

PROGETTO

**PROGETTO DEFINITIVO PER LA REALIZZAZIONE DI UN  
PARCO EOLICO DENOMINATO "STORNARA NORD"  
NEL COMUNE DI STORNARA (FG)**

TITOLO

**STUDIO EVOLUZIONE OMBRA (SHADOW FLICKERING)**

PROGETTAZIONE	PROPONENTE	VISTI
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DATI PROGETTAZIONE

Cod. Progetto <b>04EOL-2018</b>	Commessa <b>180FN-0137</b>	

Scala -	Formato Stampa <b>A4</b>	Cod. Elaborato <b>EO-SND-PD-SIA-13</b>	Rev. <b>a</b>	Nome File EO-SND.PD-SIA-13 – Studio evoluzione ombra (Shadow Flickering). doc	Elaborato <b>1</b>	Foglio <b>1 di 90</b>
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Rev.	Data	Descrizione	Elaborato	Controllato	Approvato
a	20/07/2019	Prima Emissione	M. Marseglia	A. Corradetti	R. Cairoli

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## **1 PREMESSA**

La presente relazione tecnica specialistica descrive l'evoluzione giornaliera delle ombre generate dalle pale eoliche facenti parte del progetto di un impianto eolico per la produzione di energia elettrica proposto dalla società **INERZIA S.p.A.** con sede legale in Roma, Via Arno n.21.

La proposta progettuale è finalizzata alla realizzazione di un impianto eolico per la produzione di energia elettrica da fonte rinnovabile eolica, costituito da 11 aerogeneratori, ciascuno di potenza nominale pari a 5,6 MW per una potenza complessiva di 61,60 MW, da realizzarsi nella Provincia di Foggia, nel territorio comunale di Stornara, in cui insistono gli aerogeneratori e le opere di connessione alla RTN.

## **2 DESCRIZIONE DELL'INTERVENTO**

L'impianto di produzione sarà costituito da 11 aerogeneratori, ognuno della potenza di 5,6 MW ciascuno per una potenza complessiva nominale di 61,60 MW. Gli aerogeneratori saranno ubicati in località Gianlorenzo nell'area a nord dell'abitato di Stornara, e ad una distanza dal centro abitato di circa 1,5 km.

I terreni sui quali si installerà il parco eolico, interessa una superficie di circa 500 ettari, anche se la quantità di suolo effettivamente occupato è significativamente inferiore e limitato alle aree di piazzole dove verranno installati gli aerogeneratori, come visibile sugli elaborati planimetrici allegati al progetto.

Le turbine di progetto ricadono in località "Gianlorenzo". L'area di progetto, intesa sia come quella occupata dagli aerogeneratori di progetto, con annesse piazzole e relativi cavidotti di interconnessione interna, e del cavidotto esterno, interessa il territorio comunale di Stornara censito al NCT ai fogli di mappa nn. 1-2-3-4-5-6-8-12 e13.

Di seguito si riporta la tabella riepilogativa, in cui sono indicate per ciascun aerogeneratore le relative coordinate (UTM fuso 33) e le particelle catastali, con riferimento al catasto dei terreni del Comune di Stornara.

**Tabella dati geografici e catastali degli Aerogeneratori:**

COORDINATE UTM 33 WGS84			DATI CATASTALI		
WTG	E	N	Comune	foglio n.	part. n.
1	563644	4574674	Stornara	1	12
2	563486	4573881	Stornara	1	22
3	562774	4573467	Stornara	3	8
4	563513	4572857	Stornara	6	507
5	564323	4573914	Stornara	4	29
6	565484	4574083	Stornara	2	59
7	565020	4573096	Stornara	8	198
8	566511	4573443	Stornara	9	7
9	566250	4572742	Stornara	12	165
10	567517	4572358	Stornara	12	78
11	568114	4571029	Stornara	13	260

### 3 ANALISI DELL'ESPOSIZIONE SOLARE ANNUALE

La posizione occupata nel cielo dal sole è compiutamente individuata mediante la misura di due coordinate angolari, azimut ed elevazione (altezza). L'azimut viene misurato, in senso orario, sul piano orizzontale, a partire dal nord geografico fino al punto sull'orizzonte direttamente sotto all'oggetto; l'elevazione, invece, viene misurata sul piano verticale, partendo da tale punto sino ad arrivare in corrispondenza dell'oggetto. A causa del moto della Terra intorno al sole, tali coordinate variano senza soluzione di continuità e la traiettoria descritta nel cielo dal sole è assimilabile ad un arco; ogni giorno si caratterizza per un proprio arco, il quale si discosta, se pur di poco, da quello del giorno immediatamente precedente e successivo. Ad ogni modo, si può affermare che un certo arco si ripete quasi esattamente ogni anno. Dicesi giorno l'intervallo di tempo nel quale giunge al suolo luce solare diretta per cui, la sua durata è pari al tempo che intercorre tra alba e tramonto.

La durata del giorno non coincide con la durata della luce naturale dato che sia prima dell'alba che dopo il tramonto sono rilevabili due periodi, chiamati entrambi crepuscolo (rispettivamente crepuscolo mattutino e crepuscolo serale o serotino), durante i quali giunge a terra una luce diffusa naturale fornita dai livelli più esterni dell'atmosfera i quali, trovandosi a quote più elevate, ricevono infatti luce solare diretta per un tempo più lungo riflettendola in parte verso la terra. Per quanto detto, la durata dell'illuminazione solare è pari alla somma

della durata del giorno e della durata del crepuscolo mattutino e serale. Se non si verificasse il fenomeno descritto, il passaggio dal giorno alla notte e viceversa avverrebbe in maniera repentina.

#### 4 VALUTAZIONE PREVENTIVA DELLE OMBRE GENERATE

Le turbine eoliche, come altre strutture spiccatamente sviluppate in altezza, proiettano un'ombra sulle aree adiacenti in presenza della luce solare diretta. In particolare si hanno fenomeni quasi statici legati alla presenza della torre fissa ed effetti dinamici legati alla rotazione del rotore con le sue tre pale.

Il primo fenomeno potrebbe avere come conseguenza l'incremento della probabilità di formazione di ghiaccio sulle strade asfaltate soggette a rilevante traffico (se presenti) in particolare nelle prime ed ultime ore del giorno.

Il secondo fenomeno è legato alla presenza di un osservatore posto in modo da vedere interposto il rotore tra sé e il sole. Si precisa che i fenomeni di ombreggiamento descritti attualmente non sono regolati da una specifica normativa.

Ai fini della presente trattazione è stato preso in considerazione un modello tipologico di aerogeneratore avente un'altezza massima (altezza al mozzo + lunghezza della pala) pari a 200 m dato che l'apparecchio effettivamente installato non avrà un'altezza massima superiore a tale valore. È stato stimato l'effetto "flicker" prodotto dall'impianto eolico; trattasi di un fenomeno per cui si genera una intermittenza dell'ombra (una sorta di effetto stroboscopico) a seguito del movimento del rotore dell'aerogeneratore quando in esercizio (in particolare quando il piano del rotore risulta perpendicolare alla congiungente tra l'osservatore e il sole), e che potrebbe risultare spiacevole per un osservatore. Per eseguire tale analisi è stato impiegato il software WindPRO. I risultati ottenuti sono riportati nella tavola EO-PON-PD-SIA-14.

Nel calcolo sono state assunte le seguenti ipotesi ampiamente conservative (caso peggiore – *worst case*):

- Sole splendente tutto il giorno e per tutto l'anno;
- Impianto costantemente in funzione (presenza costante di vento);
- Piano del rotore sempre ortogonale alla congiungente tra l'osservatore e il sole;
- Altezza minima del sole sull'orizzonte pari a 3°;
- Effetto dell'ombra proiettata fino a una distanza di 2000 m dalle torri;

- Totale assenza di ostacoli o schermi vegetazionali presenti negli spazi circostanti i possibili recettori.

Il report di calcolo restituisce un grafico finale (cfr. tavola EO-SND-PD-SIA-14) che riporta in pianta il numero massimo di ore/anno in cui ad altezza dell'occhio umano si verifica l'effetto flicker descritto. Tale numero è rappresentato graficamente sul territorio con aree di diverse sfumature di colore in base al numero di ore/anno di possibile effetto flicker.

Di seguito viene allegato il calcolo dell'ombra per i fabbricati "civile abitazione", maggiormente coinvolti dall'effetto flicker, presenti nel raggio di 1 km.

Dai tabulati è possibile verificare che, nonostante sono assunte le condizioni peggiorative assolute, cioè pareti con ampie porte finestre (120 cm x 200 cm) in tutte le esposizioni, e condizioni di soleggiamento massime (trascurando alcuna condizione climatica avversa), l'effetto ombra è modesto per gli immobili presenti nell'area di progetto.

## 5 CONCLUSIONE

Per quanto concerne l'effetto "flicker", quindi, valutando i risultati ottenuti in relazione al contesto antropico locale, si può ragionevolmente affermare che il fenomeno non ha particolari riflessi negativi sul territorio, dove i primi fabbricati adibiti a civile abitazioni sono in numero limitato e a distanze sempre superiori a diverse centinaia di metri, distanze oltre le quali il fenomeno di ombreggiamento è praticamente modesto e accettabile.

Pur nelle ipotesi conservative assunte, la probabilità che un osservatore sia soggetto al fenomeno non è significativa, se si riportano i risultati numerici ai casi reali con le dovute attenuazioni di origine morfologica e meteorologica del territorio.

**TABULATI DI CALCOLO**

## SHADOW - Risultato principale

Calcolo: Flicker\_su\_recettori\_Stornara Nord

Assunzioni sui calcoli d'ombra

Distanza massima di influenza

Calcola solo quando oltre il 20% del sole è coperto dalla pala

Consultare la tabella delle WTG

Altezza minima del sole sull'orizzonte 3 °  
 Passo giornaliero del calcolo 1 giorni  
 Passo temporale del calcolo 1 minuti  
 I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il dì, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

Per evitare di considerare l' ombreggiamento da WTG in realtà non direttamente visibili, prima del calcolo dell' ombra viene eseguito un calcolo ZVI. Quest' ultimo si basa sulle seguenti assunzioni.

Curve altimetriche usate: Height Contours: CONTOURLINE\_ONLINEDATA\_0.W

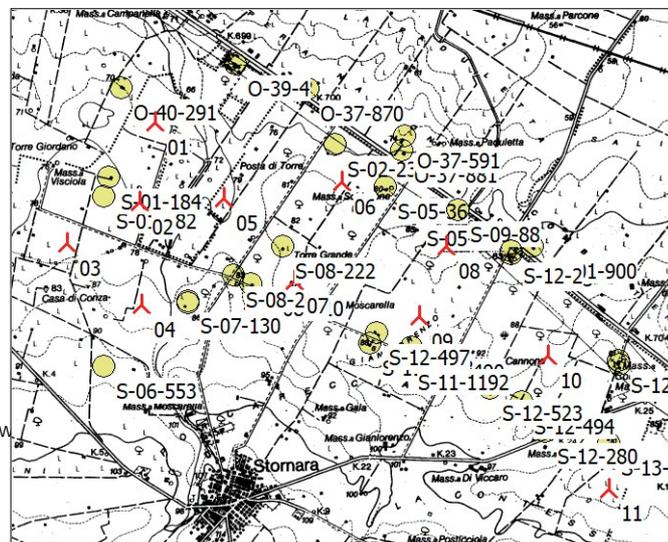
Ostacoli usati:

Eye height for map: 1,5 m

Risoluzione del grigliato: 1,0 m

All coordinates are in

UTM (north)-WGS84 Zona: 33



Scala 1:75.000

▲ Nuova WTG

● Recettore d'ombra

## WTG

Easting	Northing	Z	Dati/Descrizione	Tipo di WTG		Tipo generatore	Potenza nominale	Diametro rotore	Altezza mozzo	Dati di ombra	
				Valida	Prod.					Distanza di calcolo	giri/min di
01	563.644	4.574.674	69,9 VESTAS V162-5.6MW(...Si	VESTAS	V162-5.6MW(User)-5.600	5.600	5.600	162,0	119,0	1.904	10,4
02	563.486	4.573.881	73,7 VESTAS V162-5.6MW(...Si	VESTAS	V162-5.6MW(User)-5.600	5.600	5.600	162,0	119,0	1.904	10,4
03	562.774	4.573.467	75,0 VESTAS V162-5.6MW(...Si	VESTAS	V162-5.6MW(User)-5.600	5.600	5.600	162,0	119,0	1.904	10,4
04	563.513	4.572.857	80,4 VESTAS V162-5.6MW(...Si	VESTAS	V162-5.6MW(User)-5.600	5.600	5.600	162,0	119,0	1.904	10,4
05	564.323	4.573.914	73,6 VESTAS V162-5.6MW(...Si	VESTAS	V162-5.6MW(User)-5.600	5.600	5.600	162,0	119,0	1.904	10,4
06	565.484	4.574.083	78,8 VESTAS V162-5.6MW(...Si	VESTAS	V162-5.6MW(User)-5.600	5.600	5.600	162,0	119,0	1.904	10,4
07	565.020	4.573.096	81,5 VESTAS V162-5.6MW(...Si	VESTAS	V162-5.6MW(User)-5.600	5.600	5.600	162,0	119,0	1.904	10,4
08	566.511	4.573.443	80,0 VESTAS V162-5.6MW(...Si	VESTAS	V162-5.6MW(User)-5.600	5.600	5.600	162,0	119,0	1.904	10,4
09	566.250	4.572.742	86,5 VESTAS V162-5.6MW(...Si	VESTAS	V162-5.6MW(User)-5.600	5.600	5.600	162,0	119,0	1.904	10,4
10	567.517	4.572.358	85,0 VESTAS V162-5.6MW(...Si	VESTAS	V162-5.6MW(User)-5.600	5.600	5.600	162,0	119,0	1.904	10,4
11	568.114	4.571.029	86,5 VESTAS V162-5.6MW(...Si	VESTAS	V162-5.6MW(User)-5.600	5.600	5.600	162,0	119,0	1.904	10,4

## Recettore d'ombra-Immissione dati

n.	Easting	Northing	Z	Ampiezza	Altezza	Elevation	Inclinazione della finestra	Modo orientazione	Eye height for ZVI
			[m]	[m]	[m]	a.g.l.	[°]		[m]
C-101-900	567.363	4.573.441	79,2	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
O-37-591	566.100	4.574.542	71,3	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
O-37-870	565.149	4.575.005	67,8	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
O-37-881	566.078	4.574.391	75,0	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
O-39-4	564.432	4.575.251	73,4	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
O-40-291	563.311	4.575.011	68,7	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-01-182	563.135	4.573.935	74,5	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-01-184	563.185	4.574.126	74,5	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-02-231	565.413	4.574.456	72,6	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-05-124	566.195	4.573.761	80,7	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-05-36	565.915	4.574.032	78,1	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-06-553	563.138	4.572.248	90,1	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-07-130	563.970	4.572.901	80,0	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-07-158	563.971	4.572.876	80,4	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-08-205	564.416	4.573.159	81,0	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-08-210	564.587	4.573.071	80,0	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-08-222	564.902	4.573.444	82,0	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-09-88	566.623	4.573.807	75,0	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-11-1138	565.764	4.572.482	90,0	1,0	2,0	1,0	90,0	"Modalità serra"	3,0

continua alla pagina successiva...

