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PROGETTO PER LA REALIZZAZIONE DI UN IMPIANTO PER LA  
PRODUZIONE DI ENERGIA MEDIANTE LO SFRUTTAMENTO DEL VENTO  
NEL TERRITORIO COMUNALE DI FOGGIA E MANFREDONIA (FG)  
POTENZA NOMINALE 49,6 MW

**PROGETTO DEFINITIVO - SIA**

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**ES.6      Analisi dell'evoluzione dell'ombra indotta  
dagli aereogeneratori - Shadow flickering**

REV.	DATA	DESCRIZIONE
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## 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 nei Comuni di Foggia e Manfredonia, alla località "Macchia Rotonda". Il progetto è composto da n°12 aerogeneratori del Vestas 136-4.2 MW, con potenza unitaria pari a 4,13 MW, altezza al mozzo pari a 82 m, e diametro rotorico pari a 136 m; per una potenza complessiva di 49,6 MW.

In particolare, la posizione degli aerogeneratori è la seguente:

WTG	COORDINATE WGS84 FUSO 33N	
MF01	561349.10	4589158.18
MF02	560534.00	4588634.00
MF03	559845.70	4588454.59
FG01	559241.99	4587867.35
FG02	558938.12	4587474.00
FG03	558146.16	4587457.04
FG04	558011.87	4589128.17
FG05	557323.10	4589084.88
FG06	555769.74	4589280.54
FG07	555201.81	4590250.75
FG08	553558.18	4589240.24
FG09	552861.64	4589731.51

Tab. 1 – Coordinate aerogeneratori

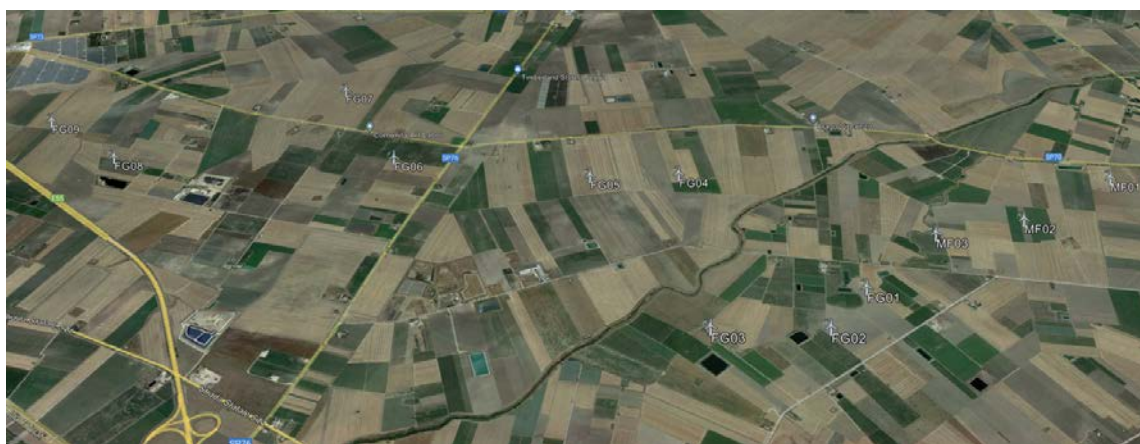


Figura 1: Planimetria dell'impianto

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. 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.

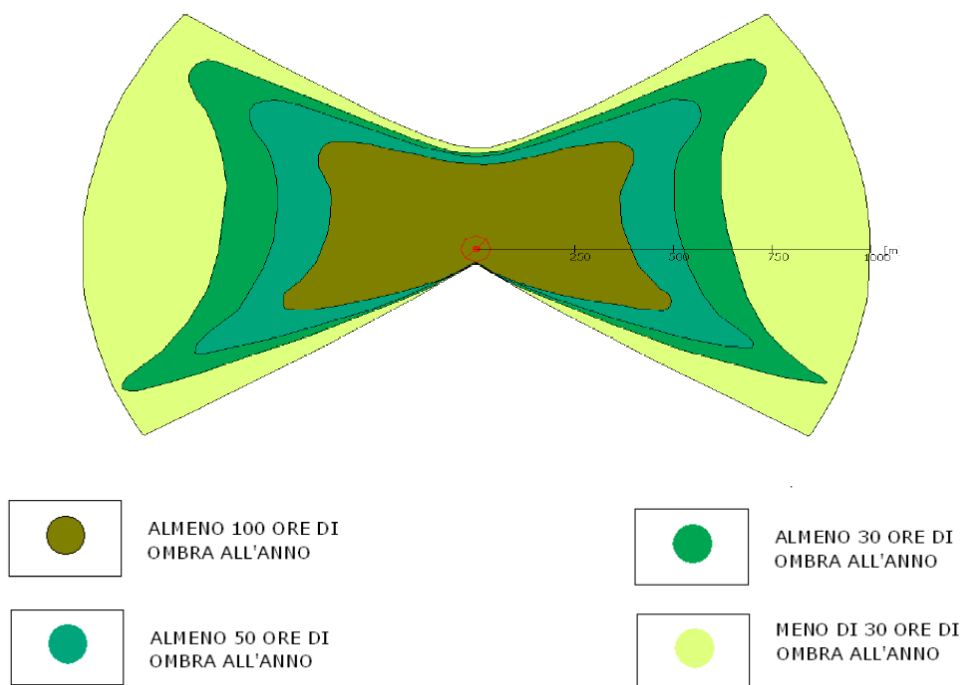


Figura 2: Evoluzione annuale tipo dell'ombra di una pala

Considerati i pochi precedenti esistenti (Germania) e le ipotesi così penalizzanti con cui è stato calcolato tale grafico si è ritenuto opportuno effettuare una sovrapposizione sull'impianto della parte più interna del grafico ovvero dell'area **che supera le 100 ore all'anno di ombra dei punti di installazione, intendendo questo come limite da non superarsi.**

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".



### 3. INDIVIDUAZIONE DEI RECETTORI ED IPOTESI DI CALCOLO

#### 3.1 INDIVIDUAZIONE DEI RICETTORI

Il progetto in esame nei comuni di Foggia e Manfredonia prevede l'installazione di 12 aerogeneratori in località "Macchia Rotonda".

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.8.1 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. Ad ogni modo si è ritenuto opportuno procedere con l'analisi.

L'analisi è stata elaborata per specifici 36 recettori che circondano l'impianto per i quali è stata stabilita l'abitabilità.

N	EST	NORD	Z [m]
1	554484.99	4590052.95	44.2
2	555912.22	4588231.27	45.7
3	556953.96	4589591.02	40.6
4	555382.98	4588975.06	46.2
5	556017.96	4588849.05	43.5
6	559720.03	4587755.98	33.1
7	555976.88	4590135.91	41.8
8	554523.99	4588701.95	49.3
9	554089.04	4589537.04	46.8
10	554023.03	4589518.00	47.0
11	555990.03	4590135.96	41.8
12	556897.96	4589574.04	40.7
13	558993.01	4588165.03	33.2
14	559275.03	4588228.96	31.2
15	558869.18	4586984.34	37.1
16	558430.67	4586703.17	38.3
17	557300.01	4588389.01	40.0
18	552725.31	4588843.59	50.3
19	552024.85	4590257.26	48.8
20	561811.50	4588853.81	26.6
21	560103.60	4588040.92	32.5
22	559632.00	4587570.95	35.0
23	559668.04	4587719.02	33.7
24	556268.00	4589555.01	42.9
25	555977.97	4590087.01	42.0
26	554050.96	4589469.03	47.1
27	558514.03	4586827.05	37.9
28	556338.96	4589548.01	42.6
29	557158.01	4589611.95	39.8
30	557911.98	4588352.03	37.9
31	556448.03	4587732.03	45.5
32	558590.99	4586785.04	37.9

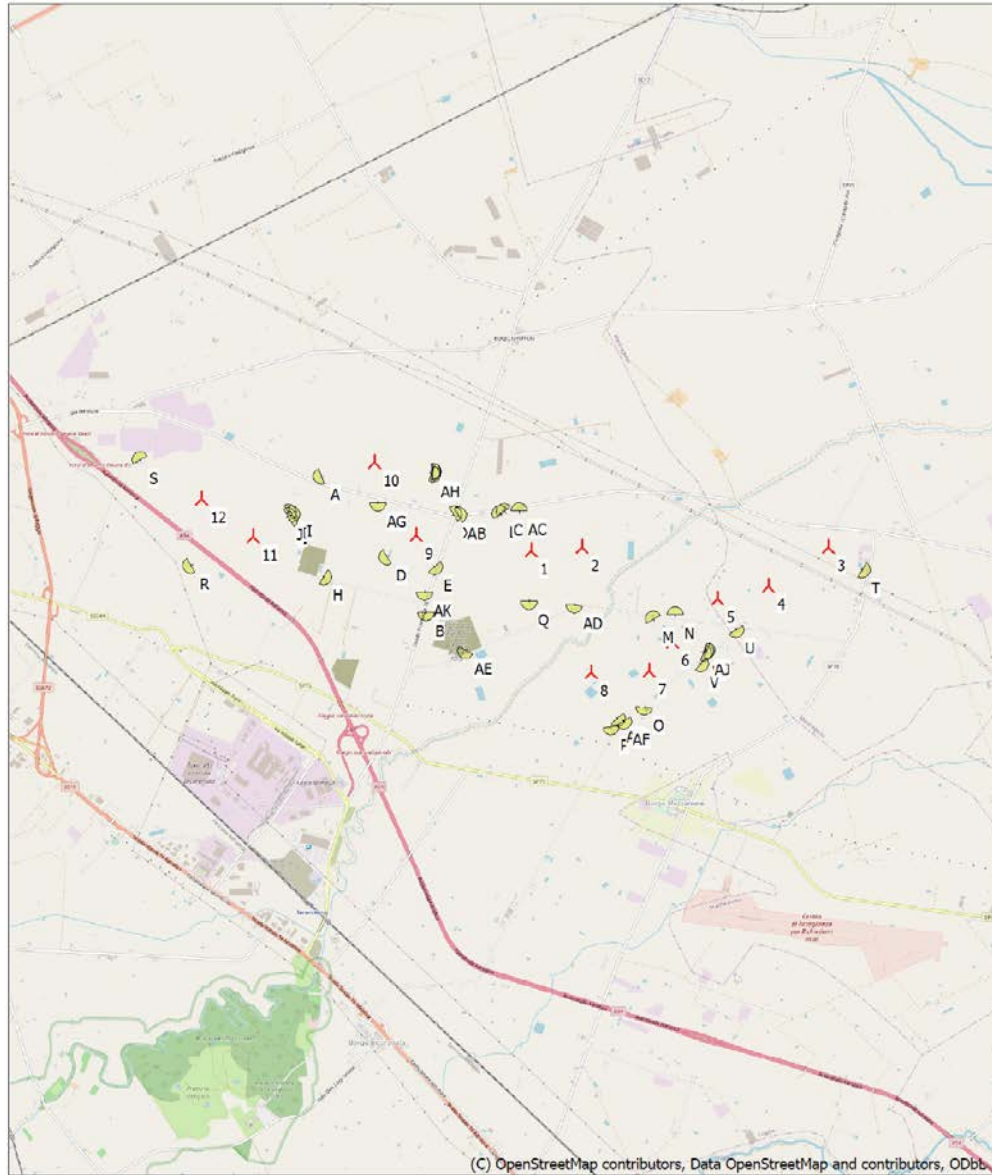


33	555248.99	4589697.03	45.4
42	555969.02	4590110.03	41.9
45	554039.50	4589564.38	46.8
48	559696.01	4587751.01	33.2
80	555890.03	4588508.99	44.4

Tab. 2 – Coordinate recettori

**SHADOW - Map**

Calculation: Shadow Flickering Foggia MR



Map: EMD OpenStreetMap , Print scale 1:75,000, Map center UTM (north)-WGS84 Zone: 33 East: 556,918 North: 4,588,480  
 Shadow receptor  
 Flicker map level: Elevation Grid Data Object: FoggiaMR\_ShadowFlickering\_EMDGrid\_0.wpg (1)  
 windPRO 3.6.361 by EMD International A/S, Tel. +45 69 16 48 50, www.emd-international.com, support@emd.dk 09/03/2023 14:43 / 1 windPRO

Figura 3 -Indicazione dei recettori

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



N	Torre più prossima	Distanza [m]
1	FG07	743
2	FG06	1058
3	FG05	626
4	FG06	492
5	FG06	497
6	FG01	490
7	FG07	783
8	FG08	1105
9	FG08	608
10	FG08	541
11	FG07	796
12	FG05	648
13	FG01	388
14	FG01	363
15	FG02	494
16	FG03	805
17	FG05	696
18	FG09	922
19	FG09	988
20	MF01	553
21	MF03	487
22	FG01	489
23	FG01	451
24	FG06	568
25	FG06	793
26	FG08	543
27	FG03	729
28	FG06	628
29	FG05	552
30	FG04	782
31	FG05	1611
32	FG03	771
33	FG07	555
42	FG07	780
45	FG08	580
48	FG01	468
80	FG06	752

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.

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





Nello studio ci si è posti nella condizione più sfavorevole possibile, in quanto si è considerato 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.

Allo stesso tempo, si è trascurata la presenza degli alberi e di altri ostacoli che bordano le strade "intercettando" l'ombra degli aerogeneratori riducendo il fastidio del flickering.

Ciò significa che i risultati ai quali si perverrà sono ampiamente cautelativi.

### 3.2 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 recettori 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

Nella procedura "Worst case" il fenomeno di shadow/flickering viene calcolato non tenendo conto delle condizioni di soleggiamento del sito e del vento, dati che allo stato dell'arte per il sito in questione non sono disponibili. Invece se avessimo di dati di cui sopra potremmo calcolare il fenomeno di shadow/flickering con la metodologia ("real case"), che secondo altri casi simili comporterebbe la riduzione del fenomeno ad 1/3 dei valori, il quale seppur più realistico, è comunque sovrastimato poiché non tiene conto della presenza di nubi e di vegetazione ad alto fusto. Dalle simulazioni effettuate, si evince che gli aerogeneratori di progetto generano maggiormente il fenomeno di shadow/flickering sul recettore "k" individuato nell'analisi che, nelle ipotesi di "Worst case", subisce il fenomeno per un periodo che si avvicina o supera di poco le 100 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.

Con le considerazioni di cui sopra, ovvero prevedendo la riduzione ad 1/3 si avranno valori sicuramente più ridotti per i ricettori con  $k=33$  ore/anno e comunque sono abitati meno di 4 ore/giorno e quindi la probabilità di accadimento si riduce quasi al nulla.

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 compreso tra Gennaio, Marzo, Aprile, Settembre, Novembre e Dicembre nelle prime ore della giornata, oppure al primo pomeriggio. Nella figura che segue è riportato a titolo di esempio il grafico "calendar" di un recettore: le macchie individuano i momenti di shadow, la posizione nel grafico individua tempo e durata del fenomeno, il colore della macchia individua la turbina che causa il fenomeno.

L'allegato 2 riporta il dettaglio analitico di quanto espresso dal grafico precedente con gli specifici orari di inizio e di fine del fenomeno. A seguire è altresì riportata la sintesi grafica annuale (come mostra l'immagine precedente) dell'apporto di ombreggiamento a carico di ogni recettore ed il/gli aerogeneratore/i responsabile/i del fenomeno.

E' stata inoltre elaborata una mappa (report Map, Allegato 3) in cui vengono riportate, con diverse gradazioni di colore, le zone soggette ad una determinata durata del fenomeno dell'ombreggiamento oltre all'estensione areale nella quale il fenomeno risulta significativo.

Il fenomeno dell'ombreggiamento interessa marginalmente tratti di strade comunali 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 recettori 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.



## 5. CONCLUSIONI E RACCOMANDAZIONI

In conclusione, si può affermare che i risultati ottenuti dell'elaborazione evidenziano, pur considerando le condizioni più sfavorevoli, che le turbine di progetto generano effetti di shadow flickering **i cui impatti risultano essere nulli per molte strutture, e piuttosto modesti (o non particolarmente problematici) per altre.**

In ogni caso è comunque da rimarcare l'effetto di sovrastima dovuto al grado di cautela utilizzato per la simulazione che non tiene in conto di tutte le possibili fonti di attenuazione dell'effetto cui ogni recettore è (o può essere) soggetto quali presenza di alberi, ostacoli, siepi e quant'altro possa attenuare il fenomeno dell'evoluzione giornaliera dell'ombra.



## **6. ELENCO ALLEGATI**

- 1. MAIN RESULT: QUADRO SINTETICO DEI RISULTATI DI CALCOLO;**
- 2. CALENDAR: ANALISI GIORNALIERA DELL'EFFETTO "FLICKERING" RICEVUTO DA OGNI RECETTORE;**
- 3. CALENDAR, GRAPHICAL: GRAFICO DELL'ANALISI GIORNALIERA DELL'EFFETTO "FLICKERING" RICEVUTO DA OGNI RECETTORE;**
- 4. CALENDAR PER WTG: ANALISI GIORNALIERA DELL'EFFETTO "FLICKERING" INDOTTO DA OGNI AEROGENERATORE SUI RECETTORI;**
- 5. CALENDAR PER WTG, GRAPHICAL: GRAFICO DELL'ANALISI GIORNALIERA DELL'EFFETTO "FLICKERING INDOTTO DA OGNI AEROGENERATORE SUI RECETTORI.**



## SHADOW - Main Result

Calculation: ShadowFlickeringFoggiaMR  
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: Elevation Grid Data Object: FoggiaMR\_ShadowFlickering  
Receptor grid resolution: 1.0 m

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

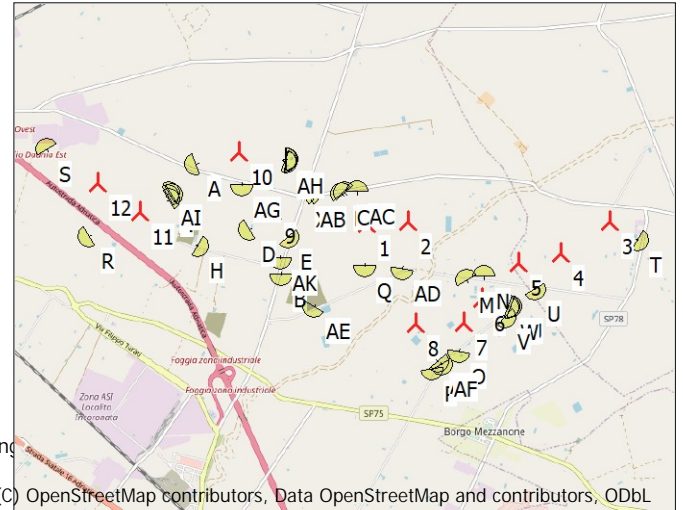
### WTGs

Row	Easting	Northing	Z [m]	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	557,323	4,589,085	40.0	VESTAS V136-4.2 4200 136.0 !O! hu...	Yes	VESTAS	V136-4.2-4,200	4,200	136.0	82.0	1,804	10.4
2	558,012	4,589,128	37.6	VESTAS V136-4.2 4200 136.0 !O! hu...	Yes	VESTAS	V136-4.2-4,200	4,200	136.0	82.0	1,804	10.4
3	561,349	4,589,158	27.9	VESTAS V136-4.2 4200 136.0 !O! hu...	Yes	VESTAS	V136-4.2-4,200	4,200	136.0	82.0	1,804	10.4
4	560,534	4,588,634	30.8	VESTAS V136-4.2 4200 136.0 !O! hu...	Yes	VESTAS	V136-4.2-4,200	4,200	136.0	82.0	1,804	10.4
5	559,846	4,588,455	29.3	VESTAS V136-4.2 4200 136.0 !O! hu...	Yes	VESTAS	V136-4.2-4,200	4,200	136.0	82.0	1,804	10.4
6	559,242	4,587,867	33.0	VESTAS V136-4.2 4200 136.0 !O! hu...	Yes	VESTAS	V136-4.2-4,200	4,200	136.0	82.0	1,804	10.4
7	558,938	4,587,474	35.8	VESTAS V136-4.2 4200 136.0 !O! hu...	Yes	VESTAS	V136-4.2-4,200	4,200	136.0	82.0	1,804	10.4
8	558,146	4,587,457	37.4	VESTAS V136-4.2 4200 136.0 !O! hu...	Yes	VESTAS	V136-4.2-4,200	4,200	136.0	82.0	1,804	10.4
9	555,770	4,589,281	44.5	VESTAS V136-4.2 4200 136.0 !O! hu...	Yes	VESTAS	V136-4.2-4,200	4,200	136.0	82.0	1,804	10.4
10	555,202	4,590,251	43.6	VESTAS V136-4.2 4200 136.0 !O! hu...	Yes	VESTAS	V136-4.2-4,200	4,200	136.0	82.0	1,804	10.4
11	553,558	4,589,240	48.4	VESTAS V136-4.2 4200 136.0 !O! hu...	Yes	VESTAS	V136-4.2-4,200	4,200	136.0	82.0	1,804	10.4
12	552,862	4,589,732	48.1	VESTAS V136-4.2 4200 136.0 !O! hu...	Yes	VESTAS	V136-4.2-4,200	4,200	136.0	82.0	1,804	10.4

### Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Elevation	Degrees from	Slope of	Direction mode	Eye height
			[m]	[m]	[m]	a.g.l.	south cw	window		(ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]	[°]		[m]
A	554,485	4,590,053	44.2	1.0	1.0	1.0	-110.0	90.0	Fixed direction	2.0
B	555,912	4,588,231	45.7	1.0	1.0	1.0	180.0	90.0	Fixed direction	2.0
C	556,954	4,589,591	40.6	1.0	1.0	1.0	-40.0	90.0	Fixed direction	2.0
D	555,383	4,588,975	46.2	1.0	1.0	1.0	-480.0	90.0	Fixed direction	2.0
E	556,018	4,588,849	43.5	1.0	1.0	1.0	140.0	90.0	Fixed direction	2.0
F	559,720	4,587,756	33.1	1.0	1.0	1.0	110.0	90.0	Fixed direction	2.0
G	555,977	4,590,136	41.8	1.0	1.0	1.0	90.0	90.0	Fixed direction	2.0
H	554,524	4,588,702	49.3	1.0	1.0	1.0	120.0	90.0	Fixed direction	2.0
I	554,089	4,589,537	46.8	1.0	1.0	1.0	60.0	90.0	Fixed direction	2.0
J	554,023	4,589,518	47.0	1.0	1.0	1.0	60.0	90.0	Fixed direction	2.0
K	555,990	4,590,136	41.8	1.0	1.0	1.0	90.0	90.0	Fixed direction	2.0
L	556,898	4,589,574	40.7	1.0	1.0	1.0	-40.0	90.0	Fixed direction	2.0
M	558,993	4,588,165	33.2	1.0	1.0	1.0	-30.0	90.0	Fixed direction	2.0
N	559,275	4,588,229	31.2	1.0	1.0	1.0	0.0	90.0	Fixed direction	2.0
O	558,869	4,586,984	37.1	1.0	1.0	1.0	-170.0	90.0	Fixed direction	2.0
P	558,431	4,586,703	38.3	1.0	1.0	1.0	170.0	90.0	Fixed direction	2.0
Q	557,300	4,588,389	40.0	1.0	1.0	1.0	180.0	90.0	Fixed direction	2.0
R	552,725	4,588,844	50.3	1.0	1.0	1.0	-120.0	90.0	Fixed direction	2.0
S	552,025	4,590,257	48.8	1.0	1.0	1.0	-30.0	90.0	Fixed direction	2.0
T	561,811	4,588,854	26.6	1.0	1.0	1.0	120.0	90.0	Fixed direction	2.0
U	560,104	4,588,041	32.5	1.0	1.0	1.0	150.0	90.0	Fixed direction	2.0
V	559,632	4,587,571	35.0	1.0	1.0	1.0	130.0	90.0	Fixed direction	2.0

To be continued on next page...



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

Scale 1:125,000

▲ New WTG      ● Shadow receptor

## SHADOW - Main Result

Calculation: ShadowFlickeringFoggiaMR

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation	Degrees from	Slope of	Direction mode	Eye height
			[m]	[m]	[m]	a.g.l.	south cw	window		(ZVI) a.g.l.
						[m]	[°]	[°]		[m]
W	559,668	4,587,719	33.7	1.0	1.0	1.0	110.0	90.0	Fixed direction	2.0
X	556,268	4,589,555	42.9	1.0	1.0	1.0	60.0	90.0	Fixed direction	2.0
Y	555,978	4,590,087	42.0	1.0	1.0	1.0	100.0	90.0	Fixed direction	2.0
Z	554,051	4,589,469	47.1	1.0	1.0	1.0	60.0	90.0	Fixed direction	2.0
AA	558,514	4,586,827	37.9	1.0	1.0	1.0	140.0	90.0	Fixed direction	2.0
AB	556,339	4,589,548	42.6	1.0	1.0	1.0	60.0	90.0	Fixed direction	2.0
AC	557,158	4,589,612	39.8	1.0	1.0	1.0	0.0	90.0	Fixed direction	2.0
AD	557,912	4,588,352	37.9	1.0	1.0	1.0	-170.0	90.0	Fixed direction	2.0
AE	556,448	4,587,732	45.5	1.0	1.0	1.0	-150.0	90.0	Fixed direction	2.0
AF	558,591	4,586,785	37.9	1.0	1.0	1.0	150.0	90.0	Fixed direction	2.0
AG	555,249	4,589,697	45.4	1.0	1.0	1.0	180.0	90.0	Fixed direction	2.0
AH	555,969	4,590,110	41.9	1.0	1.0	1.0	110.0	90.0	Fixed direction	2.0
AI	554,040	4,589,564	46.8	1.0	1.0	1.0	60.0	90.0	Fixed direction	2.0
AJ	559,696	4,587,751	33.2	1.0	1.0	1.0	100.0	90.0	Fixed direction	2.0
AK	555,890	4,588,509	44.4	1.0	1.0	1.0	180.0	90.0	Fixed direction	2.0

## Calculation Results

Shadow receptor

Shadow, worst case

No.	Shadow hours	Shadow days	Max shadow
	per year	per year	hours per day
	[h/year]	[days/year]	[h/day]
A	43:50	121	0:43
B	0:48	21	0:03
C	10:10	41	0:24
D	0:00	0	0:00
E	0:00	0	0:00
F	136:01	208	1:06
G	26:16	59	0:39
H	9:08	48	0:16
I	62:47	126	0:54
J	85:41	154	1:00
K	25:10	57	0:39
L	13:56	57	0:22
M	145:55	157	1:52
N	15:04	68	0:21
O	0:00	0	0:00
P	0:00	0	0:00
Q	0:27	16	0:02
R	36:19	83	0:35
S	27:21	88	0:31
T	6:14	28	0:20
U	24:59	81	0:34
V	29:36	57	0:47
W	150:02	183	1:14
X	61:56	96	0:57
Y	27:55	63	0:39
Z	68:27	124	0:59
AA	0:00	0	0:00
AB	44:37	75	0:51
AC	25:06	90	0:31
AD	0:00	0	0:00
AE	1:51	17	0:09
AF	0:00	0	0:00
AG	0:00	0	0:00
AH	27:52	62	0:40
AI	89:28	150	0:57
AJ	152:39	205	1:09
AK	5:23	34	0:14

Project:

FoggiaMR\_ShadowFlickering

Licensed user:

Iron solar s.r.l.

via Lanzone, 31

IT-20122 Milano

+393487125089

Fabio Paccapelo / francesca.saccarola@hopegroup.it

Calculated:

09/03/2023 18:29/3.6.361

## SHADOW - Main Result

Calculation: ShadowFlickeringFoggiaMR

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

No.	Name	Worst case [h/year]
1	VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (1)	11:29
2	VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (2)	31:11
3	VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (3)	0:00
4	VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (4)	9:59
5	VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (5)	24:51
6	VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (6)	275:49
7	VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (7)	63:49
8	VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (8)	39:16
9	VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (9)	85:22
10	VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (10)	75:04
11	VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (11)	172:01
12	VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (12)	43:09

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 - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: A - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (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
1	07:24 16:38	07:11 17:13	06:34 17:47	06:43 19:22		05:56 19:55	06:16 (10) 06:54 (10)
2	07:24 16:39	07:10 17:14	06:33 17:49	06:41 19:23		05:55 19:56	06:15 (10) 06:54 (10)
3	07:25 16:40	07:09 17:15	06:31 17:50	06:39 19:24		05:54 19:57	06:13 (10) 06:53 (10)
4	07:25 16:41	07:08 17:17	06:29 17:51	06:38 19:25		05:52 19:58	06:12 (10) 06:53 (10)
5	07:25 16:42	07:06 17:18	06:28 17:52	06:36 19:26		05:51 19:59	06:11 (10) 06:53 (10)
6	07:25 16:43	07:47 (9) 17:19	07:05 17:53	06:26 19:28		05:50 20:00	06:11 (10) 06:53 (10)
7	07:24 16:44	07:47 (9) 17:20	07:04 17:54	06:25 19:29		05:49 20:01	06:11 (10) 06:53 (10)
8	07:24 16:45	07:46 (9) 17:22	07:03 17:56	06:23 19:30		05:48 20:02	06:11 (10) 06:51 (10)
9	07:24 16:46	07:46 (9) 17:23	07:02 17:57	06:22 19:31		05:46 20:03	06:11 (10) 06:51 (10)
10	07:24 16:47	07:46 (9) 17:24	07:01 17:58	06:20 19:32		05:45 20:04	06:12 (10) 06:51 (10)
11	07:24 16:48	07:46 (9) 17:26	06:59 17:59	06:18 19:33		05:44 20:05	06:12 (10) 06:50 (10)
12	07:23 16:49	07:45 (9) 17:27	06:58 18:00	06:16 19:34		05:43 20:06	06:13 (10) 06:49 (10)
13	07:23 16:50	07:45 (9) 17:28	06:57 18:01	06:15 19:35		05:42 20:07	06:14 (10) 06:49 (10)
14	07:23 16:51	07:44 (9) 17:29	06:56 18:02	06:13 19:36		05:41 20:08	06:14 (10) 06:48 (10)
15	07:22 16:52	07:44 (9) 17:31	06:54 18:04	06:11 19:37		05:40 20:09	06:15 (10) 06:47 (10)
16	07:22 16:53	07:43 (9) 17:32	06:53 18:05	06:10 19:38	06:37 (10)	05:39 20:10	06:16 (10) 06:46 (10)
17	07:22 16:54	07:43 (9) 17:33	06:52 18:06	06:17 19:39	06:35 (10)	05:38 20:11	06:17 (10) 06:44 (10)
18	07:21 16:56	07:42 (9) 17:34	06:50 18:07	06:15 19:41	06:43 (10)	05:37 20:12	06:19 (10) 06:44 (10)
19	07:21 16:57	07:42 (9) 17:35	06:49 18:08	06:14 19:42	06:32 (10)	05:36 20:13	06:20 (10) 06:43 (10)
20	07:20 16:58	07:41 (9) 17:37	06:48 18:09	06:12 19:43	06:31 (10)	05:35 20:14	06:22 (10) 06:41 (10)
21	07:19 16:59	07:40 (9) 17:38	06:46 18:10	06:11 19:44	06:30 (10)	05:34 20:15	06:23 (10) 06:39 (10)
22	07:19 17:00	07:40 (9) 17:39	06:45 18:11	06:09 19:45	06:28 (10)	05:34 20:16	06:26 (10) 06:36 (10)
23	07:18 17:02	07:39 (9) 17:40	06:43 18:12	06:08 19:46	06:27 (10)	05:33 20:17	06:27 (10) 06:35 (10)
24	07:17 17:03	07:38 (9) 17:42	06:42 18:13	06:06 19:47	06:25 (10)	05:32 20:18	06:25 (10) 06:33 (10)
25	07:17 17:04	07:38 (9) 17:43	06:40 18:15	06:05 19:48	06:24 (10)	05:31 20:19	06:24 (10) 06:31 (10)
26	07:16 17:05	07:39 (9) 17:44	06:39 18:16	06:03 19:49	06:22 (10)	05:31 20:20	06:22 (10) 06:30 (10)
27	07:15 17:07	07:42 (9) 17:45	06:37 18:17	05:51 19:50	06:21 (10)	05:30 20:20	06:21 (10) 06:30 (10)
28	07:14 17:08	07:45 (9) 17:46	06:36 18:18	06:00 19:51	06:20 (10)	05:29 20:21	06:20 (10) 06:30 (10)
29	07:13 17:09		06:48 19:19	05:59 19:52	06:18 (10)	05:29 20:22	06:18 (10) 06:30 (10)
30	07:12 17:10		06:46 19:20	05:58 19:53	06:17 (10)	05:28 20:23	06:17 (10) 06:30 (10)
31	07:12 17:12		06:44 19:21		06:16 (10)	05:28 20:24	06:16 (10) 06:30 (10)
Potential sun hours	296	297	369	399	449	454	
Total, worst case	225			356	728		

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: A - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (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

	July	August	September	October	November	December			
1	05:27	05:52	06:23 (10)	06:23	06:54	06:28	07:04	07:28 (9)	
	20:36	20:16	37 07:00 (10)	19:33	18:41	16:54	16:29	6 07:34 (9)	
2	05:28	05:53	06:23 (10)	06:24	06:55	06:30	07:05	07:29 (9)	
	20:35	20:15	38 07:01 (10)	19:31	18:40	16:53	16:29	5 07:34 (9)	
3	05:28	05:54	06:22 (10)	06:25	06:56	06:31	07:06	07:30 (9)	
	20:35	20:14	39 07:01 (10)	19:29	18:38	16:52	16:29	4 07:34 (9)	
4	05:29	05:55	06:22 (10)	06:26	06:57	06:32	07:07	07:31 (9)	
	20:35	20:13	40 07:02 (10)	19:28	18:36	16:50	16:29	3 07:34 (9)	
5	05:30	05:56	06:21 (10)	06:27	06:58	06:33	07:08	07:32 (9)	
	20:35	20:12	41 07:02 (10)	19:26	18:35	16:49	16:28	2 07:34 (9)	
6	05:30	05:57	06:21 (10)	06:28	06:59	06:34	07:09	07:33 (9)	
	20:35	20:10	42 07:03 (10)	19:24	18:33	16:48	16:28	1 07:34 (9)	
7	05:31	05:58	06:20 (10)	06:29	07:00	06:36	07:10		
	20:34	20:09	43 07:03 (10)	19:23	18:31	16:47	16:28		
8	05:31	05:59	06:21 (10)	06:30	07:01	06:37	07:11		
	20:34	20:08	42 07:03 (10)	19:21	18:30	16:46	16:28		
9	05:32	06:00	06:22 (10)	06:31	07:02	06:38	07:12		
	20:34	20:07	41 07:03 (10)	19:19	18:28	16:45	16:28		
10	05:33	06:01	06:23 (10)	06:32	07:03	06:39	07:12		
	20:33	20:05	40 07:03 (10)	19:18	18:26	16:44	16:28		
11	05:33	06:02	06:24 (10)	06:33	07:04	06:41	07:13		
	20:33	20:04	39 07:03 (10)	19:16	18:25	16:43	16:28		
12	05:34	06:03	06:25 (10)	06:34	07:05	06:42	07:14		
	20:32	20:03	38 07:03 (10)	19:14	18:23	16:42	16:28		
13	05:35	06:04	06:25 (10)	06:35	07:06	06:43	07:15		
	20:32	20:01	37 07:02 (10)	19:12	18:22	16:41	16:28		
14	05:36	06:05	06:26 (10)	06:36	07:08	06:44	07:17 (9)	07:16	
	20:31	20:00	35 07:01 (10)	19:11	18:20	16:40	4 07:21 (9)	16:29	
15	05:36	06:06	06:27 (10)	06:37	07:09	06:45	07:14 (9)	07:17	
	20:31	19:59	34 07:01 (10)	19:09	18:18	16:39	10 07:24 (9)	16:29	
16	05:37	06:07	06:28 (10)	06:38	07:10	06:47	07:13 (9)	07:17	
	20:30	19:57	32 07:00 (10)	19:07	18:17	16:38	13 07:26 (9)	16:29	
17	05:38	06:08	06:29 (10)	06:39	07:11	06:48	07:12 (9)	07:18	
	20:29	19:56	31 07:00 (10)	19:05	18:15	16:37	16 07:28 (9)	16:29	
18	05:39	06:09	06:30 (10)	06:40	07:12	06:49	07:12 (9)	07:19	
	20:29	19:54	29 06:59 (10)	19:04	18:14	16:37	16 07:28 (9)	16:30	
19	05:40	06:10	06:31 (10)	06:41	07:13	06:50	07:13 (9)	07:19	
	20:28	19:53	27 06:58 (10)	19:02	18:12	16:36	16 07:29 (9)	16:30	
20	05:41	06:11	06:32 (10)	06:42	07:14	06:51	07:15 (9)	07:20	
	20:27	19:51	25 06:57 (10)	19:00	18:11	16:35	16 07:31 (9)	16:30	
21	05:41	06:39 (10)	06:12	06:33 (10)	06:43	07:15	06:52	07:16 (9)	07:20
	20:27	5 06:44 (10)	19:50	23 06:56 (10)	18:59	18:09	16:34	15 07:31 (9)	16:31
22	05:42	06:35 (10)	06:13	06:34 (10)	06:44	07:17	06:54	07:17 (9)	07:21
	20:26	13 06:48 (10)	19:48	21 06:55 (10)	18:57	18:08	16:34	14 07:31 (9)	16:31
23	05:43	06:33 (10)	06:14	06:35 (10)	06:45	07:18	06:55	07:18 (9)	07:21
	20:25	17 06:50 (10)	19:47	18 06:53 (10)	18:55	18:06	16:33	14 07:32 (9)	16:32
24	05:44	06:32 (10)	06:15	06:36 (10)	06:46	07:19	06:56	07:20 (9)	07:22
	20:24	20 06:52 (10)	19:45	15 06:51 (10)	18:53	18:05	16:32	13 07:33 (9)	16:32
25	05:45	06:30 (10)	06:16	06:37 (10)	06:47	06:20	06:57	07:21 (9)	07:22
	20:23	24 06:54 (10)	19:44	12 06:49 (10)	18:52	17:04	16:32	12 07:33 (9)	16:33
26	05:46	06:28 (10)	06:17	06:38 (10)	06:48	06:21	06:58	07:22 (9)	07:23
	20:22	26 06:54 (10)	19:42	8 06:46 (10)	18:50	17:02	16:31	11 07:33 (9)	16:34
27	05:47	06:27 (10)	06:18	06:39 (10)	06:49	06:22	06:59	07:23 (9)	07:23
	20:21	29 06:56 (10)	19:41	2 06:41 (10)	18:48	17:01	16:31	10 07:33 (9)	16:34
28	05:48	06:26 (10)	06:19		06:50	06:24	07:01	07:24 (9)	07:23
	20:20	31 06:57 (10)	19:39		18:47	16:59	16:30	9 07:33 (9)	16:35
29	05:49	06:25 (10)	06:20		06:52	06:25	07:02	07:25 (9)	07:24
	20:19	33 06:58 (10)	19:37		18:45	16:58	16:30	8 07:33 (9)	16:36
30	05:50	06:25 (10)	06:21		06:53	06:26	07:03	07:26 (9)	07:24
	20:18	34 06:59 (10)	19:36		18:43	16:57	16:30	7 07:33 (9)	16:36
31	05:51	06:24 (10)	06:22			06:27			07:24
	20:17	35 06:59 (10)	19:34			16:55			16:37
Potential sun hours	460	429		375	345	297	204	286	
Total, worst case	267	829							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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: B - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (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	July	August	September	October	November	December	
1	07:24 16:38	07:10 17:13	06:34 17:47	06:43 19:22	05:56 19:54	05:27 20:24	05:27 20:35	05:50 (1) 05:51 (1)	05:52 20:16	06:23 19:32	06:54 18:41	06:28 16:54	07:04 16:29
2	07:24 16:39	07:09 17:14	06:32 17:49	06:41 19:23	05:55 19:56	05:27 20:25	05:28 20:35		05:53 20:15	06:24 19:31	06:55 18:40	06:30 16:53	07:05 16:29
3	07:24 16:40	07:08 17:15	06:31 17:50	06:39 19:24	05:54 19:57	05:26 20:26	05:28 20:35		05:54 20:14	06:25 19:29	06:56 18:38	06:31 16:52	07:06 16:29
4	07:24 16:41	07:07 17:17	06:29 17:51	06:38 19:25	05:52 19:58	05:26 20:27	05:29 20:35		05:55 20:13	06:26 19:28	06:57 18:36	06:32 16:50	07:07 16:29
5	07:24 16:42	07:06 17:18	06:28 17:52	06:36 19:26	05:51 19:59	05:25 20:27	05:30 20:35		05:56 20:12	06:27 19:26	06:58 18:35	06:33 16:49	07:08 16:28
6	07:24 16:43	07:05 17:19	06:26 17:53	06:34 19:27	05:50 20:00	05:25 20:28	05:30 20:34		05:57 20:10	06:28 19:24	06:59 18:33	06:34 16:48	07:09 16:28
7	07:24 16:44	07:04 17:20	06:25 17:54	06:33 19:29	05:49 20:01	05:25 20:29	05:31 20:34		05:58 20:09	06:29 19:23	07:00 18:31	06:36 16:47	07:10 16:28
8	07:24 16:45	07:03 17:22	06:23 17:56	06:31 19:30	05:48 20:02	05:24 20:29	05:31 20:34		05:59 20:08	06:30 19:21	07:01 18:30	06:37 16:46	07:11 16:28
9	07:24 16:46	07:02 17:23	06:21 17:57	06:29 19:31	05:46 20:03	05:24 20:30	05:32 20:33		06:00 20:07	06:31 19:19	07:02 18:28	06:38 16:45	07:11 16:28
10	07:24 16:47	07:01 17:24	06:20 17:58	06:28 19:32	05:45 20:04	05:24 20:30	05:33 20:33		06:01 20:05	06:32 19:17	07:03 18:26	06:39 16:44	07:12 16:28
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14	07:23 16:51	06:56 17:29	06:13 18:02	06:21 19:36	05:41 20:08	05:24 20:32	05:36 20:31	05:46 (1)	06:05 20:00	06:36 19:11	07:08 18:20	06:44 16:40	07:16 16:29
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16	07:22 16:53	06:53 17:32	06:10 18:05	06:18 19:38	05:39 20:10	05:24 20:33	05:37 20:30	05:46 (1)	06:07 19:57	06:38 19:07	07:10 18:17	06:46 16:38	07:17 16:29
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18	07:21 16:56	06:50 17:34	06:06 18:07	06:15 19:40	05:37 20:12	05:24 20:34	05:39 20:29	05:46 (1)	06:09 19:54	06:40 19:04	07:12 18:14	06:49 16:36	07:18 16:30
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31	07:11 17:12	06:44 19:21	06:44 19:51	05:58 20:24	05:28 20:24	05:28 20:36	05:51 20:17	05:51 (1)	06:22 19:34	06:27 16:55	06:27 16:55	07:04 16:30	07:24 16:37
Potential sun hours	296	297	369	399	449	454	460	429	375	345	297	287	
Total, worst case						47	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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: C - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (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	07:24 16:38	07:10 17:13	07:31 (2) 07:39 (2)	06:34 17:47	06:43 19:22	05:56 19:54	05:27 20:24	05:27 20:35	05:52 20:16	06:23 19:32	06:53 18:41	06:28 16:54
2	07:24 16:39	07:09 17:14	8 07:30 (2) 10 07:40 (2)	06:32 17:49	06:41 19:23	05:55 19:56	05:26 20:25	05:28 20:35	05:53 20:15	06:24 19:31	06:55 18:40	06:29 16:53
3	07:24 16:40	07:08 17:15	07:29 (2) 12 07:41 (2)	06:31 17:50	06:39 19:24	05:54 19:57	05:26 20:26	05:28 20:35	05:54 20:14	06:25 19:29	06:56 18:38	06:31 16:52
4	07:24 16:41	07:07 17:17	07:27 (2) 14 07:41 (2)	06:29 17:51	06:38 19:25	05:52 19:58	05:26 20:27	05:29 20:35	05:55 20:13	06:26 19:28	06:57 18:36	06:32 16:50
5	07:24 16:42	07:06 17:18	07:26 (2) 15 07:41 (2)	06:28 17:52	06:36 19:26	05:51 19:59	05:25 20:27	05:29 20:35	05:56 20:12	06:27 19:26	06:58 18:35	06:33 16:49
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8	07:24 16:45	07:03 17:22	07:23 (2) 19 07:42 (2)	06:23 17:55	06:31 19:30	05:47 20:02	05:24 20:29	05:31 20:34	05:59 20:08	06:30 19:21	07:01 18:30	06:37 16:46
9	07:24 16:46	07:02 17:23	07:22 (2) 21 07:43 (2)	06:21 17:57	06:29 19:31	05:46 20:03	05:24 20:30	05:32 20:33	06:00 20:07	06:31 19:19	07:02 18:28	06:38 16:45
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11	07:24 16:48	06:59 17:25	07:19 (2) 23 07:42 (2)	06:18 17:59	06:26 19:33	05:44 20:05	05:24 20:31	05:33 20:33	06:02 20:04	06:33 19:16	07:04 18:25	06:40 16:43
12	07:23 16:49	06:58 17:27	07:18 (2) 23 07:41 (2)	06:16 18:00	06:24 19:34	05:43 20:06	05:24 20:31	05:34 20:32	06:03 20:03	06:34 19:14	07:05 18:23	06:42 16:42
13	07:23 16:50	06:57 17:28	07:16 (2) 24 07:40 (2)	06:15 18:01	06:23 19:35	05:42 20:07	05:24 20:32	05:35 20:32	06:04 20:01	06:35 19:12	07:06 18:21	06:43 16:41
14	07:23 16:51	06:56 17:29	07:17 (2) 22 07:39 (2)	06:13 18:02	06:21 19:36	05:41 20:08	05:23 20:32	05:36 20:31	06:05 20:00	06:36 19:11	07:07 18:20	06:44 16:40
15	07:22 16:52	06:54 17:30	07:19 (2) 19 07:38 (2)	06:11 18:03	06:20 19:37	05:40 20:09	05:23 20:33	05:36 20:31	06:06 19:59	06:37 19:09	07:09 18:18	06:45 16:39
16	07:22 16:53	06:53 17:32	07:20 (2) 16 07:36 (2)	06:10 18:05	06:18 19:38	05:39 20:10	05:23 20:33	05:37 20:30	06:07 19:57	06:38 19:07	07:10 18:17	06:46 16:38
17	07:21 16:54	06:52 17:33	07:23 (2) 11 07:34 (2)	06:08 18:06	06:17 19:39	05:38 20:11	05:23 20:34	05:38 20:29	06:08 19:56	06:39 19:05	07:11 18:15	06:48 16:37
18	07:21 16:56	06:50 17:34	07:21 (2) 06:06	18:07	06:15 19:40	05:37 20:12	05:24 20:34	05:39 20:29	06:09 19:54	06:40 19:04	07:12 18:14	06:49 16:36
19	07:20 16:57	06:49 17:35	07:20 (2) 06:05	18:08	06:13 19:41	05:36 20:13	05:24 20:34	05:40 20:28	06:10 19:53	06:41 19:02	07:13 18:12	06:50 16:36
20	07:20 16:58	06:47 17:37	07:19 (2) 06:03	18:09	06:12 19:43	05:35 20:14	05:24 20:35	05:40 20:27	06:11 19:51	06:42 19:00	07:14 18:11	06:51 16:35
21	07:19 16:59	06:46 17:38	07:18 (2) 06:01	18:10	06:10 19:44	05:34 20:15	05:24 20:35	05:41 20:26	06:12 19:50	06:43 18:58	07:15 18:09	06:52 16:34
22	07:19 17:00	06:45 17:39	07:17 (2) 06:00	18:11	06:09 19:45	05:33 20:16	05:24 20:35	05:42 20:26	06:13 19:48	06:44 18:57	07:17 18:08	06:54 16:34
23	07:18 17:02	06:43 17:40	07:16 (2) 05:58	18:12	06:07 19:46	05:33 20:17	05:24 20:35	05:43 20:25	06:14 19:47	06:45 18:55	07:18 18:06	06:55 16:33
24	07:17 17:03	06:42 17:41	07:15 (2) 05:56	18:13	06:06 19:47	05:32 20:18	05:25 20:35	05:44 20:24	06:15 19:45	06:46 18:53	07:19 18:05	06:56 16:32
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31	07:11 17:11	07:32 (2) 07:38 (2)	07:08 (2) 06:44	19:21	05:57	05:27 20:24	05:27	05:51 20:17	06:22 19:34	06:27 16:55	07:26 17:11 (2)	07:04 16:37
Potential sun hours	296	297	369	399	449	454	460	429	375	345	297	287
Total, worst case	11	294							142		163	

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: D - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (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	07:24 16:38	07:11 17:13	06:34 17:47	06:43 19:22	05:56 19:55	05:27 20:24	05:27 20:35	05:52 20:16	06:23 19:33	06:54 18:41	06:28 16:54	07:04 16:29
2	07:24 16:39	07:10 17:14	06:33 17:49	06:41 19:23	05:55 19:56	05:27 20:25	05:28 20:35	05:53 20:15	06:24 19:31	06:55 18:40	06:30 16:53	07:05 16:29
3	07:24 16:40	07:09 17:15	06:31 17:50	06:39 19:24	05:54 19:57	05:26 20:26	05:28 20:35	05:54 20:14	06:25 19:29	06:56 18:38	06:31 16:52	07:06 16:29
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19	07:20 16:57	06:49 17:35	06:05 18:08	06:14 19:42	05:36 20:13	05:24 20:34	05:40 20:28	06:10 19:53	06:41 19:02	07:13 18:12	06:50 16:36	07:19 16:30
20	07:20 16:58	06:47 17:37	06:03 18:09	06:12 19:43	05:35 20:14	05:24 20:35	05:41 20:27	06:11 19:51	06:42 19:00	07:14 18:11	06:51 16:35	07:20 16:30
21	07:19 16:59	06:46 17:38	06:01 18:10	06:11 19:44	06:11 20:15	05:34 20:35	05:41 20:27	06:12 19:50	06:43 18:59	07:15 18:09	06:52 16:34	07:20 16:31
22	07:19 17:00	06:45 17:39	06:00 18:11	06:09 19:45	05:34 20:16	05:24 20:35	05:42 20:26	06:13 19:48	06:44 18:57	07:17 18:08	06:54 16:34	07:21 16:31
23	07:18 17:02	06:43 17:40	05:58 18:12	06:08 19:46	05:33 20:17	05:24 20:35	05:43 20:25	06:14 19:47	06:45 18:55	07:18 18:06	06:55 16:33	07:21 16:32
24	07:17 17:03	06:42 17:41	05:56 18:13	06:06 19:47	05:32 20:18	05:25 20:35	05:44 20:24	06:15 19:45	06:46 18:53	07:19 18:05	06:56 16:32	07:22 16:32
25	07:17 17:04	06:40 17:43	05:55 18:14	06:05 19:48	05:31 20:19	05:25 20:36	05:45 20:23	06:16 19:44	06:47 18:52	07:20 17:03	06:57 16:32	07:22 16:33
26	07:16 17:05	06:39 17:44	05:53 18:16	06:03 19:49	05:31 20:20	05:25 20:36	05:46 20:22	06:17 19:42	06:48 18:50	07:21 17:02	06:58 16:31	07:23 16:34
27	07:15 17:07	06:37 17:45	05:51 18:17	06:02 19:50	05:30 20:20	05:26 20:36	05:47 20:21	06:18 19:41	06:49 18:48	07:22 17:01	06:59 16:31	07:23 16:34
28	07:14 17:08	06:36 17:46	05:49 18:18	06:00 19:51	05:29 20:21	05:26 20:36	05:48 20:20	06:19 19:39	06:50 18:46	07:23 16:59	07:00 16:30	07:23 16:35
29	07:13 17:09		06:48 19:19	05:59 19:52	05:29 20:22	05:26 20:36	05:49 20:19	06:20 19:37	06:51 18:45	07:24 16:58	07:02 16:30	07:24 16:36
30	07:12 17:10		06:46 19:20	05:58 19:53	05:28 20:23	05:27 20:36	05:50 20:18	06:21 19:36	06:53 18:43	07:25 16:57	07:03 16:30	07:24 16:36
31	07:11 17:12		06:44 19:21		05:28 20:24		05:51 20:17	06:22 19:34		06:27 16:55		07:24 16:37
Potential sun hours Total, worst case	296	297	369	399	449	454	460	429	375	345	297	287

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: E - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (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	07:24 16:38	07:10 17:13	06:34 17:47	06:43 19:22	05:56 19:54	05:27 20:24	05:27 20:35	05:52 20:16	06:23 19:32	06:54 18:41	06:28 16:54	07:04 16:29
2	07:24 16:39	07:09 17:14	06:32 17:49	06:41 19:23	05:55 19:56	05:27 20:25	05:28 20:35	05:53 20:15	06:24 19:31	06:55 18:40	06:30 16:53	07:05 16:29
3	07:24 16:40	07:08 17:15	06:31 17:50	06:39 19:24	05:54 19:57	05:26 20:26	05:28 20:35	05:54 20:14	06:25 19:29	06:56 18:38	06:31 16:52	07:06 16:29
4	07:24 16:41	07:07 17:17	06:29 17:51	06:38 19:25	05:52 19:58	05:26 20:27	05:29 20:35	05:55 20:13	06:26 19:28	06:57 18:36	06:32 16:50	07:07 16:29
5	07:24 16:42	07:06 17:18	06:28 17:52	06:36 19:26	05:51 19:59	05:25 20:27	05:30 20:35	05:56 20:12	06:27 19:26	06:58 18:35	06:33 16:49	07:08 16:28
6	07:24 16:43	07:05 17:19	06:26 17:53	06:34 19:27	05:50 20:00	05:25 20:28	05:30 20:34	05:57 20:10	06:28 19:24	06:59 18:33	06:34 16:48	07:09 16:28
7	07:24 16:44	07:04 17:20	06:25 17:54	06:33 19:29	05:49 20:01	05:25 20:29	05:31 20:34	05:58 20:09	06:29 19:23	07:00 18:31	06:36 16:47	07:10 16:28
8	07:24 16:45	07:03 17:22	06:23 17:56	06:31 19:30	05:48 20:02	05:24 20:29	05:31 20:34	05:59 20:08	06:30 19:21	07:01 18:30	06:37 16:46	07:11 16:28
9	07:24 16:46	07:02 17:23	06:21 17:57	06:29 19:31	05:46 20:03	05:24 20:30	05:32 20:34	06:00 20:07	06:31 19:19	07:02 18:28	06:38 16:45	07:11 16:28
10	07:24 16:47	07:01 17:24	06:20 17:58	06:28 19:32	05:45 20:04	05:24 20:30	05:33 20:33	06:01 20:05	06:32 19:17	07:03 18:26	06:39 16:44	07:12 16:28
11	07:24 16:48	06:59 17:25	06:18 17:59	06:26 19:33	05:44 20:05	05:24 20:31	05:33 20:33	06:02 20:04	06:33 19:16	07:04 18:25	06:40 16:43	07:13 16:28
12	07:23 16:49	06:58 17:27	06:16 18:00	06:25 19:34	05:43 20:06	05:24 20:31	05:34 20:32	06:03 20:03	06:34 19:14	07:05 18:23	06:42 16:42	07:14 16:28
13	07:23 16:50	06:57 17:28	06:15 18:01	06:23 19:35	05:42 20:07	05:24 20:32	05:35 20:32	06:04 20:01	06:35 19:12	07:06 18:22	06:43 16:41	07:15 16:28
14	07:23 16:51	06:56 17:29	06:13 18:02	06:21 19:36	05:41 20:08	05:24 20:32	05:36 20:31	06:05 20:00	06:36 19:11	07:08 18:20	06:44 16:40	07:16 16:29
15	07:22 16:52	06:54 17:30	06:11 18:03	06:20 19:37	05:40 20:09	05:24 20:33	05:36 20:31	06:06 19:59	06:37 19:09	07:09 18:18	06:45 16:39	07:16 16:29
16	07:22 16:53	06:53 17:32	06:10 18:05	06:18 19:38	05:39 20:10	05:24 20:33	05:37 20:30	06:07 19:57	06:38 19:07	07:10 18:17	06:46 16:38	07:17 16:29
17	07:21 16:54	06:52 17:33	06:08 18:06	06:17 19:39	05:38 20:11	05:24 20:34	05:38 20:29	06:08 19:56	06:39 19:05	07:11 18:15	06:48 16:37	07:18 16:29
18	07:21 16:56	06:50 17:34	06:06 18:07	06:15 19:40	05:37 20:12	05:24 20:34	05:39 20:29	06:09 19:54	06:40 19:04	07:12 18:14	06:49 16:36	07:18 16:30
19	07:20 16:57	06:49 17:35	06:05 18:08	06:14 19:42	05:36 20:13	05:24 20:34	05:40 20:28	06:10 19:53	06:41 19:02	07:13 18:12	06:50 16:36	07:19 16:30
20	07:20 16:58	06:47 17:37	06:03 18:09	06:12 19:43	05:35 20:14	05:24 20:35	05:41 20:27	06:11 19:51	06:42 19:00	07:14 18:11	06:51 16:35	07:20 16:30
21	07:19 16:59	06:46 17:38	06:01 18:10	06:11 19:44	06:11 20:15	05:34 20:35	05:41 20:26	06:12 19:50	06:43 18:59	07:15 18:09	06:52 16:34	07:20 16:31
22	07:19 17:00	06:45 17:39	06:00 18:11	06:09 19:45	05:33 20:16	05:24 20:35	05:42 20:26	06:13 19:48	06:44 18:57	07:17 18:08	06:54 16:34	07:21 16:31
23	07:18 17:02	06:43 17:40	05:58 18:12	06:08 19:46	05:33 20:17	05:24 20:35	05:43 20:25	06:14 19:47	06:45 18:55	07:18 18:06	06:55 16:33	07:21 16:32
24	07:17 17:03	06:42 17:41	05:56 18:13	06:06 19:47	05:32 20:18	05:25 20:35	05:44 20:24	06:15 19:45	06:46 18:53	07:19 18:05	06:56 16:32	07:22 16:32
25	07:17 17:04	06:40 17:43	05:54 18:14	06:05 19:48	05:31 20:19	05:25 20:35	05:45 20:23	06:16 19:44	06:47 18:52	07:20 17:03	06:57 16:32	07:22 16:33
26	07:16 17:05	06:39 17:44	05:53 18:16	06:03 19:49	05:31 20:19	05:25 20:36	05:46 20:22	06:17 19:42	06:48 18:50	07:21 17:02	06:58 16:31	07:23 16:34
27	07:15 17:07	06:37 17:45	05:51 18:17	06:02 19:50	05:30 20:20	05:26 20:36	05:47 20:21	06:18 19:41	06:49 18:48	07:22 17:01	06:59 16:31	07:23 16:34
28	07:14 17:08	06:36 17:46	05:49 18:18	06:00 19:51	05:29 20:21	05:26 20:36	05:48 20:20	06:19 19:39	06:50 18:46	07:23 16:59	07:00 16:30	07:23 16:35
29	07:13 17:09		06:48 19:19	05:59 19:52	05:29 20:22	05:26 20:36	05:49 20:19	06:20 19:37	06:51 18:45	07:24 16:58	07:01 16:30	07:24 16:36
30	07:12 17:10		06:46 19:20	05:58 19:53	05:28 20:23	05:27 20:36	05:50 20:18	06:21 19:36	06:52 18:43	07:25 16:57	07:03 16:30	07:24 16:36
31	07:11 17:12		06:44 19:21		05:28 20:24		05:51 20:17	06:22 19:34		06:27 16:55		07:24 16:37
Potential sun hours Total, worst case	296	297	369	399	449	454	460	429	375	345	297	287

