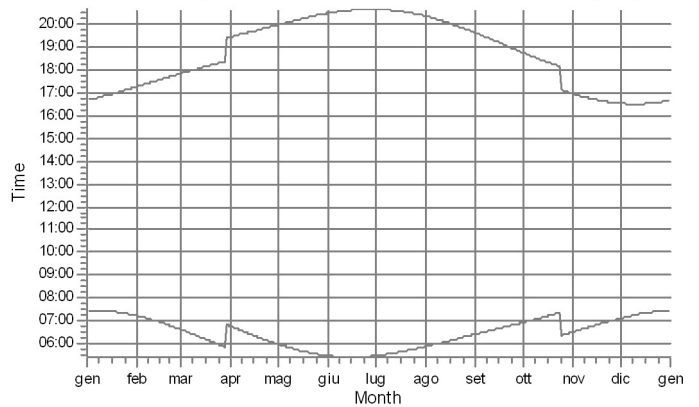
B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (116)



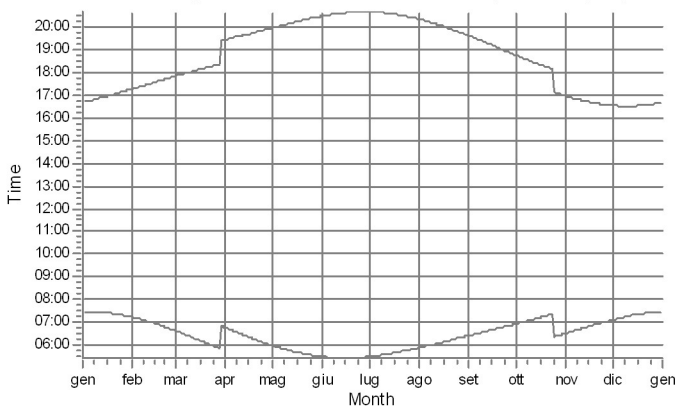
C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (117)



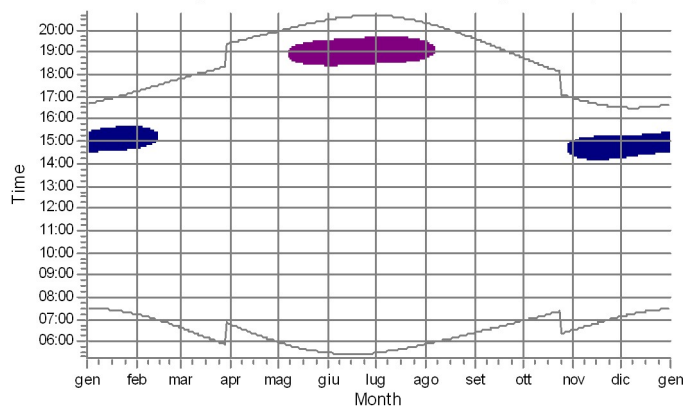
D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (119)



E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (120)



F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (121)



WTGs

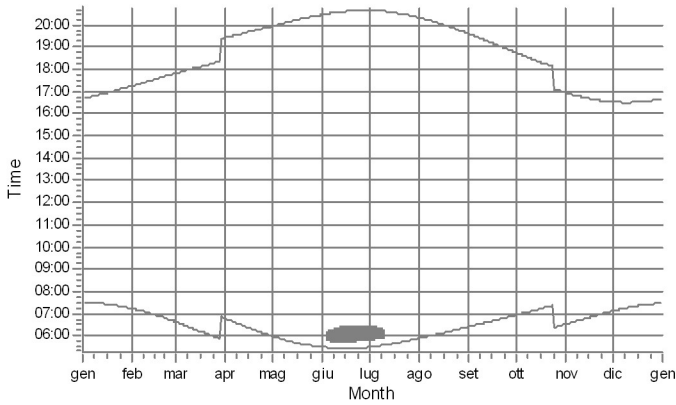
7: VESTAS V162 5600 162.0 IO! hub: 125,0 m (TOT: 206,0 m) (7)

11: VESTAS V162 5600 162.0 IO! hub: 125,0 m (TOT: 206,0 m) (11)

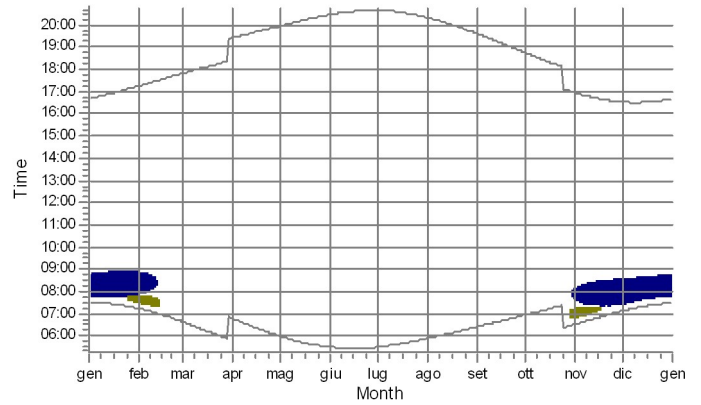
SHADOW - Calendar, graphical

Calculation: Worst case

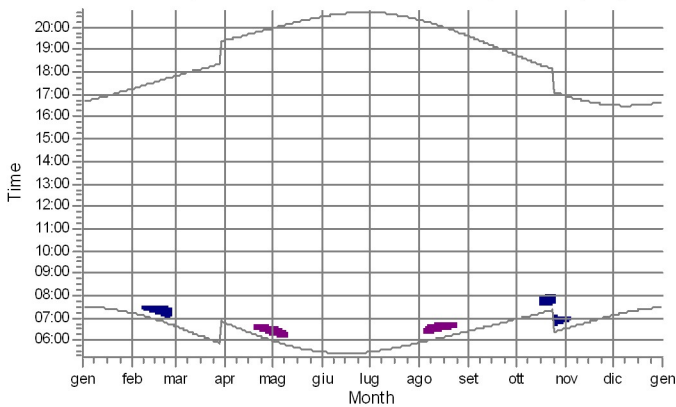
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (122)



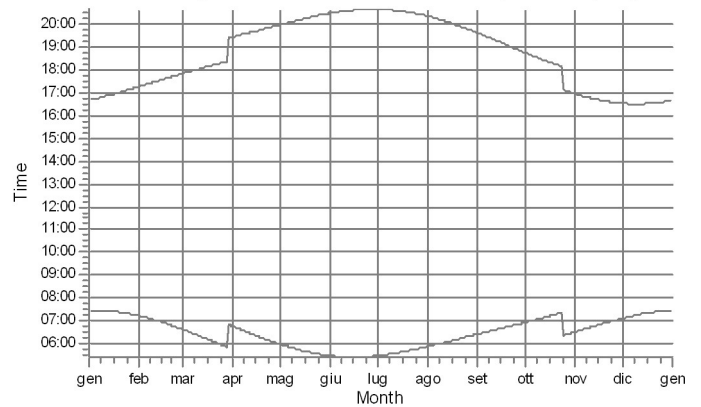
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (124)



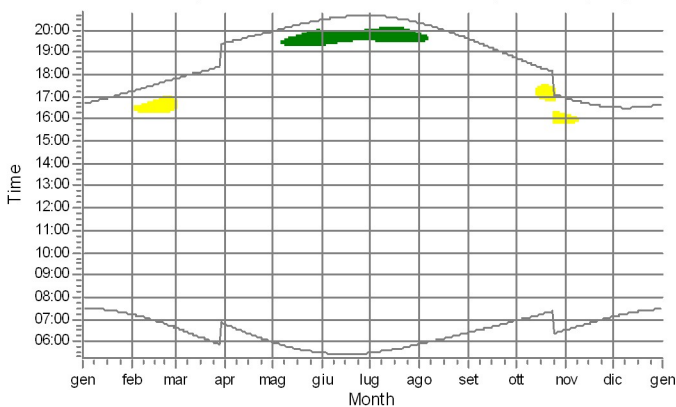
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (125)



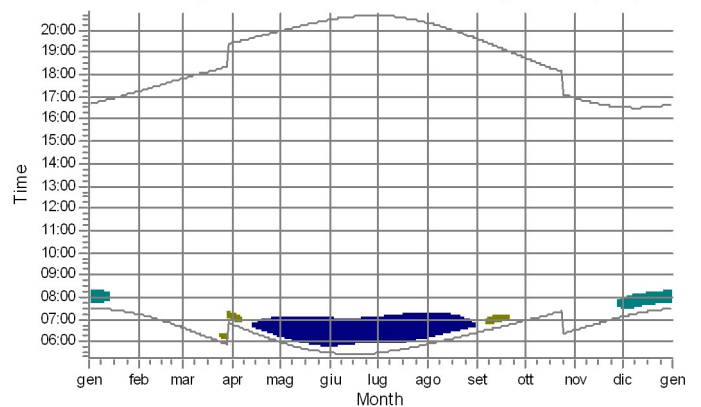
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (126)



K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (127)



L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (129)



WTGs

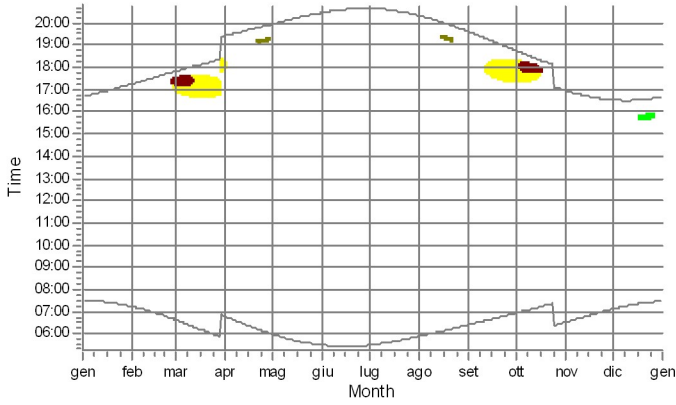
- 1: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (1)
- 2: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (2)
- 4: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (4)
- 6: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (6)

- 7: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (7)
- 10: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (10)
- 11: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (11)

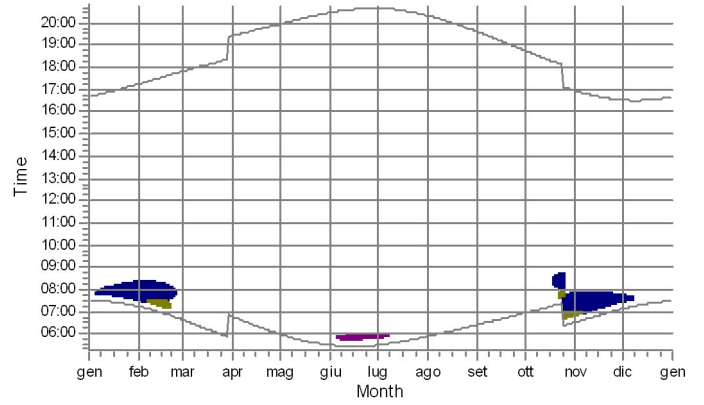
SHADOW - Calendar, graphical

Calculation: Worst case

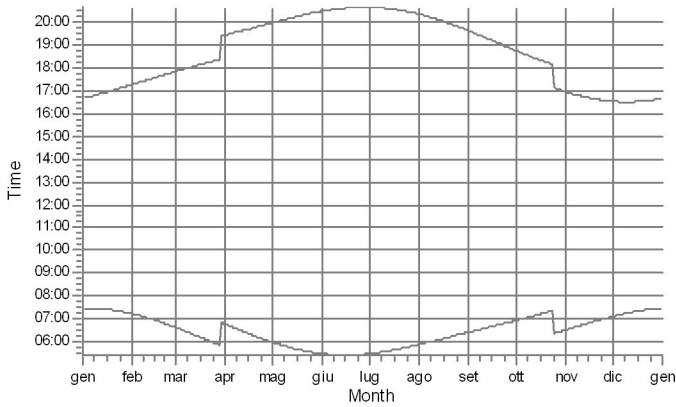
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (132)



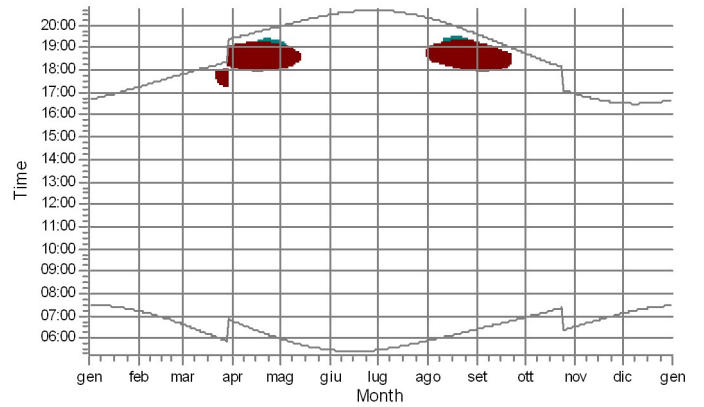
N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (134)







O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (135)






P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (137)



WTGs

	2: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (2)
	6: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (6)
	7: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (7)
	8: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (8)

	9: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (9)
	10: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (10)
	11: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (11)

SHADOW - Calendar per WTG

Calculation: Worst case WTG: 1 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (1)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December	
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:58 19:58	05:29 20:28	19:24-19:55/31 20:39	05:29 20:19	19:35-19:57/22 20:19	05:54 19:33-19:45/12	06:25 19:35	06:56 18:44	06:31 16:56
2	07:28 16:41	07:13 17:16	06:35 17:51	06:43 19:26	05:57 19:59	05:28 20:29	19:25-19:55/30 20:39	05:30 20:39	19:35-19:57/22 20:18	05:55 19:33-19:43/10	06:26 19:34	06:57 18:42	06:33 16:55
3	07:28 16:42	07:12 17:17	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	19:26-19:55/29 20:39	05:30 20:39	19:35-19:58/23 20:17	05:56 19:34-19:42/8	06:27 19:32	06:58 18:40	06:34 16:54
4	07:28 16:43	07:10 17:19	06:32 17:53	06:40 19:28	05:54 20:01	05:27 20:30	19:26-19:54/28 20:38	05:31 20:38	19:35-19:59/24 20:16	05:57 19:35-19:40/5	06:28 19:30	06:59 18:39	06:35 16:53
5	07:28 16:44	07:09 17:20	06:30 17:54	06:38 19:29	05:53 20:02	05:27 20:31	19:27-19:54/27 20:38	05:31 20:38	19:34-19:59/25 20:15	05:58 19:36-19:39/3	06:29 19:29	07:00 18:37	06:36 16:51
6	07:28 16:44	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31	19:28-19:54/26 20:38	05:32 20:38	19:34-20:00/26 20:13	05:59 19:36-19:39/3	06:30 19:29	07:02 18:37	06:37 16:51
7	07:28 16:45	07:07 17:22	06:27 17:57	06:35 19:31	05:51 20:04	19:27-19:28/1 20:32	05:26 20:38	05:32 20:38	19:34-20:00/26 20:12	06:00 19:25	06:31 18:34	07:03 16:49	06:39 16:30
8	07:28 16:46	07:06 17:24	06:26 17:58	06:33 19:32	05:50 20:05	05:26 20:33	19:29-19:53/24 20:37	05:33 20:37	19:34-20:01/27 20:11	06:01 19:24	06:32 18:32	07:04 16:48	06:40 16:30
9	07:27 16:47	07:05 17:25	06:24 17:59	06:32 19:34	05:48 20:06	05:26 20:33	19:24-19:30/6 20:37	05:34 20:37	19:34-20:02/28 20:10	06:02 19:22	06:33 18:30	07:05 16:47	06:41 16:30
10	07:27 16:49	07:04 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34	19:23-19:32/9 20:36	05:34 20:36	19:33-20:02/29 20:08	06:03 19:20	06:34 18:29	07:06 16:46	06:42 16:30
11	07:27 16:50	07:02 17:28	06:21 18:01	06:28 19:36	05:46 20:08	05:26 20:34	19:23-19:33/10 20:36	05:35 20:36	19:33-20:03/30 20:07	06:04 19:18	06:35 18:27	07:07 16:45	06:44 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:25 20:35	19:22-19:35/13 20:36	05:36 20:36	19:33-20:03/30 20:06	06:05 19:17	06:36 18:25	07:08 16:44	06:45 16:30
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:25 20:35	19:22-19:36/14 20:35	05:37 20:35	19:32-20:03/31 20:04	06:06 19:15	06:37 18:24	07:09 16:43	06:46 16:30
14	07:26 16:53	06:59 17:31	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	19:21-19:38/17 20:34	05:37 20:34	19:32-20:04/32 20:03	06:07 19:13	06:39 18:22	07:10 16:42	06:47 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36	19:21-19:39/18 20:34	05:38 20:34	19:32-20:05/33 20:02	06:08 19:12	06:40 18:21	07:11 16:41	06:48 16:31
16	07:25 16:55	06:56 17:34	06:12 18:07	06:20 19:41	05:41 20:13	05:25 20:37	19:21-19:41/20 20:33	05:39 20:33	19:32-20:05/33 20:00	06:09 19:10	06:41 18:19	07:13 16:40	06:50 16:31
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37	19:20-19:42/22 20:33	05:40 20:33	19:32-20:04/32 19:59	06:10 19:08	06:42 18:18	07:14 16:39	06:51 16:31
18	07:24 16:57	06:53 17:36	06:09 18:09	06:17 19:43	05:39 20:15	05:25 20:37	19:20-19:43/23 20:32	05:41 20:32	19:31-20:02/31 19:57	06:11 19:06	06:43 18:16	07:15 16:38	06:52 16:31
19	07:24 16:59	06:52 17:38	06:07 18:10	06:16 19:44	05:38 20:16	05:25 20:38	19:21-19:45/24 20:31	05:41 20:31	19:31-20:02/31 19:56	06:12 19:05	06:44 18:14	07:16 16:38	06:53 16:32
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38	19:21-19:47/26 20:31	05:42 20:31	19:31-20:01/30 19:54	06:13 19:03	06:45 18:13	07:17 16:37	06:54 16:32
21	07:22 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	19:21-19:48/27 20:30	05:43 20:30	19:31-20:00/29 19:53	06:14 19:01	06:46 18:11	07:18 16:36	06:56 16:33
22	07:22 17:02	06:47 17:41	06:02 18:14	06:11 19:48	05:35 20:19	05:26 20:38	19:21-19:49/28 20:29	05:44 20:29	19:31-19:59/28 19:51	06:15 18:59	06:47 18:10	07:19 16:36	06:57 16:33
23	07:21 17:04	06:46 17:43	06:00 18:15	06:10 19:49	05:35 20:20	05:26 20:39	19:22-19:51/29 20:28	05:45 20:28	19:32-19:58/26 19:50	06:16 18:58	06:48 18:09	07:21 16:35	06:58 16:34
24	07:20 17:05	06:44 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:26 20:39	19:22-19:52/30 20:27	05:46 20:27	19:32-19:57/25 19:48	06:17 18:56	06:49 18:07	07:22 16:34	06:59 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	19:22-19:53/31 20:26	05:47 20:26	19:31-19:54/23 19:47	06:18 18:54	06:50 18:06	07:23 16:34	07:00 16:35
26	07:19 17:07	06:41 17:46	05:55 18:18	06:05 19:52	05:32 20:23	05:27 20:39	19:23-19:54/31 20:25	05:48 20:25	19:31-19:53/22 19:45	06:19 18:52	06:51 18:04	07:24 16:33	07:26 16:35
27	07:18 17:08	06:40 17:47	05:54 18:19	06:04 19:53	05:32 20:24	05:27 20:39	19:23-19:55/32 20:24	05:49 20:24	19:31-19:52/21 19:43	06:20 18:51	06:52 18:03	07:25 16:33	07:27 16:36
28	07:17 17:10	06:38 17:49	05:52 18:20	06:02 19:54	05:31 20:25	05:28 20:39	19:23-19:55/32 20:23	05:50 20:23	19:31-19:51/20 19:42	06:21 18:49	06:53 18:01	07:26 16:32	07:28 16:37
29	07:16 17:11	06:37 17:50	05:50 18:21	06:01 19:55	05:30 20:26	05:28 20:39	19:24-19:56/32 20:22	05:51 20:22	19:32-19:49/17 19:40	06:22 18:47	06:54 18:00	07:27 16:32	07:29 16:37
30	07:15 17:12	06:48 17:51	06:00 18:22	06:00 19:56	05:30 20:27	05:29 20:39	19:24-19:55/31 20:21	05:52 20:21	19:32-19:48/16 19:39	06:23 18:46	06:55 18:00	07:28 16:32	07:30 16:38
31	07:15 17:14	06:47 17:52	06:00 18:23	06:00 19:57	05:29 20:28	05:29 20:39	19:25-19:55/30 20:20	05:53 20:20	19:32-19:46/14 19:37	06:24 19:37	06:30 18:46	07:29 16:58	07:31 16:39
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286	
Sum of minutes with flicker	0	0	0	0	540	647	806	38	0	0	0	0	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst case WTG: 2 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (2)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	January	February	March	April	May	June
1	07:27 16:40	07:14 17:15	06:37 16:58-17:26/28 17:50	06:45 19:25	05:58 19:58	05:29 20:28
2	07:28 16:41	07:13 17:16	06:35 16:55-17:27/32 17:51	06:43 19:26	05:57 19:59	05:28 20:28
3	07:28 16:42	07:12 16:28-16:29/1 17:17	06:34 16:54-17:30/36 17:52	06:42 19:27	05:56 20:00	05:28 20:29
4	07:28 16:43	07:10 16:27-16:30/3 17:19	06:32 16:52-17:31/39 17:53	06:40 19:28	05:54 20:01	05:27 20:30
5	07:28 16:44	07:09 16:25-16:31/6 17:20	06:30 16:50-17:31/41 17:54	06:38 19:29	05:53 20:02	05:27 20:31
6	07:28 16:45	07:08 16:24-16:33/9 17:21	06:29 16:49-17:33/44 17:56	06:37 19:30	05:52 20:03	05:27 20:31
7	07:28 16:45	07:07 16:24-16:34/10 17:22	06:27 16:48-17:33/45 17:57	06:35 19:31	05:51 20:04	05:26 20:32
8	07:27 16:46	07:06 16:23-16:36/13 17:24	06:26 16:47-17:34/47 17:58	06:33 19:32	05:50 20:05	05:26 20:33
9	07:27 16:47	07:05 16:23-16:38/15 17:25	06:24 16:46-17:35/49 17:59	06:32 19:34	05:48 20:06	05:26 20:33
10	07:27 16:49	07:04 16:22-16:38/16 17:26	06:22 16:45-17:34/49 18:00	06:30 19:35	05:47 20:07	05:26 20:34
11	07:27 16:50	07:02 16:22-16:40/18 17:28	06:21 16:45-17:35/50 18:01	06:28 19:36	05:46 20:08	05:26 20:34
12	07:27 16:51	07:01 16:22-16:42/20 17:29	06:19 16:44-17:35/51 18:03	06:27 19:37	05:45 20:09	05:25 20:35
13	07:26 16:52	07:00 16:21-16:42/21 17:30	06:17 16:43-17:35/52 18:04	06:25 19:38	05:44 20:10	05:25 20:35
14	07:26 16:53	06:59 16:21-16:44/23 17:31	06:16 16:43-17:34/51 18:05	06:24 19:39	05:43 20:11	05:25 20:36
15	07:26 16:54	06:57 16:21-16:46/25 17:33	06:14 16:43-17:35/52 18:06	06:22 19:40	05:42 20:12	05:25 20:36
16	07:25 16:55	06:56 16:21-16:47/26 17:34	06:12 16:43-17:34/51 18:07	06:20 19:41	05:41 20:13	05:25 20:37
17	07:25 16:56	06:55 16:21-16:48/27 17:35	06:11 16:42-17:34/52 18:08	06:19 19:42	05:40 20:14	05:25 20:37
18	07:24 16:57	06:53 16:22-16:50/28 17:36	06:09 16:43-17:34/51 18:09	06:17 19:43	05:39 20:15	05:25 20:37
19	07:24 16:59	06:52 16:22-16:51/29 17:38	06:07 16:43-17:33/50 18:10	06:16 19:44	05:38 20:16	05:25 20:38
20	07:23 17:00	06:50 16:23-16:53/30 17:39	06:06 16:43-17:32/49 18:12	06:14 19:46	05:37 20:17	05:26 20:38
21	07:22 17:01	06:49 16:23-16:54/31 17:40	06:04 16:43-17:31/48 18:13	06:13 19:47	05:36 20:18	05:26 20:38
22	07:22 17:02	06:47 16:24-16:56/32 17:41	06:02 16:44-17:30/46 18:14	06:11 19:48	05:35 20:19	05:26 20:38
23	07:21 17:04	06:46 16:24-16:56/32 17:43	06:00 16:44-17:29/45 18:15	06:10 19:49	05:35 20:20	05:26 20:39
24	07:20 17:05	06:44 16:26-16:56/30 17:44	05:59 16:45-17:27/42 18:16	06:08 19:50	05:34 20:21	05:26 20:39
25	07:20 17:06	06:43 16:27-16:54/27 17:45	05:57 16:46-17:27/41 18:17	06:07 19:51	05:33 20:22	05:27 20:39
26	07:19 17:07	06:41 16:29-16:52/23 17:46	05:55 16:47-17:25/38 18:18	06:05 19:52	05:32 20:23	05:27 20:39
27	07:18 17:08	06:40 17:04-17:20/16 17:47 16:31-16:49/18	05:54 16:48-17:23/35 18:19	06:04 19:53	05:32 20:24	05:27 20:39
28	07:17 17:10	06:38 17:01-17:24/23 17:49 16:35-16:46/11	05:52 16:49-17:20/31 18:20	06:02 19:54	05:31 20:24	05:28 20:39
29	07:16 17:11		06:50 17:52-18:19/27 19:21	06:01 19:55	05:30 20:25	05:28 20:39
30	07:15 17:12		06:48 17:54-18:15/21 19:23	06:00 19:56	05:30 20:26	05:29 20:39
31	07:15 17:14		06:47 17:58-18:10/12 19:24		05:29 20:27	
Potential sun hours	296	296	369	399	450	454
Sum of minutes with flicker	0	563	1305	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
--------------	-------------------------------------	-------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------

SHADOW - Calendar per WTG

Calculation: Worst case WTG: 2 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (2)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	July	August	September	October	November	December
1	05:29 20:39	05:54 20:19	06:25 19:35	06:56 17:23-18:14/51 18:44	06:31 15:52-16:08/16 16:56	07:07 16:31
2	05:30 20:39	05:55 20:18	06:26 19:34	06:57 17:22-18:13/51 18:42	06:32 15:52-16:06/14 16:55	07:08 16:31
3	05:30 20:39	05:56 20:17	06:27 19:32	06:58 17:23-18:13/50 18:40	06:34 15:53-16:05/12 16:54	07:09 16:31
4	05:31 20:38	05:57 20:16	06:28 19:30	06:59 17:23-18:12/49 18:39	06:35 15:54-16:04/10 16:53	07:10 16:30
5	05:31 20:38	05:58 20:15	06:29 19:29	07:00 17:24-18:11/47 18:37	06:36 15:54-16:02/8 16:51	07:11 16:30
6	05:32 20:38	05:59 20:13	06:30 19:27	07:01 17:24-18:10/46 18:35	06:37 15:56-16:02/6 16:50	07:12 16:30
7	05:32 20:38	06:00 20:12	06:31 19:25	07:03 17:24-18:09/45 18:34	06:39 15:57-16:00/3 16:49	07:13 16:30
8	05:33 20:37	06:01 20:11	06:32 19:24	07:04 17:25-18:08/43 18:32	06:40 15:58-15:59/1 16:48	07:14 16:30
9	05:34 20:37	06:02 20:10	06:33 19:22	07:05 17:26-18:06/40 18:30	06:41 16:47	07:15 16:30
10	05:34 20:36	06:03 20:08	06:34 19:20	07:06 17:27-18:04/37 18:29	06:42 16:46	07:16 16:30
11	05:35 20:36	06:04 20:07	06:35 19:18	07:07 17:28-18:02/34 18:27	06:43 16:45	07:17 16:30
12	05:36 20:35	06:05 20:06	06:36 17:51-18:01/10 19:17	07:08 17:30-18:01/31 18:25	06:45 16:44	07:17 16:30
13	05:37 20:35	06:06 20:04	06:37 17:46-18:06/20 19:15	07:09 17:32-17:58/26 18:24	06:46 16:43	07:18 16:30
14	05:37 20:34	06:07 20:03	06:39 17:43-18:08/25 19:13	07:10 17:35-17:55/20 18:22 17:06-17:20/14	06:47 16:42	07:19 16:30
15	05:38 20:34	06:08 20:02	06:40 17:40-18:10/30 19:12	07:11 17:39-17:50/11 18:21 17:03-17:23/20	06:48 16:41	07:20 16:31
16	05:39 20:33	06:09 20:00	06:41 17:38-18:12/34 19:10	07:13 17:00-17:25/25 18:19	06:50 16:40	07:20 16:31
17	05:40 20:33	06:10 19:59	06:42 17:36-18:13/37 19:08	07:14 16:58-17:26/28 18:18	06:51 16:39	07:21 16:31
18	05:41 20:32	06:11 19:57	06:43 17:34-18:14/40 19:06	07:15 16:57-17:28/31 18:16	06:52 16:38	07:22 16:31
19	05:41 20:31	06:12 19:56	06:44 17:32-18:14/42 19:05	07:16 16:56-17:27/31 18:14	06:53 16:38	07:22 16:32
20	05:42 20:30	06:13 19:54	06:45 17:31-18:15/44 19:03	07:17 16:54-17:26/32 18:13	06:54 16:37	07:23 16:32
21	05:43 20:30	06:14 19:53	06:46 17:30-18:16/46 19:01	07:18 16:53-17:24/31 18:11	06:56 16:36	07:24 16:33
22	05:44 20:29	06:15 19:51	06:47 17:28-18:16/48 18:59	07:19 16:52-17:22/30 18:10	06:57 16:36	07:24 16:33
23	05:45 20:28	06:16 19:50	06:48 17:27-18:16/49 18:58	07:21 16:52-17:21/29 18:09	06:58 16:35	07:25 16:34
24	05:46 20:27	06:17 19:48	06:49 17:26-18:16/50 18:56	07:22 16:52-17:19/27 18:07	06:59 16:34	07:25 16:34
25	05:47 20:26	06:18 19:47	06:50 17:26-18:16/50 18:54	06:23 15:51-16:18/27 17:06	07:00 16:34	07:25 16:35
26	05:48 20:25	06:19 19:45	06:51 17:25-18:16/51 18:52	06:24 15:50-16:16/26 17:04	07:01 16:33	07:26 16:35
27	05:49 20:24	06:20 19:43	06:52 17:24-18:16/52 18:51	06:25 15:51-16:15/24 17:03	07:03 16:33	07:26 16:36
28	05:50 20:23	06:21 19:42	06:53 17:24-18:15/51 18:49	06:26 15:51-16:13/22 17:01	07:04 16:32	07:27 16:37
29	05:51 20:22	06:22 19:40	06:54 17:23-18:15/52 18:47	06:28 15:51-16:12/21 17:00	07:05 16:32	07:27 16:37
30	05:52 20:21	06:23 19:39	06:55 17:23-18:14/51 18:46	06:29 15:51-16:11/20 16:59	07:06 16:31	07:27 16:38
31	05:53 20:20	06:24 19:37		06:30 15:51-16:09/18 16:58		07:27 16:39
Potential sun hours	461	429	375	345	296	286
Sum of minutes with flicker	0	0	782	1037	70	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
--------------	-------------------------------------	-------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------

SHADOW - Calendar per WTG

Calculation: Worst case WTG: 3 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (3)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:27 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:58 19:57	05:29 20:28	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	07:28 16:41	07:13 17:16	06:35 17:51	06:43 19:26	05:57 19:59	05:28 20:28	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:32 16:55	07:08 16:31
3	07:28 16:42	07:12 17:17	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:40	06:34 16:54	07:09 16:31
4	07:28 16:43	07:10 17:19	06:32 17:53	06:40 19:28	05:54 20:01	05:27 20:30	05:31 20:38	05:57 20:16	06:28 19:30	06:59 18:39	06:35 16:52	07:10 16:30
5	07:28 16:43	07:09 17:20	06:30 17:54	06:38 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:58 20:15	06:29 19:29	07:00 18:37	06:36 16:51	07:11 16:30
6	07:27 16:44	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31	05:32 20:38	05:59 20:13	06:30 19:27	07:01 18:35	06:37 16:50	07:12 16:30
7	07:28 16:45	07:07 17:22	06:27 17:57	06:35 19:31	05:51 20:04	05:26 20:32	05:32 20:38	06:00 20:12	06:31 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	07:27 16:46	07:06 17:24	06:26 17:58	06:33 19:32	05:49 20:05	05:26 20:33	05:33 20:37	06:01 20:11	06:32 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	07:27 16:47	07:05 17:25	06:24 17:59	06:32 19:33	05:48 20:06	05:26 20:33	05:34 20:37	06:02 20:10	06:33 19:22	07:05 18:30	06:41 16:47	07:15 16:30
10	07:27 16:48	07:04 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:34 20:36	06:03 20:08	06:34 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:02 17:28	06:21 18:01	06:28 19:36	05:46 20:08	05:26 20:34	05:35 20:36	06:04 20:07	06:35 19:18	07:07 18:27	06:43 16:45	07:17 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:25 20:35	05:36 20:36	06:05 20:06	06:36 19:17	07:08 18:25	06:45 16:44	07:17 16:30
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:25 20:35	05:37 20:35	06:06 20:04	06:37 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:59 17:31	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:37 20:34	06:07 20:03	06:38 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36	05:38 20:34	06:08 20:02	06:40 19:11	07:11 18:21	06:48 16:41	07:20 16:30
16	07:25 16:55	06:56 17:34	06:12 18:07	06:20 19:41	05:41 20:13	05:25 20:37	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:20 16:31
17	07:25 16:56	06:54 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	07:24 16:57	06:53 17:36	06:09 18:09	06:17 19:43	05:39 20:15	05:25 20:37	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:38	07:22 16:31
19	07:24 16:59	06:52 17:38	06:07 18:10	06:16 19:44	05:38 20:16	05:25 20:38	05:41 20:31	06:12 19:56	06:44 19:05	07:16 18:14	06:53 16:38	07:22 16:32
20	07:23 17:00	06:50 17:39	06:05 18:12	06:14 19:46	05:37 20:17	05:26 20:38	05:42 20:30	06:13 19:54	06:45 19:03	07:17 18:13	06:54 16:37	07:23 16:32
21	07:22 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:11	06:56 16:36	07:24 16:33
22	07:22 17:02	06:47 17:41	06:02 18:14	06:11 19:48	05:35 20:19	05:26 20:38	05:44 20:29	06:15 19:51	06:47 18:59	07:19 18:10	06:57 16:35	07:24 16:33
23	07:21 17:03	06:46 17:42	06:00 18:15	06:10 19:49	05:35 20:20	05:26 20:39	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	07:20 17:05	06:44 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:26 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:26	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:25 16:35
26	07:19 17:07	06:41 17:46	05:55 18:18	06:05 19:52	05:32 20:23	05:27 20:39	05:48 20:25	06:19 19:45	06:51 18:52	06:24 17:04	07:01 16:33	07:26 16:35
27	07:18 17:08	06:40 17:47	05:54 18:19	06:04 19:53	05:32 20:24	05:27 20:39	05:49 20:24	06:20 19:43	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	07:17 17:10	06:38 17:49	05:52 18:20	06:02 19:54	05:31 20:24	05:28 20:39	05:50 20:23	06:21 19:42	06:53 18:49	06:26 17:01	07:04 16:32	07:27 16:37
29	07:16 17:11		06:50 19:21	06:01 19:55	05:30 20:25	05:28 20:39	05:51 20:22	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:37
30	07:15 17:12		06:48 19:23	06:00 19:56	05:30 20:26	05:29 20:39	05:52 20:21	06:23 19:39	06:55 18:46	06:29 16:59	07:06 16:31	07:27 16:38
31	07:15 17:14		06:47 19:24		05:29 20:27		05:53 20:20	06:24 19:37		06:30 16:57		07:27 16:39
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst case WTG: 4 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (4)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:27 16:40	07:13 17:15	06:37 17:50	06:45 19:25	05:58 19:57	05:29 20:28	05:29 20:39	05:52-06:22/30 20:19	05:53 19:35	06:25 18:44	06:56 16:56	06:31 16:31
2	07:28 16:41	07:12 17:16	06:35 17:51	06:43 19:26	05:57 19:58	05:28 20:28	05:28 20:39	05:52-06:21/29 20:38	05:54 19:34	06:26 18:42	06:57 16:55	06:32 16:31
3	07:28 16:42	07:11 17:17	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:28 20:38	05:53-06:21/28 20:38	05:55 19:32	06:27 18:40	06:58 16:54	06:34 16:30
4	07:28 16:43	07:10 17:19	06:32 17:53	06:40 19:28	05:54 20:01	05:27 20:30	05:27 20:30	05:53-06:04/11 20:38	05:31 19:30	05:54-06:20/26 18:39	06:59 16:52	06:35 16:30
5	07:28 16:43	07:09 17:20	06:30 17:54	06:38 19:29	05:53 20:02	05:27 20:31	05:27 20:38	05:50-06:08/18 20:38	05:31 20:15	05:54-06:18/24 18:37	06:59 16:51	07:00 16:30
6	07:28 16:44	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31	05:27 20:38	05:49-06:10/21 20:38	05:32 20:13	05:55-06:17/22 18:35	06:30 16:50	07:01 16:30
7	07:28 16:45	07:07 17:22	06:27 17:57	06:35 19:31	05:51 20:04	05:26 20:32	05:26 20:37	05:48-06:12/24 20:37	05:32 20:12	05:55-06:15/20 18:34	06:31 16:49	07:02 16:30
8	07:27 16:46	07:06 17:24	06:26 17:58	06:33 19:32	05:49 20:05	05:26 20:33	05:26 20:37	05:48-06:13/25 20:37	05:33 20:11	05:58-06:13/15 18:32	06:00 16:48	06:32 16:30
9	07:27 16:47	07:05 17:25	06:24 17:59	06:32 19:33	05:48 20:06	05:26 20:33	05:26 20:37	05:48-06:15/27 20:37	05:34 20:10	06:05-06:07/2 18:30	06:02 16:47	06:33 16:30
10	07:27 16:48	07:04 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:26 20:36	05:48-06:16/28 20:36	05:34 20:08	06:03 18:29	06:34 16:46	07:06 16:30
11	07:27 16:49	07:02 17:27	06:21 18:01	06:28 19:36	05:46 20:08	05:25 20:34	05:25 20:36	05:48-06:18/30 20:36	05:35 20:07	06:04 18:27	06:35 16:45	07:07 16:30
12	07:27 16:51	07:01 17:29	06:19 18:02	06:27 19:37	05:45 20:09	05:25 20:35	05:25 20:35	05:48-06:19/31 20:35	05:36 20:06	06:05 18:25	06:36 16:44	07:08 16:30
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:25 20:35	05:25 20:35	05:48-06:20/32 20:35	05:37 20:04	06:06 18:24	06:37 16:43	07:09 16:30
14	07:26 16:53	06:58 17:31	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:25 20:34	05:48-06:20/32 20:34	05:37 20:03	06:07 18:22	06:38 16:42	07:10 16:30
15	07:25 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36	05:25 20:34	05:48-06:21/33 20:34	05:38 20:01	06:08 18:21	06:39 16:41	07:11 16:30
16	07:25 16:55	06:56 17:34	06:12 18:07	06:20 19:41	05:41 20:13	05:25 20:37	05:25 20:33	05:48-06:22/34 20:33	05:39 20:00	06:09 18:19	06:40 16:40	07:12 16:31
17	07:25 16:56	06:54 17:35	06:10 18:08	06:19 19:42	05:40 20:14	05:25 20:37	05:25 20:33	05:48-06:22/34 20:33	05:40 19:59	06:10 18:17	06:41 16:39	07:14 16:31
18	07:24 16:57	06:53 17:36	06:09 18:09	06:17 19:43	05:39 20:15	05:25 20:37	05:25 20:32	05:48-06:23/35 20:32	05:41 19:57	06:11 18:06	06:43 16:38	07:15 16:31
19	07:24 16:59	06:52 17:38	06:07 18:10	06:16 19:44	05:38 20:16	05:25 20:38	05:25 20:31	05:48-06:23/35 20:31	05:41 19:56	06:12 18:04	06:44 16:38	07:16 16:32
20	07:23 17:00	06:50 17:39	06:05 18:11	06:14 19:45	05:37 20:17	05:25 20:38	05:25 20:30	05:48-06:23/35 20:30	05:42 19:54	06:13 18:13	06:45 16:37	07:17 16:32
21	07:22 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:26 20:30	05:48-06:23/35 20:30	05:43 19:53	06:14 18:11	06:46 16:36	07:18 16:32
22	07:22 17:02	06:47 17:41	06:02 18:14	06:11 19:48	05:35 20:19	05:26 20:38	05:26 20:29	05:49-06:24/35 20:29	05:44 19:51	06:15 18:09	06:47 16:35	07:19 16:33
23	07:21 17:03	06:46 17:42	06:00 18:15	06:10 19:49	05:34 20:20	05:26 20:38	05:26 20:28	05:49-06:24/35 20:28	05:45 19:50	06:16 18:58	06:48 16:35	07:20 16:33
24	07:20 17:05	06:44 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:26 20:39	05:26 20:27	05:49-06:24/35 20:27	05:46 19:48	06:17 18:56	06:49 16:34	07:22 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:27 20:26	05:50-06:24/34 20:26	05:47 19:46	06:18 18:54	06:50 16:34	06:23 16:35
26	07:19 17:07	06:41 17:46	05:55 18:18	06:05 19:52	05:32 20:23	05:27 20:39	05:27 20:25	05:50-06:24/34 20:25	06:19 19:45	06:51 18:52	06:24 16:33	07:01 16:35
27	07:18 17:08	06:40 17:47	05:53 18:19	06:04 19:53	05:32 20:24	05:27 20:39	05:27 20:24	05:50-06:23/33 20:24	06:20 19:43	06:52 18:51	06:25 17:03	07:02 16:33
28	07:17 17:10	06:38 17:48	05:52 18:20	06:02 19:54	05:31 20:24	05:28 20:39	05:28 20:23	05:51-06:24/33 20:23	06:21 19:42	06:53 18:49	06:26 16:32	07:04 16:37
29	07:16 17:11	06:38 17:48	05:52 18:20	06:02 19:54	05:31 20:24	05:28 20:39	05:28 20:23	05:51-06:23/32 20:23	06:22 19:40	06:54 18:47	06:28 16:32	07:05 16:37
30	07:15 17:12	06:38 17:48	05:52 18:20	06:02 19:54	05:31 20:24	05:28 20:39	05:28 20:23	05:51-06:23/32 20:23	06:22 19:40	06:54 18:47	06:28 16:32	07:05 16:37
31	07:14 17:13	06:38 17:48	05:52 18:20	06:02 19:54	05:31 20:24	05:28 20:39	05:28 20:23	05:51-06:23/32 20:23	06:22 19:40	06:54 18:47	06:28 16:32	07:05 16:37
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Sum of minutes with flicker	0	0	0	0	0	822	196	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst case WTG: 5 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (5)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:27 16:40	07:13 17:15	06:37 17:50	06:45 19:25	05:58 19:57	05:29 20:28	05:29 20:39	05:53 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	07:28 16:41	07:12 17:16	06:35 17:51	06:43 19:26	05:57 19:58	05:28 20:28	05:29 20:39	05:54 20:18	06:26 19:34	06:57 18:42	06:32 16:55	07:08 16:31
3	07:28 16:42	07:11 17:17	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:38	05:55 20:17	06:27 19:32	06:58 18:40	06:34 16:54	07:09 16:30
4	07:28 16:42	07:10 17:19	06:32 17:53	06:40 19:28	05:54 20:01	05:27 20:30	05:31 20:38	05:56 20:16	06:28 19:30	06:59 18:39	06:35 16:52	07:10 16:30
5	07:28 16:43	07:09 17:20	06:30 17:54	06:38 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:57 20:15	06:29 19:29	07:00 18:37	06:36 16:51	07:11 16:30
6	07:28 16:44	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31	05:32 20:38	05:58 20:13	06:30 19:27	07:01 18:35	06:37 16:50	07:12 16:30
7	07:28 16:45	07:07 17:22	06:27 17:57	06:35 19:31	05:51 20:04	05:26 20:32	05:32 20:37	05:59 20:12	06:31 19:25	07:02 18:34	06:38 16:49	07:13 16:30
8	07:27 16:46	07:06 17:24	06:25 17:58	06:33 19:32	05:49 20:05	05:26 20:33	05:33 20:37	06:00 20:11	06:32 19:23	07:04 18:32	06:40 16:48	07:14 16:30
9	07:27 16:47	07:05 17:25	06:24 17:59	06:32 19:33	05:48 20:06	05:26 20:33	05:34 20:37	06:01 20:10	06:33 19:22	07:05 18:30	06:41 16:47	07:15 16:30
10	07:27 16:48	07:03 17:26	06:22 18:00	06:30 19:34	05:47 20:07	05:26 20:34	05:34 20:36	06:02 20:08	06:34 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:49	07:02 17:27	06:21 18:01	06:28 19:36	05:46 20:08	05:25 20:34	05:35 20:36	06:04 20:07	06:35 19:18	07:07 18:27	06:43 16:45	07:16 16:30
12	07:27 16:51	07:01 17:29	06:19 18:02	06:27 19:37	05:45 20:09	05:25 20:35	05:36 20:35	06:05 20:06	06:36 19:17	07:08 18:25	06:45 16:44	07:17 16:30
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:25 20:35	05:37 20:35	06:06 20:04	06:37 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:58 17:31	06:16 18:05	06:23 19:39	05:43 20:11	05:25 20:36	05:37 20:34	06:07 20:03	06:38 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:25 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36	05:38 20:34	06:08 20:01	06:39 19:11	07:11 18:21	06:48 16:41	07:20 16:30
16	07:25 16:55	06:56 17:34	06:12 18:07	06:20 19:41	05:41 20:13	05:25 20:37	05:39 20:33	06:09 20:00	06:40 19:10	07:12 18:19	06:49 16:40	07:20 16:31
17	07:25 16:56	06:54 17:35	06:10 18:08	06:19 19:42	05:40 20:14	05:25 20:37	05:40 20:33	06:10 19:59	06:41 19:08	07:14 18:17	06:51 16:39	07:21 16:31
18	07:24 16:57	06:53 17:36	06:09 18:09	06:17 19:43	05:39 20:15	05:25 20:37	05:41 20:32	06:11 19:57	06:42 19:06	07:15 18:16	06:52 16:38	07:22 16:31
19	07:24 16:59	06:52 17:37	06:07 18:10	06:16 19:44	05:38 20:16	05:25 20:38	05:41 20:31	06:12 19:56	06:44 19:04	07:16 18:14	06:53 16:38	07:22 16:32
20	07:23 17:00	06:50 17:39	06:05 18:11	06:14 19:45	05:37 20:17	05:25 20:38	05:42 20:30	06:13 19:54	06:45 19:03	07:17 18:13	06:54 16:37	07:23 16:32
21	07:22 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:11	06:55 16:36	07:23 16:32
22	07:22 17:02	06:47 17:41	06:02 18:14	06:11 19:48	05:35 20:19	05:26 20:38	05:44 20:29	06:15 19:51	06:47 18:59	07:19 18:10	06:57 16:35	07:24 16:33
23	07:21 17:03	06:46 17:42	06:00 18:15	06:10 19:49	05:34 20:20	05:26 20:38	05:45 20:28	06:16 19:50	06:48 18:58	07:20 18:08	06:58 16:35	07:24 16:33
24	07:20 17:05	06:44 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:26 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:26	06:18 19:46	06:50 18:54	06:23 17:06	07:00 16:34	07:25 16:35
26	07:19 17:07	06:41 17:46	05:55 18:18	06:05 19:52	05:32 20:23	05:27 20:39	05:48 20:25	06:19 19:45	06:51 18:52	06:24 17:04	07:01 16:33	07:26 16:35
27	07:18 17:08	06:40 17:47	05:53 18:19	06:04 19:53	05:32 20:24	05:27 20:39	05:49 20:24	06:20 19:43	06:52 18:51	06:25 17:03	07:02 16:33	07:26 16:36
28	07:17 17:10	06:38 17:48	05:52 18:20	06:02 19:54	05:31 20:24	05:28 20:39	05:50 20:23	06:21 19:42	06:53 18:49	06:26 17:01	07:04 16:32	07:26 16:37
29	07:16 17:11		06:50 19:21	06:01 19:55	05:30 20:25	05:28 20:39	05:51 20:22	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:37
30	07:15 17:12		06:48 19:22	06:00 19:56	05:30 20:26	05:29 20:39	05:51 20:21	06:23 19:38	06:55 18:45	06:29 16:59	07:06 16:31	07:27 16:38
31	07:14 17:13		06:47 19:24		05:29 20:27		05:52 20:20	06:24 19:37		06:30 16:57		07:27 16:39
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst case WTG: 6 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (6)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	January	February	March	April	May	June
1	07:28 07:50-08:13/23 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:58 18:55-19:10/15 19:58	05:29 20:28
2	07:28 07:50-08:13/23 16:41	07:13 17:16	06:35 17:51	06:43 19:26	05:57 18:59-19:07/8 19:59	05:28 20:29
3	07:28 07:50-08:14/24 16:42	07:12 17:17	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29
4	07:28 07:50-08:14/24 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:55 20:01	05:28 20:30
5	07:28 07:50-08:14/24 16:44	07:09 17:20	06:31 17:55	06:38 19:29	05:53 20:02	05:27 20:31
6	07:28 07:50-08:13/23 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31
7	07:28 07:50-08:13/23 16:46	07:07 17:23	06:27 17:57	06:35 19:31	05:51 20:04	05:27 20:32
8	07:28 07:50-08:13/23 16:47	07:06 17:24	06:26 17:58	06:33 19:04-19:09/5 19:32	05:50 20:05	05:26 20:33
9	07:27 07:51-08:13/22 16:48	07:05 17:25	06:24 17:59	06:32 18:59-19:09/10 19:34	05:48 20:06	05:26 20:33
10	07:27 07:52-08:11/19 16:49	07:04 17:26	06:22 18:00	06:30 18:57-19:11/14 19:35	05:47 20:07	05:26 20:34
11	07:27 07:54-08:11/17 16:50	07:02 17:28	06:21 18:01	06:29 18:55-19:11/16 19:36	05:46 20:08	05:26 20:34
12	07:27 07:56-08:10/14 16:51	07:01 17:29	06:19 18:03	06:27 18:54-19:12/18 19:37	05:45 20:09	05:26 20:35
13	07:26 07:59-08:07/8 16:52	07:00 17:30	06:17 18:04	06:25 18:52-19:13/21 19:38	05:44 20:10	05:25 20:35
14	07:26 16:53	06:59 17:31	06:16 18:05	06:24 18:51-19:13/22 19:39	05:43 20:11	05:25 20:36
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 18:50-19:14/24 19:40	05:42 20:12	05:25 20:36
16	07:25 16:55	06:56 17:34	06:12 18:07	06:21 18:49-19:14/25 19:41	05:41 20:13	05:25 20:37
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 18:49-19:16/27 19:42	05:40 20:14	05:25 20:37
18	07:24 16:58	06:53 17:36	06:09 18:09	06:17 18:48-19:17/29 19:43	05:39 20:15	05:25 20:37
19	07:24 16:59	06:52 17:38	06:07 18:11	06:16 18:48-19:18/30 19:44	05:38 20:16	05:26 20:38
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 18:47-19:19/32 19:46	05:37 20:17	05:26 20:38
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 18:48-19:20/32 19:47	05:36 20:18	05:26 20:38
22	07:22 17:02	06:47 17:41	06:02 18:14	06:11 18:47-19:20/33 19:48	05:35 20:19	05:26 20:38
23	07:21 17:04	06:46 17:43	06:00 18:15	06:10 18:48-19:21/33 19:49	05:35 20:20	05:26 20:39
24	07:20 17:05	06:45 17:44	05:59 18:16	06:08 18:48-19:19/31 19:50	05:34 20:21	05:27 20:39
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 18:48-19:19/31 19:51	05:33 20:22	05:27 20:39
26	07:19 17:07	06:42 17:46	05:55 18:18	06:05 18:49-19:18/29 19:52	05:32 20:23	05:27 20:39
27	07:18 17:09	06:40 17:47	05:54 18:19	06:04 18:50-19:17/27 19:53	05:32 20:24	05:27 20:39
28	07:17 17:10	06:38 17:49	05:52 18:20	06:03 18:51-19:16/25 19:54	05:31 20:25	05:28 20:39
29	07:16 17:11		06:50 19:22	06:01 18:52-19:15/23 19:55	05:31 20:25	05:28 20:39
30	07:16 17:12		06:49 19:23	06:00 18:53-19:12/19 19:56	05:30 20:26	05:29 20:39
31	07:15 17:14		06:47 19:24		05:29 20:27	
Potential sun hours	296	296	369	399	450	454
Sum of minutes with flicker	267	0	0	556	23	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst case WTG: 6 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (6)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	July	August	September	October	November	December
1	05:29 20:39	05:54 20:19	06:25 18:54-19:10/16 19:35	06:56 18:44	06:31 16:56	07:07 07:36-07:53/17 16:31
2	05:30 20:39	05:55 20:18	06:26 18:55-19:09/14 19:34	06:57 18:42	06:33 16:55	07:08 07:35-07:54/19 16:31
3	05:30 20:39	05:56 20:17	06:27 18:57-19:07/10 19:32	06:58 18:41	06:34 16:54	07:09 07:34-07:56/22 16:31
4	05:31 20:38	05:57 20:16	06:28 19:01-19:06/5 19:30	06:59 18:39	06:35 16:53	07:10 07:34-07:57/23 16:30
5	05:31 20:38	05:58 20:15	06:29 19:29	07:00 18:37	06:36 16:51	07:11 07:35-07:58/23 16:30
6	05:32 20:38	05:59 20:14	06:30 19:27	07:02 18:35	06:37 16:50	07:12 07:36-07:59/23 16:30
7	05:33 20:38	06:00 20:12	06:31 19:25	07:03 18:34	06:39 16:49	07:13 07:37-08:01/24 16:30
8	05:33 20:37	06:01 20:11	06:32 19:24	07:04 18:32	06:40 16:48	07:14 07:38-08:02/24 16:30
9	05:34 20:37	06:02 20:10	06:33 19:22	07:05 18:30	06:41 16:47	07:15 07:39-08:03/24 16:30
10	05:35 20:36	06:03 20:08	06:35 19:20	07:06 18:29	06:42 16:46	07:16 07:40-08:03/23 16:30
11	05:35 20:36	06:04 19:06-19:17/11 20:07	06:36 19:18	07:07 18:27	06:44 16:45	07:17 07:41-08:04/23 16:30
12	05:36 20:36	06:05 19:04-19:20/16 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:17 07:42-08:05/23 16:30
13	05:37 20:35	06:06 19:01-19:21/20 20:04	06:38 19:15	07:09 18:24	06:46 16:43	07:18 07:42-08:05/23 16:30
14	05:37 20:35	06:07 19:00-19:23/23 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 07:43-08:06/23 16:30
15	05:38 20:34	06:08 18:58-19:24/26 20:02	06:40 19:12	07:11 18:21	06:48 16:41	07:20 07:44-08:07/23 16:31
16	05:39 20:33	06:09 18:57-19:25/28 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:20 07:44-08:07/23 16:31
17	05:40 20:33	06:10 18:56-19:25/29 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 07:45-08:08/23 16:31
18	05:41 20:32	06:11 18:55-19:26/31 19:57	06:43 19:06	07:15 18:16	06:52 16:39	07:22 07:46-08:09/23 16:31
19	05:42 20:31	06:12 18:54-19:26/32 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:22 07:46-08:09/23 16:32
20	05:42 20:31	06:13 18:54-19:26/32 19:54	06:45 19:03	07:17 18:13	06:54 16:37	07:23 07:47-08:10/23 16:32
21	05:43 20:30	06:14 18:52-19:25/33 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 07:47-08:10/23 16:33
22	05:44 20:29	06:15 18:52-19:24/32 19:51	06:47 18:59	07:19 18:10	06:57 16:36	07:24 07:48-08:11/23 16:33
23	05:45 20:28	06:16 18:51-19:22/31 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 07:48-08:11/23 16:34
24	05:46 20:27	06:17 18:51-19:21/30 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 07:49-08:12/23 16:34
25	05:47 20:26	06:18 18:51-19:19/28 19:47	06:50 18:54	07:23 17:06	07:00 16:34	07:26 07:49-08:12/23 16:35
26	05:48 20:25	06:19 18:51-19:18/27 19:45	06:51 18:52	07:24 17:04	07:01 16:33	07:26 07:49-08:12/23 16:35
27	05:49 20:25	06:20 18:51-19:16/25 19:43	06:52 18:51	07:25 17:03	07:03 16:33	07:26 07:50-08:13/23 16:36
28	05:50 20:24	06:21 18:51-19:15/24 19:42	06:53 18:49	07:26 17:02	07:04 16:32	07:27 07:50-08:13/23 16:37
29	05:51 20:23	06:22 18:51-19:14/23 19:40	06:54 18:47	07:28 17:00	07:05 07:40-07:47/7 16:32	07:27 07:50-08:13/23 16:37
30	05:52 20:22	06:23 18:52-19:12/20 19:39	06:55 18:46	07:29 16:59	07:06 07:37-07:51/14 16:32	07:27 07:50-08:13/23 16:38
31	05:53 20:20	06:24 18:53-19:11/18 19:37		06:30 16:58		07:27 07:50-08:13/23 16:39
Potential sun hours	461	429	375	345	296	286
Sum of minutes with flicker	0	539	45	0	21	705