## SHADOW - Risultato principale

Calcolo: Flicker\_su\_recettori\_Stornara Nord

...continua dalla pagina precedente

n.	Eastings	Northing	Z	Ampiezza	Altezza	Elevation a.g.l.	Inclinazione della finestra	Modo orientazione	Eye height for ZVI
			[m]	[m]	[m]	[m]	[°]		[m]
S-11-1192	566.117	4.572.331	90,0	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-12-2	567.150	4.573.389	80,0	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-12-280	567.482	4.571.602	93,9	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-12-37	568.207	4.572.307	85,0	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-12-43	567.151	4.573.364	80,3	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-12-490	566.171	4.572.436	89,9	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-12-494	567.257	4.571.898	90,0	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-12-497	565.830	4.572.586	89,0	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-12-515	568.221	4.572.269	85,0	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-12-523	566.945	4.572.026	90,0	1,0	2,0	1,0	90,0	"Modalità serra"	3,0
S-13-201	568.119	4.571.484	86,6	1,0	2,0	1,0	90,0	"Modalità serra"	3,0

## Risultati dei calcoli

Recettore d'ombra

Ombra, caso peggiore

n.	Ore d'ombra per anno	Giorni con ombra per anno	Massima durata dell'ombra per giorno
	[ore/anno]	[giorni/anno]	[ore/giorno]
C-101-900	53:40	124	0:44
O-37-591	81:13	131	0:51
O-37-870	7:43	31	0:23
O-37-881	65:45	83	0:59
O-39-4	49:37	88	0:41
O-40-291	138:24	115	1:23
S-01-182	241:06	207	2:02
S-01-184	223:56	177	1:36
S-02-231	97:48	140	1:26
S-05-124	229:30	224	1:47
S-05-36	223:05	249	1:25
S-06-553	0:00	0	0:00
S-07-130	158:45	185	1:38
S-07-158	159:28	179	1:45
S-08-205	98:32	147	1:01
S-08-210	176:31	188	1:39
S-08-222	141:30	196	1:36
S-09-88	121:47	160	1:32
S-11-1138	57:09	90	1:00
S-11-1192	9:32	33	0:25
S-12-2	116:09	217	0:59
S-12-280	40:34	64	0:46
S-12-37	53:57	77	0:54
S-12-43	119:14	224	0:59
S-12-490	15:57	71	0:26
S-12-494	0:00	0	0:00
S-12-497	140:59	136	1:28
S-12-515	54:44	80	0:53
S-12-523	28:57	63	0:41
S-13-201	0:00	0	0:00

Ombreggiamento totale sui recettori d'ombra causato da ciascuna WTG

n.	Nome	Caso peggiore [ore/anno]
01	VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (55)	200:51
02	VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (56)	393:26
03	VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (57)	90:16
04	VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (58)	170:57
05	VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (59)	67:52
06	VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (60)	454:32
07	VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (61)	330:15
08	VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (62)	343:36
09	VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (63)	218:56
10	VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (64)	118:11
11	VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (65)	40:34

Progetto:  
Stornara Nord

Utente autorizzato:  
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## SHADOW - Risultato principale

Calcolo: Flicker\_su\_recettori\_Stornara Nord

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 - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: C-101-900 - Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (6)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno			
1	07:23 16:38		07:10 17:13	16:14 (09) 17:47	06:33 17:47	06:42 19:21	18:18 (08) 19:00 (08)	05:56 19:54	05:27 20:23
2	07:23 16:39		07:09 17:14	16:15 (09) 16:36 (09)	06:32 17:48	06:41 19:23	18:17 (08) 19:00 (08)	05:55 19:55	05:26 20:24
3	07:23 16:40		07:08 17:15	16:16 (09) 16:35 (09)	06:30 17:49	06:39 19:24	18:16 (08) 19:00 (08)	05:53 19:56	05:26 20:25
4	07:23 16:41	16:13 (09)	07:07 17:16	16:18 (09) 16:34 (09)	06:29 17:50	06:37 19:25	18:16 (08) 19:00 (08)	05:52 19:57	05:26 20:26
5	07:23 16:42	2 16:12 (09)	07:06 17:18	16:20 (09) 16:31 (09)	06:27 17:52	06:36 19:26	18:16 (08) 18:59 (08)	05:51 19:58	05:25 20:26
6	07:23 16:43	4 16:11 (09)	07:04 17:19		06:26 17:53	06:34 19:27	18:15 (08) 18:58 (08)	05:50 19:59	05:25 20:27
7	07:23 16:44	6 16:10 (09)	07:03 17:20		06:24 17:54	06:32 19:28	18:16 (08) 18:59 (08)	05:48 20:00	05:25 20:28
8	07:23 16:45	7 16:09 (09)	07:02 17:21		06:22 17:55	06:31 19:29	18:16 (08) 18:57 (08)	05:47 20:01	05:24 20:28
9	07:23 16:46	9 16:18 (09)	07:01 17:23		06:21 17:56	06:29 19:30	18:16 (08) 18:57 (08)	05:46 20:02	05:24 20:29
10	07:23 16:47	11 16:20 (09)	07:00 17:24		06:19 17:57	06:27 19:31	18:16 (08) 18:56 (08)	05:45 20:03	05:24 20:29
11	07:23 16:48	12 16:21 (09)	06:59 17:25		06:17 17:58	06:26 19:32	18:17 (08) 18:55 (08)	05:44 20:04	05:24 20:30
12	07:22 16:49	13 16:21 (09)	06:57 17:26		06:16 18:00	06:24 19:33	18:18 (08) 18:54 (08)	05:43 20:05	05:24 20:30
13	07:22 16:50	15 16:23 (09)	06:56 17:28		06:14 18:01	06:23 19:34	18:18 (08) 18:52 (08)	05:42 20:06	05:24 20:31
14	07:22 16:51	16 16:24 (09)	06:55 17:29		06:12 18:02	06:21 19:35	18:20 (08) 18:51 (08)	05:41 20:07	05:23 20:31
15	07:21 16:52	17 16:25 (09)	06:54 17:30		06:11 18:03	06:19 19:36	18:21 (08) 18:49 (08)	05:40 20:08	05:23 20:32
16	07:21 16:53	19 16:27 (09)	06:52 17:31		06:09 18:04	06:18 19:38	18:23 (08) 18:48 (08)	05:39 20:09	05:23 20:32
17	07:21 16:54	20 16:27 (09)	06:51 17:33		06:07 18:05	06:16 19:39	18:24 (08) 18:45 (08)	05:38 20:10	05:23 20:33
18	07:20 16:55	21 16:29 (09)	06:49 17:34		06:06 18:06	06:15 19:40	18:28 (08) 18:42 (08)	05:37 20:11	05:24 20:33
19	07:20 16:57	23 16:30 (09)	06:48 17:35		06:04 18:07	06:13 19:41		05:36 20:12	05:24 20:33
20	07:19 16:58	24 16:32 (09)	06:47 17:36		06:02 18:08	06:12 19:42		05:35 20:13	05:24 20:34
21	07:18 16:59	25 16:33 (09)	06:45 17:37		06:01 18:10	17:41 (08) 17:43 (08)	06:10 19:43	05:34 20:14	05:24 20:34
22	07:18 17:00	27 16:34 (09)	06:44 17:39		05:59 18:11	17:34 (08) 17:50 (08)	06:09 19:44	05:33 20:15	05:24 20:34
23	07:17 17:01	28 16:36 (09)	06:42 17:40		05:57 18:12	17:30 (08) 17:51 (08)	06:07 19:45	05:33 20:16	05:24 20:34
24	07:16 17:03	29 16:37 (09)	06:41 17:41		05:56 18:13	17:28 (08) 17:51 (08)	06:06 19:46	05:32 20:17	05:25 20:34
25	07:16 17:04	30 16:38 (09)	06:39 17:42		05:54 18:14	17:26 (08) 17:53 (08)	06:04 19:47	05:31 20:18	05:25 20:34
26	07:15 17:05	30 16:38 (09)	06:38 17:43		05:52 18:15	17:24 (08) 17:54 (08)	06:03 19:48	05:30 20:19	05:25 20:35
27	07:14 17:06	29 16:38 (09)	06:36 17:45		05:51 18:16	17:22 (08) 17:55 (08)	06:02 19:49	05:30 20:19	05:26 20:35
28	07:13 17:08	29 16:39 (09)	06:35 17:46		05:49 18:17	17:21 (08) 17:55 (08)	06:00 19:50	05:29 20:20	05:26 20:35
29	07:12 17:09	28 16:39 (09)			06:47 19:18	18:20 (08) 18:57 (08)	05:59 19:52	05:29 20:21	05:26 20:35
30	07:11 17:10	28 16:39 (09)			06:46 19:19	18:19 (08) 18:58 (08)	05:57 19:53	05:28 20:22	05:27 20:35
31	07:11 17:11	26 16:38 (09)			06:44 19:20	18:18 (08) 18:59 (08)		05:27 20:23	
Ore potenziali eliofanìa	297		297	369	399	651		449	453
Totale, caso peggiore	554	90	303	651					

Legenda della tabella:

Giorno del mese Alba (hh:mm) Tramonto (hh:mm) Minuti d'ombra Inizio ombreggiamento (hh:mm) Fine ombreggiamento (hh:mm) (WTG che provoca l'inizio dell'ombreggiamento) (WTG che provoca l'ultimo ombreggiamento)

## SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: C-101-900 - Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (6)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il dì, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre		
1	05:27 20:34	05:51 20:15	06:23 19:32 39	18:15 (08) 18:54 (08)	06:53 18:41	06:28 16:54	07:03 16:29 14	15:50 (09) 16:04 (09)
2	05:28 20:34	05:52 20:14	06:24 19:30 40	18:14 (08) 18:54 (08)	06:54 18:39	06:29 16:53	07:04 16:29 12	15:52 (09) 16:04 (09)
3	05:28 20:34	05:53 20:13	06:25 19:29 41	18:13 (08) 18:54 (08)	06:55 18:38	06:30 16:51	07:05 16:29 11	15:53 (09) 16:04 (09)
4	05:29 20:34	05:54 20:12	06:26 19:27 41	18:13 (08) 18:54 (08)	06:56 18:36	06:31 16:50	07:06 16:28 9	15:54 (09) 16:03 (09)
5	05:29 20:34	05:55 20:11	06:27 19:25 43	18:12 (08) 18:55 (08)	06:57 18:34	06:32 16:49	07:07 16:28 7	15:56 (09) 16:03 (09)
6	05:30 20:34	05:56 20:10	06:28 19:24 44	18:11 (08) 18:55 (08)	06:58 18:33	06:34 16:48 11	07:08 16:28 6	15:57 (09) 16:03 (09)
7	05:31 20:33	05:57 20:08	06:29 19:22 43	18:11 (08) 18:54 (08)	06:59 18:31	06:35 16:47 16	07:09 16:28 4	15:59 (09) 16:03 (09)
8	05:31 20:33	05:58 20:07	06:30 19:20 44	18:10 (08) 18:54 (08)	07:00 18:29	06:36 16:46 19	07:10 16:28 2	16:00 (09) 16:02 (09)
9	05:32 20:33	05:59 20:06	06:31 19:18 44	18:10 (08) 18:54 (08)	07:01 18:28	06:37 16:45 21	07:11 16:28	
10	05:33 20:32	06:00 20:04	06:32 19:17 43	18:10 (08) 18:53 (08)	07:02 18:26	06:38 16:44 24	07:11 16:28	
11	05:33 20:32	06:01 20:03	06:33 19:15 43	18:10 (08) 18:53 (08)	07:04 18:24	06:40 16:43 26	07:12 16:28	
12	05:34 20:31	06:02 20:02	06:34 19:14 41	18:10 (08) 18:51 (08)	07:05 18:23	06:41 16:42 26	07:13 16:28	
13	05:35 20:31	06:03 20:01	06:35 19:12 39	18:10 (08) 18:49 (08)	07:06 18:21	06:42 16:41 28	07:14 16:28	
14	05:36 20:30	06:04 19:59	06:36 19:10 38	18:10 (08) 18:48 (08)	07:07 18:20	06:43 16:40 29	07:15 16:28	
15	05:36 20:30	06:05 19:58	06:37 19:08 35	18:11 (08) 18:46 (08)	07:08 18:18	06:44 16:39 29	07:15 16:29	
16	05:37 20:29	06:06 19:56	06:38 19:07 33	18:11 (08) 18:44 (08)	07:09 18:16	06:46 16:38 29	07:16 16:29	
17	05:38 20:28	06:07 19:55	06:39 19:05 31	18:12 (08) 18:43 (08)	07:10 18:15	06:47 16:37 30	07:17 16:29	
18	05:39 20:28	06:08 19:53	06:40 19:03 28	18:13 (08) 18:41 (08)	07:11 18:13	06:48 16:36 30	07:17 16:30	
19	05:40 20:27	06:09 19:52	06:41 19:01 25	18:14 (08) 18:39 (08)	07:12 18:12	06:49 16:36 29	07:18 16:30	
20	05:40 20:26	06:10 19:51	06:42 19:00 21	18:16 (08) 18:37 (08)	07:14 18:10	06:50 16:35 28	07:19 16:30	
21	05:41 20:26	06:11 19:49	06:43 18:58 17	18:19 (08) 18:36 (08)	07:15 18:09	06:51 16:34 27	07:19 16:31	
22	05:42 20:25	06:12 19:48	06:44 18:56 9	18:23 (08) 18:32 (08)	07:16 18:07	06:53 16:33 25	07:20 16:31	
23	05:43 20:24	06:13 19:46	06:45 18:55		07:17 18:06	06:54 16:33 24	07:20 16:32	
24	05:44 20:23	06:15 19:45	06:46 18:53		07:18 18:05	06:55 16:32 23	07:21 16:32	
25	05:45 20:22	06:16 19:43 15	06:47 18:51	18:30 (08) 18:45 (08)	06:49 17:03	06:56 16:32 21	07:21 16:33	
26	05:46 20:21	06:17 19:41 21	06:48 18:49	18:27 (08) 18:48 (08)	06:20 17:02	06:57 16:31 20	07:22 16:33	
27	05:47 20:20	06:18 19:40 26	06:49 18:48	18:24 (08) 18:50 (08)	06:22 17:00	06:58 16:31 19	07:22 16:34	
28	05:48 20:19	06:19 19:38 29	06:50 18:46	18:22 (08) 18:51 (08)	06:23 16:59	06:59 16:30 17	07:22 16:35	
29	05:49 20:18	06:20 19:37 31	06:51 18:44	18:21 (08) 18:52 (08)	06:24 16:58	07:01 16:30 17	07:23 16:36	
30	05:50 20:17	06:21 19:35 34	06:52 18:43	18:21 (08) 18:53 (08)	06:25 16:56	07:02 16:29 15	07:23 16:36	
31	05:50 20:16	06:22 19:33 36	06:53 18:54 (08)		06:26 16:55		07:23 16:37	
Ore potenziali eliofania Totale, caso peggiore	460	428	375	782	345	297	583	65