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 (WTG causing flicker first time)	Last time (hh:mm) with flicker (WTG causing flicker last time)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: F - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (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	07:24 16:38	07:10 17:13	06:34 17:47	16:45 (7) 17:15 (7)	06:42 19:22	05:56 19:54	18:30 (6) 20:24	05:27 19:24 (6)	18:40 (6) 19:24 (6)	
2	07:24 16:39	07:09 17:14	06:32 17:48	16:46 (7) 17:27 (8)	06:41 19:23	05:55 19:55	18:29 (6) 20:25	05:26 19:24 (6)	18:41 (6) 19:24 (6)	
3	07:24 16:40	07:08 17:15	06:31 17:50	16:48 (7) 17:28 (8)	06:39 19:24	05:54 19:56	18:29 (6) 20:26	05:26 19:24 (6)	18:43 (6) 19:24 (6)	
4	07:24 16:41	07:07 17:16	06:29 17:51	16:50 (7) 17:29 (8)	06:37 19:25	05:52 19:57	18:29 (6) 19:34 (6)	05:26 20:26	18:43 (6) 19:23 (6)	
5	07:24 16:42	07:06 17:18	06:28 17:52	16:54 (7) 17:31 (8)	06:36 19:26	05:51 19:59	18:29 (6) 19:34 (6)	05:25 20:27	18:44 (6) 19:23 (6)	
6	07:24 16:43	07:05 17:19	06:26 17:53	17:22 (8) 17:32 (8)	06:34 19:27	05:50 20:00	18:28 (6) 19:33 (6)	05:25 20:28	18:45 (6) 19:23 (6)	
7	07:24 16:43	07:04 17:20	06:24 17:54	17:22 (8) 17:33 (8)	06:33 19:28	05:49 20:01	18:28 (6) 19:33 (6)	05:25 20:28	18:46 (6) 19:23 (6)	
8	07:24 16:44	07:03 17:22	16:57 (7) 17:55	06:23 17:34 (8)	06:31 19:29	05:47 20:02	18:28 (6) 19:33 (6)	05:24 20:29	18:46 (6) 19:22 (6)	
9	07:24 16:46	07:02 17:23	16:53 (7) 17:57	06:21 17:35 (8)	06:29 19:31	05:46 20:03	18:29 (6) 19:33 (6)	05:24 20:30	18:47 (6) 19:21 (6)	
10	07:24 16:47	07:00 17:24	16:51 (7) 17:01 (7)	06:19 17:58	06:28 19:32	05:45 20:04	18:29 (6) 19:33 (6)	05:24 20:30	18:48 (6) 19:21 (6)	
11	07:23 16:48	06:59 17:25	16:49 (7) 17:59	06:18 17:59	06:26 19:33	05:44 20:05	18:29 (6) 19:33 (6)	05:24 20:31	18:48 (6) 19:21 (6)	
12	07:23 16:49	06:58 17:27	16:48 (7) 17:04 (7)	06:16 18:00	06:24 19:34	18:57 (6) 19:12 (6)	05:43 20:06	18:29 (6) 19:33 (6)	05:24 20:31	18:49 (6) 19:21 (6)
13	07:23 16:50	06:57 17:28	16:46 (7) 17:05 (7)	06:15 18:01	06:23 19:35	18:52 (6) 19:12 (6)	05:42 20:07	18:30 (6) 19:33 (6)	05:23 20:32	18:50 (6) 19:21 (6)
14	07:23 16:51	06:55 17:29	16:46 (7) 17:06 (7)	06:13 18:02	06:21 19:36	18:49 (6) 19:14 (6)	05:41 20:08	18:30 (6) 19:32 (6)	05:23 20:32	18:51 (6) 19:20 (6)
15	07:22 16:52	06:54 17:30	16:45 (7) 17:08 (7)	06:11 18:03	06:20 19:37	18:46 (6) 19:15 (6)	05:40 20:09	18:30 (6) 19:32 (6)	05:23 20:33	18:51 (6) 19:20 (6)
16	07:22 16:53	06:53 17:32	16:44 (7) 17:09 (7)	06:10 18:04	06:18 19:38	18:44 (6) 19:16 (6)	05:39 20:10	18:30 (6) 19:31 (6)	05:23 20:33	18:52 (6) 19:20 (6)
17	07:21 16:54	06:51 17:33	16:44 (7) 17:10 (7)	06:08 18:05	06:16 19:39	18:42 (6) 19:17 (6)	05:38 20:11	18:31 (6) 19:31 (6)	05:23 20:33	18:52 (6) 19:20 (6)
18	07:21 16:55	06:50 17:34	16:43 (7) 17:11 (7)	06:06 18:07	06:15 19:40	18:41 (6) 19:18 (6)	05:37 20:12	18:31 (6) 19:31 (6)	05:23 20:34	18:52 (6) 19:20 (6)
19	07:20 16:57	06:49 17:35	16:43 (7) 17:13 (7)	06:04 18:08	06:13 19:41	18:39 (6) 19:19 (6)	05:36 20:13	18:32 (6) 19:31 (6)	05:24 20:34	18:53 (6) 19:20 (6)
20	07:20 16:58	06:47 17:36	16:43 (7) 17:15 (7)	06:03 18:09	06:12 19:42	18:38 (6) 19:20 (6)	05:35 20:14	18:33 (6) 19:30 (6)	05:24 20:34	18:53 (6) 19:20 (6)
21	07:19 16:59	06:46 17:38	16:42 (7) 17:15 (7)	06:01 18:10	06:10 19:43	18:36 (6) 19:21 (6)	05:34 20:15	18:33 (6) 19:30 (6)	05:24 20:35	18:53 (6) 19:20 (6)
22	07:18 17:00	06:44 17:39	16:43 (7) 17:17 (7)	05:59 18:11	06:09 19:45	18:35 (6) 19:22 (6)	05:33 20:16	18:33 (6) 19:29 (6)	05:24 20:35	18:54 (6) 19:21 (6)
23	07:18 17:01	06:43 17:40	16:42 (7) 17:18 (7)	05:58 18:12	06:07 19:46	18:34 (6) 19:23 (6)	05:33 20:17	18:35 (6) 19:29 (6)	05:24 20:35	18:54 (6) 19:21 (6)
24	07:17 17:03	06:41 17:41	16:43 (7) 17:20 (7)	05:56 18:13	06:06 19:47	18:33 (6) 19:24 (6)	05:32 20:18	18:35 (6) 19:29 (6)	05:25 20:35	18:54 (6) 19:21 (6)
25	07:16 17:04	06:40 17:42	16:43 (7) 17:19 (7)	05:54 18:14	06:04 19:48	18:33 (6) 19:26 (6)	05:31 20:18	18:35 (6) 19:28 (6)	05:25 20:35	18:54 (6) 19:22 (6)
26	07:16 17:05	06:38 17:44	16:44 (7) 17:19 (7)	05:53 18:15	06:03 19:49	18:31 (6) 19:26 (6)	05:30 20:19	18:37 (6) 19:28 (6)	05:25 20:35	18:54 (6) 19:22 (6)
27	07:15 17:06	06:37 17:45	16:44 (7) 17:18 (7)	05:51 18:16	06:02 19:50	18:31 (6) 19:27 (6)	05:30 20:20	18:37 (6) 19:27 (6)	05:26 20:35	18:53 (6) 19:22 (6)
28	07:14 17:08	06:35 17:46	16:45 (7) 17:17 (7)	05:49 18:18	06:00 19:51	18:30 (6) 19:28 (6)	05:29 20:21	18:37 (6) 19:26 (6)	05:26 20:35	18:54 (6) 19:23 (6)
29	07:13 17:09		06:48 19:19		06:48 19:52					
30	07:12 17:10		06:46 19:20		05:57 19:53					
31	07:11 17:11		06:44 19:21							
Potential sun hours	296	297	369	399	449	454	961			
Total, worst case		527	210	808	1816					

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: F - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (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	05:27	18:53 (6)	05:51	18:40 (6)	06:23	06:53			06:28	16:21 (7)	07:03	
	20:35	32 19:25 (6)	20:16	64 19:44 (6)	19:32	18:41			16:54	9 16:30 (7)	16:29	
2	05:28	18:53 (6)	05:52	18:40 (6)	06:24	06:54		18:05 (8)	06:29		16:23 (7)	07:04
	20:35	33 19:26 (6)	20:15	64 19:44 (6)	19:31	18:39	10	18:15 (8)	16:53	6	16:29 (7)	16:29
3	05:28	18:52 (6)	05:53	18:39 (6)	06:25	06:55		18:03 (8)	06:31		16:26 (7)	07:06
	20:35	34 19:26 (6)	20:14	65 19:44 (6)	19:29	18:38	12	18:15 (8)	16:51	1	16:27 (7)	16:29
4	05:29	18:52 (6)	05:54	18:39 (6)	06:26	06:57		18:01 (8)	06:32			07:07
	20:35	36 19:28 (6)	20:13	65 19:44 (6)	19:27	18:36	13	18:14 (8)	16:50			16:28
5	05:29	18:51 (6)	05:55	18:39 (6)	06:27	06:58		18:00 (8)	06:33			07:08
	20:35	37 19:28 (6)	20:11	65 19:44 (6)	19:26	18:34	12	18:12 (8)	16:49			16:28
6	05:30	18:51 (6)	05:56	18:39 (6)	06:28	06:59		17:59 (8)	06:34			07:09
	20:34	38 19:29 (6)	20:10	65 19:44 (6)	19:24	18:33	11	18:10 (8)	16:48			16:28
7	05:31	18:50 (6)	05:57	18:38 (6)	06:29	07:00		17:58 (8)	06:35			07:09
	20:34	39 19:29 (6)	20:09	65 19:43 (6)	19:22	18:31	10	18:08 (8)	16:47			16:28
8	05:31	18:50 (6)	05:58	18:37 (6)	06:30	07:01		17:31 (7)	06:37			07:10
	20:34	40 19:30 (6)	20:08	66 19:43 (6)	19:21	18:29	16	18:06 (8)	16:46			16:28
9	05:32	18:50 (6)	05:59	18:37 (6)	06:31	07:02		17:26 (7)	06:38			07:11
	20:33	41 19:31 (6)	20:06	66 19:43 (6)	19:19	18:28	24	18:05 (8)	16:45			16:28
10	05:33	18:49 (6)	06:00	18:37 (6)	06:32	07:03		17:23 (7)	06:39			07:12
	20:33	42 19:31 (6)	20:05	64 19:41 (6)	19:17	18:26	27	18:03 (8)	16:44			16:28
11	05:33	18:49 (6)	06:01	18:37 (6)	06:33	07:04		17:21 (7)	06:40			07:13
	20:32	43 19:32 (6)	20:04	63 19:40 (6)	19:16	18:25	28	18:01 (8)	16:43			16:28
12	05:34	18:49 (6)	06:02	18:37 (6)	06:34	07:05		17:20 (7)	06:41			07:14
	20:32	44 19:33 (6)	20:02	62 19:39 (6)	19:14	18:23	29	17:49 (7)	16:42			16:28
13	05:35	18:47 (6)	06:03	18:37 (6)	06:35	07:06		17:18 (7)	06:43			07:15
	20:31	46 19:33 (6)	20:01	61 19:38 (6)	19:12	18:21	31	17:49 (7)	16:41			16:28
14	05:35	18:47 (6)	06:04	18:38 (6)	06:36	07:07		17:17 (7)	06:44			07:15
	20:31	47 19:34 (6)	20:00	58 19:36 (6)	19:10	18:20	33	17:50 (7)	16:40			16:28
15	05:36	18:47 (6)	06:06	18:38 (6)	06:37	07:08		17:16 (7)	06:45			07:16
	20:30	48 19:35 (6)	19:58	57 19:35 (6)	19:09	18:18	34	17:50 (7)	16:39			16:29
16	05:37	18:47 (6)	06:07	18:38 (6)	06:38	07:10		17:15 (7)	06:46			07:17
	20:30	49 19:36 (6)	19:57	56 19:34 (6)	19:07	18:17	36	17:51 (7)	16:38			16:29
17	05:38	18:46 (6)	06:08	18:38 (6)	06:39	07:11		17:14 (7)	06:47			07:18
	20:29	51 19:37 (6)	19:56	54 19:32 (6)	19:05	18:15	37	17:51 (7)	16:37			16:29
18	05:39	18:45 (6)	06:09	18:39 (6)	06:40	07:12		17:14 (7)	06:49			07:18
	20:28	52 19:37 (6)	19:54	52 19:31 (6)	19:04	18:14	37	17:51 (7)	16:36			16:29
19	05:40	18:45 (6)	06:10	18:39 (6)	06:41	07:13		17:14 (7)	06:50			07:19
	20:28	53 19:38 (6)	19:53	51 19:30 (6)	19:02	18:12	35	17:49 (7)	16:36			16:30
20	05:40	18:44 (6)	06:11	18:40 (6)	06:42	07:14		17:13 (7)	06:51			07:19
	20:27	55 19:39 (6)	19:51	48 19:28 (6)	19:00	18:11	34	17:47 (7)	16:35			16:30
21	05:41	18:44 (6)	06:12	18:40 (6)	06:43	07:15		17:13 (7)	06:52			07:20
	20:26	55 19:39 (6)	19:50	47 19:27 (6)	18:58	18:09	33	17:46 (7)	16:34			16:31
22	05:42	18:44 (6)	06:13	18:41 (6)	06:44	07:16		17:12 (7)	06:53			07:21
	20:25	56 19:40 (6)	19:48	44 19:25 (6)	18:57	18:08	32	17:44 (7)	16:33			16:31
23	05:43	18:43 (6)	06:14	18:42 (6)	06:45	07:18		17:13 (7)	06:55			07:21
	20:25	58 19:41 (6)	19:47	42 19:24 (6)	18:55	18:06	30	17:43 (7)	16:33			16:32
24	05:44	18:42 (6)	06:15	18:43 (6)	06:46	07:19		17:13 (7)	06:56			07:22
	20:24	58 19:40 (6)	19:45	39 19:22 (6)	18:53	18:05	28	17:41 (7)	16:32			16:32
25	05:45	18:42 (6)	06:16	18:44 (6)	06:47	06:20		16:13 (7)	06:57			07:22
	20:23	59 19:41 (6)	19:44	37 19:21 (6)	18:51	17:03	27	16:40 (7)	16:32			16:33
26	05:46	18:42 (6)	06:17	18:45 (6)	06:48	06:21		16:14 (7)	06:58			07:22
	20:22	59 19:41 (6)	19:42	35 19:20 (6)	18:50	17:02	24	16:38 (7)	16:31			16:33
27	05:47	18:41 (6)	06:18	18:46 (6)	06:49	06:22		16:15 (7)	06:59			07:23
	20:21	61 19:42 (6)	19:40	32 19:18 (6)	18:48	17:01	22	16:37 (7)	16:31			16:34
28	05:48	18:41 (6)	06:19	18:48 (6)	06:50	06:23		16:15 (7)	07:00			07:23
	20:20	61 19:42 (6)	19:39	28 19:16 (6)	18:46	16:59	21	16:36 (7)	16:30			16:35
29	05:49	18:41 (6)	06:20	18:50 (6)	06:51	06:25		16:16 (7)	07:01			07:23
	20:19	62 19:43 (6)	19:37	25 19:15 (6)	18:45	16:58	18	16:34 (7)	16:30			16:35
30	05:50	18:40 (6)	06:21	18:53 (6)	06:52	06:26		16:17 (7)	07:02			07:24
	20:18	63 19:43 (6)	19:36	20 19:13 (6)	18:43	16:57	16	16:33 (7)	16:29			16:36
31	05:50	18:40 (6)	06:22	18:57 (6)		06:27		16:19 (7)				07:24
	20:17	63 19:43 (6)	19:34	15 19:12 (6)		16:55	13	16:32 (7)				16:37
Potential sun hours	460		429		375	345		297		16		287
Total, worst case	1515		1575		733							

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: G - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (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	July	August	September	October	November	December	
1	07:24 16:38	07:10 17:13	06:34 17:47	06:43 19:22	05:56 19:54	18:51 (10) 19:09 (10)	05:27 20:24	05:27 20:35	05:52 20:16	06:23 19:33	18:45 (10) 19:10 (10)	06:28 18:41	07:04 16:29
2	07:24 16:39	07:10 17:14	06:32 17:49	06:41 19:23	05:55 19:56	18:53 (10) 19:05 (10)	05:27 20:25	05:28 20:35	05:53 20:15	06:24 19:31	18:45 (10) 19:09 (10)	06:30 18:40	07:05 16:29
3	07:24 16:40	07:08 17:15	06:31 17:50	06:39 19:24	05:54 19:57		05:26 20:26	05:28 20:35	05:54 20:14	06:25 19:29	18:46 (10) 19:07 (10)	06:31 18:38	07:06 16:29
4	07:24 16:41	07:07 17:17	06:29 17:51	06:38 19:25	19:02 (10) 19:04 (10)	05:52 19:58	05:26 20:27	05:29 20:35	05:55 20:13	06:26 19:28	18:47 (10) 19:05 (10)	06:32 18:36	07:07 16:28
5	07:24 16:42	07:06 17:18	06:28 17:52	06:36 19:26	18:57 (10) 19:05 (10)	05:51 19:59	05:25 20:27	05:29 20:35	05:56 20:12	06:27 19:26	18:48 (10) 19:04 (10)	06:33 18:35	07:08 16:28
6	07:24 16:43	07:05 17:19	06:26 17:53	06:34 19:27	18:54 (10) 19:06 (10)	05:50 20:00	05:25 20:28	05:30 20:35	05:57 20:10	06:28 19:24	18:50 (10) 19:02 (10)	06:34 18:33	07:09 16:28
7	07:24 16:44	07:04 17:20	06:25 17:54	06:33 19:29	18:51 (10) 19:07 (10)	05:49 20:01	05:25 20:29	05:31 20:34	05:58 20:09	06:29 19:23	18:52 (10) 19:00 (10)	06:36 18:31	07:10 16:28
8	07:24 16:45	07:03 17:22	06:23 17:56	06:31 19:30	18:50 (10) 19:08 (10)	05:47 20:02	05:24 20:29	05:31 20:34	05:59 20:08	06:30 19:21	18:57 (10) 18:59 (10)	06:37 18:30	07:11 16:28
9	07:24 16:46	07:02 17:23	06:21 17:57	06:29 19:31	18:48 (10) 19:09 (10)	05:46 20:03	05:24 20:30	05:32 20:34	06:00 20:07	06:31 19:19		07:02 18:28	07:12 16:28
10	07:24 16:47	07:01 17:24	06:20 17:58	06:28 19:32	18:46 (10) 19:10 (10)	05:45 20:04	05:24 20:30	05:33 20:33	06:01 20:05	19:08 (10) 19:10 (10)	06:32 19:17	07:03 18:26	07:12 16:28
11	07:24 16:48	06:59 17:25	06:18 17:59	06:26 19:33	18:46 (10) 19:11 (10)	05:44 20:05	05:24 20:31	05:33 20:33	06:02 20:04	19:01 (10) 19:15 (10)	06:33 19:16	07:04 18:25	07:13 16:28
12	07:23 16:49	06:58 17:27	06:16 18:00	06:25 19:34	18:44 (10) 19:12 (10)	05:43 20:06	05:24 20:32	05:34 20:32	06:03 20:03	18:58 (10) 19:17 (10)	06:34 19:14	07:05 18:23	07:14 16:28
13	07:23 16:50	06:57 17:28	06:15 18:01	06:23 19:35	18:44 (10) 19:14 (10)	05:42 20:07	05:24 20:32	05:35 20:32	06:04 20:01	18:56 (10) 19:19 (10)	06:35 19:12	07:06 18:22	07:15 16:28
14	07:23 16:51	06:56 17:29	06:13 18:02	06:21 19:36	18:43 (10) 19:14 (10)	05:41 20:08	05:24 20:32	05:36 20:31	06:05 20:00	18:54 (10) 19:20 (10)	06:36 19:11	07:08 18:20	07:16 16:28
15	07:22 16:52	06:54 17:30	06:11 18:03	06:20 19:37	18:42 (10) 19:15 (10)	05:40 20:09	05:23 20:33	05:36 20:31	06:06 19:59	18:53 (10) 19:22 (10)	06:37 19:09	07:09 18:18	07:16 16:29
16	07:22 16:53	06:53 17:32	06:10 18:05	06:18 19:38	18:42 (10) 19:16 (10)	05:39 20:10	05:23 20:33	05:37 20:30	06:07 19:57	18:51 (10) 19:22 (10)	06:38 19:07	07:10 18:17	07:17 16:29
17	07:22 16:54	06:52 17:33	06:08 18:06	06:17 19:39	18:41 (10) 19:17 (10)	05:38 20:11	05:24 20:34	05:38 20:29	06:08 19:56	18:50 (10) 19:23 (10)	06:39 19:05	07:11 18:15	07:18 16:29
18	07:21 16:56	06:50 17:34	06:06 18:07	06:15 19:40	18:42 (10) 19:18 (10)	05:37 20:12	05:24 20:34	05:39 20:29	06:09 19:54	18:49 (10) 19:24 (10)	06:40 19:04	07:12 18:14	07:18 16:30
19	07:20 16:57	06:49 17:35	06:05 18:08	06:14 19:42	18:41 (10) 19:19 (10)	05:36 20:13	05:24 20:34	05:40 20:28	06:10 19:53	18:48 (10) 19:24 (10)	06:41 19:02	07:13 18:12	07:19 16:30
20	07:20 16:58	06:47 17:37	06:03 18:09	06:12 19:43	18:42 (10) 19:20 (10)	05:35 20:14	05:24 20:35	05:40 20:27	06:11 19:51	18:47 (10) 19:25 (10)	06:42 19:00	07:14 18:11	07:20 16:30
21	07:19 16:59	06:46 17:38	06:01 18:10	06:11 19:44	18:41 (10) 19:20 (10)	05:34 20:15	05:24 20:35	05:41 20:27	06:12 19:50	18:47 (10) 19:25 (10)	06:43 18:59	07:15 18:09	07:21 16:31
22	07:19 17:00	06:45 17:39	06:00 18:11	06:09 19:45	18:42 (10) 19:20 (10)	05:33 20:16	05:24 20:35	05:42 20:26	06:13 19:48	18:46 (10) 19:25 (10)	06:44 18:57	07:17 18:08	07:21 16:31
23	07:18 17:02	06:43 17:40	05:58 18:12	06:08 19:46	18:43 (10) 19:20 (10)	05:33 20:17	05:24 20:35	05:43 20:25	06:14 19:47	18:45 (10) 19:24 (10)	06:45 18:55	07:18 18:06	07:21 16:32
24	07:17 17:03	06:42 17:41	05:56 18:13	06:06 19:47	18:42 (10) 19:19 (10)	05:32 20:18	05:25 20:35	05:44 20:24	06:15 19:45	18:45 (10) 19:23 (10)	06:46 18:53	07:19 18:05	07:22 16:32
25	07:17 17:04	06:40 17:43	05:54 18:14	06:05 19:48	18:43 (10) 19:18 (10)	05:31 20:19	05:25 20:36	05:45 20:23	06:16 19:44	18:45 (10) 19:21 (10)	06:47 18:52	07:20 18:04	07:22 16:33
26	07:16 17:05	06:39 17:44	05:53 18:16	06:03 19:49	18:44 (10) 19:16 (10)	05:30 20:20	05:25 20:36	05:46 20:22	06:17 19:42	18:44 (10) 19:20 (10)	06:48 18:50	07:21 18:04	07:23 16:34
27	07:15 17:06	06:37 17:45	05:51 18:17	06:02 19:50	18:45 (10) 19:16 (10)	05:30 20:20	05:26 20:36	05:47 20:21	06:18 19:41	18:44 (10) 19:18 (10)	06:49 18:48	07:22 17:01	07:23 16:34
28	07:14 17:08	06:36 17:46	05:49 18:18	06:00 19:51	18:46 (10) 19:14 (10)	05:29 20:21	05:26 20:36	05:48 20:20	06:19 19:39	18:44 (10) 19:16 (10)	06:50 18:46	07:23 16:59	07:23 16:35
29	07:13 17:09	06:48 19:19	05:59 19:52	05:59 19:52	18:47 (10) 19:12 (10)	05:29 20:22	05:26 20:36	05:49 20:19	06:20 19:37	18:44 (10) 19:15 (10)	06:51 18:45	07:24 16:58	07:23 16:36
30	07:12 17:10	06:46 19:20	05:58 19:53	05:58 19:53	18:49 (10) 19:11 (10)	05:28 20:23	05:27 20:36	05:50 20:18	06:21 19:36	18:44 (10) 19:13 (10)	06:52 18:43	07:24 16:57	07:23 16:36
31	07:11 17:12	06:44 19:21	05:57 19:53	05:57 19:53	18:44 (10) 20:24	05:27 20:24	05:26 20:36	05:51 20:17	06:22 19:34	18:44 (10) 19:12 (10)	06:53 18:43	07:24 16:55	07:23 16:37
Potential sun hours	296	297	369	399	449	454	460	429	375	345	297	286	
Total, worst case				754	30			666	126				

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: I - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (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
1	07:24 16:38	07:11 17:13	16:02 (11) 16:49 (11)	06:34 17:47	06:43 19:22	05:56 19:55
2	07:24 16:39	07:10 17:14	16:02 (11) 16:50 (11)	06:33 17:49	06:41 19:23	05:55 19:56
3	07:25 16:40	07:09 17:15	16:02 (11) 16:52 (11)	06:31 17:50	06:39 19:24	05:54 19:57
4	07:25 16:41	07:08 17:17	16:02 (11) 16:53 (11)	06:29 17:51	06:38 19:25	05:52 19:58
5	07:25 16:42	07:06 17:18	16:01 (11) 16:54 (11)	06:28 17:52	06:36 19:26	05:51 19:59
6	07:25 16:43	07:05 17:19	16:02 (11) 16:55 (11)	06:26 17:53	06:34 19:28	05:50 20:00
7	07:24 16:44	07:04 17:20	16:02 (11) 16:55 (11)	06:25 17:54	06:33 19:29	19:06 (12) 20:01
8	07:24 16:45	07:03 17:22	16:02 (11) 16:55 (11)	06:23 17:56	06:31 19:30	19:05 (12) 20:02
9	07:24 16:46	07:02 17:23	16:03 (11) 16:55 (11)	06:21 17:57	06:29 19:31	19:03 (12) 20:03
10	07:24 16:47	16:17 (11) 07:01 16:21 (11)	16:03 (11) 17:24 16:54 (11)	06:20 17:58 16:04 (11)	06:28 19:32 06:16	19:01 (12) 20:04 18:59 (12)
11	07:24 16:48	16:15 (11) 07:00 16:22 (11)	16:03 (11) 17:26 16:54 (11)	06:18 17:59 16:04 (11)	06:26 19:33 06:25	19:00 (12) 20:05 18:59 (12)
12	07:23 16:49	16:13 (11) 06:58 16:23 (11)	16:03 (11) 17:27 16:54 (11)	06:16 18:00 16:05 (11)	06:25 19:34 06:23	18:59 (12) 20:06 18:59 (12)
13	07:23 16:50	16:12 (11) 06:57 16:24 (11)	16:05 (11) 17:28 16:54 (11)	06:15 18:01 16:05 (11)	06:23 19:35 06:21	18:59 (12) 20:07 18:58 (12)
14	07:23 16:51	16:10 (11) 06:56 16:25 (11)	16:05 (11) 17:29 16:53 (11)	06:13 18:02 16:06 (11)	06:21 19:36 06:20	18:58 (12) 20:08 18:59 (12)
15	07:22 16:52	16:09 (11) 06:54 16:27 (11)	16:06 (11) 17:31 16:52 (11)	06:11 18:04 16:07 (11)	06:19 19:37 06:18	18:59 (12) 20:09 18:58 (12)
16	07:22 16:53	16:08 (11) 06:53 16:27 (11)	16:07 (11) 17:32 16:52 (11)	06:10 18:05 16:08 (11)	06:18 19:38 06:17	18:58 (12) 20:10 18:59 (12)
17	07:22 16:54	16:08 (11) 06:52 16:29 (11)	16:08 (11) 17:33 16:50 (11)	06:08 18:06 16:09 (11)	06:17 19:39 06:15	18:59 (12) 20:11 18:58 (12)
18	07:21 16:56	16:07 (11) 06:50 16:30 (11)	16:09 (11) 17:34 16:50 (11)	06:06 18:07 16:10 (11)	06:15 19:41 06:14	18:58 (12) 20:12 18:58 (12)
19	07:21 16:57	16:07 (11) 06:49 16:32 (11)	16:10 (11) 17:35 16:48 (11)	06:05 18:08 16:12 (11)	06:14 19:42 06:12	18:58 (12) 20:13 19:00 (12)
20	07:20 16:58	16:06 (11) 06:48 16:33 (11)	16:12 (11) 17:37 16:47 (11)	06:03 18:09 16:13 (11)	06:12 19:43 06:11	19:00 (12) 20:14 19:01 (12)
21	07:19 16:59	16:05 (11) 06:46 16:34 (11)	16:13 (11) 17:38 16:44 (11)	06:01 18:10 16:14 (11)	06:11 19:44 06:09	19:01 (12) 20:15 19:02 (12)
22	07:19 17:00	16:05 (11) 06:45 16:36 (11)	16:16 (11) 17:39 16:43 (11)	06:00 18:11 16:18 (11)	06:09 19:45 06:08	19:02 (12) 20:16 19:05 (12)
23	07:18 17:02	16:04 (11) 06:43 16:37 (11)	16:18 (11) 17:40 16:39 (11)	05:58 18:12 16:39 (11)	06:08 19:46 06:06	19:05 (12) 20:17 05:32
24	07:17 17:03	16:04 (11) 06:42 16:38 (11)	16:22 (11) 17:42 16:36 (11)	05:56 18:13 16:36 (11)	06:06 19:47 05:55	05:32 20:18 06:05
25	07:17 17:04	16:03 (11) 06:40 16:39 (11)	06:40 17:43 16:39 (11)	05:55 18:15 05:53	06:05 19:48 06:03	05:31 20:19 06:03
26	07:16 17:05	16:03 (11) 06:39 16:40 (11)	06:39 17:44 16:40 (11)	05:53 18:16 05:51	06:03 19:49 06:02	05:31 20:20 05:30
27	07:15 17:07	16:03 (11) 06:37 16:42 (11)	06:37 17:45 16:42 (11)	05:51 18:17 05:49	06:02 19:50 06:00	05:30 20:20 05:29
28	07:14 17:08	16:03 (11) 06:36 16:44 (11)	06:36 17:46 16:44 (11)	05:49 18:18 16:44 (11)	06:00 19:51 06:48	05:29 20:21 05:29
29	07:13 17:09	16:02 (11) 06:35 16:45 (11)	06:35 17:47 16:45 (11)	06:48 19:52 06:46	05:59 19:52 05:58	05:29 20:22 05:28
30	07:12 17:10	16:02 (11) 06:34 16:46 (11)	06:34 17:48 16:46 (11)	06:46 19:53 06:44	05:58 19:54 06:44	05:28 20:23 05:28
31	07:12 17:12	16:02 (11) 06:33 16:48 (11)	06:33 17:49 16:48 (11)	06:44 19:54 06:44	05:58 19:54 06:44	05:28 20:24 05:28
Potential sun hours	296	297	369	399	449	454
Total, worst case	594	1049		229		

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: I - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (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

	July	August	September	October	November	December			
1	05:27 20:36	05:52 20:16	06:23 19:33	18:59 (12) 19:10 (12)	06:54 18:41	06:28 16:54	15:32 (11) 16:24 (11)	07:04 16:29	15:57 (11) 16:05 (11)
2	05:28 20:35	05:53 20:15	06:24 19:31	19:00 (12) 19:09 (12)	06:55 18:40	06:30 16:53	15:32 (11) 16:24 (11)	07:05 16:29	16:00 (11) 16:04 (11)
3	05:28 20:35	05:54 20:14	06:25 19:29	19:01 (12) 19:07 (12)	06:56 18:38	06:31 16:52	15:32 (11) 16:25 (11)	07:06 16:29	
4	05:29 20:35	05:55 20:13	06:26 19:28	19:02 (12) 19:05 (12)	06:57 18:36	06:32 16:51	15:32 (11) 16:25 (11)	07:07 16:29	
5	05:30 20:35	05:56 20:12	06:27 19:26	19:03 (12) 19:04 (12)	06:58 18:35	06:33 16:49	15:31 (11) 16:25 (11)	07:08 16:28	
6	05:30 20:35	05:57 20:10	06:28 19:24		06:59 18:33	06:34 16:48	15:32 (11) 16:25 (11)	07:09 16:28	
7	05:31 20:34	05:58 20:09	06:29 19:23		07:00 18:31	06:36 16:47	15:32 (11) 16:23 (11)	07:10 16:28	
8	05:31 20:34	05:59 20:08	06:30 19:21		07:01 18:30	06:37 16:46	15:32 (11) 16:22 (11)	07:11 16:28	
9	05:32 20:34	06:00 20:07	06:31 19:19		07:02 18:28	06:38 16:45	15:33 (11) 16:21 (11)	07:12 16:28	
10	05:33 20:33	06:01 20:05	06:32 19:18		07:03 18:26	06:39 16:44	15:33 (11) 16:20 (11)	07:12 16:28	
11	05:33 20:33	06:02 20:04	06:33 19:16		07:04 18:25	06:41 16:43	15:33 (11) 16:19 (11)	07:13 16:28	
12	05:34 20:32	06:03 20:03	06:34 19:14		07:05 18:23	06:42 16:42	15:33 (11) 16:17 (11)	07:14 16:28	
13	05:35 20:32	06:04 20:01	06:35 19:12		07:07 18:22	06:43 16:41	15:34 (11) 16:17 (11)	07:15 16:28	
14	05:36 20:31	06:05 20:00	06:36 19:11		07:08 18:20	06:44 16:40	15:35 (11) 16:16 (11)	07:16 16:29	
15	05:36 20:31	06:06 19:59	06:37 19:09		07:09 18:18	06:45 16:39	15:35 (11) 16:14 (11)	07:17 16:29	
16	05:37 20:30	06:07 19:57	06:38 19:07		07:10 18:17	06:47 16:38	15:36 (11) 16:14 (11)	07:17 16:29	
17	05:38 20:29	06:08 19:56	06:39 19:06		07:11 18:15	06:48 16:37	15:37 (11) 16:13 (11)	07:18 16:29	
18	05:39 20:29	06:09 19:54	06:40 19:04		07:12 18:14	06:49 17:09 (11)	15:38 (11) 16:12 (11)	07:19 16:30	
19	05:40 20:28	06:10 19:53	06:41 19:02		07:13 18:12	17 17:09 (11) 16:48 (11)	16:37 16:36	16:13 (11) 16:30	
20	05:41 20:27	06:11 19:51	06:42 19:00		07:14 18:11	24 17:12 (11) 16:45 (11)	06:51 16:35	15:40 (11) 16:11 (11)	07:20 16:30
21	05:41 20:27	06:12 19:50	06:43 19:00		07:15 18:09	29 17:14 (11) 16:43 (11)	06:53 16:34	16:11 (11) 15:41 (11)	16:30 07:20
22	05:42 20:26	06:13 19:48	06:44 19:00		07:17 18:08	32 17:15 (11) 16:42 (11)	06:54 16:34	16:10 (11) 16:09 (11)	16:31 16:31
23	05:43 20:25	06:14 19:47	06:45 19:00		07:18 18:06	36 17:18 (11) 16:40 (11)	06:55 16:33	15:43 (11) 16:08 (11)	07:21 16:32
24	05:44 20:24	06:15 19:45	06:46 19:00		07:19 18:05	39 17:19 (11) 16:38 (11)	06:56 16:32	15:45 (11) 16:08 (11)	07:22 16:32
25	05:45 20:23	06:16 19:44	06:47 19:00		07:20 18:04	42 17:20 (11) 16:37 (11)	06:57 16:32	16:08 (11) 15:46 (11)	07:22 07:22
26	05:46 20:22	06:17 19:42	06:48 19:00		07:21 18:03	43 16:20 (11) 16:36 (11)	06:58 16:31	16:07 (11) 15:47 (11)	16:33 07:23
27	05:47 20:21	06:18 19:41	06:49 19:00		07:22 18:02	45 16:22 (11) 15:36 (11)	06:59 16:31	16:07 (11) 15:48 (11)	16:34 07:23
28	05:48 20:20	06:19 19:39	06:50 19:00		07:23 18:01	46 16:22 (11) 15:34 (11)	07:01 16:30	16:06 (11) 15:50 (11)	16:34 07:23
29	05:49 20:19	06:20 19:37	06:51 19:00		07:24 18:00	49 16:23 (11) 15:34 (11)	07:02 16:30	16:05 (11) 15:52 (11)	16:35 07:24
30	05:50 20:18	06:21 19:36	06:52 19:00		07:25 18:00	49 16:23 (11) 15:34 (11)	07:03 16:30	16:05 (11) 15:54 (11)	16:36 07:24
31	05:51 20:17	06:22 19:34	06:53 19:00		07:26 18:00	50 16:24 (11) 16:33 (11)	07:04 16:30	16:04 (11) 16:04 (11)	16:36 07:24
Potential sun hours	460	429	375	30	345	297	1099	287	12
Total, worst case		202	30	552	1099				

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: J - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (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	07:24	16:02 (11)	07:11	15:51 (11)	06:34	06:43			05:56	05:27		
	16:38	10	16:12 (11)	17:13	58	16:49 (11)	17:47	19:22	19:55	20:25		
2	07:24	16:01 (11)	07:10	15:51 (11)	06:33	06:41			05:55	05:27		
	16:39	12	16:13 (11)	17:14	59	16:50 (11)	17:49	19:23	19:56	20:25		
3	07:25	16:00 (11)	07:09	15:51 (11)	06:31	06:39			05:54	05:26		
	16:40	14	16:14 (11)	17:15	60	16:51 (11)	17:50	19:24	19:57	20:26		
4	07:25	16:00 (11)	07:08	15:51 (11)	06:29	06:38			05:52	05:26		
	16:41	15	16:15 (11)	17:17	60	16:51 (11)	17:51	19:25	19:58	20:27		
5	07:25	15:59 (11)	07:06	15:51 (11)	06:28	06:36			05:51	05:25		
	16:42	17	16:16 (11)	17:18	59	16:50 (11)	17:52	19:26	19:59	20:27		
6	07:25	15:59 (11)	07:05	15:51 (11)	06:26	06:34			05:50	05:25		
	16:43	18	16:17 (11)	17:19	59	16:50 (11)	17:53	19:28	20:00	20:28		
7	07:24	15:58 (11)	07:04	15:51 (11)	06:25	06:33			05:49	05:25		
	16:44	20	16:18 (11)	17:20	60	16:51 (11)	17:54	19:29	20:01	20:29		
8	07:24	15:57 (11)	07:03	15:52 (11)	06:23	06:31			05:48	05:25		
	16:45	21	16:18 (11)	17:22	59	16:51 (11)	17:56	19:30	20:02	20:29		
9	07:24	15:57 (11)	07:02	15:53 (11)	06:21	06:29			05:46	05:24		
	16:46	23	16:20 (11)	17:23	58	16:51 (11)	17:57	19:31	20:03	20:30		
10	07:24	15:56 (11)	07:01	15:52 (11)	06:20	06:28			19:08 (12)	05:45	05:24	
	16:47	25	16:21 (11)	17:24	58	16:50 (11)	17:58	19:32	2	19:10 (12)	20:04	20:31
11	07:24	15:56 (11)	07:00	15:53 (11)	06:18	06:26			19:06 (12)	05:44	05:24	
	16:48	26	16:22 (11)	17:26	57	16:50 (11)	17:59	19:33	5	19:11 (12)	20:05	20:31
12	07:23	15:55 (11)	06:58	15:54 (11)	06:16	06:25			19:04 (12)	05:43	05:24	
	16:49	28	16:23 (11)	17:27	55	16:49 (11)	18:00	19:34	8	19:12 (12)	20:06	20:32
13	07:23	15:55 (11)	06:57	15:55 (11)	06:15	06:23			19:03 (12)	05:42	05:24	
	16:50	29	16:24 (11)	17:28	54	16:49 (11)	18:01	19:35	10	19:13 (12)	20:07	20:32
14	07:23	15:54 (11)	06:56	15:55 (11)	06:13	06:21			19:02 (12)	05:41	05:24	
	16:51	31	16:25 (11)	17:29	53	16:48 (11)	18:02	19:36	12	19:14 (12)	20:08	20:33
15	07:22	15:54 (11)	06:54	15:56 (11)	06:11	06:20			19:02 (12)	05:40	05:24	
	16:52	33	16:27 (11)	17:31	52	16:48 (11)	18:04	19:37	14	19:16 (12)	20:09	20:33
16	07:22	15:53 (11)	06:53	15:57 (11)	06:10	06:18			19:01 (12)	05:39	05:24	
	16:53	34	16:27 (11)	17:32	50	16:47 (11)	18:05	19:38	15	19:16 (12)	20:10	20:33
17	07:22	15:53 (11)	06:52	15:58 (11)	06:08	06:17			19:01 (12)	05:38	05:24	
	16:54	36	16:29 (11)	17:33	47	16:45 (11)	18:06	19:39	17	19:18 (12)	20:11	20:34
18	07:21	15:53 (11)	06:50	15:59 (11)	06:06	06:15			19:00 (12)	05:37	05:24	
	16:56	37	16:30 (11)	17:34	46	16:45 (11)	18:07	19:41	18	19:18 (12)	20:12	20:34
19	07:21	15:53 (11)	06:49	16:00 (11)	06:05	06:14			18:59 (12)	05:36	05:24	
	16:57	39	16:32 (11)	17:35	43	16:43 (11)	18:08	19:42	20	19:19 (12)	20:13	20:34
20	07:20	15:52 (11)	06:48	16:02 (11)	06:03	06:12			19:00 (12)	05:35	05:24	
	16:58	41	16:33 (11)	17:37	40	16:42 (11)	18:09	19:43	20	19:20 (12)	20:14	20:35
21	07:19	15:52 (11)	06:46	16:03 (11)	06:01	06:11			19:00 (12)	05:34	05:24	
	16:59	42	16:34 (11)	17:38	37	16:40 (11)	18:10	19:44	22	19:22 (12)	20:15	20:35
22	07:19	15:52 (11)	06:45	16:05 (11)	06:00	06:09			19:00 (12)	05:34	05:24	
	17:00	44	16:36 (11)	17:39	33	16:38 (11)	18:11	19:45	22	19:22 (12)	20:16	20:35
23	07:18	15:52 (11)	06:43	16:07 (11)	05:58	06:08			19:01 (12)	05:33	05:25	
	17:02	45	16:37 (11)	17:40	28	16:35 (11)	18:12	19:46	23	19:24 (12)	20:17	20:35
24	07:17	15:51 (11)	06:42	16:11 (11)	05:56	06:06			19:01 (12)	05:32	05:25	
	17:03	47	16:38 (11)	17:42	21	16:32 (11)	18:13	19:47	21	19:22 (12)	20:18	20:35
25	07:17	15:51 (11)	06:40	16:15 (11)	05:55	06:05			19:03 (12)	05:31	05:25	
	17:04	48	16:39 (11)	17:43	12	16:27 (11)	18:15	19:48	18	19:21 (12)	20:19	20:36
26	07:16	15:50 (11)	06:39		05:53	06:03			19:04 (12)	05:31	05:25	
	17:05	50	16:40 (11)	17:44		18:16	19:49	15	19:19 (12)	20:20	20:36	
27	07:15	15:51 (11)	06:37		05:51	06:02			19:07 (12)	05:30	05:26	
	17:07	51	16:42 (11)	17:45		18:17	19:50	9	19:16 (12)	20:20	20:36	
28	07:14	15:51 (11)	06:36		05:50	06:00			05:29	05:26		
	17:08	53	16:44 (11)	17:46		18:18	19:51		20:21	20:36		
29	07:13	15:51 (11)			06:48	05:59			05:29	05:27		
	17:09	54	16:45 (11)			19:19	19:52		20:22	20:36		
30	07:12	15:51 (11)			06:46	05:58			05:28	05:27		
	17:10	55	16:46 (11)			19:20	19:54		20:23	20:36		
31	07:12	15:51 (11)			06:44				05:28			
	17:12	57	16:48 (11)			19:21			20:24			
Potential sun hours	296		297		369	399			449	454		
Total, worst case	1055		1218				271					

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: J - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (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	05:27 20:36	05:52 20:16	06:23 19:33	19:05 (12) 18:41	06:54 16:54	15:22 (11) 16:29	07:04 16:05 (11)
2	05:28 20:35	05:53 20:15	06:24 19:31	19:07 (12) 18:40	06:55 16:53	15:21 (11) 16:29	07:05 16:04 (11)
3	05:28 20:35	05:54 20:14	06:25 19:29	19:09 (12) 18:38	06:56 16:52	15:22 (11) 16:29	07:06 16:04 (11)
4	05:29 20:35	05:55 20:13	06:26 19:28	19:09 (12) 18:36	06:57 16:51	15:21 (11) 16:29	07:07 16:03 (11)
5	05:30 20:35	05:56 20:12	06:27 19:26	19:09 (12) 18:35	06:58 16:49	15:21 (11) 16:28	07:08 16:03 (11)
6	05:30 20:35	05:57 20:10	06:28 19:24	19:09 (12) 18:33	06:59 16:48	15:21 (11) 16:28	07:09 16:03 (11)
7	05:31 20:34	05:58 20:09	06:29 19:23	19:09 (12) 18:31	07:00 16:47	15:21 (11) 16:28	07:10 16:03 (11)
8	05:31 20:34	05:59 20:08	06:30 19:21	19:09 (12) 18:30	07:01 16:46	15:21 (11) 16:28	07:11 16:03 (11)
9	05:32 20:34	06:00 20:07	06:31 19:19	19:09 (12) 18:28	07:02 16:45	15:22 (11) 16:28	07:12 16:03 (11)
10	05:33 20:33	06:01 20:05	06:32 19:18	19:09 (12) 18:26	07:03 16:44	15:22 (11) 16:28	07:12 16:02 (11)
11	05:33 20:33	06:02 20:04	06:33 19:16	19:09 (12) 18:25	07:04 16:43	15:22 (11) 16:28	07:13 16:02 (11)
12	05:34 20:32	06:03 20:03	06:34 19:14	19:09 (12) 18:23	07:05 16:42	15:22 (11) 16:28	07:14 16:02 (11)
13	05:35 20:32	06:04 20:01	06:35 19:12	19:09 (12) 18:22	07:07 16:41	15:23 (11) 16:28	07:15 16:03 (11)
14	05:36 20:31	06:05 20:00	06:36 19:11	19:09 (12) 18:20	07:08 16:40	15:23 (11) 16:29	07:16 16:03 (11)
15	05:36 20:31	06:06 19:59	06:37 19:09	19:09 (12) 18:18	07:09 16:39	15:23 (11) 16:29	07:17 16:29
16	05:37 20:30	06:07 19:57	06:38 19:07	19:13 (12) 19:24 (12)	07:10 18:17	15:24 (11) 16:29	07:17 16:29
17	05:38 20:29	06:08 19:56	06:39 19:06	19:10 (12) 19:26 (12)	07:11 18:15	16:46 (11) 17:02 (11)	07:18 16:29
18	05:39 20:29	06:09 19:54	06:40 19:04	19:08 (12) 19:27 (12)	07:12 18:14	16:41 (11) 17:05 (11)	06:49 16:30
19	05:40 20:28	06:10 19:53	06:41 19:02	19:07 (12) 19:28 (12)	07:13 18:12	16:38 (11) 17:08 (11)	06:50 16:30
20	05:41 20:27	06:11 19:51	06:42 19:00	19:06 (12) 19:28 (12)	07:14 18:11	16:35 (11) 17:09 (11)	06:51 16:30
21	05:41 20:27	06:12 19:50	06:43 18:59	19:05 (12) 19:27 (12)	07:16 18:09	16:33 (11) 17:11 (11)	06:53 16:31
22	05:42 20:26	06:13 19:48	06:44 18:57	19:04 (12) 19:25 (12)	07:17 18:08	16:32 (11) 17:13 (11)	06:54 16:31
23	05:43 20:25	06:14 19:47	06:45 18:55	19:04 (12) 19:24 (12)	07:18 18:06	16:30 (11) 17:14 (11)	06:55 16:32
24	05:44 20:24	06:15 19:45	06:46 18:53	19:03 (12) 19:23 (12)	07:19 18:05	16:29 (11) 17:15 (11)	06:56 16:32
25	05:45 20:23	06:16 19:44	06:47 18:52	19:03 (12) 19:21 (12)	07:20 17:04	15:27 (11) 16:15 (11)	06:57 16:32
26	05:46 20:22	06:17 19:42	06:48 18:50	19:03 (12) 19:20 (12)	07:21 17:02	15:27 (11) 16:17 (11)	06:58 16:31
27	05:47 20:21	06:18 19:41	06:49 18:48	19:02 (12) 19:18 (12)	07:22 17:01	15:26 (11) 16:17 (11)	06:59 16:31
28	05:48 20:20	06:19 19:39	06:50 18:47	19:03 (12) 19:16 (12)	07:24 16:59	15:24 (11) 16:18 (11)	07:01 16:30
29	05:49 20:19	06:20 19:37	06:52 18:45	19:03 (12) 19:15 (12)	07:25 16:58	15:23 (11) 16:18 (11)	07:02 16:30
30	05:50 20:18	06:21 19:36	06:53 18:43	19:03 (12) 19:13 (12)	07:26 16:57	15:23 (11) 16:19 (11)	07:03 16:30
31	05:51 20:17	06:22 19:34	06:54 18:42	19:04 (12) 19:12 (12)	07:27 16:55	15:23 (11) 16:19 (11)	07:04 16:30
Potential sun hours	460	429	375	345	297	287	237
Total, worst case		266	7	643	1444		

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)
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### SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: K - Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (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	July	August	September	October	November	December	
1	07:24 16:38	07:10 17:13	06:34 17:47	06:43 19:22	05:56 19:54	18:53 (10) 19:06 (10)	05:27 20:24	05:27 20:35	05:52 20:16	06:23 19:33	18:45 (10) 18:41	06:28 16:54	07:04 16:29
2	07:24 16:39	07:10 17:14	06:32 17:49	06:41 19:23	05:55 19:56		05:27 20:25	05:28 20:35	05:53 20:15	06:24 19:31	18:45 (10) 19:09 (10)	06:30 16:53	07:05 16:29
3	07:24 16:40	07:08 17:15	06:31 17:50	06:39 19:24	05:54 19:57		05:26 20:26	05:28 20:35	05:54 20:14	06:25 19:29	18:46 (10) 18:47 (10)	06:31 16:52	07:06 16:29
4	07:24 16:41	07:07 17:17	06:29 17:51	06:38 19:25	05:52 19:58	19:00 (10) 19:04 (10)	05:26 20:27	05:29 20:35	05:55 20:13	06:26 19:28	18:47 (10) 19:05 (10)	06:32 16:50	07:07 16:28
5	07:24 16:42	07:06 17:18	06:28 17:52	06:36 19:26	05:51 19:59	18:57 (10) 19:05 (10)	05:25 20:27	05:29 20:35	05:56 20:12	06:27 19:26	18:48 (10) 19:04 (10)	06:33 16:49	07:08 16:28
6	07:24 16:43	07:05 17:19	06:26 17:53	06:34 19:27	05:50 20:00	18:54 (10) 19:06 (10)	05:25 20:28	05:30 20:35	05:57 20:10	06:28 19:24	18:50 (10) 19:02 (10)	06:34 16:48	07:09 16:28
7	07:24 16:44	07:04 17:20	06:25 17:54	06:33 19:29	05:49 20:01	18:51 (10) 19:07 (10)	05:25 20:29	05:31 20:34	05:58 20:09	06:29 19:23	18:52 (10) 19:00 (10)	06:36 16:47	07:10 16:28
8	07:24 16:45	07:03 17:22	06:23 17:56	06:31 19:30	05:47 20:02	18:50 (10) 19:08 (10)	05:24 20:29	05:31 20:34	05:59 20:08	06:30 19:21	18:55 (10) 18:59 (10)	06:37 16:46	07:11 16:28
9	07:24 16:46	07:02 17:23	06:21 17:57	06:29 19:31	05:46 20:03	18:48 (10) 19:09 (10)	05:24 20:30	05:32 20:34	06:00 20:07	06:31 19:19		06:38 16:45	07:12 16:28
10	07:24 16:47	07:01 17:24	06:20 17:58	06:28 19:32	05:45 20:04	18:46 (10) 19:10 (10)	05:24 20:30	05:33 20:33	06:01 20:05	06:32 19:17		06:39 16:44	07:12 16:28
11	07:24 16:48	06:59 17:25	06:18 17:59	06:26 19:33	05:44 20:05	18:46 (10) 19:11 (10)	05:24 20:31	05:33 20:33	06:02 20:04	06:33 19:16	19:05 (10) 19:10 (10)	06:40 16:43	07:13 16:28
12	07:23 16:49	06:58 17:27	06:16 18:00	06:25 19:34	05:43 20:06	18:44 (10) 19:12 (10)	05:24 20:32	05:34 20:32	06:03 20:03	06:34 19:14	19:00 (10) 19:15 (10)	06:42 16:42	07:14 16:28
13	07:23 16:50	06:57 17:28	06:15 18:01	06:23 19:35	05:42 20:07	18:44 (10) 19:14 (10)	05:24 20:32	05:35 20:32	06:04 20:01	06:35 19:12	18:57 (10) 19:17 (10)	06:43 16:28	07:15 16:28
14	07:23 16:51	06:56 17:29	06:13 18:02	06:21 19:36	05:41 20:08	18:43 (10) 19:14 (10)	05:24 20:32	05:36 20:31	06:05 20:00	06:36 19:11	18:55 (10) 19:19 (10)	06:44 16:40	07:16 16:28
15	07:22 16:52	06:54 17:30	06:11 18:03	06:20 19:37	05:40 20:09	18:42 (10) 19:15 (10)	05:23 20:33	05:36 20:31	06:06 19:59	06:37 19:09	18:54 (10) 19:20 (10)	06:45 16:39	07:16 16:29
16	07:22 16:53	06:53 17:32	06:10 18:05	06:18 19:38	05:39 20:10	18:42 (10) 19:16 (10)	05:23 20:33	05:37 20:30	06:07 19:57	06:38 19:07	18:52 (10) 19:21 (10)	06:46 16:38	07:17 16:29
17	07:22 16:54	06:52 17:33	06:08 18:06	06:17 19:39	05:38 20:11	18:42 (10) 19:17 (10)	05:24 20:34	05:38 20:29	06:08 19:56	06:39 19:05	18:51 (10) 19:22 (10)	06:47 16:37	07:18 16:29
18	07:21 16:56	06:50 17:34	06:06 18:07	06:15 19:40	05:37 20:12	18:42 (10) 19:18 (10)	05:24 20:34	05:39 20:29	06:09 19:54	06:40 19:04	18:50 (10) 19:23 (10)	06:48 16:36	07:18 16:30
19	07:20 16:57	06:49 17:35	06:05 18:08	06:14 19:42	05:36 20:13	18:41 (10) 19:19 (10)	05:24 20:34	05:40 20:28	06:10 19:53	06:41 19:02	18:49 (10) 19:24 (10)	06:49 16:36	07:19 16:30
20	07:20 16:58	06:47 17:37	06:03 18:09	06:12 19:43	05:35 20:14	18:42 (10) 19:20 (10)	05:24 20:35	05:40 20:27	06:11 19:51	06:42 19:00	18:48 (10) 19:24 (10)	06:50 16:35	07:20 16:30
21	07:19 16:59	06:46 17:38	06:01 18:10	06:11 19:44	05:34 20:15	18:42 (10) 19:20 (10)	05:24 20:35	05:41 20:27	06:12 19:50	06:43 18:59	18:47 (10) 19:24 (10)	06:51 16:34	07:21 16:31
22	07:19 17:00	06:45 17:39	06:00 18:11	06:09 19:45	05:33 20:16	18:42 (10) 19:20 (10)	05:24 20:35	05:42 20:26	06:13 19:48	06:44 18:57	18:46 (10) 19:25 (10)	06:52 16:34	07:21 16:31
23	07:18 17:02	06:43 17:40	05:58 18:12	06:08 19:46	05:33 20:17	18:43 (10) 19:19 (10)	05:24 20:35	05:43 20:25	06:14 19:47	06:45 18:55	18:46 (10) 19:24 (10)	06:53 16:33	07:21 16:32
24	07:17 17:03	06:42 17:41	05:56 18:13	06:06 19:47	05:32 20:18	18:43 (10) 19:18 (10)	05:25 20:35	05:44 20:24	06:15 19:45	06:46 18:53	18:45 (10) 19:23 (10)	06:54 16:32	07:22 16:32
25	07:17 17:04	06:40 17:43	05:54 18:14	06:05 19:48	05:31 20:19	18:44 (10) 19:17 (10)	05:25 20:36	05:45 20:23	06:16 19:44	06:47 18:52	18:45 (10) 19:21 (10)	06:57 16:32	07:22 16:33
26	07:16 17:05	06:39 17:44	05:53 18:16	06:03 19:49	05:30 20:20	18:44 (10) 19:15 (10)	05:25 20:36	05:46 20:22	06:17 19:42	06:48 18:50	18:45 (10) 19:20 (10)	06:58 16:34	07:23 16:34
27	07:15 17:06	06:37 17:45	05:51 18:17	06:02 19:50	05:30 20:20	18:46 (10) 19:14 (10)	05:26 20:36	05:47 20:21	06:18 19:41	06:49 18:48	18:44 (10) 19:18 (10)	06:59 16:34	07:23 16:34
28	07:14 17:08	06:36 17:46	05:49 18:18	06:00 19:51	05:29 20:21	18:47 (10) 19:13 (10)	05:26 20:36	05:48 20:20	06:19 19:39	06:50 18:46	18:44 (10) 19:16 (10)	06:59 16:35	07:23 16:35
29	07:13 17:09	06:48 19:19	05:59 19:52	05:59 20:22	05:29 20:22	18:48 (10) 19:11 (10)	05:26 20:36	05:49 20:19	06:20 19:37	06:51 18:45	18:44 (10) 19:15 (10)	07:02 16:36	07:24 16:36
30	07:12 17:10	06:46 19:20	05:58 19:53	05:58 20:23	05:28 20:23	18:50 (10) 19:09 (10)	05:27 20:36	05:50 20:18	06:21 19:36	06:52 18:43	18:44 (10) 19:13 (10)	07:03 16:36	07:24 16:36
31	07:11 17:12	06:44 19:21	05:57 19:53	05:27 20:24	05:27 20:24	19:09 (10)	05:27 20:36	05:51 20:17	06:22 19:34	06:53 19:12 (10)	18:44 (10)	07:24 16:37	07:24 16:37
Potential sun hours	296	297	369	399	449	454	460	429	375	345	297	286	
Total, worst case				738	13			631	128				