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
--------------	-------------------------------------	-------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------

SHADOW - Calendar per WTG

Calculation: Worst case WTG: 7 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (7)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	January		February		March	April	May		June		
1	07:28	07:50-08:42/52	07:14	07:34-08:47/73	06:37	06:45	05:58	06:18-07:03/45	05:29	05:53-07:01/68	
	16:40	14:36-15:22/46	17:15	14:46-15:35/49	17:50	19:25	19:58		20:28		
2	07:28	07:50-08:42/52	07:13	07:33-08:47/74	06:35	06:43	05:57	06:17-07:03/46	05:28	05:53-07:00/67	
	16:41	14:36-15:23/47	17:16	14:47-15:34/47	17:51	19:26	19:59		20:29		
3	07:28	07:50-08:43/53	07:12	07:32-08:46/74	06:34	06:42	05:56	06:15-07:03/48	05:28	05:53-07:00/67	
	16:42	14:36-15:23/47	17:17	14:48-15:34/46	17:52	19:27	20:00		20:29		
4	07:28	07:50-08:44/54	07:11	07:31-08:45/74	06:32	06:40	05:55	06:14-07:03/49	05:28	05:53-06:59/66	
	16:43	14:37-15:24/47	17:19	14:50-15:33/43	17:53	19:28	20:01		20:30		
5	07:28	07:50-08:44/54	07:09	07:30-08:44/74	06:31	06:38	05:53	06:13-07:04/51	05:27	05:54-06:59/65	
	16:44	14:37-15:25/48	17:20	14:51-15:33/42	17:55	19:29	20:02		20:31		
6	07:28	07:50-08:45/55	07:08	07:28-08:41/73	06:29	06:37	05:52	06:12-07:04/52	05:27	05:55-07:00/65	
	16:45	14:37-15:26/49	17:21	14:51-15:31/40	17:56	19:30	20:03		20:31		
7	07:28	07:50-08:46/56	07:07	07:27-08:40/73	06:27	06:35	05:51	06:11-07:04/53	05:27	05:55-07:00/65	
	16:46	14:38-15:27/49	17:23	14:53-15:30/37	17:57	19:31	20:04		20:32		
8	07:28	07:50-08:46/56	07:06	07:26-08:38/72	06:26	06:33	05:50	06:10-07:04/54	05:26	05:55-06:59/64	
	16:47	14:38-15:27/49	17:24	14:55-15:29/34	17:58	19:33	20:05		20:33		
9	07:27	07:50-08:47/57	07:05	07:25-08:36/71	06:24	06:32	05:48	06:08-07:03/55	05:26	05:56-06:59/63	
	16:48	14:38-15:28/50	17:25	14:57-15:28/31	17:59	19:34	20:06		20:33		
10	07:27	07:49-08:47/58	07:04	07:24-08:33/69	06:22	06:30	05:47	06:07-07:03/56	05:26	05:56-06:59/63	
	16:49	14:38-15:28/50	17:26	15:00-15:26/26	18:00	19:35	20:07		20:34		
11	07:27	07:49-08:47/58	07:02	07:22-08:17/55	06:21	06:29	05:46	06:06-07:03/57	05:26	05:57-06:59/62	
	16:50	14:38-15:29/51	17:28	08:20-08:25/5	18:01	19:36	20:08		20:34		
12	07:27	07:49-08:48/59	07:01	07:21-08:17/56	06:19	06:27	05:45	06:05-07:03/58	05:26	05:57-06:59/62	
	16:51	14:39-15:30/51	17:29	15:06-15:20/14	18:03	19:37	20:09		20:35		
13	07:26	07:48-08:48/60	07:00	07:20-08:17/57	06:17	06:25	05:44	06:04-07:03/59	05:25	05:58-06:59/61	
	16:52	14:38-15:30/52	17:30		18:04	19:38	20:10		20:35		
14	07:26	07:48-08:49/61	06:59	07:18-08:15/57	06:16	06:24	06:42-06:45/3	05:43	06:03-07:03/60	05:25	05:58-06:59/61
	16:53	14:39-15:31/52	17:31		18:05	19:39	20:11		20:36		
15	07:26	07:47-08:49/62	06:57	07:17-08:15/58	06:14	06:22	06:41-06:48/7	05:42	06:02-07:03/61	05:25	05:58-06:59/61
	16:54	14:39-15:31/52	17:33		18:06	19:40	20:12		20:36		
16	07:25	07:47-08:49/62	06:56	07:32-08:14/42	06:12	06:21	06:39-06:50/11	05:41	06:01-07:03/62	05:25	05:59-06:59/60
	16:55	14:39-15:32/53	17:34	07:16-07:31/15	18:07	19:41	20:13		20:37		
17	07:25	07:46-08:49/63	06:55	07:32-08:12/40	06:11	06:19	06:38-06:52/14	05:40	06:00-07:03/63	05:25	05:59-06:59/60
	16:56	14:39-15:32/53	17:35	07:14-07:30/16	18:08	19:42	20:14		20:37		
18	07:24	07:46-08:50/64	06:53	07:34-08:11/37	06:09	06:17	06:36-06:53/17	05:39	06:00-07:03/63	05:25	05:59-07:00/61
	16:58	14:40-15:33/53	17:36	07:13-07:30/17	18:09	19:43	20:15		20:37		
19	07:24	07:45-08:50/65	06:52	07:35-08:09/34	06:07	06:16	06:35-06:55/20	05:38	05:59-07:03/64	05:26	05:59-07:00/61
	16:59	14:40-15:33/53	17:38	07:11-07:29/18	18:11	19:45	20:16		20:38		
20	07:23	07:44-08:50/66	06:50	07:37-08:07/30	06:06	06:14	06:33-06:56/23	05:37	05:58-07:03/65	05:26	05:59-07:00/61
	17:00	14:40-15:34/54	17:39	07:10-07:28/18	18:12	19:46	20:17		20:38		
21	07:23	07:44-08:51/67	06:49	07:39-08:04/25	06:04	06:13	06:32-06:57/25	05:36	05:57-07:02/65	05:26	06:00-07:01/61
	17:01	14:41-15:35/54	17:40	07:08-07:27/19	18:13	19:47	20:18		20:38		
22	07:22	07:43-08:50/67	06:47	07:42-08:01/19	06:02	06:11	06:30-06:58/28	05:35	05:56-07:02/66	05:26	06:00-07:01/61
	17:02	14:41-15:35/54	17:41	07:07-07:26/19	18:14	19:48	20:19		20:38		
23	07:21	07:42-08:50/68	06:46	07:48-07:55/7	06:00	06:10	06:29-06:59/30	05:35	05:56-07:02/66	05:26	06:00-07:01/61
	17:04	14:41-15:35/54	17:43	07:05-07:24/19	18:15	19:49	20:20		20:39		
24	07:21	07:41-08:50/69	06:45	07:06-07:22/16	05:59	06:08	06:27-06:59/32	05:34	05:55-07:02/67	05:27	06:00-07:01/61
	17:05	14:41-15:35/54	17:44		18:16	19:50	20:21		20:39		
25	07:20	07:41-08:51/70	06:43	07:09-07:18/9	05:57	06:07	06:26-07:00/34	05:33	05:54-07:01/67	05:27	06:01-07:01/60
	17:06	14:42-15:36/54	17:45		18:17	19:51	20:22		20:39		
26	07:19	07:40-08:50/70	06:42		05:55	06:05	06:25-07:01/36	05:32	05:54-07:02/68	05:27	06:01-07:01/60
	17:07	14:43-15:36/53	17:46		18:18	19:52	20:23		20:39		
27	07:18	07:39-08:50/71	06:40		05:54	06:04	06:23-07:01/38	05:32	05:53-07:01/68	05:27	06:01-07:01/60
	17:09	14:43-15:36/53	17:47		18:19	19:53	20:24		20:39		
28	07:17	07:38-08:49/71	06:38		05:52	06:03	06:22-07:02/40	05:31	05:53-07:01/68	05:28	06:01-07:02/61
	17:10	14:44-15:35/51	17:49		18:20	19:54	20:25		20:39		
29	07:16	07:37-08:49/72			06:50	06:01	06:21-07:03/42	05:31	05:52-07:01/69	05:28	06:01-07:02/61
	17:11	14:44-15:35/51			19:22	19:55	20:25		20:39		
30	07:16	07:36-08:49/73			06:49	06:00	06:19-07:02/43	05:30	05:52-07:01/69	05:29	06:01-07:03/62
	17:12	14:45-15:35/50			19:23	19:57	20:26		20:39		
31	07:15	07:35-08:48/73			06:47		05:29	05:52-07:00/68			
	17:14	14:46-15:35/49			19:24		20:27				
Potential sun hours	296		296		369	399	450		454		
Sum of minutes with flicker	3521		1845		0	443	1862		1871		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst case WTG: 7 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (7)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	July	August	September	October	November	December
1	05:29 06:01-07:03/62 20:39	05:54 06:16-07:14/58 20:19	06:25 06:30-07:14/58 19:35	06:56 06:57-07:14/58 18:44	06:31 06:53-08:02/69 16:56 14:28-14:56/28	07:07 07:31-08:30/59 16:31 14:20-15:11/51
2	05:30 06:01-07:04/63 20:39	05:55 06:17-07:14/57 20:18	06:26 06:31-07:14/57 19:34	06:57 06:58-07:14/57 18:42	06:33 06:55-08:06/71 16:55 14:26-14:57/31	07:08 07:32-08:30/58 16:31 14:21-15:11/50
3	05:30 06:01-07:04/63 20:39	05:56 06:18-07:14/56 20:17	06:27 06:32-07:14/56 19:32	06:58 06:59-07:14/56 18:41	06:34 06:56-08:08/72 16:54 14:24-14:59/35	07:09 07:33-08:30/57 16:31 14:21-15:11/50
4	05:31 06:01-07:05/64 20:38	05:57 06:19-07:14/55 20:16	06:28 06:33-07:14/55 19:30	06:59 06:59-07:14/55 18:39	06:35 06:57-08:10/73 16:53 14:23-15:00/37	07:10 07:34-08:30/56 16:30 14:22-15:11/49
5	05:31 06:01-07:05/64 20:38	05:58 06:20-07:14/54 20:15	06:29 06:34-07:14/54 19:29	07:01 06:59-07:14/54 18:37	06:36 06:58-08:11/73 16:51 14:21-15:01/40	07:11 07:35-08:31/56 16:30 14:23-15:12/49
6	05:32 06:01-07:06/65 20:38	05:59 06:21-07:14/53 20:14	06:30 06:35-07:14/53 19:27	07:02 06:59-07:14/53 18:35	06:37 07:00-08:14/74 16:50 14:21-15:03/42	07:12 07:36-08:31/55 16:30 14:23-15:12/49
7	05:33 06:01-07:07/66 20:38	06:00 06:22-07:14/52 20:12	06:31 06:36-07:14/52 19:25	07:03 06:59-07:14/52 18:34	06:39 07:01-08:15/74 16:49 14:19-15:03/44	07:13 07:37-08:31/54 16:30 14:24-15:12/48
8	05:33 06:01-07:06/65 20:37	06:01 06:23-07:13/50 20:11	06:32 06:28-07:13/50 19:24	07:04 06:59-07:13/50 18:32	06:40 07:02-08:16/74 16:48 14:18-15:04/46	07:14 07:38-08:32/54 16:30 14:25-15:12/47
9	05:34 06:01-07:07/66 20:37	06:02 06:24-07:13/49 20:10	06:33 06:29-07:13/49 19:22	07:05 06:59-07:13/49 18:30	06:41 07:04-08:18/74 16:47 14:18-15:05/47	07:15 07:39-08:32/53 16:30 14:25-15:12/47
10	05:35 06:00-07:07/67 20:37	06:03 06:25-07:13/48 20:08	06:35 06:30-07:13/48 19:20	07:06 06:59-07:13/48 18:29	06:42 07:05-08:18/73 16:46 14:17-15:06/49	07:16 07:40-08:33/53 16:30 14:26-15:13/47
11	05:35 06:00-07:08/68 20:36	06:04 06:26-07:12/46 20:07	06:36 06:31-07:12/46 19:19	07:07 06:59-07:12/46 18:27	06:44 07:06-08:19/73 16:45 14:16-15:06/50	07:17 07:41-08:33/52 16:30 14:27-15:13/46
12	05:36 06:00-07:08/68 20:36	06:05 06:27-07:12/45 20:06	06:37 06:32-07:12/45 19:17	07:08 06:59-07:12/45 18:26	06:45 07:08-08:20/72 16:44 14:17-15:07/50	07:17 07:42-08:34/52 16:30 14:27-15:12/45
13	05:37 06:00-07:09/69 20:35	06:06 06:28-07:11/43 20:04	06:38 06:33-07:11/43 19:15	07:09 06:59-07:11/43 18:24	06:46 07:09-08:21/72 16:43 14:16-15:07/51	07:18 07:42-08:33/51 16:30 14:28-15:13/45
14	05:37 06:00-07:09/69 20:35	06:07 06:29-07:10/41 20:03	06:39 06:34-07:10/41 19:13	07:10 06:59-07:10/41 18:22	06:47 07:10-08:21/71 16:42 14:16-15:07/51	07:19 07:43-08:34/51 16:30 14:29-15:13/44
15	05:38 06:01-07:10/69 20:34	06:08 06:30-07:10/40 20:02	06:40 06:35-07:10/40 19:12	07:11 06:59-07:10/40 18:21	06:48 07:12-08:23/71 16:41 14:15-15:08/53	07:20 07:44-08:34/50 16:31 14:29-15:14/45
16	05:39 06:02-07:10/68 20:33	06:09 06:31-07:09/38 20:00	06:41 06:36-07:09/38 19:10	07:13 06:59-07:09/38 18:19	06:50 07:13-08:23/70 16:40 14:16-15:09/53	07:21 07:44-08:34/50 16:31 14:29-15:14/45
17	05:40 06:03-07:11/68 20:33	06:10 06:32-07:08/36 19:59	06:42 06:37-07:08/36 19:08	07:14 07:40-07:52/12 18:18	06:51 07:14-08:24/70 16:39 14:15-15:09/54	07:22 07:45-08:35/50 16:31 14:30-15:14/44
18	05:41 06:04-07:11/67 20:32	06:11 06:33-07:07/34 19:57	06:43 06:38-07:07/34 19:06	07:15 07:37-07:55/18 18:16	06:52 07:15-08:24/69 16:39 14:15-15:09/54	07:22 07:46-08:36/50 16:31 14:31-15:15/44
19	05:42 06:04-07:11/67 20:31	06:12 06:34-07:06/32 19:56	06:44 06:39-07:06/32 19:05	07:16 08:17-08:29/12 18:15	06:53 07:17-08:25/68 16:38 14:16-15:10/54	07:23 07:46-08:35/49 16:32 14:31-15:15/44
20	05:42 06:05-07:12/67 20:31	06:13 06:35-07:05/30 19:54	06:45 06:39-07:05/30 19:03	07:17 08:12-08:33/21 18:13	06:54 07:18-08:25/67 16:37 14:16-15:10/54	07:23 07:47-08:36/49 16:32 14:32-15:16/44
21	05:43 06:06-07:12/66 20:30	06:14 06:36-07:03/27 19:53	06:46 06:40-07:03/27 19:01	07:18 08:09-08:35/26 18:12	06:56 07:19-08:26/67 16:36 14:16-15:10/54	07:24 07:47-08:36/49 16:33 14:32-15:16/44
22	05:44 06:07-07:12/65 20:29	06:15 06:37-07:02/25 19:51	06:47 06:41-07:02/25 18:59	07:19 08:07-08:38/31 18:10	06:57 07:20-08:26/66 16:36 14:16-15:10/54	07:24 07:48-08:37/49 16:33 14:33-15:17/44
23	05:45 06:08-07:13/65 20:28	06:16 06:38-07:00/22 19:50	06:48 06:42-07:00/22 18:58	07:21 08:05-08:40/35 18:09	06:58 07:22-08:27/65 16:35 14:17-15:11/54	07:25 07:48-08:37/49 16:34 14:33-15:17/44
24	05:46 06:09-07:13/64 20:27	06:17 06:39-06:59/20 19:48	06:49 06:43-06:59/20 18:56	07:22 08:03-08:41/38 18:07	06:59 07:23-08:27/64 16:34 14:17-15:10/53	07:25 07:49-08:38/49 16:34 14:34-15:18/44
25	05:47 06:10-07:14/64 20:26	06:18 06:40-06:57/17 19:47	06:50 06:44-06:57/17 18:54	07:23 07:01-07:42/41 17:06	07:00 07:24-08:27/63 16:34 14:17-15:10/53	07:26 07:49-08:39/50 16:35 14:34-15:18/44
26	05:48 06:10-07:13/63 20:26	06:19 06:40-06:54/14 19:45	06:51 06:45-06:54/14 18:53	07:24 06:46-07:44/58 17:04	07:01 07:25-08:28/63 16:33 14:17-15:10/53	07:26 07:49-08:39/50 16:35 14:34-15:18/44
27	05:49 06:11-07:13/62 20:25	06:20 06:41-06:51/10 19:44	06:52 06:46-06:51/10 18:51	07:25 06:47-07:44/57 17:03	07:03 07:26-08:28/62 16:33 14:18-15:10/52	07:26 07:50-08:40/50 16:36 14:35-15:19/44
28	05:50 06:12-07:14/62 20:24	06:21 06:42-06:49/7 19:42	06:53 06:47-06:49/7 18:49	07:26 06:48-07:45/57 17:02	07:04 07:28-08:29/61 16:32 14:19-15:11/52	07:27 07:50-08:40/50 16:37 14:35-15:20/45
29	05:51 06:13-07:14/61 20:23	06:22 06:43-06:45/2 19:40	06:54 06:49-06:45/2 18:47	07:27 06:49-07:45/56 17:00	07:05 07:29-08:29/60 16:32 14:19-15:11/52	07:27 07:50-08:41/51 16:37 14:36-15:20/44
30	05:52 06:14-07:14/60 20:22	06:23 06:44-07:14/60 19:39	06:55 06:51-07:14/60 18:46	07:28 06:51-07:47/56 16:59	07:06 07:30-08:29/59 16:32 14:20-15:11/51	07:27 07:50-08:41/51 16:38 14:36-15:21/45
31	05:53 06:15-07:14/59 20:20	06:24 06:45-07:14/59 19:37	06:56 06:52-07:14/59 18:44	07:29 06:52-07:47/55 16:58	07:07 07:31-08:29/58 16:58 07:48-07:57/9	07:28 07:51-08:41/51 16:39 14:36-15:21/45
Potential sun hours	461	429	375	345	296	286
Sum of minutes with flicker	2016	1061	0	746	3511	3028

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst case WTG: 8 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (8)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	January	February	March	April	May	June
1	07:28 16:40	07:14 17:15	06:37 17:16-17:28/12 17:50	06:45 18:12-19:04/52 19:25	05:58 18:09-19:03/54 19:58	05:29 20:28
2	07:28 16:41	07:13 17:16	06:35 17:15-17:29/14 17:51	06:43 18:10-19:04/54 19:26	05:57 18:11-19:02/51 19:59	05:28 20:29
3	07:28 16:42	07:12 17:17	06:34 17:15-17:31/16 17:52	06:42 18:09-19:05/56 19:27	05:56 18:11-19:00/49 20:00	05:28 20:29
4	07:28 16:43	07:11 17:19	06:32 17:14-17:32/18 17:53	06:40 18:09-19:07/58 19:28	05:55 18:12-18:59/47 20:01	05:28 20:30
5	07:28 16:44	07:09 17:20	06:31 17:14-17:32/18 17:55	06:38 18:07-19:08/61 19:29	05:53 18:14-18:58/44 20:02	05:27 20:31
6	07:28 16:45	07:08 17:21	06:29 17:14-17:34/20 17:56	06:37 18:06-19:08/62 19:30	05:52 18:15-18:56/41 20:03	05:27 20:31
7	07:28 16:46	07:07 17:23	06:27 17:14-17:35/21 17:57	06:35 18:06-19:09/63 19:31	05:51 18:17-18:55/38 20:04	05:27 20:32
8	07:28 16:47	07:06 17:24	06:26 17:16-17:34/18 17:58	06:33 18:05-19:09/64 19:32	05:50 18:18-18:52/34 20:05	05:26 20:33
9	07:27 16:48	07:05 17:25	06:24 17:16-17:32/16 17:59	06:32 18:04-19:09/65 19:34	05:48 18:20-18:50/30 20:06	05:26 20:33
10	07:27 16:49	07:04 17:26	06:22 17:18-17:30/12 18:00	06:30 18:04-19:11/67 19:35	05:47 18:23-18:48/25 20:07	05:26 20:34
11	07:27 16:50	07:02 17:28	06:21 17:22-17:26/4 18:01	06:28 18:04-19:11/67 19:36	05:46 18:26-18:45/19 20:08	05:26 20:34
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 18:04-19:12/68 19:37	05:45 18:32-18:39/7 20:09	05:26 20:35
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 18:03-19:13/70 19:38	05:44 20:10	05:25 20:35
14	07:26 16:53	06:59 17:31	06:16 18:05	06:24 18:02-19:13/71 19:39	05:43 20:11	05:25 20:36
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 18:03-19:14/71 19:40	05:42 20:12	05:25 20:36
16	07:25 16:55	06:56 17:34	06:12 18:07	06:20 18:02-19:14/72 19:41	05:41 20:13	05:25 20:37
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 18:03-19:14/71 19:42	05:40 20:14	05:25 20:37
18	07:24 16:58	06:53 17:36	06:09 18:09	06:17 18:02-19:13/71 19:43	05:39 20:15	05:25 20:37
19	07:24 16:59	06:52 17:38	06:07 18:10	06:16 18:03-19:13/70 19:44	05:38 20:16	05:26 20:38
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 18:03-19:12/69 19:46	05:37 20:17	05:26 20:38
21	07:22 17:01	06:49 17:40	06:04 18:13	06:13 18:03-19:12/69 19:47	05:36 20:18	05:26 20:38
22	07:22 17:02	06:47 17:41	06:02 17:37-17:53/16 18:14	06:11 18:03-19:11/68 19:48	05:35 20:19	05:26 20:38
23	07:21 17:04	06:46 17:43	06:00 17:31-17:54/23 18:15	06:10 18:04-19:11/67 19:49	05:35 20:20	05:26 20:39
24	07:20 17:05	06:44 17:44	05:59 17:27-17:54/27 18:16	06:08 18:04-19:09/65 19:50	05:34 20:21	05:26 20:39
25	07:20 17:06	06:43 17:45	05:57 17:25-17:56/31 18:17	06:07 18:05-19:09/64 19:51	05:33 20:22	05:27 20:39
26	07:19 17:07	06:41 17:20-17:25/5 17:46	05:55 17:22-17:57/35 18:18	06:05 18:06-19:08/62 19:52	05:32 20:23	05:27 20:39
27	07:18 17:09	06:40 17:18-17:25/7 17:47	05:54 17:20-17:58/38 18:19	06:04 18:06-19:07/61 19:53	05:32 20:24	05:27 20:39
28	07:17 17:10	06:38 17:17-17:27/10 17:49	05:52 17:18-18:00/42 18:20	06:03 18:07-19:06/59 19:54	05:31 20:25	05:28 20:39
29	07:16 17:11		06:50 18:16-19:00/44 19:22	06:01 18:08-19:06/58 19:55	05:30 20:25	05:28 20:39
30	07:15 17:12		06:49 18:14-19:01/47 19:23	06:00 18:08-19:04/56 19:56	05:30 20:26	05:29 20:39
31	07:15 17:14		06:47 18:13-19:02/49 19:24		05:29 20:27	
Potential sun hours	296	296	369	399	450	454
Sum of minutes with flicker	0	22	521	1931	439	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst case WTG: 8 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (8)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	July	August	September	October	November	December
1	05:29 20:39	05:54 18:40-18:53/13 20:19	06:25 18:02-19:10/68 19:35	06:56 18:44 18:44	06:31 16:56 16:31	07:07 16:31 16:31
2	05:30 20:39	05:55 18:35-18:57/22 20:18	06:26 18:02-19:09/67 19:34	06:57 18:42 18:42	06:33 16:55 16:31	07:08 16:31 16:31
3	05:30 20:39	05:56 18:33-18:59/26 20:17	06:27 18:02-19:07/65 19:32	06:58 17:58-18:07/9 18:40	06:34 16:54 16:31	07:09 16:31 16:31
4	05:31 20:38	05:57 18:30-19:02/32 20:16	06:28 18:02-19:06/64 19:30	06:59 17:55-18:09/14 18:39	06:35 16:53 16:30	07:10 16:30 16:30
5	05:31 20:38	05:58 18:28-19:03/35 20:15	06:29 18:02-19:05/63 19:29	07:00 17:53-18:10/17 18:37	06:36 16:51 16:30	07:11 16:30 16:30
6	05:32 20:38	05:59 18:26-19:05/39 20:14	06:30 18:02-19:04/62 19:27	07:02 17:51-18:11/20 18:35	06:37 16:50 16:30	07:12 16:30 16:30
7	05:33 20:38	06:00 18:25-19:07/42 20:12	06:31 18:02-19:03/61 19:25	07:03 17:50-18:11/21 18:34	06:39 16:49 16:30	07:13 16:30 16:30
8	05:33 20:37	06:01 18:23-19:08/45 20:11	06:32 18:03-19:01/58 19:24	07:04 17:49-18:09/20 18:32	06:40 16:48 16:30	07:14 16:30 16:30
9	05:34 20:37	06:02 18:22-19:09/47 20:10	06:33 18:03-18:59/56 19:22	07:05 17:49-18:07/18 18:30	06:41 16:47 16:30	07:15 16:30 16:30
10	05:35 20:36	06:03 18:20-19:10/50 20:08	06:34 18:03-18:58/55 19:20	07:06 17:48-18:05/17 18:29	06:42 16:46 16:30	07:16 16:30 16:30
11	05:35 20:36	06:04 18:19-19:11/52 20:07	06:35 18:04-18:56/52 19:18	07:07 17:48-18:04/16 18:27	06:44 16:45 16:30	07:17 16:30 16:30
12	05:36 20:36	06:05 18:18-19:12/54 20:06	06:37 18:05-18:54/49 19:17	07:08 17:49-18:03/14 18:26	06:45 16:44 16:30	07:17 16:30 16:30
13	05:37 20:35	06:06 18:16-19:13/57 20:04	06:38 18:05-18:53/48 19:15	07:09 17:49-18:01/12 18:24	06:46 16:43 16:30	07:18 16:30 16:30
14	05:37 20:34	06:07 18:15-19:14/59 20:03	06:39 18:06-18:51/45 19:13	07:10 17:50-17:59/9 18:22	06:47 16:42 16:30	07:19 16:30 16:30
15	05:38 20:34	06:08 18:14-19:14/60 20:02	06:40 18:07-18:49/42 19:12	07:11 17:51-17:57/6 18:21	06:48 16:41 16:31	07:20 16:31 16:31
16	05:39 20:33	06:09 18:13-19:15/62 20:00	06:41 18:09-18:47/38 19:10	07:13 17:52-17:56/4 18:19	06:50 16:40 16:31	07:20 16:31 16:31
17	05:40 20:33	06:10 18:12-19:15/63 19:59	06:42 18:10-18:46/36 19:08	07:14 18:18 18:18	06:51 16:39 16:31	07:21 16:31 16:31
18	05:41 20:32	06:11 18:11-19:16/65 19:57	06:43 18:12-18:44/32 19:06	07:15 18:16 18:16	06:52 16:38 16:31	07:22 16:31 16:31
19	05:42 20:31	06:12 18:10-19:16/66 19:56	06:44 18:14-18:42/28 19:05	07:16 18:15 18:15	06:53 16:38 16:32	07:22 16:32 16:32
20	05:42 20:31	06:13 18:10-19:16/66 19:54	06:45 18:17-18:40/23 19:03	07:17 18:13 18:13	06:54 16:37 16:32	07:23 16:32 16:32
21	05:43 20:30	06:14 18:08-19:16/68 19:53	06:46 18:21-18:39/18 19:01	07:18 18:12 18:12	06:56 16:36 16:33	07:24 16:33 16:33
22	05:44 20:29	06:15 18:07-19:16/69 19:51	06:47 18:59 18:10	07:19 18:10 18:10	06:57 16:36 16:33	07:24 16:33 16:33
23	05:45 20:28	06:16 18:06-19:16/70 19:50	06:48 18:58 18:09	07:21 18:09 18:09	06:58 16:35 16:34	07:25 16:34 16:34
24	05:46 20:27	06:17 18:06-19:16/70 19:48	06:49 18:56 18:07	07:22 18:07 18:07	06:59 16:34 16:34	07:25 16:34 16:34
25	05:47 20:26	06:18 18:05-19:16/71 19:47	06:50 18:54 18:06	06:23 17:06 17:06	07:00 16:34 16:35	07:26 16:35 16:35
26	05:48 20:25	06:19 18:05-19:16/71 19:45	06:51 18:52 17:04	06:24 17:04 17:04	07:01 16:33 16:35	07:26 16:35 16:35
27	05:49 20:24	06:20 18:04-19:16/72 19:43	06:52 18:51 17:03	06:25 17:03 17:03	07:03 16:33 16:36	07:26 16:36 16:36
28	05:50 20:24	06:21 18:04-19:15/71 19:42	06:53 18:49 17:02	06:27 17:02 17:02	07:04 16:32 16:37	07:27 16:37 16:37
29	05:51 20:23	06:22 18:03-19:14/71 19:40	06:54 18:47 17:00	06:28 17:00 17:00	07:05 16:32 16:37	07:27 16:37 16:37
30	05:52 20:21	06:23 18:03-19:12/69 19:39	06:55 18:46 18:46	06:29 16:59 16:59	07:06 16:32 16:38	07:27 16:38 16:38
31	05:53 20:20	06:24 18:03-19:11/68 19:37		06:30 16:58 16:58		07:27 16:39 16:39
Potential sun hours	461	429	375	345	296	286
Sum of minutes with flicker	0	1725	1030	197	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
--------------	-------------------------------------	-------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------

SHADOW - Calendar per WTG

Calculation: Worst case WTG: 9 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (9)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:27 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:58 19:58	05:29 20:28	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	07:28 16:41	07:13 17:16	06:35 17:51	06:43 19:26	05:57 19:59	05:28 20:28	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	07:28 16:42	07:12 17:17	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:40	06:34 16:54	07:09 16:31
4	07:28 16:43	07:10 17:19	06:32 17:53	06:40 19:28	05:54 20:01	05:28 20:30	05:31 20:38	05:57 20:16	06:28 19:30	06:59 18:39	06:35 16:53	07:10 16:30
5	07:28 16:44	07:09 17:20	06:30 17:54	06:38 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:58 20:15	06:29 19:29	07:00 18:37	06:36 16:51	07:11 16:30
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31	05:32 20:38	05:59 20:13	06:30 19:27	07:02 18:35	06:37 16:50	07:12 16:30
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:31	05:51 20:04	05:27 20:32	05:33 20:38	06:00 20:12	06:31 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	07:27 16:47	07:06 17:24	06:26 17:58	06:33 19:32	05:50 20:05	05:26 20:33	05:33 20:37	06:01 20:11	06:32 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	07:27 16:48	07:05 17:25	06:24 17:59	06:32 19:34	05:48 20:06	05:26 20:33	05:34 20:37	06:02 20:10	06:33 19:22	07:05 18:30	06:41 16:47	07:15 16:30
10	07:27 16:49	07:04 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:35 20:36	06:03 20:08	06:34 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:02 17:28	06:21 18:01	06:28 19:36	05:46 20:08	05:26 20:34	05:35 20:36	06:04 20:07	06:35 19:18	07:07 18:27	06:43 16:45	07:17 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:26 20:35	05:36 20:35	06:05 20:06	06:36 19:17	07:08 18:26	06:45 16:44	07:17 16:30
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:25 20:35	05:37 20:35	06:06 20:04	06:38 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:59 17:31	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:37 20:34	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36	05:38 20:34	06:08 20:02	06:40 19:12	07:11 18:21	06:48 16:41	07:20 16:31
16	07:25 16:55	06:56 17:34	06:12 18:07	06:20 19:41	05:41 20:13	05:25 20:37	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:20 16:31
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	07:24 16:58	06:53 17:36	06:09 18:09	06:17 19:43	05:39 20:15	05:25 20:37	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:38	15:43-15:46/3 07:22 16:31
19	07:24 16:59	06:52 17:38	06:07 18:10	06:16 19:44	05:38 20:16	05:26 20:38	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	15:42-15:47/5 07:22 16:32
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38	05:42 20:30	06:13 19:54	06:45 19:03	07:17 18:13	06:54 16:37	15:42-15:48/6 07:23 16:32
21	07:22 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	15:42-15:48/6 07:24 16:33
22	07:22 17:02	06:47 17:41	06:02 18:14	06:11 19:48	05:35 20:19	05:26 20:38	05:44 20:29	06:15 19:51	06:47 18:59	07:19 18:10	06:57 16:36	15:43-15:49/6 07:24 16:33
23	07:21 17:04	06:46 17:43	06:00 18:15	06:10 19:49	05:35 20:20	05:26 20:39	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	15:43-15:49/6 07:25 16:34
24	07:20 17:05	06:44 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:26 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	15:44-15:50/6 07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:26	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	15:45-15:49/4 07:25 16:35
26	07:19 17:07	06:41 17:46	05:55 18:18	06:05 19:52	05:32 20:23	05:27 20:39	05:48 20:25	06:19 19:45	06:51 18:52	06:24 17:04	07:01 16:33	15:46-15:48/2 07:26 16:35
27	07:18 17:09	06:40 17:47	05:54 18:19	06:04 19:53	05:32 20:24	05:27 20:39	05:49 20:24	06:20 19:43	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	07:17 17:10	06:38 17:49	05:52 18:20	06:03 19:54	05:31 20:24	05:28 20:39	05:50 20:23	06:21 19:42	06:53 18:49	06:26 17:02	07:04 16:32	07:27 16:37
29	07:16 17:11		06:50 19:21	06:01 19:55	05:30 20:25	05:28 20:39	05:51 20:22	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:37
30	07:15 17:12		06:48 19:23	06:00 19:56	05:30 20:26	05:29 20:39	05:52 20:21	06:23 19:39	06:55 18:46	06:29 16:59	07:06 16:32	07:27 16:38
31	07:15 17:14		06:47 19:24		05:29 20:27		05:53 20:20	06:24 19:37	06:55 18:46	06:30 16:58		07:27 16:39
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	44

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst case WTG: 10 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (10)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	January	February	March	April	May	June
1	07:28 16:40	07:14 07:34-07:44/10 17:15	06:37 17:50	06:45 07:04-07:13/9 19:25	05:58 19:58	05:29 20:28
2	07:28 16:41	07:13 07:33-07:44/11 17:16	06:35 17:51	06:43 07:02-07:12/10 19:26	05:57 19:59	05:28 20:29
3	07:28 16:42	07:12 07:32-07:44/12 17:17	06:34 17:52	06:42 07:00-07:09/9 19:27	05:56 20:00	05:28 20:29
4	07:28 16:43	07:11 07:31-07:44/13 17:19	06:32 17:53	06:40 06:59-07:08/9 19:28	05:55 20:01	05:28 20:30
5	07:28 16:44	07:09 07:30-07:44/14 17:20	06:31 17:55	06:38 06:57-07:04/7 19:29	05:53 20:02	05:27 20:31
6	07:28 16:45	07:08 07:28-07:43/15 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31
7	07:28 16:46	07:07 07:27-07:42/15 17:23	06:27 17:57	06:35 19:31	05:51 20:04	05:27 20:32
8	07:28 16:47	07:06 07:26-07:42/16 17:24	06:26 17:58	06:33 19:32	05:50 20:05	05:26 20:33
9	07:27 16:48	07:05 07:25-07:41/16 17:25	06:24 17:59	06:32 19:34	05:48 20:06	05:26 20:33
10	07:27 16:49	07:04 07:24-07:40/16 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34
11	07:27 16:50	07:02 07:22-07:38/16 17:28	06:21 18:01	06:28 19:36	05:46 20:08	05:26 20:34
12	07:27 16:51	07:01 07:21-07:36/15 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:25 20:35
13	07:26 16:52	07:00 07:20-07:32/12 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:25 20:35
14	07:26 16:53	06:59 07:18-07:28/10 17:31	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36
15	07:26 16:54	06:57 07:17-07:28/11 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36
16	07:25 16:55	06:56 07:16-07:27/11 17:34	06:12 18:07	06:20 19:41	05:41 20:13	05:25 20:37
17	07:25 16:56	06:55 07:14-07:26/12 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37
18	07:24 16:58	06:53 07:13-07:24/11 17:36	06:09 18:09	06:17 19:43	05:39 20:15	05:25 20:37
19	07:24 16:59	06:52 07:11-07:22/11 17:38	06:07 18:10	06:16 19:44	05:38 20:16	05:25 20:38
20	07:23 17:00	06:50 07:12-07:18/6 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 19:10-19:11/1 19:47	05:36 20:18	05:26 20:38
22	07:22 17:02	06:47 17:41	06:02 18:14	06:11 19:09-19:11/2 19:48	05:35 20:19	05:26 20:38
23	07:21 17:04	06:46 17:43	06:00 18:15	06:10 19:10-19:12/2 19:49	05:35 20:20	05:26 20:39
24	07:20 17:05	06:45 17:44	05:59 06:17-06:19/2 18:16	06:08 19:10-19:12/2 19:50	05:34 20:21	05:26 20:39
25	07:20 17:06	06:43 17:45	05:57 06:16-06:19/3 18:17	06:07 19:11-19:13/2 19:51	05:33 20:22	05:27 20:39
26	07:19 07:40-07:42/2 17:07	06:41 17:46	05:55 06:14-06:18/4 18:18	06:05 19:12-19:14/2 19:52	05:32 20:23	05:27 20:39
27	07:18 07:39-07:42/3 17:09	06:40 17:47	05:54 06:12-06:18/6 18:19	06:04 19:12-19:15/3 19:53	05:32 20:24	05:27 20:39
28	07:17 07:38-07:43/5 17:10	06:38 17:49	05:52 06:11-06:18/7 18:20	06:03 19:15-19:16/1 19:54	05:31 20:25	05:28 20:39
29	07:16 07:37-07:43/6 17:11		06:50 07:09-07:17/8 19:22	06:01 19:55	05:30 20:25	05:28 20:39
30	07:16 07:36-07:43/7 17:12		06:49 07:07-07:15/8 19:23	06:00 19:56	05:30 20:26	05:29 20:39
31	07:15 07:35-07:44/9 17:14		06:47 07:06-07:15/9 19:24		05:29 20:27	
Potential sun hours	296	296	369	399	450	454
Sum of minutes with flicker	32	253	47	59	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst case WTG: 10 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (10)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	July	August	September	October	November	December
1	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56	06:53-07:09/16 16:31
2	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	06:55-07:11/16 16:31
3	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:40	06:34 16:54	06:56-07:12/16 16:31
4	05:31 20:38	05:57 20:16	06:28 19:30	06:59 18:39	06:35 16:53	06:57-07:12/15 16:30
5	05:31 20:38	05:58 20:15	06:29 19:29	07:00 18:37	06:36 16:51	06:58-07:12/14 16:30
6	05:32 20:38	05:59 20:14	06:30 19:27	07:02 18:35	06:37 16:50	07:00-07:14/14 16:30
7	05:33 20:38	06:00 20:12	06:31 19:25	07:03 18:34	06:39 16:49	07:01-07:14/13 16:30
8	05:33 20:37	06:01 20:11	06:32 19:24	07:04 18:32	06:40 16:48	07:02-07:14/12 16:30
9	05:34 20:37	06:02 20:10	06:33 19:22	07:05 18:30	06:41 16:47	07:04-07:15/11 16:30
10	05:35 20:36	06:03 20:08	06:34 19:20	07:06 18:29	06:42 16:46	07:05-07:15/10 16:30
11	05:35 20:36	06:04 20:07	06:36 19:18	07:07 18:27	06:44 16:45	07:06-07:14/8 16:30
12	05:36 20:36	06:05 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:08-07:15/7 16:30
13	05:37 20:35	06:06 20:04	06:38 19:15	07:09 18:24	06:46 16:43	07:09-07:15/6 16:30
14	05:37 20:35	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:10-07:14/4 16:30
15	05:38 20:34	06:08 20:02	06:40 19:12	07:11 18:21	06:48 16:41	07:12-07:15/3 16:31
16	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:13-07:15/2 16:31
17	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:14-07:15/1 16:31
18	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:38	07:15-07:16/0 16:31
19	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:16-07:17/0 16:32
20	05:42 20:31	06:13 19:55	06:45 19:03	07:17 18:13	06:54 16:37	07:17-07:18/0 16:32
21	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:18-07:19/0 16:33
22	05:44 20:29	06:15 19:51	06:47 18:59	07:19 18:10	06:57 16:36	07:19-07:20/0 16:33
23	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:20-07:21/0 16:34
24	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:21-07:22/0 16:34
25	05:47 20:26	06:18 19:47	06:50 18:54	07:23 17:06	07:00 16:34	07:22-07:23/0 16:35
26	05:48 20:25	06:19 19:45	06:51 18:52	07:24 17:04	07:01 16:33	07:23-07:24/0 16:35
27	05:49 20:25	06:20 19:43	06:52 18:51	07:25 17:03	07:03 16:33	07:24-07:25/0 16:36
28	05:50 20:24	06:21 19:42	06:53 18:49	07:26 17:02	07:04 16:32	07:25-07:26/0 16:37
29	05:51 20:23	06:22 19:40	06:54 18:47	07:28 17:00	07:05 16:32	07:26-07:27/0 16:37
30	05:52 20:22	06:23 19:39	06:55 18:46	07:29 16:59	07:06 16:32	07:27-07:28/0 16:38
31	05:53 20:20	06:24 19:37		07:30 16:58	07:07 16:32	07:28-07:29/0 16:39
Potential sun hours	461	429	375	345	296	286
Sum of minutes with flicker	0	16	93	120	167	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
--------------	-------------------------------------	-------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------