Legenda della tabella:

Giorno del mese	Alba (hh:mm) Tramonto (hh:mm)	Minuti d'ombra	Inizio ombreggiamento (hh:mm) Fine ombreggiamento (hh:mm)	(WTG che provoca l'inizio dell'ombreggiamento) (WTG che provoca l'ultimo ombreggiamento)
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### SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: O-37-870 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (1)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

- Il sole splende tutto il di, dall'alba al tramonto
- Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole
- La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre	
1	07:23 16:38	07:10 17:13	06:33 17:47	17:15 (01) 17:26 (01)	06:42 19:22	05:56 19:54	05:27 20:24	05:27 20:35	05:52 20:15	06:23 19:32	06:53 18:41	17:56 (01) 18:06 (01)	06:28 16:54
2	07:23 16:39	07:09 17:14	06:32 17:48	17:13 (01) 17:27 (01)	06:41 19:23	05:55 19:55	05:27 20:24	05:28 20:34	05:52 20:14	06:24 19:30	06:54 18:39	17:53 (01) 18:08 (01)	06:29 16:53
3	07:24 16:40	07:08 17:15	06:30 17:49	17:12 (01) 17:28 (01)	06:39 19:24	05:54 19:56	05:26 20:25	05:28 20:34	05:53 20:13	06:25 19:29	06:55 18:38	17:51 (01) 18:09 (01)	06:30 16:51
4	07:24 16:41	07:07 17:16	06:29 17:51	17:12 (01) 17:29 (01)	06:37 19:25	05:52 19:57	05:26 20:26	05:29 20:34	05:54 20:12	06:26 19:27	06:56 18:36	17:49 (01) 18:10 (01)	06:31 16:50
5	07:24 16:42	07:06 17:18	06:27 17:52	17:11 (01) 17:30 (01)	06:36 19:26	05:51 19:58	05:25 20:26	05:29 20:34	05:55 20:11	06:27 19:25	06:57 18:34	17:48 (01) 18:11 (01)	06:32 16:49
6	07:24 16:43	07:05 17:19	06:26 17:53	17:12 (01) 17:32 (01)	06:34 19:27	05:50 19:59	05:25 20:27	05:30 20:34	05:56 20:10	06:28 19:24	06:58 18:33	17:48 (01) 18:10 (01)	06:34 16:48
7	07:24 16:44	07:03 17:20	06:24 17:54	17:11 (01) 17:33 (01)	06:32 19:28	05:49 20:00	05:25 20:28	05:31 20:33	05:57 20:08	06:29 19:22	06:59 18:31	17:48 (01) 18:08 (01)	06:35 16:47
8	07:23 16:45	07:02 17:21	06:22 17:55	17:11 (01) 17:34 (01)	06:31 19:29	05:47 20:01	05:24 20:28	05:31 20:33	05:58 20:07	06:30 19:20	07:00 18:29	17:47 (01) 18:07 (01)	06:36 16:46
9	07:23 16:46	07:01 17:23	06:21 17:56	17:12 (01) 17:34 (01)	06:29 19:30	05:46 20:02	05:24 20:29	05:32 20:33	05:59 20:06	06:31 19:19	07:02 18:28	17:47 (01) 18:05 (01)	06:37 16:45
10	07:23 16:47	07:00 17:24	06:19 17:57	17:13 (01) 17:32 (01)	06:27 19:31	05:45 20:03	05:24 20:30	05:33 20:32	06:00 20:05	06:32 19:19	07:03 18:26	17:47 (01) 18:03 (01)	06:38 16:44
11	07:23 16:48	06:59 17:25	06:18 17:59	17:14 (01) 17:30 (01)	06:26 19:32	05:44 20:04	05:24 20:30	05:33 20:32	06:01 20:03	06:33 19:15	07:04 18:24	17:47 (01) 18:01 (01)	06:40 16:43
12	07:23 16:49	06:58 17:26	06:16 18:00	17:16 (01) 17:29 (01)	06:24 19:33	05:43 20:05	05:24 20:31	05:34 20:31	06:02 20:02	06:34 19:14	07:05 18:23	17:47 (01) 18:00 (01)	06:41 16:42
13	07:22 16:50	06:56 17:28	06:14 18:01	17:20 (01) 17:24 (01)	06:23 19:34	05:42 20:06	05:24 20:31	05:35 20:31	06:03 20:01	06:35 19:12	07:06 18:21	17:48 (01) 17:51 (01)	06:42 16:41
14	07:22 16:51	06:55 17:29	06:13 18:02	06:21 19:36	06:21 19:36	05:41 20:07	05:24 20:32	05:36 20:30	06:04 19:59	06:36 19:10	07:07 18:20	17:49 (01) 17:56 (01)	06:43 16:40
15	07:22 16:52	06:54 17:30	06:11 18:03	06:19 19:37	06:19 19:37	05:40 20:08	05:24 20:32	05:36 20:30	06:05 19:58	06:37 19:08	07:08 18:18	17:55 (01)	06:45 16:39
16	07:21 16:53	06:52 17:31	06:09 18:04	06:09 19:38	06:18 20:09	05:39 20:32	05:24 20:32	05:37 20:29	06:06 19:56	06:38 19:07	07:09 18:09	17:51 (01)	06:46 16:38
17	07:21 16:54	06:51 17:33	06:08 18:05	06:16 19:39	06:16 19:39	05:38 20:10	05:24 20:33	05:38 20:29	06:08 19:55	06:39 19:05	07:10 18:15	17:51 (01)	06:47 16:37
18	07:20 16:55	06:50 17:34	06:06 18:06	06:15 19:40	06:15 19:40	05:37 20:11	05:24 20:33	05:39 20:28	06:09 19:54	06:40 19:03	07:11 18:13	17:51 (01)	06:48 16:36
19	07:20 16:57	06:48 17:35	06:04 18:07	06:13 19:41	06:13 19:41	05:36 20:12	05:24 20:33	05:40 20:27	06:10 19:52	06:41 19:01	07:13 18:12	17:51 (01)	06:49 16:36
20	07:19 16:58	06:47 17:36	06:03 18:09	06:12 19:42	06:12 19:42	05:35 20:13	05:24 20:34	05:40 20:26	06:11 19:51	06:42 19:00	07:14 18:10	17:51 (01)	06:50 16:35
21	07:19 16:59	06:45 17:38	06:01 18:10	06:10 19:43	06:10 19:43	05:34 20:14	05:24 20:34	05:41 20:26	06:12 19:49	06:43 18:58	07:15 18:09	17:51 (01)	06:52 16:34
22	07:18 17:00	06:44 17:39	05:59 18:11	06:09 19:44	06:09 19:44	05:33 20:15	05:24 20:34	05:42 20:25	06:13 19:48	06:44 18:56	07:16 18:08	17:51 (01)	06:53 16:34
23	07:17 17:01	06:43 17:40	05:57 18:12	06:07 19:45	06:07 19:45	05:33 20:16	05:24 20:34	05:43 20:24	06:14 19:46	06:45 18:55	07:17 18:06	17:51 (01)	06:54 16:33
24	07:17 17:03	06:41 17:41	05:56 18:13	06:06 19:46	06:06 19:46	05:32 20:17	05:25 20:34	05:44 20:23	06:15 19:45	06:46 18:53	07:18 18:05	17:51 (01)	06:55 16:32
25	07:16 17:04	06:40 17:42	05:54 18:14	06:04 19:47	06:04 19:47	05:31 20:18	05:25 20:35	05:45 20:22	06:16 19:43	06:47 18:51	06:19 17:03	17:51 (01)	06:56 16:32
26	07:15 17:05	06:38 17:44	05:52 18:15	06:03 19:48	06:03 19:48	05:30 20:19	05:25 20:35	05:46 20:21	06:17 19:42	06:48 18:49	06:21 17:02	17:51 (01)	06:57 16:31
27	07:14 17:06	06:37 17:45	05:51 18:16	06:02 19:50	06:02 19:50	05:30 20:20	05:26 20:35	05:47 20:20	06:18 19:40	06:49 18:48	06:22 17:00	17:51 (01)	06:59 16:31
28	07:13 17:08	06:35 17:46	05:49 18:17	06:00 19:51	06:00 19:51	05:29 20:20	05:26 20:35	05:48 20:20	06:19 19:38	06:50 18:46	06:23 16:59	17:51 (01)	07:00 16:30
29	07:13 17:09	06:35 17:46	05:49 18:17	06:00 19:51	06:00 19:51	05:29 20:20	05:26 20:35	05:48 20:20	06:19 19:38	06:50 18:46	06:23 16:59	17:51 (01)	07:00 16:30
30	07:12 17:10	06:35 17:46	05:49 18:17	06:00 19:51	06:00 19:51	05:29 20:20	05:26 20:35	05:48 20:20	06:19 19:38	06:50 18:46	06:23 16:59	17:51 (01)	07:00 16:30
31	07:11 17:11	06:35 17:46	05:49 18:17	06:00 19:51	06:00 19:51	05:29 20:20	05:26 20:35	05:48 20:20	06:19 19:38	06:50 18:46	06:23 16:59	17:51 (01)	07:00 16:30
Ore potenziali eliofanìa	297	297	369		399	449	453	460	428	375	345	297	287
Totale, caso peggiore		16	216								231		

Legenda della tabella:

Giorno del mese    Alba (hh:mm)    Tramonto (hh:mm)    Minuti d'ombra    Inizio ombreggiamento (hh:mm)    Fine ombreggiamento (hh:mm)    (WTG che provoca l'inizio dell'ombreggiamento)    (WTG che provoca l'ultimo ombreggiamento)

## SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: O-37-881 - Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (3)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il dì, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno		
1	07:23 16:38	07:10 17:13	16:05 (06) 16:47 (06)	06:33 17:47	16:08 (06) 17:26 (05)	06:42 19:21	05:56 19:54	05:27 20:24
2	07:23 16:39	07:09 17:14	16:04 (06) 16:48 (06)	06:32 17:48	16:09 (06) 17:27 (05)	06:41 19:23	05:55 19:55	05:26 20:24
3	07:24 16:40	07:08 17:15	16:03 (06) 16:50 (06)	06:30 17:49	16:11 (06) 17:26 (05)	06:39 19:24	05:53 19:56	05:26 20:25
4	07:24 16:41	07:07 17:16	16:02 (06) 16:51 (06)	06:29 17:51	16:14 (06) 17:25 (05)	06:37 19:25	05:52 19:57	05:26 20:26
5	07:24 16:42	07:06 17:18	16:02 (06) 16:52 (06)	06:27 17:52	16:17 (06) 17:21 (05)	06:36 19:26	05:51 19:58	05:25 20:26
6	07:24 16:43	07:05 17:19	16:01 (06) 16:52 (06)	06:26 17:53		06:34 19:27	05:50 19:59	05:25 20:27
7	07:23 16:44	07:03 17:20	16:00 (06) 16:52 (06)	06:24 17:54		06:32 19:28	05:49 20:00	05:25 20:28
8	07:23 16:45	07:02 17:21	16:00 (06) 16:53 (06)	06:22 17:55		06:31 19:29	05:47 20:01	05:24 20:28
9	07:23 16:46	07:01 17:23	16:00 (06) 16:54 (06)	06:21 17:56		06:29 19:30	05:46 20:02	05:24 20:29
10	07:23 16:47	07:00 17:24	16:00 (06) 16:55 (06)	06:19 17:57		06:27 19:31	05:45 20:03	05:24 20:30
11	07:23 16:48	06:59 17:25	15:59 (06) 16:54 (06)	06:17 17:59		06:26 19:32	05:44 20:04	05:24 20:30
12	07:23 16:49	06:57 17:26	15:59 (06) 16:55 (06)	06:16 18:00		06:24 19:33	05:43 20:05	05:24 20:31
13	07:22 16:50	06:56 17:28	15:59 (06) 16:55 (06)	06:14 18:01		06:23 19:34	05:42 20:06	05:24 20:31
14	07:22 16:51	06:55 17:29	15:58 (06) 16:55 (06)	06:13 18:02		06:21 19:35	05:41 20:07	05:24 20:32
15	07:22 16:52	06:54 17:30	15:59 (06) 16:55 (06)	06:11 18:03		06:19 19:37	05:40 20:08	05:23 20:32
16	07:21 16:53	06:52 17:31	15:59 (06) 16:55 (06)	06:09 18:04		06:18 19:38	05:39 20:09	05:23 20:32
17	07:21 16:54	06:51 17:33	15:59 (06) 16:55 (06)	06:08 18:05		06:16 19:39	05:38 20:10	05:24 20:33
18	07:20 16:55	06:50 17:34	15:59 (06) 16:55 (06)	06:06 18:06		06:15 19:40	05:37 20:11	05:24 20:33
19	07:20 16:57	06:48 17:35	16:00 (06) 16:55 (06)	06:04 18:07		06:13 19:41	05:36 20:12	05:24 20:33
20	07:19 16:58	06:47 17:36	16:00 (06) 16:54 (06)	06:02 18:09		06:12 19:42	05:35 20:13	05:24 20:34
21	07:18 16:59	06:45 17:38	16:01 (06) 17:16 (05)	06:01 18:10		06:10 19:43	05:34 20:14	05:24 20:34
22	07:18 17:00	06:44 17:39	16:00 (06) 17:17 (05)	05:59 18:11		06:09 19:44	05:33 20:15	05:24 20:34
23	07:17 17:01	06:42 17:40	16:02 (06) 17:18 (05)	05:57 18:12		06:07 19:45	05:33 20:16	05:24 20:34
24	07:16 17:03	16:16 (06) 16:31 (06)	06:41 17:41	16:02 (06) 17:19 (05)	05:56 18:13	06:06 19:46	05:32 20:17	05:25 20:34
25	07:16 17:04	16:13 (06) 16:34 (06)	06:40 17:42	16:03 (06) 17:21 (05)	05:54 18:14	06:04 19:47	05:31 20:18	05:25 20:35
26	07:15 17:05	16:12 (06) 16:38 (06)	06:38 17:44	16:04 (06) 17:22 (05)	05:52 18:15	06:03 19:48	05:30 20:19	05:25 20:35
27	07:14 17:06	16:10 (06) 16:40 (06)	06:37 17:45	16:05 (06) 17:23 (05)	05:51 18:16	06:02 19:49	05:30 20:19	05:26 20:35
28	07:13 17:08	16:09 (06) 16:42 (06)	06:35 17:46	16:06 (06) 17:24 (05)	05:49 18:17	06:00 19:51	05:29 20:20	05:26 20:35
29	07:12 17:09	16:08 (06) 16:43 (06)		06:47 19:18		05:59 19:52	05:29 20:21	05:26 20:35
30	07:12 17:10	16:06 (06) 16:45 (06)		06:46 19:19		05:57 19:53	05:28 20:22	05:27 20:35
31	07:11 17:11	16:05 (06) 16:46 (06)		06:44 19:20			05:27 20:23	
Ore potenziali eliofanìa	297		297	369		399	449	453
Totale, caso peggiore	240		1513	207				