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: ShadowFlickeringFoggiaMR Shadow receptor: M - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (13)  
 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	07:24		08:23 (6)	07:10	08:54 (6)	06:34	06:43		05:56		06:16 (5)	05:27		
	16:38	108	16:05 (8)	17:13	38	09:32 (6)	17:47	19:22		19:54	20	06:36 (5)	20:24	
2	07:24		08:24 (6)	07:09		08:56 (6)	06:32	06:41		05:55		06:14 (5)	05:26	
	16:39	107	16:05 (8)	17:14	32	09:28 (6)	17:48	19:23		19:55	22	06:36 (5)	20:25	
3	07:24		08:24 (6)	07:08		08:59 (6)	06:31	06:39		05:54		06:13 (5)	05:26	
	16:40	107	16:06 (8)	17:15	26	09:25 (6)	17:50	19:24		19:56	23	06:36 (5)	20:26	
4	07:24		08:25 (6)	07:07		09:04 (6)	06:29	06:38		05:52		06:12 (5)	05:26	
	16:41	105	16:06 (8)	17:16	16	09:20 (6)	17:51	19:25		19:58	25	06:37 (5)	20:26	
5	07:24		08:26 (6)	07:06			06:28	06:36		05:51		06:11 (5)	05:25	
	16:42	104	16:06 (8)	17:18			17:52	19:26		19:59	26	06:37 (5)	20:27	
6	07:24		08:26 (6)	07:05			06:26	06:34		05:50		06:09 (5)	05:25	
	16:43	103	16:06 (8)	17:19			17:53	19:27		20:00	27	06:36 (5)	20:28	
7	07:24		08:26 (6)	07:04			06:24	06:33		05:49		06:08 (5)	05:25	
	16:44	101	16:05 (8)	17:20			17:54	19:28		20:01	28	06:36 (5)	20:28	
8	07:24		08:27 (6)	07:03			06:23	06:31		05:47		06:07 (5)	05:24	
	16:45	100	16:05 (8)	17:22			17:55	19:29		20:02	29	06:36 (5)	20:29	
9	07:24		08:28 (6)	07:02			06:21	06:29		05:46		06:06 (5)	05:24	
	16:46	96	16:04 (8)	17:23			17:57	19:31		20:03	30	06:36 (5)	20:30	
10	07:24		08:29 (6)	07:00			06:20	06:28		05:45		06:05 (5)	05:24	
	16:47	93	16:04 (8)	17:24			17:58	19:32		20:04	31	06:36 (5)	20:30	
11	07:23		08:29 (6)	06:59			06:18	06:26		05:44		06:04 (5)	05:24	
	16:48	90	16:02 (8)	17:25			17:59	19:33		20:05	32	06:36 (5)	20:31	
12	07:23		08:30 (6)	06:58			06:16	06:24		05:43		06:03 (5)	05:24	
	16:49	85	16:01 (8)	17:27			18:00	19:34		20:06	33	06:36 (5)	20:31	
13	07:23		08:31 (6)	06:57			06:15	06:23		05:42		06:02 (5)	05:23	
	16:50	77	09:48 (6)	17:28			18:01	19:35		20:07	33	06:35 (5)	20:32	
14	07:23		08:31 (6)	06:55			06:13	06:21		05:41		06:02 (5)	05:23	
	16:51	77	09:48 (6)	17:29			18:02	19:36		20:08	33	06:35 (5)	20:32	
15	07:22		08:32 (6)	06:54			06:11	06:20		05:40		06:02 (5)	05:23	
	16:52	76	09:48 (6)	17:30			18:03	19:37		20:09	32	06:34 (5)	20:33	
16	07:22		08:33 (6)	06:53			06:10	06:18		05:39		06:02 (5)	05:23	
	16:53	74	09:47 (6)	17:32			18:04	19:38		20:10	32	06:34 (5)	20:33	
17	07:21		08:34 (6)	06:51			06:08	06:17		05:38		06:03 (5)	05:23	
	16:54	73	09:47 (6)	17:33			18:06	19:39		20:11	30	06:33 (5)	20:33	
18	07:21		08:35 (6)	06:50			06:06	06:15		05:37		06:04 (5)	05:23	
	16:55	72	09:47 (6)	17:34			18:07	19:40		20:12	28	06:32 (5)	20:34	
19	07:20		08:35 (6)	06:49			06:05	06:13		05:36		06:05 (5)	05:24	
	16:57	71	09:46 (6)	17:35			18:08	19:41		20:13	27	06:32 (5)	20:34	
20	07:20		08:37 (6)	06:47			06:03	06:12		05:35		06:06 (5)	05:24	
	16:58	69	09:46 (6)	17:36			18:09	19:42		20:14	25	06:31 (5)	20:34	
21	07:19		08:37 (6)	06:46			06:01	06:10		05:34		06:07 (5)	05:24	
	16:59	68	09:45 (6)	17:38			18:10	19:44		20:15	23	06:30 (5)	20:35	
22	07:18		08:38 (6)	06:44			05:59	06:09		05:33		06:07 (5)	05:24	
	17:00	66	09:44 (6)	17:39			18:11	19:45		20:16	22	06:29 (5)	20:35	
23	07:18		08:40 (6)	06:43			05:58	06:07		05:33		06:09 (5)	05:24	
	17:01	64	09:44 (6)	17:40			18:12	19:46		20:17	19	06:28 (5)	20:35	
24	07:17		08:41 (6)	06:41			05:56	06:06		05:32		06:11 (5)	05:25	
	17:03	62	09:43 (6)	17:41			18:13	19:47	2	06:27 (5)	20:18	16	06:27 (5)	20:35
25	07:16		08:42 (6)	06:40			05:54	06:05		06:24 (5)	05:31		06:12 (5)	05:25
	17:04	60	09:42 (6)	17:43			18:14	19:48	6	06:30 (5)	20:18	13	06:25 (5)	20:35
26	07:16		08:43 (6)	06:38			05:53	06:03		06:22 (5)	05:30		06:15 (5)	05:25
	17:05	58	09:41 (6)	17:44			18:15	19:49	9	06:31 (5)	20:19	8	06:23 (5)	20:35
27	07:15		08:44 (6)	06:37			05:51	06:02		06:21 (5)	05:30			05:26
	17:06	56	09:40 (6)	17:45			18:16	19:50	12	06:33 (5)	20:20			20:35
28	07:14		08:46 (6)	06:35			05:49	06:00		06:20 (5)	05:29			05:26
	17:08	52	09:38 (6)	17:46			18:18	19:51	14	06:34 (5)	20:21			20:35
29	07:13		08:47 (6)				06:48	05:59		06:18 (5)	05:28			05:26
	17:09	50	09:37 (6)				19:19	19:52	16	06:34 (5)	20:22			20:35
30	07:12		08:50 (6)				06:46	05:58		06:17 (5)	05:28			05:27
	17:10	46	09:36 (6)				19:20	19:53	18	06:35 (5)	20:23			20:35
31	07:11		08:52 (6)				06:44			05:27				
	17:11	42	09:34 (6)				19:21			20:23				
Potential sun hours	296			297			369	399		449			454	
Total, worst case		2412			112				77		667			

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: M - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (13)  
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	05:27 20:35	05:51 20:16	06:14 (5) 06:46 (5)	06:23 19:32	06:53 18:41	06:28 16:54	07:03 16:29	08:11 (8) 15:44 (8)	
2	05:28 20:35	05:52 20:15	06:15 (5) 06:47 (5)	06:24 19:31	06:54 18:40	06:29 16:53	07:05 16:29	08:11 (8) 15:46 (8)	
3	05:28 20:35	05:53 20:14	06:16 (5) 06:47 (5)	06:25 19:29	06:55 18:38	06:31 16:51	07:06 16:29	08:11 (8) 15:47 (8)	
4	05:29 20:35	05:54 20:13	06:17 (5) 06:47 (5)	06:26 19:27	06:57 18:36	06:32 16:50	07:07 16:28	08:11 (8) 15:49 (8)	
5	05:29 20:35	05:55 20:11	06:18 (5) 06:47 (5)	06:27 19:26	06:58 18:34	06:33 16:49	07:08 16:28	08:11 (8) 15:50 (8)	
6	05:30 20:34	05:56 20:10	06:19 (5) 06:47 (5)	06:28 19:24	06:59 18:33	06:34 16:48	07:09 16:28	08:11 (8) 15:51 (8)	
7	05:31 20:34	05:57 20:09	06:19 (5) 06:46 (5)	06:29 19:22	07:00 18:31	06:35 16:47	08:34 (6) 07:09	08:12 (6) 15:52 (8)	
8	05:31 20:34	05:58 20:08	06:20 (5) 06:46 (5)	06:30 19:21	07:01 18:30	06:37 16:46	08:30 (6) 08:56 (6)	07:10 16:28	08:12 (6) 15:53 (8)
9	05:32 20:33	05:59 20:06	06:21 (5) 06:45 (5)	06:31 19:19	07:02 18:28	06:38 16:45	08:27 (6) 08:59 (6)	07:11 16:28	08:12 (6) 15:54 (8)
10	05:33 20:33	06:00 20:05	06:22 (5) 06:45 (5)	06:32 19:17	07:03 18:26	06:39 16:44	08:25 (6) 09:03 (6)	07:12 16:28	08:13 (6) 15:54 (8)
11	05:33 20:33	06:01 20:04	06:23 (5) 06:44 (5)	06:33 19:16	07:04 18:25	06:40 16:43	08:23 (6) 09:05 (6)	07:13 16:28	08:13 (6) 15:55 (8)
12	05:34 20:32	06:02 20:03	06:24 (5) 06:43 (5)	06:34 19:14	07:05 18:23	06:41 16:42	08:21 (6) 09:07 (6)	07:14 16:28	08:14 (6) 15:56 (8)
13	05:35 20:32	06:04 20:01	06:25 (5) 06:43 (5)	06:35 19:12	07:06 18:21	06:43 16:41	08:19 (6) 09:09 (6)	07:15 16:28	08:14 (6) 15:57 (8)
14	05:35 20:31	06:05 20:00	06:26 (5) 06:42 (5)	06:36 19:10	07:07 18:20	06:44 16:40	08:18 (6) 09:11 (6)	07:15 16:28	08:14 (6) 15:57 (8)
15	05:36 20:30	06:06 19:58	06:27 (5) 06:40 (5)	06:37 19:09	07:08 18:18	06:45 16:39	08:17 (6) 09:13 (6)	07:16 16:29	08:15 (6) 15:58 (8)
16	05:37 20:30	06:07 19:57	06:28 (5) 06:39 (5)	06:38 19:08	07:10 18:17	06:46 16:38	08:16 (6) 09:14 (6)	07:17 16:29	08:15 (6) 15:59 (8)
17	05:38 20:29	06:28 (5) 06:29 (5)	06:08 19:56	06:39 19:05	07:11 18:15	06:47 16:37	08:16 (6) 09:16 (6)	07:18 16:29	08:15 (6) 15:59 (8)
18	05:39 20:29	06:23 (5) 06:33 (5)	06:09 19:54	06:40 19:04	07:12 18:14	06:49 16:36	08:15 (6) 09:17 (6)	07:18 16:29	08:16 (6) 16:00 (8)
19	05:40 20:28	06:21 (5) 06:35 (5)	06:10 19:53	06:41 19:02	07:13 18:12	06:50 16:36	08:14 (6) 09:18 (6)	07:19 16:30	08:17 (6) 16:00 (8)
20	05:40 20:27	06:20 (5) 06:37 (5)	06:11 19:51	06:42 19:00	07:14 18:11	06:51 16:35	08:13 (6) 09:19 (6)	07:20 16:30	08:17 (6) 16:00 (8)
21	05:41 20:26	06:19 (5) 06:39 (5)	06:12 19:50	06:43 18:58	07:15 18:09	06:52 16:34	08:13 (6) 09:21 (6)	07:20 16:31	08:17 (6) 16:01 (8)
22	05:42 20:26	06:18 (5) 06:40 (5)	06:13 19:48	06:44 18:57	07:16 18:08	06:53 16:33	08:13 (6) 09:22 (6)	07:21 16:31	08:17 (6) 16:01 (8)
23	05:43 20:25	06:17 (5) 06:41 (5)	06:14 19:47	06:45 18:55	07:18 18:06	06:55 16:33	08:12 (6) 09:23 (6)	07:21 16:32	08:18 (6) 16:02 (8)
24	05:44 20:24	06:15 (5) 06:41 (5)	06:15 19:45	06:46 18:53	07:19 18:05	06:56 16:32	08:12 (6) 09:24 (6)	07:22 16:32	08:19 (6) 16:02 (8)
25	05:45 20:23	06:14 (5) 06:42 (5)	06:16 19:44	06:47 18:51	07:20 17:03	06:57 16:32	08:11 (6) 09:24 (6)	07:22 16:33	08:19 (6) 16:03 (8)
26	05:46 20:22	06:14 (5) 06:43 (5)	06:17 19:42	06:48 18:50	07:21 17:02	06:58 16:31	08:12 (6) 09:26 (6)	07:22 16:33	08:20 (6) 16:04 (8)
27	05:47 20:21	06:13 (5) 06:44 (5)	06:18 19:40	06:49 18:48	07:22 17:01	06:59 16:31	08:11 (6) 09:27 (6)	07:23 16:34	08:20 (6) 16:04 (8)
28	05:48 20:20	06:13 (5) 06:44 (5)	06:19 19:39	06:50 18:46	07:23 16:59	07:00 16:30	08:11 (6) 09:28 (6)	07:23 16:35	08:20 (6) 16:04 (8)
29	05:49 20:19	06:12 (5) 06:45 (5)	06:20 19:37	06:51 18:45	07:25 16:58	07:01 16:30	08:11 (6) 09:28 (6)	07:23 16:35	08:21 (6) 16:04 (8)
30	05:50 20:18	06:12 (5) 06:46 (5)	06:21 19:36	06:52 18:43	07:26 16:57	07:02 16:29	08:11 (6) 15:41 (8)	07:24 16:36	08:22 (6) 16:05 (8)
31	05:51 20:17	06:13 (5) 06:46 (5)	06:22 19:34	06:27 16:55	06:27 16:55	06:27 16:55	07:24 16:37	08:23 (6) 16:05 (8)	
Potential sun hours	460	429	375	345	297	287	3328		
Total, worst case	353	395			1411				

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: O - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (15)  
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	07:24 16:38	07:10 17:13	06:34 17:47	06:43 19:22	05:56 19:54	05:27 20:24	05:27 20:35	05:52 20:16	06:23 19:32	06:53 18:41	06:28 16:54	07:03 16:29
2	07:24 16:39	07:09 17:14	06:32 17:48	06:41 19:23	05:55 19:55	05:26 20:25	05:28 20:35	05:53 20:15	06:24 19:31	06:54 18:40	06:29 16:53	07:05 16:29
3	07:24 16:40	07:08 17:15	06:31 17:50	06:39 19:24	05:54 19:56	05:26 20:26	05:28 20:35	05:53 20:14	06:25 19:29	06:55 18:38	06:31 16:52	07:06 16:29
4	07:24 16:41	07:07 17:16	06:29 17:51	06:38 19:25	05:52 19:58	05:26 20:26	05:29 20:35	05:54 20:13	06:26 19:27	06:57 18:36	06:32 16:50	07:07 16:28
5	07:24 16:42	07:06 17:18	06:28 17:52	06:36 19:26	05:51 19:59	05:25 20:27	05:29 20:35	05:55 20:11	06:27 19:26	06:58 18:34	06:33 16:49	07:08 16:28
6	07:24 16:43	07:05 17:19	06:26 17:53	06:34 19:27	05:50 20:00	05:25 20:28	05:30 20:34	05:56 20:10	06:28 19:24	06:59 18:33	06:34 16:48	07:09 16:28
7	07:24 16:44	07:04 17:20	06:24 17:54	06:33 19:28	05:49 20:01	05:25 20:28	05:31 20:34	05:57 20:09	06:29 19:22	07:00 18:31	06:35 16:47	07:09 16:28
8	07:24 16:45	07:03 17:22	06:23 17:55	06:31 19:29	05:47 20:02	05:24 20:29	05:31 20:34	05:58 20:08	06:30 19:21	07:01 18:30	06:37 16:46	07:10 16:28
9	07:24 16:46	07:02 17:23	06:21 17:57	06:29 19:31	05:46 20:03	05:24 20:30	05:32 20:33	05:59 20:06	06:31 19:19	07:02 18:28	06:38 16:45	07:11 16:28
10	07:24 16:47	07:00 17:24	06:20 17:58	06:28 19:32	05:45 20:04	05:24 20:30	05:33 20:33	06:00 20:05	06:32 19:17	07:03 18:26	06:39 16:44	07:12 16:28
11	07:23 16:48	06:59 17:25	06:18 17:59	06:26 19:33	05:44 20:05	05:24 20:31	05:33 20:32	06:02 20:04	06:33 19:16	07:04 18:25	06:40 16:43	07:13 16:28
12	07:23 16:49	06:58 17:27	06:16 18:00	06:24 19:34	05:43 20:06	05:24 20:31	05:34 20:32	06:03 20:03	06:34 19:14	07:05 18:23	06:41 16:42	07:14 16:28
13	07:23 16:50	06:57 17:28	06:15 18:01	06:23 19:35	05:42 20:07	05:24 20:32	05:35 20:32	06:04 20:01	06:35 19:12	07:06 18:21	06:43 16:41	07:15 16:28
14	07:23 16:51	06:55 17:29	06:13 18:02	06:21 19:36	05:41 20:08	05:23 20:32	05:36 20:31	06:05 20:00	06:36 19:10	07:07 18:20	06:44 16:40	07:15 16:28
15	07:22 16:52	06:54 17:30	06:11 18:03	06:20 19:37	05:40 20:09	05:23 20:33	05:36 20:30	06:06 19:58	06:37 19:09	07:08 18:18	06:45 16:39	07:16 16:29
16	07:22 16:53	06:53 17:32	06:10 18:04	06:18 19:38	05:39 20:10	05:23 20:33	05:37 20:30	06:07 19:57	06:38 19:07	07:10 18:17	06:46 16:38	07:17 16:29
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19	07:20 16:57	06:49 17:35	06:05 18:08	06:13 19:41	05:36 20:13	05:24 20:34	05:40 20:28	06:10 19:53	06:41 19:02	07:13 18:12	06:50 16:36	07:19 16:30
20	07:20 16:58	06:47 17:36	06:03 18:09	06:12 19:42	05:35 20:14	05:24 20:34	05:40 20:27	06:11 19:51	06:42 19:00	07:14 18:11	06:51 16:35	07:19 16:30
21	07:19 16:59	06:46 17:38	06:01 18:10	06:10 19:44	05:34 20:15	05:24 20:35	05:41 20:26	06:12 19:50	06:43 18:58	07:15 18:09	06:52 16:34	07:20 16:31
22	07:18 17:00	06:44 17:39	05:59 18:11	06:09 19:45	05:33 20:16	05:24 20:35	05:42 20:25	06:13 19:48	06:44 18:57	07:16 18:08	06:53 16:34	07:21 16:31
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25	07:16 17:04	06:40 17:43	05:54 18:14	06:05 19:48	05:31 20:18	05:25 20:35	05:45 20:23	06:16 19:44	06:47 18:51	07:20 17:03	06:57 16:32	07:22 16:33
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29	07:13 17:09		06:48 19:19	05:59 19:52	05:29 20:22	05:26 20:35	05:49 20:19	06:20 19:37	06:51 18:45	07:24 16:58	07:01 16:30	07:23 16:36
30	07:12 17:10		06:46 19:20	05:58 19:53	05:28 20:23	05:27 20:35	05:50 20:18	06:21 19:36	06:52 18:43	07:25 16:57	07:02 16:30	07:24 16:36
31	07:11 17:11		06:44 19:21		05:27 20:23		05:51 20:17	06:22 19:34		06:27 16:55		07:24 16:37
Potential sun hours Total, worst case	296	297	369	399	449	454	460	429	375	345	297	287

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: P - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (16)  
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	07:24 16:38	07:10 17:13	06:34 17:47	06:43 19:22	05:56 19:54	05:27 20:24	05:27 20:35	05:52 20:16	06:23 19:32	06:53 18:41	06:28 16:54	07:03 16:29
2	07:24 16:39	07:09 17:14	06:32 17:48	06:41 19:23	05:55 19:55	05:26 20:25	05:28 20:35	05:53 20:15	06:24 19:31	06:54 18:40	06:29 16:53	07:05 16:29
3	07:24 16:40	07:08 17:15	06:31 17:50	06:39 19:24	05:54 19:56	05:26 20:26	05:28 20:35	05:54 20:14	06:25 19:29	06:56 18:38	06:31 16:52	07:06 16:29
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21	07:19 16:59	06:46 17:38	06:01 18:10	06:10 19:44	05:34 20:15	05:24 20:35	05:41 20:26	06:12 19:50	06:43 18:58	07:15 18:09	06:52 16:34	07:20 16:31
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31	07:11 17:11		06:44 19:21		05:27 20:23		05:51 20:17	06:22 19:34		06:27 16:55		07:24 16:37
Potential sun hours Total, worst case	296	297	369	399	449	454	460	429	375	345	297	287

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: Q - Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (17)  
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
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2	07:24 16:39	07:09 17:14	06:32 17:49	06:41 19:23	05:55 19:55	05:26 20:25	05:28 20:35	05:53 20:15	06:24 19:31	06:55 18:40	06:29 16:53	07:05 16:29
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5	07:24 16:42	07:06 17:18	06:28 17:52	06:36 19:26	05:51 19:59	05:25 20:27	05:29 20:35	05:56 20:12	06:27 19:26	06:58 18:35	06:33 16:49	07:08 16:28
6	07:24 16:43	07:05 17:19	06:26 17:53	06:34 19:27	05:50 20:00	05:25 20:28	05:30 20:34	05:57 20:10	06:28 19:24	06:59 18:33	06:34 16:48	07:09 16:28
7	07:24 16:44	07:04 17:20	06:24 17:54	06:33 19:28	05:49 20:01	05:25 20:29	05:31 20:34	05:58 20:09	06:29 19:22	07:00 18:31	06:35 16:47	07:10 16:28
8	07:24 16:45	07:03 17:22	06:23 17:55	06:31 19:30	05:47 20:02	05:24 20:29	05:31 20:34	05:59 20:08	06:30 19:21	07:01 18:30	06:37 16:46	07:11 16:28
9	07:24 16:46	07:02 17:23	06:21 17:57	06:29 19:31	05:46 20:03	05:24 20:30	05:32 20:33	06:00 20:07	06:31 19:19	07:02 18:28	06:38 16:45	07:11 16:28
10	07:24 16:47	07:01 17:24	06:20 17:58	06:28 19:32	05:45 20:04	05:24 20:30	05:33 20:33	06:01 20:05	06:32 19:17	07:03 18:26	06:39 16:44	07:12 16:28
11	07:24 16:48	06:59 17:25	06:18 17:59	06:26 19:33	05:44 20:05	05:24 20:31	05:33 20:33	06:02 20:04	06:33 19:16	07:04 18:25	06:40 16:43	07:13 16:28
12	07:23 16:49	06:58 17:27	06:16 18:00	06:24 19:34	05:43 20:06	05:24 20:31	05:34 20:32	06:03 20:03	06:34 19:14	07:05 18:23	06:42 16:42	07:14 16:28
13	07:23 16:50	06:57 17:28	06:15 18:01	06:23 19:35	05:42 20:07	05:24 20:32	05:35 20:32	06:04 20:01	06:35 19:12	07:06 18:21	06:43 16:41	07:15 16:28
14	07:23 16:51	06:56 17:29	06:13 18:02	06:21 19:36	05:41 20:08	05:23 20:32	05:36 20:31	06:05 20:00	06:36 19:11	07:07 18:20	06:44 16:40	07:16 16:28
15	07:22 16:52	06:54 17:30	06:11 18:03	06:20 19:37	05:40 20:09	05:23 20:33	05:36 20:31	06:06 19:58	06:37 19:09	07:09 18:18	06:45 16:39	07:16 16:29
16	07:22 16:53	06:53 17:32	06:10 18:05	06:18 19:38	05:39 20:10	05:23 20:33	05:37 20:30	06:07 19:57	06:38 19:07	07:10 18:17	06:46 16:38	07:17 16:29
17	07:21 16:54	06:52 17:33	06:08 18:06	06:17 19:39	05:38 20:11	05:24 20:34	05:38 20:29	06:08 19:56	06:39 19:05	07:11 18:15	06:48 16:37	07:18 16:29
18	07:21 16:56	06:50 17:34	06:06 18:07	06:15 19:40	05:37 20:12	05:24 20:34	05:39 20:29	06:09 19:54	06:40 19:04	07:12 18:14	06:49 16:36	07:18 16:30
19	07:20 16:57	06:49 17:35	06:05 18:08	06:13 19:41	05:36 20:13	05:24 20:34	05:40 20:28	06:10 19:53	06:41 19:02	07:13 18:12	06:50 16:36	07:19 16:30
20	07:20 16:58	06:47 17:37	06:03 18:09	06:12 19:43	05:35 20:14	05:24 20:34	05:40 20:27	06:11 19:51	06:42 19:00	07:14 18:11	06:51 16:35	07:20 16:30
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24	07:17 17:03	06:42 17:41	05:56 18:13	06:06 19:47	05:32 20:18	05:25 20:35	05:44 20:24	06:15 19:45	06:46 18:53	07:19 18:05	06:56 16:32	07:22 16:32
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Potential sun hours	296	297	369	399	449	454	460	429	375	345	297	287
Total, worst case						27						

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)
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### SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: R - Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (18)  
 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	07:24 16:38	07:11 17:13	06:34 17:48	06:43 19:22	05:56 19:55	05:27 20:25	05:49 (11) 20:36	05:52 20:16	06:14 (11)	06:23 18:42	06:54 16:54	06:28 16:29
2	07:24 16:39	07:10 17:14	06:33 17:49	06:41 19:23	05:55 19:56	05:27 20:25	05:48 (11) 20:35	05:53 20:15	06:17 (11)	06:24 18:40	06:55 16:53	06:30 16:29
3	07:25 16:40	07:09 17:15	06:31 17:50	06:39 19:24	05:54 19:57	05:26 20:26	05:48 (11) 20:35	05:54 (11) 20:14		06:25 (11) 19:29	06:56 16:52	06:31 16:29
4	07:25 16:41	07:08 17:17	06:29 17:51	06:38 19:25	05:53 19:58	05:26 20:27	05:48 (11) 20:35	05:52 (11) 20:13		06:25 (11) 19:28	06:57 16:51	06:32 16:29
5	07:25 16:42	07:07 17:18	06:28 17:52	06:36 19:27	05:51 19:59	05:25 20:27	05:47 (11) 20:35	05:52 (11) 20:12		06:25 (11) 19:26	06:58 16:49	06:33 16:28
6	07:25 16:43	07:05 17:19	06:26 17:53	06:34 19:28	05:50 20:00	05:25 20:28	05:47 (11) 20:35	05:53 (11) 20:11		06:25 (11) 19:24	06:59 16:48	06:35 16:28
7	07:24 16:44	07:04 17:21	06:25 17:55	06:33 19:29	05:49 20:01	05:25 20:29	05:47 (11) 20:34	05:54 (11) 20:09		06:25 (11) 19:23	07:00 16:47	06:36 16:28
8	07:24 16:45	07:03 17:22	06:23 17:56	06:31 19:30	05:48 20:02	05:25 20:29	05:47 (11) 20:34	05:54 (11) 20:08		06:26 (11) 19:21	07:01 16:46	06:37 16:28
9	07:24 16:46	07:02 17:23	06:21 17:57	06:30 19:31	05:47 20:03	05:24 20:30	05:46 (11) 20:34	05:55 (11) 20:07		06:26 (11) 19:19	07:02 16:45	06:38 16:28
10	07:24 16:47	07:01 17:24	06:20 17:58	06:28 19:32	05:45 20:04	05:24 20:31	05:46 (11) 20:33	05:56 (11) 20:05		06:27 (11) 19:18	07:03 16:44	06:39 16:28
11	07:24 16:48	07:00 17:26	06:18 17:59	06:26 19:33	05:44 20:05	05:24 20:31	05:46 (11) 20:33	05:56 (11) 20:04		06:27 (11) 19:16	07:04 16:43	06:41 16:28
12	07:24 16:49	06:58 17:27	06:17 18:00	06:25 19:34	05:43 20:06	05:24 20:32	05:46 (11) 20:32	05:57 (11) 20:03		06:27 (11) 19:14	07:05 16:42	06:42 16:28
13	07:23 16:50	06:57 17:28	06:15 18:01	06:23 19:35	05:42 20:07	05:24 20:32	05:46 (11) 20:32	05:58 (11) 20:01		06:27 (11) 19:12	07:07 16:41	06:43 16:28
14	07:23 16:51	06:56 17:29	06:13 18:02	06:22 19:36	05:41 20:08	05:24 20:33	05:46 (11) 20:31	05:59 (11) 20:00		06:28 (11) 19:11	07:08 16:40	06:44 16:29
15	07:23 16:52	06:54 17:31	06:12 18:04	06:20 19:37	05:40 20:09	05:24 20:33	05:46 (11) 20:31	05:59 (11) 19:59		06:28 (11) 19:09	07:09 16:39	06:45 16:29
16	07:22 16:53	06:53 17:32	06:10 18:05	06:18 19:38	05:39 20:10	05:24 20:33	05:46 (11) 20:30	06:00 (11) 19:57		06:29 (11) 19:07	07:10 16:38	06:47 16:29
17	07:22 16:55	06:52 17:33	06:08 18:06	06:17 19:40	05:38 20:11	05:24 20:34	05:46 (11) 20:30	06:01 (11) 19:56		06:29 (11) 19:06	07:11 16:37	06:48 16:29
18	07:21 16:56	06:50 17:34	06:06 18:07	06:15 19:41	05:37 20:12	05:24 20:34	05:46 (11) 20:29	06:02 (11) 19:54		06:29 (11) 19:04	07:12 16:37	06:49 16:30
19	07:21 16:57	06:49 17:36	06:05 18:08	06:14 19:42	05:36 20:13	05:24 20:34	05:47 (11) 20:28	06:02 (11) 19:53		06:29 (11) 19:02	07:13 16:36	06:50 16:30
20	07:20 16:58	06:48 17:37	06:03 18:09	06:12 19:43	05:35 20:14	05:24 20:35	05:48 (11) 20:27	06:03 (11) 19:51		06:29 (11) 19:00	07:14 16:35	06:51 16:31
21	07:19 16:59	06:46 17:38	06:01 18:10	06:11 19:44	05:34 20:15	05:24 20:35	05:48 (11) 20:27	06:04 (11) 19:50		06:30 (11) 18:59	07:15 16:34	06:52 16:31
22	07:19 17:01	06:45 17:39	06:00 18:11	06:09 19:45	05:34 20:16	05:24 20:35	05:48 (11) 20:26	06:05 (11) 19:48		06:30 (11) 18:57	07:16 16:34	06:53 16:31
23	07:18 17:02	06:43 17:40	05:58 18:12	06:08 19:46	05:33 20:17	05:25 20:35	05:48 (11) 20:25	06:06 (11) 19:47		06:31 (11) 18:55	07:17 16:33	06:54 16:32
24	07:17 17:03	06:42 17:42	05:56 18:14	06:06 19:47	05:32 20:18	05:25 20:36	05:48 (11) 20:24	06:07 (11) 19:45		06:32 (11) 18:53	07:18 16:33	06:55 16:33
25	07:17 17:04	06:40 17:43	05:55 18:15	06:05 19:48	05:31 20:19	05:25 20:36	05:48 (11) 20:23	06:08 (11) 19:44		06:33 (11) 18:52	07:19 16:32	06:56 16:33
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27	07:15 17:07	06:37 17:45	05:51 18:17	06:02 19:50	05:30 20:21	05:26 20:36	05:49 (11) 20:21	06:10 (11) 19:41		06:35 (11) 18:48	07:21 16:31	06:58 16:34
28	07:14 17:08	06:36 17:46	05:50 18:18	06:01 19:51	05:29 20:21	05:26 20:36	05:49 (11) 20:20	06:11 (11) 19:39		06:36 (11) 18:47	07:22 16:31	06:59 16:35
29	07:13 17:09	06:48 17:49	06:48 18:19	05:59 19:52	05:29 20:22	05:27 20:36	06:11 (11) 20:19	06:12 (11) 19:38		06:37 (11) 18:45	07:23 16:30	07:02 16:36
30	07:13 17:10	06:46 17:50	06:46 18:20	05:58 19:54	05:28 20:23	05:27 20:36	06:12 (11) 20:18	06:13 (11) 19:36		06:38 (11) 18:43	07:24 16:30	07:03 16:37
31	07:12 17:12	06:45 18:01	06:45 18:21	05:58 19:54	05:28 20:24	05:27 20:36	06:13 (11) 20:17	06:14 (11) 19:34		06:39 (11) 18:42	07:25 16:56	07:04 16:37
Potential sun hours	296	297	369	399	449	454	460	429	375	345	297	287
Total, worst case					402	1003	771	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)
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Project:

FoggiaMR\_ShadowFlickering

Licensed user:

Iron solar s.r.l.  
via Lanzone, 31  
IT-20122 Milano  
+393487125089  
Fabio Paccapelo / francesca.saccarola@hopegroup.it

Calculated:

09/03/2023 18:29/3.6.361

## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: S - Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (19)  
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	07:24 16:38	07:47 (12) 17:13	07:11 17:48	07:46 (12) 17:48	06:34 19:22	06:43 19:55	05:56 20:25	05:27 20:36	05:28 20:16	05:52 19:33	06:23 18:42	06:54 16:54	06:29 16:29
2	07:25 16:39	07:47 (12) 17:14	07:10 17:14	07:49 (12) 17:49	06:33 19:23	06:41 19:56	05:55 20:25	05:27 20:36	05:28 20:15	05:53 19:31	06:24 18:40	06:55 16:53	06:30 16:29
3	07:25 16:40	07:47 (12) 17:15	07:09 17:15	07:52 (12) 17:50	06:31 19:24	06:39 19:57	05:54 20:26	05:29 20:35	05:54 20:14	06:25 19:29	06:56 18:38	06:31 16:52	06:06 16:29
4	07:25 16:41	07:47 (12) 17:17	07:08 17:17	07:59 (12) 17:50	06:30 19:24	06:38 19:58	05:53 20:27	05:29 20:35	05:55 20:13	06:26 19:28	06:57 18:36	06:32 16:51	06:07 16:29
5	07:25 16:42	07:47 (12) 17:18	07:07 17:18		06:28 17:52	06:36 19:27	05:51 20:28	05:25 20:35	05:56 20:12	06:27 19:26	06:58 18:35	06:33 16:49	06:08 16:28
6	07:25 16:43	07:47 (12) 17:19	07:05 17:19		06:26 17:53	06:35 19:28	05:50 20:00	05:25 20:28	05:57 20:11	06:28 19:24	06:59 18:33	06:35 16:48	06:09 16:28
7	07:25 16:44	07:47 (12) 17:21	07:04 17:21		06:25 17:55	06:33 19:29	05:49 20:01	05:25 20:29	05:58 20:34	06:29 19:23	07:00 18:31	06:36 16:47	06:10 16:28
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18	07:21 16:56	07:42 (12) 17:34	06:50 17:34		06:07 18:07	06:15 19:41	05:37 20:12	05:24 20:34	06:09 19:54	06:40 19:04	07:12 18:14	06:49 16:37	06:21 16:30
19	07:21 16:57	07:42 (12) 17:36	06:49 17:36		06:05 18:08	06:14 19:42	05:36 20:13	05:24 20:35	06:10 19:53	06:41 19:02	07:13 18:12	06:50 16:36	06:22 16:30
20	07:20 16:58	07:41 (12) 17:37	06:48 17:37		06:03 18:09	06:12 19:43	05:35 20:14	05:24 20:35	06:11 19:52	06:42 19:00	07:14 18:11	06:51 16:35	06:23 16:31
21	07:20 16:59	07:40 (12) 17:38	06:46 17:38		06:01 18:10	06:11 19:44	05:34 20:15	05:24 20:35	06:12 19:50	06:43 18:59	07:16 18:09	06:53 16:34	06:24 16:31
22	07:19 17:01	07:40 (12) 17:39	06:45 17:39		06:00 18:11	06:09 19:45	05:34 20:16	05:24 20:35	06:13 19:49	06:44 18:57	07:17 18:08	06:54 16:34	06:25 16:31
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24	07:17 17:03	07:38 (12) 17:42	06:42 17:42		05:56 18:14	06:06 19:47	05:32 20:18	05:25 20:36	06:15 19:45	06:46 18:54	07:19 18:05	06:56 16:33	06:27 16:33
25	07:17 17:04	07:38 (12) 17:43	06:40 17:43		05:55 18:15	06:05 19:48	05:31 20:19	05:25 20:36	06:16 19:44	06:47 18:52	07:20 17:04	06:57 16:32	06:28 16:33
26	07:16 17:05	07:39 (12) 17:44	06:39 17:44		05:53 18:16	06:03 19:49	05:31 20:20	05:25 20:36	06:17 19:42	06:49 18:50	07:21 17:02	06:58 16:31	06:29 16:34
27	07:15 17:07	07:40 (12) 17:45	06:37 17:45		05:51 18:17	06:02 19:50	05:30 20:21	05:26 20:36	06:18 19:41	06:50 18:48	07:22 17:01	07:00 16:31	06:30 16:34
28	07:14 17:08	07:41 (12) 17:46	06:36 17:46		05:50 18:18	06:01 19:51	05:29 20:21	05:26 20:36	06:19 19:39	06:51 18:47	07:23 16:59	07:01 16:31	06:31 16:34
29	07:13 17:09	07:42 (12) 17:47	06:35 17:47		06:48 19:19	05:59 19:53	05:29 20:22	05:27 20:36	06:20 19:38	06:52 18:45	07:24 16:58	07:02 16:30	06:32 16:34
30	07:13 17:10	07:43 (12) 17:48	06:34 17:48		06:46 19:20	05:58 19:54	05:28 20:23	05:27 20:36	06:21 19:36	06:53 18:43	07:25 16:57	07:03 16:30	06:33 16:34
31	07:12 17:12	07:44 (12) 18:06 (12)	06:33 18:06 (12)		06:45 19:21	05:57 20:24	05:28 20:36	05:27 20:36	06:22 20:17	06:22 19:34	06:27 16:56	07:04 16:30	06:34 16:37
Potential sun hours Total, worst case	296 699	297 39	303 39	303 39	303 39	303 49	303 49	303 49	303 49	303 49	303 49	303 49	303 49

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	(WTG causing flicker first time)
	Sun set (hh:mm)	Last time (hh:mm) with flicker	(WTG causing flicker last time)
	Minutes with flicker		



### SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: T - Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (20)  
 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	07:24 16:38	07:10 17:13	06:34 17:47		06:42 19:22	05:56 19:54	05:27 20:24	05:27 20:35	05:51 20:16	06:23 19:32		07:03 16:29
2	07:24 16:39	07:09 17:14	06:32 17:48		06:41 19:23	05:55 19:55	05:26 20:25	05:28 20:35	05:52 20:15	06:24 19:31	19	07:04 16:29
3	07:24 16:40	07:08 17:15	06:31 17:49	17:26 (4)	06:39 19:24	05:53 19:56	05:26 20:26	05:28 20:35	05:53 20:14	06:25 19:29	18	07:05 16:28
4	07:24 16:41	07:07 17:16	06:29 17:51	2 17:28 (4)	06:37 19:25	05:52 19:57	05:25 20:26	05:29 20:35	05:54 20:12	06:26 19:27	17	07:06 16:28
5	07:24 16:41	07:06 17:18	06:27 17:52	5 17:29 (4)	06:36 19:26	05:51 19:58	05:25 20:27	05:29 20:34	05:55 20:11	06:27 19:26	16	07:07 16:28
6	07:24 16:42	07:05 17:19	06:26 17:53	8 17:30 (4)	06:34 19:27	05:50 20:00	05:25 20:28	05:30 20:34	05:56 20:10	06:28 19:24	15	07:08 16:28
7	07:24 16:43	07:04 17:20	06:24 17:54	10 17:32 (4)	06:32 19:28	05:48 20:01	05:24 20:28	05:30 20:34	05:57 20:09	06:29 19:22	13	07:09 16:28
8	07:24 16:44	07:03 17:21	06:23 17:55	12 17:33 (4)	06:31 19:29	05:47 20:02	05:24 20:29	05:31 20:34	05:58 20:08	06:30 19:21	11	07:10 16:28
9	07:24 16:45	07:02 17:23	06:21 17:56	13 17:34 (4)	06:29 19:30	05:46 20:03	05:24 20:30	05:32 20:33	05:59 20:06	06:31 19:19	9	07:11 16:28
10	07:24 16:46	07:02 17:24	06:19 17:58	15 17:35 (4)	06:29 19:31	05:45 20:04	05:24 20:30	05:32 20:33	06:00 20:05	06:32 19:17	7	07:12 16:28
11	07:23 16:47	06:59 17:25	06:18 17:59	17 17:36 (4)	06:26 19:32	05:44 20:05	05:24 20:31	05:33 20:32	06:01 20:04	06:33 19:15	4	07:13 16:28
12	07:23 16:49	06:58 17:26	06:16 18:00	18 17:38 (4)	06:24 19:34	05:43 20:06	05:23 20:31	05:34 20:32	06:02 20:02	06:34 19:14		07:14 16:28
13	07:23 16:50	06:57 17:28	06:14 18:01	19 17:39 (4)	06:23 19:35	05:42 20:07	05:23 20:32	05:35 20:31	06:03 20:01	06:35 19:12		07:15 16:28
14	07:22 16:51	06:55 17:29	06:13 18:02	20 17:40 (4)	06:21 19:36	05:41 20:08	05:23 20:32	05:35 20:31	06:04 20:00	06:36 19:10		07:15 16:28
15	07:22 16:52	06:54 17:30	06:11 18:03	19 17:41 (4)	06:19 19:37	05:40 20:09	05:23 20:33	05:36 20:30	06:05 19:58	06:37 19:09		07:16 16:28
16	07:22 16:53	06:53 17:31	06:09 18:04	17 17:42 (4)	06:18 19:38	05:39 20:10	05:23 20:33	05:37 20:30	06:06 19:57	06:38 19:07		07:17 16:28
17	07:21 16:54	06:51 17:33	06:08 18:05	11 17:35 (4)	06:16 19:39	05:38 20:11	05:23 20:33	05:38 20:29	06:07 19:55	06:39 19:05		07:18 16:29
18	07:21 16:55	06:50 17:34	06:06 18:07		06:15 19:40	05:37 20:12	05:23 20:34	05:39 20:28	06:08 19:54	06:40 19:03		07:18 16:29
19	07:20 16:56	06:49 17:35	06:04 18:08		06:13 19:41	05:36 20:13	05:23 20:34	05:39 20:28	06:09 19:53	06:41 19:02		07:19 16:30
20	07:20 16:58	06:47 17:36	06:03 18:09		06:12 19:42	05:35 20:14	05:24 20:34	06:10 20:27	06:42 19:51	06:42 19:00		07:19 16:30
21	07:19 16:59	06:46 17:38	06:01 18:10		06:10 19:43	05:34 20:15	05:24 20:35	06:11 20:26	06:43 19:50	06:43 18:58		07:20 16:31
22	07:18 17:00	06:44 17:39	05:59 18:11		06:09 19:44	05:33 20:16	05:24 20:35	06:13 20:25	06:44 19:48	06:44 18:57		07:20 16:31
23	07:18 17:01	06:43 17:40	05:58 18:12		06:07 19:46	05:32 20:17	05:24 20:35	06:14 20:25	06:45 19:47	06:45 18:55		07:21 16:32
24	07:17 17:03	06:41 17:41	05:56 18:13		06:06 19:47	05:32 20:17	05:24 20:35	06:15 20:24	06:46 19:45	06:46 18:53		07:21 16:32
25	07:16 17:04	06:40 17:42	05:54 18:14		06:04 19:48	05:31 20:18	05:25 20:35	06:16 20:23	06:47 19:43	06:47 18:51		07:22 16:33
26	07:15 17:05	06:38 17:44	05:53 18:15		06:03 19:49	05:30 20:19	05:25 20:35	06:17 20:22	06:48 19:42	06:48 18:50		07:22 16:33
27	07:15 17:06	06:37 17:45	05:51 18:16		06:02 19:50	05:30 20:20	05:25 20:35	06:18 20:21	06:49 19:40	06:49 18:48		07:23 16:34
28	07:14 17:07	06:35 17:46	05:49 18:17		06:00 19:51	05:29 20:21	05:26 20:35	06:19 20:20	06:50 19:39	06:50 18:46	9	07:23 16:35
29	07:13 17:09		06:47 19:19		05:59 19:52	05:28 20:22	05:26 20:35	06:20 20:19	06:51 19:37	06:51 18:44	14	07:23 16:35
30	07:12 17:10		06:46 19:20		05:57 19:53	05:28 20:23	05:27 20:35	06:21 20:18	06:52 19:35	06:52 18:43	18	07:23 16:36
31	07:11 17:11		06:44 19:21		05:57 20:23	05:28 20:23	05:27 20:35	06:22 20:17	06:53 19:34	06:53 16:55	20	07:24 16:37
Potential sun hours	296	297	369		399	449	454	460	429	375	61	345
Total, worst case			184								129	

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: ShadowFlickeringFoggiaMR Shadow receptor: U - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (21)  
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	07:24 16:38	07:10 17:13	16:36 (7) 16:48 (7)	06:34 17:47	17:12 (6) 19:22	05:56 20:24
2	07:24 16:39	07:09 17:14	16:36 (7) 16:50 (7)	06:32 17:48	17:10 (6) 19:23	05:55 20:25
3	07:24 16:40	07:08 17:15	16:36 (7) 16:51 (7)	06:31 17:50	17:09 (6) 19:24	05:54 20:26
4	07:24 16:41	07:07 17:16	16:36 (7) 16:52 (7)	06:29 17:51	17:08 (6) 19:25	05:52 20:26
5	07:24 16:42	07:06 17:17	16:37 (7) 16:53 (7)	06:28 17:52	17:08 (6) 19:26	05:51 20:27
6	07:24 16:43	07:05 17:18	16:37 (7) 16:54 (7)	06:26 17:53	17:07 (6) 19:27	05:50 20:28
7	07:24 16:43	07:04 17:19	16:38 (7) 16:55 (7)	06:24 17:53	17:06 (6) 19:27	05:49 20:28
8	07:24 16:44	07:03 17:20	16:39 (7) 16:57 (7)	06:23 17:54	17:06 (6) 19:28	05:47 20:28
9	07:24 16:45	07:02 17:21	16:39 (7) 16:59 (7)	06:21 17:55	17:05 (6) 19:29	05:46 20:29
10	07:24 16:47	07:00 17:22	16:40 (7) 17:00 (7)	06:19 17:58	17:05 (6) 19:30	05:45 20:30
11	07:23 16:48	06:59 17:23	16:41 (7) 17:01 (7)	06:18 17:59	17:06 (6) 19:31	05:44 20:31
12	07:23 16:49	06:58 17:24	16:43 (7) 17:02 (7)	06:16 18:00	17:05 (6) 19:32	05:43 20:32
13	07:23 16:50	06:57 17:25	16:45 (7) 17:03 (7)	06:15 18:01	17:05 (6) 19:33	05:42 20:33
14	07:23 16:51	06:55 17:26	16:54 (7) 17:04 (7)	18:01 18:02	17:38 (6) 19:34	05:41 20:34
15	07:22 16:52	06:54 17:27	06:11 18:03	18:02 18:03	17:38 (6) 19:35	20:08 20:35
16	07:22 16:53	06:53 17:28	06:09 18:04	18:03 18:04	17:36 (6) 19:36	05:40 20:36
17	07:21 16:54	06:51 17:29	06:08 18:05	18:04 18:05	17:35 (6) 19:37	05:39 20:37
18	07:21 16:55	06:50 17:30	06:06 18:06	18:05 18:06	17:35 (6) 19:38	05:38 20:38
19	07:20 16:57	06:49 17:31	06:04 18:07	18:06 18:07	17:33 (6) 19:39	05:37 20:39
20	07:20 16:58	06:47 17:32	06:03 18:08	18:07 18:08	17:31 (6) 19:40	05:36 20:40
21	07:19 16:59	06:46 17:33	06:01 18:09	18:08 18:09	17:29 (6) 19:41	05:35 20:41
22	07:18 17:00	06:44 17:34	05:59 18:10	18:09 18:11	17:27 (6) 19:42	05:34 20:42
23	07:18 17:01	06:43 17:35	05:58 18:11	18:10 18:12	17:26 (6) 19:43	05:33 20:43
24	07:17 17:03	06:41 17:36	05:56 18:12	18:11 18:13	17:25 (6) 19:44	05:32 20:44
25	07:16 17:04	06:40 17:37	05:54 18:13	18:12 18:14	17:23 (6) 19:45	05:31 20:45
26	07:16 17:05	06:38 17:38	17:19 (6) 17:22 (6)	05:53 18:15	17:21 (6) 19:46	05:30 20:46
27	07:15 17:06	16:39 (7) 16:42 (7)	06:37 17:15 (6)	05:51 18:16	17:19 (6) 19:47	05:30 20:47
28	07:14 17:08	16:38 (7) 16:43 (7)	06:35 17:14 (6)	05:49 18:18	17:17 (6) 19:48	05:29 20:48
29	07:13 17:09	16:38 (7) 16:44 (7)	06:48 17:19 (6)	05:48 18:19	17:15 (6) 19:49	05:28 20:49
30	07:12 17:10	16:37 (7) 16:45 (7)	06:46 19:20	05:46 19:20	17:13 (6) 19:50	05:27 20:50
31	07:11 17:11	16:37 (7) 16:47 (7)	06:44 19:21	05:44 19:21	17:11 (6) 19:51	05:27 20:51
Potential sun hours	296	297	369	478	399	454
Total, worst case	32	234	478	399	449	454

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: U - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (21)  
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	05:27	05:51	06:23	06:53	17:45 (6)	06:28	16:09 (7)	07:03		
	20:35	20:16	19:32	18:41	34	18:19 (6)	16:54	20	16:29 (7)	16:29
2	05:28	05:52	06:24	06:54	17:44 (6)	06:29	16:08 (7)	07:04		
	20:35	20:15	19:31	18:39	33	18:17 (6)	16:53	21	16:29 (7)	16:29
3	05:28	05:53	06:25	06:55	17:44 (6)	06:31	16:07 (7)	07:06		
	20:35	20:14	19:29	18:38	31	18:15 (6)	16:51	20	16:27 (7)	16:29
4	05:29	05:54	06:26	06:56	17:43 (6)	06:32	16:08 (7)	07:07		
	20:35	20:13	19:27	18:36	31	18:14 (6)	16:50	19	16:27 (7)	16:28
5	05:29	05:55	06:27	06:58	17:43 (6)	06:33	16:07 (7)	07:08		
	20:35	20:11	19:26	18:34	29	18:12 (6)	16:49	18	16:25 (7)	16:28
6	05:30	05:56	06:28	06:59	17:42 (6)	06:34	16:07 (7)	07:08		
	20:34	20:10	19:24	18:33	28	18:10 (6)	16:48	17	16:24 (7)	16:28
7	05:31	05:57	06:29	07:00	17:42 (6)	06:35	16:07 (7)	07:09		
	20:34	20:09	19:22	18:31	26	18:08 (6)	16:47	16	16:23 (7)	16:28
8	05:31	05:58	06:30	07:01	17:42 (6)	06:37	16:07 (7)	07:10		
	20:34	20:08	19:21	18:29	24	18:06 (6)	16:46	15	16:22 (7)	16:28
9	05:32	05:59	06:31	07:02	17:42 (6)	06:38	16:07 (7)	07:11		
	20:33	20:06	19:19	18:28	23	18:05 (6)	16:45	13	16:20 (7)	16:28
10	05:33	06:00	06:32	07:03	17:42 (6)	06:39	16:07 (7)	07:12		
	20:33	20:05	19:17	18:26	21	18:03 (6)	16:44	12	16:19 (7)	16:28
11	05:33	06:01	06:33	07:04	17:43 (6)	06:40	16:09 (7)	07:13		
	20:32	20:04	19:16	18:25	18	18:01 (6)	16:43	10	16:19 (7)	16:28
12	05:34	06:02	06:34	07:05	17:45 (6)	06:41	16:09 (7)	07:14		
	20:32	20:02	19:14	18:23	15	18:00 (6)	16:42	8	16:17 (7)	16:28
13	05:35	06:03	06:35	07:06	17:46 (6)	06:43	16:10 (7)	07:15		
	20:31	20:01	19:12	18:21	13	17:59 (6)	16:41	6	16:16 (7)	16:28
14	05:35	06:04	06:36	07:07	17:47 (6)	06:44	16:11 (7)	07:15		
	20:31	20:00	19:10	18:20	10	17:57 (6)	16:40	5	16:16 (7)	16:28
15	05:36	06:05	06:37	07:08	17:49 (6)	06:45	16:12 (7)	07:16		
	20:30	19:58	19:09	18:18	6	17:55 (6)	16:39	2	16:14 (7)	16:29
16	05:37	06:07	06:38	07:10	17:52 (6)	06:46	07:17			
	20:30	19:57	19:07	18:17	1	17:53 (6)	16:38	16:29		
17	05:38	06:08	06:39	07:11	06:47	07:18				
	20:29	19:56	19:05	18:15	16:37	16:29				
18	05:39	06:09	06:40	07:12	06:49	07:18				
	20:28	19:54	19:03	18:14	16:36	16:29				
19	05:39	06:10	06:41	07:13	06:50	07:19				
	20:28	19:53	19:02	18:12	16:36	16:30				
20	05:40	06:11	06:42	07:14	06:51	07:19				
	20:27	19:51	19:00	18:11	16:35	16:30				
21	05:41	06:12	06:43	07:15	06:52	07:20				
	20:26	19:50	18:58	18:09	16:34	16:31				
22	05:42	06:13	06:44	07:16	06:53	07:21				
	20:25	19:48	18:57	18:08	16:33	16:31				
23	05:43	06:14	06:45	07:17	06:55	07:21				
	20:25	19:47	18:55	18:06	16:33	16:32				
24	05:44	06:15	06:46	17:58 (6)	07:19	06:56	07:22			
	20:24	19:45	18:53	12	18:10 (6)	18:05	16:32	16:32		
25	05:45	06:16	06:47	17:54 (6)	06:20	06:57	07:22			
	20:23	19:43	18:51	18	18:12 (6)	17:03	16:32	16:33		
26	05:46	06:17	06:48	17:52 (6)	06:21	06:58	07:22			
	20:22	19:42	18:50	22	18:14 (6)	17:02	16:31	16:33		
27	05:47	06:18	06:49	17:50 (6)	06:22	06:59	07:23			
	20:21	19:40	18:48	26	18:16 (6)	17:01	16:31	16:34		
28	05:48	06:19	06:50	17:48 (6)	06:23	07:00	07:23			
	20:20	19:39	18:46	28	18:16 (6)	16:59	16:30	16:35		
29	05:49	06:20	06:51	17:47 (6)	06:25	16:14 (7)	07:01	07:23		
	20:19	19:37	18:45	30	18:17 (6)	16:58	10	16:24 (7)	16:30	
30	05:50	06:21	06:52	17:45 (6)	06:26	16:12 (7)	07:02	07:24		
	20:18	19:36	18:43	32	18:17 (6)	16:56	14	16:26 (7)	16:29	
31	05:50	06:22	06:53	17:45 (6)	06:27	16:11 (7)	07:02	07:24		
	20:17	19:34	18:42	18	16:29 (7)	16:37	16:37			
Potential sun hours	460	429	375	345	297	287				
Total, worst case			168	385	202					