SHADOW - Calendar per WTG

Calculation: Worst case WTG: 11 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (11)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	January	February	March	April	May	June
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:58 06:18-06:31/13 19:58	05:29 18:29-19:29/60 20:28
2	07:28 16:41	07:13 17:16	06:35 17:51	06:43 19:26	05:57 06:17-06:30/13 19:59	05:28 18:28-19:29/61 20:29
3	07:28 16:42	07:12 17:17	06:34 17:52	06:42 19:27	05:56 06:15-06:29/14 20:00	05:28 18:29-19:29/60 20:29
4	07:28 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:55 06:14-06:27/13 20:01	05:28 18:28-19:29/61 20:30
5	07:28 16:44	07:10 17:20	06:31 17:55	06:38 19:29	05:53 06:13-06:26/13 20:02	05:27 18:28-19:30/62 20:31
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 06:12-06:24/12 20:03	05:27 05:49-05:50/1 20:31 18:29-19:30/61
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:31	05:51 06:11-06:22/11 20:04	05:27 05:49-05:51/2 20:32 18:29-19:31/62
8	07:28 16:47	07:06 17:24	06:26 17:58	06:33 19:33	05:50 06:14-06:17/3 20:05 18:50-19:03/13	05:26 05:48-05:51/3 20:33 18:29-19:30/61
9	07:27 16:48	07:05 17:25	06:24 17:59	06:32 19:34	05:48 18:46-19:07/21 20:06	05:26 05:48-05:52/4 20:33 18:29-19:31/62
10	07:27 16:49	07:04 17:26	06:22 18:00	06:30 19:35	05:47 18:43-19:10/27 20:07	05:26 05:48-05:52/4 20:34 18:29-19:31/62
11	07:27 16:50	07:02 17:28	06:21 18:01	06:29 19:36	05:46 18:41-19:12/31 20:08	05:26 05:48-05:53/5 20:34 18:29-19:31/62
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 18:39-19:14/35 20:09	05:26 05:48-05:54/6 20:35 18:30-19:32/62
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 18:38-19:15/37 20:10	05:25 05:48-05:54/6 20:35 18:30-19:32/62
14	07:26 16:53	06:59 17:31	06:16 18:05	06:24 19:39	05:43 18:36-19:17/41 20:11	05:25 05:48-05:55/7 20:36 18:30-19:32/62
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 18:35-19:18/43 20:12	05:25 05:48-05:55/7 20:36 18:30-19:33/63
16	07:25 16:55	06:56 17:34	06:12 18:07	06:21 19:41	05:41 18:34-19:19/45 20:13	05:25 05:48-05:56/8 20:37 18:30-19:33/63
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	05:40 18:33-19:20/47 20:14	05:25 05:48-05:56/8 20:37 18:31-19:33/62
18	07:24 16:57	06:53 17:36	06:09 18:09	06:17 19:43	05:39 18:33-19:21/48 20:15	05:25 05:48-05:56/8 20:37 18:31-19:33/62
19	07:24 16:58	06:52 17:37	06:07 18:10	06:16 19:44	05:38 18:32-19:22/50 20:16	05:26 05:48-05:56/8 20:38 18:31-19:33/62
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 06:33-06:35/2 19:46	05:37 18:31-19:23/52 20:17	05:26 05:48-05:56/8 20:38 18:31-19:33/62
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 06:32-06:35/3 19:47	05:36 18:31-19:23/52 20:18	05:26 05:49-05:57/8 20:38 18:32-19:34/62
22	07:22 17:02	06:48 17:41	06:02 18:14	06:11 06:30-06:35/5 19:48	05:35 18:30-19:23/53 20:19	05:26 05:49-05:57/8 20:39 18:32-19:34/62
23	07:21 17:04	06:46 17:43	06:00 18:15	06:10 06:29-06:35/6 19:49	05:34 18:30-19:25/55 20:20	05:26 05:49-05:57/8 20:39 18:32-19:34/62
24	07:21 17:05	06:45 17:44	05:59 18:16	06:08 06:27-06:35/8 19:50	05:33 18:30-19:25/55 20:21	05:26 05:49-05:57/8 20:39 18:32-19:34/62
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 06:26-06:35/9 19:51	05:33 18:29-19:25/56 20:22	05:27 05:50-05:58/8 20:39 18:33-19:35/62
26	07:19 17:07	06:42 17:46	05:55 18:18	06:05 06:25-06:35/10 19:52	05:32 18:29-19:26/57 20:23	05:27 05:50-05:58/8 20:39 18:33-19:35/62
27	07:18 17:09	06:40 17:47	05:54 18:19	06:04 06:23-06:34/11 19:53	05:32 18:29-19:26/57 20:24	05:27 05:50-05:57/7 20:39 18:32-19:35/63
28	07:17 17:10	06:38 17:49	05:52 18:20	06:03 06:22-06:33/11 19:54	05:31 18:29-19:27/58 20:25	05:28 05:51-05:58/7 20:39 18:33-19:36/63
29	07:16 17:11		06:50 19:22	06:01 06:21-06:33/12 19:55	05:30 18:29-19:27/58 20:26	05:28 05:51-05:57/6 20:39 18:33-19:35/62
30	07:16 17:12		06:49 19:23	06:00 06:19-06:32/13 19:57	05:30 18:28-19:27/59 20:27	05:29 05:52-05:58/6 20:39 18:34-19:36/62
31	07:15 17:14		06:47 19:24		05:29 18:28-19:28/60 20:27	
Potential sun hours	296	296	369	399	450	454
Sum of minutes with flicker	0	0	0	90	1202	2015

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Worst case WTG: 11 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (11)

Assumptions for shadow calculations

The calculated times are "worst case" given by the following assumptions:

- The sun is shining all the day, from sunrise to sunset
- The rotor plane is always perpendicular to the line from the WTG to the sun
- The WTG is always operating

	July	August	September	October	November	December
1	05:29 05:52-05:57/5 20:39 18:34-19:36/62	05:54 18:51-19:24/33 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	05:30 05:53-05:58/5 20:39 18:34-19:36/62	05:55 18:52-19:22/30 20:18	06:26 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	05:30 05:53-05:57/4 20:39 18:34-19:36/62	05:56 18:55-19:19/24 20:17	06:27 19:32	06:58 18:41	06:34 16:54	07:09 16:31
4	05:31 05:54-05:57/3 20:38 18:35-19:36/61	05:57 18:58-19:16/18 20:16	06:28 19:30	06:59 18:39	06:35 16:53	07:10 16:30
5	05:31 05:54-05:56/2 20:38 18:34-19:36/62	05:58 06:21-06:29/8 20:15 19:03-19:11/8	06:29 19:29	07:01 18:37	06:36 16:51	07:11 16:30
6	05:32 05:55-05:56/1 20:38 18:35-19:36/61	05:59 06:21-06:33/12 20:14	06:30 19:27	07:02 18:35	06:37 16:50	07:12 16:30
7	05:33 18:35-19:36/61 20:38	06:00 06:22-06:35/13 20:12	06:31 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	05:33 18:35-19:36/61 20:37	06:01 06:23-06:36/13 20:11	06:32 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	05:34 18:36-19:37/61 20:37	06:02 06:24-06:38/14 20:10	06:33 19:22	07:05 18:30	06:41 16:47	07:15 16:30
10	05:35 18:35-19:36/61 20:37	06:03 06:25-06:39/14 20:08	06:35 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	05:35 18:36-19:36/60 20:36	06:04 06:26-06:39/13 20:07	06:36 19:19	07:07 18:27	06:44 16:45	07:17 16:30
12	05:36 18:37-19:36/59 20:36	06:05 06:27-06:40/13 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:17 16:30
13	05:37 18:37-19:37/60 20:35	06:06 06:28-06:41/13 20:04	06:38 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	05:37 18:37-19:36/59 20:35	06:07 06:29-06:41/12 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	05:38 18:37-19:36/59 20:34	06:08 06:30-06:41/11 20:02	06:40 19:12	07:12 18:21	06:48 16:41	07:20 16:31
16	05:39 18:38-19:36/58 20:33	06:09 06:31-06:41/10 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:21 16:31
17	05:40 18:39-19:36/57 20:33	06:10 06:32-06:42/10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	05:41 18:38-19:35/57 20:32	06:11 06:33-06:41/8 19:57	06:43 19:06	07:15 18:16	06:52 16:38	07:22 16:31
19	05:42 18:39-19:35/56 20:31	06:12 06:34-06:41/7 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:23 16:32
20	05:42 18:39-19:34/55 20:31	06:13 06:35-06:41/6 19:54	06:45 19:03	07:17 18:13	06:54 16:37	07:23 16:32
21	05:43 18:40-19:34/54 20:30	06:14 06:36-06:41/5 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 16:33
22	05:44 18:41-19:34/53 20:29	06:15 06:37-06:40/3 19:51	06:47 18:59	07:20 18:10	06:57 16:36	07:24 16:33
23	05:45 18:42-19:33/51 20:28	06:16 06:38-06:40/2 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	05:46 18:42-19:33/51 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	05:47 18:43-19:32/49 20:26	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:26 16:35
26	05:48 18:43-19:31/48 20:26	06:19 19:45	06:51 18:53	06:24 17:04	07:01 16:33	07:26 16:35
27	05:49 18:44-19:30/46 20:25	06:20 19:44	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	05:50 18:45-19:29/44 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
29	05:51 18:46-19:28/42 20:23	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:37
30	05:52 18:48-19:27/39 20:22	06:23 19:39	06:55 18:46	06:29 16:59	07:06 16:32	07:27 16:38
31	05:53 18:49-19:25/36 20:20	06:24 19:37		06:30 16:58		07:27 16:39
Potential sun hours	461	429	375	345	296	286
Sum of minutes with flicker	1727	300	0	0	0	0

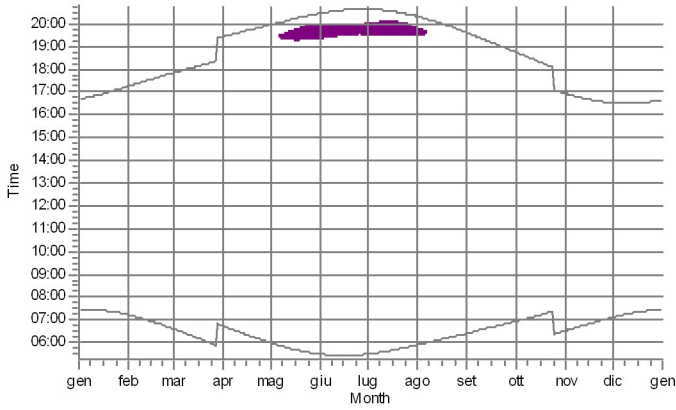
Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

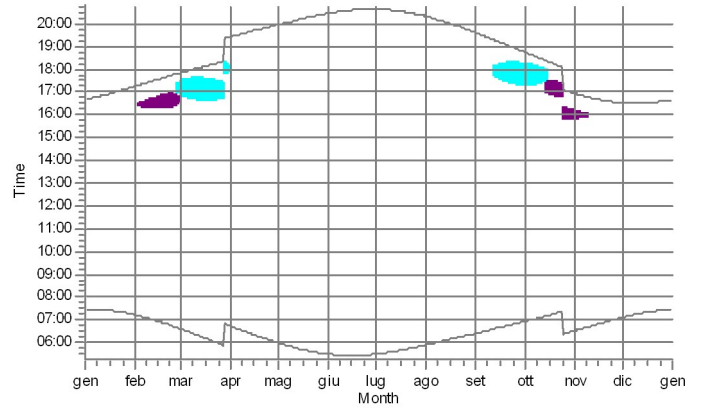
SHADOW - Calendar per WTG, graphical

Calculation: Worst case

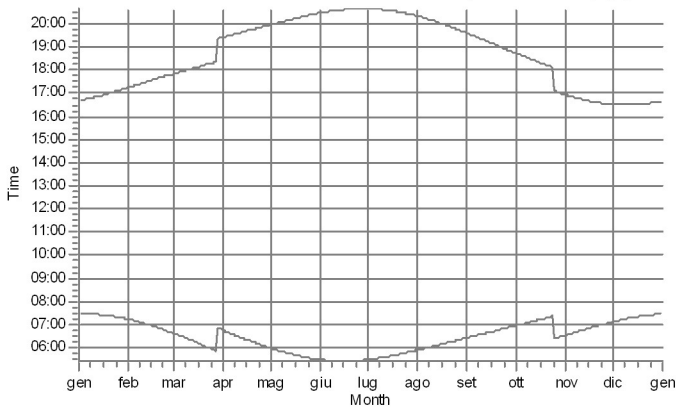
1: VESTAS V162 5600 162.0 !O!hub: 125,0 m (TOT: 206,0 m) (1)



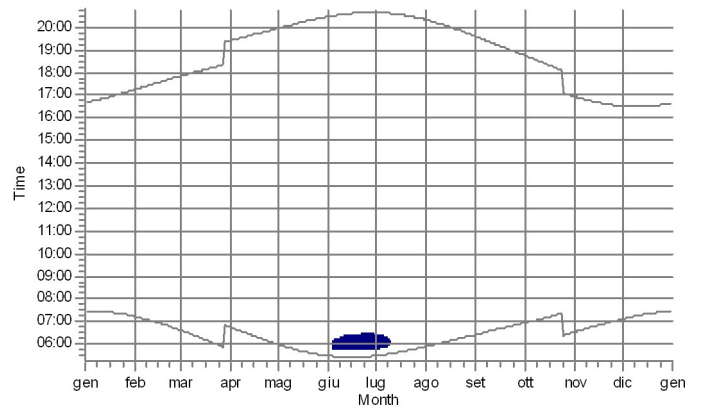
2: VESTAS V162 5600 162.0 !O!hub: 125,0 m (TOT: 206,0 m) (2)



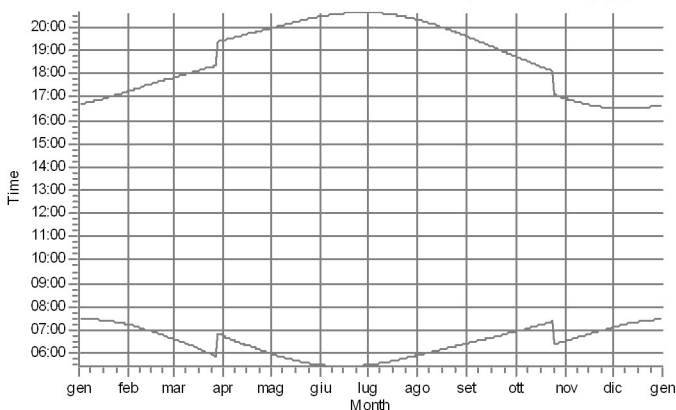
3: VESTAS V162 5600 162.0 !O!hub: 125,0 m (TOT: 206,0 m) (3)



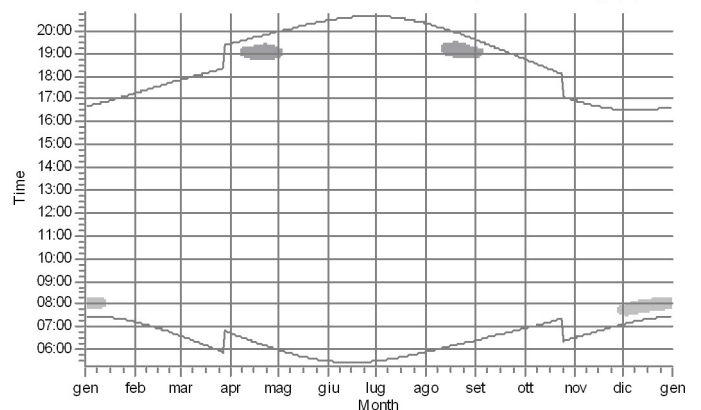
4: VESTAS V162 5600 162.0 !O!hub: 125,0 m (TOT: 206,0 m) (4)



5: VESTAS V162 5600 162.0 !O!hub: 125,0 m (TOT: 206,0 m) (5)



6: VESTAS V162 5600 162.0 !O!hub: 125,0 m (TOT: 206,0 m) (6)



Shadow receptors

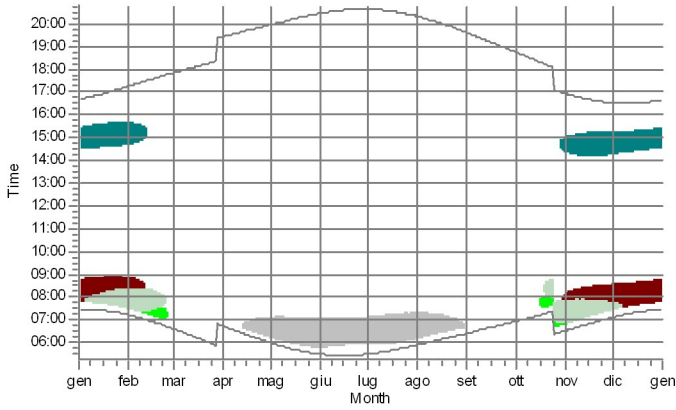
- G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (122)
- K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (127)
- L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (129)

- M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (132)
- P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (137)

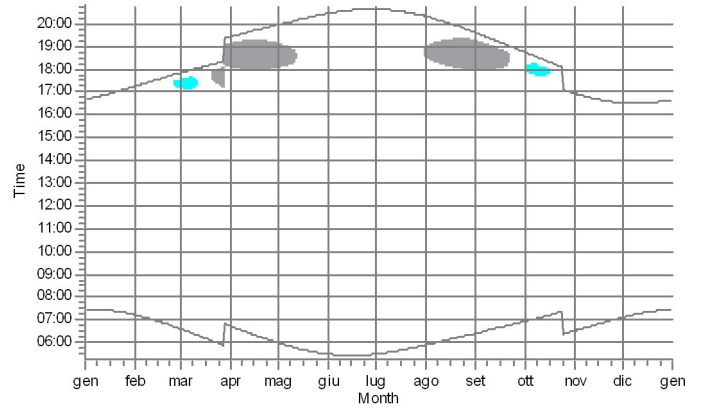
SHADOW - Calendar per WTG, graphical

Calculation: Worst case

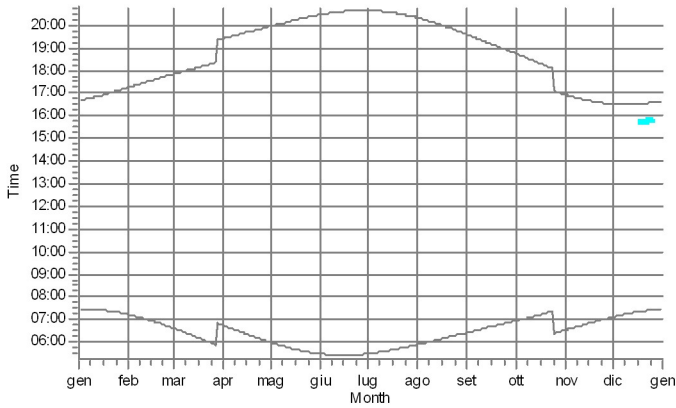
7: VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (7)



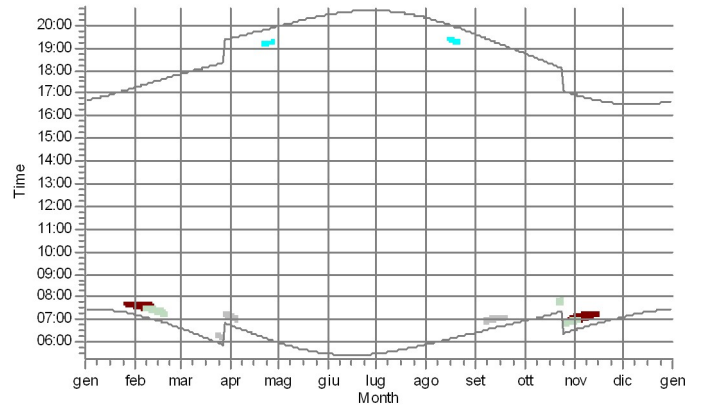
8: VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (8)



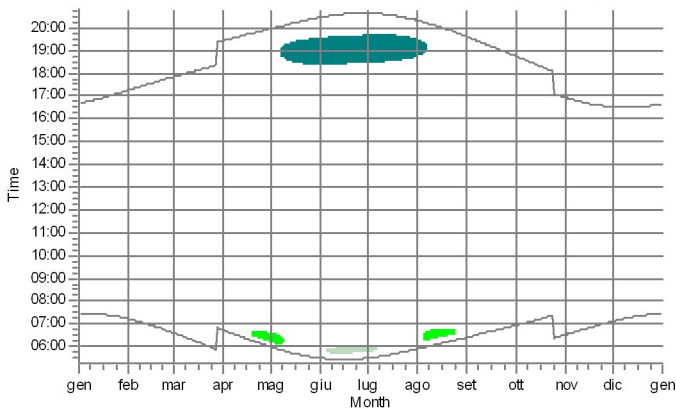
9: VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (9)



10: VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (10)



11: VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (11)



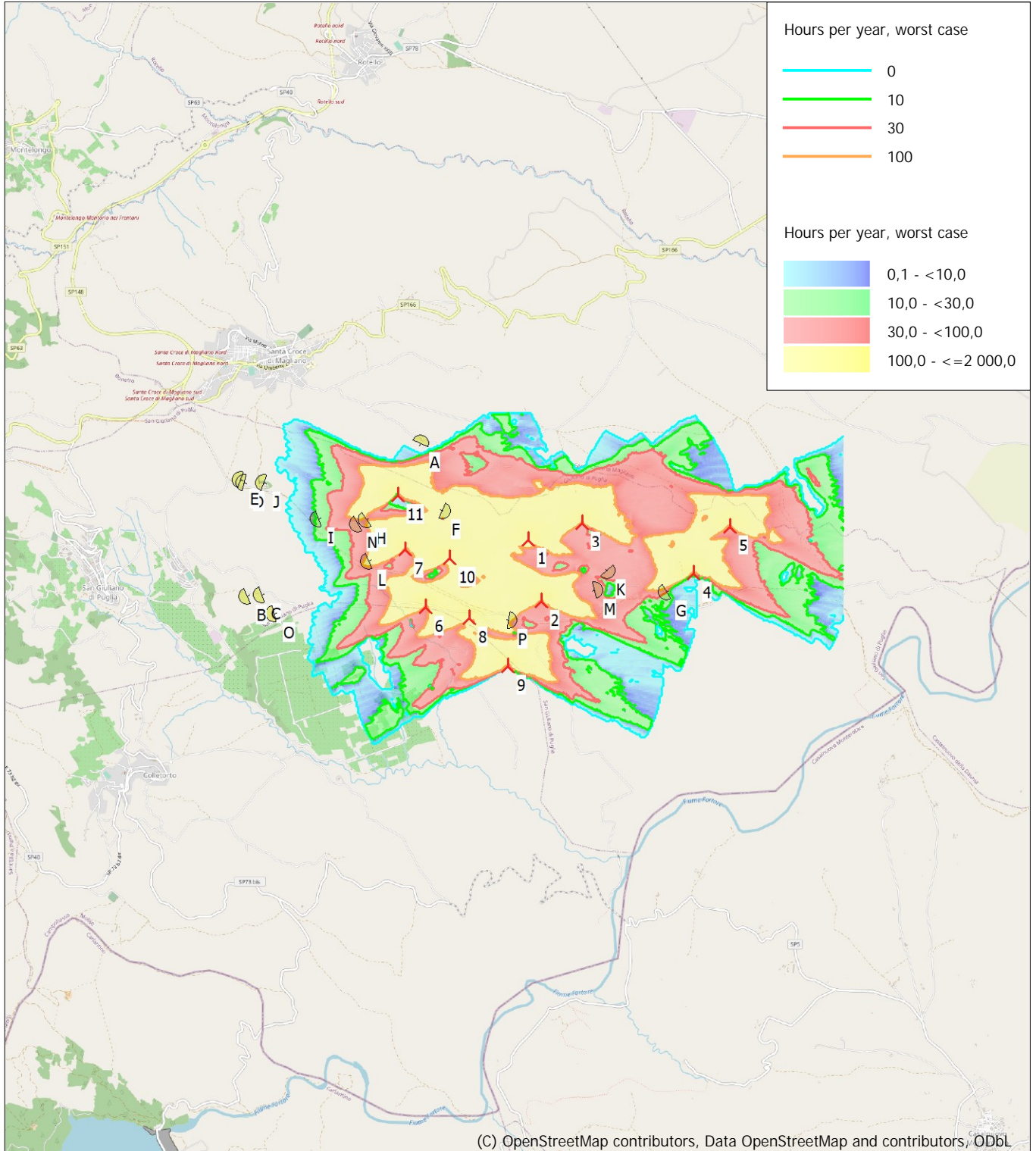
Shadow receptors

- F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (121)
- H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (124)
- I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (125)
- L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (129)

- M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (132)
- N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (134)
- P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (137)

SHADOW - Map

Calculation: Worst case



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



Map: EMD OpenStreetMap , Print scale 1:75 000, Map center UTM (north)-WGS84 Zone: 33 East: 502 460 North: 4 614 920

New WTG Shadow receptor

Flicker map level: Existing ground

Time step: 3 minutes, Day step: 7 days, Map resolution: 20 m, Visibility resolution: 10 m, Eye height: 1,5 m

8 ALLEGATO 2 – FULL REPORT “REAL CASE”

SHADOW - Main Result

Calculation: Real case

Assumptions for shadow calculations

Maximum distance for influence
 Calculate only when more than 20 % of sun is covered by the blade
 Please look in WTG table

Minimum sun height over horizon for influence 3 °
 Day step for calculation 1 days
 Time step for calculation 1 minutes

Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4,21	4,83	5,24	6,37	6,76	8,17	9,01	9,23	7,23	4,84	4,00	3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:

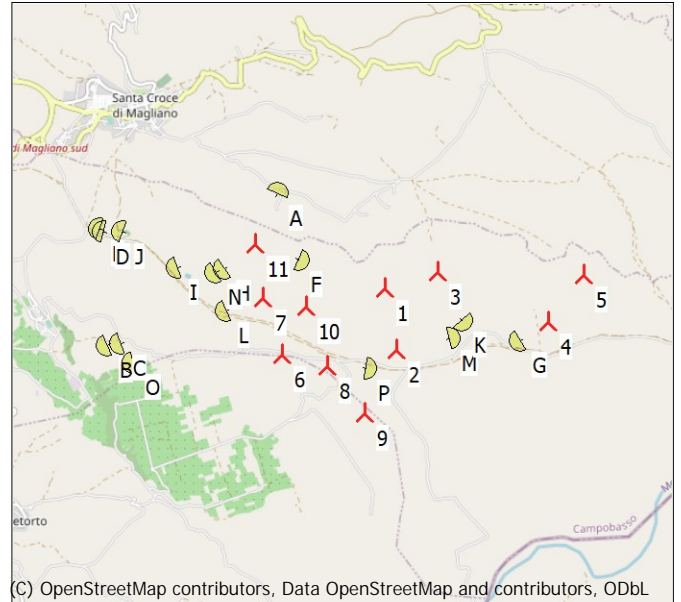
Height contours used: Existing ground
 Receptor grid resolution: 1,0 m
 Topographic shadow included in calculation

All coordinates are in

UTM (north)-WGS84 Zone: 33

WTGs

	Easting	Northing	Z	Row data/Description	WTG type			Power, rated [kW]	Rotor diameter [m]	Hub height [m]	Shadow data	
					Valid	Manufact.	Type-generator				Calculation distance [m]	RPM [RPM]
			[m]									
1	502 618	4 615 430	320,6	VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
2	502 787	4 614 620	351,5	VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
3	503 323	4 615 647	307,4	VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
4	504 778	4 614 985	237,5	VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
5	505 256	4 615 608	181,9	VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
6	501 269	4 614 552	384,5	VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
7	501 005	4 615 300	414,0	VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
8	501 848	4 614 400	353,8	VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
9	502 350	4 613 775	331,1	VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
10	501 579	4 615 184	364,1	VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-
11	500 903	4 616 009	381,0	VESTAS V162 5600 162.0 !O! hub: ... Yes	Yes	VESTAS	V162-5 600	5 600	162,0	125,0	2 040	-



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

Scale 1:100 000
 ▲ New WTG ● Shadow receptor

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Degrees from south cw	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
	[m]	[m]	[m]	[m]	[m]	[m]	[°]	[°]		[m]
A	501 199	4 616 681	402,1	1,0	1,0	1,0	26,4	90,0	Fixed direction	2,0
B	498 931	4 614 688	436,7	1,0	1,0	1,0	-114,2	90,0	Fixed direction	2,0
C	499 120	4 614 704	453,7	1,0	1,0	1,0	-111,2	90,0	Fixed direction	2,0
D	498 891	4 616 174	561,3	1,0	1,0	1,0	-74,0	90,0	Fixed direction	2,0
E	498 844	4 616 209	560,2	1,0	1,0	1,0	-71,8	90,0	Fixed direction	2,0
F	501 486	4 615 811	332,9	1,0	1,0	1,0	-243,8	90,0	Fixed direction	2,0
G	504 429	4 614 747	271,8	1,0	1,0	1,0	-119,4	90,0	Fixed direction	2,0
H	500 493	4 615 693	448,9	1,0	1,0	1,0	-123,5	90,0	Fixed direction	2,0
I	499 864	4 615 707	483,6	1,0	1,0	1,0	-108,8	90,0	Fixed direction	2,0
J	499 146	4 616 173	549,8	1,0	1,0	1,0	-70,2	90,0	Fixed direction	2,0
K	503 644	4 615 020	340,3	1,0	1,0	1,0	-222,4	90,0	Fixed direction	2,0
L	500 522	4 615 141	480,4	1,0	1,0	1,0	-116,7	90,0	Fixed direction	2,0
M	503 480	4 614 765	352,9	1,0	1,0	1,0	74,7	90,0	Fixed direction	2,0
N	500 380	4 615 641	456,0	1,0	1,0	1,0	-118,9	90,0	Fixed direction	2,0
O	499 279	4 614 464	429,7	1,0	1,0	1,0	-104,4	90,0	Fixed direction	2,0
P	502 361	4 614 369	384,8	1,0	1,0	1,0	-259,9	90,0	Fixed direction	2,0

SHADOW - Main Result

Calculation: Real case

Calculation Results

Shadow receptor

No.	Shadow, worst case		Shadow, expected values	
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
A	0:00	0	0:00	0:00
B	0:00	0	0:00	0:00
C	0:00	0	0:00	0:00
D	0:00	0	0:00	0:00
E	0:00	0	0:00	0:00
F	161:48	196	1:03	13:10
G	16:58	36	0:35	1:35
H	95:28	108	1:02	7:30
I	13:50	74	0:19	1:09
J	0:00	0	0:00	0:00
K	51:21	143	0:33	4:33
L	140:30	210	1:09	12:31
M	47:12	93	0:52	3:41
N	58:53	129	0:57	4:44
O	0:00	0	0:00	0:00
P	95:25	104	1:17	8:53

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
1	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (1)	33:51	3:16
2	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (2)	62:37	4:50
3	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (3)	0:00	0:00
4	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (4)	16:58	1:35
5	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (5)	0:00	0:00
6	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (6)	35:56	3:04
7	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (7)	331:44	26:38
8	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (8)	97:45	8:58
9	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (9)	0:44	0:02
10	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (10)	13:07	1:03
11	VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (11)	88:54	8:20

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

The calculation of the total expected values for a given receptor assumes a weighted average directional reduction for all WTGs contributing to shadow flicker within the same day. In the case where shadow flicker from different WTGs is not concurrent within the day, the total expected time at a given receptor may deviate marginally from the individual flicker time caused by each turbine separately.

SHADOW - Calendar

Calculation: Real case Shadow receptor: A - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (114)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 338 117 65 65 130 117 117 507 338 65 208 533 2 600

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:58 19:58	05:29 20:28	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	07:28 16:41	07:13 17:16	06:35 17:51	06:43 19:26	05:57 19:59	05:28 20:29	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	07:28 16:42	07:12 17:17	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:40	06:34 16:54	07:09 16:31
4	07:28 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:54 20:01	05:28 20:30	05:31 20:38	05:57 20:16	06:28 19:30	06:59 18:39	06:35 16:53	07:10 16:30
5	07:28 16:44	07:10 17:20	06:31 17:55	06:38 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:58 20:15	06:29 19:29	07:01 18:37	06:36 16:51	07:11 16:30
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31	05:32 20:38	05:59 20:14	06:30 19:27	07:02 18:35	06:37 16:50	07:12 16:30
7	07:28 16:45	07:07 17:23	06:27 17:57	06:35 19:31	05:51 20:04	05:26 20:32	05:32 20:38	06:00 20:12	06:31 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	07:28 16:46	07:06 17:24	06:26 17:58	06:33 19:33	05:50 20:05	05:26 20:33	05:33 20:37	06:01 20:11	06:32 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	07:27 16:48	07:05 17:25	06:24 17:59	06:32 19:34	05:48 20:06	05:26 20:33	05:34 20:37	06:02 20:10	06:33 19:22	07:05 18:30	06:41 16:47	07:15 16:30
10	07:27 16:49	07:04 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:34 20:37	06:03 20:08	06:34 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:02 17:28	06:21 18:01	06:29 19:36	05:46 20:08	05:26 20:34	05:35 20:36	06:04 20:07	06:36 19:19	07:07 18:27	06:44 16:45	07:17 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:25 20:35	05:36 20:36	06:05 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:17 16:30
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:25 20:35	05:37 20:35	06:06 20:04	06:38 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:59 17:31	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:37 20:35	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36	05:38 20:34	06:08 20:02	06:40 19:12	07:11 18:21	06:48 16:41	07:20 16:31
16	07:25 16:55	06:56 17:34	06:12 18:07	06:20 19:41	05:41 20:13	05:25 20:37	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:21 16:31
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	07:24 16:58	06:53 17:36	06:09 18:09	06:17 19:43	05:39 20:15	05:25 20:37	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:38	07:22 16:31
19	07:24 16:59	06:52 17:38	06:07 18:11	06:16 19:45	05:38 20:16	05:25 20:38	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:23 16:32
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38	05:42 20:31	06:13 19:54	06:45 19:03	07:17 18:13	06:54 16:37	07:23 16:32
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 16:33
22	07:22 17:02	06:48 17:41	06:02 18:14	06:11 19:48	05:35 20:19	05:26 20:39	05:44 20:29	06:15 19:51	06:47 18:59	07:20 18:10	06:57 16:36	07:24 16:33
23	07:21 17:04	06:46 17:43	06:00 18:15	06:10 19:49	05:35 20:20	05:26 20:39	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	07:21 17:05	06:45 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:26 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:26	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:26 16:35
26	07:19 17:07	06:42 17:46	05:55 18:18	06:05 19:52	05:32 20:23	05:27 20:39	05:48 20:26	06:19 19:45	06:51 18:52	06:24 17:04	07:01 16:33	07:26 16:35
27	07:18 17:09	06:40 17:47	05:54 18:19	06:04 19:53	05:32 20:24	05:27 20:39	05:49 20:25	06:20 19:44	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	07:17 17:10	06:38 17:49	05:52 18:20	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
29	07:16 17:11	06:37 17:48	05:51 18:21	06:02 19:55	05:30 20:26	05:28 20:39	05:51 20:23	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:37
30	07:16 17:12	06:49 17:49	06:00 18:22	06:00 19:56	05:30 20:27	05:29 20:39	05:52 20:22	06:23 19:39	06:55 18:46	06:29 16:59	07:06 16:32	07:27 16:38
31	07:15 17:14	06:47 17:48	06:00 18:23	06:00 19:57	05:29 20:28	05:29 20:39	05:53 20:20	06:24 19:37	06:30 16:58	06:30 16:58	07:07 16:39	07:27 16:39
Potential sun hours	296	296	369	400	450	454	461	429	375	345	296	286
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Real case Shadow receptor: B - Shadow Receptor: 1,0 x 1,0 Azimuth: 0,0° Slope: 90,0° (116)
 Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 338 117 65 65 130 117 117 507 338 65 208 533 2 600

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:59 19:58	05:29 20:28	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	07:28 16:41	07:13 17:16	06:35 17:51	06:44 19:26	05:57 19:59	05:29 20:29	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	07:28 16:42	07:12 17:18	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:41	06:34 16:54	07:09 16:31
4	07:28 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:55 20:01	05:28 20:30	05:31 20:39	05:57 20:16	06:28 19:31	07:00 18:39	06:35 16:53	07:10 16:31
5	07:28 16:44	07:10 17:20	06:31 17:55	06:39 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:58 20:15	06:30 19:29	07:01 18:37	06:36 16:52	07:11 16:30
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:32	05:32 20:38	05:59 20:14	06:31 19:27	07:02 18:36	06:38 16:50	07:12 16:30
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:32	05:51 20:04	05:27 20:32	05:33 20:38	06:00 20:12	06:32 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	07:28 16:47	07:06 17:24	06:26 17:58	06:34 19:33	05:50 20:05	05:26 20:33	05:33 20:37	06:01 20:11	06:33 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	07:28 16:48	07:05 17:25	06:24 17:59	06:32 19:34	05:49 20:06	05:26 20:33	05:34 20:37	06:02 20:10	06:34 19:22	07:05 18:31	06:41 16:47	07:15 16:30
10	07:27 16:49	07:04 17:27	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:35 20:37	06:03 20:09	06:35 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:03 17:28	06:21 18:02	06:29 19:36	05:46 20:08	05:26 20:35	05:35 20:36	06:04 20:07	06:36 19:19	07:07 18:27	06:44 16:45	07:17 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:26 20:35	05:36 20:36	06:05 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:18 16:30
13	07:26 16:52	07:00 17:30	06:18 18:04	06:25 19:38	05:44 20:10	05:26 20:36	05:37 20:35	06:06 20:05	06:38 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:59 17:32	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:38 20:35	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36	05:38 20:34	06:08 20:02	06:40 19:12	07:12 18:21	06:49 16:41	07:20 16:31
16	07:25 16:55	06:56 17:34	06:12 18:07	06:21 19:41	05:41 20:13	05:25 20:37	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:21 16:31
17	07:25 16:57	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	07:24 16:58	06:53 17:37	06:09 18:09	06:17 19:44	05:39 20:15	05:26 20:38	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:39	07:22 16:32
19	07:24 16:59	06:52 17:38	06:07 18:11	06:16 19:45	05:38 20:16	05:26 20:38	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:23 16:32
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38	05:43 20:31	06:13 19:54	06:45 19:03	07:17 18:13	06:55 16:37	07:23 16:32
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 16:33
22	07:22 17:02	06:48 17:41	06:02 18:14	06:11 19:48	05:36 20:19	05:26 20:39	05:44 20:29	06:15 19:51	06:47 19:00	07:20 18:10	06:57 16:36	07:24 16:33
23	07:21 17:04	06:46 17:43	06:01 18:15	06:10 19:49	05:35 20:20	05:26 20:39	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	07:21 17:05	06:45 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:27 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:27	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:26 16:35
26	07:19 17:07	06:42 17:46	05:55 18:18	06:06 19:52	05:33 20:23	05:27 20:39	05:48 20:26	06:19 19:45	06:51 18:53	06:24 17:04	07:02 16:33	07:26 16:36
27	07:18 17:09	06:40 17:48	05:54 18:19	06:04 19:53	05:32 20:24	05:28 20:39	05:49 20:25	06:20 19:44	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	07:17 17:10	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
29	07:17 17:11	06:38 17:48	05:51 18:22	06:02 19:55	05:30 20:26	05:28 20:39	05:51 20:23	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:38
30	07:16 17:12	06:37 17:47	05:50 18:23	06:01 19:56	05:29 20:27	05:29 20:39	05:52 20:22	06:23 19:39	06:55 18:46	06:29 16:59	07:06 16:32	07:27 16:38
31	07:15 17:14	06:36 17:46	05:49 18:24	06:00 19:57	05:28 20:28	05:29 20:39	05:53 20:21	06:24 19:37	06:30 16:58	06:30 16:58	07:07 16:39	07:27 16:39
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Real case Shadow receptor: C - Shadow Receptor: 1,0 x 1,0 Azimuth: 0,0° Slope: 90,0° (117)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:59 19:58	05:29 20:28	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	07:28 16:41	07:13 17:16	06:35 17:51	06:44 19:26	05:57 19:59	05:29 20:29	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	07:28 16:42	07:12 17:18	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:41	06:34 16:54	07:09 16:31
4	07:28 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:55 20:01	05:28 20:30	05:31 20:39	05:57 20:16	06:28 19:30	07:00 18:39	06:35 16:53	07:10 16:31
5	07:28 16:44	07:10 17:20	06:31 17:55	06:39 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:58 20:15	06:30 19:29	07:01 18:37	06:36 16:52	07:11 16:30
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:32	05:32 20:38	05:59 20:14	06:31 19:27	07:02 18:36	06:38 16:50	07:12 16:30
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:31	05:51 20:04	05:27 20:32	05:33 20:38	06:00 20:12	06:32 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	07:28 16:47	07:06 17:24	06:26 17:58	06:34 19:33	05:50 20:05	05:26 20:33	05:33 20:37	06:01 20:11	06:33 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	07:28 16:48	07:05 17:25	06:24 17:59	06:32 19:34	05:49 20:06	05:26 20:33	05:34 20:37	06:02 20:10	06:34 19:22	07:05 18:31	06:41 16:47	07:15 16:30
10	07:27 16:49	07:04 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:35 20:37	06:03 20:09	06:35 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:03 17:28	06:21 18:02	06:29 19:36	05:46 20:08	05:26 20:34	05:35 20:36	06:04 20:07	06:36 19:19	07:07 18:27	06:44 16:45	07:17 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:26 20:35	05:36 20:36	06:05 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:18 16:30
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:26 20:36	05:37 20:35	06:06 20:05	06:38 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:59 17:32	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:38 20:35	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36	05:38 20:34	06:08 20:02	06:40 19:12	07:12 18:21	06:49 16:41	07:20 16:31
16	07:25 16:55	06:56 17:34	06:12 18:07	06:21 19:41	05:41 20:13	05:25 20:37	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:21 16:31
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	07:24 16:58	06:53 17:37	06:09 18:09	06:17 19:44	05:39 20:15	05:26 20:38	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:39	07:22 16:32
19	07:24 16:59	06:52 17:38	06:07 18:11	06:16 19:45	05:38 20:16	05:26 20:38	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:23 16:32
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38	05:43 20:31	06:13 19:54	06:45 19:03	07:17 18:13	06:55 16:37	07:23 16:32
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 16:33
22	07:22 17:02	06:48 17:41	06:02 18:14	06:11 19:48	05:36 20:19	05:26 20:39	05:44 20:29	06:15 19:51	06:47 19:00	07:20 18:10	06:57 16:36	07:24 16:33
23	07:21 17:04	06:46 17:43	06:01 18:15	06:10 19:49	05:35 20:20	05:26 20:39	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	07:21 17:05	06:45 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:27 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:26	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:26 16:35
26	07:19 17:07	06:42 17:46	05:55 18:18	06:06 19:52	05:33 20:23	05:27 20:39	05:48 20:26	06:19 19:45	06:51 18:53	06:24 17:04	07:02 16:33	07:26 16:36
27	07:18 17:09	06:40 17:48	05:54 18:19	06:04 19:53	05:32 20:24	05:28 20:39	05:49 20:25	06:20 19:44	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	07:17 17:10	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
29	07:17 17:11		06:50 19:22	06:01 19:56	05:31 20:25	05:28 20:39	05:51 20:23	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:38
30	07:16 17:12		06:49 19:23	06:00 19:57	05:30 20:26	05:29 20:39	05:52 20:22	06:23 19:39	06:55 18:46	06:29 16:59	07:06 16:32	07:27 16:38
31	07:15 17:14		06:47 19:24		05:29 20:27		05:53 20:21	06:24 19:37		06:30 16:58		07:27 16:39
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Real case Shadow receptor: D - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (119)
 Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]
 Assumptions for shadow calculations
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:59 19:58	05:29 20:28	05:29 20:39	05:54 20:20	06:25 19:36	06:56 18:44	06:32 16:56	07:07 16:31
2	07:28 16:41	07:13 17:16	06:35 17:51	06:44 19:26	05:57 19:59	05:28 20:29	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	07:28 16:42	07:12 17:18	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:41	06:34 16:54	07:09 16:31
4	07:28 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:55 20:01	05:28 20:30	05:31 20:39	05:57 20:16	06:28 19:31	07:00 18:39	06:35 16:53	07:10 16:31
5	07:28 16:44	07:10 17:20	06:31 17:55	06:39 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:58 20:15	06:30 19:29	07:01 18:37	06:36 16:51	07:11 16:30
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:32	05:32 20:38	05:59 20:14	06:31 19:27	07:02 18:36	06:38 16:50	07:12 16:30
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:32	05:51 20:04	05:27 20:32	05:33 20:38	06:00 20:12	06:32 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	07:28 16:47	07:06 17:24	06:26 17:58	06:34 19:33	05:50 20:05	05:26 20:33	05:33 20:37	06:01 20:11	06:33 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	07:28 16:48	07:05 17:25	06:24 17:59	06:32 19:34	05:48 20:06	05:26 20:33	05:34 20:37	06:02 20:10	06:34 19:22	07:05 18:31	06:41 16:47	07:15 16:30
10	07:27 16:49	07:04 17:26	06:23 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:35 20:37	06:03 20:09	06:35 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:03 17:28	06:21 18:02	06:29 19:36	05:46 20:08	05:26 20:35	05:35 20:36	06:04 20:07	06:36 19:19	07:07 18:27	06:44 16:45	07:17 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:26 20:35	05:36 20:36	06:05 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:18 16:30
13	07:27 16:52	07:00 17:30	06:18 18:04	06:25 19:38	05:44 20:10	05:25 20:36	05:37 20:35	06:06 20:05	06:38 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:59 17:32	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:38 20:35	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:13	05:25 20:36	05:38 20:34	06:08 20:02	06:40 19:12	07:12 18:21	06:49 16:41	07:20 16:31
16	07:25 16:55	06:56 17:34	06:12 18:07	06:21 19:41	05:41 20:14	05:25 20:37	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:21 16:31
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:15	05:25 20:37	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	07:24 16:58	06:53 17:37	06:09 18:10	06:17 19:44	05:39 20:16	05:25 20:38	05:41 20:32	06:11 19:57	06:43 19:07	07:15 18:16	06:52 16:39	07:22 16:32
19	07:24 16:59	06:52 17:38	06:07 18:11	06:16 19:45	05:38 20:16	05:26 20:38	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:23 16:32
20	07:23 17:00	06:51 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38	05:43 20:31	06:13 19:54	06:45 19:03	07:17 18:13	06:55 16:37	07:23 16:32
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 16:33
22	07:22 17:02	06:48 17:41	06:02 18:14	06:11 19:48	05:36 20:19	05:26 20:39	05:44 20:29	06:15 19:51	06:47 19:00	07:20 18:10	06:57 16:36	07:24 16:33
23	07:21 17:04	06:46 17:43	06:01 18:15	06:10 19:49	05:35 20:20	05:26 20:39	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	07:21 17:05	06:45 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:27 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:27	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:26 16:35
26	07:19 17:07	06:42 17:46	05:55 18:18	06:05 19:52	05:33 20:23	05:27 20:39	05:48 20:26	06:19 19:45	06:51 18:53	06:24 17:04	07:02 16:33	07:26 16:35
27	07:18 17:09	06:40 17:48	05:54 18:19	06:04 19:53	05:32 20:24	05:28 20:39	05:49 20:25	06:20 19:44	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	07:17 17:10	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
29	07:17 17:11	06:38 17:48	05:51 18:22	06:02 19:55	05:30 20:26	05:28 20:39	05:51 20:23	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:38
30	07:16 17:12	06:49 17:47	06:00 18:23	06:00 19:56	05:30 20:27	05:29 20:39	05:52 20:22	06:23 19:39	06:55 18:46	06:29 16:59	07:06 16:32	07:27 16:38
31	07:15 17:14	06:47 17:46	06:00 18:24	06:00 19:57	05:29 20:28	05:29 20:39	05:53 20:21	06:24 19:37	06:30 16:58	06:30 16:58	07:07 16:39	07:27 16:39
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Real case Shadow receptor: E - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (120)
 Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 338 117 65 65 130 117 117 507 338 65 208 533 2 600