Legenda della tabella:

Giorno del mese    Alba (hh:mm)    Tramonto (hh:mm)    Minuti d'ombra    Inizio ombreggiamento (hh:mm)    Fine ombreggiamento (hh:mm)    (WTG che provoca l'inizio dell'ombreggiamento)    (WTG che provoca l'ultimo ombreggiamento)

### SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: 0-37-881 - Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (3)  
Assunzioni sui calcoli d'ombra

- I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:
- Il sole splende tutto il di, dall'alba al tramonto
- Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole
- La turbina è costantemente operativa

	Luglio	Agosto	Settembre	Ottobre		Novembre		Dicembre
1	05:27	05:51	06:23	06:53		06:28	15:29 (06)	07:03
	20:35	20:15	19:32	18:41		16:54	54	16:23 (06)
2	05:28	05:52	06:24	06:54		06:29	15:30 (06)	07:04
	20:34	20:14	19:30	18:39		16:53	54	16:24 (06)
3	05:28	05:53	06:25	06:55		06:30	15:30 (06)	07:05
	20:34	20:13	19:29	18:38		16:51	53	16:23 (06)
4	05:29	05:54	06:26	06:56		06:31	15:30 (06)	07:06
	20:34	20:12	19:27	18:36		16:50	52	16:22 (06)
5	05:29	05:55	06:27	06:57		06:32	15:30 (06)	07:07
	20:34	20:11	19:25	18:34		16:49	51	16:21 (06)
6	05:30	05:56	06:28	06:58		06:34	15:32 (06)	07:08
	20:34	20:10	19:24	18:33		16:48	49	16:21 (06)
7	05:31	05:57	06:29	06:59		06:35	15:32 (06)	07:09
	20:33	20:08	19:22	18:31		16:47	48	16:20 (06)
8	05:31	05:58	06:30	07:00	16:56 (06)	06:36	15:33 (06)	07:10
	20:33	20:07	19:20	18:29	11	17:07 (06)	46	16:19 (06)
9	05:32	05:59	06:31	07:01	16:50 (06)	06:37	15:35 (06)	07:11
	20:33	20:06	19:19	18:28	30	17:58 (05)	44	16:19 (06)
10	05:33	06:00	06:32	07:03	16:47 (06)	06:38	15:36 (06)	07:11
	20:32	20:05	19:17	18:26	41	18:00 (05)	42	16:18 (06)
11	05:33	06:01	06:33	07:04	16:44 (06)	06:40	15:36 (06)	07:12
	20:32	20:03	19:15	18:24	49	18:01 (05)	41	16:17 (06)
12	05:34	06:02	06:34	07:05	16:42 (06)	06:41	15:37 (06)	07:13
	20:31	20:02	19:13	18:23	52	18:00 (05)	39	16:16 (06)
13	05:35	06:03	06:35	07:06	16:40 (06)	06:42	15:40 (06)	07:14
	20:31	20:01	19:12	18:21	55	17:58 (05)	35	16:15 (06)
14	05:36	06:04	06:36	07:07	16:38 (06)	06:43	15:41 (06)	07:15
	20:30	19:59	19:10	18:20	57	17:56 (05)	33	16:14 (06)
15	05:36	06:05	06:37	07:08	16:37 (06)	06:44	15:42 (06)	07:16
	20:30	19:58	19:08	18:18	57	17:55 (05)	30	16:12 (06)
16	05:37	06:06	06:38	07:09	16:36 (06)	06:46	15:45 (06)	07:16
	20:29	19:56	19:07	18:16	58	17:54 (05)	26	16:11 (06)
17	05:38	06:07	06:39	07:10	16:34 (06)	06:47	15:47 (06)	07:17
	20:28	19:55	19:05	18:15	59	17:52 (05)	21	16:08 (06)
18	05:39	06:08	06:40	07:11	16:33 (06)	06:48	15:50 (06)	07:18
	20:28	19:54	19:03	18:13	58	17:50 (05)	15	16:05 (06)
19	05:40	06:09	06:41	07:12	16:32 (06)	06:49		07:18
	20:27	19:52	19:01	18:12	57	17:48 (05)		16:30
20	05:40	06:11	06:42	07:14	16:31 (06)	06:50		07:19
	20:26	19:51	19:00	18:10	56	17:47 (05)		16:30
21	05:41	06:12	06:43	07:15	16:31 (06)	06:52		07:19
	20:26	19:49	18:58	18:09	55	17:46 (05)		16:31
22	05:42	06:13	06:44	07:16	16:30 (06)	06:53		07:20
	20:25	19:48	18:56	18:07	55	17:25 (06)		16:31
23	05:43	06:14	06:45	07:17	16:29 (06)	06:54		07:20
	20:24	19:46	18:55	18:06	56	17:25 (06)		16:32
24	05:44	06:15	06:46	07:18	16:29 (06)	06:55		07:21
	20:23	19:45	18:53	18:05	55	17:24 (06)		16:32
25	05:45	06:16	06:47	07:19	16:28 (06)	06:56		07:21
	20:22	19:43	18:51	17:03	56	16:25 (06)		16:33
26	05:46	06:17	06:48	07:20	16:27 (06)	06:57		07:22
	20:21	19:41	18:49	17:02	56	16:25 (06)		16:34
27	05:47	06:18	06:49	07:21	16:26 (06)	06:58		07:22
	20:20	19:40	18:48	17:00	57	16:25 (06)		16:34
28	05:48	06:19	06:50	07:22	16:25 (06)	07:00		07:22
	20:19	19:38	18:46	16:59	56	16:24 (06)		16:35
29	05:49	06:20	06:51	07:23	16:24 (06)	07:01		07:23
	20:18	19:37	18:44	16:58	56	16:24 (06)		16:36
30	05:50	06:21	06:52	07:24	16:23 (06)	07:02		07:23
	20:17	19:35	18:43	16:56	55	16:24 (06)		16:36
31	05:51	06:22	06:53	07:25	16:22 (06)	07:03		07:23
	20:16	19:33	18:41	16:55	55	16:24 (06)		16:37
Ore potenziali eliofanìa	460	428	375	345		297		287
Totale, caso peggiore				1252		733		

Legenda della tabella:

Giorno del mese	Alba (hh:mm)	Inizio ombreggiamento (hh:mm)	(WTG che provoca l'inizio dell'ombreggiamento)
	Tramonto (hh:mm)	Fine ombreggiamento (hh:mm)	(WTG che provoca l'ultimo ombreggiamento)
	Minuti d'ombra		







SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: S-01-182 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (7) Assunzioni sui calcoli d'ombra

- I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:
Il sole splende tutto il di, dall'alba al tramonto
Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole
La turbina è costantemente operativa

Table with columns for months (Gennaio to Giugno) and rows for days (1-31) showing time intervals and potential hours.

Legenda della tabella:

Giorno del mese Alba (hh:mm) Tramonto (hh:mm) Minuti d'ombra Inizio ombreggiamento (hh:mm) Fine ombreggiamento (hh:mm) (WTG che provoca l'inizio dell'ombreggiamento) (WTG che provoca l'ultimo ombreggiamento)



## SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: S-01-182 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (7)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre			
1	05:27 20:35	05:52 20:15	06:23 19:32	07:27 (02) 09:00 (02)	06:53 18:41	07:26 (02) 16:54	06:28 16:29	07:03 15:03 (03)	14:13 (03)
2	05:28 20:35	05:53 20:14	06:24 19:30	07:26 (02) 09:00 (02)	06:54 18:39	07:28 (02) 16:53	06:29 16:53	07:04 15:04 (03)	14:12 (03)
3	05:29 20:34	05:54 20:13	06:25 19:29	07:25 (02) 09:01 (02)	06:55 18:38	07:29 (02) 16:52	06:30 16:52	07:05 16:29	14:12 (03)
4	05:29 20:34	05:55 20:12	08:08 (02) 08:24 (02)	06:26 19:27	07:25 (02) 09:01 (02)	06:56 18:36	06:31 16:50	07:06 16:29	14:12 (03)
5	05:30 20:34	05:56 20:11	08:04 (02) 08:28 (02)	06:27 19:25	07:24 (02) 09:01 (02)	06:57 18:34	06:33 16:49	07:07 16:28	14:12 (03)
6	05:30 20:34	05:57 20:10	08:01 (02) 08:31 (02)	06:28 19:24	07:14 (05) 09:00 (02)	06:58 18:33	06:34 16:48	07:08 16:28	14:12 (03)
7	05:31 20:33	05:58 20:09	07:58 (02) 08:34 (02)	06:29 19:22	07:08 (05) 09:00 (02)	06:59 18:31	06:35 16:47	07:09 16:28	14:12 (03)
8	05:31 20:33	05:59 20:07	07:56 (02) 08:36 (02)	06:30 19:20	07:06 (05) 09:00 (02)	07:01 18:29	06:36 16:46	07:10 16:28	14:12 (03)
9	05:32 20:33	06:00 20:06	07:53 (02) 08:38 (02)	06:31 19:19	07:03 (05) 09:00 (02)	07:02 18:28	06:37 16:45	07:11 16:28	14:12 (03)
10	05:33 20:32	06:01 20:05	07:51 (02) 08:39 (02)	06:32 19:17	07:02 (05) 09:00 (02)	07:03 18:26	06:39 16:44	07:12 16:28	14:11 (03)
11	05:33 20:32	06:02 20:03	07:49 (02) 08:41 (02)	06:33 19:15	07:00 (05) 09:00 (02)	07:04 18:25	06:40 16:43	07:12 16:28	14:11 (03)
12	05:34 20:31	06:03 20:02	07:48 (02) 08:43 (02)	06:34 19:14	06:59 (05) 09:00 (02)	07:05 18:23	06:41 16:42	07:13 16:28	14:12 (03)
13	05:35 20:31	06:04 20:01	07:46 (02) 08:44 (02)	06:35 19:12	06:58 (05) 08:59 (02)	07:06 18:21	06:42 16:41	07:14 16:28	14:12 (03)
14	05:36 20:30	06:05 19:59	07:45 (02) 08:46 (02)	06:36 19:10	06:57 (05) 08:59 (02)	07:07 18:20	06:43 16:40	07:15 16:29	14:13 (03)
15	05:36 20:30	06:06 19:58	07:43 (02) 08:47 (02)	06:37 19:08	06:57 (05) 08:58 (02)	07:08 18:18	06:45 16:39	07:16 16:29	14:12 (03)
16	05:37 20:29	06:07 19:57	07:42 (02) 08:48 (02)	06:38 19:07	06:58 (05) 08:58 (02)	07:09 18:17	06:46 16:38	07:16 16:29	14:13 (03)
17	05:38 20:29	06:08 19:55	07:41 (02) 08:49 (02)	06:39 19:05	06:59 (05) 08:57 (02)	07:10 18:15	06:47 16:37	07:17 16:29	14:14 (03)
18	05:39 20:28	06:09 19:54	07:39 (02) 08:50 (02)	06:40 19:03	07:00 (05) 08:57 (02)	07:12 18:14	06:48 16:36	07:18 14:33 (03)	14:13 (03)
19	05:40 20:27	06:10 19:52	07:38 (02) 08:51 (02)	06:41 19:02	07:01 (05) 08:56 (02)	07:13 18:12	06:49 16:36	14:27 (03)	14:14 (03)
20	05:41 20:27	06:11 19:51	07:37 (02) 08:52 (02)	06:42 19:00	07:02 (05) 08:55 (02)	07:14 18:11	06:51 16:35	14:44 (03)	16:30
21	05:41 20:26	06:12 19:49	07:36 (02) 08:53 (02)	06:43 18:58	07:03 (05) 08:55 (02)	07:15 18:09	06:52 16:34	14:21 (03)	16:30
22	05:42 20:25	06:13 19:48	07:35 (02) 08:54 (02)	06:44 18:56	07:04 (05) 08:54 (02)	07:16 18:08	06:53 16:34	14:19 (03)	16:31
23	05:43 20:24	06:14 19:46	07:34 (02) 08:55 (02)	06:45 18:55	07:05 (05) 08:53 (02)	07:17 18:06	06:54 16:33	14:18 (03)	16:32
24	05:44 20:23	06:15 19:45	07:33 (02) 08:56 (02)	06:46 18:53	07:06 (05) 08:52 (02)	07:18 18:05	06:55 16:32	14:17 (03)	16:32
25	05:45 20:22	06:16 19:43	07:32 (02) 08:57 (02)	06:47 18:51	07:07 (05) 08:51 (02)	06:20 17:03	06:56 16:32	14:16 (03)	16:32
26	05:46 20:22	06:17 19:42	07:31 (02) 08:57 (02)	06:48 18:50	07:08 (05) 08:49 (02)	06:21 17:02	06:57 16:31	14:15 (03)	16:32
27	05:47 20:21	06:18 19:40	07:30 (02) 08:58 (02)	06:49 18:48	07:23 (02) 08:48 (02)	06:22 17:01	06:59 16:31	14:14 (03)	16:32
28	05:48 20:20	06:19 19:38	07:29 (02) 08:58 (02)	06:50 18:46	07:24 (02) 08:47 (02)	06:23 16:59	07:00 16:30	14:13 (03)	16:32
29	05:49 20:19	06:20 19:37	07:29 (02) 08:59 (02)	06:51 18:44	07:25 (02) 08:45 (02)	06:24 16:58	07:01 16:30	14:13 (03)	16:32
30	05:50 20:18	06:21 19:35	07:28 (02) 08:59 (02)	06:52 18:43	07:26 (02) 08:44 (02)	06:25 16:57	07:02 16:30	15:00 (03)	16:32
31	05:51 20:17	06:22 19:34	07:27 (02) 09:00 (02)		06:27 16:55			15:02 (03)	16:32
Ore potenziali eliofanìa	460	428	375	345	297	287			
Totale, caso peggiore		1824	3174	614	444	1815			