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)
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### SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: V - Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (22)  
 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	07:24 16:38	07:10 17:13	06:34 17:47	06:43 19:22	05:56 19:54	05:27 20:24	05:27 20:35	05:51 20:16	06:23 19:32	06:53 18:41	17:46 (7)	06:28 16:54	07:03 16:29
2	07:24 16:39	07:09 17:14	06:32 17:48	06:41 19:23	05:55 19:55	05:26 20:25	05:28 20:35	05:52 20:15	06:24 19:31	06:54 18:39	33 18:17 (7)	06:29 16:53	07:04 16:29
3	07:24 16:40	07:08 17:15	06:31 17:50	06:39 19:24	05:54 19:56	05:26 20:26	05:28 20:35	05:53 20:14	06:25 19:29	06:55 18:38	30 18:15 (7)	06:31 16:51	07:06 16:29
4	07:24 16:41	07:07 17:16	06:29 17:51	17:22 (7) 19:25	06:37 19:57	05:26 20:26	05:29 20:35	05:54 20:13	06:26 19:27	06:57 18:36	28 18:14 (7)	06:32 16:50	07:07 16:28
5	07:24 16:42	07:06 17:18	06:28 17:52	7 19:26	17:19 (7) 19:59	06:36 20:27	05:51 20:35	05:55 20:11	06:27 19:26	06:58 18:34	26 18:12 (7)	06:33 16:49	07:08 16:28
6	07:24 16:43	07:05 17:19	06:26 17:53	12 19:27	17:31 (7) 19:27	06:34 20:00	05:50 20:28	05:56 20:34	06:28 20:10	06:59 18:33	24 18:10 (7)	06:34 16:48	07:09 16:28
7	07:24 16:44	07:04 17:20	06:24 17:54	16 19:28	17:16 (7) 19:28	06:34 20:01	05:50 20:28	05:57 20:34	06:29 20:09	07:00 18:31	21 18:08 (7)	06:35 16:47	07:09 16:28
8	07:24 16:44	07:03 17:22	06:23 17:55	20 19:29	17:13 (7) 19:29	06:33 20:02	05:49 20:29	05:57 20:34	06:29 20:08	07:01 18:29	17 18:06 (7)	06:36 16:46	07:10 16:28
9	07:24 16:46	07:02 17:23	06:21 17:57	22 19:30	17:12 (7) 19:31	06:31 20:03	05:47 20:30	05:58 20:33	06:30 20:06	07:02 18:28	14 18:05 (7)	06:37 16:45	07:11 16:28
10	07:24 16:47	07:00 17:24	06:19 17:58	25 19:31	17:10 (7) 19:32	06:29 20:04	05:45 20:30	06:00 20:33	06:32 20:05	07:03 18:26	10 18:03 (7)	06:39 16:44	07:12 16:28
11	07:23 16:48	06:59 17:25	06:18 17:59	27 19:32	17:08 (7) 19:33	06:26 20:05	05:44 20:31	06:01 20:32	06:33 20:04	07:04 18:25	4 18:08 (7)	06:40 16:43	07:13 16:28
12	07:23 16:49	06:58 17:27	06:16 18:00	30 19:33	17:07 (7) 19:34	06:24 20:06	05:43 20:31	06:02 20:32	06:34 19:14	07:05 18:19 (7)	11 18:19 (7)	06:41 16:42	07:14 16:28
13	07:23 16:50	06:57 17:28	06:15 18:01	32 19:34	17:06 (7) 19:35	06:23 20:07	05:42 20:32	06:03 20:31	06:35 20:01	07:06 19:12	19 18:23 (7)	06:42 16:41	07:15 16:28
14	07:23 16:51	06:55 17:29	06:13 18:02	34 19:35	17:06 (7) 19:36	06:21 20:08	05:41 20:32	06:05 20:31	06:36 20:00	07:07 18:25 (7)	18 18:25 (7)	06:43 16:40	07:15 16:28
15	07:22 16:52	06:54 17:30	06:11 18:03	35 19:36	17:05 (7) 19:37	06:20 20:09	05:40 20:33	06:06 20:30	06:37 19:58	07:08 19:09	24 18:25 (7)	06:44 16:39	07:16 16:29
16	07:22 16:53	06:53 17:32	06:10 18:04	37 19:37	17:04 (7) 19:38	06:18 20:10	05:39 20:33	06:07 20:30	06:38 19:57	07:10 18:28 (7)	29 18:28 (7)	06:45 16:38	07:17 16:29
17	07:21 16:54	06:51 17:33	06:08 18:05	39 19:38	17:04 (7) 19:39	06:16 20:11	05:38 20:33	06:08 20:29	06:39 19:56	07:11 19:05	34 18:29 (7)	06:46 16:37	07:18 16:29
18	07:21 16:55	06:50 17:34	06:06 18:07	41 19:39	17:04 (7) 19:40	06:15 20:12	05:37 20:34	06:09 20:28	06:40 19:54	07:12 18:30 (7)	37 18:30 (7)	06:47 16:36	07:18 16:29
19	07:20 16:57	06:49 17:35	06:04 18:08	42 19:40	17:03 (7) 19:41	06:13 20:13	05:36 20:34	06:10 20:28	06:41 19:53	07:13 19:02	43 18:35 (8)	06:48 16:36	07:19 16:30
20	07:20 16:58	06:47 17:36	06:03 18:09	43 19:41	17:03 (7) 19:42	06:12 20:14	05:35 20:34	06:11 20:27	06:42 19:51	07:14 18:37 (8)	47 18:37 (8)	06:49 16:35	07:20 16:30
21	07:19 16:59	06:46 17:38	06:01 18:10	44 19:42	17:04 (7) 19:43	06:10 20:15	05:34 20:35	06:12 20:26	06:43 19:50	07:15 18:58	47 18:36 (8)	06:50 16:34	07:21 16:31
22	07:18 17:00	06:44 17:39	05:59 18:11	45 19:43	17:04 (7) 19:44	06:09 20:16	05:33 20:35	06:13 20:25	06:44 19:48	07:16 18:57	46 18:34 (8)	06:51 16:33	07:22 16:31
23	07:18 17:01	06:43 17:40	05:58 18:12	46 19:44	17:04 (7) 19:45	06:07 20:17	05:33 20:35	06:14 20:25	06:45 19:47	07:17 18:55	44 18:32 (8)	06:52 16:33	07:23 16:32
24	07:17 17:03	06:41 17:41	05:56 18:13	47 19:45	17:05 (7) 19:46	06:06 20:18	05:32 20:35	06:15 20:24	06:46 19:45	07:19 18:53	43 18:30 (8)	06:53 16:32	07:24 16:32
25	07:16 17:04	06:40 17:42	05:54 18:14	48 19:46	17:05 (7) 19:47	06:04 20:18	05:31 20:35	06:16 20:23	06:47 19:44	07:20 18:51	43 18:29 (8)	06:54 16:32	07:25 16:33
26	07:16 17:05	06:38 17:44	05:53 18:15	49 19:47	17:06 (7) 19:48	06:03 20:19	05:30 20:35	06:17 20:22	06:48 19:42	07:21 18:50	41 18:27 (8)	06:55 16:31	07:26 16:33
27	07:15 17:06	06:37 17:45	05:51 18:16	50 19:48	17:07 (7) 19:49	06:02 20:20	05:29 20:35	06:18 20:21	06:49 19:40	07:22 18:48	39 18:25 (8)	06:56 16:30	07:27 16:34
28	07:14 17:08	06:35 17:46	05:49 18:18	51 19:49	17:08 (7) 19:50	06:00 20:21	05:28 20:35	06:19 20:20	06:50 19:39	07:23 18:46	38 18:23 (8)	06:57 16:29	07:28 16:35
29	07:13 17:09		06:48 19:19	29 19:50	17:38 (7) 19:51	05:59 20:22	05:26 20:35	06:20 20:19	06:51 19:37	07:24 18:45	36 18:21 (8)	06:58 16:28	07:29 16:36
30	07:12 17:10		06:46 19:20	25 19:51	18:12 (7) 19:52	05:58 20:22	05:27 20:35	06:21 20:19	06:52 19:37	07:25 18:45	35 18:20 (8)	06:59 16:27	07:30 16:37
31	07:11 17:11		06:44 19:21	20 19:52	18:32 (7) 19:53	05:57 20:23	05:26 20:35	06:22 20:18	06:53 19:36	07:26 18:43	35 18:20 (8)	07:00 16:55	07:31 16:38
Potential sun hours	296	297	369	881	399	449	454	460	429	375	688	345	207
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: ShadowFlickeringFoggiaMR Shadow receptor: W - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (23)  
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	07:24 16:38	07:10 17:13	06:34 17:47	16:44 (7) 17:22 (7)	06:42 19:22	05:56 19:54	18:51 (6) 19:32 (6)	05:27 20:24	18:40 (6) 19:52 (6)
2	07:24 16:39	07:09 17:14	06:32 17:48	16:44 (7) 17:21 (7)	06:41 19:23	05:55 19:55	18:49 (6) 19:32 (6)	05:26 20:25	18:40 (6) 19:53 (6)
3	07:24 16:40	07:08 17:15	06:31 17:50	16:45 (7) 17:21 (7)	06:39 19:24	05:54 19:56	18:48 (6) 19:33 (6)	05:26 20:26	18:41 (6) 19:53 (6)
4	07:24 16:41	07:07 17:16	06:29 17:51	16:45 (7) 17:29 (8)	06:37 19:25	05:52 19:57	18:47 (6) 19:34 (6)	05:26 20:26	18:40 (6) 19:53 (6)
5	07:24 16:42	07:06 17:18	06:28 17:52	16:47 (7) 17:31 (8)	06:36 19:26	05:51 19:59	18:46 (6) 19:36 (6)	05:25 20:27	18:41 (6) 19:53 (6)
6	07:24 16:43	07:05 17:19	06:26 17:53	16:48 (7) 17:32 (8)	06:34 19:27	05:50 20:00	18:44 (6) 19:36 (6)	05:25 20:28	18:41 (6) 19:54 (6)
7	07:24 16:43	07:04 17:20	06:24 17:54	16:49 (7) 17:33 (8)	06:33 19:28	05:49 20:01	18:44 (6) 19:37 (6)	05:25 20:28	18:42 (6) 19:54 (6)
8	07:24 16:44	07:03 17:22	06:23 17:55	16:52 (7) 17:34 (8)	06:31 19:29	05:47 20:02	18:43 (6) 19:38 (6)	05:24 20:29	18:41 (6) 19:53 (6)
9	07:24 16:46	07:02 17:23	06:21 17:57	16:54 (7) 17:35 (8)	06:29 19:31	05:46 20:03	18:42 (6) 19:39 (6)	05:24 20:30	18:42 (6) 19:54 (6)
10	07:24 16:47	07:00 17:24	06:19 17:58	17:24 (8) 17:36 (8)	06:28 19:32	05:45 20:04	18:42 (6) 19:40 (6)	05:24 20:30	18:42 (6) 19:54 (6)
11	07:23 16:48	06:59 17:25	16:57 (7) 17:59	06:18 17:38 (8)	06:26 19:33	05:44 20:05	18:41 (6) 19:41 (6)	05:24 20:31	18:43 (6) 19:54 (6)
12	07:23 16:49	06:58 17:27	16:54 (7) 17:04 (7)	06:16 18:00	17:25 (8) 19:34	05:43 20:06	18:41 (6) 19:42 (6)	05:24 20:31	18:43 (6) 19:54 (6)
13	07:23 16:50	06:57 17:28	16:52 (7) 17:05 (7)	06:15 18:01	17:26 (8) 19:35	05:42 20:07	18:40 (6) 19:43 (6)	05:23 20:32	18:43 (6) 19:55 (6)
14	07:23 16:51	06:55 17:29	16:50 (7) 17:06 (7)	06:13 18:02	17:29 (8) 19:36	05:41 20:08	18:40 (6) 19:44 (6)	05:23 20:32	18:44 (6) 19:55 (6)
15	07:22 16:52	06:54 17:30	16:49 (7) 17:08 (7)	06:11 18:03	06:20 19:37	05:40 20:09	18:40 (6) 19:45 (6)	05:23 20:33	18:44 (6) 19:55 (6)
16	07:22 16:53	06:53 17:32	16:47 (7) 17:09 (7)	06:10 18:04	06:18 19:38	05:39 20:10	18:39 (6) 19:46 (6)	05:23 20:33	18:44 (6) 19:55 (6)
17	07:21 16:54	06:51 17:33	16:47 (7) 17:10 (7)	06:08 18:05	06:16 19:39	05:38 20:11	18:39 (6) 19:46 (6)	05:23 20:33	18:44 (6) 19:55 (6)
18	07:21 16:55	06:50 17:34	16:45 (7) 17:11 (7)	06:06 18:07	06:15 19:40	05:37 20:12	18:39 (6) 19:47 (6)	05:23 20:34	18:44 (6) 19:55 (6)
19	07:20 16:57	06:49 17:35	16:45 (7) 17:13 (7)	06:04 18:08	06:13 19:41	05:36 20:13	18:39 (6) 19:49 (6)	05:24 20:34	18:45 (6) 19:55 (6)
20	07:20 16:58	06:47 17:36	16:45 (7) 17:15 (7)	06:03 18:09	06:12 19:42	05:35 20:14	18:39 (6) 19:50 (6)	05:24 20:34	18:45 (6) 19:55 (6)
21	07:19 16:59	06:46 17:38	16:44 (7) 17:15 (7)	06:01 18:10	06:10 19:43	05:34 20:15	18:39 (6) 19:50 (6)	05:24 20:35	18:46 (6) 19:56 (6)
22	07:18 17:00	06:44 17:39	16:44 (7) 17:17 (7)	05:59 18:11	06:09 19:45	05:33 20:16	18:39 (6) 19:51 (6)	05:24 20:35	18:46 (6) 19:56 (6)
23	07:18 17:01	06:43 17:40	16:43 (7) 17:18 (7)	05:58 18:12	06:07 19:46	05:33 20:17	18:39 (6) 19:52 (6)	05:24 20:35	18:46 (6) 19:56 (6)
24	07:17 17:03	06:41 17:41	16:43 (7) 17:20 (7)	05:56 18:13	06:06 19:47	19:10 (6) 19:23 (6)	05:32 20:18	05:25 20:35	18:46 (6) 19:56 (6)
25	07:16 17:04	06:40 17:42	16:43 (7) 17:21 (7)	05:54 18:14	06:04 19:48	19:05 (6) 19:26 (6)	05:31 20:18	05:25 20:35	18:46 (6) 19:57 (6)
26	07:16 17:05	06:38 17:44	16:43 (7) 17:22 (7)	05:53 18:15	06:03 19:49	19:01 (6) 19:26 (6)	05:30 20:19	05:25 20:35	18:46 (6) 19:57 (6)
27	07:15 17:06	06:37 17:45	16:43 (7) 17:23 (7)	05:51 18:16	06:02 19:50	18:59 (6) 19:27 (6)	05:30 20:20	05:26 20:35	18:46 (6) 19:57 (6)
28	07:14 17:08	06:35 17:46	16:44 (7) 17:23 (7)	05:49 18:18	06:00 19:51	18:56 (6) 19:28 (6)	05:29 20:21	05:26 20:35	18:47 (6) 19:58 (6)
29	07:13 17:09		06:48 19:19		05:59 19:52	18:54 (6) 19:29 (6)	05:28 20:22	05:26 20:35	18:47 (6) 19:58 (6)
30	07:12 17:10		06:46 19:20		05:58 19:53	18:52 (6) 19:30 (6)	05:28 20:23	05:27 20:35	18:47 (6) 19:59 (6)
31	07:11 17:11		06:44 19:21				18:40 (6) 19:53 (6)		
Potential sun hours	296	297	369	399	449	454			
Total, worst case		484	367	192	1958	2139			

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: W - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (23)  
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	05:27	18:47 (6)	05:51	18:52 (6)	06:23	06:53	18:05 (8)	06:28	07:03			
	20:35	71 19:58 (6)	20:16	60 19:52 (6)	19:32	18:41	14 18:19 (8)	16:54	16:29			
2	05:28	18:47 (6)	05:52	18:52 (6)	06:24	06:54	18:04 (8)	06:29	07:04			
	20:35	72 19:59 (6)	20:15	59 19:51 (6)	19:31	18:39	13 18:17 (8)	16:53	16:29			
3	05:28	18:47 (6)	05:53	18:53 (6)	06:25	06:55	18:02 (8)	06:31	07:06			
	20:35	72 19:59 (6)	20:14	57 19:50 (6)	19:29	18:38	13 18:15 (8)	16:51	16:29			
4	05:29	18:48 (6)	05:54	18:53 (6)	06:26	06:57	17:34 (7)	06:32	07:07			
	20:35	72 20:00 (6)	20:13	56 19:49 (6)	19:27	18:36	22 18:14 (8)	16:50	16:28			
5	05:29	18:47 (6)	05:55	18:54 (6)	06:27	06:58	17:30 (7)	06:33	07:08			
	20:35	72 19:59 (6)	20:11	54 19:48 (6)	19:26	18:34	28 18:12 (8)	16:49	16:28			
6	05:30	18:48 (6)	05:56	18:54 (6)	06:28	06:59	17:27 (7)	06:34	07:09			
	20:34	72 20:00 (6)	20:10	53 19:47 (6)	19:24	18:33	32 18:10 (8)	16:48	16:28			
7	05:31	18:47 (6)	05:57	18:54 (6)	06:29	07:00	17:24 (7)	06:35	07:09			
	20:34	72 19:59 (6)	20:09	51 19:45 (6)	19:22	18:31	35 18:08 (8)	16:47	16:28			
8	05:31	18:48 (6)	05:58	18:55 (6)	06:30	07:01	17:22 (7)	06:37	07:10			
	20:34	72 20:00 (6)	20:08	49 19:44 (6)	19:21	18:29	35 18:06 (8)	16:46	16:28			
9	05:32	18:48 (6)	05:59	18:56 (6)	06:31	07:02	17:21 (7)	06:38	07:11			
	20:33	73 20:01 (6)	20:06	47 19:43 (6)	19:19	18:28	36 18:05 (8)	16:45	16:28			
10	05:33	18:47 (6)	06:00	18:57 (6)	06:32	07:03	17:19 (7)	06:39	07:12			
	20:33	73 20:00 (6)	20:05	44 19:41 (6)	19:17	18:26	36 18:03 (8)	16:44	16:28			
11	05:33	18:48 (6)	06:01	18:58 (6)	06:33	07:04	17:18 (7)	06:40	07:13			
	20:32	73 20:01 (6)	20:04	42 19:40 (6)	19:16	18:25	36 17:54 (7)	16:43	16:28			
12	05:34	18:48 (6)	06:02	18:59 (6)	06:34	07:05	17:18 (7)	06:41	07:14			
	20:32	73 20:01 (6)	20:02	40 19:39 (6)	19:14	18:23	38 17:56 (7)	16:42	16:28			
13	05:35	18:48 (6)	06:03	19:01 (6)	06:35	07:06	17:17 (7)	06:43	07:15			
	20:31	73 20:01 (6)	20:01	37 19:38 (6)	19:12	18:21	39 17:56 (7)	16:41	16:28			
14	05:35	18:48 (6)	06:04	19:02 (6)	06:36	07:07	17:16 (7)	06:44	07:15			
	20:31	73 20:01 (6)	20:00	34 19:36 (6)	19:10	18:20	40 17:56 (7)	16:40	16:28			
15	05:36	18:48 (6)	06:06	19:04 (6)	06:37	07:08	17:15 (7)	06:45	07:16			
	20:30	73 20:01 (6)	19:58	31 19:35 (6)	19:09	18:18	40 17:55 (7)	16:39	16:29			
16	05:37	18:49 (6)	06:07	19:06 (6)	06:38	07:10	17:15 (7)	06:46	07:17			
	20:30	73 20:02 (6)	19:57	28 19:34 (6)	19:07	18:17	38 17:53 (7)	16:38	16:29			
17	05:38	18:49 (6)	06:08	19:08 (6)	06:39	07:11	17:14 (7)	06:47	07:18			
	20:29	73 20:02 (6)	19:56	24 19:32 (6)	19:05	18:15	38 17:52 (7)	16:37	16:29			
18	05:39	18:48 (6)	06:09	19:12 (6)	06:40	07:12	17:15 (7)	06:49	07:18			
	20:28	73 20:01 (6)	19:54	19 19:31 (6)	19:04	18:14	36 17:51 (7)	16:36	16:29			
19	05:40	18:48 (6)	06:10	19:18 (6)	06:41	07:13	17:14 (7)	06:50	07:19			
	20:28	73 20:01 (6)	19:53	9 19:27 (6)	19:02	18:12	35 17:49 (7)	16:36	16:30			
20	05:40	18:49 (6)	06:11		06:42	07:14	17:14 (7)	06:51	07:19			
	20:27	73 20:02 (6)	19:51		19:00	18:11	33 17:47 (7)	16:35	16:30			
21	05:41	18:49 (6)	06:12		06:43	07:15	17:14 (7)	06:52	07:20			
	20:26	73 20:02 (6)	19:50		18:58	18:09	32 17:46 (7)	16:34	16:31			
22	05:42	18:49 (6)	06:13		06:44	07:16	17:14 (7)	06:53	07:21			
	20:25	72 20:01 (6)	19:48		18:57	18:08	30 17:44 (7)	16:33	16:31			
23	05:43	18:50 (6)	06:14		06:45	07:18	17:16 (7)	06:55	07:21			
	20:25	71 20:01 (6)	19:47		18:55	18:06	27 17:43 (7)	16:33	16:32			
24	05:44	18:49 (6)	06:15		06:46	07:19	17:16 (7)	06:56	07:22			
	20:24	70 19:59 (6)	19:45		18:53	18:05	25 17:41 (7)	16:32	16:32			
25	05:45	18:49 (6)	06:16		06:47	06:20	16:17 (7)	06:57	07:22			
	20:23	69 19:58 (6)	19:44		18:51	17:03	23 16:40 (7)	16:32	16:33			
26	05:46	18:49 (6)	06:17		06:48	06:21	16:17 (7)	06:58	07:22			
	20:22	68 19:57 (6)	19:42		18:50	17:02	21 16:38 (7)	16:31	16:33			
27	05:47	18:50 (6)	06:18		06:49	06:22	16:19 (7)	06:59	07:23			
	20:21	67 19:57 (6)	19:40		18:48	17:01	18 16:37 (7)	16:31	16:34			
28	05:48	18:50 (6)	06:19		06:50	06:23	16:20 (7)	07:00	07:23			
	20:20	66 19:56 (6)	19:39		18:46	16:59	16 16:36 (7)	16:30	16:35			
29	05:49	18:50 (6)	06:20		06:51	06:25	16:22 (7)	07:01	07:23			
	20:19	65 19:55 (6)	19:37		18:45	5 18:15 (8)	16:58	12 16:34 (7)	16:30			
30	05:50	18:51 (6)	06:21		06:52	18:06 (8)	06:26	16:24 (7)	07:02			
	20:18	63 19:54 (6)	19:36		18:43	12 18:18 (8)	16:57	9 16:33 (7)	16:29			
31	05:51	18:51 (6)	06:22			06:27	16:28 (7)		07:24			
	20:17	62 19:53 (6)	19:34			16:55	4 16:32 (7)		16:37			
Potential sun hours	460		429		375		345		297			287
Total, worst case	2197		794		17		854					

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: ShadowFlickeringFoggiaMR Shadow receptor: X - Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (24)  
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	07:24 16:38	07:10 17:13	16:00 (9) 06:34	06:43	05:56	05:27	05:27	05:52	06:23	06:54	06:28	15:30 (9) 07:04	16:00 (9)
2	07:24 16:39	07:09 17:14	16:00 (9) 06:32	06:41	05:55	05:27	05:28	05:53	06:24	06:55	06:30	15:29 (9) 07:05	16:04 (9)
3	07:24 16:40	07:08 17:15	16:00 (9) 06:31	06:39	05:54	05:26	05:28	05:54	06:25	06:56	06:31	15:30 (9) 07:06	16:29
4	07:24 16:41	07:07 17:17	16:52 (9) 06:29	06:38	05:52	05:26	05:29	05:55	06:26	06:57	06:32	15:30 (9) 07:07	16:28
5	07:24 16:42	07:06 17:18	16:52 (9) 06:28	06:36	05:51	05:25	05:29	05:56	06:27	06:58	06:33	15:29 (9) 07:08	16:28
6	07:24 16:43	07:05 17:19	16:54 (9) 06:26	06:34	05:50	05:25	05:30	05:57	06:28	06:59	06:34	15:30 (9) 07:09	16:28
7	07:24 16:44	07:04 17:20	16:00 (9) 06:25	06:33	05:49	05:25	05:31	05:58	06:29	07:00	06:36	15:30 (9) 07:10	16:28
8	07:24 16:45	07:03 17:22	16:56 (9) 06:23	06:31	05:47	05:24	05:31	05:59	06:30	07:01	06:37	15:30 (9) 07:11	16:28
9	07:24 16:46	07:02 17:23	16:57 (9) 06:21	06:29	05:46	05:24	05:32	06:08	06:31	07:02	06:38	15:22 (9) 07:12	16:28
10	07:24 16:47	07:01 17:24	16:57 (9) 06:20	06:28	05:45	05:24	05:33	06:01	06:32	07:03	06:39	15:31 (9) 07:12	16:28
11	07:24 16:48	16:19 (9) 17:25	16:56 (9) 06:18	06:26	05:44	05:24	05:33	06:02	06:33	07:04	06:40	15:32 (9) 07:13	16:28
12	07:23 16:49	16:21 (9) 17:27	16:56 (9) 06:16	06:25	05:43	05:24	05:34	06:03	06:34	07:05	06:42	15:33 (9) 07:14	16:28
13	07:23 16:50	16:23 (9) 17:28	16:56 (9) 06:15	06:23	05:42	05:24	05:35	06:04	06:35	07:06	06:43	15:33 (9) 07:15	16:28
14	07:23 16:51	16:24 (9) 17:29	16:55 (9) 06:13	06:21	05:41	05:24	05:36	06:05	06:36	07:08	06:44	15:34 (9) 07:16	16:28
15	07:22 16:52	16:25 (9) 17:30	16:55 (9) 06:11	06:20	05:40	05:23	05:36	06:06	06:37	07:09	16:52 (9) 06:45	15:34 (9) 07:16	16:29
16	07:22 16:53	16:27 (9) 17:32	16:55 (9) 06:10	06:18	05:39	05:23	05:37	06:07	06:38	07:10	17:08 (9) 06:46	15:35 (9) 07:17	16:29
17	07:21 16:54	16:28 (9) 17:33	16:54 (9) 06:08	06:17	05:38	05:24	05:38	06:08	06:39	07:11	17:12 (9) 06:48	15:36 (9) 07:18	16:29
18	07:21 16:56	16:29 (9) 17:34	16:54 (9) 06:06	06:15	05:37	05:24	05:39	06:09	06:40	07:12	16:46 (9) 06:49	15:37 (9) 07:18	16:30
19	07:20 16:57	16:30 (9) 17:35	16:53 (9) 06:04	06:14	05:36	05:24	05:40	06:10	06:41	07:13	17:15 (9) 06:50	15:38 (9) 07:19	16:30
20	07:20 16:58	16:32 (9) 17:37	16:53 (9) 06:03	06:12	05:35	05:24	05:40	06:11	06:42	07:14	17:18 (9) 06:51	15:39 (9) 07:20	16:30
21	07:19 16:59	16:33 (9) 17:38	16:51 (9) 06:01	06:10	05:34	05:24	05:41	06:12	06:43	07:15	17:19 (9) 06:52	15:40 (9) 07:20	16:30
22	07:19 17:00	16:34 (9) 17:39	16:49 (9) 06:00	06:09	05:33	05:24	05:42	06:13	06:44	07:17	17:20 (9) 06:54	15:41 (9) 07:21	16:31
23	07:18 17:02	16:35 (9) 17:40	16:48 (9) 05:58	06:08	05:33	05:24	05:43	06:14	06:45	07:18	17:22 (9) 06:55	15:42 (9) 07:21	16:31
24	07:17 17:03	16:36 (9) 17:41	16:47 (9) 05:56	06:06	05:32	05:25	05:44	06:15	06:46	07:19	17:23 (9) 06:56	15:43 (9) 07:22	16:32
25	07:17 17:04	16:38 (9) 17:43	16:45 (9) 05:54	06:05	05:31	05:25	05:45	06:16	06:47	07:20	17:24 (9) 06:57	15:44 (9) 07:22	16:33
26	07:16 17:05	16:39 (9) 17:44	16:42 (9) 05:53	06:03	05:30	05:25	05:46	06:17	06:48	07:21	17:25 (9) 06:58	15:45 (9) 07:23	16:34
27	07:15 17:06	16:40 (9) 17:45	16:39 (9) 05:51	06:02	05:30	05:26	05:47	06:18	06:49	07:22	17:26 (9) 06:59	15:46 (9) 07:23	16:34
28	07:14 17:08	16:41 (9) 17:46	16:34 (9) 05:49	06:00	05:29	05:26	05:48	06:19	06:50	07:23	17:27 (9) 07:00	15:47 (9) 07:23	16:35
29	07:13 17:09	16:42 (9) 17:47	16:33 (9) 05:48	06:00	05:29	05:26	05:49	06:20	06:51	07:24	17:28 (9) 07:01	15:48 (9) 07:24	16:36
30	07:12 17:10	16:43 (9) 17:48	16:32 (9) 05:47	06:00	05:29	05:26	05:50	06:21	06:52	07:25	17:29 (9) 07:02	15:49 (9) 07:24	16:36
31	07:11 17:12	16:44 (9) 17:49	16:31 (9) 05:46	06:00	05:29	05:26	05:51	06:22	06:53	07:26	17:30 (9) 07:03	15:50 (9) 07:24	16:37
Potential sun hours	296	297	369	399	449	454	460	429	375	345	297	287	4
Total, worst case	588	1258	369	399	449	454	460	429	375	345	738	287	4

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: Y - Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (25)  
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	07:24 16:38	07:10 17:13	06:34 17:47	06:43 19:22	05:56 19:54	18:51 (10) 19:28 (10)	05:27 20:24	05:27 20:35	05:52 20:16	19:16 (10) 19:33	19:09 (10) 19:10 (10)	06:54 18:41	06:28 16:54	07:04 16:29
2	07:24 16:39	07:10 17:14	06:32 17:49	06:41 19:23	05:55 19:56	18:50 (10) 19:26 (10)	05:27 20:25	05:28 20:35	05:53 20:15	19:12 (10) 19:26 (10)	19:31 19:31	06:24 18:40	06:30 16:53	07:05 16:29
3	07:24 16:40	07:08 17:15	06:31 17:50	06:39 19:24	05:54 19:57	18:51 (10) 19:26 (10)	05:26 20:26	05:28 20:35	05:54 20:14	19:09 (10) 19:28 (10)	06:25 19:29	06:56 18:38	06:31 16:52	07:06 16:29
4	07:24 16:41	07:07 17:17	06:29 17:51	06:38 19:25	05:52 19:58	18:52 (10) 19:25 (10)	05:26 20:27	05:29 20:35	05:55 20:13	19:08 (10) 19:30 (10)	06:26 19:28	06:57 18:36	06:32 16:50	07:07 16:28
5	07:24 16:42	07:06 17:18	06:28 17:52	06:36 19:26	05:51 19:59	18:53 (10) 19:25 (10)	05:25 20:27	05:29 20:35	05:56 20:12	19:06 (10) 19:31 (10)	06:27 19:26	06:58 18:35	06:33 16:49	07:08 16:28
6	07:24 16:43	07:05 17:19	06:26 17:53	06:34 19:27	05:50 20:00	18:54 (10) 19:24 (10)	05:25 20:28	05:30 20:35	05:57 20:10	19:05 (10) 19:33 (10)	06:28 19:24	06:59 18:33	06:34 16:48	07:09 16:28
7	07:24 16:44	07:04 17:20	06:25 17:54	06:33 19:29	05:49 20:01	18:55 (10) 19:21 (10)	05:25 20:29	05:31 20:34	05:58 20:09	19:04 (10) 19:34 (10)	06:29 19:23	07:00 18:31	06:36 16:47	07:10 16:28
8	07:24 16:45	07:03 17:22	06:23 17:56	06:31 19:30	05:47 20:02	18:56 (10) 19:20 (10)	05:24 20:29	05:31 20:34	05:59 20:08	19:03 (10) 19:34 (10)	06:30 19:21	07:01 18:30	06:37 16:46	07:11 16:28
9	07:24 16:46	07:02 17:23	06:21 17:57	06:29 19:31	05:46 20:03	18:58 (10) 19:19 (10)	05:24 20:30	05:32 20:34	06:00 20:07	19:02 (10) 19:35 (10)	06:31 19:19	07:02 18:28	06:38 16:45	07:12 16:28
10	07:24 16:47	07:01 17:24	06:20 17:58	06:28 19:32	05:45 20:04	19:00 (10) 19:17 (10)	05:24 20:30	05:33 20:33	06:01 20:05	19:01 (10) 19:36 (10)	06:32 19:17	07:03 18:26	06:39 16:44	07:12 16:28
11	07:24 16:48	06:59 17:25	06:18 17:59	06:26 19:33	05:44 20:05	19:10 (10) 19:11 (10)	05:44 20:31	05:33 20:33	06:02 20:04	18:59 (10) 19:35 (10)	06:33 19:16	07:04 18:25	06:40 16:43	07:13 16:28
12	07:23 16:49	06:58 17:27	06:16 18:00	06:25 19:34	05:43 20:06	19:04 (10) 19:12 (10)	05:43 20:32	05:34 20:32	06:03 20:03	18:58 (10) 19:36 (10)	06:34 19:14	07:05 18:23	06:42 16:42	07:14 16:28
13	07:23 16:50	06:57 17:28	06:15 18:01	06:23 19:35	05:42 20:07	19:02 (10) 19:14 (10)	05:42 20:32	05:35 20:32	06:04 20:01	18:58 (10) 19:36 (10)	06:35 19:12	07:06 18:22	06:43 16:41	07:15 16:28
14	07:23 16:51	06:56 17:29	06:13 18:02	06:21 19:36	05:41 20:08	18:59 (10) 19:14 (10)	05:41 20:32	05:36 20:31	06:05 20:00	18:57 (10) 19:36 (10)	06:36 19:11	07:07 18:20	06:44 16:40	07:16 16:28
15	07:22 16:52	06:54 17:30	06:11 18:03	06:20 19:37	05:40 20:09	18:57 (10) 19:15 (10)	05:40 20:33	05:36 20:31	06:06 19:59	18:57 (10) 19:35 (10)	06:37 19:09	07:09 18:18	06:45 16:39	07:16 16:29
16	07:22 16:53	06:53 17:32	06:10 18:05	06:18 19:38	05:39 20:10	18:56 (10) 19:16 (10)	05:39 20:33	05:37 20:30	06:07 19:57	18:56 (10) 19:34 (10)	06:38 19:07	07:10 18:17	06:46 16:38	07:17 16:29
17	07:22 16:54	06:52 17:33	06:08 18:06	06:17 19:39	05:38 20:11	18:54 (10) 19:17 (10)	05:38 20:34	05:38 20:29	06:08 19:56	18:56 (10) 19:33 (10)	06:39 19:05	07:11 18:15	06:48 16:37	07:18 16:29
18	07:21 16:56	06:50 17:34	06:06 18:07	06:15 19:40	05:37 20:12	18:54 (10) 19:18 (10)	05:37 20:34	05:39 20:29	06:09 19:54	18:56 (10) 19:31 (10)	06:40 19:04	07:12 18:14	06:49 16:36	07:18 16:30
19	07:20 16:57	06:49 17:35	06:05 18:08	06:14 19:42	05:36 20:13	18:52 (10) 19:19 (10)	05:36 20:34	05:40 20:28	06:10 19:53	18:56 (10) 19:30 (10)	06:41 19:02	07:13 18:12	06:50 16:36	07:19 16:30
20	07:20 16:58	06:47 17:37	06:03 18:09	06:12 19:43	05:35 20:14	18:52 (10) 19:20 (10)	05:35 20:35	05:40 20:27	06:11 19:51	18:55 (10) 19:28 (10)	06:42 19:00	07:14 18:11	06:51 16:35	07:20 16:30
21	07:19 16:59	06:46 17:38	06:01 18:10	06:11 19:44	05:34 20:15	18:51 (10) 19:21 (10)	05:34 20:35	05:41 20:27	06:12 19:50	18:56 (10) 19:27 (10)	06:43 18:59	07:15 18:09	06:52 16:34	07:20 16:31
22	07:19 17:00	06:45 17:39	06:00 18:11	06:09 19:45	05:33 20:16	18:51 (10) 19:22 (10)	05:33 20:35	05:42 20:26	06:13 19:48	18:56 (10) 19:25 (10)	06:44 18:57	07:17 18:08	06:54 16:34	07:21 16:31
23	07:18 17:02	06:43 17:40	05:58 18:12	06:08 19:46	05:33 20:17	18:51 (10) 19:24 (10)	05:33 20:35	05:43 20:25	06:14 19:47	18:56 (10) 19:24 (10)	06:45 18:55	07:18 18:06	06:55 16:33	07:21 16:32
24	07:17 17:03	06:42 17:41	05:56 18:13	06:06 19:47	05:32 20:18	18:50 (10) 19:24 (10)	05:32 20:35	05:44 20:24	06:15 19:45	18:56 (10) 19:23 (10)	06:46 18:53	07:19 18:05	06:56 16:32	07:22 16:32
25	07:17 17:04	06:40 17:43	05:54 18:14	06:05 19:48	05:31 20:19	18:50 (10) 19:26 (10)	05:25 20:36	05:45 20:23	06:16 19:44	18:57 (10) 19:21 (10)	06:47 18:52	07:20 17:03	06:57 16:32	07:22 16:33
26	07:16 17:05	06:39 17:44	05:53 18:16	06:03 19:49	05:30 20:20	18:49 (10) 19:26 (10)	05:25 20:36	05:46 20:22	06:17 19:42	18:57 (10) 19:20 (10)	06:48 18:50	07:21 17:02	06:58 16:31	07:23 16:34
27	07:15 17:06	06:37 17:45	05:51 18:17	06:02 19:50	05:30 20:20	18:50 (10) 19:27 (10)	05:26 20:36	05:47 20:21	06:18 19:41	18:58 (10) 19:18 (10)	06:49 18:48	07:22 17:01	06:59 16:31	07:23 16:34
28	07:14 17:08	06:36 17:46	05:49 18:18	06:00 19:51	05:29 20:21	18:50 (10) 19:29 (10)	05:26 20:36	05:48 20:20	06:19 19:39	18:59 (10) 19:16 (10)	06:50 18:46	07:23 16:59	07:00 16:30	07:23 16:35
29	07:13 17:09		06:48 19:19	05:59 19:52	05:29 20:22	18:49 (10) 19:28 (10)	05:26 20:36	05:49 20:19	06:20 19:37	19:00 (10) 19:15 (10)	06:51 18:45	07:24 16:58	07:02 16:30	07:24 16:36
30	07:12 17:10		06:46 19:20	05:58 19:53	05:28 20:23	18:50 (10) 19:28 (10)	05:27 20:36	05:50 20:18	06:21 19:36	19:02 (10) 19:13 (10)	06:52 18:43	07:24 16:57	07:03 16:30	07:24 16:36
31	07:11 17:12		06:44 19:21	05:57 20:24	05:27 20:24	18:51 (10) 19:29 (10)	05:27 20:36	05:51 20:17	06:22 19:34	19:04 (10) 19:12 (10)	06:53 18:42	07:24 16:56	07:04 16:30	07:24 16:37
Potential sun hours	296	297	369	399	449	530	449	454	460	429	375	345	297	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: ShadowFlickeringFoggiaMR Shadow receptor: Z - Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (26)  
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	07:24 16:38	07:11 17:13	16:17 (11) 16:49 (11)	06:34 17:47	16:16 (11) 17:00 (11)	06:43 19:22	05:56 19:55	19:11 (12) 19:23 (12)	05:27 20:25
2	07:24 16:39	07:10 17:14	16:16 (11) 16:50 (11)	06:33 17:49	16:18 (11) 16:59 (11)	06:41 19:23	05:55 19:56	19:16 (12) 19:18 (12)	05:27 20:25
3	07:25 16:40	07:09 17:15	16:16 (11) 16:52 (11)	06:31 17:50	16:19 (11) 16:57 (11)	06:39 19:24	05:54 19:57		05:26 20:26
4	07:25 16:41	07:08 17:17	16:15 (11) 16:53 (11)	06:29 17:51	16:20 (11) 16:55 (11)	06:38 19:25	05:52 19:58		05:26 20:27
5	07:25 16:42	07:06 17:18	16:13 (11) 16:54 (11)	06:28 17:52	16:23 (11) 16:53 (11)	06:36 19:26	05:51 19:59		05:25 20:27
6	07:25 16:43	07:05 17:19	16:13 (11) 16:55 (11)	06:26 17:53	16:25 (11) 16:50 (11)	06:34 19:28	05:50 20:00		05:25 20:28
7	07:24 16:44	07:04 17:20	16:12 (11) 16:57 (11)	06:25 17:54	16:29 (11) 16:46 (11)	06:33 19:29	05:49 20:01		05:25 20:29
8	07:24 16:45	07:03 17:22	16:12 (11) 16:59 (11)	06:23 17:56	06:31 19:30	06:31 19:30	05:48 20:02		05:25 20:29
9	07:24 16:46	07:02 17:23	16:12 (11) 17:00 (11)	06:21 17:57	06:29 19:31	06:29 19:31	05:46 20:03		05:24 20:30
10	07:24 16:47	07:01 17:24	16:11 (11) 17:01 (11)	06:20 17:58	06:28 19:32	06:28 19:32	05:45 20:04		05:24 20:31
11	07:24 16:48	07:00 17:26	16:11 (11) 17:02 (11)	06:18 17:59	06:26 19:33	06:26 19:33	05:44 20:05		05:24 20:31
12	07:23 16:49	06:58 17:27	16:11 (11) 17:04 (11)	06:16 18:00	06:25 19:34	06:25 19:34	05:43 20:06		05:24 20:32
13	07:23 16:50	06:57 17:28	16:11 (11) 17:06 (11)	06:15 18:01	06:23 19:35	06:23 19:35	05:42 20:07		05:24 20:32
14	07:23 16:51	06:56 17:29	16:10 (11) 17:06 (11)	06:13 18:02	06:21 19:36	19:13 (12) 19:14 (12)	05:41 20:08		05:24 20:33
15	07:22 16:52	06:54 17:31	16:10 (11) 17:08 (11)	06:11 18:04	06:20 19:37	19:12 (12) 19:16 (12)	05:40 20:09		05:24 20:33
16	07:22 16:53	06:53 17:32	16:10 (11) 17:09 (11)	06:10 18:05	06:18 19:38	19:10 (12) 19:16 (12)	05:39 20:10		05:24 20:33
17	07:22 16:54	06:52 17:33	16:10 (11) 17:08 (11)	06:08 18:06	06:17 19:39	19:09 (12) 19:18 (12)	05:38 20:11		05:24 20:34
18	07:21 16:56	06:50 17:34	16:10 (11) 17:08 (11)	06:06 18:07	06:15 19:41	19:07 (12) 19:18 (12)	05:37 20:12		05:24 20:34
19	07:21 16:57	06:49 17:35	16:10 (11) 17:08 (11)	06:05 18:08	06:14 19:42	19:06 (12) 19:19 (12)	05:36 20:13		05:24 20:34
20	07:20 16:58	06:48 17:37	16:10 (11) 17:08 (11)	06:03 18:09	06:12 19:43	19:06 (12) 19:20 (12)	05:35 20:14		05:24 20:35
21	07:19 16:59	06:46 17:38	16:10 (11) 17:07 (11)	06:01 18:10	06:11 19:44	19:06 (12) 19:22 (12)	05:34 20:15		05:24 20:35
22	07:19 17:00	06:45 17:39	16:11 (11) 17:07 (11)	06:00 18:11	06:09 19:45	19:05 (12) 19:22 (12)	05:34 20:16		05:24 20:35
23	07:18 17:02	06:43 17:40	16:11 (11) 17:06 (11)	05:58 18:12	06:08 19:46	19:05 (12) 19:24 (12)	05:33 20:17		05:25 20:35
24	07:17 17:03	16:35 (11) 16:37 (11)	06:42 17:42	16:12 (11) 17:13	05:56 18:13	06:06 19:47	19:05 (12) 19:24 (12)	05:32 20:18	05:25 20:35
25	07:17 17:04	16:28 (11) 16:39 (11)	06:40 17:43	16:12 (11) 17:14	05:55 18:15	06:05 19:48	19:05 (12) 19:26 (12)	05:31 20:19	05:25 20:36
26	07:16 17:05	16:25 (11) 16:40 (11)	06:39 17:44	16:13 (11) 17:14	05:53 18:16	06:03 19:49	19:05 (12) 19:26 (12)	05:31 20:20	05:25 20:36
27	07:15 17:07	16:24 (11) 16:42 (11)	06:37 17:45	16:14 (11) 17:15	05:51 18:17	06:02 19:50	19:06 (12) 19:27 (12)	05:30 20:20	05:26 20:36
28	07:14 17:08	16:22 (11) 16:44 (11)	06:36 17:46	16:15 (11) 17:16	05:50 18:18	06:00 19:51	19:07 (12) 19:28 (12)	05:29 20:21	05:26 20:36
29	07:13 17:09	16:21 (11) 16:45 (11)		06:48 19:19	05:59 19:52	19:07 (12) 19:26 (12)	05:29 20:22		05:27 20:36
30	07:12 17:10	16:19 (11) 16:46 (11)		06:46 19:20	05:58 19:54	19:09 (12) 19:25 (12)	05:28 20:23		05:27 20:36
31	07:12 17:12	16:18 (11) 16:48 (11)		06:44 19:21			05:28 20:24		
Potential sun hours	296	297	369	399	449	454			
Total, worst case	149	1398	230	248	14				

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: Z - Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (26)  
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	05:27 20:36	05:52 20:16	06:23 19:33	06:54 18:41	06:28 16:54	15:40 (11) 16:29
2	05:28 20:35	05:53 20:15	06:24 19:31	06:55 18:40	06:30 16:53	50 15:41 (11) 16:29
3	05:28 20:35	05:54 20:14	06:25 19:29	06:56 18:38	06:31 16:52	48 16:29 (11) 16:29
4	05:29 20:35	05:55 20:13	06:26 19:28	06:57 18:36	06:32 16:51	46 15:42 (11) 16:29
5	05:30 20:35	05:56 20:12	06:27 19:26	06:58 18:35	06:33 16:49	45 15:43 (11) 16:28
6	05:30 20:35	05:57 20:10	06:28 19:24	06:59 18:33	17:08 (11) 16:48	42 16:25 (11) 16:28
7	05:31 20:34	05:58 20:09	06:29 19:23	07:00 18:31	17:03 (11) 16:47	41 16:25 (11) 16:28
8	05:31 20:34	05:59 20:08	06:30 19:21	07:01 18:30	16:59 (11) 16:46	38 15:45 (11) 16:28
9	05:32 20:34	06:00 20:07	06:31 19:21	07:02 18:30	16:56 (11) 16:45	37 15:47 (11) 16:28
10	05:33 20:33	06:01 20:05	06:32 19:18	07:03 18:26	16:55 (11) 16:44	34 15:48 (11) 16:28
11	05:33 20:33	06:02 20:04	19:23 (12) 19:29 (12)	06:33 19:16	07:04 18:25	36 16:44 (11) 16:28
12	05:34 20:32	06:03 20:03	19:19 (12) 19:32 (12)	06:34 19:14	07:05 18:23	40 17:32 (11) 16:43
13	05:35 20:32	06:04 20:01	19:17 (12) 19:34 (12)	06:35 19:12	07:07 18:22	42 16:49 (11) 16:41
14	05:36 20:31	06:05 20:00	19:15 (12) 19:34 (12)	06:36 19:11	07:08 18:20	45 16:47 (11) 16:40
15	05:36 20:31	06:06 19:59	19:14 (12) 19:35 (12)	06:37 19:09	07:09 18:18	48 17:35 (11) 16:39
16	05:37 20:30	06:07 19:57	19:13 (12) 19:34 (12)	06:38 19:07	07:10 18:17	22 16:46 (11) 16:45
17	05:38 20:29	06:08 19:56	19:12 (12) 19:33 (12)	06:39 19:06	07:11 18:15	49 16:45 (11) 16:37
18	05:39 20:29	06:09 19:54	19:11 (12) 19:31 (12)	06:40 19:04	07:12 18:14	51 16:43 (11) 16:37
19	05:40 20:28	06:10 19:53	19:11 (12) 19:30 (12)	06:41 19:02	07:13 18:12	11 16:42 (11) 16:36
20	05:41 20:27	06:11 19:51	19:10 (12) 19:28 (12)	06:42 19:00	07:14 18:11	56 16:41 (11) 16:35
21	05:41 20:27	06:12 19:50	19:10 (12) 19:27 (12)	06:43 18:59	07:16 18:09	57 16:41 (11) 16:34
22	05:42 20:26	06:13 19:48	19:10 (12) 19:25 (12)	06:44 18:57	07:17 18:08	57 16:41 (11) 16:34
23	05:43 20:25	06:14 19:47	19:10 (12) 19:24 (12)	06:45 18:55	07:18 18:06	58 16:40 (11) 16:33
24	05:44 20:24	06:15 19:45	19:10 (12) 19:23 (12)	06:46 18:53	07:19 18:05	58 16:40 (11) 16:32
25	05:45 20:23	06:16 19:44	19:10 (12) 19:21 (12)	06:47 18:52	06:20 17:04	59 15:39 (11) 16:32
26	05:46 20:22	06:17 19:42	19:11 (12) 19:20 (12)	06:48 18:50	06:21 17:02	59 15:40 (11) 16:31
27	05:47 20:21	06:18 19:41	19:12 (12) 19:18 (12)	06:49 18:48	06:22 17:01	58 15:40 (11) 16:31
28	05:48 20:20	06:19 19:39	19:13 (12) 19:16 (12)	06:50 18:47	06:24 16:59	57 15:40 (11) 16:30
29	05:49 20:19	06:20 19:37	06:52 18:45	06:25 16:58	15:39 (11) 16:34	07:02 16:30
30	05:50 20:18	06:21 19:36	06:53 18:43	06:26 16:57	15:40 (11) 16:33	07:03 16:30
31	05:51 20:17	06:22 19:34	06:54 18:43	06:27 16:55	15:40 (11) 16:32 (11)	07:04 16:30
Potential sun hours	460	429	375	345	297	287
Total, worst case		263		1244	561	

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: AA - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (27)  
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	07:24 16:38	07:10 17:13	06:34 17:47	06:43 19:22	05:56 19:54	05:27 20:24	05:27 20:35	05:52 20:16	06:23 19:32	06:53 18:41	06:28 16:54	07:03 16:29
2	07:24 16:39	07:09 17:14	06:32 17:48	06:41 19:23	05:55 19:55	05:26 20:25	05:28 20:35	05:53 20:15	06:24 19:31	06:54 18:40	06:29 16:53	07:05 16:29
3	07:24 16:40	07:08 17:15	06:31 17:50	06:39 19:24	05:54 19:56	05:26 20:26	05:28 20:35	05:54 20:14	06:25 19:29	06:56 18:38	06:31 16:52	07:06 16:29
4	07:24 16:41	07:07 17:17	06:29 17:51	06:38 19:25	05:52 19:58	05:26 20:26	05:29 20:35	05:55 20:13	06:26 19:27	06:57 18:36	06:32 16:50	07:07 16:28
5	07:24 16:42	07:06 17:18	06:28 17:52	06:36 19:26	05:51 19:59	05:25 20:27	05:29 20:35	05:55 20:11	06:27 19:26	06:58 18:35	06:33 16:49	07:08 16:28
6	07:24 16:43	07:05 17:19	06:26 17:53	06:34 19:27	05:50 20:00	05:25 20:28	05:30 20:34	05:56 20:10	06:28 19:24	06:59 18:33	06:34 16:48	07:09 16:28
7	07:24 16:44	07:04 17:20	06:24 17:54	06:33 19:28	05:49 20:01	05:25 20:28	05:31 20:34	05:57 20:09	06:29 19:22	07:00 18:31	06:35 16:47	07:09 16:28
8	07:24 16:45	07:03 17:22	06:23 17:55	06:31 19:29	05:47 20:02	05:24 20:29	05:31 20:34	05:59 20:08	06:30 19:21	07:01 18:30	06:37 16:46	07:10 16:28
9	07:24 16:46	07:02 17:23	06:21 17:57	06:29 19:31	05:46 20:03	05:24 20:30	05:32 20:33	06:00 20:06	06:31 19:19	07:02 18:28	06:38 16:45	07:11 16:28
10	07:24 16:47	07:00 17:24	06:20 17:58	06:28 19:32	05:45 20:04	05:24 20:30	05:33 20:33	06:01 20:05	06:32 19:17	07:03 18:26	06:39 16:44	07:12 16:28
11	07:23 16:48	06:59 17:25	06:18 17:59	06:26 19:33	05:44 20:05	05:24 20:31	05:33 20:32	06:02 20:04	06:33 19:16	07:04 18:25	06:40 16:43	07:13 16:28
12	07:23 16:49	06:58 17:27	06:16 18:00	06:24 19:34	05:43 20:06	05:24 20:31	05:34 20:32	06:03 20:03	06:34 19:14	07:05 18:23	06:41 16:42	07:14 16:28
13	07:23 16:50	06:57 17:28	06:15 18:01	06:23 19:35	05:42 20:07	05:24 20:32	05:35 20:32	06:04 20:01	06:35 19:12	07:06 18:21	06:43 16:41	07:15 16:28
14	07:23 16:51	06:55 17:29	06:13 18:02	06:21 19:36	05:41 20:08	05:23 20:32	05:36 20:31	06:05 20:00	06:36 19:10	07:07 18:20	06:44 16:40	07:15 16:28
15	07:22 16:52	06:54 17:30	06:11 18:03	06:20 19:37	05:40 20:09	05:23 20:33	05:36 20:30	06:06 19:58	06:37 19:09	07:08 18:18	06:45 16:39	07:16 16:29
16	07:22 16:53	06:53 17:32	06:10 18:04	06:18 19:38	05:39 20:10	05:23 20:33	05:37 20:30	06:07 19:57	06:38 19:07	07:10 18:17	06:46 16:38	07:17 16:29
17	07:21 16:54	06:51 17:33	06:08 18:06	06:17 19:39	05:38 20:11	05:23 20:33	05:38 20:29	06:08 19:56	06:39 19:05	07:11 18:15	06:47 16:37	07:18 16:29
18	07:21 16:56	06:50 17:34	06:06 18:07	06:15 19:40	05:37 20:12	05:24 20:34	05:39 20:29	06:09 19:54	06:40 19:04	07:12 18:14	06:49 16:36	07:18 16:30
19	07:20 16:57	06:49 17:35	06:05 18:08	06:13 19:41	05:36 20:13	05:24 20:34	05:40 20:28	06:10 19:53	06:41 19:02	07:13 18:12	06:50 16:36	07:19 16:30
20	07:20 16:58	06:47 17:37	06:03 18:09	06:12 19:42	05:35 20:14	05:24 20:34	05:40 20:27	06:11 19:51	06:42 19:00	07:14 18:11	06:51 16:35	07:20 16:30
21	07:19 16:59	06:46 17:38	06:01 18:10	06:10 19:44	05:34 20:15	05:24 20:35	05:41 20:26	06:12 19:50	06:43 18:58	07:15 18:09	06:52 16:34	07:20 16:31
22	07:18 17:00	06:44 17:39	05:59 18:11	06:09 19:45	05:33 20:16	05:24 20:35	05:42 20:26	06:13 19:48	06:44 18:57	07:16 18:08	06:53 16:34	07:21 16:31
23	07:18 17:01	06:43 17:40	05:58 18:12	06:07 19:46	05:33 20:17	05:24 20:35	05:43 20:25	06:14 19:47	06:45 18:55	07:18 18:06	06:55 16:33	07:21 16:32
24	07:17 17:03	06:41 17:41	05:56 18:13	06:06 19:47	05:32 20:18	05:25 20:35	05:44 20:24	06:15 19:45	06:46 18:53	07:19 18:05	06:56 16:32	07:22 16:32
25	07:16 17:04	06:40 17:43	05:54 18:14	06:05 19:48	05:31 20:18	05:25 20:35	05:45 20:23	06:16 19:44	06:47 18:51	07:20 17:03	06:57 16:32	07:22 16:33
26	07:16 17:05	06:38 17:44	05:53 18:15	06:03 19:49	05:30 20:19	05:25 20:35	05:46 20:22	06:17 19:42	06:48 18:50	07:21 17:02	06:58 16:31	07:22 16:34
27	07:15 17:06	06:37 17:45	05:51 18:17	06:02 19:50	05:30 20:20	05:26 20:35	05:47 20:21	06:18 19:40	06:49 18:48	07:22 17:01	06:59 16:31	07:23 16:34
28	07:14 17:08	06:35 17:46	05:49 18:18	06:00 19:51	05:29 20:21	05:26 20:35	05:48 20:20	06:19 19:39	06:50 18:46	07:23 16:59	07:00 16:30	07:23 16:35
29	07:13 17:09		06:48 19:19	05:59 19:52	05:29 20:22	05:26 20:35	05:49 20:19	06:20 19:37	06:51 18:45	07:24 16:58	07:01 16:30	07:23 16:36
30	07:12 17:10		06:46 19:20	05:58 19:53	05:28 20:23	05:27 20:35	05:50 20:18	06:21 19:36	06:52 18:43	07:25 16:57	07:02 16:30	07:24 16:36
31	07:11 17:11		06:44 19:21		05:27 20:23		05:51 20:17	06:22 19:34		06:27 16:55		07:24 16:37
Potential sun hours Total, worst case	296	297	369	399	449	454	460	429	375	345	297	287