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:59 19:58	05:29 20:28	05:29 20:39	05:54 20:20	06:25 19:36	06:56 18:44	06:32 16:56	07:07 16:31
2	07:28 16:41	07:13 17:16	06:35 17:51	06:44 19:26	05:57 19:59	05:28 20:29	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	07:28 16:42	07:12 17:18	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:41	06:34 16:54	07:09 16:31
4	07:28 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:55 20:01	05:28 20:30	05:31 20:39	05:57 20:16	06:28 19:31	07:00 18:39	06:35 16:53	07:10 16:31
5	07:28 16:44	07:10 17:20	06:31 17:55	06:39 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:58 20:15	06:30 19:29	07:01 18:37	06:36 16:51	07:11 16:30
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:32	05:32 20:38	05:59 20:14	06:31 19:27	07:02 18:36	06:38 16:50	07:12 16:30
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:32	05:51 20:04	05:27 20:32	05:33 20:38	06:00 20:12	06:32 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	07:28 16:47	07:06 17:24	06:26 17:58	06:34 19:33	05:50 20:05	05:26 20:33	05:33 20:37	06:01 20:11	06:33 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	07:28 16:48	07:05 17:25	06:24 17:59	06:32 19:34	05:48 20:06	05:26 20:33	05:34 20:37	06:02 20:10	06:34 19:22	07:05 18:31	06:41 16:47	07:15 16:30
10	07:27 16:49	07:04 17:26	06:23 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:35 20:37	06:03 20:09	06:35 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:03 17:28	06:21 18:02	06:29 19:36	05:46 20:08	05:26 20:35	05:35 20:36	06:04 20:07	06:36 19:19	07:07 18:27	06:44 16:45	07:17 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:26 20:35	05:36 20:36	06:05 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:18 16:30
13	07:27 16:52	07:00 17:30	06:18 18:04	06:25 19:38	05:44 20:10	05:25 20:36	05:37 20:35	06:06 20:05	06:38 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:59 17:32	06:16 18:05	06:24 19:39	05:43 20:12	05:25 20:36	05:38 20:35	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:13	05:25 20:36	05:38 20:34	06:08 20:02	06:40 19:12	07:12 18:21	06:49 16:41	07:20 16:31
16	07:25 16:55	06:56 17:34	06:12 18:07	06:21 19:41	05:41 20:14	05:25 20:37	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:21 16:31
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:15	05:25 20:37	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	07:24 16:58	06:53 17:37	06:09 18:10	06:17 19:44	05:39 20:16	05:25 20:38	05:41 20:32	06:11 19:57	06:43 19:07	07:15 18:16	06:52 16:39	07:22 16:32
19	07:24 16:59	06:52 17:38	06:07 18:11	06:16 19:45	05:38 20:16	05:26 20:38	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:23 16:32
20	07:23 17:00	06:51 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38	05:43 20:31	06:13 19:54	06:45 19:03	07:17 18:13	06:55 16:37	07:23 16:32
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 16:33
22	07:22 17:02	06:48 17:41	06:02 18:14	06:11 19:48	05:36 20:19	05:26 20:39	05:44 20:29	06:15 19:51	06:47 19:00	07:20 18:10	06:57 16:36	07:24 16:33
23	07:21 17:04	06:46 17:43	06:01 18:15	06:10 19:49	05:35 20:20	05:26 20:39	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	07:21 17:05	06:45 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:27 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:27	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:26 16:35
26	07:19 17:07	06:42 17:46	05:55 18:18	06:05 19:52	05:33 20:23	05:27 20:39	05:48 20:26	06:19 19:45	06:51 18:53	06:24 17:04	07:02 16:33	07:26 16:35
27	07:18 17:09	06:40 17:48	05:54 18:19	06:04 19:53	05:32 20:24	05:28 20:39	05:49 20:25	06:20 19:44	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	07:17 17:10	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
29	07:17 17:11		06:50 19:22	06:01 19:56	05:31 20:26	05:28 20:39	05:51 20:23	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:38
30	07:16 17:12		06:49 19:23	06:00 19:57	05:30 20:26	05:29 20:39	05:52 20:22	06:23 19:39	06:55 18:46	06:29 16:59	07:06 16:32	07:27 16:38
31	07:15 17:14		06:47 19:24		05:29 20:27		05:53 20:21	06:24 19:37		06:30 16:58		07:27 16:39
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Real case Shadow receptor: F - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (121)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 338 117 65 65 130 117 117 507 338 65 208 533 2 600

	January	February	March	April	May	June				
1	07:28	14:36 (7)	07:14	14:46 (7)	06:37	06:45	05:58	05:29	18:29 (11)	
	16:40	46 15:22 (7)	17:15	49 15:35 (7)	17:50	19:25	19:58	20:28	60 19:29 (11)	
2	07:28	14:36 (7)	07:13	14:47 (7)	06:35	06:43	05:57	05:28	18:28 (11)	
	16:41	47 15:23 (7)	17:16	47 15:34 (7)	17:51	19:26	19:59	20:29	61 19:29 (11)	
3	07:28	14:36 (7)	07:12	14:48 (7)	06:34	06:42	05:56	05:28	18:29 (11)	
	16:42	47 15:23 (7)	17:17	46 15:34 (7)	17:52	19:27	20:00	20:29	60 19:29 (11)	
4	07:28	14:37 (7)	07:11	14:50 (7)	06:32	06:40	05:54	05:28	18:28 (11)	
	16:43	47 15:24 (7)	17:19	43 15:33 (7)	17:53	19:28	20:01	20:30	61 19:29 (11)	
5	07:28	14:37 (7)	07:09	14:51 (7)	06:31	06:38	05:53	05:27	18:28 (11)	
	16:44	48 15:25 (7)	17:20	42 15:33 (7)	17:55	19:29	20:02	20:31	62 19:30 (11)	
6	07:28	14:37 (7)	07:08	14:51 (7)	06:29	06:37	05:52	05:27	18:29 (11)	
	16:45	49 15:26 (7)	17:21	40 15:31 (7)	17:56	19:30	20:03	20:31	61 19:30 (11)	
7	07:28	14:38 (7)	07:07	14:53 (7)	06:27	06:35	05:51	05:26	18:29 (11)	
	16:46	49 15:27 (7)	17:23	37 15:30 (7)	17:57	19:31	20:04	20:32	62 19:31 (11)	
8	07:28	14:38 (7)	07:06	14:55 (7)	06:26	06:33	05:50	18:50 (11)	05:26	18:29 (11)
	16:47	49 15:27 (7)	17:24	34 15:29 (7)	17:58	19:32	20:05	13 19:03 (11)	20:33	61 19:30 (11)
9	07:27	14:38 (7)	07:05	14:57 (7)	06:24	06:32	05:48	18:46 (11)	05:26	18:29 (11)
	16:48	50 15:28 (7)	17:25	31 15:28 (7)	17:59	19:34	20:06	21 19:07 (11)	20:33	62 19:31 (11)
10	07:27	14:38 (7)	07:04	15:00 (7)	06:22	06:30	05:47	18:43 (11)	05:26	18:29 (11)
	16:49	50 15:28 (7)	17:26	26 15:26 (7)	18:00	19:35	20:07	27 19:10 (11)	20:34	62 19:31 (11)
11	07:27	14:38 (7)	07:02	15:02 (7)	06:21	06:28	05:46	18:41 (11)	05:26	18:29 (11)
	16:50	51 15:29 (7)	17:28	21 15:23 (7)	18:01	19:36	20:08	31 19:12 (11)	20:34	62 19:31 (11)
12	07:27	14:39 (7)	07:01	15:06 (7)	06:19	06:27	05:45	18:39 (11)	05:25	18:30 (11)
	16:51	51 15:30 (7)	17:29	14 15:20 (7)	18:03	19:37	20:09	35 19:14 (11)	20:35	62 19:32 (11)
13	07:26	14:38 (7)	07:00	06:17	06:25	05:44	18:38 (11)	05:25	18:30 (11)	
	16:52	52 15:30 (7)	17:30	18:04	19:38	20:10	37 19:15 (11)	20:35	62 19:32 (11)	
14	07:26	14:39 (7)	06:59	06:16	06:24	05:43	18:36 (11)	05:25	18:30 (11)	
	16:53	52 15:31 (7)	17:31	18:05	19:39	20:11	41 19:17 (11)	20:36	62 19:32 (11)	
15	07:26	14:39 (7)	06:57	06:14	06:22	05:42	18:35 (11)	05:25	18:30 (11)	
	16:54	52 15:31 (7)	17:33	18:06	19:40	20:12	43 19:18 (11)	20:36	63 19:33 (11)	
16	07:25	14:39 (7)	06:56	06:12	06:20	05:41	18:34 (11)	05:25	18:30 (11)	
	16:55	53 15:32 (7)	17:34	18:07	19:41	20:13	45 19:19 (11)	20:37	63 19:33 (11)	
17	07:25	14:39 (7)	06:55	06:11	06:19	05:40	18:33 (11)	05:25	18:31 (11)	
	16:56	53 15:32 (7)	17:35	18:08	19:42	20:14	47 19:20 (11)	20:37	62 19:33 (11)	
18	07:24	14:40 (7)	06:53	06:09	06:17	05:39	18:33 (11)	05:25	18:31 (11)	
	16:58	53 15:33 (7)	17:36	18:09	19:43	20:15	48 19:21 (11)	20:37	62 19:33 (11)	
19	07:24	14:40 (7)	06:52	06:07	06:16	05:38	18:32 (11)	05:25	18:31 (11)	
	16:59	53 15:33 (7)	17:38	18:10	19:45	20:16	50 19:22 (11)	20:38	62 19:33 (11)	
20	07:23	14:40 (7)	06:50	06:06	06:14	05:37	18:31 (11)	05:26	18:31 (11)	
	17:00	54 15:34 (7)	17:39	18:12	19:46	20:17	52 19:23 (11)	20:38	62 19:33 (11)	
21	07:23	14:41 (7)	06:49	06:04	06:13	05:36	18:31 (11)	05:26	18:32 (11)	
	17:01	54 15:35 (7)	17:40	18:13	19:47	20:18	52 19:23 (11)	20:38	62 19:34 (11)	
22	07:22	14:41 (7)	06:47	06:02	06:11	05:35	18:30 (11)	05:26	18:32 (11)	
	17:02	54 15:35 (7)	17:41	18:14	19:48	20:19	53 19:23 (11)	20:38	62 19:34 (11)	
23	07:21	14:41 (7)	06:46	06:00	06:10	05:35	18:30 (11)	05:26	18:32 (11)	
	17:04	54 15:35 (7)	17:43	18:15	19:49	20:20	55 19:25 (11)	20:39	62 19:34 (11)	
24	07:21	14:41 (7)	06:45	05:59	06:08	05:34	18:30 (11)	05:26	18:32 (11)	
	17:05	54 15:35 (7)	17:44	18:16	19:50	20:21	55 19:25 (11)	20:39	62 19:34 (11)	
25	07:20	14:42 (7)	06:43	05:57	06:07	05:33	18:29 (11)	05:27	18:33 (11)	
	17:06	54 15:36 (7)	17:45	18:17	19:51	20:22	56 19:25 (11)	20:39	62 19:35 (11)	
26	07:19	14:43 (7)	06:42	05:55	06:05	05:32	18:29 (11)	05:27	18:33 (11)	
	17:07	53 15:36 (7)	17:46	18:18	19:52	20:23	57 19:26 (11)	20:39	62 19:35 (11)	
27	07:18	14:43 (7)	06:40	05:54	06:04	05:32	18:29 (11)	05:27	18:32 (11)	
	17:09	53 15:36 (7)	17:47	18:19	19:53	20:24	57 19:26 (11)	20:39	63 19:35 (11)	
28	07:17	14:44 (7)	06:38	05:52	06:03	05:31	18:29 (11)	05:28	18:33 (11)	
	17:10	51 15:35 (7)	17:49	18:20	19:54	20:25	58 19:27 (11)	20:39	63 19:36 (11)	
29	07:16	14:44 (7)		06:50	06:01	05:30	18:29 (11)	05:28	18:33 (11)	
	17:11	51 15:35 (7)		19:22	19:55	20:25	58 19:27 (11)	20:39	62 19:35 (11)	
30	07:16	14:45 (7)		06:49	06:00	05:30	18:28 (11)	05:29	18:34 (11)	
	17:12	50 15:35 (7)		19:23	19:57	20:26	59 19:27 (11)	20:39	62 19:36 (11)	
31	07:15	14:46 (7)		06:47		05:29	18:28 (11)			
	17:14	49 15:35 (7)		19:24		20:27	60 19:28 (11)			
Potential sun hours	296	296	369	399	450	454				
Total, worst case	1583	430			1110	1856				
Sun reduction	0,44	0,46			0,47	0,54				
Oper. time red.	0,30	0,30			0,30	0,30				
Wind dir. red.	0,57	0,57			0,58	0,58				
Total reduction	0,07	0,08			0,08	0,09				
Total, real	118	33			88	171				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Real case Shadow receptor: F - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (121)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4,21	4,83	5,24	6,37	6,76	8,17	9,01	9,23	7,23	4,84	4,00	3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

	July		August		September		October		November		December					
1	05:29		18:34 (11)	05:54		18:51 (11)	06:25	06:56		06:31	14:28 (7)	07:07	14:20 (7)			
	20:39	62	19:36 (11)	20:19	33	19:24 (11)	19:35	18:44		16:56	28	14:56 (7)	16:31	51	15:11 (7)	
2	05:30		18:34 (11)	05:55		18:52 (11)	06:26	06:57		06:33	14:26 (7)	07:08	14:21 (7)			
	20:39	62	19:36 (11)	20:18	30	19:22 (11)	19:34	18:42		16:55	31	14:57 (7)	16:31	50	15:11 (7)	
3	05:30		18:34 (11)	05:56		18:55 (11)	06:27	06:58		06:34	14:24 (7)	07:09	14:21 (7)			
	20:39	62	19:36 (11)	20:17	24	19:19 (11)	19:32	18:40		16:54	35	14:59 (7)	16:31	50	15:11 (7)	
4	05:31		18:35 (11)	05:57		18:58 (11)	06:28	06:59		06:35	14:23 (7)	07:10	14:22 (7)			
	20:38	61	19:36 (11)	20:16	18	19:16 (11)	19:30	18:39		16:53	37	15:00 (7)	16:30	49	15:11 (7)	
5	05:31		18:34 (11)	05:58		19:03 (11)	06:29	07:00		06:36	14:21 (7)	07:11	14:23 (7)			
	20:38	62	19:36 (11)	20:15	8	19:11 (11)	19:29	18:37		16:51	40	15:01 (7)	16:30	49	15:12 (7)	
6	05:32		18:35 (11)	05:59			06:30	07:02		06:37	14:21 (7)	07:12	14:23 (7)			
	20:38	61	19:36 (11)	20:14			19:27	18:35		16:50	42	15:03 (7)	16:30	49	15:12 (7)	
7	05:33		18:35 (11)	06:00			06:31	07:03		06:39	14:19 (7)	07:13	14:24 (7)			
	20:38	61	19:36 (11)	20:12			19:25	18:34		16:49	44	15:03 (7)	16:30	48	15:12 (7)	
8	05:33		18:35 (11)	06:01			06:32	07:04		06:40	14:18 (7)	07:14	14:25 (7)			
	20:37	61	19:36 (11)	20:11			19:24	18:32		16:48	46	15:04 (7)	16:30	47	15:12 (7)	
9	05:34		18:36 (11)	06:02			06:33	07:05		06:41	14:18 (7)	07:15	14:25 (7)			
	20:37	61	19:37 (11)	20:10			19:22	18:30		16:47	47	15:05 (7)	16:30	47	15:12 (7)	
10	05:35		18:35 (11)	06:03			06:34	07:06		06:42	14:17 (7)	07:16	14:26 (7)			
	20:37	61	19:36 (11)	20:08			19:20	18:29		16:46	49	15:06 (7)	16:30	47	15:13 (7)	
11	05:35		18:36 (11)	06:04			06:36	07:07		06:44	14:16 (7)	07:17	14:27 (7)			
	20:36	60	19:36 (11)	20:07			19:18	18:27		16:45	50	15:06 (7)	16:30	46	15:13 (7)	
12	05:36		18:37 (11)	06:05			06:37	07:08		06:45	14:17 (7)	07:17	14:27 (7)			
	20:36	59	19:36 (11)	20:06			19:17	18:26		16:44	50	15:07 (7)	16:30	45	15:12 (7)	
13	05:37		18:37 (11)	06:06			06:38	07:09		06:46	14:16 (7)	07:18	14:28 (7)			
	20:35	60	19:37 (11)	20:04			19:15	18:24		16:43	51	15:07 (7)	16:30	45	15:13 (7)	
14	05:37		18:37 (11)	06:07			06:39	07:10		06:47	14:16 (7)	07:19	14:29 (7)			
	20:35	59	19:36 (11)	20:03			19:13	18:22		16:42	51	15:07 (7)	16:30	44	15:13 (7)	
15	05:38		18:37 (11)	06:08			06:40	07:11		06:48	14:15 (7)	07:20	14:29 (7)			
	20:34	59	19:36 (11)	20:02			19:12	18:21		16:41	53	15:08 (7)	16:31	45	15:14 (7)	
16	05:39		18:38 (11)	06:09			06:41	07:13		06:50	14:16 (7)	07:21	14:29 (7)			
	20:33	58	19:36 (11)	20:00			19:10	18:19		16:40	53	15:09 (7)	16:31	45	15:14 (7)	
17	05:40		18:39 (11)	06:10			06:42	07:14		06:51	14:15 (7)	07:21	14:30 (7)			
	20:33	57	19:36 (11)	19:59			19:08	18:18		16:39	54	15:09 (7)	16:31	44	15:14 (7)	
18	05:41		18:38 (11)	06:11			06:43	07:15		06:52	14:15 (7)	07:22	14:31 (7)			
	20:32	57	19:35 (11)	19:57			19:06	18:16		16:38	54	15:09 (7)	16:31	44	15:15 (7)	
19	05:42		18:39 (11)	06:12			06:44	07:16		06:53	14:16 (7)	07:22	14:31 (7)			
	20:31	56	19:35 (11)	19:56			19:05	18:15		16:38	54	15:10 (7)	16:32	44	15:15 (7)	
20	05:42		18:39 (11)	06:13			06:45	07:17		06:54	14:16 (7)	07:23	14:32 (7)			
	20:31	55	19:34 (11)	19:54			19:03	18:13		16:37	54	15:10 (7)	16:32	44	15:16 (7)	
21	05:43		18:40 (11)	06:14			06:46	07:18		06:56	14:16 (7)	07:24	14:32 (7)			
	20:30	54	19:34 (11)	19:53			19:01	18:12		16:36	54	15:10 (7)	16:33	44	15:16 (7)	
22	05:44		18:41 (11)	06:15			06:47	07:19		06:57	14:16 (7)	07:24	14:33 (7)			
	20:29	53	19:34 (11)	19:51			18:59	18:10		16:36	54	15:10 (7)	16:33	44	15:17 (7)	
23	05:45		18:42 (11)	06:16			06:48	07:21		06:58	14:17 (7)	07:25	14:33 (7)			
	20:28	51	19:33 (11)	19:50			18:58	18:09		16:35	54	15:11 (7)	16:34	44	15:17 (7)	
24	05:46		18:42 (11)	06:17			06:49	07:22		06:59	14:17 (7)	07:25	14:34 (7)			
	20:27	51	19:33 (11)	19:48			18:56	18:07		16:34	53	15:10 (7)	16:34	44	15:18 (7)	
25	05:47		18:43 (11)	06:18			06:50	06:23		07:00	14:17 (7)	07:26	14:34 (7)			
	20:26	49	19:32 (11)	19:47			18:54	17:06		16:34	53	15:10 (7)	16:35	44	15:18 (7)	
26	05:48		18:43 (11)	06:19			06:51	06:24		07:01	14:17 (7)	07:26	14:34 (7)			
	20:25	48	19:31 (11)	19:45			18:52	17:04		16:33	53	15:10 (7)	16:35	44	15:18 (7)	
27	05:49		18:44 (11)	06:20			06:52	06:25		07:03	14:18 (7)	07:26	14:35 (7)			
	20:25	46	19:30 (11)	19:43			18:51	17:03		16:33	52	15:10 (7)	16:36	44	15:19 (7)	
28	05:50		18:45 (11)	06:21			06:53	06:27		07:04	14:19 (7)	07:27	14:35 (7)			
	20:24	44	19:29 (11)	19:42			18:49	17:02		16:32	52	15:11 (7)	16:37	45	15:20 (7)	
29	05:51		18:46 (11)	06:22			06:54	06:28		07:05	14:19 (7)	07:27	14:36 (7)			
	20:23	42	19:28 (11)	19:40			18:47	17:00		16:32	52	15:11 (7)	16:37	44	15:20 (7)	
30	05:52		18:48 (11)	06:23			06:55	06:29		07:06	14:20 (7)	07:27	14:36 (7)			
	20:22	39	19:27 (11)	19:39			18:46	16:59	16	14:51 (7)	16:32	51	15:11 (7)	16:38	45	15:21 (7)
31	05:53		18:49 (11)	06:24			06:30	06:30		14:31 (7)		07:27	14:36 (7)			
	20:20	36	19:25 (11)	19:37			16:58	22	14:53 (7)		16:39	45	15:21 (7)			
Potential sun hours	461		429			375		345		296		286				
Total, worst case	1707		113					38		1451		1420				
Sun reduction	0,61		0,67					0,44		0,40		0,36				
Oper. time red.	0,30		0,30					0,30		0,30		0,30				
Wind dir. red.	0,58		0,58					0,57		0,57		0,57				
Total reduction	0,10		0,11					0,07		0,07		0,06				
Total, real	177		13					3		99		87				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Real case Shadow receptor: G - Shadow Receptor: 1,0 x 1,0 Azimuth: 0,0° Slope: 90,0° (122)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4,21	4,83	5,24	6,37	6,76	8,17	9,01	9,23	7,23	4,84	4,00	3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:27 16:40	07:13 17:15	06:37 17:50	06:45 19:25	05:58 19:57	05:29 20:28	05:29 20:39	05:52 (4) 20:19	05:53 19:35	06:25 18:44	06:31 16:56	07:07 16:31
2	07:28 16:41	07:12 17:16	06:35 17:51	06:43 19:26	05:57 19:59	05:28 20:28	05:30 20:39	05:52 (4) 20:18	05:54 19:34	06:26 18:42	06:57 16:55	07:08 16:31
3	07:28 16:42	07:11 17:17	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:38	05:53 (4) 20:17	05:55 19:32	06:27 18:40	06:58 16:54	07:09 16:30
4	07:28 16:43	07:10 17:19	06:32 17:53	06:40 19:28	05:54 20:01	05:27 20:30	05:31 20:38	05:54 (4) 20:16	05:56 19:30	06:28 18:39	06:59 16:52	07:10 16:30
5	07:28 16:43	07:09 17:20	06:30 17:54	06:38 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:54 (4) 20:15	05:57 19:29	06:29 18:37	07:00 16:51	07:11 16:30
6	07:28 16:44	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31	05:32 20:38	05:55 (4) 20:13	05:58 19:27	06:30 18:35	07:01 16:50	07:12 16:30
7	07:28 16:45	07:07 17:22	06:27 17:57	06:35 19:31	05:51 20:04	05:26 20:32	05:32 20:37	05:55 (4) 20:12	06:00 19:25	06:31 18:34	07:02 16:49	07:13 16:30
8	07:27 16:46	07:06 17:24	06:26 17:58	06:33 19:32	05:49 20:05	05:26 20:33	05:33 20:37	05:58 (4) 20:11	06:01 19:23	06:32 18:32	07:04 16:48	07:14 16:30
9	07:27 16:47	07:05 17:25	06:24 17:59	06:32 19:33	05:48 20:06	05:26 20:33	05:34 20:37	06:05 (4) 20:10	06:02 19:22	06:33 18:30	07:05 16:41	07:15 16:30
10	07:27 16:48	07:04 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:34 20:36	06:07 (4) 20:36	06:03 19:20	06:34 18:29	07:06 16:46	07:16 16:30
11	07:27 16:50	07:02 17:28	06:21 18:01	06:28 19:36	05:46 20:08	05:26 20:34	05:35 20:36	06:04 (4) 20:36	06:04 19:18	06:35 18:27	07:07 16:45	07:16 16:30
12	07:27 16:51	07:01 17:29	06:19 18:02	06:27 19:37	05:45 20:09	05:25 20:35	05:36 20:35	06:18 (4) 20:35	06:05 19:17	06:36 18:25	07:08 16:44	07:17 16:30
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:25 20:35	05:37 20:35	06:19 (4) 20:35	06:06 19:15	06:37 18:24	07:09 16:43	07:18 16:30
14	07:26 16:53	06:58 17:31	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:37 20:34	06:20 (4) 20:34	06:07 19:13	06:38 18:22	07:10 16:42	07:19 16:30
15	07:25 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36	05:38 20:34	06:20 (4) 20:34	06:08 19:11	06:39 18:21	07:11 16:41	07:20 16:30
16	07:25 16:55	06:56 17:34	06:12 18:07	06:20 19:41	05:41 20:13	05:25 20:37	05:39 20:33	06:21 (4) 20:33	06:09 19:10	06:40 18:19	07:12 16:40	07:20 16:31
17	07:25 16:56	06:54 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37	05:40 20:33	06:22 (4) 20:33	06:10 19:08	06:41 18:17	07:14 16:39	07:21 16:31
18	07:24 16:57	06:53 17:36	06:09 18:09	06:17 19:43	05:39 20:15	05:25 20:37	05:41 20:32	06:23 (4) 20:32	06:11 19:06	06:43 18:16	07:15 16:38	07:22 16:31
19	07:24 16:59	06:52 17:38	06:07 18:10	06:16 19:44	05:38 20:16	05:25 20:38	05:41 20:31	06:24 (4) 20:31	06:12 19:04	06:44 18:14	07:16 16:38	07:22 16:32
20	07:23 17:00	06:50 17:39	06:05 18:11	06:14 19:45	05:37 20:17	05:26 20:38	05:42 20:30	06:23 (4) 20:30	06:13 19:03	06:45 18:13	07:17 16:37	07:23 16:32
21	07:22 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:24 (4) 20:30	06:14 19:01	06:46 18:11	07:18 16:36	07:23 16:33
22	07:22 17:02	06:47 17:41	06:02 18:14	06:11 19:48	05:35 20:19	05:26 20:38	05:44 20:29	06:25 (4) 20:29	06:15 19:01	06:47 18:09	07:19 16:35	07:24 16:33
23	07:21 17:03	06:46 17:42	06:00 18:15	06:10 19:49	05:34 20:20	05:26 20:38	05:45 20:28	06:26 (4) 20:28	06:16 19:00	06:48 18:08	07:20 16:35	07:25 16:34
24	07:20 17:05	06:44 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:26 20:39	05:46 20:27	06:27 (4) 20:27	06:17 19:48	06:49 18:56	07:22 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:26	06:28 (4) 20:26	06:18 19:47	06:50 18:54	07:23 16:34	07:25 16:35
26	07:19 17:07	06:41 17:46	05:55 18:18	06:05 19:52	05:32 20:23	05:27 20:39	05:48 20:25	06:29 (4) 20:25	06:19 19:45	06:51 18:52	07:24 16:33	07:26 16:35
27	07:18 17:08	06:40 17:47	05:53 18:19	06:04 19:53	05:32 20:24	05:27 20:39	05:49 20:24	06:30 (4) 20:24	06:20 19:43	06:52 18:51	07:25 16:33	07:26 16:36
28	07:17 17:10	06:38 17:48	05:52 18:20	06:02 19:54	05:31 20:24	05:28 20:39	05:50 20:23	06:31 (4) 20:23	06:21 19:42	06:53 18:49	07:26 16:32	07:26 16:37
29	07:16 17:11		06:50 19:21	06:01 19:55	05:30 20:25	05:28 20:39	05:51 20:22	06:32 (4) 20:22	06:22 19:40	06:54 18:47	07:27 16:32	07:27 16:37
30	07:15 17:12		06:48 19:22	06:00 19:56	05:30 20:26	05:29 20:39	05:52 20:21	06:33 (4) 20:21	06:23 19:39	06:55 18:45	07:28 16:59	07:27 16:38
31	07:14 17:13		06:47 19:24		05:29 20:27		05:53 20:20	06:34 (4) 20:20	06:24 19:37	06:30 16:57		07:27 16:39
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Total, worst case						822		196				
Sun reduction						0,54		0,61				
Oper. time red.						0,30		0,30				
Wind dir. red.						0,57		0,57				
Total reduction						0,09		0,10				
Total, real						75		20				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Real case Shadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (124)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4,21	4,83	5,24	6,37	6,76	8,17	9,01	9,23	7,23	4,84	4,00	3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

	January	February	March	April	May	June	
1	07:28 16:40	07:50 (7) 08:42 (7)	07:14 17:15	07:34 (10) 08:47 (7)	06:37 17:50	06:45 19:25	05:58 20:28
2	07:28 16:41	07:50 (7) 08:42 (7)	07:13 17:16	07:33 (10) 08:47 (7)	06:35 17:51	06:43 19:26	05:57 19:59
3	07:28 16:42	07:50 (7) 08:43 (7)	07:12 17:17	07:32 (10) 08:46 (7)	06:34 17:52	06:42 19:27	05:56 20:00
4	07:28 16:43	07:50 (7) 08:44 (7)	07:11 17:19	07:31 (10) 08:45 (7)	06:32 17:53	06:40 19:28	05:55 20:01
5	07:28 16:44	07:50 (7) 08:44 (7)	07:10 17:20	07:30 (10) 08:44 (7)	06:31 17:55	06:38 19:29	05:53 20:02
6	07:28 16:45	07:50 (7) 08:45 (7)	07:08 17:21	07:28 (10) 08:41 (7)	06:29 17:56	06:37 19:30	05:52 20:03
7	07:28 16:46	07:50 (7) 08:46 (7)	07:07 17:23	07:27 (10) 08:40 (7)	06:27 17:57	06:35 19:31	05:51 20:04
8	07:28 16:47	07:50 (7) 08:46 (7)	07:06 17:24	07:26 (10) 08:38 (7)	06:26 17:58	06:33 19:33	05:50 20:05
9	07:27 16:48	07:50 (7) 08:47 (7)	07:05 17:25	07:25 (10) 08:36 (7)	06:24 17:59	06:32 19:34	05:48 20:06
10	07:27 16:49	07:49 (7) 08:47 (7)	07:04 17:26	07:24 (10) 08:33 (7)	06:22 18:00	06:30 19:35	05:47 20:07
11	07:27 16:50	07:49 (7) 08:47 (7)	07:02 17:28	07:22 (10) 08:25 (7)	06:21 18:02	06:29 19:36	05:46 20:08
12	07:27 16:51	07:49 (7) 08:48 (7)	07:01 17:29	07:21 (10) 07:36 (10)	06:19 18:03	06:27 19:37	05:45 20:09
13	07:26 16:52	07:48 (7) 08:48 (7)	07:00 17:30	07:26 (10) 07:32 (10)	06:17 18:04	06:25 19:38	05:44 20:10
14	07:26 16:53	07:48 (7) 08:49 (7)	06:59 17:31	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36
15	07:26 16:54	07:47 (7) 08:49 (7)	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36
16	07:25 16:55	07:48 (7) 08:49 (7)	06:56 17:34	06:12 18:07	06:21 19:41	05:41 20:13	05:25 20:37
17	07:25 16:56	07:48 (7) 08:49 (7)	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37
18	07:24 16:58	07:49 (7) 08:50 (7)	06:53 17:36	06:09 18:09	06:17 19:43	05:39 20:15	05:25 20:37
19	07:24 16:59	07:49 (7) 08:50 (7)	06:52 17:38	06:07 18:11	06:16 19:45	05:38 20:16	05:26 20:38
20	07:23 17:00	07:49 (7) 08:50 (7)	06:50 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38
21	07:23 17:01	07:51 (7) 08:51 (7)	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38
22	07:22 17:02	07:51 (7) 08:50 (7)	06:48 17:41	06:02 18:14	06:11 19:48	05:35 20:19	05:26 20:39
23	07:21 17:04	07:51 (7) 08:50 (7)	06:46 17:43	06:00 18:15	06:10 19:49	05:35 20:20	05:26 20:39
24	07:21 17:05	07:51 (7) 08:50 (7)	06:45 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:27 20:39
25	07:20 17:06	07:53 (7) 08:51 (7)	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39
26	07:19 17:07	07:40 (10) 08:50 (7)	06:42 17:46	05:55 18:18	06:05 19:52	05:32 20:23	05:27 20:39
27	07:18 17:09	07:39 (10) 08:50 (7)	06:40 17:47	05:54 18:19	06:04 19:53	05:32 20:24	05:27 20:39
28	07:17 17:10	07:38 (10) 08:49 (7)	06:38 17:49	05:52 18:20	06:03 19:54	05:31 20:25	05:28 20:39
29	07:16 17:11	07:37 (10) 08:49 (7)		06:50 19:22	06:01 19:55	05:31 20:25	05:28 20:39
30	07:16 17:12	07:36 (10) 08:49 (7)		06:49 19:23	06:00 19:57	05:30 20:26	05:29 20:39
31	07:15 17:14	07:35 (10) 08:48 (7)		06:47 19:24		05:29 20:27	
Potential sun hours	296	296		369	399	450	454
Total, worst case	1805		553				
Sun reduction	0,44		0,46				
Oper. time red.	0,30		0,30				
Wind dir. red.	0,65		0,64				
Total reduction	0,09		0,09				
Total, real	153		48				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Real case Shadow receptor: H - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (124)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4,21	4,83	5,24	6,37	6,76	8,17	9,01	9,23	7,23	4,84	4,00	3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

	July	August	September	October	November	December			
1	05:29	05:54	06:25	06:56	06:31	06:53 (10)	07:07	07:31 (7)	
	20:39	20:19	19:35	18:44	16:56	08:02 (7)	16:31	59 08:30 (7)	
2	05:30	05:55	06:26	06:57	06:33	06:55 (10)	07:08	07:32 (7)	
	20:39	20:18	19:34	18:42	16:55	08:06 (7)	16:31	58 08:30 (7)	
3	05:30	05:56	06:27	06:58	06:34	06:56 (10)	07:09	07:33 (7)	
	20:39	20:17	19:32	18:41	16:54	08:08 (7)	16:31	57 08:30 (7)	
4	05:31	05:57	06:28	06:59	06:35	06:57 (10)	07:10	07:34 (7)	
	20:38	20:16	19:30	18:39	16:53	08:10 (7)	16:30	56 08:30 (7)	
5	05:31	05:58	06:29	07:01	06:36	06:58 (10)	07:11	07:35 (7)	
	20:38	20:15	19:29	18:37	16:51	08:11 (7)	16:30	56 08:31 (7)	
6	05:32	05:59	06:30	07:02	06:37	07:00 (10)	07:12	07:36 (7)	
	20:38	20:14	19:27	18:35	16:50	08:14 (7)	16:30	55 08:31 (7)	
7	05:33	06:00	06:31	07:03	06:39	07:01 (10)	07:13	07:37 (7)	
	20:38	20:12	19:25	18:34	16:49	08:15 (7)	16:30	54 08:31 (7)	
8	05:33	06:01	06:32	07:04	06:40	07:02 (10)	07:14	07:38 (7)	
	20:37	20:11	19:24	18:32	16:48	08:16 (7)	16:30	54 08:32 (7)	
9	05:34	06:02	06:34	07:05	06:41	07:04 (10)	07:15	07:39 (7)	
	20:37	20:10	19:22	18:30	16:47	08:18 (7)	16:30	53 08:32 (7)	
10	05:35	06:03	06:35	07:06	06:42	07:05 (10)	07:16	07:40 (7)	
	20:37	20:09	19:20	18:29	16:46	08:18 (7)	16:30	53 08:33 (7)	
11	05:35	06:04	06:36	07:07	06:44	07:06 (10)	07:17	07:41 (7)	
	20:36	20:07	19:19	18:27	16:45	08:19 (7)	16:30	52 08:33 (7)	
12	05:36	06:05	06:37	07:08	06:45	07:08 (10)	07:17	07:42 (7)	
	20:36	20:06	19:17	18:26	16:44	08:20 (7)	16:30	52 08:34 (7)	
13	05:37	06:06	06:38	07:09	06:46	07:09 (10)	07:18	07:42 (7)	
	20:35	20:04	19:15	18:24	16:43	08:21 (7)	16:30	51 08:33 (7)	
14	05:38	06:07	06:39	07:10	06:47	07:10 (10)	07:19	07:43 (7)	
	20:35	20:03	19:13	18:22	16:42	08:21 (7)	16:30	51 08:34 (7)	
15	05:38	06:08	06:40	07:12	06:48	07:12 (10)	07:20	07:44 (7)	
	20:34	20:02	19:12	18:21	16:41	08:23 (7)	16:31	50 08:34 (7)	
16	05:39	06:09	06:41	07:13	06:50	07:13 (10)	07:21	07:44 (7)	
	20:33	20:00	19:10	18:19	16:40	08:23 (7)	16:31	50 08:34 (7)	
17	05:40	06:10	06:42	07:14	06:51	07:26 (7)	07:21	07:45 (7)	
	20:33	19:59	19:08	18:18	16:39	08:24 (7)	16:31	50 08:35 (7)	
18	05:41	06:11	06:43	07:15	06:52	07:25 (7)	07:22	07:46 (7)	
	20:32	19:57	19:06	18:16	16:39	08:24 (7)	16:31	50 08:36 (7)	
19	05:42	06:12	06:44	07:16	06:53	07:26 (7)	07:23	07:46 (7)	
	20:31	19:56	19:05	18:15	16:38	08:25 (7)	16:32	49 08:35 (7)	
20	05:42	06:13	06:45	07:17	06:55	07:26 (7)	07:23	07:47 (7)	
	20:31	19:54	19:03	18:13	16:37	08:25 (7)	16:32	49 08:36 (7)	
21	05:43	06:14	06:46	07:18	06:56	07:26 (7)	07:24	07:47 (7)	
	20:30	19:53	19:01	18:12	16:36	08:26 (7)	16:33	49 08:36 (7)	
22	05:44	06:15	06:47	07:20	06:57	07:25 (7)	07:24	07:48 (7)	
	20:29	19:51	18:59	18:10	16:36	08:26 (7)	16:33	49 08:37 (7)	
23	05:45	06:16	06:48	07:21	06:58	07:26 (7)	07:25	07:48 (7)	
	20:28	19:50	18:58	18:09	16:35	08:27 (7)	16:34	49 08:37 (7)	
24	05:46	06:17	06:49	07:22	06:59	07:26 (7)	07:25	07:49 (7)	
	20:27	19:48	18:56	18:07	16:34	08:27 (7)	16:34	49 08:38 (7)	
25	05:47	06:18	06:50	06:23	07:00	07:26 (7)	07:26	07:49 (7)	
	20:26	19:47	18:54	17:06	16:34	08:27 (7)	16:35	50 08:39 (7)	
26	05:48	06:19	06:51	06:24	07:02	07:26 (7)	07:26	07:49 (7)	
	20:26	19:45	18:53	17:04	16:33	08:28 (7)	16:35	50 08:39 (7)	
27	05:49	06:20	06:52	06:25	07:03	07:26 (7)	07:26	07:50 (7)	
	20:25	19:44	18:51	17:03	16:33	08:28 (7)	16:36	50 08:40 (7)	
28	05:50	06:21	06:53	06:27	07:04	07:28 (7)	07:27	07:50 (7)	
	20:24	19:42	18:49	17:02	16:32	08:29 (7)	16:37	50 08:40 (7)	
29	05:51	06:22	06:54	06:28	06:53 (10)	07:05	07:29 (7)	07:27	07:50 (7)
	20:23	19:40	18:47	17:00	9 07:02 (10)	16:32	60 08:29 (7)	16:37	51 08:41 (7)
30	05:52	06:23	06:55	06:29	06:51 (10)	07:06	07:30 (7)	07:27	07:50 (7)
	20:22	19:39	18:46	16:59	15 07:06 (10)	16:32	59 08:29 (7)	16:38	51 08:41 (7)
31	05:53	06:24	06:56	06:30	06:52 (10)	07:07	07:27	07:50 (7)	
	20:21	19:37	16:58	25 07:57 (7)	16:31	51 08:41 (7)	16:39	51 08:41 (7)	
Potential sun hours	461	429	375	345	296	286			
Total, worst case				49	1713	1608			
Sun reduction				0,44	0,40	0,36			
Oper. time red.				0,30	0,30	0,30			
Wind dir. red.				0,62	0,65	0,65			
Total reduction				0,08	0,08	0,07			
Total, real				4	133	113			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Real case Shadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (125)
 Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]
 Assumptions for shadow calculations

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 338 117 65 65 130 117 117 507 338 65 208 533 2 600

	January	February	March	April	May	June
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:59 19:58	06:18 (11) 20:28
2	07:28 16:41	07:13 17:16	06:35 17:51	06:44 19:26	05:57 19:59	06:17 (11) 20:29
3	07:28 16:42	07:12 17:18	06:34 17:52	06:42 19:27	05:56 20:00	06:15 (11) 20:29
4	07:28 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:55 20:01	06:14 (11) 20:30
5	07:28 16:44	07:10 17:20	06:31 17:55	06:38 19:29	05:53 20:02	06:13 (11) 20:31
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	06:12 (11) 20:31
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:31	05:51 20:04	06:11 (11) 20:32
8	07:28 16:47	07:06 17:24	07:26 (7) 17:58	06:26 19:33	05:50 20:05	06:14 (11) 20:33
9	07:27 16:48	07:05 17:25	07:25 (7) 17:59	06:24 19:34	05:48 20:06	06:17 (11) 20:33
10	07:27 16:49	07:04 17:26	07:24 (7) 18:00	06:22 19:35	05:47 20:07	06:14 (11) 20:34
11	07:27 16:50	07:03 17:28	07:22 (7) 18:02	06:21 19:36	05:46 20:08	06:11 (11) 20:34
12	07:27 16:51	07:01 17:29	07:21 (7) 18:03	06:19 19:37	05:45 20:09	06:11 (11) 20:35
13	07:26 16:52	07:00 17:30	07:20 (7) 18:04	06:17 19:38	05:44 20:10	06:11 (11) 20:36
14	07:26 16:53	06:59 17:32	07:18 (7) 18:05	06:16 19:39	05:43 20:11	06:11 (11) 20:36
15	07:26 16:54	06:57 17:33	07:17 (7) 18:06	06:14 19:40	05:42 20:12	06:11 (11) 20:36
16	07:25 16:55	06:56 17:34	07:16 (7) 18:07	06:12 19:41	05:41 20:13	06:11 (11) 20:37
17	07:25 16:56	06:55 17:35	07:14 (7) 18:08	06:11 19:42	05:40 20:14	06:11 (11) 20:37
18	07:24 16:58	06:53 17:37	07:13 (7) 18:09	06:09 19:43	05:39 20:15	06:11 (11) 20:38
19	07:24 16:59	06:52 17:38	07:11 (7) 18:11	06:07 19:45	05:38 20:16	06:11 (11) 20:38
20	07:23 17:00	06:50 17:39	07:10 (7) 18:12	06:06 19:46	06:14 20:17	06:33 (11) 20:38
21	07:23 17:01	06:49 17:40	07:08 (7) 18:13	06:13 19:47	06:32 (11) 20:18	06:35 (11) 20:38
22	07:22 17:02	06:48 17:41	07:07 (7) 18:14	06:12 19:48	06:30 (11) 20:19	06:35 (11) 20:39
23	07:21 17:04	06:46 17:43	07:05 (7) 18:15	06:10 19:49	06:29 (11) 20:20	06:35 (11) 20:39
24	07:21 17:05	06:45 17:44	07:06 (7) 18:16	06:08 19:50	06:27 (11) 20:21	06:35 (11) 20:39
25	07:20 17:06	06:43 17:45	07:09 (7) 18:17	06:07 19:51	06:26 (11) 20:22	06:35 (11) 20:39
26	07:19 17:07	06:42 17:46	05:55 18:18	06:05 19:52	06:25 (11) 20:23	06:35 (11) 20:39
27	07:18 17:09	06:40 17:47	05:54 18:19	06:04 19:53	06:23 (11) 20:24	06:35 (11) 20:39
28	07:17 17:10	06:39 17:49	05:52 18:21	06:03 19:54	06:22 (11) 20:25	06:35 (11) 20:39
29	07:17 17:11		06:50 19:22	06:01 19:55	06:21 (11) 20:25	06:35 (11) 20:39
30	07:16 17:12		06:49 19:23	06:00 19:57	06:19 (11) 20:26	06:35 (11) 20:39
31	07:15 17:14		06:47 19:24		06:32 (11) 20:27	06:35 (11) 20:39
Potential sun hours	296	296	369	399	450	454
Total, worst case			230	90		92
Sun reduction			0,46	0,48		0,47
Oper. time red.			0,30	0,30		0,30
Wind dir. red.			0,58	0,55		0,55
Total reduction			0,08	0,08		0,08
Total, real			18	7		7

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Real case Shadow receptor: I - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (125)
 Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 338 117 65 65 130 117 117 507 338 65 208 533 2 600

	July	August	September	October	November	December
1	05:29 20:39	05:54 20:19		06:25 19:35	06:56 18:44	06:31 16:56
2	05:30 20:39	05:55 20:18		06:26 19:34	06:57 18:42	5 06:53 (7) 16:31
3	05:30 20:39	05:56 20:17		06:27 19:32	06:58 18:41	3 06:55 (7) 16:31
4	05:31 20:38	05:57 20:16		06:28 19:30	06:59 18:39	1 06:56 (7) 16:31
5	05:31 20:38	05:58 20:15	8 06:21 (11)	06:29 19:29	07:01 18:37	06:35 16:51
6	05:32 20:38	05:59 20:14	12 06:22 (11)	06:30 19:27	07:02 18:36	06:38 16:50
7	05:33 20:38	06:00 20:12	13 06:23 (11)	06:31 19:25	07:03 18:34	06:39 16:49
8	05:33 20:37	06:01 20:11	13 06:24 (11)	06:32 19:24	07:04 18:32	06:40 16:48
9	05:34 20:37	06:02 20:10	14 06:25 (11)	06:33 19:22	07:05 18:31	06:41 16:47
10	05:35 20:37	06:03 20:09	14 06:26 (11)	06:34 19:20	07:06 18:29	06:42 16:46
11	05:35 20:36	06:04 20:07	13 06:27 (11)	06:35 19:19	07:07 18:27	06:44 16:45
12	05:36 20:36	06:05 20:06	13 06:28 (11)	06:36 19:17	07:08 18:26	06:45 16:44
13	05:37 20:35	06:06 20:05	13 06:29 (11)	06:37 19:15	07:09 18:24	06:46 16:43
14	05:38 20:35	06:07 20:03	12 06:30 (11)	06:38 19:13	07:10 18:22	06:47 16:42
15	05:38 20:34	06:08 20:02	11 06:31 (11)	06:39 19:12	07:11 18:21	06:49 16:41
16	05:39 20:33	06:09 20:00	10 06:32 (11)	06:40 19:10	07:12 18:19	06:50 16:40
17	05:40 20:33	06:10 19:59	10 06:33 (11)	06:41 19:08	07:13 18:18	06:51 16:39
18	05:41 20:32	06:11 19:57	8 06:34 (11)	06:42 19:06	12 07:14 (7) 18:16	06:52 16:39
19	05:42 20:31	06:12 19:56	7 06:35 (11)	06:43 19:05	18 07:15 (7) 18:15	06:53 16:38
20	05:42 20:31	06:13 19:54	6 06:36 (11)	06:44 19:03	19 07:16 (7) 18:13	06:54 16:37
21	05:43 20:30	06:14 19:53	5 06:37 (11)	06:45 19:01	19 07:17 (7) 18:12	06:55 16:36
22	05:44 20:29	06:15 19:51	3 06:38 (11)	06:46 18:59	19 07:18 (7) 18:10	06:56 16:36
23	05:45 20:28	06:16 19:50	2 06:39 (11)	06:47 18:58	18 07:19 (7) 18:09	06:57 16:35
24	05:46 20:27	06:17 19:48		06:48 18:56	18 08:00 (7) 18:07	06:58 16:34
25	05:47 20:26	06:18 19:47		06:49 18:54	17 08:01 (7) 17:06	06:59 16:34
26	05:48 20:26	06:19 19:45		06:50 18:53	16 08:02 (7) 17:04	07:00 16:33
27	05:49 20:25	06:20 19:44		06:51 18:51	15 08:03 (7) 17:03	07:01 16:33
28	05:50 20:24	06:21 19:42		06:52 18:50	14 08:04 (7) 17:02	07:02 16:32
29	05:51 20:23	06:22 19:40		06:53 18:47	13 08:05 (7) 17:01	07:03 16:32
30	05:52 20:22	06:23 19:39		06:54 18:46	12 08:06 (7) 17:00	07:04 16:32
31	05:53 20:21	06:24 19:37		06:55 18:45	11 08:07 (7) 16:59	07:05 16:32
Potential sun hours	461	429		375	345	296
Total, worst case			187		222	9
Sun reduction			0,67		0,44	0,40
Oper. time red.			0,30		0,30	0,30
Wind dir. red.			0,55		0,58	0,58
Total reduction			0,11		0,08	0,07
Total, real			20		17	1