Legenda della tabella:

Giorno del mese  
Alba (hh:mm)  
Tramonto (hh:mm) Minuti d'ombra

Inizio ombreggiamento (hh:mm)  
Fine ombreggiamento (hh:mm)

(WTG che provoca l'inizio dell'ombreggiamento)  
(WTG che provoca l'ultimo ombreggiamento)



## SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: S-01-184 - Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (8)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Luglio	Agosto	Settembre	Settembre	Ottobre	Settembre	Novembre	Novembre	Dicembre	Dicembre
1	05:27 20:35	05:52 20:15	06:23 19:32		06:53 18:41	07:17 (05) 18:41	06:28 16:54	07:32 (02) 09:06 (02)	07:03 16:29	07:44 (02) 09:08 (02)
2	05:28 20:35	05:53 20:14	06:24 19:30		06:54 18:39	07:16 (05) 18:39	06:29 16:53	07:32 (02) 09:07 (02)	07:04 16:29	07:45 (02) 09:07 (02)
3	05:28 20:34	05:54 20:13	06:25 19:29		06:55 18:38	07:15 (05) 18:38	06:30 16:52	07:32 (02) 09:07 (02)	07:05 16:29	07:46 (02) 09:07 (02)
4	05:29 20:34	05:55 20:12	06:26 19:27		06:56 18:36	07:16 (05) 18:36	06:31 16:50	07:32 (02) 09:07 (02)	07:06 16:29	07:46 (02) 09:07 (02)
5	05:30 20:34	05:56 20:11	06:27 19:25		06:57 18:34	07:18 (05) 18:34	06:33 16:49	07:32 (02) 09:08 (02)	07:07 16:28	07:47 (02) 09:07 (02)
6	05:30 20:34	05:57 20:10	06:28 19:24		06:58 18:33	07:19 (05) 18:33	06:34 16:48	07:32 (02) 09:08 (02)	07:08 16:28	07:48 (02) 09:07 (02)
7	05:31 20:33	05:58 20:09	06:29 19:22		06:59 18:31	07:20 (05) 18:31	06:35 16:47	07:32 (02) 09:08 (02)	07:09 16:28	07:49 (02) 09:08 (02)
8	05:31 20:33	05:59 20:07	06:30 19:20		07:01 18:29	07:21 (05) 18:29	06:36 16:46	07:32 (02) 09:07 (02)	07:10 16:28	07:49 (02) 09:08 (02)
9	05:32 20:33	06:00 20:06	06:31 19:19		07:02 18:28	07:22 (05) 18:28	06:37 16:45	07:33 (02) 09:08 (02)	07:11 16:28	07:50 (02) 09:08 (02)
10	05:33 20:32	06:01 20:05	06:32 19:17		07:03 18:26	07:23 (05) 18:26	06:39 16:44	07:32 (02) 09:08 (02)	07:12 16:28	07:50 (02) 09:07 (02)
11	05:33 20:32	06:02 20:03	06:33 19:15		07:04 18:25	07:24 (05) 18:25	06:40 16:43	07:32 (02) 09:08 (02)	07:12 16:28	07:51 (02) 09:07 (02)
12	05:34 20:31	06:03 20:02	06:34 19:14		07:05 18:23	07:25 (05) 18:23	06:41 16:42	07:33 (02) 09:09 (02)	07:13 16:28	07:52 (02) 09:08 (02)
13	05:35 20:31	06:04 20:01	06:35 19:12		07:06 18:21	07:26 (05) 18:21	06:42 16:41	07:33 (02) 09:08 (02)	07:14 16:28	07:53 (02) 09:08 (02)
14	05:36 20:30	06:05 19:59	06:36 19:10		07:07 18:20	07:28 (05) 18:20	06:43 16:40	07:33 (02) 09:08 (02)	07:15 16:29	07:54 (02) 09:09 (02)
15	05:36 20:30	06:06 19:58	06:37 19:08		07:08 18:18	07:29 (05) 18:18	06:45 16:39	07:34 (02) 09:08 (02)	07:16 16:29	07:54 (02) 09:08 (02)
16	05:37 20:29	06:07 19:57	06:38 19:07		07:09 18:17	07:30 (05) 18:17	06:46 16:38	07:35 (02) 09:08 (02)	07:16 16:29	07:55 (02) 09:09 (02)
17	05:38 20:29	06:08 19:55	06:39 19:05		07:10 18:15	07:31 (05) 18:15	06:47 16:37	07:35 (02) 09:08 (02)	07:17 16:29	07:56 (02) 09:10 (02)
18	05:39 20:28	06:09 19:54	06:40 19:03		07:12 18:14	07:32 (05) 18:14	06:48 16:36	07:35 (02) 09:08 (02)	07:18 16:30	07:55 (02) 09:09 (02)
19	05:40 20:27	06:10 19:52	06:41 19:02		07:13 18:12	07:33 (05) 18:12	06:49 16:36	07:36 (02) 09:09 (02)	07:18 16:30	07:56 (02) 09:10 (02)
20	05:41 20:27	06:11 19:51	06:42 19:00		07:14 18:11	07:34 (05) 18:11	06:51 16:35	07:37 (02) 09:08 (02)	07:19 16:30	07:56 (02) 09:10 (02)
21	05:41 20:26	06:12 19:49	06:43 18:58		07:15 18:09	07:35 (05) 18:09	06:52 16:34	07:37 (02) 09:08 (02)	07:19 16:31	07:57 (02) 09:11 (02)
22	05:42 20:25	06:13 19:48	06:44 18:56		07:16 18:08	07:36 (05) 18:08	06:53 16:34	07:37 (02) 09:08 (02)	07:20 16:31	07:57 (02) 09:11 (02)
23	05:43 20:24	06:14 19:46	06:45 18:55		07:17 18:06	07:37 (05) 18:06	06:54 16:33	07:38 (02) 09:07 (02)	07:21 16:32	07:58 (02) 09:12 (02)
24	05:44 20:23	06:15 19:45	06:46 18:53	4	07:18 18:05	07:38 (05) 18:05	06:55 16:32	07:39 (02) 09:08 (02)	07:21 16:32	07:58 (02) 09:12 (02)
25	05:45 20:22	06:16 19:43	06:47 18:51	15	07:19 18:04	07:39 (05) 18:04	06:56 16:32	07:40 (02) 09:08 (02)	07:21 16:33	07:59 (02) 09:13 (02)
26	05:46 20:22	06:17 19:42	06:48 18:50	20	07:20 18:03	07:40 (05) 18:03	06:57 16:31	07:41 (02) 09:08 (02)	07:22 16:34	08:00 (02) 09:13 (02)
27	05:47 20:21	06:18 19:40	06:49 18:48	23	07:21 18:02	07:41 (05) 18:02	06:59 16:31	07:42 (02) 09:07 (02)	07:22 16:34	08:01 (02) 09:14 (02)
28	05:48 20:20	06:19 19:38	06:50 18:46	25	07:22 18:01	07:42 (05) 18:01	07:00 16:30	07:43 (02) 09:07 (02)	07:23 16:35	08:02 (02) 09:14 (02)
29	05:49 20:19	06:20 19:37	06:51 18:44	28	07:23 18:00	07:43 (05) 18:00	07:01 16:30	07:44 (02) 09:07 (02)	07:23 16:36	08:01 (02) 09:16 (02)
30	05:50 20:18	06:21 19:35	06:52 18:43	29	07:24 17:59	07:44 (05) 17:59	07:02 16:30	07:45 (02) 09:08 (02)	07:23 16:36	08:01 (02) 09:16 (02)
31	05:51 20:17	06:22 19:34			06:27 16:55	07:45 (05) 16:55	07:03 16:30	07:46 (02) 09:08 (02)	07:23 16:37	08:01 (02) 09:17 (02)
Ore potenziali eliofanìa	460	428	375		345		297		287	
Totale, caso peggiore				144	2215		2769		2363	

Legenda della tabella:

Giorno del mese Alba (hh:mm) Tramonto (hh:mm) Minuti d'ombra Inizio ombreggiamento (hh:mm) Fine ombreggiamento (hh:mm) (WTG che provoca l'inizio dell'ombreggiamento) (WTG che provoca l'ultimo ombreggiamento)



## SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: S-02-231 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (9) Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre			
1	05:27 20:35	05:52 20:15	06:23 19:32	18:56 (01) 19:10 (01)	06:53 18:41	06:28 16:54	15:57 (05) 16:28 (05)	07:03 16:29	10:24 (06) 11:34 (06)
2	05:28 20:34	05:52 20:14	06:24 19:30	18:55 (01) 19:08 (01)	06:54 18:39	06:29 16:53	15:57 (05) 16:29 (05)	07:04 16:29	10:24 (06) 11:35 (06)
3	05:28 20:34	05:53 20:13	06:25 19:29	18:54 (01) 19:06 (01)	06:55 18:38	06:30 16:51	15:57 (05) 16:28 (05)	07:05 16:29	10:23 (06) 11:36 (06)
4	05:29 20:34	05:54 20:12	06:26 19:27	18:54 (01) 19:04 (01)	06:56 18:36	06:31 16:50	15:56 (05) 16:26 (05)	07:06 16:28	10:23 (06) 11:38 (06)
5	05:29 20:34	05:55 20:11	06:27 19:25	18:55 (01) 19:03 (01)	06:57 18:34	06:32 16:49	15:56 (05) 16:25 (05)	07:07 16:28	10:23 (06) 11:39 (06)
6	05:30 20:34	05:56 20:10	06:28 19:24	18:55 (01) 19:01 (01)	06:58 18:33	06:34 16:48	15:57 (05) 16:24 (05)	07:08 16:28	10:23 (06) 11:40 (06)
7	05:31 20:33	05:57 20:08	06:29 19:22	18:57 (01) 18:59 (01)	06:59 18:31	06:35 16:47	15:57 (05) 16:23 (05)	07:09 16:28	10:23 (06) 11:41 (06)
8	05:31 20:33	05:58 20:07	06:30 19:20	18:57 (01) 19:19	07:00 18:29	06:36 16:46	15:57 (05) 16:21 (05)	07:10 16:28	10:23 (06) 11:42 (06)
9	05:32 20:33	05:59 20:06	06:31 19:19	18:59 (01) 19:19	07:02 18:28	06:37 16:45	15:59 (05) 16:21 (05)	07:11 16:28	10:23 (06) 11:43 (06)
10	05:33 20:32	06:00 20:05	06:32 19:17	19:17	07:03 18:26	06:38 16:44	15:59 (05) 16:20 (05)	07:12 16:28	10:22 (06) 11:43 (06)
11	05:33 20:32	06:01 20:03	06:33 19:15	19:15	07:04 18:24	06:40 16:43	16:00 (05) 16:18 (05)	07:12 16:28	10:22 (06) 11:44 (06)
12	05:34 20:31	06:02 20:02	06:34 19:13	19:13	07:05 18:23	06:41 16:42	16:00 (05) 16:17 (05)	07:13 16:28	10:22 (06) 11:45 (06)
13	05:35 20:31	06:03 20:01	06:35 19:12	19:12	07:06 18:21	06:42 16:41	16:02 (05) 16:17 (05)	07:14 16:28	10:23 (06) 11:46 (06)
14	05:36 20:30	06:04 19:59	06:36 19:10	19:10	07:07 18:20	06:43 16:40	16:03 (05) 16:15 (05)	07:15 16:28	10:23 (06) 11:47 (06)
15	05:36 20:30	06:05 19:58	06:37 19:08	19:08	07:08 18:18	06:44 16:39	16:05 (05) 16:14 (05)	07:16 16:29	10:23 (06) 11:47 (06)
16	05:37 20:29	06:06 19:56	06:38 19:07	19:07	07:09 18:17	06:46 16:38	16:07 (05) 16:14 (05)	07:16 16:29	10:23 (06) 11:48 (06)
17	05:38 20:29	06:07 19:55	06:39 19:05	19:05	07:10 18:15	06:47 16:37	16:10 (05) 16:13 (05)	07:17 16:29	10:24 (06) 11:49 (06)
18	05:39 20:28	06:09 19:54	06:40 19:03	19:03	07:11 18:13	06:48 16:36	16:13 (05) 16:10 (05)	07:18 16:30	10:24 (06) 11:49 (06)
19	05:40 20:27	06:10 19:52	06:41 19:01	19:01	07:13 18:12	06:49 16:36	16:14 (05) 16:08 (06)	07:18 16:30	10:25 (06) 11:50 (06)
20	05:40 20:26	06:11 19:51	06:42 19:00	19:00	07:14 18:10	06:50 16:35	10:42 (06) 11:05 (06)	07:19 16:30	10:24 (06) 11:50 (06)
21	05:41 20:26	06:12 19:49	06:43 18:58	18:58	07:15 18:09	06:52 16:34	10:38 (06) 11:10 (06)	07:19 16:31	10:25 (06) 11:51 (06)
22	05:42 20:25	06:13 19:48	06:44 18:56	18:56	07:16 18:07	06:53 16:34	10:35 (06) 11:14 (06)	07:20 16:31	10:25 (06) 11:51 (06)
23	05:43 20:24	06:14 19:46	06:45 18:55	18:55	07:17 18:06	06:54 16:33	10:32 (06) 11:17 (06)	07:20 16:32	10:26 (06) 11:52 (06)
24	05:44 20:23	06:15 19:45	06:46 18:53	18:53	07:18 18:05	06:55 16:32	10:31 (06) 11:21 (06)	07:21 16:32	10:27 (06) 11:52 (06)
25	05:45 20:22	06:16 19:43	06:47 18:51	18:51	07:19 17:03	06:56 17:03	16:05 (05) 16:22 (05)	07:21 16:32	10:28 (06) 11:53 (06)
26	05:46 20:21	06:17 19:42	06:48 19:03 (01) 19:13 (01)	19:03 (01) 18:49	06:59 17:02	17:03 16:03 (05)	16:22 (05) 16:03 (05)	16:33 16:31	11:53 (06) 10:28 (06)
27	05:47 20:20	06:18 19:40	06:49 19:14 (01)	19:14 (01) 18:48	06:58 17:00	16:04 (05) 16:25 (05)	10:30 (06) 16:31	07:21 11:27 (06)	10:28 (06) 16:34
28	05:48 20:20	06:19 19:38	06:50 19:16 (01)	19:16 (01) 18:46	06:57 16:59	16:26 (05) 16:30	11:28 (06) 16:35	07:22 16:35	10:29 (06) 11:53 (06)
29	05:49 20:19	06:20 19:37	06:51 19:15 (01)	19:15 (01) 18:44	06:56 16:58	16:30 16:27 (05)	10:25 (06) 11:30 (06)	07:23 16:36	10:30 (06) 11:54 (06)
30	05:50 20:17	06:21 19:35	06:52 19:13 (01)	19:13 (01) 18:43	06:55 16:56	16:31 16:27 (05)	11:29 (06) 11:31 (06)	07:23 16:36	10:31 (06) 11:54 (06)
31	05:51 20:16	06:22 19:34	06:53 19:12 (01)	19:12 (01)	06:54 16:55	16:32 16:27 (05)	11:30 (06) 16:37	07:23 16:37	10:31 (06) 11:54 (06)
Ore potenziali eliofanìa	460	428	375	345	297	287			
Totale, caso peggiore		89	65	187	907	2534			