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 (WTG causing flicker first time)	Last time (hh:mm) with flicker (WTG causing flicker last time)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: AB - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (28)  
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	07:24 16:38	07:10 17:13	16:21 (9) 06:34	16:29 (9) 06:43	05:56 05:27	05:27 05:27	05:52 06:23	06:54 06:28			06:28 15:46 (9)	07:04 16:29
2	07:24 16:39	07:09 17:14	16:21 (9) 06:32	16:33 (9) 06:41	05:55 05:27	05:28 05:28	05:53 06:24	06:55 06:55	06:24 06:55		06:30 16:53	07:05 16:29 (9)
3	07:24 16:40	07:08 17:15	16:20 (9) 06:31	16:39 06:39	05:54 05:26	05:28 05:28	05:54 06:25	06:56 06:56	06:25 06:56		06:31 16:52	07:06 16:29 (9)
4	07:24 16:41	07:07 17:17	16:18 (9) 06:29	16:51 06:38	05:52 05:26	05:29 05:29	05:55 06:26	06:57 06:57	06:26 06:57		06:32 16:50	07:07 16:28 (9)
5	07:24 16:42	07:06 17:18	16:18 (9) 06:28	16:54 (9) 06:36	05:51 05:25	05:29 05:29	05:56 06:27	06:58 06:58	06:27 06:58		06:33 16:49	07:08 16:28 (9)
6	07:24 16:43	07:05 17:19	16:18 (9) 06:26	16:54 (9) 06:34	05:50 05:25	05:30 05:30	05:57 06:28	06:59 06:59	06:28 06:59		06:34 16:48	07:09 16:28 (9)
7	07:24 16:44	07:04 17:20	16:17 (9) 06:25	16:57 (9) 06:33	05:49 05:25	05:31 05:31	05:58 06:29	07:00 07:00	06:29 07:00		06:36 16:47	07:10 16:28 (9)
8	07:24 16:45	07:03 17:22	16:17 (9) 06:23	16:59 (9) 06:31	05:47 05:24	05:31 05:31	05:59 06:30	07:01 07:01	06:30 07:01		06:37 16:46	07:11 16:28 (9)
9	07:24 16:46	07:02 17:23	16:17 (9) 06:21	17:00 (9) 06:29	05:46 05:24	05:32 05:32	06:00 06:31	07:02 07:02	06:31 07:02		06:38 16:45	07:12 16:28 (9)
10	07:24 16:47	07:01 17:24	16:16 (9) 06:20	17:01 (9) 06:28	05:45 05:24	05:33 05:33	06:01 06:32	07:03 07:03	06:32 07:03		06:39 16:44	07:12 16:28 (9)
11	07:24 16:48	06:59 17:25	16:16 (9) 06:18	17:02 (9) 06:26	05:44 05:24	05:33 05:33	06:02 06:33	07:04 07:04	06:33 07:04		17:09 (9) 06:40	07:13 16:28 (9)
12	07:23 16:49	06:58 17:27	16:16 (9) 06:16	17:02 (9) 06:25	05:43 05:24	05:34 05:34	06:03 06:34	07:05 07:05	06:34 07:05	11	17:20 (9) 06:43	07:14 16:28 (9)
13	07:23 16:50	06:57 17:28	16:16 (9) 06:15	17:04 (9) 06:23	05:42 05:24	05:35 05:35	06:04 06:35	07:06 07:06	06:35 07:06	20	17:24 (9) 06:42	07:15 16:28 (9)
14	07:23 16:51	06:56 17:29	16:16 (9) 06:13	17:05 (9) 06:21	05:41 05:24	05:36 05:36	06:05 06:36	07:08 07:08	06:36 07:08	26	17:27 (9) 06:41	07:16 16:28 (9)
15	07:22 16:52	06:54 17:30	16:16 (9) 06:11	17:06 (9) 06:20	05:40 05:23	05:36 05:36	06:06 06:37	07:09 07:09	06:37 07:09		18:20 (9) 06:40	07:17 16:28 (9)
16	07:22 16:53	06:53 17:32	16:16 (9) 06:10	17:07 (9) 06:18	05:40 05:23	05:37 05:37	06:07 06:38	07:10 07:10	06:38 07:10	34	17:30 (9) 06:39	07:18 16:28 (9)
17	07:21 16:54	06:52 17:33	16:16 (9) 06:08	17:08 (9) 06:17	05:38 05:24	05:38 05:38	06:08 06:39	07:11 07:11	06:39 07:11	37	17:31 (9) 06:38	07:19 16:28 (9)
18	07:21 16:56	06:50 17:34	16:17 (9) 06:06	17:09 (9) 06:15	05:38 05:24	05:39 05:39	06:09 06:40	07:12 07:12	06:40 07:12	40	17:33 (9) 06:37	07:20 16:28 (9)
19	07:20 16:57	06:49 17:35	16:17 (9) 06:05	17:10 (9) 06:14	05:36 05:24	05:40 05:40	06:10 06:41	07:13 07:13	06:41 07:13	42	17:34 (9) 06:36	07:21 16:28 (9)
20	07:20 16:58	06:47 17:37	16:18 (9) 06:03	17:11 (9) 06:12	05:35 05:24	05:40 05:40	06:11 06:42	07:14 07:14	06:42 07:14	43	17:34 (9) 06:36	07:22 16:28 (9)
21	07:19 16:59	06:46 17:38	16:18 (9) 06:01	17:12 (9) 06:10	05:34 05:24	05:41 05:41	06:12 06:43	07:15 07:15	06:43 07:15	46	17:35 (9) 06:35	07:23 16:28 (9)
22	07:19 17:00	06:45 17:39	16:19 (9) 06:00	17:13 (9) 06:09	05:33 05:24	05:42 05:42	06:13 06:44	07:17 07:17	06:44 07:17	47	17:35 (9) 06:34	07:24 16:28 (9)
23	07:18 17:02	06:43 17:40	16:19 (9) 05:58	17:14 (9) 06:08	05:33 05:24	05:43 05:43	06:14 06:45	07:18 07:18	06:45 07:18	48	17:36 (9) 06:34	07:25 16:28 (9)
24	07:17 17:03	06:42 17:41	16:21 (9) 05:56	17:15 (9) 06:06	05:32 05:25	05:45 05:45	06:15 06:46	07:19 07:19	06:46 07:19	49	17:36 (9) 06:33	07:26 16:28 (9)
25	07:17 17:04	16:31 (9) 06:40	16:21 (9) 05:54	17:16 (9) 06:05	05:31 05:25	05:45 05:45	06:16 06:47	07:20 07:20	06:47 07:20	50	17:36 (9) 06:32	07:27 16:28 (9)
26	07:16 17:05	16:39 (9) 06:39	16:23 (9) 05:53	17:17 (9) 06:03	05:30 05:25	05:46 05:46	06:17 06:48	07:21 07:21	06:48 07:21	51	17:37 (9) 06:31	07:28 16:28 (9)
27	07:15 17:06	16:40 (9) 06:37	16:24 (9) 05:51	17:18 (9) 06:02	05:30 05:26	05:47 05:47	06:18 06:49	07:22 07:22	06:49 07:22	51	17:37 (9) 06:31	07:29 16:28 (9)
28	07:14 17:08	16:41 (9) 06:36	16:27 (9) 05:49	17:19 (9) 06:00	05:29 05:26	05:48 05:48	06:19 06:50	07:23 07:23	06:50 07:23	50	17:38 (9) 06:30	07:30 16:28 (9)
29	07:13 17:09	16:42 (9) 06:35	16:27 (9) 05:48	17:20 (9) 05:59	05:29 05:26	05:49 05:49	06:20 06:51	07:24 07:24	06:51 07:24	49	17:39 (9) 06:29	07:31 16:28 (9)
30	07:12 17:10	16:43 (9) 06:34	16:28 (9) 05:47	17:21 (9) 05:58	05:28 05:26	05:50 05:50	06:21 06:52	07:25 07:25	06:52 07:25	47	17:40 (9) 06:28	07:32 16:28 (9)
31	07:11 17:12	16:44 (9) 06:33	16:28 (9) 05:46	17:22 (9) 05:57	05:27 05:26	05:51 05:51	06:22 06:53	07:26 07:26	06:53 07:26	46	17:41 (9) 06:27	07:33 16:28 (9)
Potential sun hours	296	297	369	399	449	454	460	429	375	345	297	287
Total, worst case	121	1165	39	399	449	454	460	429	375	345	867	485

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: AC - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (29)  
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	07:24 16:38	07:10 17:13	07:32 (2) 08:03 (2)	06:34 17:47	17:14 (9) 19:22	06:43 19:54	05:27 20:24
2	07:24 16:39	07:09 17:14	07:33 (2) 08:02 (2)	06:32 17:49	17:14 (9) 19:23	06:41 19:56	05:26 20:25
3	07:24 16:40	07:08 17:15	07:34 (2) 08:02 (2)	06:31 17:50	17:14 (9) 19:24	06:39 19:57	05:26 20:26
4	07:24 16:41	07:07 17:17	07:34 (2) 08:00 (2)	06:29 17:51	17:14 (9) 19:25	06:38 19:58	05:26 20:27
5	07:24 16:42	07:06 17:18	07:35 (2) 07:59 (2)	06:28 17:52	17:15 (9) 19:26	06:36 19:59	05:25 20:27
6	07:24 16:43	07:05 17:19	07:37 (2) 07:58 (2)	06:26 17:53	17:15 (9) 19:27	06:34 20:00	05:25 20:28
7	07:24 16:44	07:04 17:20	07:39 (2) 07:56 (2)	06:24 17:54	17:16 (9) 19:29	06:33 20:01	05:25 20:29
8	07:24 16:45	07:46 (2) 07:47 (2)	07:03 17:22	06:23 17:55	17:19 (9) 19:30	06:31 20:02	05:24 20:29
9	07:24 16:46	07:46 (2) 07:49 (2)	07:02 17:23	06:21 17:57	17:28 (9) 19:31	06:29 20:03	05:24 20:30
10	07:24 16:47	07:46 (2) 07:51 (2)	07:01 17:24	06:20 17:58	19:32	06:28 20:04	05:24 20:30
11	07:24 16:48	07:45 (2) 07:51 (2)	06:59 17:25	06:18 17:59	06:26 19:33	05:44 20:05	05:24 20:31
12	07:23 16:49	07:45 (2) 07:53 (2)	06:58 17:27	06:16 18:00	06:24 19:34	05:43 20:06	05:24 20:31
13	07:23 16:50	07:45 (2) 07:54 (2)	06:57 17:28	06:15 18:01	06:23 19:35	05:42 20:07	05:24 20:32
14	07:23 16:51	07:44 (2) 07:55 (2)	06:56 17:29	06:13 18:02	06:21 19:36	05:41 20:08	05:23 20:32
15	07:22 16:52	07:44 (2) 07:56 (2)	06:54 17:30	06:11 18:03	06:20 19:37	05:40 20:09	05:23 20:33
16	07:22 16:53	07:43 (2) 07:57 (2)	06:53 17:32	06:10 18:05	06:18 19:38	05:39 20:10	05:23 20:33
17	07:21 16:54	07:43 (2) 07:58 (2)	06:52 17:33	06:08 18:06	06:17 19:39	05:38 20:11	05:23 20:34
18	07:21 16:56	07:42 (2) 07:58 (2)	06:50 17:34	06:06 18:07	06:15 19:40	05:37 20:12	05:24 20:34
19	07:20 16:57	07:42 (2) 08:00 (2)	06:49 17:35	06:05 18:08	06:13 19:41	05:36 20:13	05:24 20:34
20	07:20 16:58	07:41 (2) 08:00 (2)	06:47 17:37	06:03 18:09	06:12 19:43	05:35 20:14	05:24 20:35
21	07:19 16:59	07:40 (2) 08:00 (2)	06:46 17:38	06:01 18:10	06:10 19:44	05:34 20:15	05:24 20:35
22	07:19 17:00	07:40 (2) 08:02 (2)	06:45 17:39	06:00 18:11	06:09 19:45	05:33 20:16	05:24 20:35
23	07:18 17:01	07:39 (2) 08:02 (2)	06:43 17:40	05:58 18:12	06:07 19:46	05:33 20:17	05:24 20:35
24	07:17 17:03	07:38 (2) 08:02 (2)	06:42 17:41	17:19 (9) 18:13	05:56 19:47	05:32 20:18	05:25 20:35
25	07:16 17:04	07:37 (2) 08:02 (2)	06:40 17:43	17:16 (9) 18:14	05:54 19:48	05:31 20:19	05:25 20:35
26	07:16 17:05	07:36 (2) 08:02 (2)	06:39 17:44	17:16 (9) 18:15	05:53 19:49	05:30 20:19	05:25 20:36
27	07:15 17:06	07:35 (2) 08:02 (2)	06:37 17:45	17:15 (9) 18:17	05:51 19:50	05:30 20:20	05:26 20:36
28	07:14 17:08	07:35 (2) 08:03 (2)	06:36 17:46	17:14 (9) 18:18	05:49 19:51	05:29 20:21	05:26 20:36
29	07:13 17:09	07:34 (2) 08:03 (2)		06:48 19:19	05:59 19:52	05:29 20:22	05:26 20:36
30	07:12 17:10	07:33 (2) 08:03 (2)		06:46 19:20	05:58 19:53	05:28 20:23	05:27 20:36
31	07:11 17:11	07:32 (2) 08:03 (2)		06:44 19:21		05:27 20:24	
Potential sun hours	296	297	369	399	449	454	
Total, worst case	422	218	110				

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: ShadowFlickeringFoggiaMR Shadow receptor: AC - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (29)  
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	05:27	05:52	06:23	06:53		06:28		07:04
	20:35	20:16	19:32	18:41		16:54		16:29
2	05:28	05:53	06:24	06:55		06:29		07:05
	20:35	20:15	19:31	18:40		16:53		16:29
3	05:28	05:54	06:25	06:56		06:31	07:11 (2)	07:06
	20:35	20:14	19:29	18:38		16:52	13	07:24 (2)
4	05:29	05:55	06:26	06:57		06:32		07:09 (2)
	20:35	20:13	19:27	18:36		16:50	17	07:26 (2)
5	05:29	05:56	06:27	06:58	17:58 (9)	06:33		07:07 (2)
	20:35	20:12	19:26	18:35	5	18:03 (9)	21	07:28 (2)
6	05:30	05:57	06:28	06:59	17:54 (9)	06:34		07:05 (2)
	20:34	20:10	19:24	18:33	12	18:06 (9)	24	07:29 (2)
7	05:31	05:58	06:29	07:00	17:52 (9)	06:36		07:05 (2)
	20:34	20:09	19:22	18:31	15	18:07 (9)	26	07:31 (2)
8	05:31	05:59	06:30	07:01	17:50 (9)	06:37		07:04 (2)
	20:34	20:08	19:21	18:30	16	18:06 (9)	28	07:32 (2)
9	05:32	06:00	06:31	07:02	17:49 (9)	06:38		07:03 (2)
	20:33	20:07	19:19	18:28	16	18:05 (9)	29	07:32 (2)
10	05:33	06:01	06:32	07:03	17:48 (9)	06:39		07:03 (2)
	20:33	20:05	19:17	18:26	15	18:03 (9)	31	07:34 (2)
11	05:33	06:02	06:33	07:04	17:48 (9)	06:40		07:03 (2)
	20:33	20:04	19:16	18:25	14	18:02 (9)	31	07:34 (2)
12	05:34	06:03	06:34	07:05	17:47 (9)	06:42		07:04 (2)
	20:32	20:03	19:14	18:23	13	18:00 (9)	30	07:34 (2)
13	05:35	06:04	06:35	07:06	17:47 (9)	06:43		07:06 (2)
	20:32	20:01	19:12	18:21	12	17:59 (9)	29	07:35 (2)
14	05:36	06:05	06:36	07:07	17:47 (9)	06:44		07:07 (2)
	20:31	20:00	19:11	18:20	10	17:57 (9)	28	07:35 (2)
15	05:36	06:06	06:37	07:09	17:47 (9)	06:45		07:08 (2)
	20:31	19:59	19:09	18:18	8	17:55 (9)	27	07:35 (2)
16	05:37	06:07	06:38	07:10	17:48 (9)	06:46		07:09 (2)
	20:30	19:57	19:07	18:17	5	17:53 (9)	26	07:35 (2)
17	05:38	06:08	06:39	07:11	17:48 (9)	06:48		07:11 (2)
	20:29	19:56	19:05	18:15	3	17:51 (9)	25	07:36 (2)
18	05:39	06:09	06:40	07:12		06:49		07:12 (2)
	20:29	19:54	19:04	18:14		16:36	24	07:36 (2)
19	05:40	06:10	06:41	07:13		06:50		07:13 (2)
	20:28	19:53	19:02	18:12		16:36	23	07:36 (2)
20	05:40	06:11	06:42	07:14		06:51		07:14 (2)
	20:27	19:51	19:00	18:11		16:35	22	07:36 (2)
21	05:41	06:12	06:43	07:15		06:52		07:16 (2)
	20:26	19:50	18:58	18:09		16:34	20	07:36 (2)
22	05:42	06:13	06:44	07:17		06:54		07:17 (2)
	20:26	19:48	18:57	18:08		16:34	19	07:36 (2)
23	05:43	06:14	06:45	07:18		06:55		07:18 (2)
	20:25	19:47	18:55	18:06		16:33	18	07:36 (2)
24	05:44	06:15	06:46	07:19		06:56		07:19 (2)
	20:24	19:45	18:53	18:05		16:32	16	07:35 (2)
25	05:45	06:16	06:47	06:20		06:57		07:21 (2)
	20:23	19:44	18:52	17:03		16:32	15	07:36 (2)
26	05:46	06:17	06:48	06:21		06:58		07:22 (2)
	20:22	19:42	18:50	17:02		16:31	14	07:36 (2)
27	05:47	06:18	06:49	06:22		06:59		07:23 (2)
	20:21	19:41	18:48	17:01		16:31	12	07:35 (2)
28	05:48	06:19	06:50	06:24		07:00		07:24 (2)
	20:20	19:39	18:46	16:59		16:30	11	07:35 (2)
29	05:49	06:20	06:51	06:25		07:01		07:25 (2)
	20:19	19:37	18:45	16:58		16:30	9	07:34 (2)
30	05:50	06:21	06:52	06:26		07:03		07:26 (2)
	20:18	19:36	18:43	16:57		16:30	8	07:34 (2)
31	05:51	06:22		06:27				07:24
	20:17	19:34		16:55				16:37
Potential sun hours	460	429	375	345		297		287
Total, worst case				144		596		16

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: AD - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (30)  
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	07:24 16:38	07:10 17:13	06:34 17:47	06:43 19:22	05:56 19:54	05:27 20:24	05:27 20:35	05:52 20:16	06:23 19:32	06:53 18:41	06:28 16:54	07:04 16:29
2	07:24 16:39	07:09 17:14	06:32 17:48	06:41 19:23	05:55 19:55	05:26 20:25	05:28 20:35	05:53 20:15	06:24 19:31	06:54 18:40	06:29 16:53	07:05 16:29
3	07:24 16:40	07:08 17:15	06:31 17:50	06:39 19:24	05:54 19:57	05:26 20:26	05:28 20:35	05:54 20:14	06:25 19:29	06:56 18:38	06:31 16:52	07:06 16:29
4	07:24 16:41	07:07 17:17	06:29 17:51	06:38 19:25	05:52 19:58	05:26 20:27	05:29 20:35	05:55 20:13	06:26 19:27	06:57 18:36	06:32 16:50	07:07 16:28
5	07:24 16:42	07:06 17:18	06:28 17:52	06:36 19:26	05:51 19:59	05:25 20:27	05:29 20:35	05:55 20:11	06:27 19:26	06:58 18:35	06:33 16:49	07:08 16:28
6	07:24 16:43	07:05 17:19	06:26 17:53	06:34 19:27	05:50 20:00	05:25 20:28	05:30 20:34	05:56 20:10	06:28 19:24	06:59 18:33	06:34 16:48	07:09 16:28
7	07:24 16:44	07:04 17:20	06:24 17:54	06:33 19:28	05:49 20:01	05:25 20:29	05:31 20:34	05:57 20:09	06:29 19:22	07:00 18:31	06:35 16:47	07:10 16:28
8	07:24 16:45	07:03 17:22	06:23 17:55	06:31 19:30	05:47 20:02	05:24 20:29	05:31 20:34	05:58 20:08	06:30 19:21	07:01 18:30	06:37 16:46	07:10 16:28
9	07:24 16:46	07:02 17:23	06:21 17:57	06:29 19:31	05:46 20:03	05:24 20:30	05:32 20:33	06:00 20:07	06:31 19:19	07:02 18:28	06:38 16:45	07:11 16:28
10	07:24 16:47	07:01 17:24	06:20 17:58	06:28 19:32	05:45 20:04	05:24 20:30	05:33 20:33	06:01 20:05	06:32 19:17	07:03 18:26	06:39 16:44	07:12 16:28
11	07:24 16:48	06:59 17:25	06:18 17:59	06:26 19:33	05:44 20:05	05:24 20:31	05:33 20:33	06:02 20:04	06:33 19:16	07:04 18:25	06:40 16:43	07:13 16:28
12	07:23 16:49	06:58 17:27	06:16 18:00	06:24 19:34	05:43 20:06	05:24 20:31	05:34 20:32	06:03 20:03	06:34 19:14	07:05 18:23	06:42 16:42	07:14 16:28
13	07:23 16:50	06:57 17:28	06:15 18:01	06:23 19:35	05:42 20:07	05:24 20:32	05:35 20:32	06:04 20:01	06:35 19:12	07:06 18:21	06:43 16:41	07:15 16:28
14	07:23 16:51	06:56 17:29	06:13 18:02	06:21 19:36	05:41 20:08	05:23 20:32	05:36 20:31	06:05 20:00	06:36 19:10	07:07 18:20	06:44 16:40	07:16 16:28
15	07:22 16:52	06:54 17:30	06:11 18:03	06:20 19:37	05:40 20:09	05:23 20:33	05:36 20:30	06:06 19:58	06:37 19:09	07:09 18:18	06:45 16:39	07:16 16:29
16	07:22 16:53	06:53 17:32	06:10 18:04	06:18 19:38	05:39 20:10	05:23 20:33	05:37 20:30	06:07 19:57	06:38 19:07	07:10 18:17	06:46 16:38	07:17 16:29
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18	07:21 16:56	06:50 17:34	06:06 18:07	06:15 19:40	05:37 20:12	05:24 20:34	05:39 20:29	06:09 19:54	06:40 19:04	07:12 18:14	06:49 16:36	07:18 16:30
19	07:20 16:57	06:49 17:35	06:05 18:08	06:13 19:41	05:36 20:13	05:24 20:34	05:40 20:28	06:10 19:53	06:41 19:02	07:13 18:12	06:50 16:36	07:19 16:30
20	07:20 16:58	06:47 17:37	06:03 18:09	06:12 19:43	05:35 20:14	05:24 20:34	05:40 20:27	06:11 19:51	06:42 19:00	07:14 18:11	06:51 16:35	07:20 16:30
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25	07:16 17:04	06:40 17:43	05:54 18:14	06:05 19:48	05:31 20:19	05:25 20:35	05:45 20:23	06:16 19:44	06:47 18:52	07:20 17:03	06:57 16:32	07:22 16:33
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31	07:11 17:11		06:44 19:21		05:27 20:24		05:51 20:17	06:22 19:34		06:27 16:55		07:24 16:37
Potential sun hours Total, worst case	296	297	369	399	449	454	460	429	375	345	297	287

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: AE - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (31)  
 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	07:24 16:38	07:10 17:13	06:34 17:47	06:43 19:22	05:56 19:54	05:27 20:24	05:27 20:35	05:52 20:16	06:23 19:32	06:53 18:41	06:28 16:54	07:04 16:29
2	07:24 16:39	07:09 17:14	06:32 17:49	06:41 19:23	05:55 19:56	05:27 20:25	05:28 20:35	05:53 20:15	06:24 19:31	06:55 18:40	07:15 (8) 16:53	07:05 16:29
3	07:24 16:40	07:08 17:15	06:31 17:50	06:39 19:24	05:54 19:57	05:26 20:26	05:28 20:35	05:54 20:14	06:25 19:29	06:56 18:38	07:16 (8) 16:52	07:06 16:29
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Potential sun hours	296	297	369	399	449	454	460	429	375	345	297	287
Total, worst case			54								57	

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: AF - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (32)  
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	07:24 16:38	07:10 17:13	06:34 17:47	06:43 19:22	05:56 19:54	05:27 20:24	05:27 20:35	05:52 20:16	06:23 19:32	06:53 18:41	06:28 16:54	07:03 16:29
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31	07:11 17:11		06:44 19:21		05:27 20:23		05:51 20:17	06:22 19:34		06:27 16:55		07:24 16:37
Potential sun hours Total, worst case	296	297	369	399	449	454	460	429	375	345	297	287

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: AG - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (33)  
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
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3	07:24 16:40	07:09 17:15	06:31 17:50	06:39 19:24	05:54 19:57	05:26 20:26	05:28 20:35	05:54 20:14	06:25 19:29	06:56 18:38	06:31 16:52	07:06 16:29
4	07:25 16:41	07:07 17:17	06:29 17:51	06:38 19:25	05:52 19:58	05:26 20:27	05:29 20:35	05:55 20:13	06:26 19:28	06:57 18:36	06:32 16:50	07:07 16:29
5	07:25 16:42	07:06 17:18	06:28 17:52	06:36 19:26	05:51 19:59	05:25 20:27	05:30 20:35	05:56 20:12	06:27 19:26	06:58 18:35	06:33 16:49	07:08 16:28
6	07:24 16:43	07:05 17:19	06:26 17:53	06:34 19:28	05:50 20:00	05:25 20:28	05:30 20:35	05:57 20:10	06:28 19:24	06:59 18:33	06:34 16:48	07:09 16:28
7	07:24 16:44	07:04 17:20	06:25 17:54	06:33 19:29	05:49 20:01	05:25 20:29	05:31 20:34	05:58 20:09	06:29 19:23	07:00 18:31	06:36 16:47	07:10 16:28
8	07:24 16:45	07:03 17:22	06:23 17:56	06:31 19:30	05:48 20:02	05:24 20:29	05:31 20:34	05:59 20:08	06:30 19:21	07:01 18:30	06:37 16:46	07:11 16:28
9	07:24 16:46	07:02 17:23	06:21 17:57	06:29 19:31	05:46 20:03	05:24 20:30	05:32 20:34	06:00 20:07	06:31 19:19	07:02 18:28	06:38 16:45	07:12 16:28
10	07:24 16:47	07:01 17:24	06:20 17:58	06:28 19:32	05:45 20:04	05:24 20:30	05:33 20:33	06:01 20:05	06:32 19:17	07:03 18:26	06:39 16:44	07:12 16:28
11	07:24 16:48	06:59 17:25	06:18 17:59	06:26 19:33	05:44 20:05	05:24 20:31	05:33 20:33	06:02 20:04	06:33 19:16	07:04 18:25	06:40 16:43	07:13 16:28
12	07:23 16:49	06:58 17:27	06:16 18:00	06:25 19:34	05:43 20:06	05:24 20:32	05:34 20:32	06:03 20:03	06:34 19:14	07:05 18:23	06:42 16:42	07:14 16:28
13	07:23 16:50	06:57 17:28	06:15 18:01	06:23 19:35	05:42 20:07	05:24 20:32	05:35 20:32	06:04 20:01	06:35 19:12	07:06 18:22	06:43 16:41	07:15 16:28
14	07:23 16:51	06:56 17:29	06:13 18:02	06:21 19:36	05:41 20:08	05:24 20:32	05:36 20:31	06:05 20:00	06:36 19:11	07:08 18:20	06:44 16:40	07:16 16:29
15	07:22 16:52	06:54 17:30	06:11 18:03	06:20 19:37	05:40 20:09	05:24 20:33	05:36 20:31	06:06 19:59	06:37 19:09	07:09 18:18	06:45 16:39	07:16 16:29
16	07:22 16:53	06:53 17:32	06:10 18:05	06:18 19:38	05:39 20:10	05:24 20:33	05:37 20:30	06:07 19:57	06:38 19:07	07:10 18:17	06:47 16:38	07:17 16:29
17	07:22 16:54	06:52 17:33	06:08 18:06	06:17 19:39	05:38 20:11	05:24 20:34	05:38 20:29	06:08 19:56	06:39 19:05	07:11 18:15	06:48 16:37	07:18 16:29
18	07:21 16:56	06:50 17:34	06:06 18:07	06:15 19:40	05:37 20:12	05:24 20:34	05:39 20:29	06:09 19:54	06:40 19:04	07:12 18:14	06:49 16:36	07:19 16:30
19	07:21 16:57	06:49 17:35	06:05 18:08	06:14 19:42	05:36 20:13	05:24 20:34	05:40 20:28	06:10 19:53	06:41 19:02	07:13 18:12	06:50 16:36	07:19 16:30
20	07:20 16:58	06:47 17:37	06:03 18:09	06:12 19:43	05:35 20:14	05:24 20:35	05:41 20:27	06:11 19:51	06:42 19:00	07:14 18:11	06:51 16:35	07:20 16:30
21	07:19 16:59	06:46 17:38	06:01 18:10	06:11 19:44	06:11 20:15	05:34 20:35	05:41 20:27	06:12 19:50	06:43 18:59	07:15 18:09	06:52 16:34	07:20 16:31
22	07:19 17:00	06:45 17:39	06:00 18:11	06:09 19:45	05:34 20:16	05:24 20:35	05:42 20:26	06:13 19:48	06:44 18:57	07:17 18:08	06:54 16:34	07:21 16:31
23	07:18 17:02	06:43 17:40	05:58 18:12	06:08 19:46	05:33 20:17	05:24 20:35	05:43 20:25	06:14 19:47	06:45 18:55	07:18 18:06	06:55 16:33	07:21 16:32
24	07:17 17:03	06:42 17:41	05:56 18:13	06:06 19:47	05:32 20:18	05:25 20:35	05:44 20:24	06:15 19:45	06:46 18:53	07:19 18:05	06:56 16:32	07:22 16:32
25	07:17 17:04	06:40 17:43	05:55 18:14	06:05 19:48	05:31 20:19	05:25 20:36	05:45 20:23	06:16 19:44	06:47 18:52	07:20 17:03	06:57 16:32	07:22 16:33
26	07:16 17:05	06:39 17:44	05:53 18:16	06:03 19:49	05:31 20:20	05:25 20:36	05:46 20:22	06:17 19:42	06:48 18:50	07:21 17:02	06:58 16:31	07:23 16:34
27	07:15 17:07	06:37 17:45	05:51 18:17	06:02 19:50	05:30 20:20	05:26 20:36	05:47 20:21	06:18 19:41	06:49 18:48	07:22 17:01	06:59 16:31	07:23 16:34
28	07:14 17:08	06:36 17:46	05:49 18:18	06:00 19:51	05:29 20:21	05:26 20:36	05:48 20:20	06:19 19:39	06:50 18:47	07:23 16:59	07:00 16:30	07:23 16:35
29	07:13 17:09		06:48 19:19	05:59 19:52	05:29 20:22	05:26 20:36	05:49 20:19	06:20 19:37	06:51 18:45	07:24 16:58	07:02 16:30	07:24 16:36
30	07:12 17:10		06:46 19:20	05:58 19:53	05:28 20:23	05:27 20:36	05:50 20:18	06:21 19:36	06:53 18:43	07:25 16:57	07:03 16:30	07:24 16:36
31	07:11 17:12		06:44 19:21		05:28 20:24		05:51 20:17	06:22 19:34		06:27 16:55		07:24 16:37
Potential sun hours	296	297	369	399	449	454	460	429	375	345	297	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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: AH - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (34)  
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	07:24 16:38	07:10 17:13	06:34 17:47	06:43 19:22	05:56 19:54	18:49 (10) 20:24	05:27 20:35	05:52 20:16	06:23 19:33	18:55 (10) 19:10 (10)	06:54 18:41	06:28 16:54	07:04 16:29
2	07:24 16:39	07:10 17:14	06:32 17:49	06:41 19:23	05:55 19:56	18:49 (10) 20:25	05:27 20:35	05:53 20:15	06:24 19:31	18:56 (10) 19:09 (10)	06:55 18:40	06:30 16:53	07:05 16:29
3	07:24 16:40	07:08 17:15	06:31 17:50	06:39 19:24	05:54 19:57	18:50 (10) 20:26	05:28 20:35	05:54 20:14	06:25 19:29	18:59 (10) 19:07 (10)	06:56 18:38	06:31 16:52	07:06 16:29
4	07:24 16:41	07:07 17:17	06:29 17:51	06:38 19:25	05:52 19:58	18:51 (10) 20:27	05:29 20:35	05:55 20:13	06:26 19:28	19:02 (10) 19:05 (10)	06:57 18:36	06:32 16:50	07:07 16:28
5	07:24 16:42	07:06 17:18	06:28 17:52	06:36 19:26	05:51 19:59	18:53 (10) 20:27	05:29 20:35	05:56 20:12	06:27 19:10 (10)	19:18 (10) 19:26	06:58 18:35	06:33 16:49	07:08 16:28
6	07:24 16:43	07:05 17:19	06:26 17:53	06:34 19:27	05:50 20:00	18:55 (10) 19:14 (10)	05:30 20:28	05:57 20:10	06:28 19:07 (10)	19:22 (10) 19:24	06:59 18:33	06:34 16:48	07:09 16:28
7	07:24 16:44	07:04 17:20	06:25 17:54	06:33 19:29	05:49 20:01	18:57 (10) 19:10 (10)	05:31 20:29	05:58 20:09	06:29 19:04 (10)	19:23 19:23	07:00 18:31	06:36 16:47	07:10 16:28
8	07:24 16:45	07:03 17:22	06:23 17:56	06:31 19:30	05:47 19:08 (10)	19:06 (10) 20:02	05:31 20:29	05:59 20:08	06:30 19:02 (10)	19:21 19:21	07:01 18:30	06:37 16:46	07:11 16:28
9	07:24 16:46	07:02 17:23	06:21 17:57	06:29 19:31	05:46 19:09 (10)	19:01 (10) 20:03	05:32 20:30	06:00 20:07	06:31 19:01 (10)	19:19 19:19	07:02 18:28	06:38 16:45	07:12 16:28
10	07:24 16:47	07:01 17:24	06:20 17:58	06:28 19:32	05:45 19:10 (10)	18:57 (10) 20:04	05:33 20:30	06:01 20:05	06:32 18:59 (10)	19:17 19:17	07:03 18:26	06:39 16:44	07:12 16:28
11	07:24 16:48	06:59 17:25	06:18 17:59	06:26 19:33	05:44 19:11 (10)	18:56 (10) 20:05	05:33 20:31	06:02 20:04	06:33 19:28 (10)	19:16 19:16	07:04 18:25	06:40 16:43	07:13 16:28
12	07:23 16:49	06:58 17:27	06:16 18:00	06:25 19:34	05:43 19:12 (10)	18:53 (10) 20:06	05:34 20:32	06:03 20:03	06:34 19:29 (10)	19:14 19:14	07:05 18:23	06:42 16:42	07:14 16:28
13	07:23 16:50	06:57 17:28	06:15 18:01	06:23 19:35	05:42 19:14 (10)	18:52 (10) 20:07	05:35 20:32	06:04 20:01	06:35 18:55 (10)	19:12 19:12	07:06 18:22	06:43 16:41	07:15 16:28
14	07:23 16:51	06:56 17:29	06:13 18:02	06:21 19:36	05:41 19:14 (10)	18:51 (10) 20:08	05:36 20:32	06:05 20:00	06:36 19:31 (10)	19:11 19:11	07:08 18:20	06:44 16:40	07:16 16:28
15	07:22 16:52	06:54 17:30	06:11 18:03	06:20 19:37	05:40 19:15 (10)	18:49 (10) 20:09	05:36 20:33	06:06 20:31	06:37 19:59	19:09 19:09	07:09 18:18	06:45 16:39	07:16 16:29
16	07:22 16:53	06:53 17:32	06:10 18:05	06:18 19:38	05:39 19:16 (10)	18:49 (10) 20:10	05:37 20:33	06:07 20:30	06:38 19:57	19:07 19:07	07:10 18:17	06:46 16:38	07:17 16:29
17	07:22 16:54	06:52 17:33	06:08 18:06	06:17 19:39	05:38 19:17 (10)	18:47 (10) 20:11	05:38 20:34	06:08 20:29	06:39 19:56	19:05 19:05	07:11 18:15	06:48 16:37	07:18 16:29
18	07:21 16:56	06:50 17:34	06:06 18:07	06:15 19:40	05:37 19:18 (10)	18:47 (10) 20:12	05:39 20:34	06:09 20:29	06:40 19:54	19:04 19:04	07:12 18:14	06:49 16:36	07:18 16:30
19	07:20 16:57	06:49 17:35	06:05 18:08	06:14 19:42	05:36 19:19 (10)	18:46 (10) 20:13	05:40 20:34	06:10 20:28	06:41 19:53	19:02 19:02	07:13 18:12	06:50 16:36	07:19 16:30
20	07:20 16:58	06:47 17:37	06:03 18:09	06:12 19:43	05:35 19:20 (10)	18:46 (10) 20:14	05:40 20:35	06:11 20:27	06:42 19:51	19:00 19:00	07:14 18:11	06:51 16:35	07:20 16:30
21	07:19 16:59	06:46 17:38	06:01 18:10	06:11 19:44	05:34 19:21 (10)	18:45 (10) 20:15	05:41 20:35	06:12 20:27	06:43 19:50	18:59 18:59	07:15 18:09	06:52 16:34	07:20 16:31
22	07:19 17:00	06:45 17:39	06:00 18:11	06:09 19:45	05:33 19:22 (10)	18:46 (10) 20:16	05:42 20:35	06:13 20:26	06:44 19:48	18:50 (10) 18:57	07:17 18:08	06:54 16:34	07:21 16:31
23	07:18 17:02	06:43 17:40	05:58 18:12	06:08 19:46	05:33 19:24 (10)	18:46 (10) 20:17	05:43 20:35	06:14 20:25	06:45 19:47	18:50 (10) 18:55	07:18 18:06	06:55 16:33	07:21 16:32
24	07:17 17:03	06:42 17:41	05:56 18:13	06:06 19:47	05:32 19:24 (10)	18:45 (10) 20:18	05:44 20:35	06:15 20:24	06:46 19:45	18:50 (10) 18:53	07:19 18:05	06:56 16:32	07:22 16:32
25	07:17 17:04	06:40 17:43	05:54 18:14	06:05 19:48	05:31 19:26 (10)	18:46 (10) 20:19	05:45 20:35	06:16 20:23	06:47 19:44	18:50 (10) 18:52	07:20 17:03	06:57 16:32	07:22 16:33
26	07:16 17:05	06:39 17:44	05:53 18:16	06:03 19:49	05:30 19:25 (10)	18:45 (10) 20:20	05:46 20:36	06:17 20:22	06:48 19:42	18:50 (10) 18:50	07:21 17:02	06:58 16:31	07:23 16:34
27	07:15 17:06	06:37 17:45	05:51 18:17	06:02 19:50	05:30 19:24 (10)	18:46 (10) 20:20	05:47 20:36	06:18 20:21	06:49 19:41	18:51 (10) 18:48	07:22 17:01	06:59 16:31	07:23 16:34
28	07:14 17:08	06:36 17:46	05:49 18:18	06:00 19:51	05:29 19:24 (10)	18:47 (10) 20:21	05:48 20:36	06:19 20:20	06:50 19:39	18:50 (10) 18:46	07:23 16:59	07:00 16:30	07:23 16:35
29	07:13 17:09	06:48 19:19	05:59 19:52	05:59 20:22	05:29 19:23 (10)	18:47 (10) 20:22	05:49 20:36	06:20 20:19	06:51 19:37	18:52 (10) 18:45	07:24 16:58	07:02 16:30	07:24 16:36
30	07:12 17:10	06:46 19:20	05:58 19:53	05:58 20:23	05:28 19:22 (10)	18:48 (10) 20:23	05:50 20:36	06:21 20:18	06:52 19:36	18:52 (10) 18:43	07:25 16:57	07:03 16:30	07:24 16:36
31	07:11 17:12	06:44 19:21	06:44 19:21	06:44 19:21	05:27 20:24	18:53 (10) 20:24	05:51 20:36	06:22 20:17	06:53 19:34	18:53 (10) 19:12 (10)	07:26 16:55	07:04 16:30	07:24 16:37
Potential sun hours	296	297	369	399	449	454	460	429	375	39	345	297	286
Total, worst case				657	173			803					

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: AI - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (35)  
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	07:24 16:38	15:40 (11) 17:13	07:11 17:13	15:45 (11) 16:40 (11)	06:34 17:47	06:43 19:22
2	07:24 16:39	15:41 (11) 16:13 (11)	07:10 17:14	15:46 (11) 16:40 (11)	06:33 17:49	06:41 19:23
3	07:25 16:40	15:41 (11) 16:14 (11)	07:09 17:15	15:46 (11) 16:40 (11)	06:31 17:50	06:39 19:24
4	07:25 16:41	15:41 (11) 16:15 (11)	07:08 17:17	15:47 (11) 16:39 (11)	06:29 17:51	06:38 19:25
5	07:25 16:42	15:41 (11) 16:16 (11)	07:06 17:18	15:47 (11) 16:38 (11)	06:28 17:52	06:36 19:26
6	07:25 16:43	15:41 (11) 16:17 (11)	07:05 17:19	15:48 (11) 16:38 (11)	06:26 17:53	06:34 19:28
7	07:24 16:44	15:41 (11) 16:18 (11)	07:04 17:20	15:49 (11) 16:37 (11)	06:25 17:54	06:33 19:29
8	07:24 16:45	15:41 (11) 16:18 (11)	07:03 17:22	15:50 (11) 16:37 (11)	06:23 17:56	06:31 19:30
9	07:24 16:46	15:41 (11) 16:20 (11)	07:02 17:23	15:51 (11) 16:36 (11)	06:21 17:57	06:29 19:31
10	07:24 16:47	15:41 (11) 16:21 (11)	07:01 17:24	15:52 (11) 16:35 (11)	06:20 17:58	06:28 19:32
11	07:24 16:48	15:42 (11) 16:22 (11)	07:00 17:26	15:53 (11) 16:34 (11)	06:18 17:59	06:26 19:33
12	07:23 16:49	15:41 (11) 16:23 (11)	06:58 17:27	15:55 (11) 16:33 (11)	06:16 18:00	06:25 19:34
13	07:23 16:50	15:41 (11) 16:24 (11)	06:57 17:28	15:57 (11) 16:32 (11)	06:15 18:01	06:23 19:35
14	07:23 16:51	15:41 (11) 16:25 (11)	06:56 17:29	15:58 (11) 16:29 (11)	06:13 18:02	06:21 19:36
15	07:22 16:52	15:41 (11) 16:27 (11)	06:54 17:31	16:01 (11) 16:27 (11)	06:11 18:04	06:20 19:37
16	07:22 16:53	15:41 (11) 16:27 (11)	06:53 17:32	16:04 (11) 16:25 (11)	06:10 18:05	06:18 19:38
17	07:22 16:54	15:41 (11) 16:29 (11)	06:52 17:33	16:08 (11) 16:19 (11)	06:08 18:06	06:17 19:39
18	07:21 16:56	15:41 (11) 16:30 (11)	06:50 17:34	16:01 (11) 18:07	06:11 19:41	06:20 19:42
19	07:21 16:57	15:42 (11) 16:32 (11)	06:49 17:35	16:05 (11) 18:08	06:14 19:42	06:18 19:43
20	07:20 16:58	15:42 (11) 16:33 (11)	06:48 17:37	16:09 (11) 18:09	06:12 19:43	06:16 19:44
21	07:19 16:59	15:41 (11) 16:34 (11)	06:46 17:38	16:01 (11) 18:10	06:11 19:44	06:15 19:45
22	07:19 17:00	15:42 (11) 16:36 (11)	06:45 17:39	16:06 (11) 18:11	06:09 19:45	06:13 19:46
23	07:18 17:02	15:42 (11) 16:37 (11)	06:43 17:40	16:05 (11) 18:12	06:08 19:46	06:12 19:47
24	07:17 17:03	15:42 (11) 16:38 (11)	06:42 17:42	16:06 (11) 18:13	06:06 19:47	06:10 19:48
25	07:17 17:04	15:42 (11) 16:39 (11)	06:40 17:43	16:05 (11) 18:15	06:05 19:48	06:09 19:49
26	07:16 17:05	15:42 (11) 16:39 (11)	06:39 17:44	16:05 (11) 18:16	06:03 19:49	06:07 19:50
27	07:15 17:07	15:43 (11) 16:40 (11)	06:37 17:45	16:01 (11) 18:17	06:02 19:50	06:06 19:51
28	07:14 17:08	15:44 (11) 16:40 (11)	06:36 17:46	16:00 (11) 18:18	06:00 19:51	06:04 19:52
29	07:13 17:09	15:44 (11) 16:40 (11)	06:36 17:46	16:00 (11) 18:18	06:00 19:51	06:04 19:52
30	07:12 17:10	15:44 (11) 16:40 (11)	06:36 17:46	16:00 (11) 18:18	06:00 19:51	06:04 19:52
31	07:12 17:12	15:45 (11) 16:40 (11)	06:36 17:46	16:00 (11) 18:18	06:00 19:51	06:04 19:52
Potential sun hours	296	297	369	399	449	454
Total, worst case	1426	702	256			

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: AI - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (35)  
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	05:27 20:36	05:52 20:16	06:23 19:33	18:55 (12) 19:10 (12)	06:54 18:41	06:28 16:54	15:21 (11) 16:05 (11)	07:04 16:29	15:24 (11) 16:05 (11)
2	05:28 20:35	05:53 20:15	06:24 19:31	18:55 (12) 19:09 (12)	06:55 18:40	06:30 16:53	15:20 (11) 16:05 (11)	07:05 16:29	15:24 (11) 16:04 (11)
3	05:28 20:35	05:54 20:14	06:25 19:29	18:55 (12) 19:07 (12)	06:56 18:38	06:31 16:52	15:20 (11) 16:07 (11)	07:06 16:29	15:25 (11) 16:04 (11)
4	05:29 20:35	05:55 20:13	06:26 19:28	18:56 (12) 19:05 (12)	06:57 18:36	06:32 16:51	15:18 (11) 16:07 (11)	07:07 16:29	15:26 (11) 16:03 (11)
5	05:30 20:35	05:56 20:12	06:27 19:26	18:57 (12) 19:04 (12)	06:58 18:35	06:33 16:49	15:17 (11) 16:08 (11)	07:08 16:28	15:26 (11) 16:03 (11)
6	05:30 20:35	05:57 20:10	06:28 19:24	18:58 (12) 19:02 (12)	06:59 18:33	06:34 16:48	15:18 (11) 16:09 (11)	07:09 16:28	15:27 (11) 16:03 (11)
7	05:31 20:34	05:58 20:09	06:29 19:23	19:00 19:23	07:00 18:31	06:36 16:47	15:17 (11) 16:09 (11)	07:10 16:28	15:28 (11) 16:03 (11)
8	05:31 20:34	05:59 20:08	06:30 19:21	19:23 19:21	07:01 18:30	06:37 16:46	15:16 (11) 16:10 (11)	07:11 16:28	15:29 (11) 16:03 (11)
9	05:32 20:34	06:00 20:07	06:31 19:19	19:21 19:19	07:02 18:28	06:38 16:45	15:16 (11) 16:11 (11)	07:12 16:28	15:30 (11) 16:03 (11)
10	05:33 20:33	06:01 20:05	06:32 19:18	19:18 19:18	07:03 18:26	06:39 16:44	15:16 (11) 16:11 (11)	07:12 16:28	15:30 (11) 16:02 (11)
11	05:33 20:33	06:02 20:04	06:33 19:16	19:16 19:16	07:04 18:25	06:41 16:43	15:15 (11) 16:11 (11)	07:13 16:28	15:31 (11) 16:02 (11)
12	05:34 20:32	06:03 20:03	06:34 19:14	19:14 19:14	07:05 18:23	06:42 16:42	15:15 (11) 16:11 (11)	07:14 16:28	15:31 (11) 16:02 (11)
13	05:35 20:32	06:04 20:01	06:35 19:12	19:12 19:12	07:07 18:22	06:43 16:41	15:16 (11) 16:12 (11)	07:15 16:28	15:32 (11) 16:03 (11)
14	05:36 20:31	06:05 20:00	06:36 19:11	19:11 19:11	07:08 18:20	06:44 16:40	15:16 (11) 16:12 (11)	07:16 16:29	15:33 (11) 16:03 (11)
15	05:36 20:31	06:06 19:59	06:37 19:09	19:09 19:09	07:09 18:18	06:45 16:39	15:15 (11) 16:12 (11)	07:17 16:29	15:33 (11) 16:03 (11)
16	05:37 20:30	06:07 19:57	06:38 19:07	19:07 19:07	07:10 18:17	06:47 16:38	15:16 (11) 16:13 (11)	07:17 16:29	15:34 (11) 16:03 (11)
17	05:38 20:29	06:08 19:56	06:39 19:06	19:06 19:06	07:11 18:15	06:48 16:37	15:16 (11) 16:13 (11)	07:18 16:29	15:35 (11) 16:04 (11)
18	05:39 20:29	06:09 19:54	06:40 19:04	19:04 19:04	07:12 18:14	06:49 16:37	15:16 (11) 16:12 (11)	07:19 16:30	15:35 (11) 16:03 (11)
19	05:40 20:28	06:10 19:53	06:41 19:02	19:02 19:02	07:13 18:12	06:50 16:36	15:16 (11) 16:11 (11)	07:19 16:30	15:36 (11) 16:04 (11)
20	05:41 20:27	06:11 19:51	06:42 19:00	19:00 19:00	07:14 18:11	06:51 16:35	15:17 (11) 16:11 (11)	07:20 16:30	15:36 (11) 16:04 (11)
21	05:41 20:27	06:12 19:50	19:07 (12) 19:15 (12)	06:43 18:59	07:16 18:09	06:53 16:34	15:17 (11) 16:10 (11)	07:20 16:31	15:37 (11) 16:05 (11)
22	05:42 20:26	06:13 19:48	19:04 (12) 19:18 (12)	06:44 18:57	07:17 18:08	06:54 16:34	15:18 (11) 16:09 (11)	07:21 16:31	15:37 (11) 16:05 (11)
23	05:43 20:25	06:14 19:47	19:02 (12) 19:19 (12)	06:45 18:55	07:18 18:06	06:55 16:33	15:18 (11) 16:08 (11)	07:21 16:32	15:38 (11) 16:06 (11)
24	05:44 20:24	06:15 19:45	19:00 (12) 19:20 (12)	06:46 18:53	07:19 18:05	06:56 16:32	15:19 (11) 16:08 (11)	07:22 16:32	15:38 (11) 16:06 (11)
25	05:45 20:23	06:16 19:44	18:59 (12) 19:21 (12)	06:47 18:52	06:20 17:04	15:36 (11) 15:51 (11)	06:57 16:32	15:20 (11) 16:07 (11)	15:39 (11) 16:07 (11)
26	05:46 20:22	06:17 19:42	18:58 (12) 19:20 (12)	06:48 18:50	06:21 17:02	15:33 (11) 15:55 (11)	06:58 16:31	15:20 (11) 16:07 (11)	15:39 (11) 16:08 (11)
27	05:47 20:21	06:18 19:41	18:57 (12) 19:18 (12)	06:49 18:48	06:22 17:01	15:30 (11) 15:57 (11)	06:59 16:31	15:20 (11) 16:06 (11)	15:39 (11) 16:08 (11)
28	05:48 20:20	06:19 19:39	18:56 (12) 19:16 (12)	06:50 18:47	06:24 16:59	15:27 (11) 15:59 (11)	07:01 16:30	15:21 (11) 16:05 (11)	15:39 (11) 16:08 (11)
29	05:49 20:19	06:20 19:37	18:56 (12) 19:15 (12)	06:52 18:45	06:25 16:58	15:25 (11) 16:01 (11)	07:02 16:30	15:21 (11) 16:05 (11)	15:40 (11) 16:10 (11)
30	05:50 20:18	06:21 19:36	18:55 (12) 19:13 (12)	06:53 18:43	06:26 16:57	15:24 (11) 16:03 (11)	07:03 16:30	15:22 (11) 16:04 (11)	15:40 (11) 16:10 (11)
31	05:51 20:17	06:22 19:34	18:55 (12) 19:12 (12)	06:53 18:43	06:27 16:55	15:23 (11) 16:04 (11)	07:03 16:30	15:22 (11) 16:04 (11)	15:40 (11) 16:11 (11)
Potential sun hours	460	429	375	345	297	287			
Total, worst case		198	61	212	1536	977			