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Real case Shadow receptor: J - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (126)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:59 19:58	05:29 20:28	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	07:28 16:41	07:13 17:16	06:35 17:51	06:44 19:26	05:57 19:59	05:28 20:29	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	07:28 16:42	07:12 17:18	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:41	06:34 16:54	07:09 16:31
4	07:28 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:55 20:01	05:28 20:30	05:31 20:39	05:57 20:16	06:28 19:31	07:00 18:39	06:35 16:53	07:10 16:30
5	07:28 16:44	07:10 17:20	06:31 17:55	06:39 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:58 20:15	06:29 19:29	07:01 18:37	06:36 16:51	07:11 16:30
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:32	05:32 20:38	05:59 20:14	06:31 19:27	07:02 18:36	06:38 16:50	07:12 16:30
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:32	05:51 20:04	05:27 20:32	05:33 20:38	06:00 20:12	06:32 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	07:28 16:47	07:06 17:24	06:26 17:58	06:34 19:33	05:50 20:05	05:26 20:33	05:33 20:37	06:01 20:11	06:33 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	07:28 16:48	07:05 17:25	06:24 17:59	06:32 19:34	05:48 20:06	05:26 20:33	05:34 20:37	06:02 20:10	06:34 19:22	07:05 18:31	06:41 16:47	07:15 16:30
10	07:27 16:49	07:04 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:35 20:37	06:03 20:09	06:35 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:03 17:28	06:21 18:02	06:29 19:36	05:46 20:08	05:26 20:35	05:35 20:36	06:04 20:07	06:36 19:19	07:07 18:27	06:44 16:45	07:17 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:26 20:35	05:36 20:36	06:05 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:18 16:30
13	07:27 16:52	07:00 17:30	06:18 18:04	06:25 19:38	05:44 20:10	05:25 20:36	05:37 20:35	06:06 20:05	06:38 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:59 17:32	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:38 20:35	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:13	05:25 20:36	05:38 20:34	06:08 20:02	06:40 19:12	07:12 18:21	06:49 16:41	07:20 16:31
16	07:25 16:55	06:56 17:34	06:12 18:07	06:21 19:41	05:41 20:14	05:25 20:37	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:21 16:31
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:15	05:25 20:37	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	07:24 16:58	06:53 17:37	06:09 18:09	06:17 19:44	05:39 20:15	05:25 20:38	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:39	07:22 16:32
19	07:24 16:59	06:52 17:38	06:07 18:11	06:16 19:45	05:38 20:16	05:26 20:38	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:23 16:32
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38	05:42 20:31	06:13 19:54	06:45 19:03	07:17 18:13	06:55 16:37	07:23 16:32
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 16:33
22	07:22 17:02	06:48 17:41	06:02 18:14	06:11 19:48	05:35 20:19	05:26 20:39	05:44 20:29	06:15 19:51	06:47 19:00	07:20 18:10	06:57 16:36	07:24 16:33
23	07:21 17:04	06:46 17:43	06:01 18:15	06:10 19:49	05:35 20:20	05:26 20:39	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	07:21 17:05	06:45 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:27 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:27	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:26 16:35
26	07:19 17:07	06:42 17:46	05:55 18:18	06:05 19:52	05:32 20:23	05:27 20:39	05:48 20:26	06:19 19:45	06:51 18:53	06:24 17:04	07:02 16:33	07:26 16:35
27	07:18 17:09	06:40 17:48	05:54 18:19	06:04 19:53	05:32 20:24	05:28 20:39	05:49 20:25	06:20 19:44	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	07:17 17:10	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
29	07:17 17:11		06:50 19:22	06:01 19:56	05:31 20:26	05:28 20:39	05:51 20:23	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:38
30	07:16 17:12		06:49 19:23	06:00 19:57	05:30 20:26	05:29 20:39	05:52 20:22	06:23 19:39	06:55 18:46	06:29 16:59	07:06 16:32	07:27 16:38
31	07:15 17:14		06:47 19:24		05:29 20:27		05:53 20:21	06:24 19:37		06:30 16:58		07:27 16:39
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Real case Shadow receptor: K - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (127)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4,21	4,83	5,24	6,37	6,76	8,17	9,01	9,23	7,23	4,84	4,00	3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

	January	February	March	April	May	June		
1	07:27 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:58 19:57	05:29 20:28	19:24 (1) 31 19:55 (1)	
2	07:28 16:41	07:13 17:16	06:35 17:51	06:43 19:26	05:57 19:59	05:28 20:28	19:25 (1) 30 19:55 (1)	
3	07:28 16:42	07:11 17:17	16:28 (2) 16:29 (2)	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	19:26 (1) 29 19:55 (1)
4	07:28 16:43	07:10 17:19	16:27 (2) 16:30 (2)	06:32 17:53	06:40 19:28	05:54 20:01	05:27 20:30	19:26 (1) 28 19:54 (1)
5	07:28 16:43	07:09 17:20	16:25 (2) 16:31 (2)	06:30 17:54	06:38 19:29	05:53 20:02	05:27 20:31	19:27 (1) 27 19:54 (1)
6	07:28 16:44	07:08 17:21	16:24 (2) 16:33 (2)	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31	19:28 (1) 26 19:54 (1)
7	07:28 16:45	07:07 17:22	16:24 (2) 16:34 (2)	06:27 17:57	06:35 19:31	05:51 20:04	19:27 (1) 20:32	19:29 (1) 25 19:54 (1)
8	07:27 16:46	07:06 17:24	16:23 (2) 16:36 (2)	06:26 17:58	06:33 19:32	05:49 20:05	19:25 (1) 19:29 (1)	05:26 24 19:53 (1)
9	07:27 16:47	07:05 17:25	16:23 (2) 16:38 (2)	06:24 17:59	06:32 19:33	05:48 20:06	19:24 (1) 19:30 (1)	05:26 24 19:53 (1)
10	07:27 16:48	07:04 17:26	16:22 (2) 16:38 (2)	06:22 18:00	06:30 19:35	05:47 20:07	19:23 (1) 19:32 (1)	05:26 23 19:53 (1)
11	07:27 16:50	07:02 17:28	16:22 (2) 16:40 (2)	06:21 18:01	06:28 19:36	05:46 20:08	19:23 (1) 19:33 (1)	05:26 22 19:53 (1)
12	07:27 16:51	07:01 17:29	16:22 (2) 16:42 (2)	06:19 18:03	06:27 19:37	05:45 20:09	19:22 (1) 19:35 (1)	05:25 21 19:53 (1)
13	07:26 16:52	07:00 17:30	16:21 (2) 16:42 (2)	06:17 18:04	06:25 19:38	05:44 20:10	19:22 (1) 19:36 (1)	05:25 21 19:53 (1)
14	07:26 16:53	06:58 17:31	16:21 (2) 16:44 (2)	06:16 18:05	06:24 19:39	05:43 20:11	19:21 (1) 19:38 (1)	05:25 20 19:53 (1)
15	07:26 16:54	06:57 17:33	16:21 (2) 16:46 (2)	06:14 18:06	06:22 19:40	05:42 20:12	19:21 (1) 19:39 (1)	05:25 20 19:53 (1)
16	07:25 16:55	06:56 17:34	16:21 (2) 16:47 (2)	06:12 18:07	06:20 19:41	05:41 20:13	19:21 (1) 19:41 (1)	05:25 19 19:53 (1)
17	07:25 16:56	06:54 17:35	16:21 (2) 16:48 (2)	06:11 18:08	06:19 19:42	05:40 20:14	19:20 (1) 19:42 (1)	05:25 18 19:52 (1)
18	07:24 16:57	06:53 17:36	16:22 (2) 16:50 (2)	06:09 18:09	06:17 19:43	05:39 20:15	19:20 (1) 19:43 (1)	05:25 18 19:52 (1)
19	07:24 16:59	06:52 17:38	16:22 (2) 16:51 (2)	06:07 18:10	06:16 19:44	05:38 20:16	19:21 (1) 19:45 (1)	05:25 17 19:52 (1)
20	07:23 17:00	06:50 17:39	16:23 (2) 16:53 (2)	06:05 18:12	06:14 19:45	05:37 20:17	19:21 (1) 19:47 (1)	05:26 17 19:52 (1)
21	07:22 17:01	06:49 17:40	16:23 (2) 16:54 (2)	06:04 18:13	06:13 19:47	05:36 20:18	19:21 (1) 19:48 (1)	05:26 17 19:52 (1)
22	07:22 17:02	06:47 17:41	16:24 (2) 16:56 (2)	06:02 18:14	06:11 19:48	05:35 20:19	19:21 (1) 19:49 (1)	05:26 17 19:53 (1)
23	07:21 17:03	06:46 17:42	16:24 (2) 16:56 (2)	06:00 18:15	06:10 19:49	05:35 20:20	19:22 (1) 19:51 (1)	05:26 17 19:53 (1)
24	07:20 17:05	06:44 17:44	16:26 (2) 16:56 (2)	05:59 18:16	06:08 19:50	05:34 20:21	19:22 (1) 19:52 (1)	05:26 18 19:53 (1)
25	07:20 17:06	06:43 17:45	16:27 (2) 16:54 (2)	05:57 18:17	06:07 19:51	05:33 20:22	19:22 (1) 19:53 (1)	05:27 18 19:54 (1)
26	07:19 17:07	06:41 17:46	16:29 (2) 16:52 (2)	05:55 18:18	06:05 19:52	05:32 20:23	19:23 (1) 19:54 (1)	05:27 18 19:54 (1)
27	07:18 17:08	06:40 17:47	16:31 (2) 16:49 (2)	05:54 18:19	06:04 19:53	05:32 20:24	19:23 (1) 19:55 (1)	05:27 20 19:55 (1)
28	07:17 17:10	06:38 17:49	16:35 (2) 16:46 (2)	05:52 18:20	06:02 19:54	05:31 20:24	19:23 (1) 19:55 (1)	05:28 20 19:56 (1)
29	07:16 17:11		06:50 19:21	06:01 19:55	05:30 20:25	19:24 (1) 19:56 (1)	05:28 20:39	19:35 (1) 21 19:56 (1)
30	07:15 17:12		06:48 19:23	06:00 19:56	05:30 20:26	19:24 (1) 19:55 (1)	05:29 20:39	19:36 (1) 21 19:57 (1)
31	07:14 17:14		06:47 19:24		05:29 20:27	19:25 (1) 19:55 (1)		
Potential sun hours	296	296	369	399	450	454		
Total, worst case		524			540	647		
Sun reduction		0,46			0,47	0,54		
Oper. time red.		0,30			0,30	0,30		
Wind dir. red.		0,56			0,59	0,59		
Total reduction		0,08			0,08	0,09		
Total, real		40			44	61		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Real case Shadow receptor: K - Shadow Receptor: 1,0 x 1,0 Azimuth: 0,0° Slope: 90,0° (127)
 Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 338 117 65 65 130 117 117 507 338 65 208 533 2 600

	July		August		September		October		November		December	
1	05:29	19:35 (1)	05:54	19:33 (1)	06:25	06:56	06:31	15:52 (2)	07:07			
	20:39	22 19:57 (1)	20:19	12 19:45 (1)	19:35	18:44	16:56	16	16:08 (2)	16:31		
2	05:30	19:35 (1)	05:55	19:33 (1)	06:26	06:57	06:32	15:52 (2)	07:08			
	20:39	22 19:57 (1)	20:18	10 19:43 (1)	19:34	18:42	16:55	14	16:06 (2)	16:31		
3	05:30	19:35 (1)	05:56	19:34 (1)	06:27	06:58	06:34	15:53 (2)	07:09			
	20:38	23 19:58 (1)	20:17	8 19:42 (1)	19:32	18:40	16:54	12	16:05 (2)	16:31		
4	05:31	19:35 (1)	05:57	19:35 (1)	06:28	06:59	06:35	15:54 (2)	07:10			
	20:38	24 19:59 (1)	20:16	5 19:40 (1)	19:30	18:39	16:52	10	16:04 (2)	16:30		
5	05:31	19:34 (1)	05:58	19:36 (1)	06:29	07:00	06:36	15:54 (2)	07:11			
	20:38	25 19:59 (1)	20:15	3 19:39 (1)	19:29	18:37	16:51	8	16:02 (2)	16:30		
6	05:32	19:34 (1)	05:59		06:30	07:01	06:37	15:56 (2)	07:12			
	20:38	26 20:00 (1)	20:13		19:27	18:35	16:50	6	16:02 (2)	16:30		
7	05:32	19:34 (1)	06:00		06:31	07:03	06:39	15:57 (2)	07:13			
	20:37	26 20:00 (1)	20:12		19:25	18:34	16:49	3	16:00 (2)	16:30		
8	05:33	19:34 (1)	06:01		06:32	07:04	06:40	15:58 (2)	07:14			
	20:37	27 20:01 (1)	20:11		19:24	18:32	16:48	1	15:59 (2)	16:30		
9	05:34	19:34 (1)	06:02		06:33	07:05	06:41		07:15			
	20:37	28 20:02 (1)	20:10		19:22	18:30	16:47		16:30			
10	05:34	19:33 (1)	06:03		06:34	07:06	06:42		07:16			
	20:36	29 20:02 (1)	20:08		19:20	18:29	16:46		16:30			
11	05:35	19:33 (1)	06:04		06:35	07:07	06:43		07:16			
	20:36	30 20:03 (1)	20:07		19:18	18:27	16:45		16:30			
12	05:36	19:33 (1)	06:05		06:36	07:08	06:45		07:17			
	20:35	30 20:03 (1)	20:06		19:17	18:25	16:44		16:30			
13	05:37	19:32 (1)	06:06		06:37	07:09	06:46		07:18			
	20:35	31 20:03 (1)	20:04		19:15	18:24	16:43		16:30			
14	05:37	19:32 (1)	06:07		06:38	07:10	06:47		07:19			
	20:34	32 20:04 (1)	20:03		19:13	18:22	14 17:20 (2)	16:42	16:30			
15	05:38	19:32 (1)	06:08		06:39	07:11	17:03 (2)	06:48	07:20			
	20:34	33 20:05 (1)	20:02		19:11	18:21	20 17:23 (2)	16:41	16:30			
16	05:39	19:32 (1)	06:09		06:41	07:12	17:00 (2)	06:50	07:20			
	20:33	33 20:05 (1)	20:00		19:10	18:19	25 17:25 (2)	16:40	16:31			
17	05:40	19:32 (1)	06:10		06:42	07:14	16:58 (2)	06:51	07:21			
	20:33	32 20:04 (1)	19:59		19:08	18:18	28 17:26 (2)	16:39	16:31			
18	05:41	19:31 (1)	06:11		06:43	07:15	16:57 (2)	06:52	07:22			
	20:32	31 20:02 (1)	19:57		19:06	18:16	31 17:28 (2)	16:38	16:31			
19	05:41	19:31 (1)	06:12		06:44	07:16	16:56 (2)	06:53	07:22			
	20:31	31 20:02 (1)	19:56		19:05	18:14	31 17:27 (2)	16:38	16:32			
20	05:42	19:31 (1)	06:13		06:45	07:17	16:54 (2)	06:54	07:23			
	20:30	30 20:01 (1)	19:54		19:03	18:13	32 17:26 (2)	16:37	16:32			
21	05:43	19:31 (1)	06:14		06:46	07:18	16:53 (2)	06:56	07:24			
	20:30	29 20:00 (1)	19:53		19:01	18:11	31 17:24 (2)	16:36	16:33			
22	05:44	19:31 (1)	06:15		06:47	07:19	16:52 (2)	06:57	07:24			
	20:29	28 19:59 (1)	19:51		18:59	18:10	30 17:22 (2)	16:35	16:33			
23	05:45	19:32 (1)	06:16		06:48	07:21	16:52 (2)	06:58	07:25			
	20:28	26 19:58 (1)	19:50		18:58	18:08	29 17:21 (2)	16:35	16:34			
24	05:46	19:32 (1)	06:17		06:49	07:22	16:52 (2)	06:59	07:25			
	20:27	25 19:57 (1)	19:48		18:56	18:07	27 17:19 (2)	16:34	16:34			
25	05:47	19:31 (1)	06:18		06:50	06:23	15:51 (2)	07:00	07:25			
	20:26	23 19:54 (1)	19:47		18:54	17:06	27 16:18 (2)	16:34	16:35			
26	05:48	19:31 (1)	06:19		06:51	06:24	15:50 (2)	07:01	07:26			
	20:25	22 19:53 (1)	19:45		18:52	17:04	26 16:16 (2)	16:33	16:35			
27	05:49	19:31 (1)	06:20		06:52	06:25	15:51 (2)	07:02	07:26			
	20:24	21 19:52 (1)	19:43		18:51	17:03	24 16:15 (2)	16:33	16:36			
28	05:50	19:31 (1)	06:21		06:53	06:26	15:51 (2)	07:04	07:27			
	20:23	20 19:51 (1)	19:42		18:49	17:01	22 16:13 (2)	16:32	16:37			
29	05:51	19:32 (1)	06:22		06:54	06:28	15:51 (2)	07:05	07:27			
	20:22	17 19:49 (1)	19:40		18:47	17:00	21 16:12 (2)	16:32	16:37			
30	05:52	19:32 (1)	06:23		06:55	06:29	15:51 (2)	07:06	07:27			
	20:21	16 19:48 (1)	19:39		18:45	16:59	20 16:11 (2)	16:31	16:38			
31	05:53	19:32 (1)	06:24			06:30	15:51 (2)		07:27			
	20:20	14 19:46 (1)	19:37			16:57	18 16:09 (2)		16:39			
Potential sun hours	461		429		375		345		296			286
Total, worst case	806		38				456		70			
Sun reduction	0,61		0,67				0,44		0,40			
Oper. time red.	0,30		0,30				0,30		0,30			
Wind dir. red.	0,59		0,59				0,56		0,56			
Total reduction	0,11		0,12				0,07		0,07			
Total, real	86		4				33		5			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Real case Shadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (129)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4,21	4,83	5,24	6,37	6,76	8,17	9,01	9,23	7,23	4,84	4,00	3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

	January	February	March	April	May	June					
1	07:28 16:40	07:50 (6) 08:13 (6)	07:14 17:15	06:37 17:50	06:45 19:25	07:04 (10) 07:13 (10)	05:58 19:58	06:18 (7) 07:03 (7)	05:29 20:28	68	05:53 (7) 07:01 (7)
2	07:28 16:41	07:50 (6) 08:13 (6)	07:13 17:16	06:35 17:51	06:43 19:26	07:02 (10) 07:12 (10)	05:57 19:59	06:17 (7) 07:03 (7)	05:28 20:29	67	05:53 (7) 07:00 (7)
3	07:28 16:42	07:50 (6) 08:14 (6)	07:12 17:17	06:34 17:52	06:42 19:27	07:00 (10) 07:09 (10)	05:56 20:00	06:15 (7) 07:03 (7)	05:28 20:29	67	05:53 (7) 07:00 (7)
4	07:28 16:43	07:50 (6) 08:14 (6)	07:11 17:19	06:32 17:53	06:40 19:28	06:59 (10) 07:08 (10)	05:55 20:01	06:14 (7) 07:03 (7)	05:28 20:30	66	05:53 (7) 06:59 (7)
5	07:28 16:44	07:50 (6) 08:14 (6)	07:10 17:20	06:31 17:55	06:38 19:29	06:57 (10) 07:04 (10)	05:53 20:02	06:13 (7) 07:04 (7)	05:27 20:31	65	05:54 (7) 06:59 (7)
6	07:28 16:45	07:50 (6) 08:13 (6)	07:08 17:21	06:29 17:56	06:37 19:30	06:56 (10) 07:04 (10)	05:52 20:03	06:12 (7) 07:04 (7)	05:27 20:31	65	05:55 (7) 07:00 (7)
7	07:28 16:46	07:50 (6) 08:13 (6)	07:07 17:23	06:27 17:57	06:35 19:31	06:55 (10) 07:03 (10)	05:51 20:04	06:11 (7) 07:04 (7)	05:27 20:32	65	05:55 (7) 07:00 (7)
8	07:28 16:47	07:50 (6) 08:13 (6)	07:06 17:24	06:26 17:58	06:33 19:33	06:54 (10) 07:02 (10)	05:50 20:05	06:10 (7) 07:04 (7)	05:26 20:33	64	05:55 (7) 06:59 (7)
9	07:27 16:48	07:51 (6) 08:13 (6)	07:05 17:25	06:24 17:59	06:32 19:34	06:53 (10) 07:01 (10)	05:48 20:06	06:08 (7) 07:03 (7)	05:26 20:33	63	05:56 (7) 06:59 (7)
10	07:27 16:49	07:52 (6) 08:11 (6)	07:04 17:26	06:22 18:00	06:30 19:35	06:52 (10) 07:00 (10)	05:47 20:07	06:07 (7) 07:03 (7)	05:26 20:34	63	05:56 (7) 06:59 (7)
11	07:27 16:50	07:54 (6) 08:11 (6)	07:02 17:28	06:21 18:02	06:29 19:36	06:51 (10) 07:00 (10)	05:46 20:08	06:06 (7) 07:03 (7)	05:26 20:34	62	05:57 (7) 06:59 (7)
12	07:27 16:51	07:56 (6) 08:10 (6)	07:01 17:29	06:19 18:03	06:27 19:37	06:49 (10) 07:00 (10)	05:45 20:09	06:05 (7) 07:03 (7)	05:26 20:35	62	05:57 (7) 06:59 (7)
13	07:26 16:52	07:59 (6) 08:07 (6)	07:00 17:30	06:17 18:04	06:25 19:38	06:48 (10) 07:00 (10)	05:44 20:10	06:04 (7) 07:03 (7)	05:25 20:35	61	05:58 (7) 06:59 (7)
14	07:26 16:53	06:59 17:31	06:16 18:05	06:24 18:05	06:24 19:39	06:42 (7) 06:45 (7)	05:43 20:11	06:03 (7) 07:03 (7)	05:25 20:36	61	05:58 (7) 06:59 (7)
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 18:06	06:22 19:40	06:41 (7) 06:48 (7)	05:42 20:12	06:02 (7) 07:03 (7)	05:25 20:36	61	05:58 (7) 06:59 (7)
16	07:25 16:55	06:56 17:34	06:12 18:07	06:21 18:07	06:21 19:41	06:39 (7) 06:50 (7)	05:41 20:13	06:01 (7) 07:03 (7)	05:25 20:37	60	05:59 (7) 06:59 (7)
17	07:25 16:56	06:55 17:35	06:11 18:08	06:20 18:08	06:19 19:42	06:38 (7) 06:52 (7)	05:40 20:14	06:00 (7) 07:03 (7)	05:25 20:37	60	05:59 (7) 06:59 (7)
18	07:24 16:58	06:53 17:36	06:09 18:09	06:17 18:09	06:17 19:43	06:36 (7) 06:53 (7)	05:39 20:15	06:00 (7) 07:03 (7)	05:25 20:37	61	05:59 (7) 07:00 (7)
19	07:24 16:59	06:52 17:38	06:07 18:11	06:16 18:11	06:16 19:45	06:35 (7) 06:55 (7)	05:38 20:16	05:59 (7) 07:03 (7)	05:26 20:38	61	05:59 (7) 07:00 (7)
20	07:23 17:00	06:50 17:39	06:06 18:12	06:15 18:12	06:14 19:46	06:33 (7) 06:56 (7)	05:37 20:17	05:58 (7) 07:03 (7)	05:26 20:38	61	05:59 (7) 07:00 (7)
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 18:13	06:13 19:47	06:32 (7) 06:57 (7)	05:36 20:18	05:57 (7) 07:02 (7)	05:26 20:38	61	06:00 (7) 07:01 (7)
22	07:22 17:02	06:48 17:41	06:02 18:14	06:11 18:14	06:11 19:48	06:30 (7) 06:58 (7)	05:35 20:19	05:56 (7) 07:02 (7)	05:26 20:39	61	06:00 (7) 07:01 (7)
23	07:21 17:04	06:46 17:43	06:00 18:15	06:10 18:15	06:10 19:49	06:29 (7) 06:59 (7)	05:35 20:20	05:56 (7) 07:02 (7)	05:26 20:39	61	06:00 (7) 07:01 (7)
24	07:21 17:05	06:45 17:44	05:59 18:16	06:09 18:16	06:08 19:50	06:27 (7) 06:59 (7)	05:34 20:21	05:55 (7) 07:02 (7)	05:27 20:39	61	06:00 (7) 07:01 (7)
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 18:17	06:07 19:51	06:26 (7) 07:00 (7)	05:33 20:22	05:54 (7) 07:01 (7)	05:27 20:39	60	06:01 (7) 07:01 (7)
26	07:19 17:07	06:42 17:46	05:55 18:18	06:05 18:18	06:05 19:52	06:25 (7) 07:01 (7)	05:32 20:23	05:54 (7) 07:02 (7)	05:27 20:39	60	06:01 (7) 07:01 (7)
27	07:18 17:09	06:40 17:47	05:54 18:19	06:04 18:19	06:04 19:53	06:23 (7) 07:01 (7)	05:32 20:24	05:53 (7) 07:01 (7)	05:28 20:39	60	06:01 (7) 07:01 (7)
28	07:17 17:10	06:38 17:49	05:52 18:20	06:03 18:20	06:03 19:54	06:22 (7) 07:02 (7)	05:31 20:25	05:53 (7) 07:01 (7)	05:28 20:39	61	06:01 (7) 07:02 (7)
29	07:16 17:11	06:38 17:49	05:52 18:20	06:03 18:20	06:03 19:54	06:22 (7) 07:02 (7)	05:31 20:25	05:53 (7) 07:01 (7)	05:28 20:39	61	06:01 (7) 07:02 (7)
30	07:16 17:12	06:38 17:49	05:52 18:20	06:03 18:20	06:03 19:54	06:22 (7) 07:02 (7)	05:31 20:25	05:53 (7) 07:01 (7)	05:28 20:39	62	06:01 (7) 07:03 (7)
31	07:15 17:14	06:37 17:48	05:51 18:19	06:02 18:19	06:02 19:53	06:21 (7) 07:01 (7)	05:30 20:24	05:52 (7) 07:00 (7)	05:29 20:38	62	06:01 (7) 07:03 (7)
Potential sun hours	296	296	369	399	450	454					
Total, worst case	267		47	487	1862	1871					
Sun reduction	0,44		0,44	0,48	0,47	0,54					
Oper. time red.	0,30		0,30	0,30	0,30	0,30					
Wind dir. red.	0,65		0,57	0,55	0,55	0,55					
Total reduction	0,09		0,07	0,08	0,08	0,09					
Total, real	23		3	38	143	166					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Real case Shadow receptor: L - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (129)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
338 117 65 65 130 117 117 507 338 65 208 533 2 600

	July	August	September	October	November	December						
1	05:29	06:01 (7)	05:54	06:16 (7)	06:25	06:56	06:31	07:07	07:36 (6)			
	20:39	62 07:03 (7)	20:19	58 07:14 (7)	19:35	18:44	16:56	16:31	17 07:53 (6)			
2	05:30	06:01 (7)	05:55	06:17 (7)	06:26	06:57	06:33	07:08	07:35 (6)			
	20:39	63 07:04 (7)	20:18	57 07:14 (7)	19:34	18:42	16:55	16:31	19 07:54 (6)			
3	05:30	06:01 (7)	05:56	06:18 (7)	06:27	06:58	06:34	07:09	07:34 (6)			
	20:39	63 07:04 (7)	20:17	56 07:14 (7)	19:32	18:41	16:54	16:31	22 07:56 (6)			
4	05:31	06:01 (7)	05:57	06:19 (7)	06:28	06:59	06:35	07:10	07:34 (6)			
	20:38	64 07:05 (7)	20:16	55 07:14 (7)	19:30	18:39	16:53	16:30	23 07:57 (6)			
5	05:31	06:01 (7)	05:58	06:20 (7)	06:29	07:01	06:36	07:11	07:35 (6)			
	20:38	64 07:05 (7)	20:15	54 07:14 (7)	19:29	18:37	16:51	16:30	23 07:58 (6)			
6	05:32	06:01 (7)	05:59	06:21 (7)	06:30	07:02	06:37	07:12	07:36 (6)			
	20:38	65 07:06 (7)	20:14	53 07:14 (7)	19:27	18:35	16:50	16:30	23 07:59 (6)			
7	05:33	06:01 (7)	06:00	06:22 (7)	06:31	07:03	06:39	07:13	07:37 (6)			
	20:38	66 07:07 (7)	20:12	52 07:14 (7)	19:25	7 06:59 (10)	18:34	16:30	24 08:01 (6)			
8	05:33	06:01 (7)	06:01	06:23 (7)	06:32	07:04	06:40	07:14	07:38 (6)			
	20:37	65 07:06 (7)	20:11	50 07:13 (7)	19:24	9 07:02 (10)	18:32	16:30	24 08:02 (6)			
9	05:34	06:01 (7)	06:02	06:24 (7)	06:34	07:05	06:41	07:15	07:39 (6)			
	20:37	66 07:07 (7)	20:10	49 07:13 (7)	19:22	9 07:03 (10)	18:30	16:30	24 08:03 (6)			
10	05:35	06:00 (7)	06:03	06:25 (7)	06:35	07:06	06:42	07:16	07:40 (6)			
	20:37	67 07:07 (7)	20:09	48 07:13 (7)	19:20	10 07:05 (10)	18:29	16:30	23 08:03 (6)			
11	05:35	06:00 (7)	06:04	06:26 (7)	06:36	07:07	06:44	07:17	07:41 (6)			
	20:36	68 07:08 (7)	20:07	46 07:12 (7)	19:19	9 07:05 (10)	18:27	16:30	23 08:04 (6)			
12	05:36	06:00 (7)	06:05	06:27 (7)	06:37	07:08	06:45	07:17	07:42 (6)			
	20:36	68 07:08 (7)	20:06	45 07:12 (7)	19:17	9 07:06 (10)	18:26	16:30	23 08:05 (6)			
13	05:37	06:00 (7)	06:06	06:28 (7)	06:38	07:09	06:46	07:18	07:42 (6)			
	20:35	69 07:09 (7)	20:04	43 07:11 (7)	19:15	9 07:07 (10)	18:24	16:30	23 08:05 (6)			
14	05:38	06:00 (7)	06:07	06:29 (7)	06:39	07:10	06:47	07:19	07:43 (6)			
	20:35	69 07:09 (7)	20:03	41 07:10 (7)	19:13	8 07:07 (10)	18:22	16:30	23 08:06 (6)			
15	05:38	06:01 (7)	06:08	06:30 (7)	06:40	07:11	06:48	07:20	07:44 (6)			
	20:34	69 07:10 (7)	20:02	40 07:10 (7)	19:12	7 07:07 (10)	18:21	16:31	23 08:07 (6)			
16	05:39	06:02 (7)	06:09	06:31 (7)	06:41	07:12	06:50	07:21	07:44 (6)			
	20:33	68 07:10 (7)	20:00	38 07:09 (7)	19:10	6 07:07 (10)	18:19	16:31	23 08:07 (6)			
17	05:40	06:03 (7)	06:10	06:32 (7)	06:42	07:13	06:51	07:21	07:45 (6)			
	20:33	68 07:11 (7)	19:59	36 07:08 (7)	19:08	5 07:07 (10)	18:18	16:31	23 08:08 (6)			
18	05:41	06:04 (7)	06:11	06:33 (7)	06:43	07:14	06:52	07:22	07:46 (6)			
	20:32	67 07:11 (7)	19:57	34 07:07 (7)	19:06	3 07:06 (10)	18:16	16:31	23 08:09 (6)			
19	05:42	06:04 (7)	06:12	06:34 (7)	06:44	07:15	06:53	07:23	07:46 (6)			
	20:31	67 07:11 (7)	19:56	32 07:06 (7)	19:05	2 07:06 (10)	18:15	16:32	23 08:09 (6)			
20	05:42	06:05 (7)	06:13	06:35 (7)	06:45	07:16	06:54	07:23	07:47 (6)			
	20:31	67 07:12 (7)	19:54	30 07:05 (7)	19:03		18:13	16:32	23 08:10 (6)			
21	05:43	06:06 (7)	06:14	06:36 (7)	06:46	07:17	06:56	07:24	07:47 (6)			
	20:30	66 07:12 (7)	19:53	27 07:03 (7)	19:01		18:12	16:33	23 08:10 (6)			
22	05:44	06:07 (7)	06:15	06:37 (7)	06:47	07:18	06:57	07:24	07:48 (6)			
	20:29	65 07:12 (7)	19:51	25 07:02 (7)	18:59		18:10	16:33	23 08:11 (6)			
23	05:45	06:08 (7)	06:16	06:38 (7)	06:48	07:19	06:58	07:25	07:48 (6)			
	20:28	65 07:13 (7)	19:50	22 07:00 (7)	18:58		18:09	16:34	23 08:11 (6)			
24	05:46	06:09 (7)	06:17	06:39 (7)	06:49	07:20	06:59	07:25	07:49 (6)			
	20:27	64 07:13 (7)	19:48	20 06:59 (7)	18:56		18:07	16:34	23 08:12 (6)			
25	05:47	06:10 (7)	06:18	06:40 (7)	06:50	07:21	07:00	07:26	07:49 (6)			
	20:26	64 07:14 (7)	19:47	17 06:57 (7)	18:54		17:06	16:35	23 08:12 (6)			
26	05:48	06:10 (7)	06:19	06:40 (7)	06:51	07:22	07:01	07:26	07:49 (6)			
	20:26	63 07:13 (7)	19:45	14 06:54 (7)	18:53		17:04	16:35	23 08:12 (6)			
27	05:49	06:11 (7)	06:20	06:41 (7)	06:52	07:23	07:03	07:26	07:50 (6)			
	20:25	62 07:13 (7)	19:44	10 06:51 (7)	18:51		17:03	16:36	23 08:13 (6)			
28	05:50	06:12 (7)	06:21	06:42 (7)	06:53	07:24	07:04	07:27	07:50 (6)			
	20:24	62 07:14 (7)	19:42	7 06:49 (7)	18:49		17:02	16:37	23 08:13 (6)			
29	05:51	06:13 (7)	06:22	06:43 (7)	06:54	07:25	07:05	07:27	07:50 (6)			
	20:23	61 07:14 (7)	19:40	2 06:45 (7)	18:47		17:00	16:38	23 08:13 (6)			
30	05:52	06:14 (7)	06:23		06:55	07:26	07:06	07:27	07:50 (6)			
	20:22	60 07:14 (7)	19:39		18:46		16:59	16:38	23 08:13 (6)			
31	05:53	06:15 (7)	06:24			07:27	07:07	07:27	07:50 (6)			
	20:20	59 07:14 (7)	19:37				16:58	16:39	23 08:13 (6)			
Potential sun hours	461		429		375		345		296		286	
Total, worst case	2016			1061		93			21		705	
Sun reduction	0,61			0,67		0,58			0,40		0,36	
Oper. time red.	0,30			0,30		0,30			0,30		0,30	
Wind dir. red.	0,55			0,55		0,57			0,65		0,65	
Total reduction	0,10			0,11		0,10			0,08		0,07	
Total, real	201			116		9			2		50	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Real case Shadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (132)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 338 117 65 65 130 117 117 507 338 65 208 533 2 600

	January	February	March	April	May	June
1	07:27 16:40	07:14 17:15	06:37 17:50	16:58 (2) 17:28 (8)	06:45 19:25	05:58 19:57
2	07:28 16:41	07:13 17:16	06:35 17:51	16:55 (2) 17:29 (8)	06:43 19:26	05:57 19:59
3	07:28 16:42	07:11 17:17	06:34 17:52	16:54 (2) 17:31 (8)	06:42 19:27	05:56 20:00
4	07:28 16:43	07:10 17:19	06:32 17:53	16:52 (2) 17:32 (8)	06:40 19:28	05:54 20:01
5	07:28 16:44	07:09 17:20	06:30 17:54	16:50 (2) 17:32 (8)	06:38 19:29	05:53 20:02
6	07:28 16:44	07:08 17:21	06:29 17:56	16:49 (2) 17:34 (8)	06:37 19:30	05:52 20:03
7	07:28 16:45	07:07 17:22	06:27 17:57	16:48 (2) 17:35 (8)	06:35 19:31	05:51 20:04
8	07:27 16:46	07:06 17:24	06:26 17:58	16:47 (2) 17:34 (2)	06:33 19:32	05:49 20:05
9	07:27 16:47	07:05 17:25	06:24 17:59	16:46 (2) 17:35 (2)	06:32 19:33	05:48 20:06
10	07:27 16:48	07:04 17:26	06:22 18:00	16:45 (2) 17:34 (2)	06:30 19:35	05:47 20:07
11	07:27 16:50	07:02 17:28	06:21 18:01	16:45 (2) 17:35 (2)	06:28 19:36	05:46 20:08
12	07:27 16:51	07:01 17:29	06:19 18:03	16:44 (2) 17:35 (2)	06:27 19:37	05:45 20:09
13	07:26 16:52	07:00 17:30	06:17 18:04	16:43 (2) 17:35 (2)	06:25 19:38	05:44 20:10
14	07:26 16:53	06:59 17:31	06:16 18:05	16:43 (2) 17:34 (2)	06:24 19:39	05:43 20:11
15	07:26 16:54	06:57 17:33	06:14 18:06	16:43 (2) 17:35 (2)	06:22 19:40	05:42 20:12
16	07:25 16:55	06:56 17:34	06:12 18:07	16:43 (2) 17:34 (2)	06:20 19:41	05:41 20:13
17	07:25 16:56	06:54 17:35	06:11 18:08	16:42 (2) 17:34 (2)	06:19 19:42	05:40 20:14
18	07:24 16:57	06:53 17:36	06:09 18:09	16:43 (2) 17:34 (2)	06:17 19:43	05:39 20:15
19	07:24 16:59	06:52 17:38	06:07 18:10	16:43 (2) 17:33 (2)	06:16 19:44	05:38 20:16
20	07:23 17:00	06:50 17:39	06:05 18:12	16:43 (2) 17:32 (2)	06:14 19:45	05:37 20:17
21	07:22 17:01	06:49 17:40	06:04 18:13	16:43 (2) 17:31 (2)	06:13 19:47	05:36 19:10 (10)
22	07:22 17:02	06:47 17:41	06:02 18:14	16:44 (2) 17:30 (2)	06:11 19:48	05:35 19:11 (10)
23	07:21 17:03	06:46 17:42	06:00 18:15	16:44 (2) 17:29 (2)	06:10 19:49	05:35 19:12 (10)
24	07:20 17:05	06:44 17:44	05:59 18:16	16:45 (2) 17:27 (2)	06:08 19:50	05:34 19:12 (10)
25	07:20 17:06	06:43 17:45	05:57 18:17	16:46 (2) 17:27 (2)	06:07 19:51	05:33 19:13 (10)
26	07:19 17:07	06:41 17:46	17:20 (8) 05:55	16:47 (2) 17:25 (2)	06:05 19:52	05:32 19:14 (10)
27	07:18 17:08	06:40 17:47	17:25 (8) 05:54	16:48 (2) 17:23 (2)	06:04 19:53	05:32 19:15 (10)
28	07:17 17:10	06:38 17:49	17:25 (8) 05:52	16:49 (2) 17:20 (2)	06:02 19:54	05:31 19:16 (10)
29	07:16 17:11		17:27 (8) 06:50	17:52 (2) 19:21	06:01 18:19 (2)	05:30 19:55
30	07:15 17:12		06:48 19:23	17:54 (2) 18:15 (2)	06:00 19:56	05:30 20:26
31	07:14 17:14		06:47 19:24	17:58 (2) 18:10 (2)	05:29 20:27	05:29 20:27
Potential sun hours	296	296	369	399	450	454
Total, worst case		52	1315		15	
Sun reduction		0,46	0,44		0,48	
Oper. time red.		0,30	0,30		0,30	
Wind dir. red.		0,55	0,55		0,56	
Total reduction		0,07	0,07		0,08	
Total, real		4	94		1	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Real case Shadow receptor: M - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (132)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4,21	4,83	5,24	6,37	6,76	8,17	9,01	9,23	7,23	4,84	4,00	3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

	July	August	September	October	November	December		
1	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	17:23 (2) 18:14 (2)	06:31 16:56	07:07 16:31	
2	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	17:22 (2) 18:13 (2)	06:32 16:55	07:08 16:31	
3	05:30 20:38	05:56 20:17	06:27 19:32	06:58 18:40	17:23 (2) 18:13 (2)	06:34 16:54	07:09 16:31	
4	05:31 20:38	05:57 20:16	06:28 19:30	06:59 18:39	17:23 (2) 18:12 (2)	06:35 16:52	07:10 16:30	
5	05:31 20:38	05:58 20:15	06:29 19:29	07:00 18:37	17:24 (2) 18:11 (2)	06:36 16:51	07:11 16:30	
6	05:32 20:38	05:59 20:13	06:30 19:27	07:01 18:35	17:24 (2) 18:11 (8)	06:37 16:50	07:12 16:30	
7	05:32 20:37	06:00 20:12	06:31 19:25	07:03 18:34	17:24 (2) 18:11 (8)	06:39 16:49	07:13 16:30	
8	05:33 20:37	06:01 20:11	06:32 19:24	07:04 18:32	17:25 (2) 18:09 (8)	06:40 16:48	07:14 16:30	
9	05:34 20:37	06:02 20:10	06:33 19:22	07:05 18:30	17:26 (2) 18:07 (8)	06:41 16:47	07:15 16:30	
10	05:34 20:36	06:03 20:08	06:34 19:20	07:06 18:29	17:27 (2) 18:05 (8)	06:42 16:46	07:16 16:30	
11	05:35 20:36	06:04 20:07	06:35 19:18	07:07 18:27	17:28 (2) 18:04 (8)	06:43 16:45	07:16 16:30	
12	05:36 20:35	06:05 20:06	06:36 19:17	17:51 (2) 18:01 (2)	07:08 18:25	17:30 (2) 18:03 (8)	06:45 16:44	07:17 16:30
13	05:37 20:35	06:06 20:04	06:37 19:15	17:46 (2) 18:06 (2)	07:09 18:24	17:32 (2) 18:01 (8)	06:46 16:43	07:18 16:30
14	05:37 20:34	06:07 20:03	06:38 19:13	17:43 (2) 18:08 (2)	07:10 18:22	17:35 (2) 17:59 (8)	06:47 16:42	07:19 16:30
15	05:38 20:34	06:08 20:02	19:22 (10) 06:39 19:11	17:40 (2) 18:10 (2)	07:11 18:21	17:39 (2) 17:57 (8)	06:48 16:41	07:20 16:30
16	05:39 20:33	06:09 20:00	19:20 (10) 06:41 19:10	17:38 (2) 18:12 (2)	07:12 18:19	17:52 (8) 17:56 (8)	06:50 16:40	07:20 16:31
17	05:40 20:33	06:10 19:59	19:18 (10) 06:42 19:08	17:36 (2) 18:13 (2)	07:14 18:18	06:51 16:39	07:21 16:31	
18	05:41 20:32	06:11 19:57	19:16 (10) 06:43 19:06	17:34 (2) 18:14 (2)	07:15 18:16	06:52 16:38	07:22 16:31	15:43 (9) 15:46 (9)
19	05:41 20:31	06:12 19:56	19:15 (10) 06:44 19:05	17:32 (2) 18:14 (2)	07:16 18:14	06:53 16:38	07:22 16:32	15:42 (9) 15:47 (9)
20	05:42 20:30	06:13 19:54	19:15 (10) 06:45 19:03	17:31 (2) 18:15 (2)	07:17 18:13	06:54 16:37	07:23 16:32	15:42 (9) 15:48 (9)
21	05:43 20:30	06:14 19:53	19:14 (10) 06:46 19:01	17:30 (2) 18:16 (2)	07:18 18:11	06:56 16:36	07:24 16:33	15:42 (9) 15:48 (9)
22	05:44 20:29	06:15 19:51	06:47 18:59	17:28 (2) 18:16 (2)	07:19 18:10	06:57 16:36	07:24 16:33	15:43 (9) 15:49 (9)
23	05:45 20:28	06:16 19:50	06:48 18:58	17:27 (2) 18:16 (2)	07:21 18:09	06:58 16:35	07:25 16:34	15:43 (9) 15:49 (9)
24	05:46 20:27	06:17 19:48	06:49 18:56	17:26 (2) 18:16 (2)	07:22 18:07	06:59 16:34	07:25 16:34	15:44 (9) 15:50 (9)
25	05:47 20:26	06:18 19:47	06:50 18:54	17:26 (2) 18:16 (2)	06:23 17:06	07:00 16:34	07:25 16:35	15:45 (9) 15:49 (9)
26	05:48 20:25	06:19 19:45	06:51 18:52	17:25 (2) 18:16 (2)	06:24 17:04	07:01 16:33	07:26 16:35	15:46 (9) 15:48 (9)
27	05:49 20:24	06:20 19:43	06:52 18:51	17:24 (2) 18:16 (2)	06:25 17:03	07:02 16:33	07:26 16:36	
28	05:50 20:23	06:21 19:42	06:53 18:49	17:24 (2) 18:15 (2)	06:26 17:01	07:04 16:32	07:27 16:37	
29	05:51 20:22	06:22 19:40	06:54 18:47	17:23 (2) 18:15 (2)	06:28 17:00	07:05 16:32	07:27 16:37	
30	05:52 20:21	06:23 19:39	06:55 18:46	17:23 (2) 18:14 (2)	06:29 16:59	07:06 16:31	07:27 16:38	
31	05:53 20:20	06:24 19:37		06:30 16:57			07:27 16:39	
Potential sun hours	461	429	375	345	296	286		
Total, worst case		16	782	608		44		
Sun reduction		0,67	0,58	0,44		0,36		
Oper. time red.		0,30	0,30	0,30		0,30		
Wind dir. red.		0,56	0,55	0,55		0,57		
Total reduction		0,11	0,09	0,07		0,06		
Total, real		2	74	43		3		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Real case Shadow receptor: N - Shadow Receptor: 1,0 x 1,0 Azimuth: 0,0° Slope: 90,0° (134)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 338 117 65 65 130 117 117 507 338 65 208 533 2 600