Legenda della tabella:

Giorno del mese    Alba (hh:mm)    Tramonto (hh:mm)    Minuti d'ombra    Inizio ombreggiamento (hh:mm)    Fine ombreggiamento (hh:mm)    (WTG che provoca l'inizio dell'ombreggiamento)    (WTG che provoca l'ultimo ombreggiamento)











## SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: S-07-130 - Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (14) Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo		Aprile		Maggio		Giugno				
1	07:23 16:38	07:10 17:13	06:34 17:47		06:42 19:22	78	17:26 (04) 18:44 (04)	05:56 19:54	44	06:35 (07) 18:11 (04)	05:27 20:24	24	19:35 (03) 19:59 (03)
2	07:23 16:39	07:09 17:14	06:32 17:48		06:41 19:23	79	17:25 (04) 18:44 (04)	05:55 19:55	30	06:36 (07) 18:05 (04)	05:27 20:24	25	19:34 (03) 19:59 (03)
3	07:24 16:40	07:08 17:15	06:30 17:49		06:39 19:24	78	17:26 (04) 18:44 (04)	05:54 19:56	15	06:38 (07) 06:53 (07)	05:26 20:25	25	19:35 (03) 20:00 (03)
4	07:24 16:41	07:07 17:17	06:29 17:51		06:37 19:25	79	17:25 (04) 18:44 (04)	05:52 19:57	7	06:42 (07) 06:49 (07)	05:26 20:26	26	19:35 (03) 20:01 (03)
5	07:24 16:42	07:06 17:18	06:27 17:52		06:36 19:26	78	17:25 (04) 18:43 (04)	05:51 19:58			05:25 20:26	26	19:35 (03) 20:01 (03)
6	07:24 16:43	07:05 17:19	06:26 17:53		06:34 19:27	78	17:25 (04) 18:43 (04)	05:50 19:59			05:25 20:27	27	19:35 (03) 20:02 (03)
7	07:24 16:44	07:03 17:20	06:24 17:54		06:32 19:28	77	17:25 (04) 18:42 (04)	05:49 20:00			05:25 20:28	27	19:36 (03) 20:03 (03)
8	07:23 16:45	07:02 17:22	06:22 17:55		06:31 19:29	77	17:25 (04) 18:42 (04)	05:47 20:01			05:25 20:28	28	19:36 (03) 20:04 (03)
9	07:23 16:46	07:01 17:23	06:21 17:56		06:29 19:30	86	06:48 (07) 18:42 (04)	05:46 20:02			05:24 20:29	27	19:36 (03) 20:03 (03)
10	07:23 16:47	07:00 17:24	06:19 17:58		06:28 19:31	90	06:46 (07) 17:16 (04)	05:45 20:03			05:24 20:30	28	19:36 (03) 20:04 (03)
11	07:23 16:48	06:59 17:25	06:18 17:59	9	16:59 (04) 17:23 (04)	92	06:45 (07) 18:41 (04)	05:44 20:04			05:24 20:30	29	19:36 (03) 20:05 (03)
12	07:23 16:49	06:58 17:27	06:16 18:00	24	16:55 (04) 17:27 (04)	94	06:43 (07) 18:40 (04)	05:43 20:05			05:24 20:31	28	19:37 (03) 20:05 (03)
13	07:22 16:50	06:56 17:28	06:14 18:01	39	16:51 (04) 17:30 (04)	95	06:41 (07) 18:38 (04)	05:42 20:06			05:24 20:31	29	19:37 (03) 20:06 (03)
14	07:22 16:51	06:55 17:29	06:13 18:02	44	16:48 (04) 17:32 (04)	96	06:40 (07) 18:38 (04)	05:41 20:07			05:24 20:32	29	19:37 (03) 20:06 (03)
15	07:22 16:52	06:54 17:30	06:11 18:03	48	16:46 (04) 17:34 (04)	97	06:38 (07) 18:37 (04)	05:40 20:08			05:24 20:32	28	19:38 (03) 20:06 (03)
16	07:21 16:53	06:52 17:32	06:09 18:04	52	16:44 (04) 17:36 (04)	97	06:37 (07) 18:36 (04)	05:39 20:09	2	19:43 (03) 19:45 (03)	05:24 20:32	29	19:38 (03) 20:07 (03)
17	07:21 16:54	06:51 17:33	06:08 18:05	56	16:41 (04) 17:37 (04)	98	06:35 (07) 18:35 (04)	05:38 20:10	5	19:41 (03) 19:46 (03)	05:24 20:33	29	19:38 (03) 20:07 (03)
18	07:20 16:56	06:50 17:34	06:06 18:06	59	16:40 (04) 17:39 (04)	97	06:34 (07) 18:34 (04)	05:37 20:11	8	19:39 (03) 19:47 (03)	05:24 20:33	29	19:38 (03) 20:07 (03)
19	07:20 16:57	06:48 17:35	06:04 18:08	62	16:38 (04) 17:40 (04)	98	06:32 (07) 18:33 (04)	05:36 20:12	9	19:39 (03) 19:48 (03)	05:24 20:33	29	19:38 (03) 20:07 (03)
20	07:19 16:58	06:47 17:36	06:03 18:09	64	16:36 (04) 17:40 (04)	96	06:31 (07) 18:32 (04)	05:35 20:13	11	19:38 (03) 19:49 (03)	05:24 20:34	30	19:38 (03) 20:08 (03)
21	07:19 16:59	06:45 17:38	06:01 18:10	66	16:36 (04) 17:42 (04)	94	06:30 (07) 18:30 (04)	05:34 20:14	13	19:37 (03) 19:50 (03)	05:24 20:34	30	19:39 (03) 20:09 (03)
22	07:18 17:00	06:44 17:39	05:59 18:11	68	16:34 (04) 17:42 (04)	93	06:30 (07) 18:30 (04)	05:34 20:15	14	19:36 (03) 19:50 (03)	05:24 20:34	30	19:39 (03) 20:09 (03)
23	07:17 17:02	06:43 17:40	05:58 18:12	69	16:33 (04) 17:42 (04)	90	06:30 (07) 18:28 (04)	05:33 20:16	16	19:36 (03) 19:52 (03)	05:25 20:34	29	19:39 (03) 20:08 (03)
24	07:17 17:03	06:41 17:41	05:56 18:13	72	16:31 (04) 17:43 (04)	85	06:30 (07) 18:26 (04)	05:32 20:17	17	19:35 (03) 19:52 (03)	05:25 20:34	29	19:39 (03) 20:08 (03)
25	07:16 17:04	06:40 17:42	05:54 18:14	73	16:31 (04) 17:44 (04)	81	06:31 (07) 18:25 (04)	05:31 20:18	18	19:35 (03) 19:53 (03)	05:25 20:35	29	19:40 (03) 20:09 (03)
26	07:15 17:05	06:38 17:44	05:52 18:15	74	16:30 (04) 17:44 (04)	78	06:30 (07) 18:23 (04)	05:31 20:19	19	19:35 (03) 19:54 (03)	05:25 20:35	29	19:40 (03) 20:09 (03)
27	07:14 17:06	06:37 17:45	05:51 18:16	75	16:29 (04) 17:44 (04)	72	06:31 (07) 18:21 (04)	05:30 20:20	20	19:35 (03) 19:55 (03)	05:26 20:35	29	19:40 (03) 20:09 (03)
28	07:13 17:08	06:35 17:46	05:49 18:17	76	16:29 (04) 17:45 (04)	68	06:31 (07) 18:19 (04)	05:29 20:20	21	19:35 (03) 19:56 (03)	05:26 20:35	29	19:40 (03) 20:09 (03)
29	07:13 17:09		06:47 19:18	76	17:28 (04) 18:44 (04)	62	06:32 (07) 18:17 (04)	05:29 20:21	21	19:35 (03) 19:56 (03)	05:27 20:35	29	19:40 (03) 20:09 (03)
30	07:12 17:10		06:46 19:19	77	17:27 (04) 18:44 (04)	53	06:34 (07) 18:14 (04)	05:28 20:22	23	19:35 (03) 19:58 (03)	05:27 20:35	28	19:41 (03) 20:09 (03)
31	07:11 17:11		06:44 19:21	78	17:27 (04) 18:45 (04)			05:28 20:23	24	19:34 (03) 19:58 (03)			
Ore potenziali eliofania	297	297	369		399		449			453		843	
Totale, caso peggiore			1293		2536		337					843	

Legenda della tabella:

Giorno del mese	Alba (hh:mm)	Inizio ombreggiamento (hh:mm)	(WTG che provoca l'inizio dell'ombreggiamento)
	Tramonto (hh:mm) Minuti d'ombra	Fine ombreggiamento (hh:mm)	(WTG che provoca l'ultimo ombreggiamento)



SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara NordRecettore d'ombra: S-07-158 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (13)  
 Assunzioni sui calcoli d'ombra

- I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:
- Il sole splende tutto il di, dall'alba al tramonto
- Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole
- La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno					
1	07:23	07:10	06:34	06:42	17:36 (04)	05:56	06:28 (07)	05:27			19:39 (03)
	16:38	17:13	17:47	19:22	74 18:50 (04)	19:54	18:34 (04)	20:24	20		19:59 (03)
2	07:23	07:09	06:32	06:41	17:35 (04)	05:55	06:28 (07)	05:27			19:38 (03)
	16:39	17:14	17:48	19:23	75 18:50 (04)	19:55	18:32 (04)	20:24	21		19:59 (03)
3	07:24	07:08	06:30	06:39	17:35 (04)	05:54	06:29 (07)	05:26			19:38 (03)
	16:40	17:15	17:49	19:24	76 18:51 (04)	19:56	18:31 (04)	20:25	22		20:00 (03)
4	07:24	07:07	06:29	06:37	17:34 (04)	05:52	06:31 (07)	05:26			19:39 (03)
	16:41	17:17	17:51	19:25	77 18:51 (04)	19:57	18:29 (04)	20:26	22		20:01 (03)
5	07:24	07:06	06:27	06:36	17:33 (04)	05:51	06:32 (07)	05:25			19:38 (03)
	16:42	17:18	17:52	19:26	78 18:51 (04)	19:58	18:28 (04)	20:26	23		20:01 (03)
6	07:24	07:05	06:26	06:34	17:33 (04)	05:50	06:34 (07)	05:25			19:39 (03)
	16:43	17:19	17:53	19:27	78 18:51 (04)	19:59	18:26 (04)	20:27	23		20:02 (03)
7	07:24	07:03	06:24	06:32	17:32 (04)	05:49	06:36 (07)	05:25			19:39 (03)
	16:44	17:20	17:54	19:28	79 18:51 (04)	20:00	18:23 (04)	20:28	24		20:03 (03)
8	07:23	07:02	06:22	06:31	17:31 (04)	05:47	17:53 (04)	05:25			19:39 (03)
	16:45	17:22	17:55	19:29	79 18:50 (04)	20:01	18:21 (04)	20:28	25		20:04 (03)
9	07:23	07:01	06:21	06:29	17:32 (04)	05:46	17:56 (04)	05:24			19:39 (03)
	16:46	17:23	17:56	19:30	79 18:51 (04)	20:02	18:18 (04)	20:29	24		20:03 (03)
10	07:23	07:00	06:19	06:28	17:31 (04)	05:45	18:01 (04)	05:24			19:39 (03)
	16:47	17:24	17:58	19:31	79 18:50 (04)	20:03	18:14 (04)	20:30	25		20:04 (03)
11	07:23	06:59	06:18	06:26	06:46 (07)	05:44		05:24			19:39 (03)
	16:48	17:25	17:59	19:32	80 18:50 (04)	20:04		20:30	26		20:05 (03)
12	07:23	06:58	06:16	06:24	06:43 (07)	05:43		05:24			19:40 (03)
	16:49	17:27	18:00	19:33	90 18:50 (04)	20:05		20:31	25		20:05 (03)
13	07:22	06:56	06:14	06:23	06:41 (07)	05:42		05:24			19:40 (03)
	16:50	17:28	18:01	19:34	93 18:49 (04)	20:06		20:31	26		20:06 (03)
14	07:22	06:55	06:13	06:21	06:40 (07)	05:41		05:24			19:40 (03)
	16:51	17:29	18:02	19:36	96 18:49 (04)	20:07		20:32	26		20:06 (03)
15	07:22	06:54	06:11	06:20	06:38 (07)	05:40		05:24			19:40 (03)
	16:52	17:30	18:03	19:37	98 18:48 (04)	20:08		20:32	26		20:06 (03)
16	07:21	06:52	06:09	17:10 (04)	06:18	06:37 (07)	05:39	05:24			19:40 (03)
	16:53	17:32	18:04	15 17:25 (04)	19:38	99 18:48 (04)	20:09	20:32	27		20:07 (03)
17	07:21	06:51	06:08	17:04 (04)	06:16	06:35 (07)	05:38	05:24			19:41 (03)
	16:54	17:33	18:05	27 17:31 (04)	19:39	101 18:47 (04)	20:10	20:33	26		20:07 (03)
18	07:20	06:50	06:06	17:00 (04)	06:15	06:34 (07)	05:37	05:24			19:41 (03)
	16:56	17:34	18:06	35 17:35 (04)	19:40	102 18:47 (04)	20:11	20:33	26		20:07 (03)
19	07:20	06:48	06:04	16:57 (04)	06:13	06:32 (07)	05:36	19:47 (03)	05:24		19:41 (03)
	16:57	17:35	18:08	40 17:37 (04)	19:41	103 18:46 (04)	20:12	1 19:48 (03)	20:33	26	20:07 (03)
20	07:19	06:47	06:03	16:54 (04)	06:12	06:31 (07)	05:35	19:45 (03)	05:24		19:41 (03)
	16:58	17:36	18:09	45 17:39 (04)	19:42	103 18:45 (04)	20:13	4 19:49 (03)	20:34	27	20:08 (03)
21	07:19	06:45	06:01	16:52 (04)	06:10	06:29 (07)	05:34	19:43 (03)	05:24		19:42 (03)
	16:59	17:38	18:10	50 17:42 (04)	19:43	103 18:44 (04)	20:14	7 19:50 (03)	20:34	27	20:09 (03)
22	07:18	06:44	05:59	16:49 (04)	06:09	06:28 (07)	05:34	19:42 (03)	05:24		19:42 (03)
	17:00	17:39	18:11	54 17:43 (04)	19:44	104 18:44 (04)	20:15	8 19:50 (03)	20:34	27	20:09 (03)
23	07:17	06:43	05:58	16:47 (04)	06:07	06:26 (07)	05:33	19:42 (03)	05:25		19:42 (03)
	17:02	17:40	18:12	57 17:44 (04)	19:45	103 18:42 (04)	20:16	10 19:52 (03)	20:34	26	20:08 (03)
24	07:17	06:41	05:56	16:45 (04)	06:06	06:26 (07)	05:32	19:41 (03)	05:25		19:42 (03)
	17:03	17:41	18:13	60 17:45 (04)	19:46	102 18:42 (04)	20:17	11 19:52 (03)	20:34	26	20:08 (03)
25	07:16	06:40	05:54	16:44 (04)	06:05	06:26 (07)	05:31	19:40 (03)	05:25		19:43 (03)
	17:04	17:42	18:14	62 17:46 (04)	19:47	100 18:41 (04)	20:18	13 19:53 (03)	20:35	26	20:09 (03)
26	07:15	06:38	05:52	16:42 (04)	06:03	06:25 (07)	05:31	19:40 (03)	05:25		19:42 (03)
	17:05	17:44	18:15	65 17:47 (04)	19:48	99 18:40 (04)	20:19	14 19:54 (03)	20:35	27	20:09 (03)
27	07:14	06:37	05:51	16:41 (04)	06:02	06:26 (07)	05:30	19:39 (03)	05:26		19:42 (03)
	17:06	17:45	18:16	66 17:47 (04)	19:50	96 18:39 (04)	20:20	16 19:55 (03)	20:35	27	20:09 (03)
28	07:13	06:35	05:49	16:40 (04)	06:00	06:26 (07)	05:29	19:39 (03)	05:26		19:43 (03)
	17:08	17:46	18:17	69 17:49 (04)	19:51	92 18:37 (04)	20:20	17 19:56 (03)	20:35	26	20:09 (03)
29	07:13		06:47	17:39 (04)	05:59	06:26 (07)	05:29	19:39 (03)	05:27		19:43 (03)
	17:09		19:18	70 18:49 (04)	19:52	90 18:36 (04)	20:21	17 19:56 (03)	20:35	26	20:09 (03)
30	07:12		06:46	17:37 (04)	05:58	06:27 (07)	05:28	19:39 (03)	05:27		19:44 (03)
	17:10		19:19	72 18:49 (04)	19:53	86 18:35 (04)	20:22	19 19:58 (03)	20:35	25	20:09 (03)
31	07:11		06:44	17:37 (04)			05:28	19:38 (03)			
	17:11		19:21	73 18:50 (04)			20:23	20 19:58 (03)			
Ore potenziali eliofanìa	297	297	369	399	449	675	453	753			
Totale, caso peggiore			860	2714							