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: AJ - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (36)  
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	07:24 16:38	07:10 17:13	06:34 17:47	16:44 (7) 17:15 (7)	06:42 19:22	05:56 19:54	18:31 (6) 19:32 (6)	05:27 20:24	18:36 (6) 19:33 (6)
2	07:24 16:39	07:09 17:14	06:32 17:48	16:45 (7) 17:27 (8)	06:41 19:23	05:55 19:55	18:30 (6) 19:32 (6)	05:26 20:25	18:37 (6) 19:33 (6)
3	07:24 16:40	07:08 17:15	06:31 17:50	16:47 (7) 17:28 (8)	06:39 19:24	05:54 19:56	18:30 (6) 19:33 (6)	05:26 20:26	18:38 (6) 19:33 (6)
4	07:24 16:41	07:07 17:16	06:29 17:51	16:48 (7) 17:29 (8)	06:37 19:25	05:52 19:57	18:30 (6) 19:34 (6)	05:26 20:26	18:38 (6) 19:32 (6)
5	07:24 16:42	07:06 17:18	06:28 17:52	16:52 (7) 17:31 (8)	06:36 19:26	05:51 19:59	18:29 (6) 19:36 (6)	05:25 20:27	18:38 (6) 19:32 (6)
6	07:24 16:43	07:05 17:19	06:26 17:53	17:22 (8) 17:32 (8)	06:34 19:27	05:50 20:00	18:28 (6) 19:36 (6)	05:25 20:28	18:39 (6) 19:33 (6)
7	07:24 16:43	07:04 17:20	06:24 17:54	17:22 (8) 17:33 (8)	06:33 19:28	05:49 20:01	18:28 (6) 19:37 (6)	05:25 20:28	18:40 (6) 19:33 (6)
8	07:24 16:44	07:03 17:22	16:53 (7) 17:55	06:23 17:22 (8)	06:31 19:29	05:47 20:02	18:28 (6) 19:37 (6)	05:24 20:29	18:40 (6) 19:32 (6)
9	07:24 16:46	07:02 17:23	16:50 (7) 17:57	06:21 17:22 (8)	06:29 19:31	05:46 20:03	18:28 (6) 19:37 (6)	05:24 20:30	18:41 (6) 19:32 (6)
10	07:24 16:47	07:00 17:24	16:48 (7) 17:01 (7)	06:19 17:58	06:28 19:32	05:45 20:04	18:29 (6) 19:37 (6)	05:24 20:30	18:41 (6) 19:32 (6)
11	07:23 16:48	06:59 17:25	16:47 (7) 17:02 (7)	06:18 17:59	06:26 19:33	05:44 20:05	18:29 (6) 19:37 (6)	05:24 20:31	18:42 (6) 19:32 (6)
12	07:23 16:49	06:58 17:27	16:46 (7) 17:04 (7)	06:16 18:00	06:24 19:34	05:43 20:06	18:29 (6) 19:37 (6)	05:24 20:31	18:42 (6) 19:32 (6)
13	07:23 16:50	06:57 17:28	16:44 (7) 17:05 (7)	06:15 18:01	06:23 19:35	05:42 20:07	18:29 (6) 19:37 (6)	05:23 20:32	18:43 (6) 19:32 (6)
14	07:23 16:51	06:55 17:29	16:44 (7) 17:06 (7)	06:13 18:02	06:21 19:36	05:41 19:00 (6) 20:08	18:29 (6) 19:37 (6)	05:23 20:32	18:43 (6) 19:32 (6)
15	07:22 16:52	06:54 17:30	16:43 (7) 17:08 (7)	06:11 18:03	06:20 19:37	18:54 (6) 19:15 (6) 20:09	18:29 (6) 19:37 (6)	05:23 20:33	18:44 (6) 19:32 (6)
16	07:22 16:53	06:53 17:32	16:42 (7) 17:09 (7)	06:10 18:04	06:18 19:38	18:51 (6) 19:16 (6) 20:10	18:29 (6) 19:37 (6)	05:23 20:33	18:44 (6) 19:32 (6)
17	07:21 16:54	06:51 17:33	16:42 (7) 17:10 (7)	06:08 18:05	06:16 19:39	18:48 (6) 19:17 (6) 20:11	18:29 (6) 19:36 (6)	05:23 20:33	18:44 (6) 19:32 (6)
18	07:21 16:55	06:50 17:34	16:41 (7) 17:11 (7)	06:06 18:07	06:15 19:40	18:46 (6) 19:18 (6) 20:12	18:29 (6) 19:36 (6)	05:23 20:34	18:44 (6) 19:32 (6)
19	07:20 16:57	06:49 17:35	16:41 (7) 17:13 (7)	06:04 18:08	06:13 19:41	18:43 (6) 19:19 (6) 20:13	18:31 (6) 19:37 (6)	05:24 20:34	18:45 (6) 19:32 (6)
20	07:20 16:58	06:47 17:36	16:41 (7) 17:15 (7)	06:03 18:09	06:12 19:42	18:42 (6) 19:20 (6) 20:14	18:31 (6) 19:36 (6)	05:24 20:34	18:45 (6) 19:32 (6)
21	07:19 16:59	06:46 17:38	16:40 (7) 17:15 (7)	06:01 18:10	06:10 19:43	18:40 (6) 19:21 (6) 20:15	18:31 (6) 19:36 (6)	05:24 20:35	18:45 (6) 19:32 (6)
22	07:18 17:00	06:44 17:39	16:41 (7) 17:17 (7)	05:59 18:11	06:09 19:45	18:39 (6) 19:22 (6) 20:16	18:31 (6) 19:35 (6)	05:24 20:35	18:46 (6) 19:33 (6)
23	07:18 17:01	06:43 17:40	16:40 (7) 17:18 (7)	05:58 18:12	06:07 19:46	18:37 (6) 19:23 (6) 20:17	18:32 (6) 19:36 (6)	05:24 20:35	18:46 (6) 19:33 (6)
24	07:17 17:03	06:41 17:41	16:41 (7) 17:19 (7)	05:56 18:13	06:06 19:47	18:36 (6) 19:24 (6) 20:18	18:32 (6) 19:35 (6)	05:25 20:35	18:46 (6) 19:33 (6)
25	07:16 17:04	06:40 17:42	16:41 (7) 17:18 (7)	05:54 18:14	06:04 19:48	18:36 (6) 19:26 (6) 20:18	18:32 (6) 19:35 (6)	05:25 20:35	18:46 (6) 19:34 (6)
26	07:16 17:05	06:38 17:44	16:42 (7) 17:18 (7)	05:53 18:15	06:03 19:49	18:34 (6) 19:26 (6) 20:19	18:34 (6) 19:35 (6)	05:25 20:35	18:46 (6) 19:34 (6)
27	07:15 17:06	06:37 17:45	16:42 (7) 17:17 (7)	05:51 18:16	06:02 19:50	18:33 (6) 19:27 (6) 20:20	18:34 (6) 19:35 (6)	05:26 20:35	18:46 (6) 19:34 (6)
28	07:14 17:08	06:35 17:46	16:43 (7) 17:16 (7)	05:49 18:18	06:00 19:51	18:32 (6) 19:28 (6) 20:21	18:34 (6) 19:34 (6)	05:26 20:35	18:46 (6) 19:35 (6)
29	07:13 17:09		06:48 19:19		05:59 19:52	18:32 (6) 19:29 (6) 20:22	18:35 (6) 19:34 (6)	05:26 20:35	18:46 (6) 19:35 (6)
30	07:12 17:10		06:46 19:20		05:57 19:53	18:31 (6) 19:30 (6) 20:23	18:35 (6) 19:33 (6)	05:27 20:35	18:47 (6) 19:36 (6)
31	07:11 17:11		06:44 19:21			05:27 20:23	18:36 (6) 19:34 (6)		
Potential sun hours	296	297	369	399	449	454			
Total, worst case		568	219	701	2009	1500			

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: AJ - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (36)  
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	05:27	18:46 (6)	05:51	18:39 (6)	06:23	06:53	18:09 (8)	06:28	16:18 (7)	07:03				
	20:35	50	19:36 (6)	20:16	69	19:48 (6)	19:32	18:41	3	18:12 (8)	16:54	12	16:30 (7)	16:29
2	05:28	18:46 (6)	05:52	18:39 (6)	06:24	06:54	18:04 (8)	06:29	16:20 (7)	07:04				
	20:35	51	19:37 (6)	20:15	69	19:48 (6)	19:31	18:39	11	18:15 (8)	16:53	9	16:29 (7)	16:29
3	05:28	18:46 (6)	05:53	18:39 (6)	06:25	06:55	18:02 (8)	06:31	16:22 (7)	07:06				
	20:35	51	19:37 (6)	20:14	69	19:48 (6)	19:29	18:38	13	18:15 (8)	16:51	5	16:27 (7)	16:29
4	05:29	18:46 (6)	05:54	18:39 (6)	06:26	06:57	18:01 (8)	06:32		07:07				
	20:35	52	19:38 (6)	20:13	69	19:48 (6)	19:27	18:36	13	18:14 (8)	16:50			16:28
5	05:29	18:45 (6)	05:55	18:39 (6)	06:27	06:58	17:59 (8)	06:33		07:08				
	20:35	53	19:38 (6)	20:11	69	19:48 (6)	19:26	18:34	13	18:12 (8)	16:49			16:28
6	05:30	18:46 (6)	05:56	18:39 (6)	06:28	06:59	17:58 (8)	06:34		07:09				
	20:34	53	19:39 (6)	20:10	68	19:47 (6)	19:24	18:33	12	18:10 (8)	16:48			16:28
7	05:31	18:45 (6)	05:57	18:38 (6)	06:29	07:00	17:58 (8)	06:35		07:09				
	20:34	54	19:39 (6)	20:09	67	19:45 (6)	19:22	18:31	10	18:08 (8)	16:47			16:28
8	05:31	18:45 (6)	05:58	18:38 (6)	06:30	07:01	17:29 (7)	06:37		07:10				
	20:34	54	19:39 (6)	20:08	66	19:44 (6)	19:21	18:29	19	18:06 (8)	16:46			16:28
9	05:32	18:45 (6)	05:59	18:38 (6)	06:31	07:02	17:24 (7)	06:38		07:11				
	20:33	55	19:40 (6)	20:06	65	19:43 (6)	19:19	18:28	26	18:05 (8)	16:45			16:28
10	05:33	18:44 (6)	06:00	18:38 (6)	06:32	07:03	17:21 (7)	06:39		07:12				
	20:33	56	19:40 (6)	20:05	63	19:41 (6)	19:17	18:26	29	18:03 (8)	16:44			16:28
11	05:33	18:44 (6)	06:01	18:39 (6)	06:33	07:04	17:19 (7)	06:40		07:13				
	20:32	57	19:41 (6)	20:04	61	19:40 (6)	19:16	18:25	30	18:01 (8)	16:43			16:28
12	05:34	18:44 (6)	06:02	18:39 (6)	06:34	07:05	17:18 (7)	06:41		07:14				
	20:32	58	19:42 (6)	20:02	60	19:39 (6)	19:14	18:23	30	17:48 (7)	16:42			16:28
13	05:35	18:43 (6)	06:03	18:39 (6)	06:35	07:06	17:17 (7)	06:43		07:15				
	20:31	59	19:42 (6)	20:01	59	19:38 (6)	19:12	18:21	32	17:49 (7)	16:41			16:28
14	05:35	18:43 (6)	06:04	18:39 (6)	06:36	07:07	17:15 (7)	06:44		07:15				
	20:31	59	19:42 (6)	20:00	57	19:36 (6)	19:10	18:20	34	17:49 (7)	16:40			16:28
15	05:36	18:43 (6)	06:06	18:40 (6)	06:37	07:08	17:14 (7)	06:45		07:16				
	20:30	60	19:43 (6)	19:58	55	19:35 (6)	19:09	18:18	36	17:50 (7)	16:39			16:29
16	05:37	18:43 (6)	06:07	18:40 (6)	06:38	07:10	17:13 (7)	06:46		07:17				
	20:30	61	19:44 (6)	19:57	54	19:34 (6)	19:07	18:17	37	17:50 (7)	16:38			16:29
17	05:38	18:43 (6)	06:08	18:41 (6)	06:39	07:11	17:12 (7)	06:47		07:18				
	20:29	61	19:44 (6)	19:56	51	19:32 (6)	19:05	18:15	38	17:50 (7)	16:37			16:29
18	05:39	18:42 (6)	06:09	18:41 (6)	06:40	07:12	17:12 (7)	06:49		07:18				
	20:28	62	19:44 (6)	19:54	50	19:31 (6)	19:04	18:14	39	17:51 (7)	16:36			16:29
19	05:40	18:42 (6)	06:10	18:42 (6)	06:41	07:13	17:12 (7)	06:50		07:19				
	20:28	63	19:45 (6)	19:53	48	19:30 (6)	19:02	18:12	37	17:49 (7)	16:36			16:30
20	05:40	18:42 (6)	06:11	18:43 (6)	06:42	07:14	17:11 (7)	06:51		07:19				
	20:27	63	19:45 (6)	19:51	45	19:28 (6)	19:00	18:11	36	17:47 (7)	16:35			16:30
21	05:41	18:42 (6)	06:12	18:44 (6)	06:43	07:15	17:11 (7)	06:52		07:20				
	20:26	64	19:46 (6)	19:50	43	19:27 (6)	18:58	18:09	35	17:46 (7)	16:34			16:31
22	05:42	18:42 (6)	06:13	18:45 (6)	06:44	07:16	17:11 (7)	06:53		07:21				
	20:25	64	19:46 (6)	19:48	40	19:25 (6)	18:57	18:08	33	17:44 (7)	16:33			16:31
23	05:43	18:41 (6)	06:14	18:46 (6)	06:45	07:18	17:11 (7)	06:55		07:21				
	20:25	66	19:47 (6)	19:47	38	19:24 (6)	18:55	18:06	32	17:43 (7)	16:33			16:32
24	05:44	18:40 (6)	06:15	18:48 (6)	06:46	07:19	17:11 (7)	06:56		07:22				
	20:24	66	19:46 (6)	19:45	34	19:22 (6)	18:53	18:05	30	17:41 (7)	16:32			16:32
25	05:45	18:40 (6)	06:16	18:49 (6)	06:47	06:20	16:11 (7)	06:57		07:22				
	20:23	66	19:46 (6)	19:44	32	19:21 (6)	18:51	17:03	29	16:40 (7)	16:32			16:33
26	05:46	18:40 (6)	06:17	18:51 (6)	06:48	06:21	16:12 (7)	06:58		07:22				
	20:22	67	19:47 (6)	19:42	29	19:20 (6)	18:50	17:02	26	16:38 (7)	16:31			16:33
27	05:47	18:40 (6)	06:18	18:53 (6)	06:49	06:22	16:13 (7)	06:59		07:23				
	20:21	67	19:47 (6)	19:40	25	19:18 (6)	18:48	17:01	24	16:37 (7)	16:31			16:34
28	05:48	18:40 (6)	06:19	18:57 (6)	06:50	06:23	16:13 (7)	07:00		07:23				
	20:20	67	19:47 (6)	19:39	19	19:16 (6)	18:46	16:59	23	16:36 (7)	16:30			16:35
29	05:49	18:40 (6)	06:20	19:01 (6)	06:51	06:25	16:14 (7)	07:01		07:23				
	20:19	68	19:48 (6)	19:37	14	19:15 (6)	18:45	16:58	20	16:34 (7)	16:30			16:35
30	05:50	18:39 (6)	06:21		06:52	06:26	16:15 (7)	07:02		07:24				
	20:18	69	19:48 (6)	19:36		18:43	16:57	18	16:33 (7)	16:29				16:36
31	05:50	18:39 (6)	06:22		06:27		16:17 (7)			07:24				
	20:17	69	19:48 (6)	19:34			16:55	15	16:32 (7)					16:37
Potential sun hours	460		429		375	345		297	26					287
Total, worst case	1865		1488		783									

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)
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## SHADOW - Calendar

Calculation: ShadowFlickeringFoggiaMR Shadow receptor: AK - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (37)  
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	07:24 16:38	07:10 17:13	06:34 17:47	06:43 19:22	05:56 19:54	05:27 20:24	05:27 20:35	05:52 20:16	06:14 (1) 06:24 (1)	06:23 19:32	06:54 18:41	06:28 16:54	07:04 16:29
2	07:24 16:39	07:09 17:14	06:32 17:49	06:41 19:23	05:55 19:56	05:27 20:25	05:28 20:35	05:53 20:15	06:15 (1) 06:24 (1)	06:24 19:31	06:55 18:40	06:30 16:53	07:05 16:29
3	07:24 16:40	07:08 17:15	06:31 17:50	06:39 19:24	05:54 19:57	05:26 20:26	05:28 20:35	05:54 20:14	06:16 (1) 06:24 (1)	06:25 19:29	06:56 18:38	06:31 16:52	07:06 16:29
4	07:24 16:41	07:07 17:17	06:29 17:51	06:38 19:25	05:52 19:58	05:26 20:27	05:29 20:35	05:55 20:13	06:17 (1) 06:24 (1)	06:26 19:28	06:57 18:36	06:32 16:50	07:07 16:29
5	07:24 16:42	07:06 17:18	06:28 17:52	06:36 19:26	05:51 19:59	05:25 20:27	05:30 20:35	05:56 20:12	06:18 (1) 06:24 (1)	06:27 19:26	06:58 18:35	06:33 16:49	07:08 16:28
6	07:24 16:43	07:05 17:19	06:26 17:53	06:34 19:27	05:50 20:00	05:25 20:28	05:30 20:34	05:57 20:10	06:19 (1) 06:23 (1)	06:28 19:24	06:59 18:33	06:34 16:48	07:09 16:28
7	07:24 16:44	07:04 17:20	06:25 17:54	06:33 19:29	05:49 20:01	05:25 20:29	05:31 20:34	05:58 20:09	06:20 (1) 06:22 (1)	06:29 19:23	07:00 18:31	06:36 16:47	07:10 16:28
8	07:24 16:45	07:03 17:22	06:23 17:56	06:31 19:30	05:48 20:02	05:25 20:29	05:31 20:34	05:59 20:08	06:21 (1) 06:24 (1)	06:30 19:21	07:01 18:30	06:37 16:46	07:11 16:28
9	07:24 16:46	07:02 17:23	06:21 17:57	06:29 19:31	05:46 20:03	05:24 20:30	05:32 20:34	06:00 20:07	06:22 (1) 06:25 (1)	06:31 19:19	07:02 18:28	06:38 16:45	07:11 16:28
10	07:24 16:47	07:01 17:24	06:20 17:58	06:28 19:32	05:45 20:04	05:24 20:30	05:33 20:33	06:01 20:05	06:26 (1) 06:29 (1)	06:32 19:17	07:03 18:26	06:39 16:44	07:12 16:28
11	07:24 16:48	06:59 17:25	06:18 17:59	06:26 19:33	05:44 20:05	05:24 20:31	05:33 20:33	06:02 20:04	06:27 (1) 06:30 (1)	06:33 19:16	07:04 18:25	06:40 16:43	07:13 16:28
12	07:23 16:49	06:58 17:27	06:16 18:00	06:25 19:34	05:43 20:06	05:24 20:31	05:34 20:32	06:03 20:03	06:31 (1) 06:34 (1)	06:34 19:14	07:05 18:23	06:42 16:42	07:14 16:28
13	07:23 16:50	06:57 17:28	06:15 18:01	06:23 19:35	05:42 20:07	05:24 20:32	05:35 20:32	06:04 20:01	06:35 (1) 06:38 (1)	06:35 19:12	07:06 18:22	06:43 16:41	07:15 16:28
14	07:23 16:51	06:56 17:29	06:13 18:02	06:21 19:36	05:41 20:08	05:24 20:32	05:36 20:31	06:05 20:00	06:39 (1) 06:42 (1)	06:36 19:11	07:08 18:20	06:44 16:40	07:16 16:29
15	07:22 16:52	06:54 17:30	06:11 18:03	06:20 19:37	05:40 20:09	05:24 20:33	05:36 20:31	06:06 19:59	06:43 (1) 06:46 (1)	06:37 19:09	07:09 18:18	06:45 16:39	07:16 16:29
16	07:22 16:53	06:53 17:32	06:10 18:05	06:18 19:38	05:39 20:10	05:24 20:33	05:37 20:30	06:07 19:57	06:47 (1) 06:50 (1)	06:38 19:07	07:10 18:17	06:46 16:38	07:17 16:29
17	07:21 16:54	06:52 17:33	06:08 18:06	06:17 19:39	05:38 20:11	05:24 20:34	05:38 20:29	06:08 19:56	06:51 (1) 06:54 (1)	06:39 19:05	07:11 18:15	06:48 16:37	07:18 16:29
18	07:21 16:56	06:50 17:34	06:06 18:07	06:15 19:40	05:37 20:12	05:24 20:34	05:39 20:29	06:09 19:54	06:55 (1) 06:58 (1)	06:40 19:04	07:12 18:14	06:49 16:36	07:18 16:30
19	07:20 16:57	06:49 17:35	06:05 18:08	06:14 19:42	05:36 20:13	05:24 20:34	05:40 20:28	06:10 19:53	06:59 (1) 07:02 (1)	06:41 19:02	07:13 18:12	06:50 16:36	07:19 16:30
20	07:20 16:58	06:47 17:37	06:03 18:09	06:12 19:43	05:35 20:14	05:24 20:35	05:41 20:27	06:11 19:51	07:03 (1) 07:06 (1)	06:42 19:00	07:14 18:11	06:51 16:35	07:20 16:30
21	07:19 16:59	06:46 17:38	06:01 18:10	06:11 19:44	05:34 20:15	05:24 20:35	05:41 20:26	06:12 19:50	07:07 (1) 07:10 (1)	06:43 18:59	07:15 18:09	06:52 16:34	07:21 16:30
22	07:19 17:00	06:45 17:39	06:00 18:11	06:09 19:45	05:34 20:16	05:24 20:35	05:42 20:26	06:13 19:48	07:08 (1) 07:11 (1)	06:44 18:57	07:17 18:08	06:54 16:34	07:21 16:31
23	07:18 17:02	06:43 17:40	05:58 18:12	06:08 19:46	05:33 20:17	05:24 20:35	05:43 20:25	06:14 19:47	07:09 (1) 07:12 (1)	06:45 18:55	07:18 18:06	06:55 16:33	07:21 16:32
24	07:17 17:03	06:42 17:41	05:56 18:13	06:06 19:47	05:32 20:18	05:25 20:35	05:44 20:24	06:15 19:45	07:13 (1) 07:16 (1)	06:46 18:53	07:19 18:05	06:56 16:32	07:22 16:32
25	07:17 17:04	06:40 17:43	05:54 18:14	06:05 19:48	05:31 20:19	05:25 20:35	05:45 20:23	06:16 19:44	07:14 (1) 07:17 (1)	06:47 18:52	06:20 17:03	06:57 16:32	07:22 16:33
26	07:16 17:05	06:39 17:44	05:53 18:16	06:03 19:49	05:31 20:19	05:25 20:36	05:46 20:22	06:17 19:42	07:15 (1) 07:18 (1)	06:48 18:50	06:21 17:02	06:58 16:31	07:23 16:34
27	07:15 17:07	06:37 17:45	05:51 18:17	06:02 19:50	05:30 20:20	05:26 20:36	05:47 20:21	06:18 19:41	07:16 (1) 07:19 (1)	06:49 18:48	06:22 17:01	06:59 16:31	07:23 16:34
28	07:14 17:08	06:36 17:46	05:49 18:18	06:00 19:51	05:29 20:21	05:26 20:36	05:48 20:20	06:19 19:39	07:17 (1) 07:20 (1)	06:50 18:46	06:24 16:59	06:54 16:30	07:23 16:35
29	07:13 17:09	06:35 17:47	05:48 18:19	05:59 19:52	05:29 20:22	05:26 20:37	05:49 20:19	06:20 19:37	07:18 (1) 07:21 (1)	06:51 18:45	06:25 16:58	07:01 16:30	07:24 16:36
30	07:12 17:10	06:34 17:48	05:47 18:20	05:28 19:53	05:28 20:23	05:27 20:36	05:50 20:18	06:21 19:36	07:19 (1) 07:22 (1)	06:52 18:43	06:26 16:57	07:03 16:30	07:24 16:36
31	07:11 17:12	06:33 17:49	05:46 18:21	05:27 19:54	05:27 20:24	05:26 20:37	05:51 20:17	06:22 19:34	07:20 (1) 07:23 (1)	06:53 18:44	06:27 16:55	07:04 16:30	07:24 16:37
Potential sun hours	296	297	369	399	449	454	460	429	375	345	297	287	
Total, worst case					161		116	46					

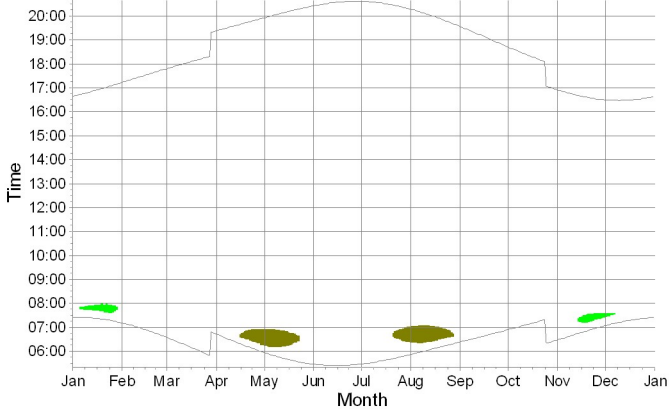
Table layout: For each day in each month the following matrix apply

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)
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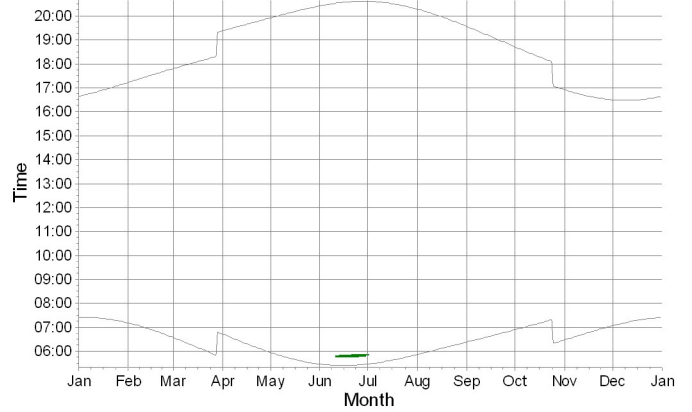
## SHADOW - Calendar, graphical

Calculation: ShadowFlickeringFoggiaMR

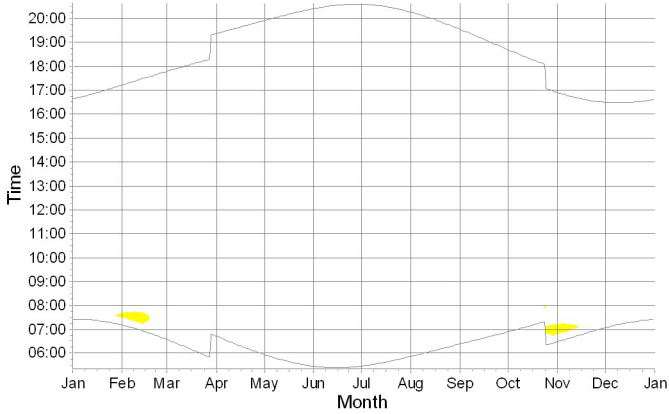
A: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (1)



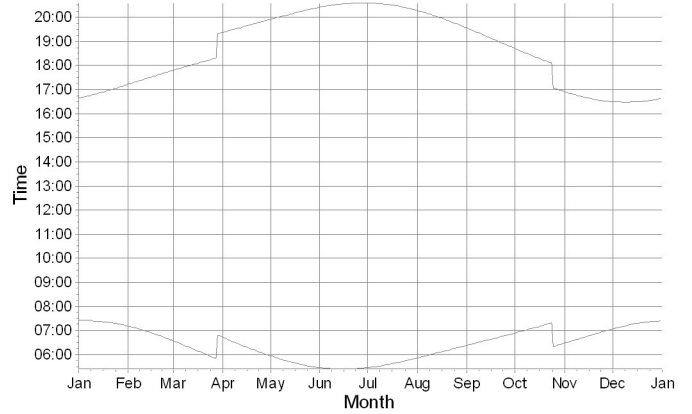
B: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (2)



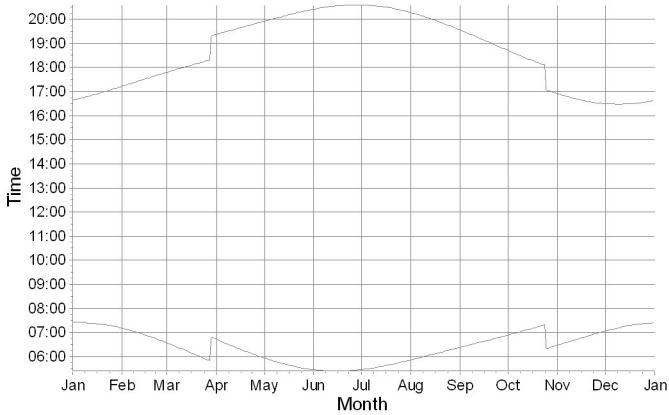
C: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (3)



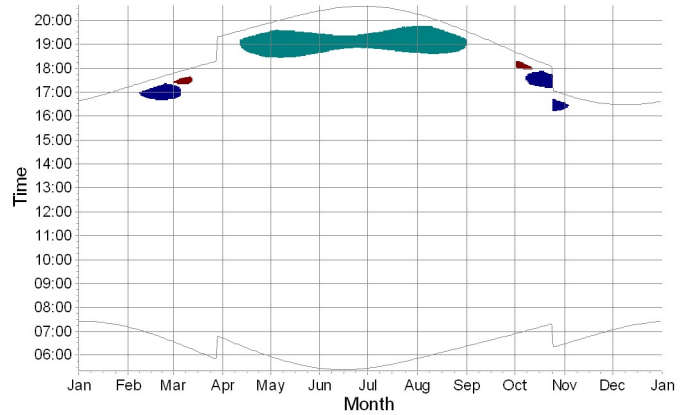
D: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (4)



E: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (5)



F: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (6)



### WTGs

- 1: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (1)
- 2: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (2)
- 6: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (6)
- 7: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (7)

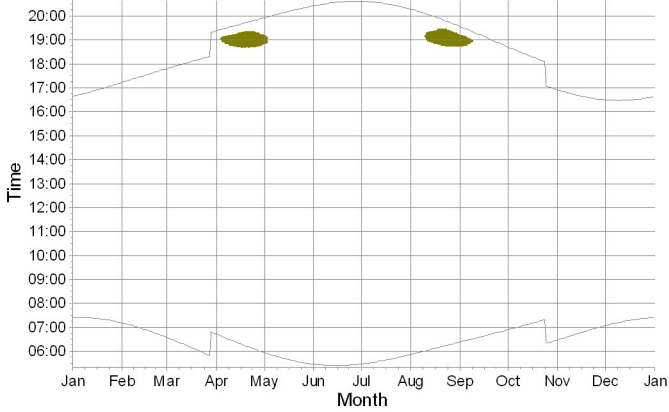
- 8: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (8)
- 9: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (9)
- 10: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (10)



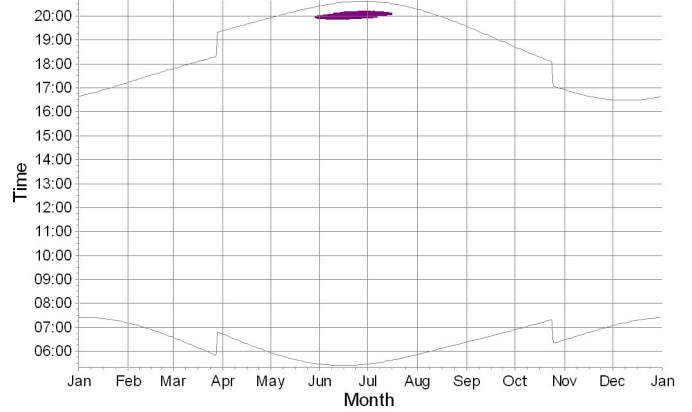
## SHADOW - Calendar, graphical

Calculation: ShadowFlickeringFoggiaMR

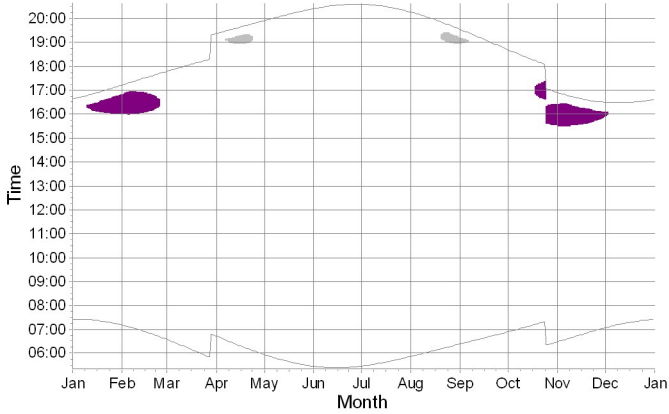
G: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (7)



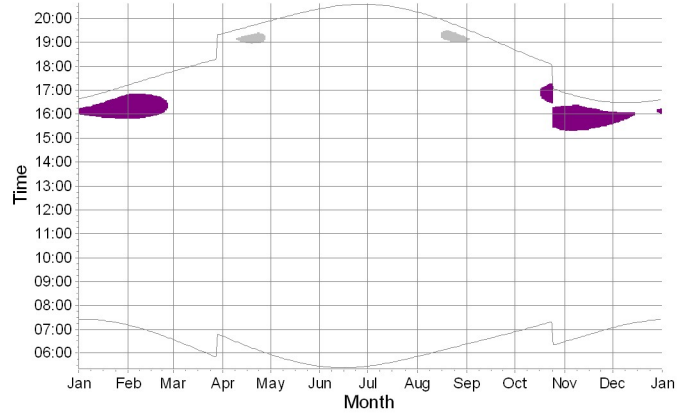
H: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (8)



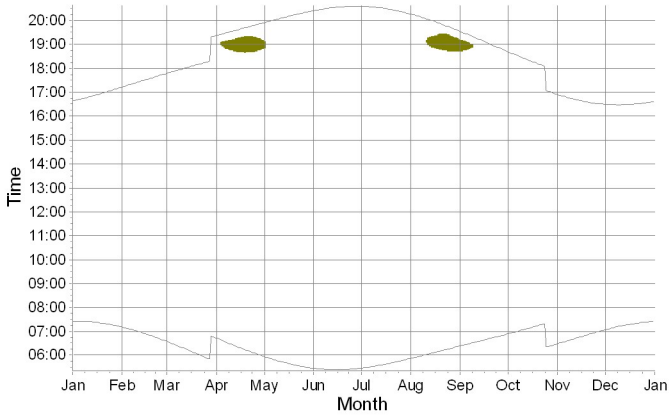
I: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (9)



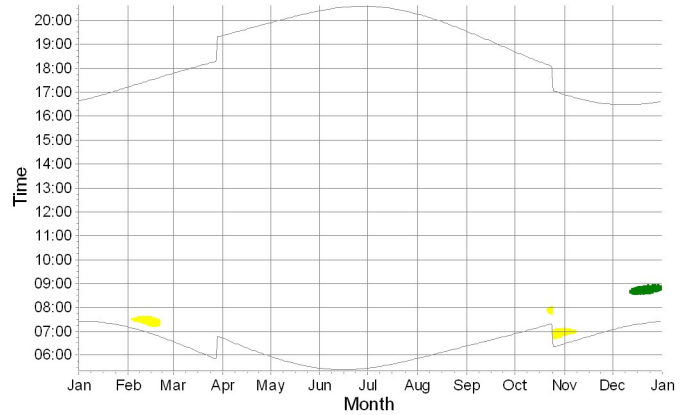
J: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (10)



K: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (11)



L: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (12)



### WTGs

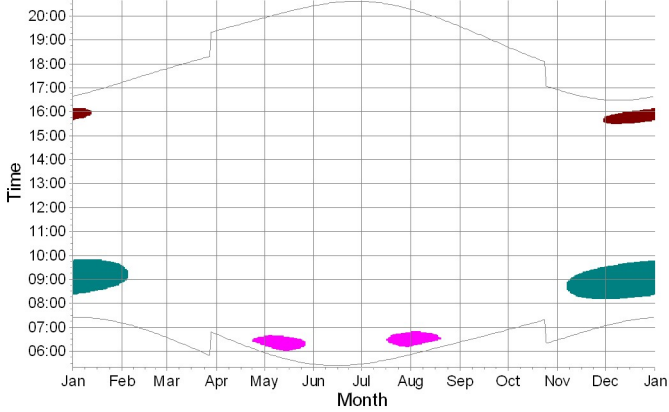
- 1: VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (1)
- 2: VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (2)
- 10: VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (10)

- 11: VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (11)
- 12: VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (12)

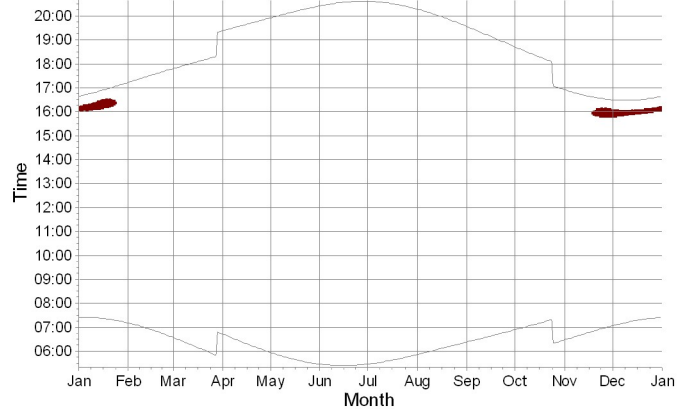
## SHADOW - Calendar, graphical

Calculation: ShadowFlickeringFoggiaMR

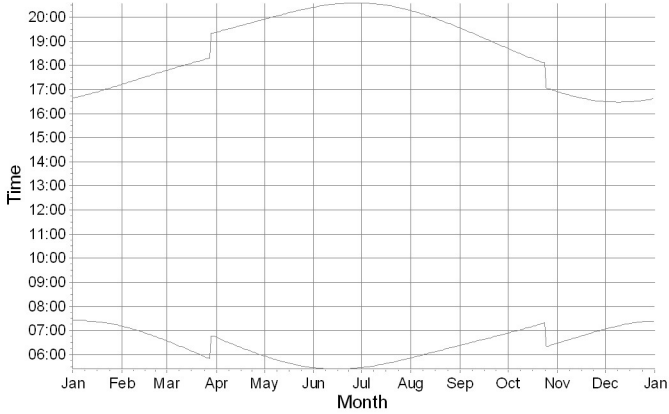
M: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (13)



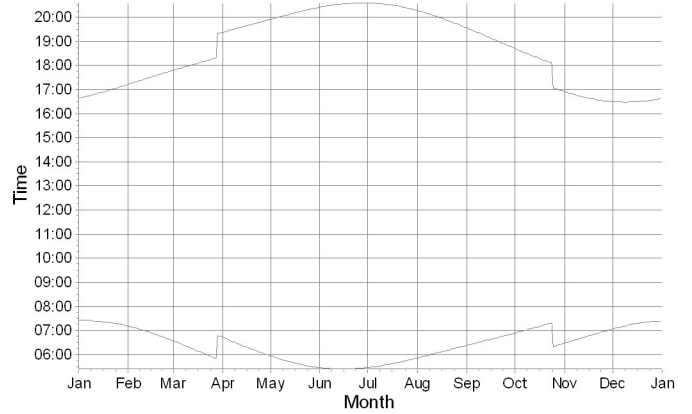
N: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (14)



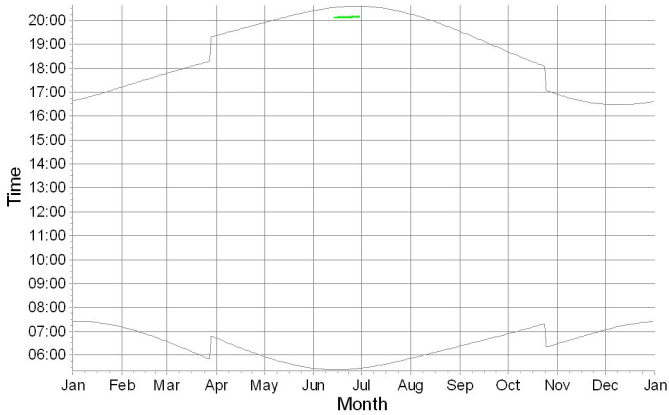
O: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (15)



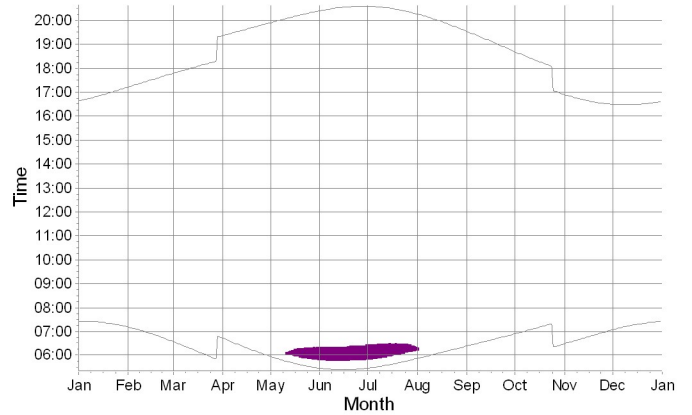
P: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (16)



Q: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (17)



R: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (18)



### WTGs

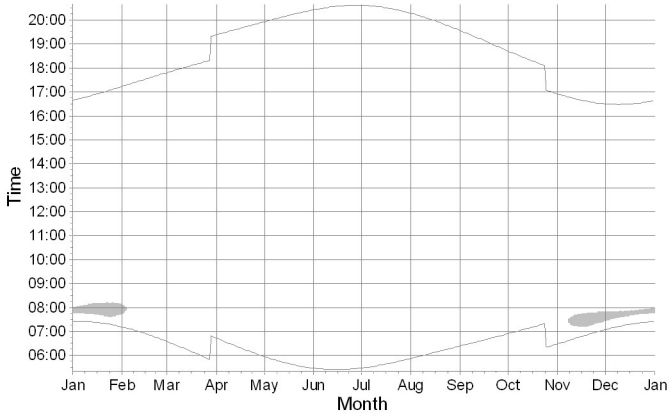
- 4: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (4)
- 5: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (5)
- 6: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (6)

- 8: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (8)
- 9: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (9)
- 11: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (11)

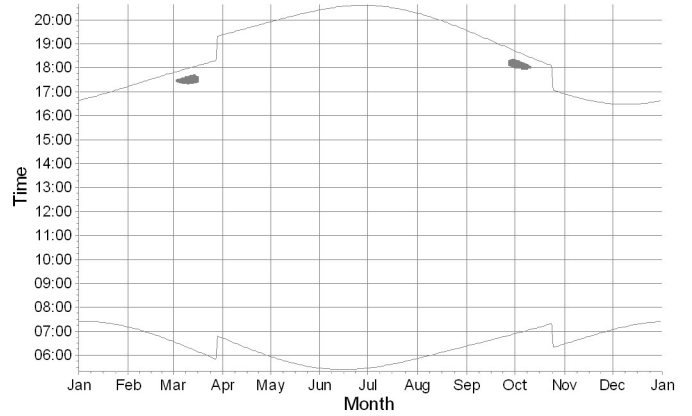
## SHADOW - Calendar, graphical

Calculation: ShadowFlickeringFoggiaMR

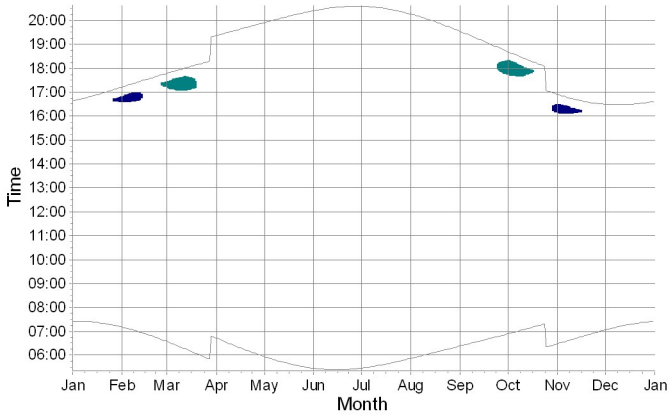
S: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (19)



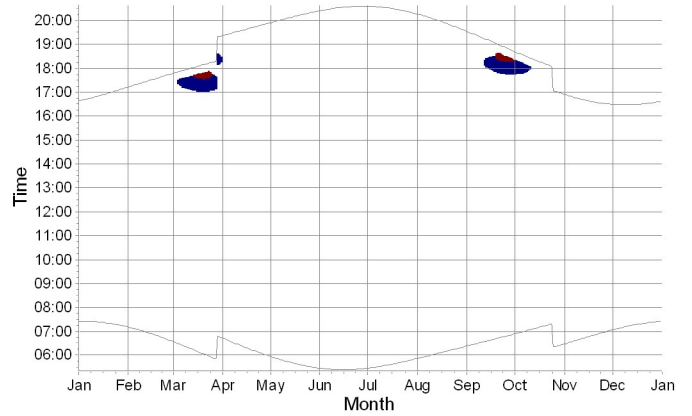
T: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (20)



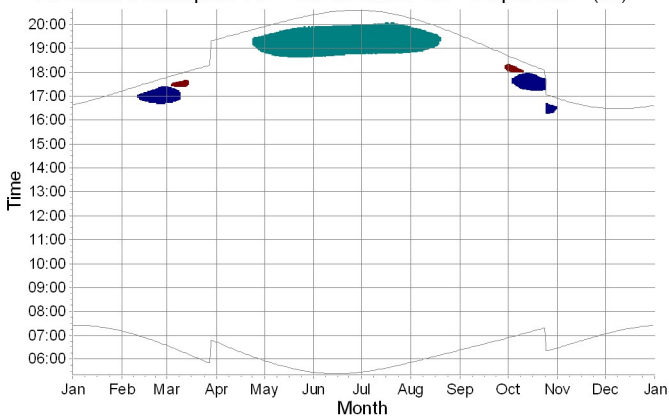
U: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (21)



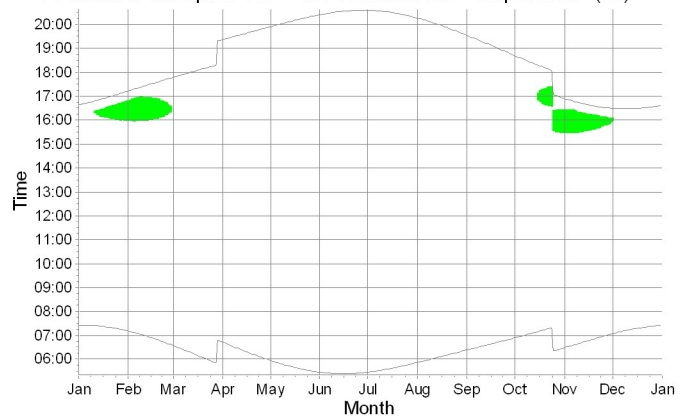
V: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (22)



W: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (23)



X: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (24)



### WTGs

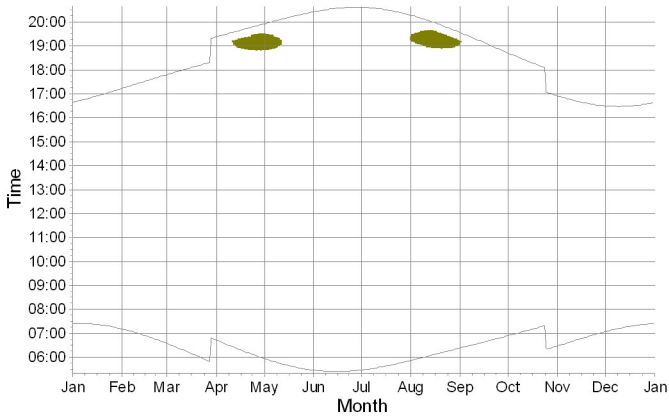
- 4: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (4)
- 6: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (6)
- 7: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (7)

- 8: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (8)
- 9: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (9)
- 12: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (12)

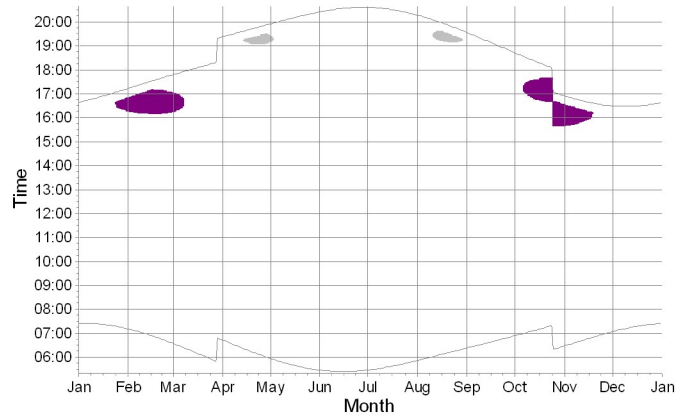
## SHADOW - Calendar, graphical

Calculation: ShadowFlickeringFoggiaMR

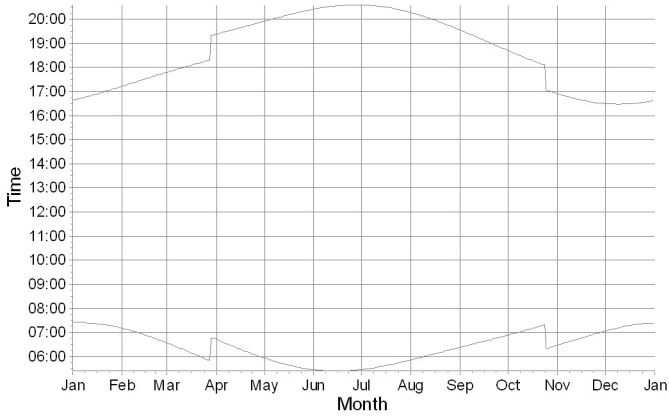
Y: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (25)



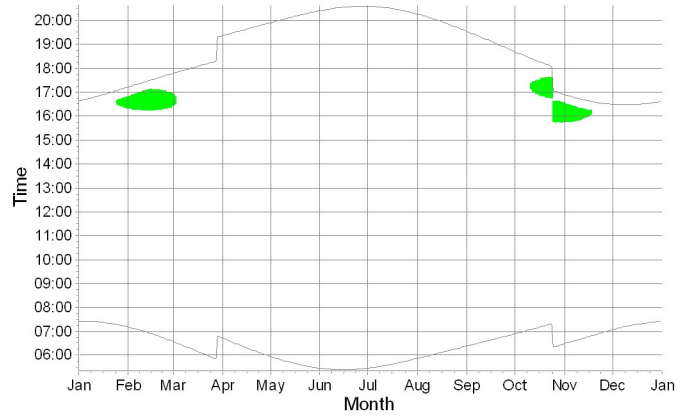
Z: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (26)



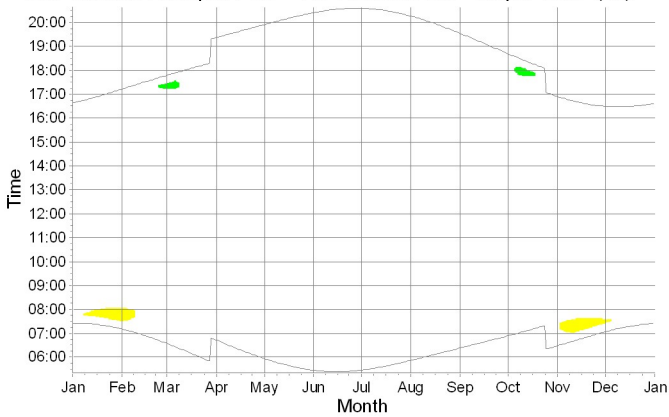
AA: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (27)



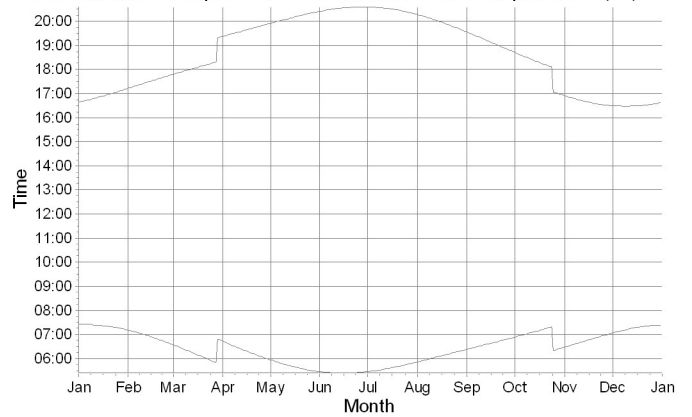
AB: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (28)



AC: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (29)



AD: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (30)



### WTGs

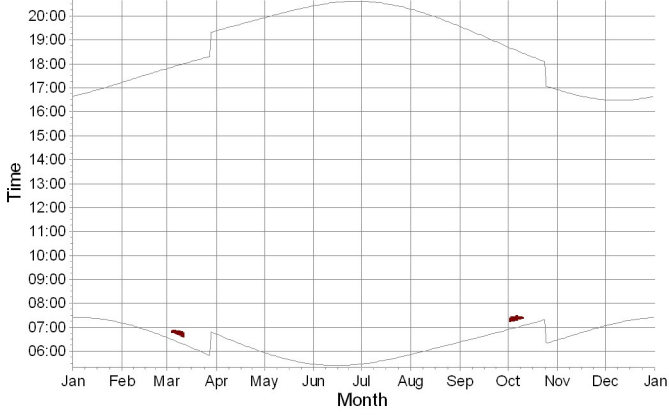
- 2: VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (2)
- 9: VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (9)
- 10: VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (10)

- 11: VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (11)
- 12: VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (12)

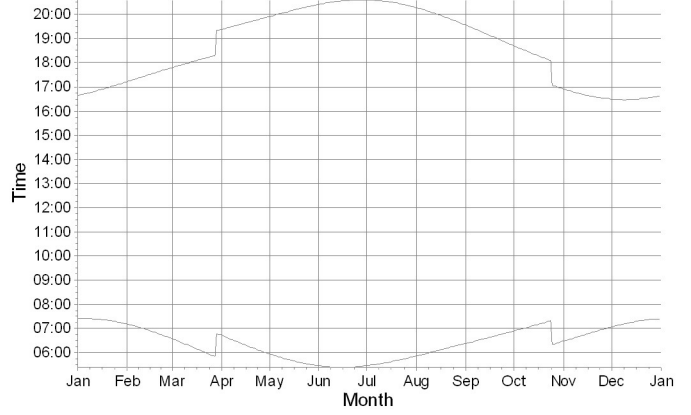
## SHADOW - Calendar, graphical

Calculation: ShadowFlickeringFoggiaMR

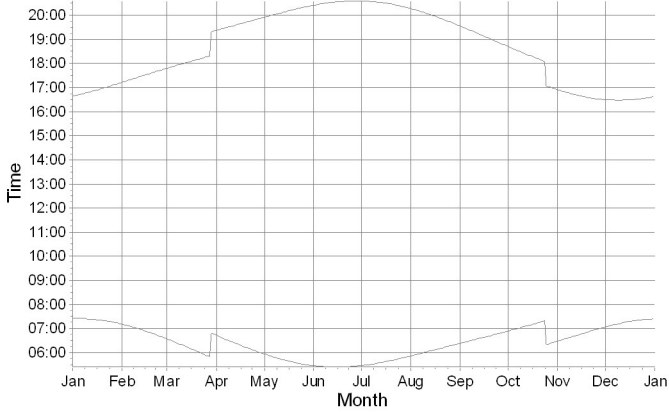
AE: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (31)



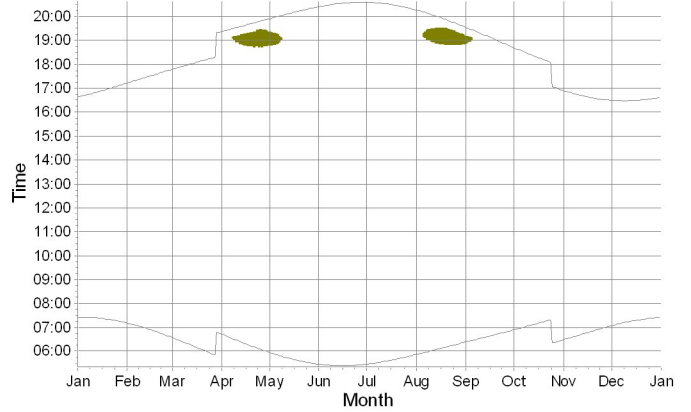
AF: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (32)



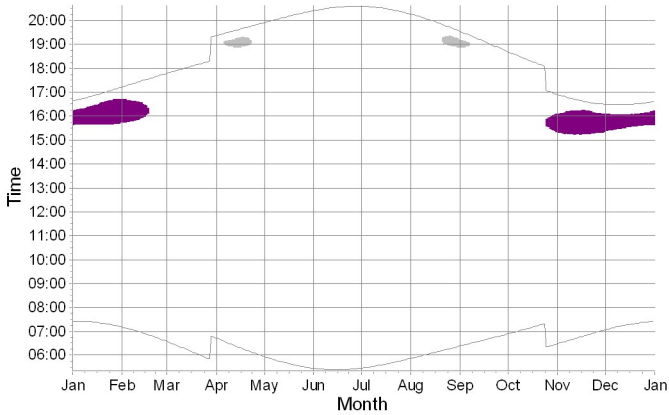
AG: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (33)



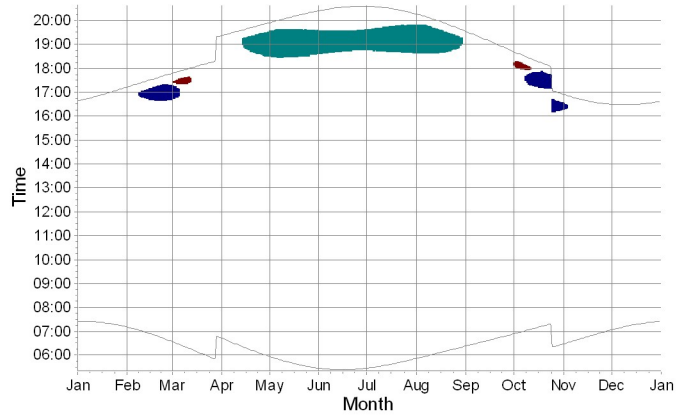
AH: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (34)



AI: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (35)



AJ: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 90.0° (36)



### WTGs

- 6: VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (6)
- 7: VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (7)
- 8: VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (8)

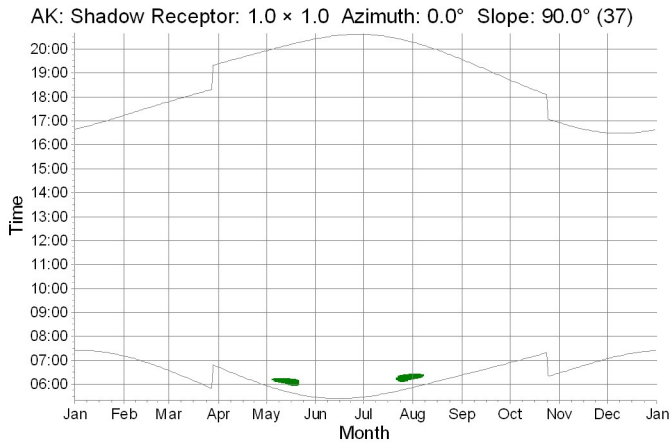
- 10: VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (10)
- 11: VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (11)
- 12: VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (12)

Project:  
FoggiaMR\_ShadowFlickering

Licensed user:  
Iron solar s.r.l.  
via Lanzone, 31  
IT-20122 Milano  
+393487125089  
Fabio Paccapelo / francesca.saccarola@hopegroup.it  
Calculated:  
09/03/2023 18:29/3.6.361

## SHADOW - Calendar, graphical

Calculation: ShadowFlickeringFoggiaMR



WTGs

1: VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (1)