	January	February	March	April	May	June	
1	07:28 16:40	07:14 17:15	07:34 (7) 08:18 (7)	06:37 17:50	06:45 19:25	05:58 19:58	05:29 20:28
2	07:28 16:41	07:13 17:16	07:33 (7) 08:19 (7)	06:35 17:51	06:43 19:26	05:57 19:59	05:28 20:29
3	07:28 16:42	07:12 17:17	07:32 (7) 08:19 (7)	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29
4	07:28 16:43	07:11 17:19	07:31 (7) 08:19 (7)	06:32 17:53	06:40 19:28	05:55 20:01	05:28 20:30
5	07:28 16:44	07:10 17:20	07:30 (7) 08:19 (7)	06:31 17:55	06:38 19:29	05:53 20:02	05:27 20:31
6	07:28 16:45	07:50 (7) 07:08	07:28 (7) 08:19 (7)	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31
7	07:28 16:46	07:50 (7) 07:07	07:27 (7) 08:19 (7)	06:27 17:57	06:35 19:31	05:51 20:04	05:27 20:32
8	07:28 16:47	07:50 (7) 07:06	07:26 (7) 08:19 (7)	06:26 17:58	06:33 19:33	05:50 20:05	05:26 20:33
9	07:27 16:48	07:50 (7) 07:05	07:25 (10) 08:19 (7)	06:24 17:59	06:32 19:34	05:48 20:06	05:26 20:33
10	07:27 16:49	07:49 (7) 07:04	07:24 (10) 08:18 (7)	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34
11	07:27 16:50	07:49 (7) 07:02	07:22 (10) 08:17 (7)	06:21 18:02	06:29 19:36	05:46 20:08	05:26 20:34
12	07:27 16:51	08:00 (7) 07:01	08:17 (7) 07:21 (10)	18:02 06:19	19:36 06:27	20:08 05:45	20:34 05:26
13	07:26 16:52	08:02 (7) 07:00	08:17 (7) 07:20 (10)	18:03 06:17	19:37 06:25	20:09 05:44	20:35 05:25
14	07:26 16:53	07:48 (7) 06:59	08:17 (7) 07:18 (10)	18:04 06:16	19:38 06:24	20:10 05:43	20:35 05:25
15	07:26 16:54	08:04 (7) 06:57	08:15 (7) 07:17 (10)	18:05 06:14	19:39 06:22	20:11 05:42	20:36 05:25
16	07:26 16:55	07:47 (7) 06:56	08:15 (7) 07:16 (10)	18:06 06:12	19:40 06:21	20:12 05:41	20:36 05:25
17	07:25 16:56	08:07 (7) 07:34	08:14 (7) 07:14 (10)	18:07 06:11	19:41 06:19	20:13 05:40	20:37 05:25
18	07:25 16:58	07:46 (7) 06:53	08:12 (7) 07:13 (10)	18:08 06:09	19:42 06:17	20:14 05:39	20:37 05:25
19	07:24 16:59	08:09 (7) 07:36	08:11 (7) 07:11 (10)	18:09 06:07	19:43 06:16	20:15 05:38	20:37 05:26
20	07:24 17:00	07:45 (7) 06:52	08:09 (7) 07:11 (10)	18:11 06:06	19:45 06:14	20:16 05:37	20:38 05:26
21	07:23 17:01	07:44 (7) 06:50	08:12 (10) 07:12 (10)	06:06 06:06	19:46 06:13	20:17 05:36	20:38 05:26
22	07:23 17:02	07:44 (7) 06:49	08:07 (7) 07:39 (7)	06:04 06:04	19:47 06:13	20:18 05:36	20:38 05:26
23	07:22 17:03	08:12 (7) 17:40	08:04 (7) 18:13	19:47	06:11	05:35	05:26
24	07:22 17:04	07:43 (7) 06:48	07:42 (7) 06:02	06:11	19:48	20:19	20:39
25	07:21 17:05	08:13 (7) 17:41	08:01 (7) 18:14	19:48	06:10	05:35	05:26
26	07:21 17:06	07:42 (7) 06:46	07:48 (7) 06:01	06:10	19:49	20:20	20:39
27	07:21 17:07	08:13 (7) 17:43	07:55 (7) 18:15	19:49	06:08	05:34	05:27
28	07:20 17:08	07:41 (7) 06:45	05:59	06:08	19:50	20:21	20:39
29	07:20 17:09	08:14 (7) 17:44	18:16	19:50	06:07	05:33	05:27
30	07:20 17:10	07:41 (7) 06:43	05:57	06:07	19:51	20:22	20:39
31	07:19 17:11	08:15 (7) 17:45	18:17	19:51	06:05	05:32	05:27
Potential sun hours	296	296	369	399	450	454	
Total, worst case	606	1063				159	
Sun reduction	0,44	0,46				0,54	
Oper. time red.	0,30	0,30				0,30	
Wind dir. red.	0,62	0,62				0,57	
Total reduction	0,08	0,08				0,09	
Total, real	50	89				15	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Real case Shadow receptor: N - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (134)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
338 117 65 65 130 117 117 507 338 65 208 533 2 600

	July	August	September	October	November	December
1	05:29	05:52 (11)	05:54	06:25	06:56	07:31 (7)
	20:39	05:57 (11)	20:19	19:35	18:44	16:31
2	05:30	05:53 (11)	05:55	06:26	06:57	07:32 (7)
	20:39	05:58 (11)	20:18	19:34	18:42	16:31
3	05:30	05:53 (11)	05:56	06:27	06:58	07:33 (7)
	20:39	05:57 (11)	20:17	19:32	18:41	16:31
4	05:31	05:54 (11)	05:57	06:28	06:59	07:34 (7)
	20:38	05:57 (11)	20:16	19:30	18:39	16:30
5	05:31	05:54 (11)	05:58	06:29	07:01	07:35 (7)
	20:38	05:56 (11)	20:15	19:29	18:37	16:30
6	05:32	05:55 (11)	05:59	06:30	07:02	07:36 (7)
	20:38	05:56 (11)	20:14	19:27	18:35	16:30
7	05:33	06:00	06:31	07:03	07:37	07:13
	20:38	20:12	19:25	18:34	16:49	16:30
8	05:33	06:01	06:33	07:04	07:38	07:14
	20:37	20:11	19:24	18:32	16:48	16:30
9	05:34	06:02	06:34	07:05	07:40	07:15
	20:37	20:10	19:22	18:31	16:47	16:30
10	05:35	06:03	06:35	07:06	07:42	07:16
	20:37	20:09	19:20	18:29	16:46	16:30
11	05:35	06:04	06:36	07:07	07:44	07:17
	20:36	20:07	19:19	18:27	16:45	16:30
12	05:36	06:05	06:37	07:08	07:46	07:18
	20:36	20:06	19:17	18:26	16:44	16:30
13	05:37	06:06	06:38	07:09	07:48	07:18
	20:35	20:04	19:15	18:24	16:43	16:30
14	05:38	06:07	06:39	07:10	07:50	07:19
	20:35	20:03	19:13	18:22	16:42	16:30
15	05:38	06:08	06:40	07:12	07:52	07:20
	20:34	20:02	19:12	18:21	16:41	16:31
16	05:39	06:09	06:41	07:13	07:54	07:21
	20:33	20:00	19:10	18:19	16:40	16:31
17	05:40	06:10	06:42	07:14	07:56	07:21
	20:33	19:59	19:08	18:18	16:39	16:31
18	05:41	06:11	06:43	07:15	07:58	07:22
	20:32	19:57	19:06	18:16	16:39	16:31
19	05:42	06:12	06:44	07:16	08:00 (7)	07:23
	20:31	19:56	19:05	18:15	16:38	16:32
20	05:42	06:13	06:45	07:17	08:02 (7)	07:23
	20:31	19:54	19:03	18:13	16:37	16:32
21	05:43	06:14	06:46	07:18	08:04 (7)	07:24
	20:30	19:53	19:01	18:12	16:36	16:33
22	05:44	06:15	06:47	07:20	08:06 (10)	07:24
	20:29	19:51	18:59	18:10	16:36	16:33
23	05:45	06:16	06:48	07:21	08:08 (10)	07:25
	20:28	19:50	18:58	18:09	16:35	16:34
24	05:46	06:17	06:49	07:22	08:10 (10)	07:25
	20:27	19:48	18:56	18:07	16:34	16:34
25	05:47	06:18	06:50	07:23	08:12 (10)	07:26
	20:26	19:47	18:54	17:06	16:34	16:35
26	05:48	06:19	06:51	07:24	08:14 (10)	07:26
	20:26	19:45	18:53	17:04	16:33	16:35
27	05:49	06:20	06:52	07:25	08:16 (10)	07:26
	20:25	19:44	18:51	17:03	16:33	16:36
28	05:50	06:21	06:53	07:27	08:18 (10)	07:27
	20:24	19:42	18:49	17:02	16:32	16:37
29	05:51	06:22	06:54	07:28	08:20 (10)	07:27
	20:23	19:40	18:47	17:00	16:32	16:37
30	05:52	06:23	06:55	07:29	08:22 (10)	07:27
	20:22	19:39	18:46	16:59	16:32	16:38
31	05:53	06:24	06:56	07:30	08:24 (10)	07:27
	20:21	19:37	16:58	07:47 (7)	16:39	16:39
Potential sun hours	461	429	375	345	296	286
Total, worst case	20			581	1064	40
Sun reduction	0,61			0,44	0,40	0,36
Oper. time red.	0,30			0,30	0,30	0,30
Wind dir. red.	0,57			0,62	0,62	0,62
Total reduction	0,10			0,08	0,07	0,07
Total, real	2			46	80	3

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Real case Shadow receptor: O - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (135)
 Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]
 Assumptions for shadow calculations
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:59 19:58	05:29 20:28	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	07:28 16:41	07:13 17:16	06:35 17:51	06:44 19:26	05:57 19:59	05:29 20:29	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	07:28 16:42	07:12 17:18	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:41	06:34 16:54	07:09 16:31
4	07:28 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:55 20:01	05:28 20:30	05:31 20:38	05:57 20:16	06:28 19:30	07:00 18:39	06:35 16:53	07:10 16:31
5	07:28 16:44	07:10 17:20	06:31 17:55	06:39 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:58 20:15	06:30 19:29	07:01 18:37	06:36 16:52	07:11 16:30
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31	05:32 20:38	05:59 20:14	06:31 19:27	07:02 18:36	06:38 16:50	07:12 16:30
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:31	05:51 20:04	05:27 20:32	05:33 20:38	06:00 20:12	06:32 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	07:28 16:47	07:06 17:24	06:26 17:58	06:34 19:33	05:50 20:05	05:26 20:33	05:33 20:37	06:01 20:11	06:33 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	07:27 16:48	07:05 17:25	06:24 17:59	06:32 19:34	05:49 20:06	05:26 20:33	05:34 20:37	06:02 20:10	06:34 19:22	07:05 18:31	06:41 16:47	07:15 16:30
10	07:27 16:49	07:04 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:35 20:37	06:03 20:09	06:35 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:03 17:28	06:21 18:02	06:29 19:36	05:46 20:08	05:26 20:34	05:35 20:36	06:04 20:07	06:36 19:19	07:07 18:27	06:44 16:45	07:17 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:26 20:35	05:36 20:36	06:05 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:18 16:30
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:26 20:35	05:37 20:35	06:06 20:05	06:38 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:59 17:32	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:38 20:35	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36	05:38 20:34	06:08 20:02	06:40 19:12	07:12 18:21	06:49 16:41	07:20 16:31
16	07:25 16:55	06:56 17:34	06:12 18:07	06:21 19:41	05:41 20:13	05:25 20:37	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:21 16:31
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	07:24 16:58	06:53 17:37	06:09 18:09	06:17 19:44	05:39 20:15	05:26 20:37	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:39	07:22 16:32
19	07:24 16:59	06:52 17:38	06:07 18:11	06:16 19:45	05:38 20:16	05:26 20:38	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:23 16:32
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38	05:43 20:31	06:13 19:54	06:45 19:03	07:17 18:13	06:55 16:37	07:23 16:32
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 16:33
22	07:22 17:02	06:48 17:41	06:02 18:14	06:11 19:48	05:36 20:19	05:26 20:39	05:44 20:29	06:15 19:51	06:47 19:00	07:20 18:10	06:57 16:36	07:24 16:33
23	07:21 17:04	06:46 17:43	06:01 18:15	06:10 19:49	05:35 20:20	05:26 20:39	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	07:21 17:05	06:45 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:27 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:26	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:26 16:35
26	07:19 17:07	06:42 17:46	05:55 18:18	06:06 19:52	05:33 20:23	05:27 20:39	05:48 20:26	06:19 19:45	06:51 18:53	06:24 17:04	07:02 16:33	07:26 16:36
27	07:18 17:09	06:40 17:48	05:54 18:19	06:04 19:53	05:32 20:24	05:28 20:39	05:49 20:25	06:20 19:44	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	07:17 17:10	06:39 17:49	05:52 18:21	06:03 19:54	05:31 20:25	05:28 20:39	05:50 20:24	06:21 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
29	07:17 17:11		06:50 19:22	06:01 19:55	05:31 20:25	05:28 20:39	05:51 20:23	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:38
30	07:16 17:12		06:49 19:23	06:00 19:57	05:30 20:26	05:29 20:39	05:52 20:22	06:23 19:39	06:55 18:46	06:29 16:59	07:06 16:32	07:27 16:38
31	07:15 17:14		06:47 19:24		05:29 20:27		05:53 20:21	06:24 19:37		06:30 16:58		07:27 16:39
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Total, worst case												
Sun reduction												
Oper. time red.												
Wind dir. red.												
Total reduction												
Total, real												

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)		Last time (hh:mm) with flicker	(WTG causing flicker last time)

SHADOW - Calendar

Calculation: Real case Shadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (137)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 338 117 65 65 130 117 117 507 338 65 208 533 2 600

	January	February	March	April	May	June
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	18:12 (8) 19:04 (8)	05:58 19:10 (6)
2	07:28 16:41	07:13 17:16	06:35 17:51	06:43 19:26	18:10 (8) 19:04 (8)	05:57 19:07 (6)
3	07:28 16:42	07:12 17:17	06:34 17:52	06:42 19:27	18:09 (8) 19:05 (8)	05:56 20:00
4	07:28 16:43	07:10 17:19	06:32 17:53	06:40 19:28	18:09 (8) 19:07 (8)	05:54 20:01
5	07:28 16:44	07:09 17:20	06:30 17:54	06:38 19:29	18:07 (8) 19:08 (8)	05:53 20:02
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	18:06 (8) 19:08 (8)	05:52 20:03
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:31	18:06 (8) 19:09 (8)	05:51 20:04
8	07:27 16:47	07:06 17:24	06:26 17:58	06:33 19:32	18:05 (8) 19:09 (8)	05:50 20:05
9	07:27 16:48	07:05 17:25	06:24 17:59	06:32 19:34	18:04 (8) 19:09 (8)	05:48 20:06
10	07:27 16:49	07:04 17:26	06:22 18:00	06:30 19:35	18:04 (8) 19:11 (8)	05:47 20:07
11	07:27 16:50	07:02 17:28	06:21 18:01	06:28 19:36	18:04 (8) 19:11 (8)	05:46 20:08
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	18:04 (8) 19:12 (8)	05:45 20:09
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	18:03 (8) 19:13 (8)	05:44 20:10
14	07:26 16:53	06:59 17:31	06:16 18:05	06:24 19:39	18:02 (8) 19:13 (8)	05:43 20:11
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	18:03 (8) 19:14 (8)	05:42 20:12
16	07:25 16:55	06:56 17:34	06:12 18:07	06:20 19:41	18:02 (8) 19:14 (8)	05:41 20:13
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	18:03 (8) 19:16 (6)	05:40 20:14
18	07:24 16:58	06:53 17:36	06:09 18:09	06:17 19:43	18:02 (8) 19:17 (6)	05:39 20:15
19	07:24 16:59	06:52 17:38	06:07 18:10	06:16 19:44	18:03 (8) 19:18 (6)	05:38 20:16
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 19:46	18:03 (8) 19:19 (6)	05:37 20:17
21	07:22 17:01	06:49 17:40	06:04 18:13	06:13 19:47	18:03 (8) 19:20 (6)	05:36 20:18
22	07:22 17:02	06:47 17:41	06:02 18:14	17:37 (8) 17:53 (8)	06:11 19:48	05:35 20:19
23	07:21 17:04	06:46 17:43	06:00 18:15	17:31 (8) 17:54 (8)	06:10 19:49	05:35 20:20
24	07:20 17:05	06:44 17:44	05:59 18:16	17:27 (8) 17:54 (8)	06:08 19:50	05:34 20:21
25	07:20 17:06	06:43 17:45	05:57 18:17	17:25 (8) 17:56 (8)	06:07 19:51	05:33 20:22
26	07:19 17:07	06:41 17:46	05:55 18:18	17:22 (8) 17:57 (8)	06:05 19:52	05:32 20:23
27	07:18 17:09	06:40 17:47	05:54 18:19	17:20 (8) 17:58 (8)	06:04 19:53	05:32 20:24
28	07:17 17:10	06:38 17:49	05:52 18:20	17:18 (8) 18:00 (8)	06:03 19:54	05:31 20:24
29	07:16 17:11		06:50 19:21	18:16 (8) 19:00 (8)	06:01 19:55	05:30 20:25
30	07:15 17:12		06:48 19:23	18:14 (8) 19:01 (8)	06:00 19:56	05:30 20:26
31	07:15 17:14		06:47 19:24	18:13 (8) 19:02 (8)		05:29 20:27
Potential sun hours	296	296	369	399	450	454
Total, worst case			352	2043		451
Sun reduction			0,44	0,48		0,47
Oper. time red.			0,30	0,30		0,30
Wind dir. red.			0,57	0,57		0,57
Total reduction			0,07	0,08		0,08
Total, real			26	165		35

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

SHADOW - Calendar

Calculation: Real case Shadow receptor: P - Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (137)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
338 117 65 65 130 117 117 507 338 65 208 533 2 600

	July	August	September	October	November	December	
1	05:29 20:39	05:54 20:19	13 18:40 (8) 18:53 (8)	06:25 19:35	68 18:02 (8) 19:10 (8)	06:56 18:44 16:56	07:07 16:31
2	05:30 20:39	05:55 20:18	22 18:35 (8) 18:57 (8)	06:26 19:34	67 18:02 (8) 19:09 (8)	06:57 18:42 16:55	07:08 16:31
3	05:30 20:39	05:56 20:17	26 18:33 (8) 18:59 (8)	06:27 19:32	65 18:02 (8) 19:07 (8)	06:58 18:40 16:54	07:09 16:31
4	05:31 20:38	05:57 20:16	32 18:30 (8) 19:02 (8)	06:28 19:30	64 18:02 (8) 19:06 (8)	06:59 18:39 16:53	07:10 16:30
5	05:31 20:38	05:58 20:15	35 18:28 (8) 19:03 (8)	06:29 19:29	63 18:02 (8) 19:05 (8)	07:00 18:37 16:51	07:11 16:30
6	05:32 20:38	05:59 20:13	39 18:26 (8) 19:05 (8)	06:30 19:27	62 18:02 (8) 19:04 (8)	07:02 18:35 16:50	07:12 16:30
7	05:33 20:38	06:00 20:12	42 18:25 (8) 19:07 (8)	06:31 19:25	61 18:02 (8) 19:03 (8)	07:03 18:34 16:49	07:13 16:30
8	05:33 20:37	06:01 20:11	45 18:23 (8) 19:08 (8)	06:32 19:24	60 18:03 (8) 19:01 (8)	07:04 18:32 16:48	07:14 16:30
9	05:34 20:37	06:02 20:10	47 18:22 (8) 19:09 (8)	06:33 19:22	59 18:03 (8) 18:59 (8)	07:05 18:30 16:47	07:15 16:30
10	05:35 20:36	06:03 20:08	50 18:20 (8) 19:10 (8)	06:34 19:20	58 18:03 (8) 18:58 (8)	07:06 18:29 16:46	07:16 16:30
11	05:35 20:36	06:04 20:07	58 18:19 (8) 19:17 (6)	06:35 19:18	57 18:04 (8) 18:56 (8)	07:07 18:27 16:45	07:17 16:30
12	05:36 20:36	06:05 20:06	62 18:18 (8) 19:20 (6)	06:36 19:17	56 18:05 (8) 18:54 (8)	07:08 18:26 16:44	07:17 16:30
13	05:37 20:35	06:06 20:04	65 18:16 (8) 19:21 (6)	06:38 19:15	55 18:05 (8) 18:53 (8)	07:09 18:24 16:43	07:18 16:30
14	05:37 20:34	06:07 20:03	68 18:15 (8) 19:23 (6)	06:39 19:13	54 18:06 (8) 18:51 (8)	07:10 18:22 16:42	07:19 16:30
15	05:38 20:34	06:08 20:02	70 18:14 (8) 19:24 (6)	06:40 19:12	53 18:07 (8) 18:49 (8)	07:11 18:21 16:41	07:20 16:31
16	05:39 20:33	06:09 20:00	72 18:13 (8) 19:25 (6)	06:41 19:10	52 18:09 (8) 18:47 (8)	07:13 18:19 16:40	07:20 16:31
17	05:40 20:33	06:10 19:59	73 18:12 (8) 19:25 (6)	06:42 19:08	51 18:10 (8) 18:46 (8)	07:14 18:18 16:39	07:21 16:31
18	05:41 20:32	06:11 19:57	75 18:11 (8) 19:26 (6)	06:43 19:06	50 18:12 (8) 18:44 (8)	07:15 18:16 16:38	07:22 16:31
19	05:42 20:31	06:12 19:56	76 18:10 (8) 19:26 (6)	06:44 19:05	49 18:14 (8) 18:42 (8)	07:16 18:15 16:38	07:22 16:32
20	05:42 20:30	06:13 19:54	76 18:10 (8) 19:26 (6)	06:45 19:03	48 18:17 (8) 18:40 (8)	07:17 18:13 16:37	07:23 16:32
21	05:43 20:30	06:14 19:53	77 18:08 (8) 19:25 (6)	06:46 19:01	47 18:21 (8) 18:39 (8)	07:18 18:12 16:36	07:24 16:33
22	05:44 20:29	06:15 19:51	77 18:07 (8) 19:24 (6)	06:47 18:59	46 18:19 18:10	07:19 18:10 16:36	07:24 16:33
23	05:45 20:28	06:16 19:50	76 18:06 (8) 19:22 (6)	06:48 18:58	45 18:18 (8) 18:09	07:21 18:09 16:35	07:25 16:34
24	05:46 20:27	06:17 19:48	75 18:06 (8) 19:21 (6)	06:49 18:56	44 18:17 (8) 18:07	07:22 18:07 16:34	07:25 16:34
25	05:47 20:26	06:18 19:47	74 18:05 (8) 19:19 (6)	06:50 18:54	43 18:16 (8) 17:06	07:23 18:06 16:34	07:25 16:35
26	05:48 20:25	06:19 19:45	73 18:05 (8) 19:18 (6)	06:51 18:52	42 18:15 (8) 17:04	07:24 18:05 16:33	07:26 16:35
27	05:49 20:24	06:20 19:43	72 18:04 (8) 19:16 (8)	06:52 18:51	41 18:14 (8) 17:03	07:25 18:04 16:33	07:26 16:36
28	05:50 20:23	06:21 19:42	71 18:04 (8) 19:15 (8)	06:53 18:49	40 18:13 (8) 17:02	07:26 18:03 16:32	07:27 16:37
29	05:51 20:22	06:22 19:40	71 18:03 (8) 19:14 (8)	06:54 18:47	39 18:12 (8) 17:00	07:27 18:02 16:32	07:27 16:37
30	05:52 20:21	06:23 19:39	69 18:03 (8) 19:12 (8)	06:55 18:46	38 18:11 (8) 16:59	07:28 18:01 16:32	07:27 16:38
31	05:53 20:20	06:24 19:37	68 18:03 (8) 19:11 (8)	06:56 18:45	37 18:10 (8) 16:58	07:29 18:00 16:39	07:27 16:39
Potential sun hours	461	429	375	345	296	286	
Total, worst case		1849		1030			
Sun reduction		0,67		0,58			
Oper. time red.		0,30		0,30			
Wind dir. red.		0,57		0,57			
Total reduction		0,11		0,10			
Total, real		208		100			

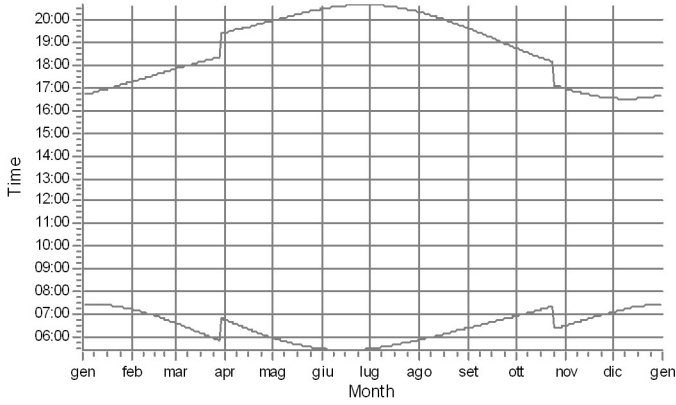
Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	(WTG causing flicker first time)	(WTG causing flicker last time)
--------------	------------------	-----------------	----------------------	---------------------------------	--------------------------------	----------------------------------	---------------------------------

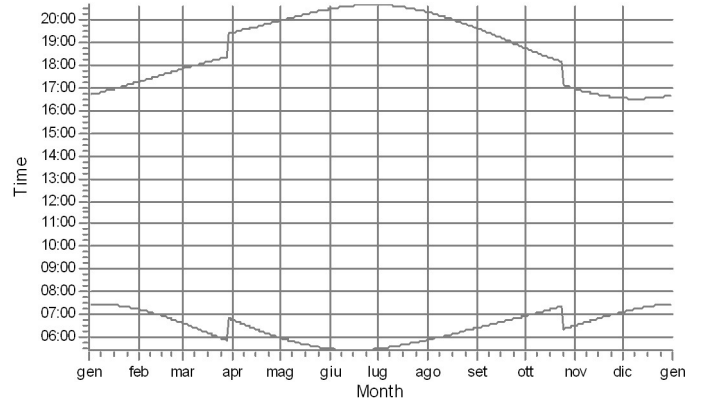
SHADOW - Calendar, graphical

Calculation: Real case

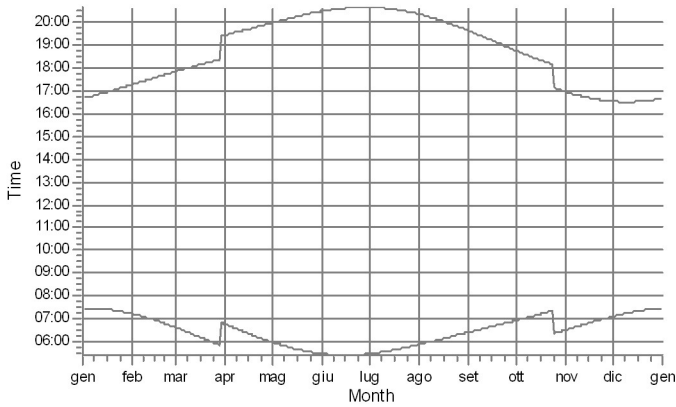
A: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (114)



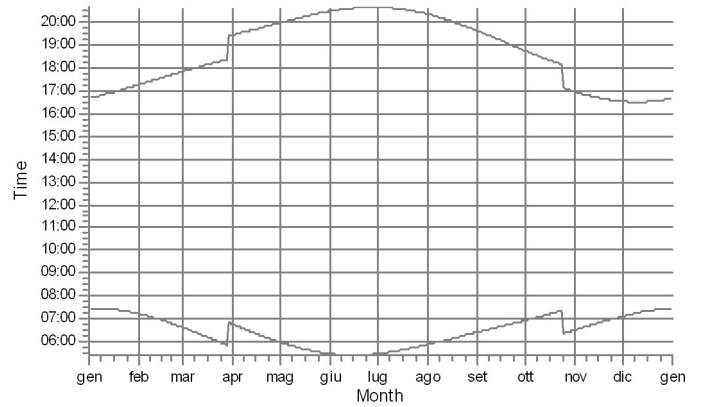
B: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (116)



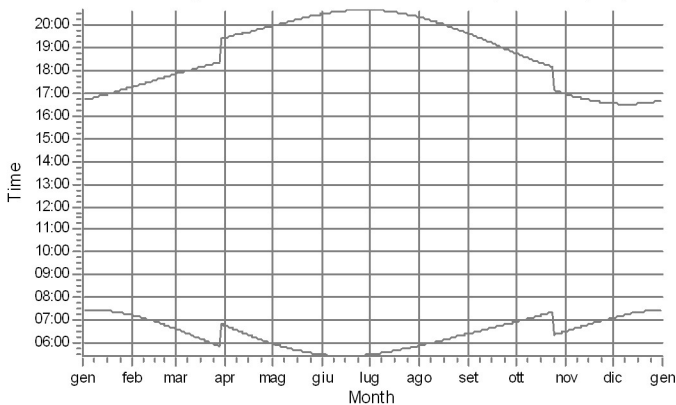
C: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (117)



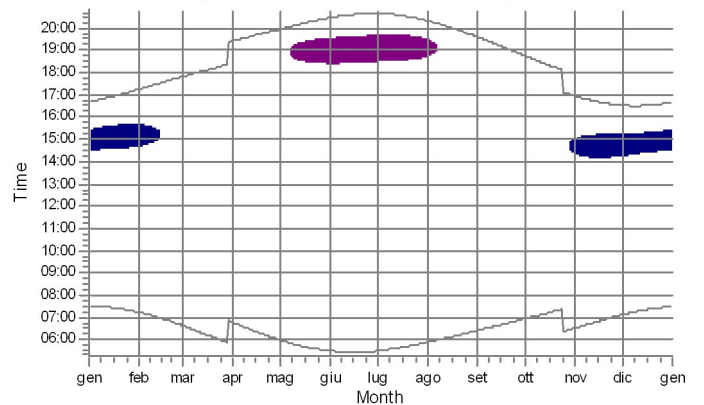
D: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (119)



E: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (120)



F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (121)



WTGs

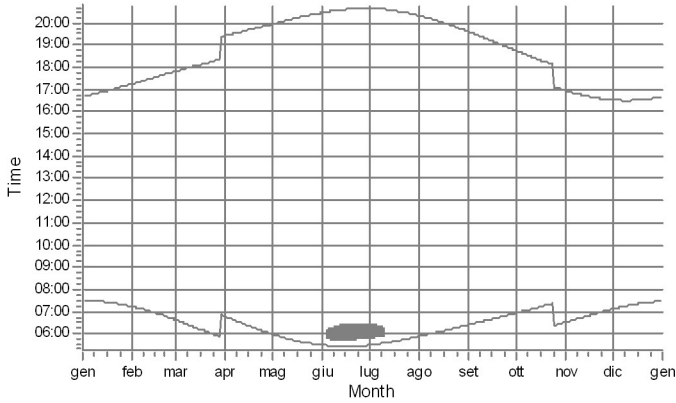
7: VESTAS V162 5600 162.0 IO! hub: 125,0 m (TOT: 206,0 m) (7)

11: VESTAS V162 5600 162.0 IO! hub: 125,0 m (TOT: 206,0 m) (11)

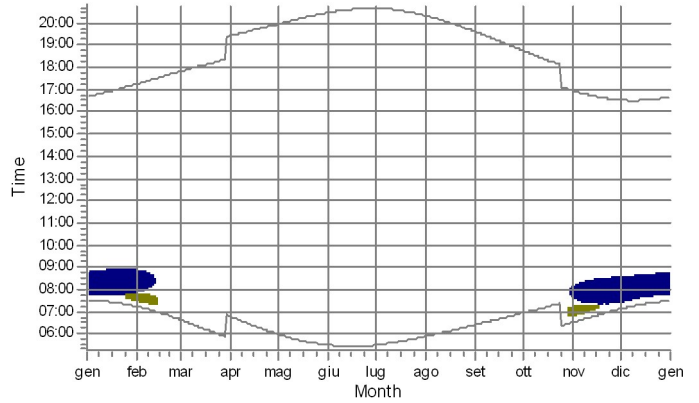
SHADOW - Calendar, graphical

Calculation: Real case

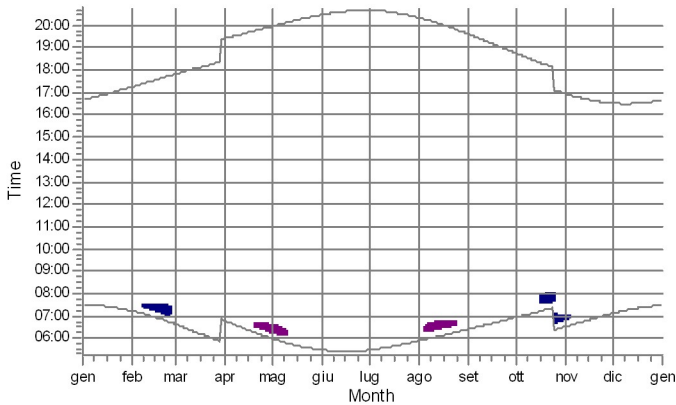
G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (122)



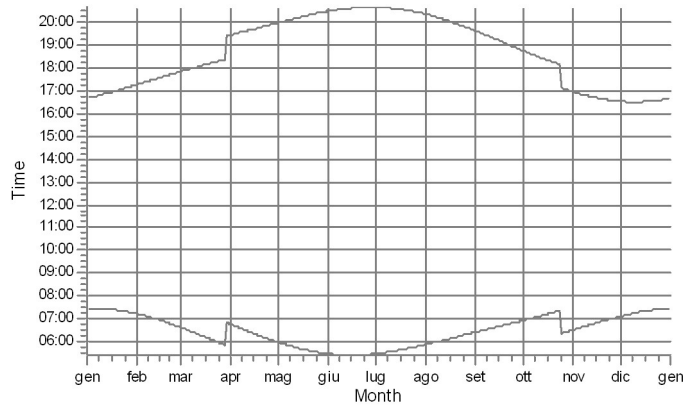
H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (124)



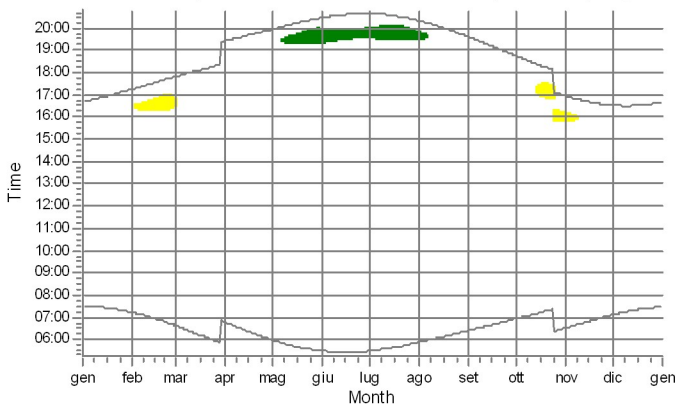
I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (125)



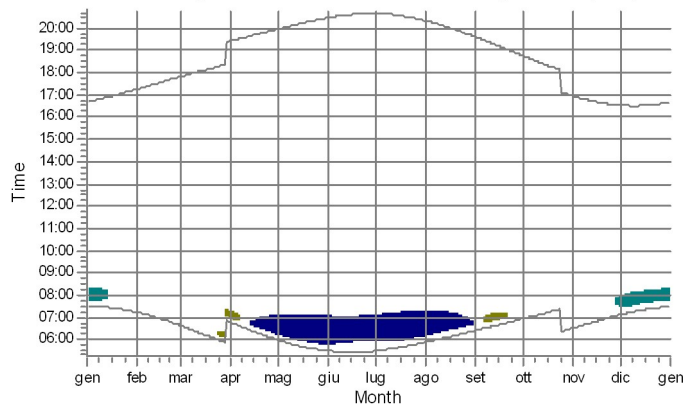
J: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (126)



K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (127)



L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (129)



WTGs

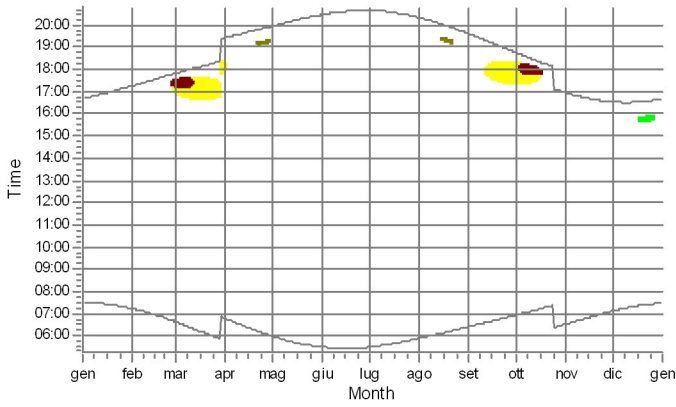
- 1: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (1)
- 2: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (2)
- 4: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (4)
- 6: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (6)

- 7: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (7)
- 10: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (10)
- 11: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (11)

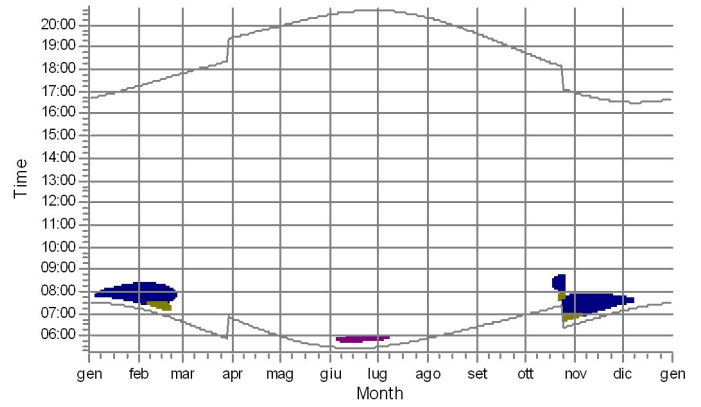
SHADOW - Calendar, graphical

Calculation: Real case

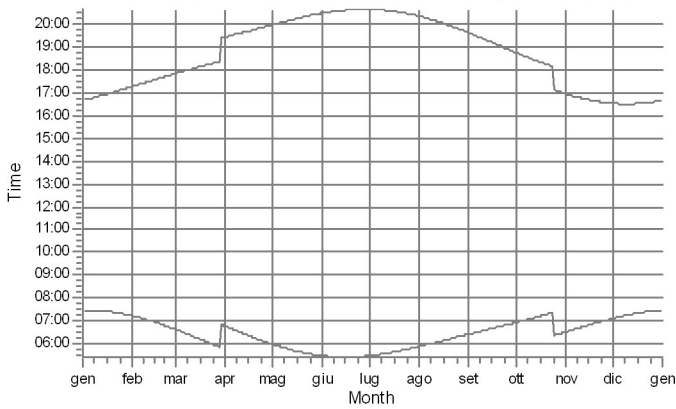
M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (132)



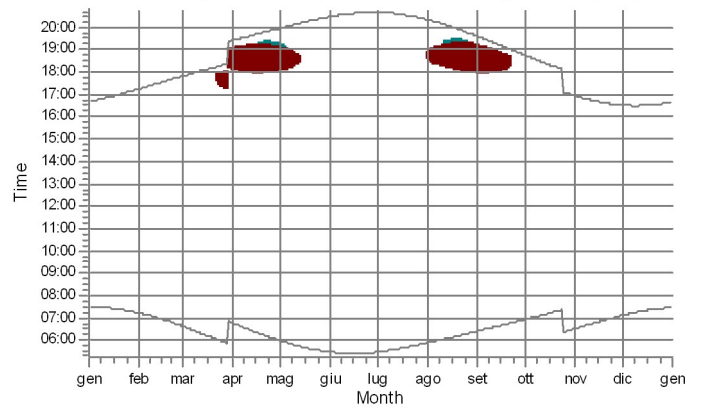
N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (134)



O: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (135)



P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (137)



WTGs

- 2: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (2)
- 6: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (6)
- 7: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (7)
- 8: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (8)

- 9: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (9)
- 10: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (10)
- 11: VESTAS V162 5600 162.0 !OI! hub: 125,0 m (TOT: 206,0 m) (11)

Project:

Intervisibilità

Licensed user:

Iron solar s.r.l.
via Lanzone, 31
IT-20122 Milano
+393487125089
Fabio Paccapelo / francesca.saccarola@hopegroup.it
Calculated:
07/05/2024 21:27/4.0.531

SHADOW - Calendar per WTG

Calculation: Real case WTG: 1 - VESTAS V162 5600 162.0 !OI hub: 125,0 m (TOT: 206,0 m) (1)
Assumptions for shadow calculations
Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
338 117 65 65 130 117 117 507 338 65 208 533 2 600

Table with 13 columns (January to December) and 31 rows of data. Each cell contains a time range (e.g., 07:28-17:15) or a numerical value. The last row shows 'Potential sun hours' and 'Sum of minutes with flicker' for each month.

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Real case WTG: 2 - VESTAS V162 5600 162.0 IO! hub: 125,0 m (TOT: 206,0 m) (2)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4,21	4,83	5,24	6,37	6,76	8,17	9,01	9,23	7,23	4,84	4,00	3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

	January	February	March	April	May	June
1	07:27 16:40	07:14 17:15	06:37 16:58-17:26/28	06:45 17:50	05:58 19:25	05:29 19:58
2	07:28 16:41	07:13 17:16	06:35 17:51	06:43 19:26	05:57 19:59	05:28 20:28
3	07:28 16:42	07:12 17:17	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29
4	07:28 16:43	07:10 17:19	06:32 17:53	06:40 19:28	05:54 20:01	05:27 20:30
5	07:28 16:44	07:09 17:20	06:30 17:54	06:38 19:29	05:53 20:02	05:27 20:31
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31
7	07:28 16:45	07:07 17:22	06:27 17:57	06:35 19:31	05:51 20:04	05:26 20:32
8	07:27 16:46	07:06 17:24	06:26 17:58	06:33 19:32	05:50 20:05	05:26 20:33
9	07:27 16:47	07:05 17:25	06:24 17:59	06:32 19:34	05:48 20:06	05:26 20:33
10	07:27 16:49	07:04 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34
11	07:27 16:50	07:02 17:28	06:21 18:01	06:28 19:36	05:46 20:08	05:26 20:34
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:25 20:35
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:25 20:35
14	07:26 16:53	06:59 17:31	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36
16	07:25 16:55	06:56 17:34	06:12 18:07	06:20 19:41	05:41 20:13	05:25 20:37
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37
18	07:24 16:57	06:53 17:36	06:09 18:09	06:17 19:43	05:39 20:15	05:25 20:37
19	07:24 16:59	06:52 17:38	06:07 18:10	06:16 19:44	05:38 20:16	05:25 20:38
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38
21	07:22 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38
22	07:22 17:02	06:47 17:41	06:02 18:14	06:11 19:48	05:35 20:19	05:26 20:38
23	07:21 17:04	06:46 17:43	06:00 18:15	06:10 19:49	05:35 20:20	05:26 20:39
24	07:20 17:05	06:44 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:26 20:39
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39
26	07:19 17:07	06:41 17:46	05:55 18:18	06:05 19:52	05:32 20:23	05:27 20:39
27	07:18 17:08	06:40 17:47	05:54 18:19	06:04 19:53	05:32 20:24	05:27 20:39
28	07:17 17:10	06:38 17:49	05:52 18:20	06:02 19:54	05:31 20:24	05:28 20:39
29	07:16 17:11		06:50 19:21	06:01 19:55	05:30 20:25	05:28 20:39
30	07:15 17:12		06:48 19:23	06:00 19:56	05:30 20:26	05:29 20:39
31	07:15 17:14		06:47 19:24		05:29 20:27	
Potential sun hours	296	296	369	399	450	454
Sum of minutes with flicker	0	563	1305	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Real case WTG: 2 - VESTAS V162 5600 162.0 IO! hub: 125,0 m (TOT: 206,0 m) (2)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4,21	4,83	5,24	6,37	6,76	8,17	9,01	9,23	7,23	4,84	4,00	3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

	July	August	September	October	November	December
1	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	17:23-18:14/51 16:56	06:31 15:52-16:08/16 16:31
2	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	17:22-18:13/51 16:55	06:32 15:52-16:06/14 16:31
3	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:40	17:23-18:13/50 16:54	06:34 15:53-16:05/12 16:31
4	05:31 20:38	05:57 20:16	06:28 19:30	06:59 18:39	17:23-18:12/49 16:53	06:35 15:54-16:04/10 16:30
5	05:31 20:38	05:58 20:15	06:29 19:29	07:00 18:37	17:24-18:11/47 16:51	06:36 15:54-16:02/8 16:30
6	05:32 20:38	05:59 20:13	06:30 19:27	07:01 18:35	17:24-18:10/46 16:50	06:37 15:56-16:02/6 16:30
7	05:32 20:38	06:00 20:12	06:31 19:25	07:03 18:34	17:24-18:09/45 16:49	06:39 15:57-16:00/3 16:30
8	05:33 20:37	06:01 20:11	06:32 19:24	07:04 18:32	17:25-18:08/43 16:48	06:40 15:58-15:59/1 16:30
9	05:34 20:37	06:02 20:10	06:33 19:22	07:05 18:30	17:26-18:06/40 16:47	06:41 16:47 16:30
10	05:34 20:36	06:03 20:08	06:34 19:20	07:06 18:29	17:27-18:04/37 16:46	06:42 16:46 16:30
11	05:35 20:36	06:04 20:07	06:35 19:18	07:07 18:27	17:28-18:02/34 16:45	06:43 16:45 16:30
12	05:36 20:35	06:05 20:06	06:36 19:17	07:08 18:25	17:30-18:01/31 16:44	06:45 16:44 16:30
13	05:37 20:34	06:06 20:03	06:37 19:13	07:09 18:22	17:32-17:58/26 16:43	06:46 16:43 16:30
14	05:37 20:34	06:07 20:03	06:39 19:13	07:10 18:22	17:35-17:55/20 16:42	06:47 16:42 16:30
15	05:38 20:34	06:08 20:02	06:40 19:12	07:11 18:21	17:39-17:50/11 16:41	06:48 16:41 16:31
16	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	17:00-17:25/25 16:40	06:50 16:40 16:31
17	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	16:58-17:26/28 16:39	06:51 16:39 16:31
18	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	16:57-17:28/31 16:38	06:52 16:38 16:31
19	05:41 20:31	06:12 19:56	06:44 19:05	07:16 18:14	16:56-17:27/31 16:38	06:53 16:38 16:32
20	05:42 20:30	06:13 19:54	06:45 19:03	07:17 18:13	16:54-17:26/32 16:37	06:54 16:37 16:32
21	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:11	16:53-17:24/31 16:36	06:56 16:36 16:33
22	05:44 20:29	06:15 19:51	06:47 18:59	07:19 18:10	16:52-17:22/30 16:36	06:57 16:36 16:33
23	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	16:52-17:21/29 16:35	06:58 16:35 16:34
24	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	16:52-17:19/27 16:34	06:59 16:34 16:34
25	05:47 20:26	06:18 19:47	06:50 18:54	07:23 17:06	16:52-17:16/27 16:34	07:00 16:34 16:35
26	05:48 20:25	06:19 19:45	06:51 18:52	07:24 17:04	15:50-16:16/26 16:33	07:01 16:33 16:35
27	05:49 20:24	06:20 19:43	06:52 18:51	07:25 17:03	15:51-16:15/24 16:33	07:03 16:33 16:36
28	05:50 20:23	06:21 19:42	06:53 18:49	07:26 17:01	15:51-16:13/22 16:32	07:04 16:32 16:37
29	05:51 20:22	06:22 19:40	06:54 18:47	07:28 17:00	17:23-18:15/52 16:32	07:05 16:32 16:37
30	05:52 20:21	06:23 19:39	06:55 18:46	07:29 16:59	15:51-16:11/20 16:31	07:06 16:31 16:38
31	05:53 20:20	06:24 19:37		07:30 16:58	15:51-16:09/18 16:30	07:07 16:30 16:39
Potential sun hours	461	429	375	345	296	286
Sum of minutes with flicker	0	0	782	1037	70	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
--------------	-------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------

SHADOW - Calendar per WTG

Calculation: Real case WTG: 3 - VESTAS V162 5600 162.0 IO! hub: 125,0 m (TOT: 206,0 m) (3)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4,21	4,83	5,24	6,37	6,76	8,17	9,01	9,23	7,23	4,84	4,00	3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

January | February | March | April | May | June | July | August | September | October | November | December