## SHADOW - Calendar per WTG

Calculation: ShadowFlickeringFoggiaMR WTG: 2 - VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 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	July	August	September	October	November	December
1	07:24 16:38	07:10 17:13	07:31-08:03/32 17:47	06:34 17:47	06:43 19:22	05:56 19:54	05:27 20:24	05:27 20:35	06:23 20:16	06:53 19:32	06:28 18:41	07:04 16:29
2	07:24 16:39	07:09 17:14	07:30-08:02/32 17:48	06:32 19:23	06:41 19:55	05:55 19:55	05:26 20:25	05:28 20:35	05:53 20:15	06:24 19:31	06:54 18:40	07:05 16:29
3	07:24 16:40	07:08 17:15	07:29-08:02/33 17:50	06:31 17:50	06:39 19:24	05:54 19:57	05:26 20:26	05:28 20:35	05:53 20:14	06:25 19:29	06:56 18:38	07:06 16:28
4	07:24 16:41	07:07 17:16	07:27-08:00/33 17:51	06:29 17:51	06:38 19:25	05:52 19:58	05:26 20:27	05:29 20:35	05:54 20:13	06:26 19:27	06:57 18:36	07:07 16:28
5	07:24 16:42	07:06 17:18	07:26-07:59/33 17:52	06:28 17:52	06:36 19:26	05:51 19:59	05:25 20:27	05:29 20:35	05:55 20:11	06:27 19:26	06:58 18:35	07:08 16:28
6	07:24 16:43	07:05 17:19	07:25-07:58/33 17:53	06:26 17:53	06:34 19:27	05:50 20:00	05:25 20:28	05:30 20:34	05:56 20:10	06:28 19:24	06:59 18:33	07:09 16:28
7	07:24 16:44	07:04 17:20	07:24-07:56/32 17:54	06:24 17:54	06:33 19:28	05:49 20:01	05:25 20:29	05:31 20:34	05:57 20:09	06:29 19:22	07:00 18:31	07:10 16:28
8	07:24 16:45	07:03 17:22	07:23-07:54/31 17:55	06:23 17:55	06:31 19:30	05:47 20:02	05:24 20:29	05:31 20:34	05:58 20:08	06:30 19:21	07:01 18:30	07:11 16:28
9	07:24 16:46	07:02 17:23	07:22-07:43/21 17:57	06:21 17:57	06:29 19:31	05:46 20:03	05:24 20:30	05:32 20:33	05:59 20:07	06:31 19:19	07:02 18:28	07:11 16:28
10	07:24 16:47	07:01 17:24	07:20-07:42/22 17:58	06:20 17:58	06:28 19:32	05:45 20:04	05:24 20:30	05:33 20:33	06:00 20:05	06:32 19:17	07:03 18:26	07:12 16:28
11	07:24 16:48	06:59 17:25	07:19-07:42/23 17:59	06:18 17:59	06:26 19:33	05:44 20:05	05:24 20:31	05:33 20:33	06:02 20:04	06:33 19:16	07:04 18:25	07:13 16:28
12	07:23 16:49	06:58 17:27	07:18-07:41/23 18:00	06:16 18:00	06:24 19:34	05:43 20:06	05:24 20:31	05:34 20:32	06:03 20:03	06:34 19:14	07:05 18:23	07:14 16:28
13	07:23 16:50	06:57 17:28	07:16-07:40/24 18:01	06:15 18:01	06:23 19:35	05:42 20:07	05:24 20:32	05:35 20:32	06:04 20:01	06:35 19:12	07:06 18:21	07:15 16:28
14	07:23 16:51	06:56 17:29	07:15-07:39/24 18:02	06:13 18:02	06:21 19:36	05:41 20:08	05:23 20:32	05:36 20:31	06:05 20:00	06:36 19:10	07:07 18:20	07:16 16:28
15	07:22 16:52	06:54 17:30	07:14-07:38/24 18:03	06:11 18:03	06:20 19:37	05:40 20:09	05:23 20:33	05:36 20:31	06:06 19:58	06:37 19:09	07:09 18:18	07:16 16:29
16	07:22 16:53	06:53 17:32	07:12-07:36/24 18:04	06:10 18:04	06:18 19:38	05:39 20:10	05:23 20:33	05:37 20:30	06:07 19:57	06:38 19:07	07:10 18:17	07:17 16:29
17	07:21 16:54	06:52 17:33	07:12-07:34/22 18:06	06:08 18:06	06:17 19:39	05:38 20:11	05:23 20:34	05:38 20:29	06:08 19:56	06:39 19:05	07:11 18:15	07:18 16:29
18	07:21 16:55	06:50 17:34	07:13-07:32/19 18:07	06:06 18:07	06:15 19:40	05:37 20:12	05:24 20:34	05:39 20:29	06:09 19:54	06:40 19:04	07:12 18:14	07:18 16:30
19	07:20 16:57	06:49 17:35	07:14-07:30/16 18:08	06:05 18:08	06:13 19:41	05:36 20:13	05:24 20:34	05:40 20:28	06:10 19:53	06:41 19:02	07:13 18:12	07:19 16:30
20	07:20 16:58	06:47 17:37	07:17-07:28/11 18:09	06:03 18:09	06:12 19:43	05:35 20:14	05:24 20:34	05:40 20:27	06:11 19:51	06:42 19:00	07:14 18:11	07:20 16:30
21	07:19 16:59	06:46 17:38	07:40-08:00/20 18:10	06:01 18:10	06:10 19:44	05:34 20:15	05:24 20:35	05:41 20:26	06:12 19:50	06:43 18:58	07:15 18:09	07:20 16:31
22	07:19 17:00	06:44 17:39	07:40-08:02/22 18:11	06:00 18:11	06:09 19:45	05:33 20:16	05:24 20:35	05:42 20:26	06:13 19:48	06:44 18:57	07:16 18:08	07:21 16:31
23	07:18 17:01	06:43 17:40	07:39-08:02/23 18:12	06:00 18:12	06:09 19:46	05:33 20:17	05:24 20:35	05:43 20:25	06:14 19:47	06:45 18:55	07:18 18:06	07:22 16:32
24	07:17 17:03	06:42 17:41	07:38-08:02/24 18:13	06:00 18:13	06:06 19:47	05:32 20:18	05:25 20:35	05:44 20:24	06:15 19:45	06:46 18:53	07:19 18:05	07:23 16:32
25	07:16 17:04	06:40 17:43	07:37-08:02/25 18:14	06:00 18:14	06:05 19:48	05:31 20:19	05:25 20:35	05:45 20:23	06:16 19:44	06:47 18:52	07:20 17:03	07:24 16:33
26	07:16 17:05	06:39 17:44	07:36-08:02/26 18:15	06:00 18:15	06:03 19:49	05:30 20:19	05:25 20:35	05:46 20:22	06:17 19:42	06:48 18:50	07:21 17:02	07:25 16:33
27	07:15 17:06	06:37 17:45	07:35-08:02/27 18:16	06:00 18:16	06:02 19:50	05:30 20:20	05:26 20:36	05:47 20:21	06:18 19:40	06:49 18:48	07:22 17:01	07:26 16:34
28	07:14 17:08	06:35 17:46	07:35-08:03/28 18:17	06:00 18:17	06:00 19:51	05:29 20:21	05:26 20:36	05:48 20:20	06:19 19:39	06:50 18:46	07:23 16:59	07:27 16:35
29	07:13 17:09	06:35 17:46	07:34-08:03/29 18:18	06:00 18:18	06:00 19:51	05:29 20:21	05:26 20:36	05:49 20:20	06:20 19:46	06:51 18:45	07:24 17:02	07:28 16:36
30	07:12 17:10	06:35 17:46	07:33-08:03/30 18:19	06:00 18:19	06:00 19:52	05:29 20:22	05:26 20:36	05:49 20:19	06:20 19:37	06:51 18:45	07:25 17:02	07:29 16:36
31	07:11 17:11	06:35 17:46	07:32-08:03/31 18:20	06:00 18:20	06:00 19:53	05:29 20:23	05:26 20:35	05:49 20:18	06:20 19:36	06:51 18:43	07:26 16:57	07:30 16:36
Potential sun hours	296	297	369	399	449	454	460	429	375	345	297	287
Sum of minutes with flicker	422	512	0	0	0	0	0	0	0	214	707	16

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: ShadowFlickeringFoggiaMR WTG: 3 - VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 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	07:24 16:38	07:10 17:13	06:34 17:47	06:42 19:22	05:56 19:54	05:27 20:24	05:27 20:35	05:51 20:16	06:23 19:32	06:53 18:41	06:28 16:54	07:03 16:29
2	07:24 16:39	07:09 17:14	06:32 17:48	06:41 19:23	05:55 19:55	05:26 20:25	05:28 20:35	05:52 20:15	06:24 19:31	06:54 18:39	06:29 16:53	07:04 16:29
3	07:24 16:40	07:08 17:15	06:31 17:49	06:39 19:24	05:53 19:56	05:26 20:26	05:28 20:35	05:53 20:14	06:25 19:29	06:55 18:38	06:30 16:51	07:05 16:28
4	07:24 16:41	07:07 17:16	06:29 17:51	06:37 19:25	05:52 19:57	05:25 20:26	05:29 20:35	05:54 20:13	06:26 19:27	06:56 18:36	06:32 16:50	07:06 16:28
5	07:24 16:41	07:06 17:18	06:27 17:52	06:36 19:26	05:51 19:58	05:25 20:27	05:29 20:35	05:55 20:11	06:27 19:26	06:57 18:34	06:33 16:49	07:07 16:28
6	07:24 16:42	07:05 17:19	06:26 17:53	06:34 19:27	05:50 20:00	05:25 20:28	05:30 20:34	05:56 20:10	06:28 19:24	06:59 18:33	06:34 16:48	07:08 16:28
7	07:24 16:43	07:04 17:20	06:24 17:54	06:32 19:28	05:48 20:01	05:24 20:28	05:30 20:34	05:57 20:09	06:29 19:22	07:00 18:31	06:35 16:47	07:09 16:28
8	07:24 16:44	07:03 17:21	06:23 17:55	06:31 19:29	05:47 20:02	05:24 20:29	05:31 20:34	05:58 20:08	06:30 19:21	07:01 18:29	06:37 16:46	07:10 16:28
9	07:24 16:45	07:02 17:23	06:21 17:56	06:29 19:30	05:46 20:03	05:24 20:30	05:32 20:33	05:59 20:06	06:31 19:19	07:02 18:28	06:38 16:45	07:11 16:28
10	07:24 16:46	07:00 17:24	06:19 17:58	06:28 19:32	05:45 20:04	05:24 20:30	05:32 20:33	06:00 20:05	06:32 19:17	07:03 18:26	06:39 16:43	07:12 16:28
11	07:23 16:47	06:59 17:25	06:18 17:59	06:26 19:33	05:44 20:05	05:24 20:31	05:33 20:32	06:01 20:04	06:33 19:15	07:04 18:25	06:40 16:42	07:13 16:28
12	07:23 16:49	06:58 17:26	06:16 18:00	06:24 19:34	05:43 20:06	05:23 20:31	05:34 20:32	06:02 20:02	06:34 19:14	07:05 18:23	06:41 16:41	07:14 16:28
13	07:23 16:50	06:57 17:28	06:14 18:01	06:23 19:35	05:42 20:07	05:23 20:32	05:35 20:31	06:03 20:01	06:35 19:12	07:06 18:21	06:43 16:41	07:15 16:28
14	07:22 16:51	06:55 17:29	06:13 18:02	06:21 19:36	05:41 20:08	05:23 20:32	05:35 20:31	06:04 20:00	06:36 19:10	07:07 18:20	06:44 16:40	07:15 16:28
15	07:22 16:52	06:54 17:30	06:11 18:03	06:20 19:37	05:40 20:09	05:23 20:33	05:36 20:30	06:05 19:58	06:37 19:09	07:08 18:18	06:45 16:39	07:16 16:28
16	07:22 16:53	06:53 17:31	06:09 18:04	06:18 19:38	05:39 20:10	05:23 20:33	05:37 20:30	06:06 19:57	06:38 19:07	07:09 18:17	06:46 16:38	07:17 16:29
17	07:21 16:54	06:51 17:33	06:08 18:05	06:16 19:39	05:38 20:11	05:23 20:33	05:38 20:29	06:07 19:55	06:39 19:05	07:11 18:15	06:47 16:37	07:18 16:29
18	07:21 16:55	06:50 17:34	06:06 18:07	06:15 19:40	05:37 20:12	05:23 20:34	05:39 20:28	06:08 19:54	06:40 19:03	07:12 18:13	06:49 16:36	07:18 16:29
19	07:20 16:56	06:49 17:35	06:04 18:08	06:13 19:41	05:36 20:13	05:23 20:34	05:39 20:28	06:09 19:53	06:41 19:02	07:13 18:12	06:50 16:35	07:19 16:30
20	07:20 16:58	06:47 17:36	06:03 18:09	06:12 19:42	05:35 20:14	05:24 20:34	05:40 20:27	06:10 19:51	06:42 19:00	07:14 18:10	06:51 16:35	07:19 16:30
21	07:19 16:59	06:46 17:38	06:01 18:10	06:10 19:43	05:34 20:15	05:24 20:35	05:41 20:26	06:12 19:50	06:43 18:58	07:15 18:09	06:52 16:34	07:20 16:31
22	07:18 17:00	06:44 17:39	05:59 18:11	06:09 19:45	05:33 20:16	05:24 20:35	05:42 20:25	06:13 19:48	06:44 18:57	07:16 18:08	06:53 16:33	07:21 16:31
23	07:18 17:01	06:43 17:40	05:58 18:12	06:07 19:46	05:32 20:17	05:24 20:35	05:43 20:25	06:14 19:47	06:45 18:55	07:17 18:06	06:54 16:33	07:21 16:32
24	07:17 17:03	06:41 17:41	05:56 18:13	06:06 19:47	05:32 20:17	05:24 20:35	05:44 20:24	06:15 19:45	06:46 18:53	07:19 18:05	06:56 16:32	07:21 16:32
25	07:16 17:04	06:40 17:42	05:54 18:14	06:04 19:48	05:31 20:18	05:25 20:35	05:45 20:23	06:16 19:43	06:47 18:51	07:20 18:03	06:57 16:32	07:22 16:33
26	07:16 17:05	06:38 17:44	05:53 18:15	06:03 19:49	05:30 20:19	05:25 20:35	05:46 20:22	06:17 19:42	06:48 18:50	07:21 17:02	06:58 16:31	07:22 16:33
27	07:15 17:06	06:37 17:45	05:51 18:16	06:02 19:50	05:30 20:20	05:25 20:35	05:47 20:21	06:18 19:40	06:49 18:48	07:22 17:00	06:59 16:31	07:23 16:34
28	07:14 17:07	06:35 17:46	05:49 18:17	06:00 19:51	05:29 20:21	05:26 20:35	05:48 20:20	06:19 19:39	06:50 18:46	07:23 16:59	07:00 16:30	07:23 16:35
29	07:13 17:09		06:47 19:19	05:59 19:52	05:28 20:22	05:26 20:35	05:48 20:19	06:20 19:37	06:51 18:45	07:24 16:58	07:01 16:30	07:23 16:35
30	07:12 17:10		06:46 19:20	05:57 19:53	05:28 20:23	05:27 20:35	05:49 20:18	06:21 19:35	06:52 18:43	07:25 16:56	07:02 16:29	07:24 16:36
31	07:11 17:11		06:44 19:21		05:27 20:23		05:50 20:17	06:22 19:34		06:27 16:55		07:24 16:37
Potential sun hours	296	297	369	399	449	454	460	429	375	345	297	287
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: ShadowFlickeringFoggiaMR WTG: 4 - VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 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
1	07:24 16:38	07:10 17:13	06:34 17:47	06:42 19:22	05:56 06:16-06:28/12 19:54	05:27 20:24
2	07:24 16:39	07:09 17:14	06:32 17:48	06:41 19:23	05:55 06:14-06:26/12 19:55	05:26 20:25
3	07:24 16:40	07:08 17:15	06:31 17:26-17:28/2 17:50	06:39 19:24	05:53 06:13-06:25/12 19:56	05:26 20:26
4	07:24 16:41	07:07 17:16	06:29 17:24-17:29/5 17:51	06:37 19:25	05:52 06:12-06:24/12 19:57	05:25 20:26
5	07:24 16:42	07:06 17:18	06:28 17:22-17:30/8 17:52	06:36 19:26	05:51 06:13-06:23/10 19:59	05:25 20:27
6	07:24 16:42	07:05 17:19	06:26 17:22-17:32/10 17:53	06:34 19:27	05:50 06:15-06:18/3 20:00	05:25 20:28
7	07:24 16:43	07:04 17:20	06:24 17:21-17:33/12 17:54	06:32 19:28	05:48 20:01	05:24 20:28
8	07:24 16:44	07:03 17:21	06:23 17:21-17:34/13 17:55	06:31 19:29	05:47 20:02	05:24 20:29
9	07:24 16:45	07:02 17:23	06:21 17:20-17:35/15 17:56	06:29 19:30	05:46 20:03	05:24 20:30
10	07:24 16:46	07:00 17:24	06:19 17:19-17:36/17 17:58	06:28 19:32	05:45 20:04	05:24 20:30
11	07:23 16:48	06:59 17:25	06:18 17:20-17:38/18 17:59	06:26 19:33	05:44 20:05	05:24 20:31
12	07:23 16:49	06:58 17:26	06:16 17:20-17:39/19 18:00	06:24 19:34	05:43 20:06	05:23 20:31
13	07:23 16:50	06:57 17:28	06:14 17:20-17:40/20 18:01	06:23 19:35	05:42 20:07	05:23 20:32
14	07:23 16:51	06:55 17:29	06:13 17:22-17:41/19 18:02	06:21 19:36	05:41 20:08	05:23 20:32
15	07:22 16:52	06:54 17:30	06:11 17:23-17:38/15 18:03	06:20 19:37	05:40 20:09	05:23 20:33
16	07:22 16:53	06:53 17:31	06:09 17:24-17:35/11 18:04	06:18 19:38	05:39 20:10	05:23 20:33
17	07:21 16:54	06:51 17:33	06:08 18:05	06:16 19:39	05:38 20:11	05:23 20:33
18	07:21 16:55	06:50 17:34	06:06 18:07	06:15 19:40	05:37 20:12	05:23 20:34
19	07:20 16:57	06:49 17:35	06:04 18:08	06:13 19:41	05:36 20:13	05:24 20:34
20	07:20 16:58	06:47 17:36	06:03 18:09	06:12 19:42	05:35 20:14	05:24 20:34
21	07:19 16:59	06:46 17:38	06:01 18:10	06:10 19:43	05:34 20:15	05:24 20:35
22	07:18 17:00	06:44 17:39	05:59 18:11	06:09 19:45	05:33 20:16	05:24 20:35
23	07:18 17:01	06:43 17:40	05:58 18:12	06:07 19:46	05:32 20:17	05:24 20:35
24	07:17 17:03	06:41 17:41	05:56 18:13	06:06 06:25-06:27/2 19:47	05:32 20:17	05:25 20:35
25	07:16 17:04	06:40 17:42	05:54 18:14	06:04 06:24-06:28/4 19:48	05:31 20:18	05:25 20:35
26	07:16 17:05	06:38 17:44	05:53 18:15	06:03 06:22-06:28/6 19:49	05:30 20:19	05:25 20:35
27	07:15 17:06	06:37 17:45	05:51 18:16	06:02 06:21-06:29/8 19:50	05:30 20:20	05:25 20:35
28	07:14 17:08	06:35 17:46	05:49 18:18	06:00 06:20-06:29/9 19:51	05:29 20:21	05:26 20:35
29	07:13 17:09		06:48 19:19	05:59 06:18-06:28/10 19:52	05:28 20:22	05:26 20:35
30	07:12 17:10		06:46 19:20	05:57 06:17-06:28/11 19:53	05:28 20:23	05:27 20:35
31	07:11 17:11		06:44 19:21		05:27 20:23	
Potential sun hours	296	297	369	399	449	454
Sum of minutes with flicker	0	0	184	50	61	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: ShadowFlickeringFoggiaMR WTG: 4 - VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 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

	July	August	September	October	November	December
1	05:27 20:35	05:51 20:16	06:23 19:32	06:53 17:59-18:18/19 18:41	06:28 16:54	07:03 16:29
2	05:28 20:35	05:52 20:15	06:24 19:31	06:54 17:58-18:16/18 18:39	06:29 16:53	07:04 16:29
3	05:28 20:35	05:53 20:14	06:25 19:29	06:55 17:58-18:15/17 18:38	06:31 16:51	07:06 16:29
4	05:29 20:35	05:54 20:13	06:26 19:27	06:56 17:58-18:14/16 18:36	06:32 16:50	07:07 16:28
5	05:29 20:35	05:55 20:11	06:27 19:26	06:58 17:57-18:12/15 18:34	06:33 16:49	07:08 16:28
6	05:30 20:34	05:56 20:10	06:28 19:24	06:59 17:57-18:10/13 18:33	06:34 16:48	07:08 16:28
7	05:31 20:34	05:57 06:23-06:30/7 20:09	06:29 19:22	07:00 17:57-18:08/11 18:31	06:35 16:47	07:09 16:28
8	05:31 20:34	05:58 06:21-06:32/11 20:08	06:30 19:21	07:01 17:57-18:06/9 18:29	06:37 16:46	07:10 16:28
9	05:32 20:33	05:59 06:21-06:33/12 20:06	06:31 19:19	07:02 17:58-18:05/7 18:28	06:38 16:45	07:11 16:28
10	05:32 20:33	06:00 06:22-06:34/12 20:05	06:32 19:17	07:03 17:59-18:03/4 18:26	06:39 16:44	07:12 16:28
11	05:33 20:32	06:01 06:23-06:35/12 20:04	06:33 19:16	07:04 18:25	06:40 16:43	07:13 16:28
12	05:34 20:32	06:02 06:24-06:35/11 20:02	06:34 19:14	07:05 18:23	06:41 16:42	07:14 16:28
13	05:35 20:31	06:03 06:25-06:36/11 20:01	06:35 19:12	07:06 18:21	06:43 16:41	07:15 16:28
14	05:35 20:31	06:04 06:26-06:36/10 20:00	06:36 19:10	07:07 18:20	06:44 16:40	07:15 16:28
15	05:36 20:30	06:05 06:27-06:36/9 19:58	06:37 19:09	07:08 18:18	06:45 16:39	07:16 16:29
16	05:37 20:30	06:06 06:28-06:35/7 19:57	06:38 19:07	07:10 18:17	06:46 16:38	07:17 16:29
17	05:38 20:29	06:07 06:29-06:35/6 19:55	06:39 19:05	07:11 18:15	06:47 16:37	07:18 16:29
18	05:39 20:28	06:09 06:30-06:34/4 19:54	06:40 19:03	07:12 18:14	06:49 16:36	07:18 16:29
19	05:39 20:28	06:10 06:31-06:33/2 19:53	06:41 19:02	07:13 18:12	06:50 16:35	07:19 16:30
20	05:40 20:27	06:11 19:51	06:42 19:00	07:14 18:11	06:51 16:35	07:19 16:30
21	05:41 20:26	06:12 19:50	06:43 18:58	07:15 18:09	06:52 16:34	07:20 16:31
22	05:42 20:25	06:13 19:48	06:44 18:57	07:16 18:08	06:53 16:33	07:21 16:31
23	05:43 20:25	06:14 19:47	06:45 18:55	07:17 18:06	06:55 16:33	07:21 16:32
24	05:44 20:24	06:15 19:45	06:46 18:53	07:19 18:05	06:56 16:32	07:22 16:32
25	05:45 20:23	06:16 19:43	06:47 18:51	06:20 17:03	06:57 16:32	07:22 16:33
26	05:46 20:22	06:17 19:42	06:48 18:50	06:21 17:02	06:58 16:31	07:22 16:33
27	05:47 20:21	06:18 19:40	06:49 18:07-18:16/9 18:48	06:22 17:00	06:59 16:31	07:23 16:34
28	05:48 20:20	06:19 19:39	06:50 18:04-18:18/14 18:46	06:23 16:59	07:00 16:30	07:23 16:35
29	05:49 20:19	06:20 19:37	06:51 18:02-18:20/18 18:45	06:25 16:58	07:01 16:30	07:23 16:35
30	05:49 20:18	06:21 19:36	06:52 18:00-18:20/20 18:43	06:26 16:56	07:02 16:29	07:24 16:36
31	05:50 20:17	06:22 19:34		06:27 16:55		07:24 16:37
Potential sun hours	460	429	375	345	297	287
Sum of minutes with flicker	0	114	61	129	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: ShadowFlickeringFoggiaMR WTG: 6 - VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 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	07:24 08:23-09:46/83 16:38	07:10 08:54-09:32/38 17:13	06:34 17:12-17:26/14 17:47	06:43 19:22	05:56 18:30-19:32/62 19:54	05:27 18:36-19:52/76 20:24	
2	07:24 08:24-09:47/83 16:39	07:09 08:56-09:28/32 17:14	06:32 17:10-17:27/17 17:48	06:41 19:23	05:55 18:29-19:32/63 19:55	05:26 18:37-19:53/76 20:25	
3	07:24 08:24-09:47/83 16:40	07:08 08:59-09:25/26 17:15	06:31 17:09-17:28/19 17:50	06:39 19:24	05:54 18:29-19:33/64 19:56	05:26 18:38-19:53/75 20:26	
4	07:24 08:25-09:47/82 16:41	07:07 09:04-09:20/16 17:16	06:29 17:08-17:29/21 17:51	06:38 19:25	05:52 18:29-19:34/65 19:58	05:26 18:38-19:53/75 20:26	
5	07:24 08:26-09:48/82 16:42	07:06 08:26-09:48/82 17:18	06:28 17:08-17:31/23 17:52	06:36 19:26	05:51 18:29-19:36/67 19:59	05:25 18:38-19:53/75 20:27	
6	07:24 08:26-09:48/82 16:43	07:05 08:26-09:48/82 17:19	06:26 17:07-17:32/25 17:53	06:34 19:27	05:50 18:28-19:36/68 20:00	05:25 18:39-19:54/75 20:28	
7	07:24 08:26-09:47/81 16:44	07:04 08:26-09:47/81 17:20	06:24 17:06-17:33/27 17:54	06:33 19:28	05:49 18:28-19:37/69 20:01	05:25 18:40-19:54/74 20:28	
8	07:24 08:27-09:48/81 16:45	07:03 08:27-09:48/81 17:22	06:23 17:06-17:34/28 17:55	06:31 19:29	05:47 18:28-19:38/70 20:02	05:24 18:40-19:53/73 20:29	
9	07:24 08:28-09:48/80 16:46	07:02 08:28-09:48/80 17:23	06:21 17:05-17:35/30 17:57	06:29 19:31	05:46 18:28-19:39/71 20:03	05:24 18:41-19:54/73 20:30	
10	07:24 08:29-09:48/79 16:47	07:00 08:29-09:48/79 17:24	06:19 17:05-17:36/31 17:58	06:28 19:32	05:45 18:29-19:40/71 20:04	05:24 18:41-19:54/73 20:30	
11	07:23 08:29-09:48/79 16:48	06:59 08:29-09:48/79 17:25	06:18 17:06-17:38/32 17:59	06:26 19:33	05:44 18:29-19:41/72 20:05	05:24 18:42-19:54/72 20:31	
12	07:23 08:30-09:48/78 16:49	06:58 08:30-09:48/78 17:27	06:16 17:05-17:39/34 18:00	06:24 18:57-19:12/15 19:34	05:43 18:29-19:42/73 20:06	05:24 18:42-19:54/72 20:31	
13	07:23 08:31-09:48/77 16:50	06:57 08:31-09:48/77 17:28	06:15 17:05-17:38/33 18:01	06:23 18:52-19:12/20 19:35	05:42 18:29-19:43/74 20:07	05:23 18:43-19:55/72 20:32	
14	07:23 08:31-09:48/77 16:51	06:55 08:31-09:48/77 17:29	06:13 17:07-17:38/31 18:02	06:21 18:49-19:14/25 19:36	05:41 18:29-19:44/75 20:08	05:23 18:43-19:55/72 20:32	
15	07:22 08:32-09:48/76 16:52	06:54 08:32-09:48/76 17:30	06:11 17:07-17:36/29 18:03	06:20 18:46-19:15/29 19:37	05:40 18:29-19:45/76 20:09	05:23 18:44-19:55/71 20:33	
16	07:22 08:33-09:47/74 16:53	06:53 08:33-09:47/74 17:32	06:10 17:08-17:35/27 18:04	06:18 18:44-19:16/32 19:38	05:39 18:29-19:46/77 20:10	05:23 18:44-19:55/71 20:33	
17	07:21 08:34-09:47/73 16:54	06:51 08:34-09:47/73 17:33	06:08 17:10-17:33/23 18:06	06:16 18:42-19:17/35 19:39	05:38 18:29-19:46/77 20:11	05:23 18:44-19:55/71 20:33	
18	07:21 08:35-09:47/72 16:55	06:50 08:35-09:47/72 17:34	06:06 17:11-17:31/20 18:07	06:15 18:41-19:18/37 19:40	05:37 18:29-19:47/78 20:12	05:23 18:44-19:55/71 20:34	
19	07:20 08:35-09:46/71 16:57	06:49 08:35-09:46/71 17:35	06:04 17:13-17:27/14 18:08	06:13 18:39-19:19/40 19:41	05:36 18:31-19:49/78 20:13	05:24 18:45-19:55/70 20:34	
20	07:20 08:37-09:46/69 16:58	06:47 08:37-09:46/69 17:36	06:03 08:37-09:46/69 18:09	06:12 18:38-19:20/42 19:42	05:35 18:31-19:50/79 20:14	05:24 18:45-19:55/70 20:34	
21	07:19 08:37-09:45/68 16:59	06:46 08:37-09:45/68 17:38	06:01 08:37-09:45/68 18:10	06:10 18:36-19:21/45 19:44	05:34 18:31-19:50/79 20:15	05:24 18:45-19:56/71 20:35	
22	07:18 08:38-09:44/66 17:00	06:44 08:38-09:44/66 17:39	05:59 08:38-09:44/66 18:11	06:09 18:35-19:22/47 19:45	05:33 18:31-19:51/80 20:16	05:24 18:46-19:56/70 20:35	
23	07:18 08:40-09:44/64 17:01	06:43 08:40-09:44/64 17:40	05:58 08:40-09:44/64 18:12	06:07 18:34-19:23/49 19:46	05:33 18:32-19:52/80 20:17	05:24 18:46-19:56/70 20:35	
24	07:17 08:41-09:43/62 17:03	06:41 08:41-09:43/62 17:41	05:56 08:41-09:43/62 18:13	06:06 18:33-19:24/51 19:47	05:32 18:32-19:52/80 20:18	05:25 18:46-19:56/70 20:35	
25	07:16 08:42-09:42/60 17:04	06:40 08:42-09:42/60 17:43	05:54 08:42-09:42/60 18:14	06:04 18:33-19:26/53 19:48	05:31 18:32-19:52/80 20:18	05:25 18:46-19:57/71 20:35	
26	07:16 08:43-09:41/58 17:05	06:38 08:43-09:41/58 17:44	05:53 08:43-09:41/58 18:15	06:03 18:31-19:26/55 19:49	05:30 18:34-19:53/79 20:19	05:25 18:46-19:57/71 20:35	
27	07:15 08:44-09:40/56 17:06	06:37 08:44-09:40/56 17:45	05:51 08:44-09:40/56 18:16	06:02 18:31-19:27/56 19:50	05:30 18:34-19:52/78 20:20	05:26 18:46-19:57/71 20:35	
28	07:14 08:46-09:38/52 17:08	06:35 08:46-09:38/52 17:46	05:49 08:46-09:38/52 18:18	06:00 18:30-19:28/58 19:51	05:29 18:34-19:52/78 20:21	05:26 18:46-19:58/72 20:35	
29	07:13 08:47-09:37/50 17:09	06:34 08:47-09:37/50 17:47	05:48 08:47-09:37/50 19:19	05:59 18:30-19:29/59 19:52	05:28 18:35-19:53/78 20:22	05:26 18:46-19:58/72 20:35	
30	07:12 08:50-09:36/46 17:10	06:33 08:50-09:36/46 17:48	05:46 08:50-09:36/46 19:20	05:58 18:30-19:30/60 19:53	05:28 18:35-19:52/77 20:23	05:27 18:47-19:59/72 20:35	
31	07:11 08:52-09:34/42 17:11	06:32 08:52-09:34/42 17:49	05:44 08:52-09:34/42 19:21	05:57 18:30-19:30/60 19:54	05:27 18:36-19:53/77 20:24	05:27 18:47-19:59/72 20:35	
	Potential sun hours Sum of minutes with flicker	296 2186	297 134	369 478	399 808	449 2295	454 2167

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: ShadowFlickeringFoggiaMR WTG: 6 - VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 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	05:27 18:46-19:58/72 20:35	05:51 18:39-19:52/73 20:16	06:23 19:32	06:53 17:45-18:19/34 18:41	06:28 16:54	07:03 08:11-09:30/79 16:29
2	05:28 18:46-19:59/73 20:35	05:52 18:39-19:51/72 20:15	06:24 19:31	06:54 17:44-18:17/33 18:40	06:29 16:53	07:05 08:11-09:30/79 16:29
3	05:28 18:46-19:59/73 20:35	05:53 18:39-19:50/71 20:14	06:25 19:29	06:55 17:44-18:15/31 18:38	06:31 16:51	07:06 08:11-09:31/80 16:29
4	05:29 18:46-20:00/74 20:35	05:54 18:39-19:49/70 20:13	06:26 19:27	06:57 17:43-18:14/31 18:36	06:32 16:50	07:07 08:11-09:32/81 16:28
5	05:29 18:45-19:59/74 20:35	05:55 18:39-19:48/69 20:11	06:27 19:26	06:58 17:43-18:12/29 18:34	06:33 16:49	07:08 08:11-09:32/81 16:28
6	05:30 18:46-20:00/74 20:34	05:56 18:39-19:47/68 20:10	06:28 19:24	06:59 17:42-18:10/28 18:33	06:34 16:48	07:09 08:11-09:33/82 16:28
7	05:31 18:45-19:59/74 20:34	05:57 18:38-19:45/67 20:09	06:29 19:22	07:00 17:42-18:08/26 18:31	06:35 08:34-08:51/17 16:47	07:09 08:12-09:34/82 16:28
8	05:31 18:45-20:00/75 20:34	05:58 18:37-19:44/67 20:08	06:30 19:21	07:01 17:42-18:06/24 18:30	06:37 08:30-08:56/26 16:46	07:10 08:12-09:34/82 16:28
9	05:32 18:45-20:01/76 20:33	05:59 18:37-19:43/66 20:06	06:31 19:19	07:02 17:42-18:05/23 18:28	06:38 08:27-08:59/32 16:45	07:11 08:12-09:35/83 16:28
10	05:33 18:44-20:00/76 20:33	06:00 18:37-19:41/64 20:05	06:32 19:17	07:03 17:42-18:03/21 18:26	06:39 08:25-09:03/38 16:44	07:12 08:13-09:36/83 16:28
11	05:33 18:44-20:01/77 20:32	06:01 18:37-19:40/63 20:04	06:33 19:16	07:04 17:43-18:01/18 18:25	06:40 08:23-09:05/42 16:43	07:13 08:13-09:36/83 16:28
12	05:34 18:44-20:01/77 20:32	06:02 18:37-19:39/62 20:03	06:34 19:14	07:05 17:45-18:00/15 18:23	06:41 08:21-09:07/46 16:42	07:14 08:14-09:37/83 16:28
13	05:35 18:43-20:01/78 20:32	06:04 18:37-19:38/61 20:01	06:35 19:12	07:06 17:46-17:59/13 18:21	06:43 08:19-09:09/50 16:41	07:15 08:14-09:38/84 16:28
14	05:35 18:43-20:01/78 20:31	06:05 18:38-19:36/58 20:00	06:36 19:10	07:07 17:47-17:57/10 18:20	06:44 08:18-09:11/53 16:40	07:15 08:14-09:38/84 16:28
15	05:36 18:43-20:01/78 20:30	06:06 18:38-19:35/57 19:58	06:37 19:09	07:08 17:49-17:55/6 18:18	06:45 08:17-09:13/56 16:39	07:16 08:15-09:39/84 16:29
16	05:37 18:43-20:02/79 20:30	06:07 18:38-19:34/56 19:57	06:38 19:07	07:10 17:52-17:53/1 18:17	06:46 08:16-09:14/58 16:38	07:17 08:15-09:39/84 16:29
17	05:38 18:43-20:02/79 20:29	06:08 18:38-19:32/54 19:56	06:39 19:05	07:11 17:49-17:55/6 18:15	06:47 08:16-09:16/60 16:37	07:18 08:15-09:39/84 16:29
18	05:39 18:42-20:01/79 20:28	06:09 18:39-19:31/52 19:54	06:40 19:04	07:12 17:49-17:55/6 18:14	06:49 08:15-09:17/62 16:36	07:18 08:16-09:40/84 16:29
19	05:40 18:42-20:01/79 20:28	06:10 18:39-19:30/51 19:53	06:41 19:02	07:13 17:49-17:55/6 18:12	06:50 08:14-09:18/64 16:36	07:19 08:17-09:41/84 16:30
20	05:40 18:42-20:02/80 20:27	06:11 18:40-19:28/48 19:51	06:42 19:00	07:14 17:49-17:55/6 18:11	06:51 08:13-09:19/66 16:35	07:20 08:17-09:41/84 16:30
21	05:41 18:42-20:02/80 20:26	06:12 18:40-19:27/47 19:50	06:43 18:58	07:15 17:49-17:55/6 18:09	06:52 08:13-09:21/68 16:34	07:20 08:17-09:42/85 16:31
22	05:42 18:42-20:01/79 20:26	06:13 18:41-19:25/44 19:48	06:44 18:57	07:16 17:49-17:55/6 18:05	06:53 08:13-09:22/69 16:33	07:21 08:17-09:42/85 16:31
23	05:43 18:41-20:01/80 20:25	06:14 18:42-19:24/42 19:47	06:45 18:55	07:18 17:49-17:55/6 18:06	06:55 08:12-09:23/71 16:33	07:21 08:18-09:43/85 16:32
24	05:44 18:40-19:59/79 20:24	06:15 18:43-19:22/39 19:45	06:46 17:58-18:10/12 18:53	07:19 17:49-17:55/6 18:05	06:56 08:12-09:24/72 16:32	07:22 08:19-09:43/84 16:32
25	05:45 18:40-19:58/78 20:23	06:16 18:44-19:21/37 19:44	06:47 17:54-18:12/18 18:51	07:20 17:49-17:55/6 17:03	06:57 08:11-09:24/73 16:32	07:22 08:19-09:43/84 16:33
26	05:46 18:40-19:57/77 20:22	06:17 18:45-19:20/35 19:42	06:48 17:52-18:14/22 18:50	07:21 17:49-17:55/6 17:02	06:58 08:12-09:26/74 16:31	07:22 08:20-09:44/84 16:33
27	05:47 18:40-19:57/77 20:21	06:18 18:46-19:18/32 19:40	06:49 17:50-18:16/26 18:48	07:22 17:49-17:55/6 17:01	06:59 08:11-09:27/76 16:31	07:23 08:20-09:44/84 16:34
28	05:48 18:40-19:56/76 20:20	06:19 18:48-19:16/28 19:39	06:50 17:48-18:16/28 18:46	07:23 17:48-18:16/28 16:59	07:00 08:11-09:28/77 16:30	07:23 08:20-09:45/85 16:35
29	05:49 18:40-19:55/75 20:19	06:20 18:50-19:15/25 19:37	06:51 17:47-18:17/30 18:45	07:25 17:47-18:17/30 16:58	07:01 08:11-09:28/77 16:30	07:23 08:21-09:45/84 16:35
30	05:50 18:39-19:54/75 20:18	06:21 18:53-19:13/20 19:36	06:52 17:45-18:17/32 18:43	07:26 17:45-18:17/32 16:57	07:02 08:11-09:29/78 16:29	07:24 08:22-09:46/84 16:36
31	05:51 18:39-19:53/74 20:17	06:22 18:57-19:12/15 19:34	06:53 17:45-18:17/32 18:43	07:27 17:45-18:17/32 16:56	07:03 08:11-09:29/78 16:29	07:24 08:23-09:46/83 16:37
Potential sun hours	460	429	375	345	297	287
Sum of minutes with flicker	2375	1613	168	343	1405	2577

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: ShadowFlickeringFoggiaMR WTG: 7 - VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 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	07:24 16:38	07:10 16:36-16:48/12 17:13	06:34 16:44-17:22/38 17:47	06:43 19:22	05:56 19:54	05:27 20:24
2	07:24 16:39	07:09 16:36-16:50/14 17:14	06:32 16:44-17:21/37 17:48	06:41 19:23	05:55 19:55	05:26 20:25
3	07:24 16:40	07:08 16:36-16:51/15 17:15	06:31 16:45-17:21/36 17:50	06:39 19:24	05:54 19:56	05:26 20:26
4	07:24 16:41	07:07 16:36-16:52/16 17:16	06:29 16:45-17:19/34 17:51 17:22-17:29/7	06:38 19:25	05:52 19:58	05:26 20:26
5	07:24 16:42	07:06 16:37-16:54/17 17:18	06:28 16:47-17:18/31 17:52 17:19-17:31/12	06:36 19:26	05:51 19:59	05:25 20:27
6	07:24 16:43	07:05 16:37-16:55/18 17:19	06:26 16:48-17:32/44 17:53	06:34 19:27	05:50 20:00	05:25 20:28
7	07:24 16:44	07:04 16:38-16:57/19 17:20	06:24 16:49-17:33/44 17:54	06:33 19:28	05:49 20:01	05:25 20:28
8	07:24 16:45	07:03 16:39-16:59/20 17:22	06:23 16:52-17:34/42 17:55	06:31 19:29	05:47 20:02	05:24 20:29
9	07:24 16:46	07:02 16:39-16:59/20 17:23	06:21 16:54-17:08/14 17:57 17:10-17:35/25	06:29 19:31	05:46 20:03	05:24 20:30
10	07:24 16:47	07:00 16:40-17:01/21 17:24	06:20 17:09-17:36/27 17:58	06:28 19:32	05:45 20:04	05:24 20:30
11	07:23 16:48	06:59 16:41-17:02/21 17:25	06:18 17:08-17:38/30 17:59	06:26 19:33	05:44 20:05	05:24 20:31
12	07:23 16:49	06:58 16:43-17:04/21 17:27	06:16 17:07-17:39/32 18:00	06:24 19:34	05:43 20:06	05:24 20:31
13	07:23 16:50	06:57 16:44-17:05/21 17:28	06:15 17:06-17:40/34 18:01	06:23 19:35	05:42 20:07	05:24 20:32
14	07:23 16:51	06:55 16:44-17:06/22 17:29	06:13 17:06-17:41/35 18:02	06:21 19:36	05:41 20:08	05:23 20:32
15	07:22 16:52	06:54 16:43-17:08/25 17:30	06:11 17:05-17:42/37 18:03	06:20 19:37	05:40 20:09	05:23 20:33
16	07:22 16:53	06:53 16:42-17:09/27 17:32	06:10 17:04-17:43/39 18:04	06:18 19:38	05:39 20:10	05:23 20:33
17	07:21 16:54	06:51 16:42-17:10/28 17:33	06:08 17:04-17:45/41 18:06	06:17 19:39	05:38 20:11	05:23 20:33
18	07:21 16:55	06:50 16:41-17:11/30 17:34	06:06 17:04-17:46/42 18:07	06:15 19:40	05:37 20:12	05:24 20:34
19	07:20 16:57	06:49 16:41-17:13/32 17:35	06:05 17:03-17:46/43 18:08	06:13 19:41	05:36 20:13	05:24 20:34
20	07:20 16:58	06:47 16:41-17:15/34 17:36	06:03 17:03-17:47/44 18:09	06:12 19:42	05:35 20:14	05:24 20:34
21	07:19 16:59	06:46 16:40-17:15/35 17:38	06:01 17:04-17:47/43 18:10	06:10 19:44	05:34 20:15	05:24 20:35
22	07:18 17:00	06:44 16:41-17:17/36 17:39	05:59 17:04-17:46/42 18:11	06:09 19:45	05:33 20:16	05:24 20:35
23	07:18 17:01	06:43 16:40-17:18/38 17:40	05:58 17:04-17:44/40 18:12	06:07 19:46	05:33 20:17	05:24 20:35
24	07:17 17:03	06:41 16:41-17:20/39 17:41	05:56 17:05-17:44/39 18:13	06:06 19:47	05:32 20:18	05:25 20:35
25	07:16 17:04	06:40 16:41-17:21/40 17:43	05:54 17:05-17:43/38 18:14	06:05 19:48	05:31 20:18	05:25 20:35
26	07:16 17:05	06:38 16:42-17:22/40 17:44	05:53 17:06-17:41/35 18:15	06:03 19:49	05:30 20:19	05:25 20:35
27	07:15 16:39-16:42/3 17:06	06:37 16:42-17:23/41 17:45	05:51 17:08-17:40/32 18:16	06:02 19:50	05:30 20:20	05:26 20:35
28	07:14 16:38-16:43/5 17:08	06:35 16:43-17:23/40 17:46	05:49 17:09-17:38/29 18:18	06:00 19:51	05:29 20:21	05:26 20:35
29	07:13 16:38-16:44/6 17:09		06:48 18:10-18:35/25 19:19	05:59 19:52	05:29 20:22	05:26 20:35
30	07:12 16:37-16:45/8 17:10		06:46 18:12-18:32/20 19:20	05:58 19:53	05:28 20:23	05:27 20:35
31	07:11 16:37-16:47/10 17:11		06:44 18:16-18:28/12 19:21		05:27 20:23	
Potential sun hours	296	297	369	399	449	454
Sum of minutes with flicker	32	742	1123	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: ShadowFlickeringFoggiaMR WTG: 7 - VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 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	05:27 20:35	05:52 20:16	06:23 19:32	06:53 17:46-18:19/33 18:41	06:28 16:09-16:30/21 16:54	07:03 16:29
2	05:28 20:35	05:52 20:15	06:24 19:31	06:54 17:47-18:17/30 18:40	06:29 16:08-16:29/21 16:53	07:05 16:29
3	05:28 20:35	05:53 20:14	06:25 19:29	06:55 17:47-18:15/28 18:38	06:31 16:07-16:27/20 16:52	07:06 16:29
4	05:29 20:35	05:54 20:13	06:26 19:27	06:57 17:34-17:44/10 18:36 17:48-18:14/26	06:32 16:08-16:27/19 16:50	07:07 16:28
5	05:29 20:35	05:55 20:11	06:27 19:26	06:58 17:30-17:47/17 18:34 17:48-18:12/24	06:33 16:07-16:25/18 16:49	07:08 16:28
6	05:30 20:34	05:56 20:10	06:28 19:24	06:59 17:27-18:10/43 18:33	06:34 16:07-16:24/17 16:48	07:09 16:28
7	05:31 20:34	05:57 20:09	06:29 19:22	07:00 17:24-18:08/44 18:31	06:35 16:07-16:23/16 16:47	07:09 16:28
8	05:31 20:34	05:58 20:08	06:30 19:21	07:01 17:22-18:06/44 18:30	06:37 16:07-16:22/15 16:46	07:10 16:28
9	05:32 20:33	05:59 20:06	06:31 19:19	07:02 17:21-17:53/32 18:28 17:55-18:05/10	06:38 16:07-16:20/13 16:45	07:11 16:28
10	05:33 20:33	06:00 20:05	06:32 19:17	07:03 17:19-17:54/35 18:26 17:59-18:03/4	06:39 16:07-16:19/12 16:44	07:12 16:28
11	05:33 20:32	06:01 20:04	06:33 19:16	07:04 17:18-17:54/36 18:25	06:40 16:09-16:19/10 16:43	07:13 16:28
12	05:34 20:32	06:03 20:03	06:34 18:08-18:19/11 19:14	07:05 17:18-17:56/38 18:23	06:41 16:09-16:17/8 16:42	07:14 16:28
13	05:35 20:32	06:04 20:01	06:35 18:04-18:23/19 19:12	07:06 17:17-17:56/39 18:21	06:43 16:10-16:16/6 16:41	07:15 16:28
14	05:36 20:31	06:05 20:00	06:36 18:01-18:25/24 19:10	07:07 17:15-17:56/41 18:20	06:44 16:11-16:16/5 16:40	07:15 16:28
15	05:36 20:30	06:06 19:58	06:37 17:58-18:27/29 19:09	07:08 17:14-17:55/41 18:18	06:45 16:12-16:14/2 16:39	07:16 16:29
16	05:37 20:30	06:07 19:57	06:38 17:56-18:28/32 19:07	07:10 17:13-17:53/40 18:17	06:46 16:38	07:17 16:29
17	05:38 20:29	06:08 19:56	06:39 17:55-18:29/34 19:05	07:11 17:12-17:52/40 18:15	06:47 16:37	07:18 16:29
18	05:39 20:29	06:09 19:54	06:40 17:53-18:30/37 19:04	07:12 17:12-17:51/39 18:14	06:49 16:36	07:18 16:30
19	05:40 20:28	06:10 19:53	06:41 17:52-18:30/38 19:02	07:13 17:12-17:49/37 18:12	06:50 16:36	07:19 16:30
20	05:40 20:27	06:11 19:51	06:42 17:50-18:31/41 19:00	07:14 17:11-17:47/36 18:11	06:51 16:35	07:20 16:30
21	05:41 20:26	06:12 19:50	06:43 17:49-18:31/42 18:58	07:15 17:11-17:46/35 18:09	06:52 16:34	07:20 16:31
22	05:42 20:26	06:13 19:48	06:44 17:48-18:31/43 18:57	07:16 17:11-17:44/33 18:08	06:53 16:34	07:21 16:31
23	05:43 20:25	06:14 19:47	06:45 17:48-18:31/43 18:55	07:18 17:11-17:43/32 18:06	06:55 16:33	07:21 16:32
24	05:44 20:24	06:15 19:45	06:46 17:47-18:30/43 18:53	07:19 17:11-17:41/30 18:05	06:56 16:32	07:22 16:32
25	05:45 20:23	06:16 19:44	06:47 17:46-18:29/43 18:51	06:20 16:11-16:40/29 17:03	06:57 16:32	07:22 16:33
26	05:46 20:22	06:17 19:42	06:48 17:46-18:27/41 18:50	06:21 16:12-16:38/26 17:02	06:58 16:31	07:22 16:33
27	05:47 20:21	06:18 19:40	06:49 17:46-18:25/39 18:48	06:22 16:13-16:37/24 17:01	06:59 16:31	07:23 16:34
28	05:48 20:20	06:19 19:39	06:50 17:45-18:23/38 18:46	06:23 16:13-16:36/23 16:59	07:00 16:30	07:23 16:35
29	05:49 20:19	06:20 19:37	06:51 17:45-18:21/36 18:45	06:25 16:14-16:34/20 16:58	07:01 16:30	07:23 16:36
30	05:50 20:18	06:21 19:36	06:52 17:45-18:20/35 18:43	06:26 16:12-16:33/21 16:57	07:02 16:30	07:24 16:36
31	05:51 20:17	06:22 19:34		06:27 16:11-16:32/21 16:55		07:24 16:37
Potential sun hours	460	429	375	345	297	287
Sum of minutes with flicker	0	0	668	1061	203	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: ShadowFlickeringFoggiaMR WTG: 8 - VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 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	07:24 15:40-16:12/32 16:38	07:10 17:13	06:34 17:47	06:43 19:22	05:56 19:54	05:27 20:24
2	07:24 15:41-16:13/32 16:39	07:09 17:14	06:32 17:25-17:27/2 17:48	06:41 19:23	05:55 19:55	05:26 20:25
3	07:24 15:42-16:14/32 16:40	07:08 17:15	06:31 17:24-17:28/4 17:50	06:39 19:24	05:54 19:56	05:26 20:26
4	07:24 15:43-16:15/32 16:41	07:07 17:17	06:29 17:23-17:29/6 17:51 06:48-06:50/2	06:38 19:25	05:52 19:58	05:26 20:26
5	07:24 15:44-16:16/32 16:42	07:06 17:18	06:28 17:23-17:31/8 17:52 06:47-06:51/4	06:36 19:26	05:51 19:59	05:25 20:27
6	07:24 15:45-16:16/31 16:43	07:05 17:19	06:26 17:22-17:32/10 17:53 06:45-06:51/6	06:34 19:27	05:50 20:00	05:25 20:28
7	07:24 15:45-16:17/32 16:44	07:04 17:20	06:24 17:22-17:33/11 17:54 06:43-06:50/7	06:33 19:28	05:49 20:01	05:25 20:28
8	07:24 15:46-16:18/32 16:45	07:03 17:22	06:23 17:22-17:34/12 17:55 06:42-06:50/8	06:31 19:30	05:47 20:02	05:24 20:29
9	07:24 15:48-16:20/32 16:46	07:02 17:23	06:21 17:22-17:35/13 17:57 06:40-06:49/9	06:29 19:31	05:46 20:03	05:24 20:30
10	07:24 16:05-16:21/16 16:47 15:50-16:04/14	07:00 17:24	06:20 17:23-17:36/13 17:58 06:38-06:47/9	06:28 19:32	05:45 20:04	05:24 20:30
11	07:24 16:05-16:22/17 16:48 15:51-16:02/11	06:59 17:25	06:18 17:25-17:38/13 17:59 06:37-06:46/9	06:26 19:33	05:44 20:05	05:24 20:31
12	07:23 16:05-16:23/18 16:49 15:54-16:01/7	06:58 17:27	06:16 17:25-17:39/14 18:00	06:24 19:34	05:43 20:06	05:24 20:31
13	07:23 16:06-16:25/19 16:50	06:57 17:28	06:15 17:26-17:39/13 18:01	06:23 19:35	05:42 20:07	05:24 20:32
14	07:23 16:06-16:25/19 16:51	06:55 17:29	06:13 17:29-17:37/8 18:02 17:39-17:41/2	06:21 19:36	05:41 20:08	05:23 20:32
15	07:22 16:07-16:27/20 16:52	06:54 17:30	06:11 17:37-17:42/5 18:03	06:20 19:37	05:40 20:09	05:23 20:33
16	07:22 16:08-16:28/20 16:53	06:53 17:32	06:10 17:36-17:43/7 18:04	06:18 19:38	05:39 20:10	05:23 20:33
17	07:21 16:09-16:29/20 16:54	06:51 17:33	06:08 17:36-17:45/9 18:06	06:17 19:39	05:38 20:11	05:23 20:33
18	07:21 16:09-16:30/21 16:56	06:50 17:34	06:06 17:35-17:46/11 18:07	06:15 19:40	05:37 20:12	05:24 20:34
19	07:20 16:10-16:29/19 16:57	06:49 17:35	06:05 17:35-17:46/11 18:08	06:13 19:41	05:36 20:13	05:24 20:34
20	07:20 16:12-16:30/18 16:58	06:47 17:37	06:03 17:34-17:47/13 18:09	06:12 19:42	05:35 20:14	05:24 20:34
21	07:19 16:13-16:29/16 16:59	06:46 17:38	06:01 17:35-17:49/14 18:10	06:10 19:44	05:34 20:15	05:24 20:35
22	07:19 16:14-16:27/13 17:00	06:44 17:39	05:59 17:36-17:50/14 18:11	06:09 19:45	05:33 20:16	05:24 20:35
23	07:18 16:17-16:27/10 17:01	06:43 17:40	05:58 17:36-17:51/15 18:12	06:07 19:46	05:33 20:17	05:24 20:35
24	07:17 16:20-16:23/3 17:03	06:42 17:41	05:56 17:39-17:50/11 18:13	06:06 19:47	05:32 20:18	05:25 20:35
25	07:16 17:04	06:40 17:43	05:54 17:43-17:44/1 18:14	06:05 19:48	05:31 20:18	05:25 20:35
26	07:16 17:05	06:39 17:44	05:53 18:15	06:03 19:49	05:30 20:19	05:25 20:35
27	07:15 17:06	06:37 17:45	05:51 18:17	06:02 19:50	05:30 20:20	05:26 20:35
28	07:14 17:08	06:35 17:46	05:49 18:18	06:00 19:51	05:29 20:21	05:26 20:35
29	07:13 17:09		06:48 19:19	05:59 19:52	05:29 20:22	05:26 20:35
30	07:12 17:10		06:46 19:20	05:58 19:53	05:28 20:23	05:27 20:35
31	07:11 17:11		06:44 19:21		05:27 20:24	
Potential sun hours	296	297	369	399	449	454
Sum of minutes with flicker	568	0	294	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: ShadowFlickeringFoggiaMR WTG: 8 - VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 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	05:27 20:35	05:52 20:16	06:23 19:32	06:53 18:05-18:19/14 18:41	06:28 16:54	07:04 15:47-16:04/17 16:29 15:33-15:44/11
2	05:28 20:35	05:53 20:15	06:24 19:31	06:54 18:04-18:17/13 18:40 07:15-07:23/8	06:29 16:53	07:05 15:47-16:03/16 16:29 15:32-15:46/14
3	05:28 20:35	05:54 20:14	06:25 19:29	06:56 18:02-18:15/13 18:38 07:16-07:25/9	06:31 16:52	07:06 15:31-16:03/32 16:29
4	05:29 20:35	05:55 20:13	06:26 19:27	06:57 18:01-18:14/13 18:36 07:17-07:26/9	06:32 16:50	07:07 15:31-16:03/32 16:28
5	05:29 20:35	05:56 20:11	06:27 19:26	06:58 17:59-18:12/13 18:35 07:18-07:26/8	06:33 16:49	07:08 15:30-16:02/32 16:28
6	05:30 20:34	05:57 20:10	06:28 19:24	06:59 17:58-18:10/12 18:33 07:19-07:27/8	06:34 16:48	07:09 15:30-16:02/32 16:28
7	05:31 20:34	05:58 20:09	06:29 19:22	07:00 17:58-18:08/10 18:31 07:20-07:26/6	06:35 16:47	07:10 15:30-16:02/32 16:28
8	05:31 20:34	05:59 20:08	06:30 19:21	07:01 17:57-18:06/9 18:30 07:21-07:26/5	06:37 16:46	07:10 15:30-16:02/32 16:28
9	05:32 20:33	06:00 20:06	06:31 19:19	07:02 17:57-18:05/8 18:28 07:22-07:25/3	06:38 16:45	07:11 15:30-16:02/32 16:28
10	05:33 20:33	06:01 20:05	06:32 19:17	07:03 17:57-18:03/6 18:26 07:23-07:24/1	06:39 16:44	07:12 15:30-16:02/32 16:28
11	05:33 20:33	06:02 20:04	06:33 19:16	07:04 17:58-18:01/3 18:25	06:40 16:43	07:13 15:31-16:02/31 16:28
12	05:34 20:32	06:03 20:03	06:34 19:14	07:05 18:23	06:41 16:42	07:14 15:31-16:02/31 16:28
13	05:35 20:32	06:04 20:01	06:35 19:12	07:06 18:21	06:43 16:41	07:15 15:31-16:03/32 16:28
14	05:36 20:31	06:05 20:00	06:36 19:10	07:07 18:20	06:44 16:40	07:16 15:31-16:02/31 16:28
15	05:36 20:30	06:06 19:58	06:37 19:09	07:09 18:18	06:45 16:39	07:16 15:31-16:03/32 16:29
16	05:37 20:30	06:07 19:57	06:38 19:07	07:10 18:17	06:46 16:38	07:17 15:32-16:03/31 16:29
17	05:38 20:29	06:08 19:56	06:39 19:05	07:11 18:15	06:48 16:37	07:18 15:32-16:03/31 16:29
18	05:39 20:29	06:09 19:54	06:40 19:04	07:12 18:14	06:49 15:54-15:57/3 16:36	07:18 15:32-16:03/31 16:30
19	05:40 20:28	06:10 19:53	06:41 18:25-18:35/10 19:02	07:13 18:12	06:50 15:51-16:01/10 16:36	07:19 15:33-16:04/31 16:30
20	05:40 20:27	06:11 19:51	06:42 18:23-18:37/14 19:00	07:14 18:11	06:51 15:49-16:02/13 16:35	07:20 15:33-16:04/31 16:30
21	05:41 20:26	06:12 19:50	06:43 18:21-18:36/15 18:58	07:15 18:09	06:52 15:49-16:05/16 16:34	07:20 15:34-16:05/31 16:31
22	05:42 20:26	06:13 19:48	06:44 18:20-18:34/14 18:57	07:16 18:08	06:53 15:48-16:06/18 16:34	07:21 15:34-16:05/31 16:31
23	05:43 20:25	06:14 19:47	06:45 18:19-18:32/13 18:55	07:18 18:06	06:55 15:47-16:06/19 16:33	07:21 15:35-16:06/31 16:32
24	05:44 20:24	06:15 19:45	06:46 18:18-18:30/12 18:53	07:19 18:05	06:56 15:46-16:07/21 16:32	07:22 15:35-16:06/31 16:32
25	05:45 20:23	06:16 19:44	06:47 18:18-18:29/11 18:52	06:20 17:03	06:57 15:46-16:06/20 16:32	07:22 15:35-16:06/31 16:33
26	05:46 20:22	06:17 19:42	06:48 18:17-18:27/10 18:50	06:21 17:02	06:58 15:47-16:07/20 16:31	07:22 15:37-16:08/31 16:34
27	05:47 20:21	06:18 19:40	06:49 18:17-18:25/8 18:48	06:22 17:01	06:59 15:46-16:06/20 16:31	07:23 15:37-16:08/31 16:34
28	05:48 20:20	06:19 19:39	06:50 18:18-18:23/5 18:46	06:23 16:59	07:00 15:46-16:05/19 16:30	07:23 15:37-16:08/31 16:35
29	05:49 20:19	06:20 19:37	06:51 18:10-18:15/5 18:45 18:18-18:21/3	06:25 16:58	07:01 15:46-16:05/19 16:30	07:23 15:38-16:09/31 16:36
30	05:50 20:18	06:21 19:36	06:52 18:06-18:18/12 18:43 18:19-18:20/1	06:26 16:57	07:02 15:46-16:04/18 16:30 15:35-15:41/6	07:24 15:39-16:11/32 16:36
31	05:51 20:17	06:22 19:34		06:27 16:55		07:24 15:40-16:11/31 16:37
Potential sun hours	460	429	375	345	297	287
Sum of minutes with flicker	0	0	133	171	222	968