1	07:27 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:58 19:57	05:29 20:28	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	07:28 16:41	07:13 17:16	06:35 17:51	06:43 19:26	05:57 19:59	05:28 20:28	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:32 16:55	07:08 16:31
3	07:28 16:42	07:12 17:17	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:40	06:34 16:54	07:09 16:31
4	07:28 16:43	07:10 17:19	06:32 17:53	06:40 19:28	05:54 20:01	05:27 20:30	05:31 20:38	05:57 20:16	06:28 19:30	06:59 18:39	06:35 16:52	07:10 16:30
5	07:28 16:43	07:09 17:20	06:30 17:54	06:38 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:58 20:15	06:29 19:29	07:00 18:37	06:36 16:51	07:11 16:30
6	07:28 16:44	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31	05:32 20:38	05:59 20:13	06:30 19:27	07:01 18:35	06:37 16:50	07:12 16:30
7	07:28 16:45	07:07 17:22	06:27 17:57	06:35 19:31	05:51 20:04	05:26 20:32	05:32 20:38	06:00 20:12	06:31 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	07:27 16:46	07:06 17:24	06:26 17:58	06:33 19:32	05:49 20:05	05:26 20:33	05:33 20:37	06:01 20:11	06:32 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	07:27 16:47	07:05 17:25	06:24 17:59	06:32 19:33	05:48 20:06	05:26 20:33	05:34 20:37	06:02 20:10	06:33 19:22	07:05 18:30	06:41 16:47	07:15 16:30
10	07:27 16:48	07:04 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:34 20:36	06:03 20:08	06:34 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:02 17:28	06:21 18:01	06:28 19:36	05:46 20:08	05:26 20:34	05:35 20:36	06:04 20:07	06:35 19:18	07:07 18:27	06:43 16:45	07:17 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:25 20:35	05:36 20:36	06:05 20:06	06:36 19:17	07:08 18:25	06:45 16:44	07:17 16:30
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:25 20:35	05:37 20:35	06:06 20:04	06:37 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:59 17:31	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:37 20:34	06:07 20:03	06:38 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36	05:38 20:34	06:08 20:02	06:40 19:11	07:11 18:21	06:48 16:41	07:20 16:30
16	07:25 16:55	06:56 17:34	06:12 18:07	06:20 19:41	05:41 20:13	05:25 20:37	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:20 16:31
17	07:25 16:56	06:54 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	07:24 16:57	06:53 17:36	06:09 18:09	06:17 19:43	05:39 20:15	05:25 20:37	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:38	07:22 16:31
19	07:24 16:59	06:52 17:38	06:07 18:10	06:16 19:44	05:38 20:16	05:25 20:38	05:41 20:31	06:12 19:56	06:44 19:05	07:16 18:14	06:53 16:38	07:22 16:32
20	07:23 17:00	06:50 17:39	06:05 18:12	06:14 19:46	05:37 20:17	05:26 20:38	05:42 20:30	06:13 19:54	06:45 19:03	07:17 18:13	06:54 16:37	07:23 16:32
21	07:22 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:11	06:56 16:36	07:24 16:33
22	07:22 17:02	06:47 17:41	06:02 18:14	06:11 19:48	05:35 20:19	05:26 20:38	05:44 20:29	06:15 19:51	06:47 18:59	07:19 18:10	06:57 16:35	07:24 16:33
23	07:21 17:03	06:46 17:42	06:00 18:15	06:10 19:49	05:35 20:20	05:26 20:39	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	07:20 17:05	06:44 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:26 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:07	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:26	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:25 16:35
26	07:19 17:08	06:41 17:47	05:55 18:19	06:05 19:53	05:32 20:24	05:27 20:39	05:48 20:24	06:19 19:43	06:51 18:51	06:24 17:03	07:01 16:33	07:26 16:36
27	07:18 17:10	06:40 17:49	05:54 18:20	06:04 19:54	05:32 20:24	05:27 20:39	05:49 20:23	06:20 19:42	06:52 18:49	06:25 17:01	07:03 16:32	07:26 16:37
28	07:17 17:11	06:38 17:49	05:52 18:20	06:02 19:54	05:31 20:24	05:28 20:39	05:50 20:23	06:21 19:42	06:53 18:49	06:26 17:01	07:04 16:32	07:27 16:37
29	07:16 17:11	06:37 17:48	05:51 18:21	06:01 19:55	05:30 20:25	05:28 20:39	05:51 20:22	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:37
30	07:15 17:12	06:36 17:49	05:50 18:22	06:00 19:56	05:30 20:26	05:29 20:39	05:52 20:21	06:23 19:39	06:55 18:46	06:29 16:59	07:06 16:31	07:27 16:38
31	07:15 17:14	06:35 17:49	05:49 18:23	06:00 19:57	05:30 20:27	05:29 20:40	05:53 20:20	06:24 19:37	06:56 16:57	06:30 16:57	07:07 16:31	07:27 16:39

Potential sun hours

Sum of minutes with flicker

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Real case WTG: 4 - VESTAS V162 5600 162.0 IO! hub: 125,0 m (TOT: 206,0 m) (4)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4,21	4,83	5,24	6,37	6,76	8,17	9,01	9,23	7,23	4,84	4,00	3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:27 16:40	07:13 17:15	06:37 17:50	06:45 19:25	05:58 19:57	05:29 20:28	05:29 05:52-06:22/30 20:39	05:53 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	07:28 16:41	07:12 17:16	06:35 17:51	06:43 19:26	05:57 19:58	05:28 20:28	05:30 05:52-06:21/29 20:39	05:54 20:18	06:26 19:34	06:57 18:42	06:32 16:55	07:08 16:31
3	07:28 16:42	07:11 17:17	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 05:53-06:21/28 20:38	05:55 20:17	06:27 19:32	06:58 18:40	06:34 16:54	07:09 16:30
4	07:28 16:43	07:10 17:19	06:32 17:53	06:40 19:28	05:54 20:01	05:27 05:53-06:04/11 20:30	05:31 05:54-06:20/26 20:38	05:56 20:16	06:28 19:30	06:59 18:39	06:35 16:52	07:10 16:30
5	07:28 16:43	07:09 17:20	06:30 17:54	06:38 19:29	05:53 20:02	05:27 05:50-06:08/18 20:31	05:31 05:54-06:18/24 20:38	05:57 20:15	06:29 19:29	07:00 18:37	06:36 16:51	07:11 16:30
6	07:28 16:44	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 05:49-06:10/21 20:31	05:32 05:55-06:17/22 20:38	05:58 20:13	06:30 19:27	07:01 18:35	06:37 16:50	07:12 16:30
7	07:28 16:45	07:07 17:22	06:27 17:57	06:35 19:31	05:51 20:04	05:26 05:48-06:12/24 20:32	05:32 05:55-06:15/20 20:37	05:59 20:12	06:31 19:25	07:02 18:34	06:39 16:49	07:13 16:30
8	07:27 16:46	07:06 17:24	06:26 17:58	06:33 19:32	05:49 20:05	05:26 05:48-06:13/25 20:33	05:33 05:58-06:13/15 20:37	06:00 20:11	06:32 19:23	07:04 18:32	06:40 16:48	07:14 16:30
9	07:27 16:47	07:05 17:25	06:24 17:59	06:32 19:33	05:48 20:06	05:26 05:48-06:15/27 20:33	05:34 06:05-06:07/2 20:37	06:02 20:10	06:33 19:22	07:05 18:30	06:41 16:47	07:15 16:30
10	07:27 16:48	07:04 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 05:48-06:16/28 20:34	05:34 20:36	06:03 20:08	06:34 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:49	07:02 17:27	06:21 18:01	06:28 19:36	05:46 20:08	05:25 05:48-06:18/30 20:34	05:35 20:36	06:04 20:07	06:35 19:18	07:07 18:27	06:43 16:45	07:16 16:30
12	07:27 16:51	07:01 17:29	06:19 18:02	06:27 19:37	05:45 20:09	05:25 05:48-06:19/31 20:35	05:36 20:35	06:05 20:06	06:36 19:17	07:08 18:25	06:45 16:44	07:17 16:30
13	07:26 16:52	07:00 17:30	06:17 18:04	06:17 19:38	05:44 20:10	05:25 05:48-06:20/32 20:35	05:37 20:35	06:06 20:04	06:37 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:58 17:31	06:16 18:05	06:24 19:39	05:43 20:11	05:25 05:48-06:20/32 20:36	05:37 20:34	06:07 20:03	06:38 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:25 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 05:48-06:21/33 20:36	05:38 20:34	06:08 20:01	06:39 19:11	07:11 18:21	06:48 16:41	07:20 16:30
16	07:25 16:55	06:56 17:34	06:12 18:07	06:20 19:41	05:41 20:13	05:25 05:48-06:22/34 20:37	05:39 20:33	06:09 20:00	06:40 19:10	07:12 18:19	06:49 16:40	07:20 16:31
17	07:25 16:56	06:54 17:35	06:10 18:08	06:19 19:42	05:40 20:14	05:25 05:48-06:22/34 20:37	05:40 20:33	06:10 19:59	06:41 19:08	07:14 18:17	06:51 16:39	07:21 16:31
18	07:24 16:57	06:53 17:36	06:09 18:09	06:17 19:43	05:39 20:15	05:25 05:48-06:23/35 20:37	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:38	07:22 16:31
19	07:24 16:59	06:52 17:38	06:07 18:10	06:16 19:44	05:38 20:16	05:25 05:48-06:23/35 20:38	05:41 20:31	06:12 19:56	06:44 19:04	07:16 18:14	06:53 16:38	07:22 16:32
20	07:23 17:00	06:50 17:39	06:05 18:11	06:14 19:45	05:37 20:17	05:25 05:48-06:23/35 20:38	05:42 20:30	06:13 19:54	06:45 19:03	07:17 18:13	06:54 16:37	07:23 16:32
21	07:22 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 05:48-06:23/35 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:11	06:55 16:36	07:23 16:32
22	07:22 17:02	06:47 17:41	06:02 18:14	06:11 19:48	05:35 20:19	05:26 05:49-06:24/35 20:38	05:44 20:29	06:15 19:51	06:47 18:59	07:19 18:10	06:57 16:35	07:24 16:33
23	07:21 17:03	06:46 17:42	06:00 18:15	06:10 19:49	05:34 20:20	05:26 05:49-06:24/35 20:38	05:45 20:28	06:16 19:50	06:48 18:58	07:20 18:08	06:58 16:35	07:24 16:33
24	07:20 17:05	06:44 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:26 05:49-06:24/35 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 05:50-06:24/34 20:39	05:47 20:26	06:18 19:46	06:50 18:54	06:23 17:06	07:00 16:34	07:25 16:35
26	07:19 17:07	06:41 17:46	05:55 18:18	06:05 19:52	05:32 20:23	05:27 05:50-06:24/34 20:39	05:48 20:25	06:19 19:45	06:51 18:52	06:24 17:04	07:01 16:33	07:26 16:35
27	07:18 17:08	06:40 17:47	05:53 18:19	06:04 19:53	05:32 20:24	05:27 05:50-06:23/33 20:39	05:49 20:24	06:20 19:43	06:52 18:51	06:25 17:03	07:02 16:33	07:26 16:36
28	07:17 17:10	06:38 17:48	05:52 18:20	06:02 19:54	05:31 20:24	05:28 05:51-06:24/33 20:39	05:50 20:23	06:21 19:42	06:53 18:49	06:26 17:01	07:04 16:32	07:26 16:37
29	07:16 17:11		06:50 19:21	06:01 19:55	05:30 20:25	05:28 05:51-06:23/32 20:39	05:51 20:22	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:37
30	07:15 17:12		06:48 19:22	06:00 19:56	05:30 20:26	05:29 05:51-06:22/31 20:39	05:52 20:21	06:23 19:38	06:55 18:45	06:29 16:59	07:06 16:31	07:27 16:38
31	07:14 17:13		06:47 19:24		05:29 20:27		05:52 20:20	06:24 19:37		06:30 16:57		07:27 16:39
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Sum of minutes with flicker	0	0	0	0	0	822	196	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Real case WTG: 5 - VESTAS V162 5600 162.0 IO! hub: 125,0 m (TOT: 206,0 m) (5)
Assumptions for shadow calculations
Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time
N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
338 117 65 65 130 117 117 507 338 65 208 533 2 600

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:27 16:40	07:13 17:15	06:37 17:50	06:45 19:25	05:58 19:57	05:29 20:28	05:29 20:39	05:53 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	07:28 16:41	07:12 17:16	06:35 17:51	06:43 19:26	05:57 19:58	05:28 20:28	05:29 20:39	05:54 20:18	06:26 19:34	06:57 18:42	06:32 16:55	07:08 16:31
3	07:28 16:42	07:11 17:17	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:38	05:55 20:17	06:27 19:32	06:58 18:40	06:34 16:54	07:09 16:30
4	07:28 16:42	07:10 17:19	06:32 17:53	06:40 19:28	05:54 20:01	05:27 20:30	05:31 20:38	05:56 20:16	06:28 19:30	06:59 18:39	06:35 16:52	07:10 16:30
5	07:28 16:43	07:09 17:20	06:30 17:54	06:38 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:57 20:15	06:29 19:29	07:00 18:37	06:36 16:51	07:11 16:30
6	07:28 16:44	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31	05:32 20:38	05:58 20:13	06:30 19:27	07:01 18:35	06:37 16:50	07:12 16:30
7	07:28 16:45	07:07 17:22	06:27 17:57	06:35 19:31	05:51 20:04	05:26 20:32	05:32 20:37	05:59 20:12	06:31 19:25	07:02 18:34	06:38 16:49	07:13 16:30
8	07:27 16:46	07:06 17:24	06:25 17:58	06:33 19:32	05:49 20:05	05:26 20:33	05:33 20:37	06:00 20:11	06:32 19:23	07:04 18:32	06:40 16:48	07:14 16:30
9	07:27 16:47	07:05 17:25	06:24 17:59	06:32 19:33	05:48 20:06	05:26 20:33	05:34 20:37	06:01 20:10	06:33 19:22	07:05 18:30	06:41 16:47	07:15 16:30
10	07:27 16:48	07:03 17:26	06:22 18:00	06:30 19:34	05:47 20:07	05:26 20:34	05:34 20:36	06:02 20:08	06:34 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:49	07:02 17:27	06:21 18:01	06:28 19:36	05:46 20:08	05:25 20:34	05:35 20:36	06:04 20:07	06:35 19:18	07:07 18:27	06:43 16:45	07:16 16:30
12	07:27 16:51	07:01 17:29	06:19 18:02	06:27 19:37	05:45 20:09	05:25 20:35	05:36 20:35	06:05 20:06	06:36 19:17	07:08 18:25	06:45 16:44	07:17 16:30
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:25 20:35	05:37 20:35	06:06 20:04	06:37 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:58 17:31	06:16 18:05	06:23 19:39	05:43 20:11	05:25 20:36	05:37 20:34	06:07 20:03	06:38 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:25 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36	05:38 20:34	06:08 20:01	06:39 19:11	07:11 18:21	06:48 16:41	07:20 16:30
16	07:25 16:55	06:56 17:34	06:12 18:07	06:20 19:41	05:41 20:13	05:25 20:37	05:39 20:33	06:09 20:00	06:40 19:10	07:12 18:19	06:49 16:40	07:20 16:31
17	07:25 16:56	06:54 17:35	06:10 18:08	06:19 19:42	05:40 20:14	05:25 20:37	05:40 20:33	06:10 19:59	06:41 19:08	07:14 18:17	06:51 16:39	07:21 16:31
18	07:24 16:57	06:53 17:36	06:09 18:09	06:17 19:43	05:39 20:15	05:25 20:37	05:41 20:32	06:11 19:57	06:42 19:06	07:15 18:16	06:52 16:38	07:22 16:31
19	07:24 16:59	06:52 17:37	06:07 18:10	06:16 19:44	05:38 20:16	05:25 20:38	05:41 20:31	06:12 19:56	06:44 19:04	07:16 18:14	06:53 16:38	07:22 16:32
20	07:23 17:00	06:50 17:39	06:05 18:11	06:14 19:45	05:37 20:17	05:25 20:38	05:42 20:30	06:13 19:54	06:45 19:03	07:17 18:13	06:54 16:37	07:23 16:32
21	07:22 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:11	06:55 16:36	07:23 16:32
22	07:22 17:02	06:47 17:41	06:02 18:14	06:11 19:48	05:35 20:19	05:26 20:38	05:44 20:29	06:15 19:51	06:47 18:59	07:19 18:10	06:57 16:35	07:24 16:33
23	07:21 17:03	06:46 17:42	06:00 18:15	06:10 19:49	05:34 20:20	05:26 20:38	05:45 20:28	06:16 19:50	06:48 18:58	07:20 18:08	06:58 16:35	07:24 16:33
24	07:20 17:05	06:44 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:26 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:26	06:18 19:46	06:50 18:54	06:23 17:06	07:00 16:34	07:25 16:35
26	07:19 17:07	06:41 17:46	05:55 18:18	06:05 19:52	05:32 20:23	05:27 20:39	05:48 20:25	06:19 19:45	06:51 18:52	06:24 17:04	07:01 16:33	07:26 16:35
27	07:18 17:08	06:40 17:47	05:53 18:19	06:04 19:53	05:32 20:24	05:27 20:39	05:49 20:24	06:20 19:43	06:52 18:51	06:25 17:03	07:02 16:33	07:26 16:36
28	07:17 17:10	06:38 17:48	05:52 18:20	06:02 19:54	05:31 20:24	05:28 20:39	05:50 20:23	06:21 19:42	06:53 18:49	06:26 17:01	07:04 16:32	07:26 16:37
29	07:16 17:11		06:50 19:21	06:01 19:55	05:30 20:25	05:28 20:39	05:51 20:22	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:37
30	07:15 17:12		06:48 19:22	06:00 19:56	05:30 20:26	05:29 20:39	05:51 20:21	06:23 19:38	06:55 18:45	06:29 16:59	07:06 16:31	07:27 16:38
31	07:14 17:13		06:47 19:24		05:29 20:27		05:52 20:20	06:24 19:37		06:30 16:57		07:27 16:39
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Real case WTG: 6 - VESTAS V162 5600 162.0 IO! hub: 125,0 m (TOT: 206,0 m) (6)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
338 117 65 65 130 117 117 507 338 65 208 533 2 600

	January	February	March	April	May	June
1	07:28 07:50-08:13/23 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:58 18:55-19:10/15 19:58	05:29 20:28
2	07:28 07:50-08:13/23 16:41	07:13 17:16	06:35 17:51	06:43 19:26	05:57 18:59-19:07/8 19:59	05:28 20:29
3	07:28 07:50-08:14/24 16:42	07:12 17:17	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29
4	07:28 07:50-08:14/24 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:55 20:01	05:28 20:30
5	07:28 07:50-08:14/24 16:44	07:09 17:20	06:31 17:55	06:38 19:29	05:53 20:02	05:27 20:31
6	07:28 07:50-08:13/23 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31
7	07:28 07:50-08:13/23 16:46	07:07 17:23	06:27 17:57	06:35 19:31	05:51 20:04	05:27 20:32
8	07:28 07:50-08:13/23 16:47	07:06 17:24	06:26 17:58	06:33 19:32	05:50 20:05	05:26 20:33
9	07:27 07:51-08:13/22 16:48	07:05 17:25	06:24 17:59	06:32 18:59-19:09/10 19:34	05:48 20:06	05:26 20:33
10	07:27 07:52-08:11/19 16:49	07:04 17:26	06:22 18:00	06:30 18:57-19:11/14 19:35	05:47 20:07	05:26 20:34
11	07:27 07:54-08:11/17 16:50	07:02 17:28	06:21 18:01	06:29 18:55-19:11/16 19:36	05:46 20:08	05:26 20:34
12	07:27 07:56-08:10/14 16:51	07:01 17:29	06:19 18:03	06:27 18:54-19:12/18 19:37	05:45 20:09	05:26 20:35
13	07:26 07:59-08:07/8 16:52	07:00 17:30	06:17 18:04	06:25 18:52-19:13/21 19:38	05:44 20:10	05:25 20:35
14	07:26 16:53 17:31	06:59 17:31	06:16 18:05	06:24 18:51-19:13/22 19:39	05:43 20:11	05:25 20:36
15	07:26 16:54 17:33	06:57 17:33	06:14 18:06	06:22 18:50-19:14/24 19:40	05:42 20:12	05:25 20:36
16	07:25 16:55 17:34	06:56 17:34	06:12 18:07	06:21 18:49-19:14/25 19:41	05:41 20:13	05:25 20:37
17	07:25 16:56 17:35	06:55 17:35	06:11 18:08	06:19 18:49-19:16/27 19:42	05:40 20:14	05:25 20:37
18	07:24 16:58 17:36	06:53 17:36	06:09 18:09	06:17 18:48-19:17/29 19:43	05:39 20:15	05:25 20:37
19	07:24 16:59 17:38	06:52 17:38	06:07 18:11	06:16 18:48-19:18/30 19:44	05:38 20:16	05:26 20:38
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 18:47-19:19/32 19:46	05:37 20:17	05:26 20:38
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 18:48-19:20/32 19:47	05:36 20:18	05:26 20:38
22	07:22 17:02	06:47 17:41	06:02 18:14	06:11 18:47-19:20/33 19:48	05:35 20:19	05:26 20:38
23	07:21 17:04	06:46 17:43	06:00 18:15	06:10 18:48-19:21/33 19:49	05:35 20:20	05:26 20:39
24	07:20 17:05	06:45 17:44	05:59 18:16	06:08 18:48-19:19/31 19:50	05:34 20:21	05:27 20:39
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 18:48-19:19/31 19:51	05:33 20:22	05:27 20:39
26	07:19 17:07	06:42 17:46	05:55 18:18	06:05 18:49-19:18/29 19:52	05:32 20:23	05:27 20:39
27	07:18 17:09	06:40 17:47	05:54 18:19	06:04 18:50-19:17/27 19:53	05:32 20:24	05:27 20:39
28	07:17 17:10	06:38 17:49	05:52 18:20	06:03 18:51-19:16/25 19:54	05:31 20:25	05:28 20:39
29	07:16 17:11	06:37 17:50	05:50 18:21	06:01 18:52-19:15/23 19:55	05:31 20:25	05:28 20:39
30	07:16 17:12	06:36 17:51	05:49 18:22	06:00 18:53-19:12/19 19:56	05:30 20:26	05:29 20:39
31	07:15 17:14	06:35 17:52	05:47 18:23	05:47 18:54-19:11/17 19:57	05:29 20:27	05:29 20:39
Potential sun hours	296	296	369	399	450	454
Sum of minutes with flicker	267	0	0	556	23	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Real case WTG: 6 - VESTAS V162 5600 162.0 IO! hub: 125,0 m (TOT: 206,0 m) (6)
Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time
N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
338 117 65 65 130 117 117 507 338 65 208 533 2 600

	July	August	September	October	November	December
1	05:29 20:39	05:54 20:19	06:25 18:54-19:10/16 19:35	06:56 18:44	06:31 16:56	07:07 07:36-07:53/17 16:31
2	05:30 20:39	05:55 20:18	06:26 18:55-19:09/14 19:34	06:57 18:42	06:33 16:55	07:08 07:35-07:54/19 16:31
3	05:30 20:39	05:56 20:17	06:27 18:57-19:07/10 19:32	06:58 18:41	06:34 16:54	07:09 07:34-07:56/22 16:31
4	05:31 20:38	05:57 20:16	06:28 19:01-19:06/5 19:30	06:59 18:39	06:35 16:53	07:10 07:34-07:57/23 16:30
5	05:31 20:38	05:58 20:15	06:29 19:29	07:00 18:37	06:36 16:51	07:11 07:35-07:58/23 16:30
6	05:32 20:38	05:59 20:14	06:30 19:27	07:02 18:35	06:37 16:50	07:12 07:36-07:59/23 16:30
7	05:33 20:38	06:00 20:12	06:31 19:25	07:03 18:34	06:39 16:49	07:13 07:37-08:01/24 16:30
8	05:33 20:37	06:01 20:11	06:32 19:24	07:04 18:32	06:40 16:48	07:14 07:38-08:02/24 16:30
9	05:34 20:37	06:02 20:10	06:33 19:22	07:05 18:30	06:41 16:47	07:15 07:39-08:03/24 16:30
10	05:35 20:36	06:03 20:08	06:35 19:20	07:06 18:29	06:42 16:46	07:16 07:40-08:03/23 16:30
11	05:35 20:36	06:04 19:06-19:17/11 20:07	06:36 19:18	07:07 18:27	06:44 16:45	07:17 07:41-08:04/23 16:30
12	05:36 20:36	06:05 19:04-19:20/16 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:17 07:42-08:05/23 16:30
13	05:37 20:35	06:06 19:01-19:21/20 20:04	06:38 19:15	07:09 18:24	06:46 16:43	07:18 07:42-08:05/23 16:30
14	05:37 20:35	06:07 19:00-19:23/23 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 07:43-08:06/23 16:30
15	05:38 20:34	06:08 18:58-19:24/26 20:02	06:40 19:12	07:11 18:21	06:48 16:41	07:20 07:44-08:07/23 16:31
16	05:39 20:33	06:09 18:57-19:25/28 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:20 07:44-08:07/23 16:31
17	05:40 20:33	06:10 18:56-19:25/29 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 07:45-08:08/23 16:31
18	05:41 20:32	06:11 18:55-19:26/31 19:57	06:43 19:06	07:15 18:16	06:52 16:39	07:22 07:46-08:09/23 16:31
19	05:42 20:31	06:12 18:54-19:26/32 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:22 07:46-08:09/23 16:32
20	05:42 20:31	06:13 18:54-19:26/32 19:54	06:45 19:03	07:17 18:13	06:54 16:37	07:23 07:47-08:10/23 16:32
21	05:43 20:30	06:14 18:52-19:25/33 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 07:47-08:10/23 16:33
22	05:44 20:29	06:15 18:52-19:24/32 19:51	06:47 18:59	07:19 18:10	06:57 16:36	07:24 07:48-08:11/23 16:33
23	05:45 20:28	06:16 18:51-19:22/31 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 07:48-08:11/23 16:34
24	05:46 20:27	06:17 18:51-19:21/30 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 07:49-08:12/23 16:34
25	05:47 20:26	06:18 18:51-19:19/28 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:26 07:49-08:12/23 16:35
26	05:48 20:25	06:19 18:51-19:18/27 19:45	06:51 18:52	06:24 17:04	07:01 16:33	07:26 07:49-08:12/23 16:35
27	05:49 20:25	06:20 18:51-19:16/25 19:43	06:52 18:51	06:25 17:03	07:03 16:33	07:26 07:50-08:13/23 16:36
28	05:50 20:24	06:21 18:51-19:15/24 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 07:50-08:13/23 16:37
29	05:51 20:23	06:22 18:51-19:14/23 19:40	06:54 18:47	06:28 17:00	07:05 07:40-07:47/7 16:32	07:27 07:50-08:13/23 16:37
30	05:52 20:22	06:23 18:52-19:12/20 19:39	06:55 18:46	06:29 16:59	07:06 07:37-07:51/14 16:32	07:27 07:50-08:13/23 16:38
31	05:53 20:20	06:24 18:53-19:11/18 19:37		06:30 16:58		07:27 07:50-08:13/23 16:39
Potential sun hours	461	429	375	345	296	286
Sum of minutes with flicker	0	539	45	0	21	705

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Real case WTG: 7 - VESTAS V162 5600 162.0 IO! hub: 125,0 m (TOT: 206,0 m) (7)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
338 117 65 65 130 117 117 507 338 65 208 533 2 600

	January	February	March	April	May	June
1	07:28 07:50-08:42/52 16:40 14:36-15:22/46	07:14 07:34-08:47/73 17:15 14:46-15:35/49	06:37 17:50	06:45 19:25	05:58 06:18-07:03/45 19:58	05:29 05:53-07:01/68 20:28
2	07:28 07:50-08:42/52 16:41 14:36-15:23/47	07:13 07:33-08:47/74 17:16 14:47-15:34/47	06:35 17:51	06:43 19:26	05:57 06:17-07:03/46 19:59	05:28 05:53-07:00/67 20:29
3	07:28 07:50-08:43/53 16:42 14:36-15:23/47	07:12 07:32-08:46/74 17:17 14:48-15:34/46	06:34 17:52	06:42 19:27	05:56 06:15-07:03/48 20:00	05:28 05:53-07:00/67 20:29
4	07:28 07:50-08:44/54 16:43 14:37-15:24/47	07:11 07:31-08:45/74 17:19 14:50-15:33/43	06:32 17:53	06:40 19:28	05:55 06:14-07:03/49 20:01	05:28 05:53-06:59/66 20:30
5	07:28 07:50-08:44/54 16:44 14:37-15:25/48	07:09 07:30-08:44/74 17:20 14:51-15:33/42	06:31 17:55	06:38 19:29	05:53 06:13-07:04/51 20:02	05:27 05:54-06:59/65 20:31
6	07:28 07:50-08:45/55 16:45 14:37-15:26/49	07:08 07:28-08:41/73 17:21 14:51-15:31/40	06:29 17:56	06:37 19:30	05:52 06:12-07:04/52 20:03	05:27 05:55-07:00/65 20:31
7	07:28 07:50-08:46/56 16:46 14:38-15:27/49	07:07 07:27-08:40/73 17:23 14:53-15:30/37	06:27 17:57	06:35 19:31	05:51 06:11-07:04/53 20:04	05:27 05:55-07:00/65 20:32
8	07:28 07:50-08:46/56 16:47 14:38-15:27/49	07:06 07:26-08:38/72 17:24 14:55-15:29/34	06:26 17:58	06:33 19:33	05:50 06:10-07:04/54 20:05	05:26 05:55-06:59/64 20:33
9	07:27 07:50-08:47/57 16:48 14:38-15:28/50	07:05 07:25-08:36/71 17:25 14:57-15:28/31	06:24 17:59	06:32 19:34	05:48 06:08-07:03/55 20:06	05:26 05:56-06:59/63 20:33
10	07:27 07:49-08:47/58 16:49 14:38-15:28/50	07:04 07:24-08:33/69 17:26 15:00-15:26/26	06:22 18:00	06:30 19:35	05:47 06:07-07:03/56 20:07	05:26 05:56-06:59/63 20:34
11	07:27 07:49-08:47/58 16:50 14:38-15:29/51	07:02 07:22-08:17/55 15:02-15:23/21 17:28 08:20-08:25/5	06:21 18:01	06:29 19:36	05:46 06:06-07:03/57 20:08	05:26 05:57-06:59/62 20:34
12	07:27 07:49-08:48/59 16:51 14:39-15:30/51	07:01 07:21-08:17/56 17:29 15:06-15:20/14	06:19 18:03	06:27 19:37	05:45 06:05-07:03/58 20:09	05:26 05:57-06:59/62 20:35
13	07:26 07:48-08:48/60 16:52 14:38-15:30/52	07:00 07:20-08:17/57 17:30 15:06-15:20/14	06:17 18:04	06:25 19:38	05:44 06:04-07:03/59 20:10	05:25 05:58-06:59/61 20:35
14	07:26 07:48-08:49/61 16:53 14:39-15:31/52	06:59 07:18-08:15/57 17:31 15:06-15:20/14	06:16 18:05	06:24 06:42-06:45/3 19:39	05:43 06:03-07:03/60 20:11	05:25 05:58-06:59/61 20:36
15	07:26 07:47-08:49/62 16:54 14:39-15:31/52	06:57 07:17-08:15/58 17:33 15:06-15:20/14	06:14 18:06	06:22 06:41-06:48/7 19:40	05:42 06:02-07:03/61 20:12	05:25 05:58-06:59/61 20:36
16	07:25 07:47-08:49/62 16:55 14:39-15:32/53	06:56 07:32-08:14/42 17:34 07:16-07:31/15	06:12 18:07	06:21 06:39-06:50/11 19:41	05:41 06:01-07:03/62 20:13	05:25 05:59-06:59/60 20:37
17	07:25 07:46-08:49/63 16:56 14:39-15:32/53	06:55 07:32-08:12/40 17:35 07:14-07:30/16	06:11 18:08	06:19 06:38-06:52/14 19:42	05:40 06:00-07:03/63 20:14	05:25 05:59-06:59/60 20:37
18	07:24 07:46-08:50/64 16:58 14:40-15:33/53	06:53 07:34-08:11/37 17:36 07:13-07:30/17	06:09 18:09	06:17 06:36-06:53/17 19:43	05:39 06:00-07:03/63 20:15	05:25 05:59-07:00/61 20:37
19	07:24 07:45-08:50/65 16:59 14:40-15:33/53	06:52 07:35-08:09/34 17:38 07:11-07:29/18	06:07 18:11	06:16 06:35-06:55/20 19:45	05:38 05:59-07:03/64 20:16	05:26 05:59-07:00/61 20:38
20	07:23 07:44-08:50/66 17:00 14:40-15:34/54	06:50 07:37-08:07/30 17:39 07:10-07:28/18	06:06 18:12	06:14 06:33-06:56/23 19:46	05:37 05:58-07:03/65 20:17	05:26 05:59-07:00/61 20:38
21	07:23 07:44-08:51/67 17:01 14:41-15:35/54	06:49 07:39-08:04/25 17:40 07:08-07:27/19	06:04 18:13	06:13 06:32-06:57/25 19:47	05:36 05:57-07:02/65 20:18	05:26 06:00-07:01/61 20:38
22	07:22 07:43-08:50/67 17:02 14:41-15:35/54	06:47 07:42-08:01/19 17:41 07:07-07:26/19	06:02 18:14	06:11 06:30-06:58/28 19:48	05:35 05:56-07:02/66 20:19	05:26 06:00-07:01/61 20:38
23	07:21 07:42-08:50/68 17:04 14:41-15:35/54	06:46 07:48-07:55/7 17:43 07:05-07:24/19	06:00 18:15	06:10 06:29-06:59/30 19:49	05:35 05:56-07:02/66 20:20	05:26 06:00-07:01/61 20:39
24	07:21 07:41-08:50/69 17:05 14:41-15:35/54	06:45 07:06-07:22/16 17:44 15:06-15:20/14	05:59 18:16	06:08 06:27-06:59/32 19:50	05:34 05:55-07:02/67 20:21	05:27 06:00-07:01/61 20:39
25	07:20 07:41-08:51/70 17:06 14:42-15:36/54	06:43 07:09-07:18/9 17:45 15:06-15:20/14	05:57 18:17	06:07 06:26-07:00/34 19:51	05:33 05:54-07:01/67 20:22	05:27 06:01-07:01/60 20:39
26	07:19 07:40-08:50/70 17:07 14:43-15:36/53	06:42 15:06-15:20/14 17:46 15:06-15:20/14	05:55 18:18	06:05 06:25-07:01/36 19:52	05:32 05:54-07:02/68 20:23	05:27 06:01-07:01/60 20:39
27	07:18 07:39-08:50/71 17:09 14:43-15:36/53	06:40 15:06-15:20/14 17:47 15:06-15:20/14	05:54 18:19	06:04 06:23-07:01/38 19:53	05:32 05:53-07:01/68 20:24	05:27 06:01-07:01/60 20:39
28	07:17 07:38-08:49/71 17:10 14:44-15:35/51	06:38 15:06-15:20/14 17:49 15:06-15:20/14	05:52 18:20	06:03 06:22-07:02/40 19:54	05:31 05:53-07:01/68 20:25	05:28 06:01-07:02/61 20:39
29	07:16 07:37-08:49/72 17:11 14:44-15:35/51	06:37 15:06-15:20/14 17:49 15:06-15:20/14	06:50 19:22	06:01 06:21-07:03/42 19:55	05:31 05:52-07:01/69 20:25	05:28 06:01-07:02/61 20:39
30	07:16 07:36-08:49/73 17:12 14:45-15:35/50	06:36 15:06-15:20/14 17:49 15:06-15:20/14	06:49 19:23	06:00 06:19-07:02/43 19:57	05:30 05:52-07:01/69 20:26	05:29 06:01-07:03/62 20:39
31	07:15 07:35-08:48/73 17:14 14:46-15:35/49	06:35 15:06-15:20/14 17:49 15:06-15:20/14	06:47 19:24	05:29 15:06-15:20/14 19:57	05:29 05:52-07:00/68 20:27	05:29 06:01-07:03/62 20:39
	Potential sun hours 296	296	369	399	450	454
	Sum of minutes with flicker 3521	1845	0	443	1862	1871

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Real case WTG: 7 - VESTAS V162 5600 162.0 IO! hub: 125,0 m (TOT: 206,0 m) (7)
Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time
N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
338 117 65 65 130 117 117 507 338 65 208 533 2 600

	July	August	September	October	November	December
1	05:29 06:01-07:03/62 20:39	05:54 06:16-07:14/58 20:19	06:25 06:56 19:35	06:56 18:44	06:31 06:53-08:02/69 16:56 14:28-14:56/28	07:07 07:31-08:30/59 16:31 14:20-15:11/51
2	05:30 06:01-07:04/63 20:39	05:55 06:17-07:14/57 20:18	06:26 06:57 19:34	06:57 18:42	06:33 06:55-08:06/71 16:55 14:26-14:57/31	07:08 07:32-08:30/58 16:31 14:21-15:11/50
3	05:30 06:01-07:04/63 20:39	05:56 06:18-07:14/56 20:17	06:27 06:58 19:32	06:58 18:41	06:34 06:56-08:08/72 16:54 14:24-14:59/35	07:09 07:33-08:30/57 16:31 14:21-15:11/50
4	05:31 06:01-07:05/64 20:38	05:57 06:19-07:14/55 20:16	06:28 06:59 19:30	06:59 18:39	06:35 06:57-08:10/73 16:53 14:23-15:00/37	07:10 07:34-08:30/56 16:30 14:22-15:11/49
5	05:31 06:01-07:05/64 20:38	05:58 06:20-07:14/54 20:15	06:29 07:01 19:29	07:01 18:37	06:36 06:58-08:11/73 16:51 14:21-15:01/40	07:11 07:35-08:31/56 16:30 14:23-15:12/49
6	05:32 06:01-07:06/65 20:38	05:59 06:21-07:14/53 20:14	06:30 07:02 19:27	07:02 18:35	06:37 07:00-08:14/74 16:50 14:21-15:03/42	07:12 07:36-08:31/55 16:30 14:23-15:12/49
7	05:33 06:01-07:07/66 20:38	06:00 06:22-07:14/52 20:12	06:31 07:03 19:25	07:03 18:34	06:39 07:01-08:15/74 16:49 14:19-15:03/44	07:13 07:37-08:31/54 16:30 14:24-15:12/48
8	05:33 06:01-07:06/65 20:37	06:01 06:23-07:13/50 20:11	06:32 07:04 19:24	07:04 18:32	06:40 07:02-08:16/74 16:48 14:18-15:04/46	07:14 07:38-08:32/54 16:30 14:25-15:12/47
9	05:34 06:01-07:07/66 20:37	06:02 06:24-07:13/49 20:10	06:33 07:05 19:22	07:05 18:30	06:41 07:04-08:18/74 16:47 14:18-15:05/47	07:15 07:39-08:32/53 16:30 14:25-15:12/47
10	05:35 06:00-07:07/67 20:37	06:03 06:25-07:13/48 20:08	06:35 07:06 19:20	07:06 18:29	06:42 07:05-08:18/73 16:46 14:17-15:06/49	07:16 07:40-08:33/53 16:30 14:26-15:13/47
11	05:35 06:00-07:08/68 20:36	06:04 06:26-07:12/46 20:07	06:36 07:07 19:19	07:07 18:27	06:44 07:06-08:19/73 16:45 14:16-15:06/50	07:17 07:41-08:33/52 16:30 14:27-15:13/46
12	05:36 06:00-07:08/68 20:36	06:05 06:27-07:12/45 20:06	06:37 07:08 19:17	07:08 18:26	06:45 07:08-08:20/72 16:44 14:17-15:07/50	07:17 07:42-08:34/52 16:30 14:27-15:12/45
13	05:37 06:00-07:09/69 20:35	06:06 06:28-07:11/43 20:04	06:38 07:09 19:15	07:09 18:24	06:46 07:09-08:21/72 16:43 14:16-15:07/51	07:18 07:42-08:33/51 16:30 14:28-15:13/45
14	05:37 06:00-07:09/69 20:35	06:07 06:29-07:10/41 20:03	06:39 07:10 19:13	07:10 18:22	06:47 07:10-08:21/71 16:42 14:16-15:07/51	07:19 07:43-08:34/51 16:30 14:29-15:13/44
15	05:38 06:01-07:10/69 20:34	06:08 06:30-07:10/40 20:02	06:40 07:11 19:12	07:11 18:21	06:48 07:12-08:23/71 16:41 14:15-15:08/53	07:20 07:44-08:34/50 16:31 14:29-15:14/45
16	05:39 06:02-07:10/68 20:33	06:09 06:31-07:09/38 20:00	06:41 07:13 19:10	07:13 18:19	06:50 07:13-08:23/70 16:40 14:16-15:09/53	07:21 07:44-08:34/50 16:31 14:29-15:14/45
17	05:40 06:03-07:11/68 20:33	06:10 06:32-07:08/36 19:59	06:42 07:14 19:08	07:14 07:40-07:52/12 18:18	06:51 07:14-08:24/70 16:39 14:15-15:09/54	07:21 07:45-08:35/50 16:31 14:30-15:14/44
18	05:41 06:04-07:11/67 20:32	06:11 06:33-07:07/34 19:57	06:43 07:15 19:06	07:15 07:37-07:55/18 18:16	06:52 07:15-08:24/69 16:39 14:15-15:09/54	07:22 07:46-08:36/50 16:31 14:31-15:15/44
19	05:42 06:04-07:11/67 20:31	06:12 06:34-07:06/32 19:56	06:44 07:16 19:05	07:16 08:17-08:29/12 18:15 07:37-07:56/19	06:53 07:17-08:25/68 16:38 14:16-15:10/54	07:23 07:46-08:35/49 16:32 14:31-15:15/44
20	05:42 06:05-07:12/67 20:31	06:13 06:35-07:05/30 19:54	06:45 07:17 19:03	07:17 08:12-08:33/21 18:13 07:38-07:57/19	06:54 07:18-08:25/67 16:37 14:16-15:10/54	07:23 07:47-08:36/49 16:32 14:32-15:16/44
21	05:43 06:06-07:12/66 20:30	06:14 06:36-07:03/27 19:53	06:46 07:18 19:01	07:18 08:09-08:35/26 18:12 07:39-07:58/19	06:56 07:19-08:26/67 16:36 14:16-15:10/54	07:24 07:47-08:36/49 16:33 14:32-15:16/44
22	05:44 06:07-07:12/65 20:29	06:15 06:37-07:02/25 19:51	06:47 07:19 18:59	07:19 08:07-08:38/31 18:10 07:41-07:59/18	06:57 07:20-08:26/66 16:36 14:16-15:10/54	07:24 07:48-08:37/49 16:33 14:33-15:17/44
23	05:45 06:08-07:13/65 20:28	06:16 06:38-07:00/22 19:50	06:48 07:21 18:58	07:21 08:05-08:40/35 18:09 07:42-08:00/18	06:58 07:22-08:27/65 16:35 14:17-15:11/54	07:25 07:48-08:37/49 16:34 14:33-15:17/44
24	05:46 06:09-07:13/64 20:27	06:17 06:39-06:59/20 19:48	06:49 07:22 18:56	07:22 08:03-08:41/38 18:07 07:43-08:00/17	06:59 07:23-08:27/64 16:34 14:17-15:10/53	07:25 07:49-08:38/49 16:34 14:34-15:18/44
25	05:47 06:10-07:14/64 20:26	06:18 06:40-06:57/17 19:47	06:50 07:23 18:54	07:23 07:01-07:42/41 17:06 06:44-07:00/16	07:00 07:24-08:27/63 16:34 14:17-15:10/53	07:26 07:49-08:39/50 16:35 14:34-15:18/44
26	05:48 06:10-07:13/63 20:26	06:19 06:40-06:54/14 19:45	06:51 07:24 18:53	07:24 06:46-07:44/58 17:04	07:01 07:25-08:28/63 16:33 14:17-15:10/53	07:26 07:49-08:39/50 16:35 14:34-15:18/44
27	05:49 06:11-07:13/62 20:25	06:20 06:41-06:51/10 19:44	06:52 07:25 18:51	07:25 06:47-07:44/57 17:03	07:03 07:26-08:28/62 16:33 14:18-15:10/52	07:26 07:50-08:40/50 16:36 14:35-15:19/44
28	05:50 06:12-07:14/62 20:24	06:21 06:42-06:49/7 19:42	06:53 07:26 18:49	07:26 06:48-07:45/57 17:02	07:04 07:28-08:29/61 16:32 14:19-15:11/52	07:27 07:50-08:40/50 16:37 14:35-15:20/45
29	05:51 06:13-07:14/61 20:23	06:22 06:43-06:45/2 19:40	06:54 07:28 18:47	07:28 06:49-07:45/56 17:00	07:05 07:29-08:29/60 16:32 14:19-15:11/52	07:27 07:50-08:41/51 16:37 14:36-15:20/44
30	05:52 06:14-07:14/60 20:22	06:23 06:44-06:51/16 19:39	06:55 07:29 18:46	07:29 06:51-07:47/56 16:59 14:35-14:51/16	07:06 07:30-08:29/59 16:32 14:20-15:11/51	07:27 07:50-08:41/51 16:38 14:36-15:21/45
31	05:53 06:15-07:14/59 20:20	06:24 06:45-06:52/15 19:37	06:56 07:30 18:45	07:30 06:52-07:47/55 16:58 07:48-07:57/9	07:07 07:31-08:30/59 16:32 14:20-15:11/51	07:27 07:50-08:41/51 16:39 14:36-15:21/45
Potential sun hours	461	429	375	345	296	286
Sum of minutes with flicker	2016	1061	0	746	3511	3028

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Real case WTG: 8 - VESTAS V162 5600 162.0 IO! hub: 125,0 m (TOT: 206,0 m) (8)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4,21	4,83	5,24	6,37	6,76	8,17	9,01	9,23	7,23	4,84	4,00	3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

	January	February	March	April	May	June
1	07:28 16:40	07:14 17:15	06:37 17:16-17:28/12 17:50	06:45 18:12-19:04/52 19:25	05:58 18:09-19:03/54 19:58	05:29 20:28
2	07:28 16:41	07:13 17:16	06:35 17:15-17:29/14 17:51	06:43 18:10-19:04/54 19:26	05:57 18:11-19:02/51 19:59	05:28 20:29
3	07:28 16:42	07:12 17:17	06:34 17:15-17:31/16 17:52	06:42 18:09-19:05/56 19:27	05:56 18:11-19:00/49 20:00	05:28 20:29
4	07:28 16:43	07:11 17:19	06:32 17:14-17:32/18 17:53	06:40 18:09-19:07/58 19:28	05:55 18:12-18:59/47 20:01	05:28 20:30
5	07:28 16:44	07:09 17:20	06:31 17:14-17:32/18 17:55	06:38 18:07-19:08/61 19:29	05:53 18:14-18:58/44 20:02	05:27 20:31
6	07:28 16:45	07:08 17:21	06:29 17:14-17:34/20 17:56	06:37 18:06-19:08/62 19:30	05:52 18:15-18:56/41 20:03	05:27 20:31
7	07:28 16:46	07:07 17:23	06:27 17:14-17:35/21 17:57	06:35 18:06-19:09/63 19:31	05:51 18:17-18:55/38 20:04	05:27 20:32
8	07:28 16:47	07:06 17:24	06:26 17:16-17:34/18 17:58	06:33 18:05-19:09/64 19:32	05:50 18:18-18:52/34 20:05	05:26 20:33
9	07:27 16:48	07:05 17:25	06:24 17:16-17:32/16 17:59	06:32 18:04-19:09/65 19:34	05:48 18:20-18:50/30 20:06	05:26 20:33
10	07:27 16:49	07:04 17:26	06:22 17:18-17:30/12 18:00	06:30 18:04-19:11/67 19:35	05:47 18:23-18:48/25 20:07	05:26 20:34
11	07:27 16:50	07:02 17:28	06:21 17:22-17:26/4 18:01	06:28 18:04-19:11/67 19:36	05:46 18:26-18:45/19 20:08	05:26 20:34
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 18:04-19:12/68 19:37	05:45 18:32-18:39/7 20:09	05:26 20:35
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 18:03-19:13/70 19:38	05:44 20:10	05:25 20:35
14	07:26 16:53	06:59 17:31	06:16 18:05	06:24 18:02-19:13/71 19:39	05:43 20:11	05:25 20:36
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 18:03-19:14/71 19:40	05:42 20:12	05:25 20:36
16	07:25 16:55	06:56 17:34	06:12 18:07	06:20 18:02-19:14/72 19:41	05:41 20:13	05:25 20:37
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 18:03-19:14/71 19:42	05:40 20:14	05:25 20:37
18	07:24 16:58	06:53 17:36	06:09 18:09	06:17 18:02-19:13/71 19:43	05:39 20:15	05:25 20:37
19	07:24 16:59	06:52 17:38	06:07 18:10	06:16 18:03-19:13/70 19:44	05:38 20:16	05:26 20:38
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 18:03-19:12/69 19:46	05:37 20:17	05:26 20:38
21	07:22 17:01	06:49 17:40	06:04 18:13	06:13 18:03-19:12/69 19:47	05:36 20:18	05:26 20:38
22	07:22 17:02	06:47 17:41	06:02 17:37-17:53/16 18:14	06:11 18:03-19:11/68 19:48	05:35 20:19	05:26 20:38
23	07:21 17:04	06:46 17:43	06:00 17:31-17:54/23 18:15	06:10 18:04-19:11/67 19:49	05:35 20:20	05:26 20:39
24	07:20 17:05	06:44 17:44	05:59 17:27-17:54/27 18:16	06:08 18:04-19:09/65 19:50	05:34 20:21	05:26 20:39
25	07:20 17:06	06:43 17:45	05:57 17:25-17:56/31 18:17	06:07 18:05-19:09/64 19:51	05:33 20:22	05:27 20:39
26	07:19 17:07	06:41 17:20-17:25/5 17:46	05:55 17:22-17:57/35 18:18	06:05 18:06-19:08/62 19:52	05:32 20:23	05:27 20:39
27	07:18 17:09	06:40 17:18-17:25/7 17:47	05:54 17:20-17:58/38 18:19	06:04 18:06-19:07/61 19:53	05:32 20:24	05:27 20:39
28	07:17 17:10	06:38 17:17-17:27/10 17:49	05:52 17:18-18:00/42 18:20	06:03 18:07-19:06/59 19:54	05:31 20:25	05:28 20:39
29	07:16 17:11		06:50 18:16-19:00/44 19:22	06:01 18:08-19:06/58 19:55	05:30 20:25	05:28 20:39
30	07:15 17:12		06:49 18:14-19:01/47 19:23	06:00 18:08-19:04/56 19:56	05:30 20:26	05:29 20:39
31	07:15 17:14		06:47 18:13-19:02/49 19:24		05:29 20:27	
Potential sun hours	296	296	369	399	450	454
Sum of minutes with flicker	0	22	521	1931	439	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker	First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
--------------	-------------------------------------	-------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------

SHADOW - Calendar per WTG

Calculation: Real case WTG: 8 - VESTAS V162 5600 162.0 IO! hub: 125,0 m (TOT: 206,0 m) (8)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 338 117 65 65 130 117 117 507 338 65 208 533 2 600

	July	August	September	October	November	December
1	05:29 20:39	05:54 18:40-18:53/13 20:19	06:25 18:02-19:10/68 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	05:30 20:39	05:55 18:35-18:57/22 20:18	06:26 18:02-19:09/67 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	05:30 20:39	05:56 18:33-18:59/26 20:17	06:27 18:02-19:07/65 19:32	06:58 17:58-18:07/9 18:40	06:34 16:54	07:09 16:31
4	05:31 20:38	05:57 18:30-19:02/32 20:16	06:28 18:02-19:06/64 19:30	06:59 17:55-18:09/14 18:39	06:35 16:53	07:10 16:30
5	05:31 20:38	05:58 18:28-19:03/35 20:15	06:29 18:02-19:05/63 19:29	07:00 17:53-18:10/17 18:37	06:36 16:51	07:11 16:30
6	05:32 20:38	05:59 18:26-19:05/39 20:14	06:30 18:02-19:04/62 19:27	07:02 17:51-18:11/20 18:35	06:37 16:50	07:12 16:30
7	05:33 20:38	06:00 18:25-19:07/42 20:12	06:31 18:02-19:03/61 19:25	07:03 17:50-18:11/21 18:34	06:39 16:49	07:13 16:30
8	05:33 20:37	06:01 18:23-19:08/45 20:11	06:32 18:03-19:01/58 19:24	07:04 17:49-18:09/20 18:32	06:40 16:48	07:14 16:30
9	05:34 20:37	06:02 18:22-19:09/47 20:10	06:33 18:03-18:59/56 19:22	07:05 17:49-18:07/18 18:30	06:41 16:47	07:15 16:30
10	05:35 20:36	06:03 18:20-19:10/50 20:08	06:34 18:03-18:58/55 19:20	07:06 17:48-18:05/17 18:29	06:42 16:46	07:16 16:30
11	05:35 20:36	06:04 18:19-19:11/52 20:07	06:35 18:04-18:56/52 19:18	07:07 17:48-18:04/16 18:27	06:44 16:45	07:17 16:30
12	05:36 20:36	06:05 18:18-19:12/54 20:06	06:37 18:05-18:54/49 19:17	07:08 17:49-18:03/14 18:26	06:45 16:44	07:17 16:30
13	05:37 20:35	06:06 18:16-19:13/57 20:04	06:38 18:05-18:53/48 19:15	07:09 17:49-18:01/12 18:24	06:46 16:43	07:18 16:30
14	05:37 20:34	06:07 18:15-19:14/59 20:03	06:39 18:06-18:51/45 19:13	07:10 17:50-17:59/9 18:22	06:47 16:42	07:19 16:30
15	05:38 20:34	06:08 18:14-19:14/60 20:02	06:40 18:07-18:49/42 19:12	07:11 17:51-17:57/6 18:21	06:48 16:41	07:20 16:31
16	05:39 20:33	06:09 18:13-19:15/62 20:00	06:41 18:09-18:47/38 19:10	07:13 17:52-17:56/4 18:19	06:50 16:40	07:20 16:31
17	05:40 20:33	06:10 18:12-19:15/63 19:59	06:42 18:10-18:46/36 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	05:41 20:32	06:11 18:11-19:16/65 19:57	06:43 18:12-18:44/32 19:06	07:15 18:16	06:52 16:38	07:22 16:31
19	05:42 20:31	06:12 18:10-19:16/66 19:56	06:44 18:14-18:42/28 19:05	07:16 18:15	06:53 16:38	07:22 16:32
20	05:42 20:31	06:13 18:10-19:16/66 19:54	06:45 18:17-18:40/23 19:03	07:17 18:13	06:54 16:37	07:23 16:32
21	05:43 20:30	06:14 18:08-19:16/68 19:53	06:46 18:21-18:39/18 19:01	07:18 18:12	06:56 16:36	07:24 16:33
22	05:44 20:29	06:15 18:07-19:16/69 19:51	06:47 18:59	07:19 18:10	06:57 16:36	07:24 16:33
23	05:45 20:28	06:16 18:06-19:16/70 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	05:46 20:27	06:17 18:06-19:16/70 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	05:47 20:26	06:18 18:05-19:16/71 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:26 16:35
26	05:48 20:25	06:19 18:05-19:16/71 19:45	06:51 18:52	06:24 17:04	07:01 16:33	07:26 16:35
27	05:49 20:24	06:20 18:04-19:16/72 19:43	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	05:50 20:24	06:21 18:04-19:15/71 19:42	06:53 18:49	06:27 17:02	07:04 16:32	07:27 16:37
29	05:51 20:23	06:22 18:03-19:14/71 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:37
30	05:52 20:21	06:23 18:03-19:12/69 19:39	06:55 18:46	06:29 16:59	07:06 16:32	07:27 16:38
31	05:53 20:20	06:24 18:03-19:11/68 19:37		06:30 16:58		07:27 16:39
Potential sun hours	461	429	375	345	296	286
Sum of minutes with flicker	0	1725	1030	197	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Real case WTG: 9 - VESTAS V162 5600 162.0 IO! hub: 125,0 m (TOT: 206,0 m) (9)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 338 117 65 65 130 117 117 507 338 65 208 533 2 600

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:27 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:58 19:58	05:29 20:28	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56	07:07 16:31
2	07:28 16:41	07:13 17:16	06:35 17:51	06:43 19:26	05:57 19:59	05:28 20:28	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	07:08 16:31
3	07:28 16:42	07:12 17:17	06:34 17:52	06:42 19:27	05:56 20:00	05:28 20:29	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:40	06:34 16:54	07:09 16:31
4	07:28 16:43	07:10 17:19	06:32 17:53	06:40 19:28	05:54 20:01	05:28 20:30	05:31 20:38	05:57 20:16	06:28 19:30	06:59 18:39	06:35 16:53	07:10 16:30
5	07:28 16:44	07:09 17:20	06:30 17:54	06:38 19:29	05:53 20:02	05:27 20:31	05:31 20:38	05:58 20:15	06:29 19:29	07:00 18:37	06:36 16:51	07:11 16:30
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31	05:32 20:38	05:59 20:13	06:30 19:27	07:02 18:35	06:37 16:50	07:12 16:30
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:31	05:51 20:04	05:27 20:32	05:33 20:38	06:00 20:12	06:31 19:25	07:03 18:34	06:39 16:49	07:13 16:30
8	07:27 16:47	07:06 17:24	06:26 17:58	06:33 19:32	05:50 20:05	05:26 20:33	05:33 20:37	06:01 20:11	06:32 19:24	07:04 18:32	06:40 16:48	07:14 16:30
9	07:27 16:48	07:05 17:25	06:24 17:59	06:32 19:34	05:48 20:06	05:26 20:33	05:34 20:37	06:02 20:10	06:33 19:22	07:05 18:30	06:41 16:47	07:15 16:30
10	07:27 16:49	07:04 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34	05:35 20:36	06:03 20:08	06:34 19:20	07:06 18:29	06:42 16:46	07:16 16:30
11	07:27 16:50	07:02 17:28	06:21 18:01	06:28 19:36	05:46 20:08	05:26 20:34	05:35 20:36	06:04 20:07	06:35 19:18	07:07 18:27	06:43 16:45	07:17 16:30
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:26 20:35	05:36 20:35	06:05 20:06	06:36 19:17	07:08 18:26	06:45 16:44	07:17 16:30
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:25 20:35	05:37 20:35	06:06 20:04	06:38 19:15	07:09 18:24	06:46 16:43	07:18 16:30
14	07:26 16:53	06:59 17:31	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36	05:37 20:34	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:19 16:30
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36	05:38 20:34	06:08 20:02	06:40 19:12	07:11 18:21	06:48 16:41	07:20 16:31
16	07:25 16:55	06:56 17:34	06:12 18:07	06:20 19:41	05:41 20:13	05:25 20:37	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:20 16:31
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:21 16:31
18	07:24 16:58	06:53 17:36	06:09 18:09	06:17 19:43	05:39 20:15	05:25 20:37	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:38	07:21 16:31
19	07:24 16:59	06:52 17:38	06:07 18:10	06:16 19:44	05:38 20:16	05:26 20:38	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:22 16:32
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38	05:42 20:30	06:13 19:54	06:45 19:03	07:17 18:13	06:54 16:37	07:23 16:32
21	07:22 17:01	06:49 17:40	06:04 18:13	06:13 19:47	05:36 20:18	05:26 20:38	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:24 16:33
22	07:22 17:02	06:47 17:41	06:02 18:14	06:11 19:48	05:35 20:19	05:26 20:38	05:44 20:29	06:15 19:51	06:47 18:59	07:19 18:10	06:57 16:36	07:24 16:33
23	07:21 17:04	06:46 17:43	06:00 18:15	06:10 19:49	05:35 20:20	05:26 20:39	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:25 16:34
24	07:20 17:05	06:44 17:44	05:59 18:16	06:08 19:50	05:34 20:21	05:26 20:39	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:25 16:34
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 19:51	05:33 20:22	05:27 20:39	05:47 20:26	06:18 19:47	06:50 18:54	06:23 17:06	07:00 16:34	07:25 16:35
26	07:19 17:07	06:41 17:46	05:55 18:18	06:05 19:52	05:32 20:23	05:27 20:39	05:48 20:25	06:19 19:45	06:51 18:52	06:24 17:04	07:01 16:33	07:26 16:35
27	07:18 17:09	06:40 17:47	05:54 18:19	06:04 19:53	05:32 20:24	05:27 20:39	05:49 20:24	06:20 19:43	06:52 18:51	06:25 17:03	07:03 16:33	07:26 16:36
28	07:17 17:10	06:38 17:49	05:52 18:20	06:03 19:54	05:31 20:24	05:28 20:39	05:50 20:23	06:21 19:42	06:53 18:49	06:26 17:02	07:04 16:32	07:27 16:37
29	07:16 17:11	06:37 17:48	05:51 18:21	06:02 19:55	05:30 20:25	05:28 20:39	05:51 20:22	06:22 19:40	06:54 18:47	06:28 17:00	07:05 16:32	07:27 16:37
30	07:15 17:12	06:36 17:47	05:50 18:22	06:01 19:56	05:29 20:26	05:29 20:39	05:52 20:21	06:23 19:39	06:55 18:46	06:29 16:59	07:06 16:32	07:27 16:38
31	07:15 17:14	06:35 17:46	05:49 18:23	06:00 19:57	05:28 20:27	05:29 20:40	05:53 20:20	06:24 19:37	06:56 18:45	06:30 16:58	07:07 16:33	07:27 16:39
Potential sun hours	296	296	369	399	450	454	461	429	375	345	296	286
Sum of minutes with flicker	0	0	0	0	0	0	0	0	0	0	0	44

Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Real case WTG: 10 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (10)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
4,21	4,83	5,24	6,37	6,76	8,17	9,01	9,23	7,23	4,84	4,00	3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

	January	February	March	April	May	June
1	07:28 16:40	07:14 07:34-07:44/10 17:15	06:37 17:50	06:45 07:04-07:13/9 19:25	05:58 19:58	05:29 20:28
2	07:28 16:41	07:13 07:33-07:44/11 17:16	06:35 17:51	06:43 07:02-07:12/10 19:26	05:57 19:59	05:28 20:29
3	07:28 16:42	07:12 07:32-07:44/12 17:17	06:34 17:52	06:42 07:00-07:09/9 19:27	05:56 20:00	05:28 20:29
4	07:28 16:43	07:11 07:31-07:44/13 17:19	06:32 17:53	06:40 06:59-07:08/9 19:28	05:55 20:01	05:28 20:30
5	07:28 16:44	07:09 07:30-07:44/14 17:20	06:31 17:55	06:38 06:57-07:04/7 19:29	05:53 20:02	05:27 20:31
6	07:28 16:45	07:08 07:28-07:43/15 17:21	06:29 17:56	06:37 19:30	05:52 20:03	05:27 20:31
7	07:28 16:46	07:07 07:27-07:42/15 17:23	06:27 17:57	06:35 19:31	05:51 20:04	05:27 20:32
8	07:28 16:47	07:06 07:26-07:42/16 17:24	06:26 17:58	06:33 19:32	05:50 20:05	05:26 20:33
9	07:27 16:48	07:05 07:25-07:41/16 17:25	06:24 17:59	06:32 19:34	05:48 20:06	05:26 20:33
10	07:27 16:49	07:04 07:24-07:40/16 17:26	06:22 18:00	06:30 19:35	05:47 20:07	05:26 20:34
11	07:27 16:50	07:02 07:22-07:38/16 17:28	06:21 18:01	06:28 19:36	05:46 20:08	05:26 20:34
12	07:27 16:51	07:01 07:21-07:36/15 17:29	06:19 18:03	06:27 19:37	05:45 20:09	05:25 20:35
13	07:26 16:52	07:00 07:20-07:32/12 17:30	06:17 18:04	06:25 19:38	05:44 20:10	05:25 20:35
14	07:26 16:53	06:59 07:18-07:28/10 17:31	06:16 18:05	06:24 19:39	05:43 20:11	05:25 20:36
15	07:26 16:54	06:57 07:17-07:28/11 17:33	06:14 18:06	06:22 19:40	05:42 20:12	05:25 20:36
16	07:25 16:55	06:56 07:16-07:27/11 17:34	06:12 18:07	06:20 19:41	05:41 20:13	05:25 20:37
17	07:25 16:56	06:55 07:14-07:26/12 17:35	06:11 18:08	06:19 19:42	05:40 20:14	05:25 20:37
18	07:24 16:58	06:53 07:13-07:24/11 17:36	06:09 18:09	06:17 19:43	05:39 20:15	05:25 20:37
19	07:24 16:59	06:52 07:11-07:22/11 17:38	06:07 18:10	06:16 19:44	05:38 20:16	05:25 20:38
20	07:23 17:00	06:50 07:12-07:18/6 17:39	06:06 18:12	06:14 19:46	05:37 20:17	05:26 20:38
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 19:10-19:11/1 19:47	05:36 20:18	05:26 20:38
22	07:22 17:02	06:47 17:41	06:02 18:14	06:11 19:09-19:11/2 19:48	05:35 20:19	05:26 20:38
23	07:21 17:04	06:46 17:43	06:00 18:15	06:10 19:10-19:12/2 19:49	05:35 20:20	05:26 20:39
24	07:20 17:05	06:45 17:44	05:59 06:17-06:19/2 18:16	06:08 19:10-19:12/2 19:50	05:34 20:21	05:26 20:39
25	07:20 17:06	06:43 17:45	05:57 06:16-06:19/3 18:17	06:07 19:11-19:13/2 19:51	05:33 20:22	05:27 20:39
26	07:19 07:40-07:42/2 17:07	06:41 17:46	05:55 06:14-06:18/4 18:18	06:05 19:12-19:14/2 19:52	05:32 20:23	05:27 20:39
27	07:18 07:39-07:42/3 17:09	06:40 17:47	05:54 06:12-06:18/6 18:19	06:04 19:12-19:15/3 19:53	05:32 20:24	05:27 20:39
28	07:17 07:38-07:43/5 17:10	06:38 17:49	05:52 06:11-06:18/7 18:20	06:03 19:15-19:16/1 19:54	05:31 20:25	05:28 20:39
29	07:16 07:37-07:43/6 17:11	06:37 17:50	05:50 07:09-07:17/8 19:22	06:01 19:55	05:30 20:25	05:28 20:39
30	07:16 07:36-07:43/7 17:12	06:36 17:51	05:49 07:07-07:15/8 19:23	06:00 19:56	05:30 20:26	05:29 20:39
31	07:15 07:35-07:44/9 17:14	06:35 17:52	05:47 07:06-07:15/9 19:24	05:59 19:57	05:29 20:27	05:29 20:39
Potential sun hours	296	296	369	399	450	454
Sum of minutes with flicker	32	253	47	59	0	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Real case WTG: 10 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (10)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 338 117 65 65 130 117 117 507 338 65 208 533 2 600

	July	August	September	October	November	December
1	05:29 20:39	05:54 20:19	06:25 19:35	06:56 18:44	06:31 16:56	06:53-07:09/16 16:31
2	05:30 20:39	05:55 20:18	06:26 19:34	06:57 18:42	06:33 16:55	06:55-07:11/16 16:31
3	05:30 20:39	05:56 20:17	06:27 19:32	06:58 18:40	06:34 16:54	06:56-07:12/16 16:31
4	05:31 20:38	05:57 20:16	06:28 19:30	06:59 18:39	06:35 16:53	06:57-07:12/15 16:30
5	05:31 20:38	05:58 20:15	06:29 19:29	07:00 18:37	06:36 16:51	06:58-07:12/14 16:30
6	05:32 20:38	05:59 20:14	06:30 19:27	07:02 18:35	06:37 16:50	07:00-07:14/14 16:30
7	05:33 20:38	06:00 20:12	06:31 19:25	07:03 18:34	06:39 16:49	07:01-07:14/13 16:30
8	05:33 20:37	06:01 20:11	06:32 19:24	07:04 18:32	06:40 16:48	07:02-07:14/12 16:30
9	05:34 20:37	06:02 20:10	06:33 19:22	07:05 18:30	06:41 16:47	07:04-07:15/11 16:30
10	05:35 20:36	06:03 20:08	06:34 19:20	07:06 18:29	06:42 16:46	07:05-07:15/10 16:30
11	05:35 20:36	06:04 20:07	06:36 19:18	07:07 18:27	06:44 16:45	07:06-07:14/8 16:30
12	05:36 20:36	06:05 20:06	06:37 19:17	07:08 18:26	06:45 16:44	07:08-07:15/7 16:30
13	05:37 20:35	06:06 20:04	06:38 19:15	07:09 18:24	06:46 16:43	07:09-07:15/6 16:30
14	05:37 20:35	06:07 20:03	06:39 19:13	07:10 18:22	06:47 16:42	07:10-07:14/4 16:30
15	05:38 20:34	06:08 20:02	06:40 19:12	07:11 18:21	06:48 16:41	07:12-07:15/3 16:31
16	05:39 20:33	06:09 20:00	06:41 19:10	07:13 18:19	06:50 16:40	07:13-07:15/2 16:31
17	05:40 20:33	06:10 19:59	06:42 19:08	07:14 18:18	06:51 16:39	07:14-07:15/1 16:31
18	05:41 20:32	06:11 19:57	06:43 19:06	07:15 18:16	06:52 16:38	07:15-07:16/0 16:31
19	05:42 20:31	06:12 19:56	06:44 19:05	07:16 18:15	06:53 16:38	07:16-07:17/0 16:32
20	05:42 20:31	06:13 19:54	06:45 19:03	07:17 18:13	06:54 16:37	07:17-07:18/0 16:32
21	05:43 20:30	06:14 19:53	06:46 19:01	07:18 18:12	06:56 16:36	07:18-07:19/0 16:33
22	05:44 20:29	06:15 19:51	06:47 18:59	07:19 18:10	06:57 16:36	07:19-07:20/0 16:33
23	05:45 20:28	06:16 19:50	06:48 18:58	07:21 18:09	06:58 16:35	07:21-07:22/0 16:34
24	05:46 20:27	06:17 19:48	06:49 18:56	07:22 18:07	06:59 16:34	07:22-07:23/0 16:34
25	05:47 20:26	06:18 19:47	06:50 18:54	07:23 17:06	06:59 16:34	07:23-07:24/0 16:35
26	05:48 20:25	06:19 19:45	06:51 18:52	07:24 17:04	07:01 16:33	07:24-07:25/0 16:35
27	05:49 20:25	06:20 19:43	06:52 18:51	07:25 17:03	07:03 16:33	07:25-07:26/0 16:36
28	05:50 20:24	06:21 19:42	06:53 18:49	07:26 17:02	07:04 16:32	07:26-07:27/0 16:37
29	05:51 20:23	06:22 19:40	06:54 18:47	07:27 17:00	07:05 16:32	07:27-07:28/0 16:37
30	05:52 20:22	06:23 19:39	06:55 18:46	07:28 16:59	07:06 16:32	07:28-07:29/0 16:38
31	05:53 20:20	06:24 19:37		07:29 16:58	07:06 16:32	07:29-07:30/0 16:39
Potential sun hours	461	429	375	345	296	286
Sum of minutes with flicker	0	16	93	120	167	0

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Real case WTG: 11 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (11)
 Assumptions for shadow calculations Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]
 Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N	NNE	ENE	E	ESE	SSE	S	SSW	WSW	W	WNW	NNW	Sum
338	117	65	65	130	117	117	507	338	65	208	533	2 600

	January	February	March	April	May	June
1	07:28 16:40	07:14 17:15	06:37 17:50	06:45 19:25	05:58 06:18-06:31/13 19:58	05:29 18:29-19:29/60 20:28
2	07:28 16:41	07:13 17:16	06:35 17:51	06:43 19:26	05:57 06:17-06:30/13 19:59	05:28 18:28-19:29/61 20:29
3	07:28 16:42	07:12 17:17	06:34 17:52	06:42 19:27	05:56 06:15-06:29/14 20:00	05:28 18:29-19:29/60 20:29
4	07:28 16:43	07:11 17:19	06:32 17:53	06:40 19:28	05:55 06:14-06:27/13 20:01	05:28 18:28-19:29/61 20:30
5	07:28 16:44	07:10 17:20	06:31 17:55	06:38 19:29	05:53 06:13-06:26/13 20:02	05:27 18:28-19:30/62 20:31
6	07:28 16:45	07:08 17:21	06:29 17:56	06:37 19:30	05:52 06:12-06:24/12 20:03	05:27 05:49-05:50/1 20:31 18:29-19:30/61
7	07:28 16:46	07:07 17:23	06:27 17:57	06:35 19:31	05:51 06:11-06:22/11 20:04	05:27 05:49-05:51/2 20:32 18:29-19:31/62
8	07:28 16:47	07:06 17:24	06:26 17:58	06:33 19:33	05:50 06:14-06:17/3 20:05 18:50-19:03/13	05:26 05:48-05:51/3 20:33 18:29-19:30/61
9	07:27 16:48	07:05 17:25	06:24 17:59	06:32 19:34	05:48 18:46-19:07/21 20:06	05:26 05:48-05:52/4 20:33 18:29-19:31/62
10	07:27 16:49	07:04 17:26	06:22 18:00	06:30 19:35	05:47 18:43-19:10/27 20:07	05:26 05:48-05:52/4 20:34 18:29-19:31/62
11	07:27 16:50	07:02 17:28	06:21 18:01	06:29 19:36	05:46 18:41-19:12/31 20:08	05:26 05:48-05:53/5 20:34 18:29-19:31/62
12	07:27 16:51	07:01 17:29	06:19 18:03	06:27 19:37	05:45 18:39-19:14/35 20:09	05:26 05:48-05:54/6 20:35 18:30-19:32/62
13	07:26 16:52	07:00 17:30	06:17 18:04	06:25 19:38	05:44 18:38-19:15/37 20:10	05:25 05:48-05:54/6 20:35 18:30-19:32/62
14	07:26 16:53	06:59 17:31	06:16 18:05	06:24 19:39	05:43 18:36-19:17/41 20:11	05:25 05:48-05:55/7 20:36 18:30-19:32/62
15	07:26 16:54	06:57 17:33	06:14 18:06	06:22 19:40	05:42 18:35-19:18/43 20:12	05:25 05:48-05:55/7 20:36 18:30-19:33/63
16	07:25 16:55	06:56 17:34	06:12 18:07	06:21 19:41	05:41 18:34-19:19/45 20:13	05:25 05:48-05:56/8 20:37 18:30-19:33/63
17	07:25 16:56	06:55 17:35	06:11 18:08	06:19 19:42	05:40 18:33-19:20/47 20:14	05:25 05:48-05:56/8 20:37 18:31-19:33/62
18	07:24 16:58	06:53 17:36	06:09 18:09	06:17 19:43	05:39 18:33-19:21/48 20:15	05:25 05:48-05:56/8 20:37 18:31-19:33/62
19	07:24 16:59	06:52 17:38	06:07 18:11	06:16 19:45	05:38 18:32-19:22/50 20:16	05:26 05:48-05:56/8 20:38 18:31-19:33/62
20	07:23 17:00	06:50 17:39	06:06 18:12	06:14 06:33-06:35/2 19:46	05:37 18:31-19:23/52 20:17	05:26 05:48-05:56/8 20:38 18:31-19:33/62
21	07:23 17:01	06:49 17:40	06:04 18:13	06:13 06:32-06:35/3 19:47	05:36 18:31-19:23/52 20:18	05:26 05:49-05:57/8 20:38 18:32-19:34/62
22	07:22 17:02	06:48 17:41	06:02 18:14	06:11 06:30-06:35/5 19:48	05:35 18:30-19:23/53 20:19	05:26 05:49-05:57/8 20:39 18:32-19:34/62
23	07:21 17:04	06:46 17:43	06:00 18:15	06:10 06:29-06:35/6 19:49	05:35 18:30-19:25/55 20:20	05:26 05:49-05:57/8 20:39 18:32-19:34/62
24	07:21 17:05	06:45 17:44	05:59 18:16	06:08 06:27-06:35/8 19:50	05:34 18:30-19:25/55 20:21	05:26 05:49-05:57/8 20:39 18:32-19:34/62
25	07:20 17:06	06:43 17:45	05:57 18:17	06:07 06:26-06:35/9 19:51	05:33 18:29-19:25/56 20:22	05:27 05:50-05:58/8 20:39 18:33-19:35/62
26	07:19 17:07	06:42 17:46	05:55 18:18	06:05 06:25-06:35/10 19:52	05:32 18:29-19:26/57 20:23	05:27 05:50-05:58/8 20:39 18:33-19:35/62
27	07:18 17:09	06:40 17:47	05:54 18:19	06:04 06:23-06:34/11 19:53	05:32 18:29-19:26/57 20:24	05:27 05:50-05:57/7 20:39 18:32-19:35/63
28	07:17 17:10	06:38 17:49	05:52 18:20	06:03 06:22-06:33/11 19:54	05:31 18:29-19:27/58 20:25	05:28 05:51-05:58/7 20:39 18:33-19:36/63
29	07:16 17:11		06:50 19:22	06:01 06:21-06:33/12 19:55	05:30 18:29-19:27/58 20:25	05:28 05:51-05:57/6 20:39 18:33-19:35/62
30	07:16 17:12		06:49 19:23	06:00 06:19-06:32/13 19:57	05:30 18:28-19:27/59 20:26	05:29 05:52-05:58/6 20:39 18:34-19:36/62
31	07:15 17:14		06:47 19:24		05:29 18:28-19:28/60 20:27	
Potential sun hours	296	296	369	399	450	454
Sum of minutes with flicker	0	0	0	90	1202	2015

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker
	Sun set (hh:mm)	First time (hh:mm) with flicker	Last time (hh:mm) with flicker	Minutes with flicker

SHADOW - Calendar per WTG

Calculation: Real case WTG: 11 - VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (11)

Assumptions for shadow calculations

Sunshine probability S (Average daily sunshine hours) [CAMPOBASSO]

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
 4,21 4,83 5,24 6,37 6,76 8,17 9,01 9,23 7,23 4,84 4,00 3,35

Operational time

N NNE ENE E ESE SSE S SSW WSW W WNW NNW Sum
 338 117 65 65 130 117 117 507 338 65 208 533 2 600

	July	August	September	October	November	December
1	05:29 05:52-05:57/5	05:54 18:51-19:24/33	06:25	06:56	06:31	07:07
	20:39 18:34-19:36/62	20:19	19:35	18:44	16:56	16:31
2	05:30 05:53-05:58/5	05:55 18:52-19:22/30	06:26	06:57	06:33	07:08
	20:39 18:34-19:36/62	20:18	19:34	18:42	16:55	16:31
3	05:30 05:53-05:57/4	05:56 18:55-19:19/24	06:27	06:58	06:34	07:09
	20:39 18:34-19:36/62	20:17	19:32	18:41	16:54	16:31
4	05:31 05:54-05:57/3	05:57 18:58-19:16/18	06:28	06:59	06:35	07:10
	20:38 18:35-19:36/61	20:16	19:30	18:39	16:53	16:30
5	05:31 05:54-05:56/2	05:58 06:21-06:29/8	06:29	07:01	06:36	07:11
	20:38 18:34-19:36/62	20:15 19:03-19:11/8	19:29	18:37	16:51	16:30
6	05:32 05:55-05:56/1	05:59 06:21-06:33/12	06:30	07:02	06:37	07:12
	20:38 18:35-19:36/61	20:14	19:27	18:35	16:50	16:30
7	05:33 18:35-19:36/61	06:00 06:22-06:35/13	06:31	07:03	06:39	07:13
	20:38	20:12	19:25	18:34	16:49	16:30
8	05:33 18:35-19:36/61	06:01 06:23-06:36/13	06:32	07:04	06:40	07:14
	20:37	20:11	19:24	18:32	16:48	16:30
9	05:34 18:36-19:37/61	06:02 06:24-06:38/14	06:33	07:05	06:41	07:15
	20:37	20:10	19:22	18:30	16:47	16:30
10	05:35 18:36-19:36/60	06:03 06:25-06:39/14	06:35	07:06	06:42	07:16
	20:37	20:08	19:20	18:29	16:46	16:30
11	05:35 18:36-19:36/60	06:04 06:26-06:39/13	06:36	07:07	06:44	07:17
	20:36	20:07	19:19	18:27	16:45	16:30
12	05:36 18:37-19:36/59	06:05 06:27-06:40/13	06:37	07:08	06:45	07:17
	20:36	20:06	19:17	18:26	16:44	16:30
13	05:37 18:37-19:37/60	06:06 06:28-06:41/13	06:38	07:09	06:46	07:18
	20:35	20:04	19:15	18:24	16:43	16:30
14	05:37 18:37-19:36/59	06:07 06:29-06:41/12	06:39	07:10	06:47	07:19
	20:35	20:03	19:13	18:22	16:42	16:30
15	05:38 18:37-19:36/59	06:08 06:30-06:41/11	06:40	07:12	06:48	07:20
	20:34	20:02	19:12	18:21	16:41	16:31
16	05:39 18:38-19:36/58	06:09 06:31-06:41/10	06:41	07:13	06:50	07:21
	20:33	20:00	19:10	18:19	16:40	16:31
17	05:40 18:39-19:36/57	06:10 06:32-06:42/10	06:42	07:14	06:51	07:21
	20:33	19:59	19:08	18:18	16:39	16:31
18	05:41 18:38-19:35/57	06:11 06:33-06:41/8	06:43	07:15	06:52	07:22
	20:32	19:57	19:06	18:16	16:38	16:31
19	05:42 18:39-19:35/56	06:12 06:34-06:41/7	06:44	07:16	06:53	07:23
	20:31	19:56	19:05	18:15	16:38	16:32
20	05:42 18:39-19:34/55	06:13 06:35-06:41/6	06:45	07:17	06:54	07:23
	20:31	19:54	19:03	18:13	16:37	16:32
21	05:43 18:40-19:34/54	06:14 06:36-06:41/5	06:46	07:18	06:56	07:24
	20:30	19:53	19:01	18:12	16:36	16:33
22	05:44 18:41-19:34/53	06:15 06:37-06:40/3	06:47	07:20	06:57	07:24
	20:29	19:51	18:59	18:10	16:36	16:33
23	05:45 18:42-19:33/51	06:16 06:38-06:40/2	06:48	07:21	06:58	07:25
	20:28	19:50	18:58	18:09	16:35	16:34
24	05:46 18:42-19:33/51	06:17	06:49	07:22	06:59	07:25
	20:27	19:48	18:56	18:07	16:34	16:34
25	05:47 18:43-19:32/49	06:18	06:50	06:23	07:00	07:26
	20:26	19:47	18:54	17:06	16:34	16:35
26	05:48 18:43-19:31/48	06:19	06:51	06:24	07:01	07:26
	20:26	19:45	18:53	17:04	16:33	16:35
27	05:49 18:44-19:30/46	06:20	06:52	06:25	07:03	07:26
	20:25	19:44	18:51	17:03	16:33	16:36
28	05:50 18:45-19:29/44	06:21	06:53	06:27	07:04	07:27
	20:24	19:42	18:49	17:02	16:32	16:37
29	05:51 18:46-19:28/42	06:22	06:54	06:28	07:05	07:27
	20:23	19:40	18:47	17:00	16:32	16:37
30	05:52 18:48-19:27/39	06:23	06:55	06:29	07:06	07:27
	20:22	19:39	18:46	16:59	16:32	16:38
31	05:53 18:49-19:25/36	06:24		06:30		07:27
	20:20	19:37		16:58		16:39
Potential sun hours	461	429	375	345	296	286
Sum of minutes with flicker	1727	300	0	0	0	0

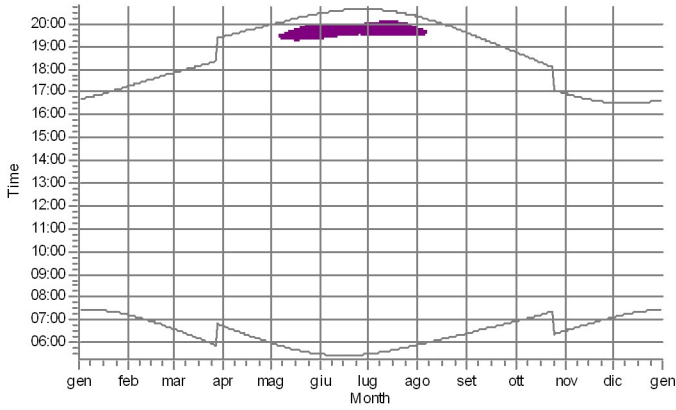
Table layout: For each day in each month the following matrix apply

Day in month Sun rise (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker
 Sun set (hh:mm) First time (hh:mm) with flicker-Last time (hh:mm) with flicker/Minutes with flicker

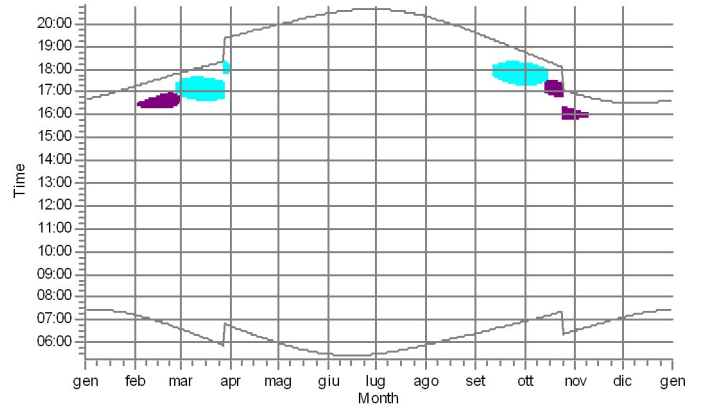
SHADOW - Calendar per WTG, graphical

Calculation: Real case

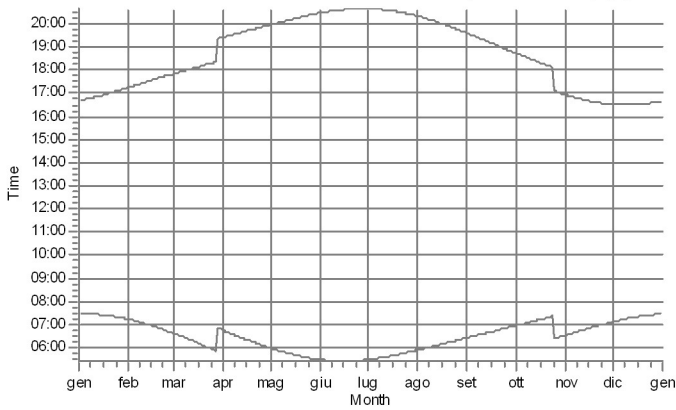
1: VESTAS V162 5600 162.0 !O!hub: 125,0 m (TOT: 206,0 m) (1)



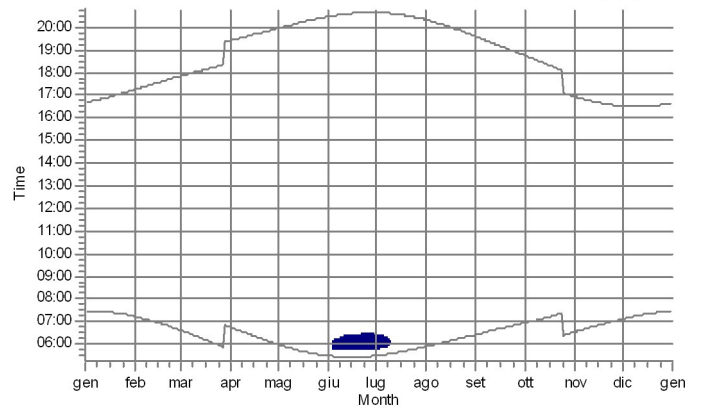
2: VESTAS V162 5600 162.0 !O!hub: 125,0 m (TOT: 206,0 m) (2)



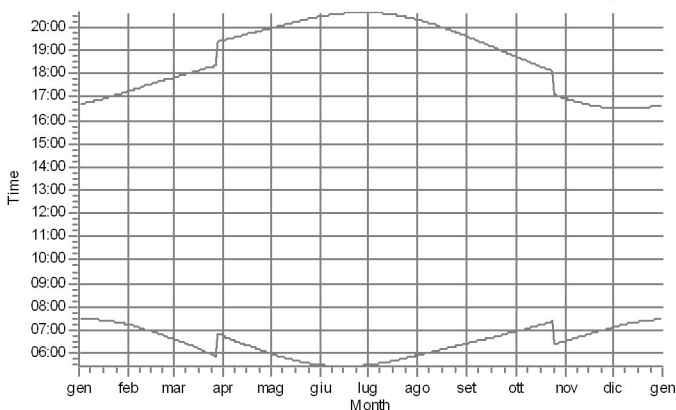
3: VESTAS V162 5600 162.0 !O!hub: 125,0 m (TOT: 206,0 m) (3)



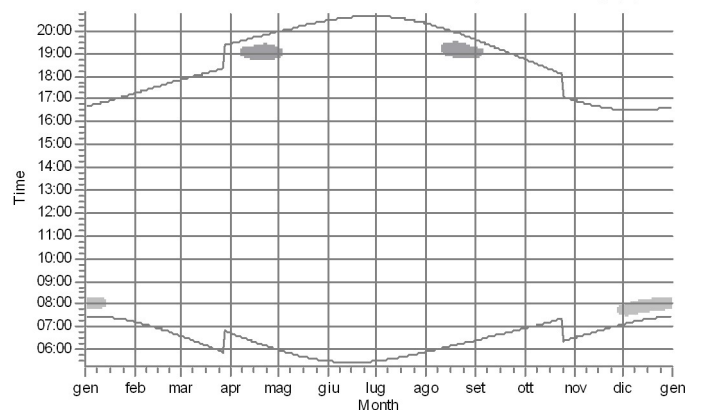
4: VESTAS V162 5600 162.0 !O!hub: 125,0 m (TOT: 206,0 m) (4)



5: VESTAS V162 5600 162.0 !O!hub: 125,0 m (TOT: 206,0 m) (5)



6: VESTAS V162 5600 162.0 !O!hub: 125,0 m (TOT: 206,0 m) (6)



Shadow receptors

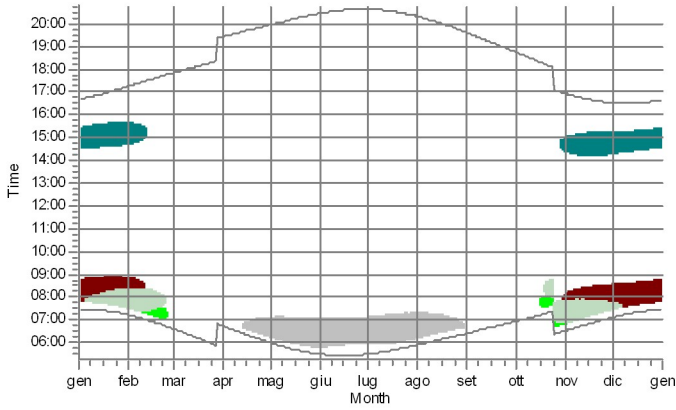
- G: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (122)
- K: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (127)
- L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (129)

- M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (132)
- P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (137)

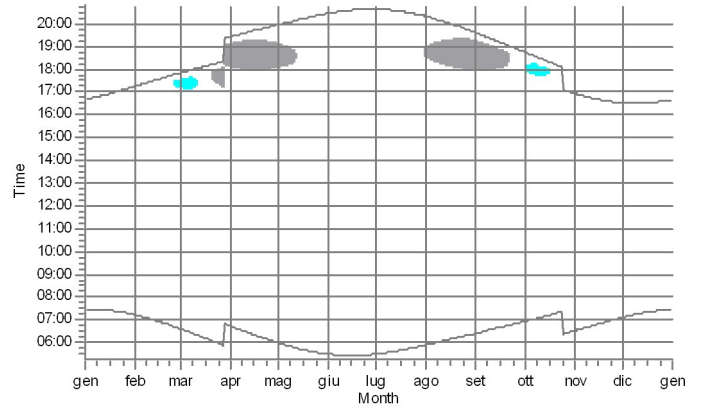
SHADOW - Calendar per WTG, graphical

Calculation: Real case

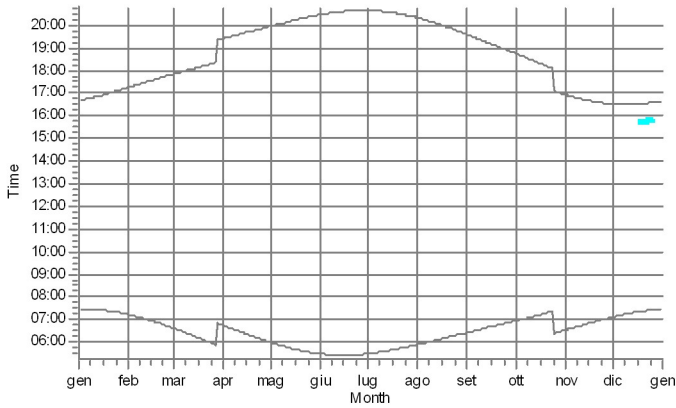
7: VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (7)



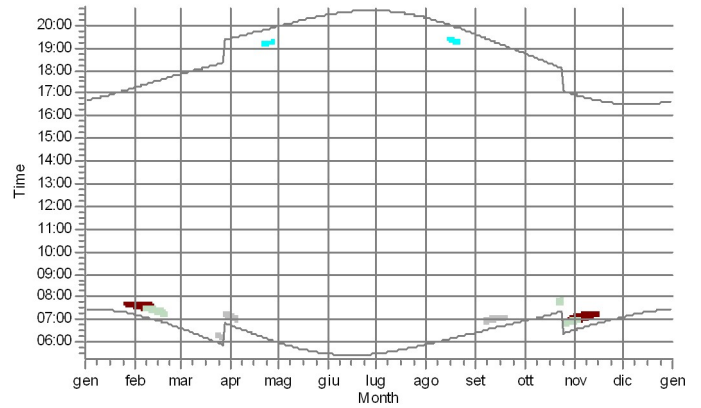
8: VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (8)



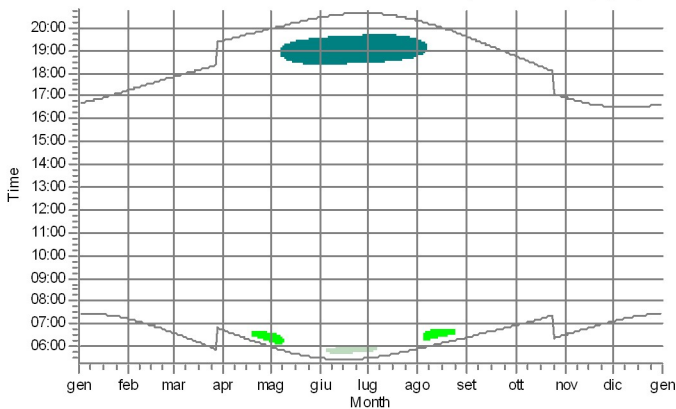
9: VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (9)



10: VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (10)



11: VESTAS V162 5600 162.0 !O! hub: 125,0 m (TOT: 206,0 m) (11)



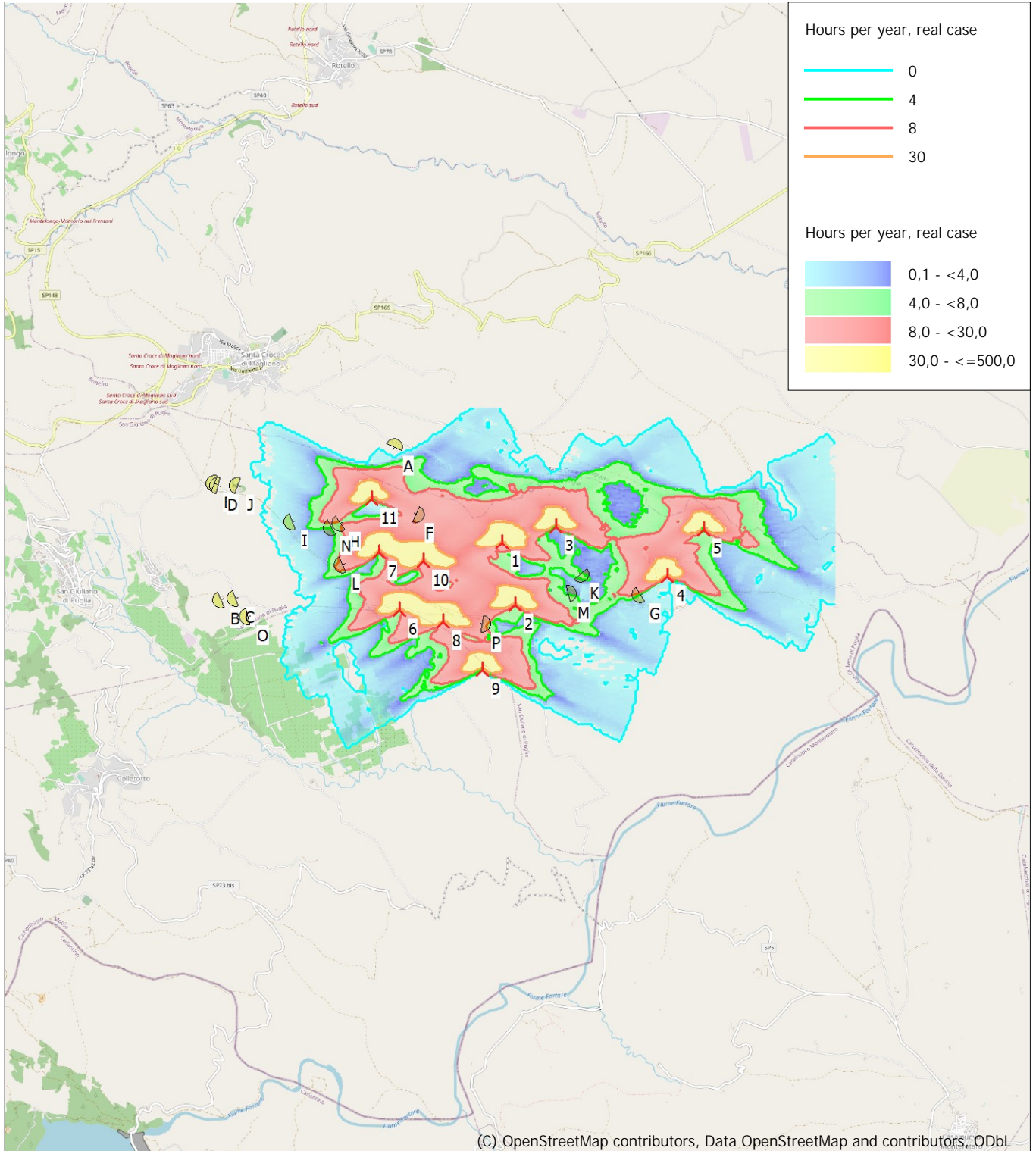
Shadow receptors

- F: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (121)
- H: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (124)
- I: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (125)
- L: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (129)

- M: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (132)
- N: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (134)
- P: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 90,0° (137)

SHADOW - Map

Calculation: Real case



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



Map: EMD OpenStreetMap , Print scale 1:75 000, Map center UTM (north)-WGS84 Zone: 33 East: 502 800 North: 4 614 960

New WTG Shadow receptor

Flicker map level: Existing ground

Time step: 4 minutes, Day step: 14 days, Map resolution: 30 m, Visibility resolution: 15 m, Eye height: 1,5 m