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: ShadowFlickeringFoggiaMR WTG: 9 - VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 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
1	07:24 16:38	07:10 16:00-16:49/49 17:13	06:34 17:14-17:26/12 17:47 16:29-16:52/23	06:43 19:22	05:56 19:54	05:27 20:24
2	07:24 16:39	07:10 16:00-16:50/50 17:14	06:32 17:14-17:27/13 17:49 16:33-16:49/16	06:41 19:23	05:55 19:56	05:27 20:25
3	07:24 16:40	07:08 16:00-16:52/52 17:15	06:31 17:14-17:28/14 17:50	06:39 19:24	05:54 19:57	05:26 20:26
4	07:24 16:41	07:07 15:59-16:52/53 17:17	06:29 17:14-17:29/15 17:51	06:38 19:25	05:52 19:58	05:26 20:27
5	07:24 16:42	07:06 15:59-16:54/55 17:18	06:28 17:15-17:31/16 17:52	06:36 19:26	05:51 19:59	05:25 20:27
6	07:24 07:47-07:48/1 16:43	07:05 16:00-16:55/55 17:19	06:26 17:15-17:32/17 17:53	06:34 19:27	05:50 20:00	05:25 20:28
7	07:24 07:47-07:49/2 16:44	07:04 16:00-16:57/57 17:20	06:25 17:16-17:30/14 17:54	06:33 19:29	05:49 20:01	05:25 20:29
8	07:24 07:46-07:49/3 16:45	07:03 16:00-16:59/59 17:22	06:23 17:19-17:28/9 17:56	06:31 19:30	05:48 20:02	05:24 20:29
9	07:24 07:46-07:50/4 16:46	07:02 16:01-17:00/59 17:23	06:21 17:57	06:29 19:31	05:46 20:03	05:24 20:30
10	07:24 07:46-07:51/5 16:47	07:01 16:00-17:01/61 17:24	06:20 17:58	06:28 19:32	05:45 20:04	05:24 20:30
11	07:24 16:19-16:21/2 16:48 07:46-07:52/6	06:59 16:01-17:02/61 17:25	06:18 17:59	06:26 19:33	05:44 20:05	05:24 20:31
12	07:23 16:15-16:23/8 16:49 07:45-07:52/7	06:58 16:01-17:04/63 17:27	06:16 18:00	06:25 19:34	05:43 20:06	05:24 20:32
13	07:23 16:13-16:24/11 16:50 07:45-07:53/8	06:57 16:01-17:05/64 17:28	06:15 18:01	06:23 19:35	05:42 20:07	05:24 20:32
14	07:23 16:11-16:25/14 16:51 07:44-07:53/9	06:56 16:02-17:06/64 17:29	06:13 18:02	06:21 19:36	05:41 20:08	05:24 20:06-20:07/1 20:32
15	07:22 16:10-16:27/17 16:52 07:44-07:54/10	06:54 16:03-17:07/64 17:30	06:11 18:03	06:20 19:37	05:40 20:09	05:24 20:06-20:07/1 20:33
16	07:22 16:09-16:27/18 16:53 07:43-07:54/11	06:53 16:03-17:06/63 17:32	06:10 18:05	06:18 19:38	05:39 20:10	05:24 20:06-20:08/2 20:33
17	07:21 16:08-16:29/21 16:54 07:43-07:55/12	06:52 16:04-17:06/62 17:33	06:08 18:06	06:17 19:39	05:38 20:11	05:24 20:06-20:08/2 20:34
18	07:21 16:07-16:30/23 16:56 07:42-07:55/13	06:50 16:05-17:06/61 17:34	06:06 18:07	06:15 19:40	05:37 20:12	05:24 20:06-20:08/2 20:34
19	07:20 16:07-16:32/25 16:57 07:42-07:56/14	06:49 16:05-17:05/60 17:35	06:05 18:08	06:14 19:42	05:36 20:13	05:24 20:06-20:08/2 20:34
20	07:20 16:06-16:33/27 16:58 07:41-07:55/14	06:47 16:07-17:05/58 17:37	06:03 18:09	06:12 19:43	05:35 20:14	05:24 20:06-20:08/2 20:35
21	07:19 16:04-16:34/30 16:59 07:40-07:55/15	06:46 16:07-17:04/57 17:38	06:01 18:10	06:11 19:44	05:34 20:15	05:24 20:07-20:09/2 20:35
22	07:19 16:05-16:36/31 17:00 07:40-07:56/16	06:45 16:09-17:04/55 17:39	06:00 18:11	06:09 19:45	05:33 20:16	05:24 20:07-20:09/2 20:35
23	07:18 16:04-16:37/33 17:02 07:39-07:55/16	06:43 16:10-17:02/52 17:40	05:58 18:12	06:08 19:46	05:33 20:17	05:24 20:07-20:09/2 20:35
24	07:17 16:03-16:38/35 17:03 07:38-07:54/16	06:42 17:19-17:20/1 17:41 16:13-17:02/49	05:56 18:13	06:06 19:47	05:32 20:18	05:25 20:07-20:09/2 20:35
25	07:17 16:02-16:39/37 17:04 07:38-07:54/16	06:40 17:16-17:20/4 17:43 16:14-17:00/46	05:55 18:14	06:05 19:48	05:31 20:19	05:25 20:08-20:10/2 20:35
26	07:16 16:02-16:40/38 17:05 07:39-07:52/13	06:39 17:16-17:22/6 17:44 16:18-16:59/41	05:53 18:16	06:03 19:49	05:31 20:20	05:25 20:08-20:10/2 20:36
27	07:15 16:01-16:41/40 17:07 07:42-07:52/10	06:37 17:15-17:23/8 17:45 16:22-16:57/35	05:51 18:17	06:02 19:50	05:30 20:20	05:26 20:08-20:09/1 20:36
28	07:14 16:02-16:44/42 17:08 07:45-07:49/4	06:36 17:14-17:25/11 17:46 16:27-16:55/28	05:49 18:18	06:00 19:51	05:29 20:21	05:26 20:09-20:10/1 20:36
29	07:13 16:01-16:45/44 17:09		06:48 19:19	05:59 19:52	05:29 20:22	05:26 20:09-20:10/1 20:36
30	07:12 16:01-16:46/45 17:10		06:46 19:20	05:58 19:53	05:28 20:23	05:27 20:36
31	07:11 16:01-16:48/47 17:12		06:44 19:21		05:28 20:24	
Potential sun hours	296	297	369	399	449	454
Sum of minutes with flicker	813	1563	149	0	0	27

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: ShadowFlickeringFoggiaMR WTG: 9 - VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 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

	July	August	September	October	November	December
1	05:27 20:35	05:52 20:16	06:23 19:33	06:54 18:41	06:28 15:30-16:30/60 16:54	07:04 16:00-16:04/4 16:29 07:28-07:34/6
2	05:28 20:35	05:53 20:15	06:24 19:31	06:55 18:40	06:30 15:29-16:29/60 16:53	07:05 07:29-07:34/5 16:29
3	05:28 20:35	05:54 20:14	06:25 19:29	06:56 18:38	06:31 15:30-16:28/58 16:52	07:06 07:30-07:34/4 16:29
4	05:29 20:35	05:55 20:13	06:26 19:28	06:57 18:36	06:32 15:30-16:27/57 16:50	07:07 07:31-07:34/3 16:29
5	05:30 20:35	05:56 20:12	06:27 19:26	06:58 17:58-18:03/5 18:35	06:33 15:29-16:25/56 16:49	07:08 07:32-07:34/2 16:28
6	05:30 20:35	05:57 20:10	06:28 19:24	06:59 17:54-18:06/12 18:33	06:34 15:30-16:25/55 16:48	07:09 07:33-07:34/1 16:28
7	05:31 20:34	05:58 20:09	06:29 19:23	07:00 17:52-18:07/15 18:31	06:36 15:30-16:23/53 16:47	07:10 16:28
8	05:31 20:34	05:59 20:08	06:30 19:21	07:01 17:50-18:06/16 18:30	06:37 15:30-16:22/52 16:46	07:11 16:28
9	05:32 20:34	06:00 20:07	06:31 19:19	07:02 17:49-18:05/16 18:28	06:38 15:30-16:20/50 16:45	07:12 16:28
10	05:33 20:33	06:01 20:05	06:32 19:17	07:03 17:48-18:03/15 18:26	06:39 15:31-16:20/49 16:44	07:12 16:28
11	05:33 20:33	06:02 20:04	06:33 19:16	07:04 17:48-18:02/14 18:25	06:40 15:32-16:19/47 16:43	07:13 16:28
12	05:34 20:32	06:03 20:03	06:34 19:14	07:05 17:47-18:00/13 18:23	06:42 15:32-16:17/45 16:42	07:14 16:28
13	05:35 20:32	06:04 20:01	06:35 19:12	07:06 17:47-17:59/12 18:22	06:43 15:33-16:17/44 16:41	07:15 16:28
14	05:36 20:31	06:05 20:00	06:36 19:11	07:08 17:47-17:57/10 18:20	06:44 15:34-16:16/42 16:40	07:16 16:29
15	05:36 20:31	06:06 19:59	06:37 19:09	07:09 17:47-17:55/8 18:18	06:45 15:34-16:14/40 16:39	07:16 16:29
16	05:37 20:30	06:07 19:57	06:38 19:07	07:10 17:48-17:53/5 18:17	06:46 15:35-16:13/38 16:38	07:17 16:29
17	05:38 20:29	06:08 19:56	06:39 19:05	07:11 17:48-17:51/3 18:15	06:48 15:36-16:13/37 16:37	07:18 16:29
18	05:39 20:29	06:09 19:54	06:40 19:04	07:12 16:43-17:34/51 18:14	06:49 15:37-16:12/35 16:36	07:18 16:30
19	05:40 20:28	06:10 19:53	06:41 19:02	07:13 16:41-17:34/53 18:12	06:50 15:38-16:11/33 16:36	07:19 16:30
20	05:41 20:27	06:11 19:51	06:42 19:00	07:14 16:39-17:35/56 18:11	06:51 15:40-16:11/31 16:35	07:20 16:30
21	05:41 20:27	06:12 19:50	06:43 18:59	07:15 16:38-17:35/57 18:09	06:52 15:41-16:10/29 16:34	07:20 16:31
22	05:42 20:26	06:13 19:48	06:44 18:57	07:17 16:37-17:36/59 18:08	06:54 15:41-16:09/28 16:34	07:21 16:31
23	05:43 20:25	06:14 19:47	06:45 18:55	07:18 16:36-17:36/60 18:06	06:55 15:43-16:08/25 16:33	07:21 16:32
24	05:44 20:24	06:15 19:45	06:46 18:53	07:19 16:34-17:36/62 18:05	06:56 15:44-16:07/23 16:32	07:22 16:32
25	05:45 20:23	06:16 19:44	06:47 18:52	06:20 15:33-16:36/63 17:03	06:57 15:46-16:07/21 16:32	07:22 16:33
26	05:46 20:22	06:17 19:42	06:48 18:50	06:21 15:32-16:36/64 17:02	06:58 15:48-16:07/19 16:31	07:23 16:34
27	05:47 20:21	06:18 19:41	06:49 18:48	06:22 15:32-16:37/65 17:01	06:59 15:49-16:06/17 16:31	07:23 16:34
28	05:48 20:20	06:19 19:39	06:50 18:46	06:24 15:31-16:36/65 16:59	07:00 15:51-16:05/14 16:30	07:23 16:35
29	05:49 20:19	06:20 19:37	06:51 18:45	06:25 15:30-16:34/64 16:58	07:02 15:53-16:05/12 16:30	07:24 16:36
30	05:50 20:18	06:21 19:36	06:52 18:43	06:26 15:30-16:32/62 16:57	07:03 15:56-16:04/8 16:30	07:24 16:36
31	05:51 20:17	06:22 19:34		06:27 15:30-16:32/62 16:55		07:24 16:37
Potential sun hours	460	429	375	345	297	287
Sum of minutes with flicker	0	0	0	1203	1342	25

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: ShadowFlickeringFoggiaMR WTG: 11 - VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 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	07:24 15:40-16:12/32 16:38	07:11 15:45-16:49/64 17:13	06:34 16:16-17:00/44 17:48	06:43 19:22	05:56 19:55	05:27 19:54-20:00/6 20:25 19:54-20:00/6
2	07:24 15:41-16:13/32 16:39	07:10 15:46-16:50/64 17:14	06:33 16:18-16:59/41 17:49	06:41 19:23	05:55 19:56	05:27 19:53-20:00/7 20:25 19:53-20:00/7
3	07:25 15:41-16:14/33 16:40	07:09 15:46-16:52/66 17:15	06:31 16:19-16:57/38 17:50	06:39 19:24	05:54 19:57	05:26 19:53-20:01/8 20:26 19:53-20:01/8
4	07:25 15:41-16:15/34 16:41	07:08 15:47-16:53/66 17:17	06:29 16:20-16:55/35 17:51	06:38 19:25	05:53 19:58	05:26 19:53-20:02/9 20:27 19:53-20:02/9
5	07:25 15:41-16:16/35 16:42	07:06 15:47-16:54/67 17:18	06:28 16:23-16:53/30 17:52	06:36 19:27	05:51 19:59	05:25 19:52-20:02/10 20:27 19:52-20:02/10
6	07:25 15:41-16:17/36 16:43	07:05 15:48-16:55/67 17:19	06:26 16:25-16:50/25 17:53	06:34 19:28	05:50 20:00	05:25 19:52-20:03/11 20:28 19:52-20:03/11
7	07:24 15:41-16:18/37 16:44	07:04 15:49-16:57/68 17:21	06:25 16:29-16:46/17 17:54	06:33 19:29	05:49 20:01	05:25 19:52-20:04/12 20:29 19:52-20:04/12
8	07:24 15:41-16:18/37 16:45	07:03 15:50-16:59/69 17:22	06:23 17:56	06:31 19:30	05:48 20:02	05:25 19:52-20:04/12 20:29 19:52-20:04/12
9	07:24 15:41-16:20/39 16:46	07:02 15:51-17:00/69 17:23	06:21 17:57	06:30 19:31	05:46 20:03	05:24 19:51-20:04/13 20:30 19:51-20:04/13
10	07:24 15:41-16:21/40 16:47	07:01 15:52-17:01/69 17:24	06:20 17:58	06:28 19:32	05:45 20:04	05:24 19:51-20:05/14 20:31 19:51-20:05/14
11	07:24 15:42-16:22/40 16:48	07:00 15:53-17:02/69 17:26	06:18 17:59	06:26 19:33	05:44 20:05	05:24 19:52-20:05/13 20:31 19:52-20:05/13
12	07:24 15:41-16:23/42 16:49	06:58 15:54-17:04/70 17:27	06:16 18:00	06:25 19:34	05:43 20:06	05:24 19:52-20:06/14 20:32 19:52-20:06/14
13	07:23 15:41-16:24/43 16:50	06:57 15:55-17:06/71 17:28	06:15 18:01	06:23 19:35	05:42 20:07	05:24 19:52-20:06/14 20:32 19:52-20:06/14
14	07:23 15:41-16:25/44 16:51	06:56 15:55-17:06/71 17:29	06:13 18:02	06:21 19:36	05:41 20:08	05:24 19:52-20:07/15 20:33 19:52-20:07/15
15	07:22 15:41-16:27/46 16:52	06:54 15:56-17:08/72 17:31	06:11 18:04	06:20 19:37	05:40 20:09	05:24 19:52-20:07/15 20:33 19:52-20:07/15
16	07:22 15:41-16:27/46 16:53	06:53 15:57-17:09/72 17:32	06:10 18:05	06:18 19:38	05:39 20:10	05:24 19:52-20:08/16 20:34 19:52-20:08/16
17	07:22 15:41-16:29/48 16:55	06:52 15:58-17:08/70 17:33	06:08 18:06	06:17 19:39	05:38 20:11	05:24 19:52-20:08/16 20:34 19:52-20:08/16
18	07:21 15:41-16:30/49 16:56	06:50 15:59-17:08/69 17:34	06:06 18:07	06:15 19:41	05:37 20:12	05:24 19:52-20:08/16 20:34 19:52-20:08/16
19	07:21 15:42-16:32/50 16:57	06:49 16:00-17:08/68 17:35	06:05 18:08	06:14 19:42	05:36 20:13	05:24 19:52-20:08/16 20:34 19:52-20:08/16
20	07:20 15:42-16:33/51 16:58	06:48 16:02-17:08/66 17:37	06:03 18:09	06:12 19:43	05:35 20:14	05:24 19:53-20:09/16 20:35 19:53-20:09/16
21	07:19 15:41-16:34/53 16:59	06:46 16:03-17:07/64 17:38	06:01 18:10	06:11 19:44	05:34 20:15	05:24 19:53-20:09/16 20:35 19:53-20:09/16
22	07:19 15:42-16:36/54 17:00	06:45 16:05-17:07/62 17:39	06:00 18:11	06:09 19:45	05:34 20:16	05:24 19:53-20:09/16 20:35 19:53-20:09/16
23	07:18 15:42-16:37/55 17:02	06:43 16:07-17:06/59 17:40	05:58 18:12	06:08 19:46	05:33 20:17	05:25 19:53-20:09/16 20:35 19:53-20:09/16
24	07:17 15:42-16:38/56 17:03	06:42 16:11-17:06/55 17:42	05:56 18:13	06:06 19:47	05:32 20:18	05:25 19:53-20:09/16 20:35 19:53-20:09/16
25	07:17 15:42-16:39/57 17:04	06:40 16:12-17:04/52 17:43	05:55 18:15	06:05 19:48	05:31 20:19	05:25 19:54-20:10/16 20:36 19:54-20:10/16
26	07:16 15:42-16:40/58 17:05	06:39 16:13-17:04/51 17:44	05:53 18:16	06:03 19:49	05:31 20:20	05:25 19:54-20:10/16 20:36 19:54-20:10/16
27	07:15 15:43-16:42/59 17:07	06:37 16:14-17:03/49 17:45	05:51 18:17	06:02 19:50	05:30 20:20	05:26 19:55-20:10/15 20:36 19:55-20:10/15
28	07:14 15:44-16:44/60 17:08	06:36 16:15-17:02/47 17:46	05:50 18:18	06:01 19:51	05:29 20:21	05:26 19:55-20:10/15 20:36 19:55-20:10/15
29	07:13 15:44-16:45/61 17:09		06:48 19:19	05:59 19:52	05:29 20:22	05:27 19:55-20:10/15 20:36 19:55-20:10/15
30	07:12 15:44-16:46/62 17:10		06:46 19:20	05:58 19:54	05:28 20:23	05:27 19:55-20:10/15 20:36 19:55-20:10/15
31	07:12 15:45-16:48/63 17:12		06:44 19:21		05:28 20:24	05:28 19:55-19:58/3 20:36 19:56-20:10/14
Potential sun hours	296	297	369	399	449	454
Sum of minutes with flicker	1452	1806	230	0	412	1411

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: ShadowFlickeringFoggiaMR WTG: 11 - VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 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	05:27	05:50-06:24/34	05:52	06:14-06:17/3	06:23	06:54	06:28	15:21-16:30/69	07:04	15:24-16:05/41		
	20:36	19:56-20:10/14	20:16		19:33	18:41	16:54		16:29			
2	05:28	05:51-06:25/34	05:53		06:24	06:55	06:30	15:20-16:29/69	07:05	15:24-16:04/40		
	20:35	19:56-20:10/14	20:15		19:31	18:40	16:53		16:29			
3	05:28	05:51-06:24/33	05:54		06:25	06:56	06:31	15:20-16:28/68	07:06	15:25-16:04/39		
	20:35	19:56-20:09/13	20:14		19:29	18:38	16:52		16:29			
4	05:29	05:52-06:25/33	05:55		06:26	06:57	06:32	15:18-16:27/69	07:07	15:26-16:03/37		
	20:35	19:57-20:10/13	20:13		19:28	18:36	16:51		16:29			
5	05:30	05:52-06:25/33	05:56		06:27	06:58	06:33	15:17-16:25/68	07:08	15:26-16:03/37		
	20:35	19:57-20:09/12	20:12		19:26	18:35	16:49		16:28			
6	05:30	05:53-06:25/32	05:57		06:28	06:59	17:08-17:19/11	06:34	15:18-16:25/67	07:09	15:27-16:03/36	
	20:35	19:58-20:09/11	20:10		19:24	18:33	16:48		16:28			
7	05:31	05:54-06:26/32	05:58		06:29	07:00	17:03-17:24/21	06:36	15:17-16:23/66	07:10	15:28-16:03/35	
	20:34	19:59-20:09/10	20:09		19:23	18:31	16:47		16:28			
8	05:31	05:54-06:26/32	05:59		06:30	07:01	16:59-17:27/28	06:37	15:16-16:22/66	07:11	15:29-16:03/34	
	20:34	19:59-20:08/9	20:08		19:21	18:30	16:46		16:28			
9	05:32	05:55-06:26/31	06:00		06:31	07:02	16:56-17:29/33	06:38	15:16-16:21/65	07:12	15:30-16:03/33	
	20:34	20:00-20:08/8	20:07		19:19	18:28	16:45		16:28			
10	05:33	05:56-06:27/31	06:01		06:32	07:03	16:55-17:31/36	06:39	15:16-16:20/64	07:13	15:30-16:02/32	
	20:33	20:01-20:08/7	20:05		19:18	18:26	16:44		16:28			
11	05:34	05:56-06:26/30	06:02		06:33	07:04	16:52-17:32/40	06:41	15:15-16:19/64	07:13	15:31-16:02/31	
	20:33	20:01-20:07/6	20:04		19:16	18:25	16:43		16:28			
12	05:34	05:57-06:27/30	06:03		06:34	07:05	16:51-17:33/42	06:42	15:15-16:17/62	07:14	15:31-16:02/31	
	20:32	20:02-20:07/5	20:03		19:14	18:23	16:42		16:28			
13	05:35	05:58-06:27/29	06:04		06:35	07:07	16:49-17:34/45	06:43	15:16-16:17/61	07:15	15:32-16:03/31	
	20:32	20:03-20:07/4	20:01		19:12	18:22	16:41		16:28			
14	05:36	05:59-06:28/29	06:05		06:36	07:08	16:47-17:35/48	06:44	15:16-16:16/60	07:16	15:33-16:03/30	
	20:31	20:03-20:06/3	20:00		19:11	18:20	16:40		16:29			
15	05:36	05:59-06:27/28	06:06		06:37	07:09	16:46-17:35/49	06:45	15:15-16:14/59	07:17	15:33-16:03/30	
	20:31	20:04-20:05/1	19:59		19:09	18:19	16:39		16:29			
16	05:37	06:00-06:27/27	06:07		06:38	07:10	16:45-17:36/51	06:47	15:16-16:14/58	07:17	15:34-16:03/29	
	20:30		19:57		19:07	18:17	16:38		16:29			
17	05:38	06:01-06:27/26	06:08		06:39	07:11	16:44-17:37/53	06:48	15:16-16:13/57	07:18	15:35-16:04/29	
	20:29		19:56		19:06	18:15	16:37		16:29			
18	05:39	06:02-06:28/26	06:09		06:40	07:12	16:41-17:37/56	06:49	15:16-16:12/56	07:19	15:35-16:03/28	
	20:29		19:54		19:04	18:14	16:37		16:30			
19	05:40	06:02-06:27/25	06:10		06:41	07:13	16:38-17:38/60	06:50	15:16-16:11/55	07:19	15:36-16:04/28	
	20:28		19:53		19:02	18:12	16:36		16:30			
20	05:41	06:03-06:27/24	06:11		06:42	07:14	16:35-17:38/63	06:51	15:17-16:11/54	07:20	15:36-16:04/28	
	20:27		19:51		19:00	18:11	16:35		16:30			
21	05:41	06:04-06:27/23	06:12		06:43	07:16	16:33-17:38/65	06:53	15:17-16:10/53	07:20	15:37-16:05/28	
	20:27		19:50		18:59	18:09	16:34		16:31			
22	05:42	06:05-06:27/22	06:13		06:44	07:17	16:32-17:38/66	06:54	15:18-16:09/51	07:21	15:37-16:05/28	
	20:26		19:48		18:57	18:08	16:34		16:31			
23	05:43	06:06-06:26/20	06:14		06:45	07:18	16:30-17:38/68	06:55	15:18-16:08/50	07:21	15:38-16:06/28	
	20:25		19:47		18:55	18:06	16:33		16:32			
24	05:44	06:07-06:26/19	06:15		06:46	07:19	16:29-17:38/69	06:56	15:19-16:08/49	07:22	15:38-16:06/28	
	20:24		19:45		18:53	18:05	16:32		16:32			
25	05:45	06:08-06:26/18	06:16		06:47	06:20	15:27-16:38/71	06:57	15:20-16:07/47	07:22	15:39-16:07/28	
	20:23		19:44		18:52	17:04	16:32		16:33			
26	05:46	06:09-06:25/16	06:17		06:48	06:21	15:27-16:38/71	06:58	15:20-16:07/47	07:23	15:39-16:08/29	
	20:22		19:42		18:50	17:02	16:31		16:34			
27	05:47	06:09-06:24/15	06:18		06:49	06:22	15:26-16:37/71	06:59	15:20-16:06/46	07:23	15:39-16:08/29	
	20:21		19:41		18:48	17:01	16:31		16:34			
28	05:48	06:10-06:23/13	06:19		06:51	06:24	15:24-16:36/72	07:01	15:21-16:05/44	07:23	15:39-16:08/29	
	20:20		19:39		18:47	16:59	16:30		16:35			
29	05:49	06:11-06:22/11	06:20		06:52	06:25	15:23-16:34/71	07:02	15:21-16:05/44	07:24	15:40-16:10/30	
	20:19		19:37		18:45	16:58	16:30		16:36			
30	05:50	06:12-06:21/9	06:21		06:53	06:26	15:23-16:33/70	07:03	15:22-16:04/42	07:24	15:40-16:10/30	
	20:18		19:36		18:43	16:57	16:30		16:36			
31	05:51	06:13-06:19/6	06:22			06:27	15:23-16:32/69			07:24	15:40-16:11/31	
	20:17		19:34			16:55				16:37		
Potential sun hours	460		429		375	345	297	1730		287	977	
Sum of minutes with flicker	901		3		0	1399		1730		977		

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: ShadowFlickeringFoggiaMR WTG: 12 - VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (12)  
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	07:24 07:47-07:58/11 16:38	07:11 07:46-08:04/18 17:13	06:34 17:48	06:43 19:22	05:56 19:11-19:23/12 19:55	05:27 20:25
2	07:24 07:47-07:59/12 16:39	07:10 07:49-08:03/14 17:14	06:33 17:49	06:41 19:23	05:55 19:16-19:18/2 19:56	05:27 20:25
3	07:25 07:47-07:59/12 16:40	07:09 07:52-07:59/7 17:15	06:31 17:50	06:39 19:24	05:54 19:57	05:26 20:26
4	07:25 07:47-08:00/13 16:41	07:08 17:17	06:29 17:51	06:38 19:25	05:53 19:58	05:26 20:27
5	07:25 07:47-08:01/14 16:42	07:07 17:18	06:28 17:52	06:36 19:27	05:51 19:59	05:25 20:28
6	07:25 07:47-08:02/15 16:43	07:05 17:19	06:26 17:53	06:34 19:02-19:06/4 19:28	05:50 20:00	05:25 20:28
7	07:25 07:47-08:03/16 16:44	07:04 17:21	06:25 17:55	06:33 19:00-19:07/7 19:29	05:49 20:01	05:25 20:29
8	07:24 07:47-08:04/17 16:45	07:03 17:22	06:23 17:56	06:31 18:59-19:08/9 19:30	05:48 20:02	05:25 20:29
9	07:24 07:46-08:04/18 16:46	07:02 17:23	06:21 17:57	06:30 18:57-19:09/12 19:31	05:46 20:03	05:24 20:30
10	07:24 07:46-08:05/19 16:47	07:01 17:24	06:20 17:58	06:28 18:56-19:10/14 19:32	05:45 20:04	05:24 20:31
11	07:24 07:46-08:06/20 16:48	07:00 17:26	06:18 17:59	06:26 18:56-19:11/15 19:33	05:44 20:05	05:24 20:31
12	07:24 07:45-08:06/21 16:49	06:58 17:27	06:17 18:00	06:25 18:55-19:12/17 19:34	05:43 20:06	05:24 20:32
13	07:23 07:45-08:07/22 16:50	06:57 17:28	06:15 18:01	06:23 18:55-19:14/19 19:35	05:42 20:07	05:24 20:32
14	07:23 07:45-08:08/23 16:51	06:56 17:29	06:13 18:02	06:21 18:55-19:14/19 19:36	05:41 20:08	05:24 20:33
15	07:23 07:44-08:08/24 16:52	06:54 17:31	06:12 18:04	06:20 18:55-19:16/21 19:37	05:40 20:09	05:24 20:33
16	07:22 07:44-08:08/24 16:53	06:53 17:32	06:10 18:05	06:18 18:55-19:16/21 19:38	05:39 20:10	05:24 20:33
17	07:22 07:43-08:08/25 16:55	06:52 17:33	06:08 18:06	06:17 18:56-19:18/22 19:40	05:38 20:11	05:24 20:34
18	07:21 07:42-08:08/26 16:56	06:50 17:34	06:06 18:07	06:15 18:56-19:18/22 19:41	05:37 20:12	05:24 20:34
19	07:21 07:42-08:09/27 16:57	06:49 17:36	06:05 18:08	06:14 18:57-19:19/22 19:42	05:36 20:13	05:24 20:34
20	07:20 07:41-08:09/28 16:58	06:48 17:37	06:03 18:09	06:12 18:58-19:20/22 19:43	05:35 20:14	05:24 20:35
21	07:19 07:40-08:09/29 16:59	06:46 17:38	06:01 18:10	06:11 19:00-19:22/22 19:44	05:34 20:15	05:24 20:35
22	07:19 07:40-08:10/30 17:00	06:45 17:39	06:00 18:11	06:09 19:00-19:22/22 19:45	05:34 20:16	05:24 20:35
23	07:18 07:39-08:10/31 17:02	06:43 17:40	05:58 18:12	06:08 19:01-19:24/23 19:46	05:33 20:17	05:25 20:35
24	07:17 07:38-08:09/31 17:03	06:42 17:42	05:56 18:14	06:06 19:01-19:24/23 19:47	05:32 20:18	05:25 20:36
25	07:17 07:38-08:09/31 17:04	06:40 17:43	05:55 18:15	06:05 19:03-19:26/23 19:48	05:31 20:19	05:25 20:36
26	07:16 07:39-08:10/31 17:05	06:39 17:44	05:53 18:16	06:03 19:04-19:26/22 19:49	05:31 20:20	05:25 20:36
27	07:15 07:40-08:09/29 17:07	06:37 17:45	05:51 18:17	06:02 19:06-19:27/21 19:50	05:30 20:21	05:26 20:36
28	07:14 07:41-08:09/28 17:08	06:36 17:46	05:50 18:18	06:01 19:07-19:28/21 19:51	05:29 20:21	05:26 20:36
29	07:13 07:42-08:08/26 17:09		06:48 19:19	05:59 19:07-19:26/19 19:52	05:29 20:22	05:27 20:36
30	07:13 07:43-08:07/24 17:10		06:46 19:20	05:58 19:09-19:25/16 19:54	05:28 20:23	05:27 20:36
31	07:12 07:44-08:06/22 17:12		06:44 19:21		05:28 20:24	
Potential sun hours	296	297	369	399	449	454
Sum of minutes with flicker	699	39	0	458	14	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: ShadowFlickeringFoggiaMR WTG: 12 - VESTAS V136-4.2 4200 136.0 IO! hub: 82.0 m (TOT: 150.0 m) (12)  
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	05:27 20:36	05:52 20:16	06:23 18:55-19:10/15 19:33	06:54 18:42	06:28 16:54	07:04 07:28-07:48/20 16:29
2	05:28 20:36	05:53 20:15	06:24 18:55-19:09/14 19:31	06:55 18:40	06:30 16:53	07:05 07:29-07:48/19 16:29
3	05:29 20:35	05:54 20:14	06:25 18:55-19:07/12 19:29	06:56 18:38	06:31 16:52	07:06 07:30-07:48/18 16:29
4	05:29 20:35	05:55 20:13	06:26 18:56-19:05/9 19:28	06:57 18:36	06:32 16:51	07:07 07:31-07:48/17 16:29
5	05:30 20:35	05:56 20:12	06:27 18:57-19:04/7 19:26	06:58 18:35	06:33 16:49	07:08 07:32-07:48/16 16:28
6	05:30 20:35	05:57 20:11	06:28 18:58-19:02/4 19:24	06:59 18:33	06:35 16:48	07:09 07:33-07:48/15 16:28
7	05:31 20:34	05:58 20:09	06:29 19:23	07:00 18:31	06:36 16:47	07:10 07:34-07:48/14 16:28
8	05:31 20:34	05:59 20:08	06:30 19:21	07:01 18:30	06:37 07:22-07:29/7 16:46	07:11 07:35-07:48/13 16:28
9	05:32 20:34	06:00 20:07	06:31 19:19	07:02 18:28	06:38 07:19-07:34/15 16:45	07:12 07:36-07:48/12 16:28
10	05:33 20:33	06:01 20:05	06:32 19:18	07:03 18:27	06:39 07:17-07:36/19 16:44	07:13 07:37-07:49/12 16:28
11	05:34 20:33	06:02 19:23-19:29/6 20:04	06:33 19:16	07:04 18:25	06:41 07:15-07:37/22 16:43	07:13 07:37-07:48/11 16:28
12	05:34 20:32	06:03 19:19-19:32/13 20:03	06:34 19:14	07:05 18:23	06:42 07:15-07:39/24 16:42	07:14 07:38-07:48/10 16:28
13	05:35 20:32	06:04 19:17-19:34/17 20:01	06:35 19:12	07:07 18:22	06:43 07:14-07:40/26 16:41	07:15 07:39-07:49/10 16:28
14	05:36 20:31	06:05 19:15-19:34/19 20:00	06:36 19:11	07:08 18:20	06:44 07:13-07:41/28 16:40	07:16 07:40-07:49/9 16:29
15	05:37 20:31	06:06 19:14-19:35/21 19:59	06:37 19:09	07:09 18:19	06:45 07:12-07:41/29 16:39	07:17 07:40-07:49/9 16:29
16	05:37 20:30	06:07 19:13-19:34/21 19:57	06:38 19:07	07:10 18:17	06:47 07:12-07:43/31 16:38	07:17 07:41-07:49/8 16:29
17	05:38 20:30	06:08 19:10-19:33/23 19:56	06:39 19:06	07:11 18:15	06:48 07:12-07:43/31 16:37	07:18 07:42-07:50/8 16:29
18	05:39 20:29	06:09 19:08-19:31/23 19:54	06:40 19:04	07:12 18:14	06:49 07:12-07:43/31 16:37	07:19 07:42-07:49/7 16:30
19	05:40 20:28	06:10 19:07-19:30/23 19:53	06:41 19:02	07:13 18:12	06:50 07:13-07:44/31 16:36	07:19 07:43-07:50/7 16:30
20	05:41 20:27	06:11 19:06-19:28/22 19:51	06:42 19:00	07:14 18:11	06:51 07:15-07:45/30 16:35	07:20 07:44-07:51/7 16:30
21	05:42 20:27	06:12 19:05-19:27/22 19:50	06:43 18:59	07:16 18:09	06:53 07:16-07:45/29 16:34	07:20 07:44-07:51/7 16:31
22	05:42 20:26	06:13 19:04-19:25/21 19:48	06:44 18:57	07:17 18:08	06:54 07:17-07:45/28 16:34	07:21 07:45-07:52/7 16:31
23	05:43 20:25	06:14 19:02-19:24/22 19:47	06:45 18:55	07:18 18:06	06:55 07:18-07:45/27 16:33	07:21 07:45-07:52/7 16:32
24	05:44 20:24	06:15 19:00-19:23/23 19:45	06:46 18:53	07:19 18:05	06:56 07:20-07:46/26 16:33	07:22 07:45-07:52/7 16:32
25	05:45 20:23	06:16 18:59-19:21/22 19:44	06:47 18:52	06:20 17:04	06:57 07:21-07:46/25 16:32	07:22 07:46-07:53/7 16:33
26	05:46 20:22	06:17 18:58-19:20/22 19:42	06:48 18:50	06:21 17:02	06:58 07:22-07:47/25 16:31	07:23 07:46-07:54/8 16:34
27	05:47 20:21	06:18 18:57-19:18/21 19:41	06:49 18:48	06:23 17:01	06:59 07:23-07:47/24 16:31	07:23 07:46-07:54/8 16:34
28	05:48 20:20	06:19 18:56-19:16/20 19:39	06:51 18:47	06:24 16:59	07:01 07:24-07:47/23 16:31	07:23 07:47-07:55/8 16:35
29	05:49 20:19	06:20 18:56-19:15/19 19:38	06:52 18:45	06:25 16:58	07:02 07:25-07:47/22 16:30	07:24 07:47-07:56/9 16:36
30	05:50 20:18	06:21 18:55-19:13/18 19:36	06:53 18:43	06:26 16:57	07:03 07:27-07:48/21 16:30	07:24 07:47-07:56/9 16:36
31	05:51 20:17	06:22 18:55-19:12/17 19:34		06:27 16:56		07:24 07:47-07:57/10 16:37
Potential sun hours	460	429	375	345	297	286
Sum of minutes with flicker	0	415	61	0	574	329

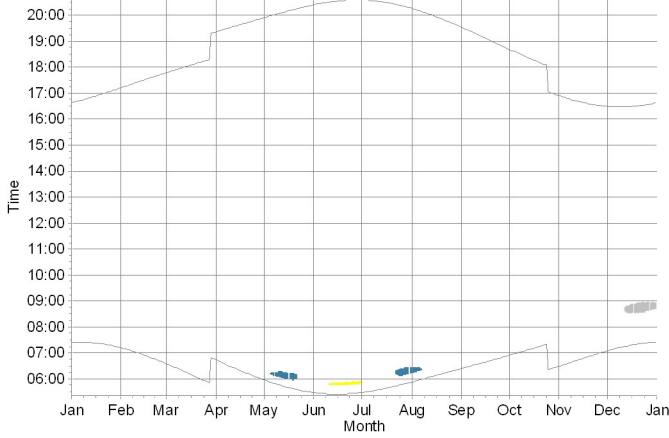
Table layout: For each day in each month the following matrix apply

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

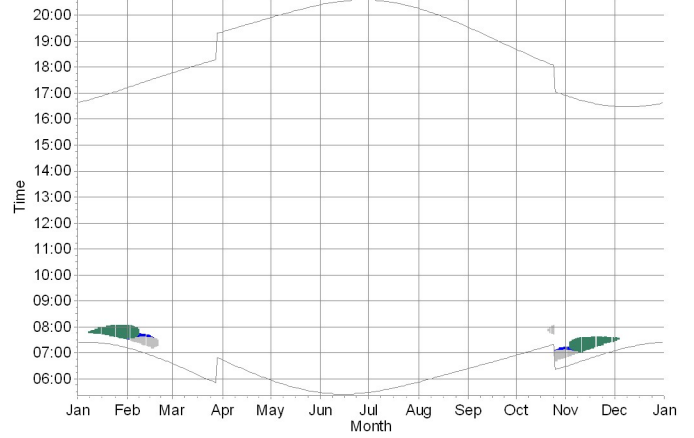
## SHADOW - Calendar per WTG, graphical

Calculation: ShadowFlickeringFoggiaMR

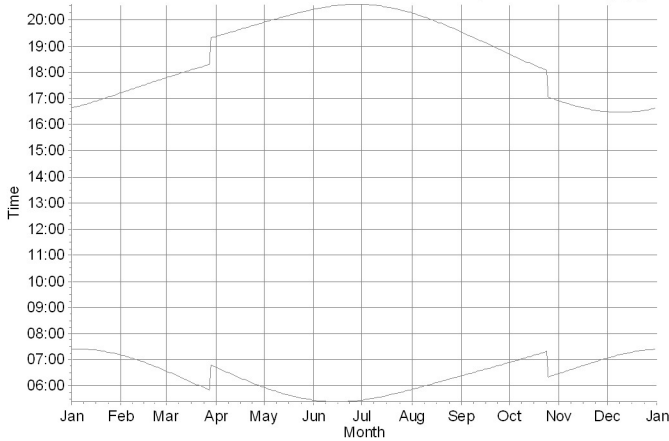
1: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (1)



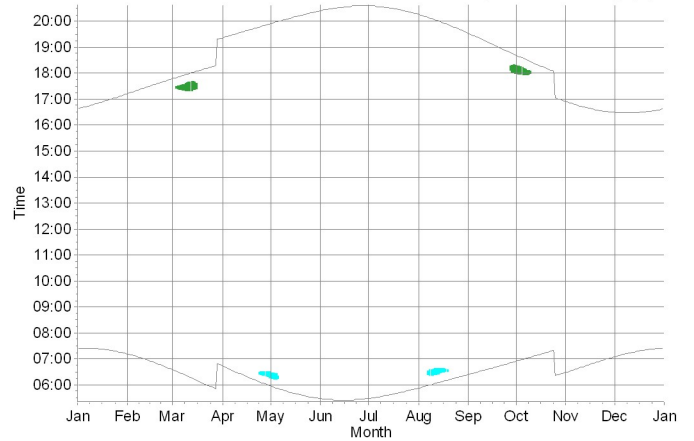
2: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (2)



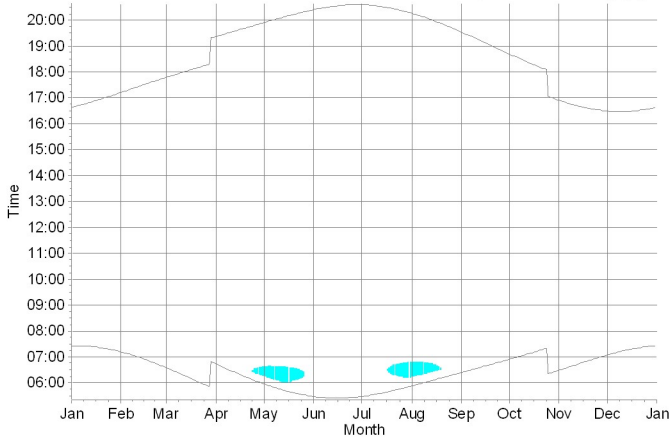
3: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (3)



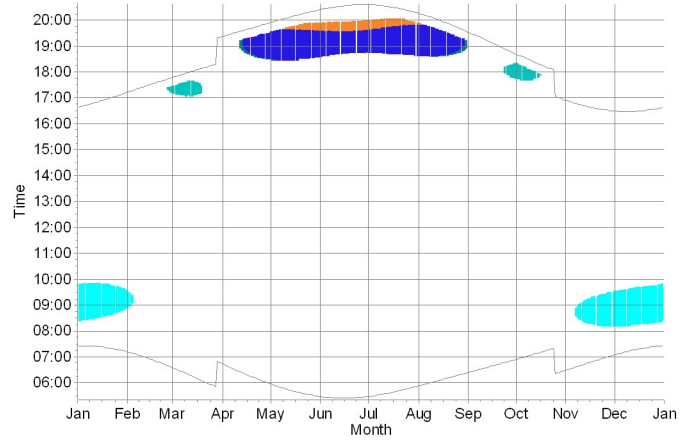
4: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (4)




5: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (5)



6: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (6)



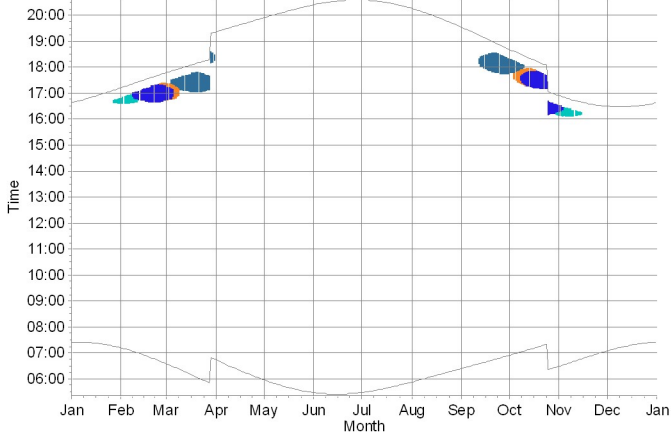
Shadow receptors

- |   |   |  |
|---|---|--|
|  B: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (2)  |  M: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (13) |  AC: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (29) |
|  C: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (3)  |  T: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (20) |  AJ: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (36) |
|  F: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (6)  |  U: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (21) |  AK: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (37) |
|  L: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (12) |  W: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (23) |  |

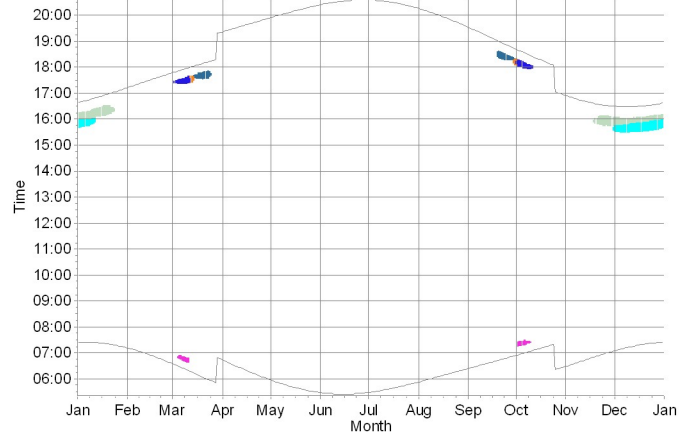
## SHADOW - Calendar per WTG, graphical

Calculation: ShadowFlickeringFoggiaMR

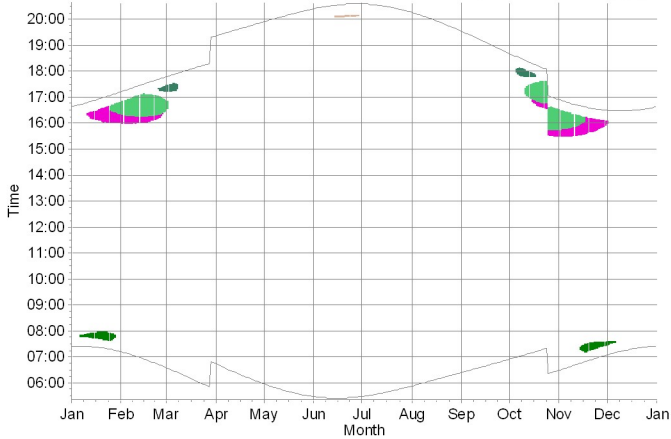
7: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (7)



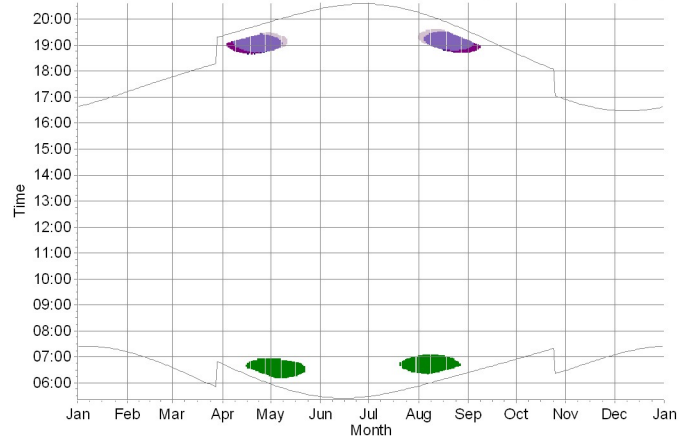
8: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (8)



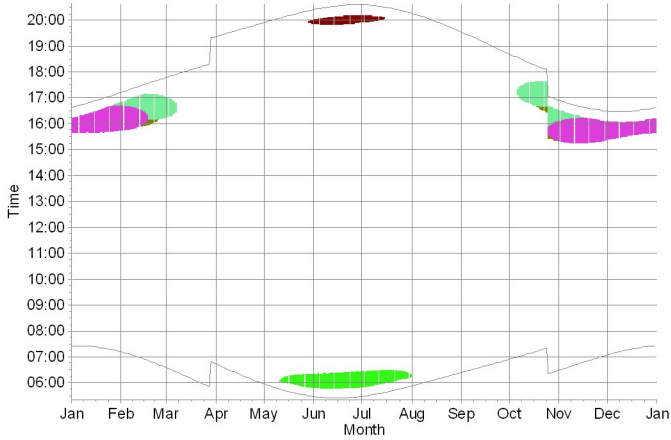
9: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (9)



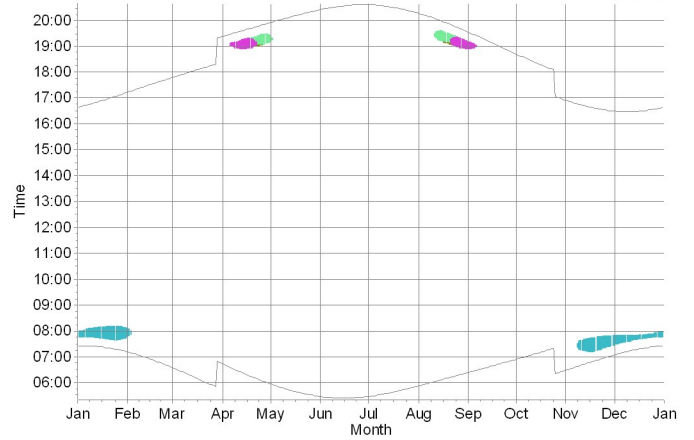
10: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (10)



11: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (11)



12: VESTAS V136-4.2 4200 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (12)



Shadow receptors

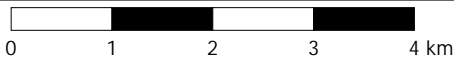
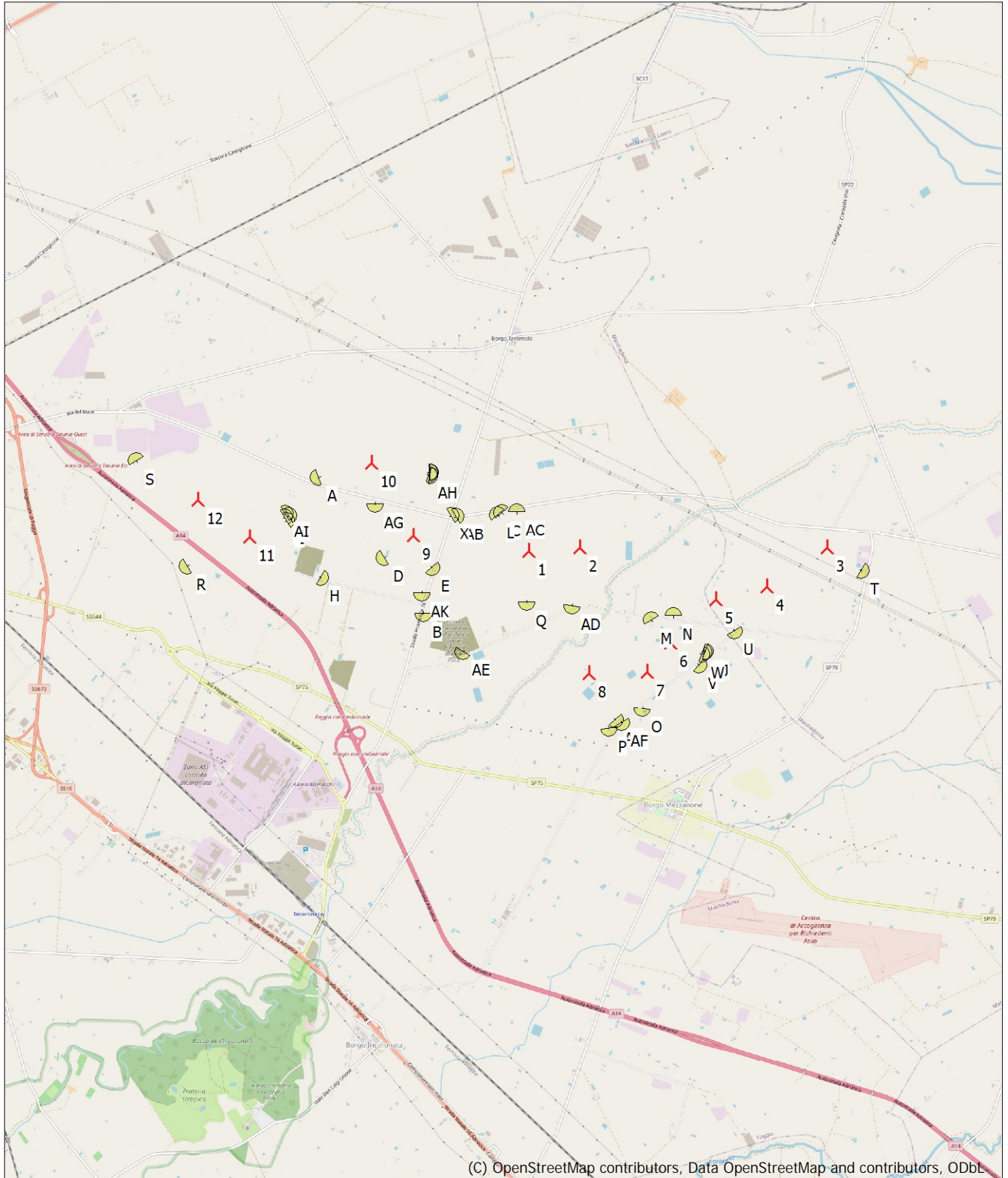
- A: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (1)
- F: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (6)
- G: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (7)
- H: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (8)
- I: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (9)
- J: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (10)
- K: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (11)
- M: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (13)

- N: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (14)
- Q: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (17)
- R: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (18)
- S: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (19)
- U: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (21)
- V: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (22)
- W: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (23)
- X: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (24)

- Y: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (25)
- Z: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (26)
- AB: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (28)
- AC: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (29)
- AE: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (31)
- AH: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (34)
- AI: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (35)
- AJ: Shadow Receptor: 1.0 x 1.0 Azimuth: 0.0° Slope: 90.0° (36)

## SHADOW - Map

Calculation: ShadowFlickeringFoggiaMR



Map: EMD OpenStreetMap , Print scale 1:75,000, Map center UTM (north)-WGS84 Zone: 33 East: 556,918 North: 4,588,480

New WTG

Shadow receptor

Flicker map level: Elevation Grid Data Object: FoggiaMR\_ShadowFlickering\_EMDGrid\_0.wpg (1)