Legenda della tabella:

Giorno del mese    Alba (hh:mm)                                    Inizio ombreggiamento (hh:mm)                                    (WTG che provoca l'inizio dell'ombreggiamento)  
 Tramonto (hh:mm)Minuti d'ombra                                    Fine ombreggiamento (hh:mm)                                    (WTG che provoca l'ultimo ombreggiamento)



**SHADOW - Calendario**

Calcolo: Flicker\_su\_recettori\_Stornara NordRecettore d'ombra: S-07-158 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (13)  
**Assunzioni sui calcoli d'ombra**

- I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:
- Il sole splende tutto il dì, dall'alba al tramonto
- Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole
- La turbina è costantemente operativa

	Luglio		Agosto		Settembre		Ottobre	Novembre	Dicembre		
1	05:27		19:43 (03)	05:52		06:23	17:30 (04)	06:53	06:28	07:03	
	20:35	26	20:09 (03)	20:15		19:32	18:49 (04)	18:41	16:54	16:29	
2	05:28		19:44 (03)	05:53		06:24	17:30 (04)	06:54	06:29	07:04	
	20:34	25	20:09 (03)	20:14		19:30	18:49 (04)	18:39	16:53	16:29	
3	05:28		19:44 (03)	05:54		18:09 (04)	06:25	17:30 (04)	06:55	06:30	07:05
	20:34	25	20:09 (03)	20:13	17	18:26 (04)	19:29	18:49 (04)	18:38	16:52	16:29
4	05:29		19:44 (03)	05:55		18:06 (04)	06:26	17:29 (04)	06:56	06:31	07:06
	20:34	25	20:09 (03)	20:12	24	18:30 (04)	19:27	18:48 (04)	18:36	16:50	16:29
5	05:30		19:44 (03)	05:56		06:51 (07)	06:27	17:28 (04)	06:57	06:32	07:07
	20:34	24	20:08 (03)	20:11	31	18:32 (04)	19:25	18:47 (04)	18:34	16:49	16:28
6	05:30		19:45 (03)	05:57		06:46 (07)	06:28	17:28 (04)	06:58	06:34	07:08
	20:34	23	20:08 (03)	20:10	46	18:34 (04)	19:24	18:46 (04)	18:33	16:48	16:28
7	05:31		19:45 (03)	05:58		06:43 (07)	06:29	17:28 (04)	06:59	06:35	07:09
	20:33	23	20:08 (03)	20:08	56	18:36 (04)	19:22	18:46 (04)	18:31	16:47	16:28
8	05:31		19:45 (03)	05:59		06:40 (07)	06:30	17:28 (04)	07:01	06:36	07:10
	20:33	23	20:08 (03)	20:07	63	18:37 (04)	19:20	18:45 (04)	18:29	16:46	16:28
9	05:32		19:46 (03)	06:00		06:39 (07)	06:31	17:28 (04)	07:02	06:37	07:11
	20:33	22	20:08 (03)	20:06	68	18:38 (04)	19:19	18:44 (04)	18:28	16:45	16:28
10	05:33		19:46 (03)	06:01		06:38 (07)	06:32	17:28 (04)	07:03	06:39	07:12
	20:32	22	20:08 (03)	20:05	74	18:40 (04)	19:17	18:43 (04)	18:26	16:44	16:28
11	05:33		19:46 (03)	06:02		06:36 (07)	06:33	17:28 (04)	07:04	06:40	07:12
	20:32	20	20:06 (03)	20:03	80	18:41 (04)	19:15	18:43 (04)	18:24	16:43	16:28
12	05:34		19:46 (03)	06:03		06:35 (07)	06:34	17:28 (04)	07:05	06:41	07:13
	20:31	20	20:06 (03)	20:02	83	18:42 (04)	19:14	18:42 (04)	18:23	16:42	16:28
13	05:35		19:47 (03)	06:04		06:35 (07)	06:35	17:28 (04)	07:06	06:42	07:14
	20:31	19	20:06 (03)	20:01	86	18:43 (04)	19:12	18:41 (04)	18:21	16:41	16:28
14	05:36		19:47 (03)	06:05		06:34 (07)	06:36	17:29 (04)	07:07	06:43	07:15
	20:30	18	20:05 (03)	19:59	90	18:44 (04)	19:10	18:39 (04)	18:20	16:40	16:29
15	05:36		19:47 (03)	06:06		06:33 (07)	06:37	17:29 (04)	07:08	06:45	07:16
	20:30	18	20:05 (03)	19:58	94	18:45 (04)	19:08	18:38 (04)	18:18	16:39	16:29
16	05:37		19:48 (03)	06:07		06:33 (07)	06:38	17:30 (04)	07:09	06:46	07:16
	20:29	16	20:04 (03)	19:56	96	18:46 (04)	19:07	18:37 (04)	18:17	16:38	16:29
17	05:38		19:49 (03)	06:08		06:32 (07)	06:39	17:30 (04)	07:10	06:47	07:17
	20:29	15	20:04 (03)	19:55	99	18:47 (04)	19:05	18:36 (04)	18:15	16:37	16:29
18	05:39		19:49 (03)	06:09		06:32 (07)	06:40	17:31 (04)	07:11	06:48	07:18
	20:28	14	20:03 (03)	19:54	101	18:47 (04)	19:03	18:34 (04)	18:14	16:36	16:30
19	05:40		19:50 (03)	06:10		06:32 (07)	06:41	17:32 (04)	07:13	06:49	07:18
	20:27	12	20:02 (03)	19:52	103	18:48 (04)	19:02	18:32 (04)	18:12	16:36	16:30
20	05:41		19:51 (03)	06:11		06:32 (07)	06:42	17:33 (04)	07:14	06:50	07:19
	20:26	11	20:02 (03)	19:51	104	18:48 (04)	19:00	18:31 (04)	18:11	16:35	16:30
21	05:41		19:52 (03)	06:12		06:33 (07)	06:43	17:34 (04)	07:15	06:52	07:19
	20:26	9	20:01 (03)	19:49	105	18:49 (04)	18:58	18:29 (04)	18:09	16:34	16:31
22	05:42		19:53 (03)	06:13		06:34 (07)	06:44	17:36 (04)	07:16	06:53	07:20
	20:25	8	20:01 (03)	19:48	104	18:49 (04)	18:56	18:26 (04)	18:08	16:34	16:31
23	05:43		19:54 (03)	06:14		06:35 (07)	06:45	17:37 (04)	07:17	06:54	07:20
	20:24	6	20:00 (03)	19:46	103	18:49 (04)	18:55	18:24 (04)	18:06	16:33	16:32
24	05:44		19:56 (03)	06:15		06:36 (07)	06:46	17:39 (04)	07:18	06:55	07:21
	20:23	3	19:59 (03)	19:45	102	18:49 (04)	18:53	18:21 (04)	18:05	16:32	16:32
25	05:45			06:16		06:37 (07)	06:47	17:42 (04)	06:19	06:56	07:21
	20:22			19:43	102	18:50 (04)	18:51	18:18 (04)	17:03	16:32	16:33
26	05:46			06:17		06:38 (07)	06:48	17:45 (04)	06:21	06:57	07:22
	20:21			19:42	101	18:50 (04)	18:50	18:14 (04)	17:02	16:31	16:34
27	05:47			06:18		06:39 (07)	06:49	17:49 (04)	06:22	06:59	07:22
	20:21			19:40	100	18:50 (04)	18:48	18:09 (04)	17:01	16:31	16:34
28	05:48			06:19		06:40 (07)	06:50		06:23	07:00	07:22
	20:20			19:38	97	18:50 (04)	18:46		16:59	16:30	16:35
29	05:49			06:20		06:41 (07)	06:51		06:24	07:01	07:23
	20:19			19:37	96	18:50 (04)	18:44		16:58	16:30	16:36
30	05:50			06:21		06:42 (07)	06:52		06:25	07:02	07:23
	20:18			19:35	93	18:50 (04)	18:43		16:57	16:30	16:36
31	05:51			06:22		06:43 (07)			06:27		07:23
	20:16			19:34	88	18:49 (04)			16:55		16:37
Ore potenziali eliofanìa	460			428		375		345		297	287
Totale, caso peggiore		427		2406		1733					

Legenda della tabella:

Giorno del mese    Alba (hh:mm)                                      Inizio ombreggiamento (hh:mm)                      (WTG che provoca l'inizio dell'ombreggiamento)  
 Tramonto (hh:mm)Minuti d'ombra                    Fine ombreggiamento (hh:mm)                                      (WTG che provoca l'ultimo ombreggiamento)

### SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara NordRecettore d'ombra: S-08-205 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (15) Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno	
1	07:23 16:38	07:10 17:13	06:34 17:47	06:53 (09) 17:20 (04)   06:42 19:22	07:22 (07) 08:19 (07)	05:27 19:54 20:24	
2	07:23 16:39	07:09 17:14	06:32 17:48	06:51 (09) 17:19 (04)   06:41 19:23	07:21 (07) 08:18 (07)	05:27 19:55 20:24	
3	07:24 16:40	07:08 17:15	06:30 17:49	06:49 (09) 17:18 (04)   06:39 19:24	07:22 (07) 08:17 (07)	05:26 19:56 20:25	
4	07:24 16:41	07:07 17:16	06:29 17:51	06:48 (09) 17:18 (04)   06:37 19:25	07:22 (07) 08:16 (07)	05:26 19:57 20:26	
5	07:24 16:42	07:06 17:18	06:27 17:52	06:47 (09) 17:16 (04)   06:36 19:26	07:22 (07) 08:14 (07)	05:25 19:58 20:26	
6	07:24 16:43	07:05 17:19	06:26 17:53	06:48 (09) 17:15 (04)   06:34 19:27	07:24 (07) 08:14 (07)	05:25 19:59 20:27	
7	07:24 16:44	07:03 17:20	06:24 17:54	06:50 (09) 17:13 (04)   06:32 19:28	07:24 (07) 08:12 (07)	05:25 20:00 20:28	
8	07:23 16:45	07:02 17:22	06:22 17:55	06:49 (07) 17:11 (04)   06:31 19:29	07:24 (07) 08:10 (07)	05:25 20:01 20:28	
9	07:23 16:46	07:01 17:23	06:21 17:56	06:45 (07) 17:09 (04)   06:29 19:30	07:26 (07) 08:09 (07)	05:24 20:02 20:29	
10	07:23 16:47	07:00 17:24	06:19 17:57	06:42 (07) 17:06 (04)   06:28 19:31	07:27 (07) 08:07 (07)	05:24 20:03 20:30	
11	07:23 16:48	06:59 17:25	06:18 17:59	06:39 (07) 07:14 (07)   06:26 19:32	07:29 (07) 08:05 (07)	05:24 20:04 20:30	
12	07:23 16:49	06:58 17:27	06:16 18:00	06:37 (07) 07:17 (07)   06:24 19:33	07:30 (07) 19:12 (03)	05:24 20:05 20:31	
13	07:22 16:50	06:56 17:28	16:57 (04) 17:05 (04)   06:14 18:01	06:35 (07) 07:18 (07)   06:23 19:34	07:32 (07) 19:12 (03)	05:24 20:06 20:31	
14	07:22 16:51	06:55 17:29	16:52 (04) 17:06 (04)   06:13 18:02	06:33 (07) 07:19 (07)   06:21 19:36	07:35 (07) 19:14 (03)	05:24 20:07 20:32	
15	07:22 16:52	06:54 17:30	16:50 (04) 17:08 (04)   06:11 18:03	06:32 (07) 07:20 (07)   06:20 19:37	07:39 (07) 19:14 (03)	05:24 20:08 20:32	
16	07:21 16:53	06:52 17:32	16:49 (04) 17:09 (04)   06:09 18:04	06:30 (07) 07:21 (07)   06:18 19:38	19:04 (03) 19:16 (03)	05:24 20:09 20:32	
17	07:21 16:54	06:51 17:33	16:47 (04) 17:10 (04)   06:08 18:05	06:29 (07) 07:21 (07)   06:16 19:39	19:03 (03) 19:16 (03)	05:24 20:10 20:33	
18	07:20 16:56	06:50 17:34	16:46 (04) 17:12 (04)   06:06 18:06	06:28 (07) 07:23 (07)   06:15 19:40	19:03 (03) 19:18 (03)	05:24 20:11 20:33	
19	07:20 16:57	06:48 17:35	16:45 (04) 17:13 (04)   06:04 18:07	06:27 (07) 07:23 (07)   06:13 19:41	19:02 (03) 19:19 (03)	05:24 20:12 20:33	
20	07:19 16:58	06:47 17:36	16:44 (04) 17:14 (04)   06:03 18:09	06:26 (07) 07:23 (07)   06:12 19:42	19:03 (03) 19:20 (03)	05:24 20:13 20:34	
21	07:19 16:59	06:45 17:38	16:43 (04) 17:16 (04)   06:01 18:10	06:24 (07) 07:23 (07)   06:10 19:43	19:02 (03) 19:20 (03)	05:24 20:14 20:34	
22	07:18 17:00	06:44 17:39	16:42 (04) 17:17 (04)   05:59 18:11	06:24 (07) 07:23 (07)   06:09 19:44	19:03 (03) 19:22 (03)	05:24 20:15 20:34	
23	07:17 17:02	06:43 17:40	16:42 (04) 17:18 (04)   05:58 18:12	06:23 (07) 07:23 (07)   06:07 19:45	19:03 (03) 19:22 (03)	05:25 20:16 20:34	
24	07:17 17:03	06:41 17:41	07:00 (09) 17:19 (04)   05:56 18:13	06:23 (07) 07:23 (07)   06:06 19:46	19:05 (03) 19:21 (03)	05:25 20:17 20:34	
25	07:16 17:04	06:40 17:42	06:59 (09) 17:21 (04)   05:54 18:14	06:23 (07) 07:23 (07)   06:04 19:47	19:07 (03) 19:19 (03)	05:25 20:18 20:35	
26	07:15 17:05	06:38 17:44	06:57 (09) 17:20 (04)   05:52 18:15	06:22 (07) 07:22 (07)   06:03 19:48	19:08 (03) 19:16 (03)	05:25 20:19 20:35	
27	07:14 17:06	06:37 17:45	06:56 (09) 17:21 (04)   05:51 18:16	06:21 (07) 07:22 (07)   06:02 19:50	05:30 20:20	05:26 20:35	
28	07:13 17:08	06:35 17:46	06:54 (09) 17:20 (04)   05:49 18:17	06:22 (07) 07:22 (07)   06:00 19:51	05:29 20:20	05:26 20:35	
29	07:13 17:09			06:47 19:18	07:21 (07) 08:21 (07)   05:59 19:52	05:29 20:21	05:27 20:35
30	07:12 17:10			06:46 19:19	07:21 (07) 08:20 (07)   05:58 19:53	05:28 20:22	05:27 20:35
31	07:11 17:11			06:44 19:20	07:22 (07) 08:20 (07)	05:28 20:23	
Ore potenziali eliofanìa	297	297	369	399	449	453	
Totale, caso peggiore		503	1612	825			

#### Legenda della tabella:

Giorno del mese	Alba (hh:mm) Tramonto (hh:mm)	Minuti d'ombra	Inizio ombreggiamento (hh:mm) Fine ombreggiamento (hh:mm)	(WTG che provoca l'inizio dell'ombreggiamento) (WTG che provoca l'ultimo ombreggiamento)
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SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara NordRecettore d'ombra: S-08-205 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (15) Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:  
Il sole splende tutto il di, dall'alba al tramonto  
Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole  
La turbina è costantemente operativa

	Luglio	Agosto		Settembre		Ottobre		Novembre	Dicembre	
1	05:27	05:52		06:23		07:28 (07)	06:53	07:15 (07)	06:28	07:03
	20:35	20:15		19:32	36	08:04 (07)	18:41	17:56 (07)	16:54	16:29
2	05:28	05:53		06:24		07:26 (07)	06:54	07:16 (07)	06:29	07:04
	20:34	20:14		19:30	40	08:06 (07)	18:39	07:54 (07)	16:53	16:29
3	05:28	05:54		06:25		07:24 (07)	06:55	07:18 (07)	06:30	07:05
	20:34	20:13		19:29	43	08:07 (07)	18:38	17:41 (04)	16:51	16:29
4	05:29	05:55		06:26		07:23 (07)	06:56	07:20 (07)	06:31	07:06
	20:34	20:12		19:27	45	08:08 (07)	18:36	17:45 (04)	16:50	16:29
5	05:30	05:56		06:27		07:20 (07)	06:57	07:24 (07)	06:32	07:07
	20:34	20:11		19:25	48	08:08 (07)	18:34	17:47 (04)	16:49	16:28
6	05:30	05:57		06:28		07:19 (07)	06:58	07:28 (09)	06:34	07:08
	20:34	20:10		19:24	50	08:09 (07)	18:33	17:49 (04)	16:48	16:28
7	05:31	05:58		06:29		07:18 (07)	06:59	07:25 (09)	06:35	07:09
	20:33	20:08		19:22	51	08:09 (07)	18:31	17:50 (04)	16:47	16:28
8	05:31	05:59		06:30		07:16 (07)	07:00	07:23 (09)	06:36	07:10
	20:33	20:07		19:20	54	08:10 (07)	18:29	17:51 (04)	16:46	16:28
9	05:32	06:00		06:31		07:15 (07)	07:02	07:22 (09)	06:37	07:11
	20:33	20:06		19:19	55	08:10 (07)	18:28	17:52 (04)	16:45	16:28
10	05:33	06:01		06:32		07:15 (07)	07:03	07:23 (09)	06:38	07:12
	20:32	20:05		19:17	56	08:11 (07)	18:26	17:52 (04)	16:44	16:28
11	05:33	06:02		06:33		07:14 (07)	07:04	07:24 (09)	06:40	07:12
	20:32	20:03		19:15	57	08:11 (07)	18:24	17:53 (04)	16:43	16:28
12	05:34	06:03		06:34		07:13 (07)	07:05	07:25 (09)	06:41	07:13
	20:31	20:02		19:14	58	08:11 (07)	18:23	17:53 (04)	16:42	16:28
13	05:35	06:04		06:35		07:12 (07)	07:06	07:26 (09)	06:42	07:14
	20:31	20:01		19:12	59	08:11 (07)	18:21	17:53 (04)	16:41	16:28
14	05:36	06:05		06:36		07:12 (07)	07:07	07:27 (09)	06:43	07:15
	20:30	19:59		19:10	59	08:11 (07)	18:20	17:52 (04)	16:40	16:29
15	05:36	06:06		06:37		07:11 (07)	07:08	07:29 (09)	06:45	07:16
	20:30	19:58		19:08	60	08:11 (07)	18:18	17:53 (04)	16:39	16:29
16	05:37	06:07		06:38		07:11 (07)	07:09	07:30 (09)	06:46	07:16
	20:29	19:56		19:07	60	08:11 (07)	18:17	17:53 (04)	16:38	16:29
17	05:38	06:08	19:14 (03)	06:39		07:10 (07)	07:10	07:31 (09)	06:47	07:17
	20:29	19:55	9	19:23 (03)	61	08:11 (07)	18:15	17:52 (04)	16:37	16:29
18	05:39	06:09	19:12 (03)	06:40		07:10 (07)	07:11	07:32 (09)	06:48	07:18
	20:28	19:54	13	19:25 (03)	60	08:10 (07)	18:14	17:50 (04)	16:36	16:30
19	05:40	06:10	19:10 (03)	06:41		07:10 (07)	07:13	17:13 (04)	06:49	07:18
	20:27	19:52	17	19:27 (03)	60	08:10 (07)	18:12	17:48 (04)	16:36	16:30
20	05:41	06:11	19:09 (03)	06:42		07:10 (07)	07:14	17:13 (04)	06:50	07:19
	20:26	19:51	19	19:28 (03)	59	08:09 (07)	18:11	17:47 (04)	16:35	16:30
21	05:41	06:12	19:08 (03)	06:43		07:10 (07)	07:15	17:14 (04)	06:52	07:19
	20:26	19:49	19	19:27 (03)	59	08:09 (07)	18:09	17:46 (04)	16:34	16:31
22	05:42	06:13	19:07 (03)	06:44		07:10 (07)	07:16	17:15 (04)	06:53	07:20
	20:25	19:48	18	19:25 (03)	58	08:08 (07)	18:08	17:44 (04)	16:34	16:31
23	05:43	06:14	19:07 (03)	06:45		07:10 (07)	07:17	17:15 (04)	06:54	07:20
	20:24	19:46	17	19:24 (03)	57	08:07 (07)	18:06	17:43 (04)	16:33	16:32
24	05:44	06:15	19:06 (03)	06:46		07:10 (07)	07:18	17:16 (04)	06:55	07:21
	20:23	19:45	16	19:22 (03)	56	08:06 (07)	18:05	17:41 (04)	16:32	16:32
25	05:45	06:16	19:06 (03)	06:47		07:10 (07)	06:19	16:18 (04)	06:56	07:21
	20:22	19:43	15	19:21 (03)	55	08:05 (07)	17:03	16:40 (04)	16:32	16:33
26	05:46	06:17	19:06 (03)	06:48		07:11 (07)	06:21	16:19 (04)	06:57	07:22
	20:21	19:42	13	19:19 (03)	53	08:04 (07)	17:02	16:39 (04)	16:31	16:34
27	05:47	06:18	19:06 (03)	06:49		07:11 (07)	06:22	16:21 (04)	06:58	07:22
	20:20	19:40	12	19:18 (03)	52	08:03 (07)	17:01	16:37 (04)	16:31	16:34
28	05:48	06:19	07:40 (07)	06:50		07:12 (07)	06:23	16:23 (04)	07:00	07:22
	20:20	19:38	24	19:16 (03)	49	08:01 (07)	16:59	16:35 (04)	16:30	16:35
29	05:49	06:20	07:36 (07)	06:51		07:13 (07)	06:24	16:28 (04)	07:01	07:23
	20:19	19:37	30	19:15 (03)	47	08:00 (07)	16:58	16:35 (04)	16:30	16:36
30	05:50	06:21	07:33 (07)	06:52		07:14 (07)	06:25		07:02	07:23
	20:18	19:35	33	19:13 (03)	44	07:58 (07)	16:57		16:30	16:36
31	05:51	06:22	07:30 (07)				06:26			07:23
	20:16	19:34	36	19:12 (03)			16:55			16:37
Ore potenziali eliofanía	460	428		375			345		297	287
Totale, caso peggiore			291		1601		1080			

Legenda della tabella:

Giorno del mese	Alba (hh:mm)	Tramonto (hh:mm)	Minuti d'ombra	Inizio ombreggiamento (hh:mm)	Fine ombreggiamento (hh:mm)	(WTG che provoca l'inizio dell'ombreggiamento)	(WTG che provoca l'ultimo ombreggiamento)
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SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara NordRecettore d'ombra: S-08-222 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (17)
Assunzioni sui calcoli d'ombra

- I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:
Il sole splende tutto il di, dall'alba al tramonto
Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole
La turbina è costantemente operativa

Table with columns for months (Gennaio, Febbraio, Marzo, Aprile, Maggio, Giugno) and rows for days (1-31). Each cell contains time intervals and counts, representing shadow times and potential hours.

Legenda della tabella:

Giorno del mese Alba (hh:mm) Tramonto (hh:mm) Minuti d'ombra
Inizio ombreggiamento (hh:mm) Fine ombreggiamento (hh:mm)
(WTG che provoca l'inizio dell'ombreggiamento) (WTG che provoca l'ultimo ombreggiamento)

## SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: S-08-222 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (17)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre
1	05:27 20:35	05:52 20:15	19:28 (02) 19:32	06:23 18:41	06:28 16:54	07:08 (09) 16:29
2	05:28 20:34	05:53 20:14	19:27 (02) 19:30	06:24 18:39	06:29 16:53	07:05 (09) 16:29
3	05:28 20:34	05:54 20:13	19:26 (02) 19:29	06:25 18:38	06:30 16:51	07:03 (09) 16:29
4	05:29 20:34	05:54 20:12	19:26 (02) 19:27	06:26 18:36	06:31 16:50	07:01 (09) 16:29
5	05:30 20:34	05:55 20:11	19:25 (02) 19:25	06:27 18:34	06:32 16:49	07:00 (09) 16:28
6	05:30 20:34	05:56 20:10	19:25 (02) 19:24	06:28 18:33	06:34 16:48	07:00 (09) 16:28
7	05:31 20:33	05:57 20:08	19:24 (02) 19:22	06:29 18:31	06:35 16:47	06:59 (09) 16:28
8	05:31 20:33	05:58 20:07	19:23 (02) 19:20	06:30 18:29	06:36 16:46	06:59 (09) 16:28
9	05:32 20:33	05:59 20:06	19:23 (02) 19:19	06:31 18:28	06:37 16:45	07:00 (09) 16:28
10	05:33 20:32	06:00 20:05	19:23 (02) 19:17	06:32 07:03 (08) 07:12 (08)	06:38 07:03 (08) 16:44	07:01 (09) 16:28 07:24 (09)
11	05:33 20:32	06:01 20:03	19:24 (02) 19:15	06:33 07:00 (08) 07:14 (08)	06:40 07:04 16:43	07:02 (09) 16:28 07:24 (09)
12	05:34 20:31	06:02 20:02	19:24 (02) 19:14	06:34 06:58 (08) 07:15 (08)	06:41 07:05 16:42	07:03 (09) 16:28 07:24 (09)
13	05:35 20:31	06:04 20:01	19:24 (02) 19:12	06:35 06:56 (08) 07:16 (08)	06:42 07:06 16:41	07:05 (09) 16:28 10:27 (07)
14	05:36 20:30	06:05 19:59	19:25 (02) 19:10	06:36 06:56 (08) 07:16 (08)	06:43 07:07 16:40	07:06 (09) 16:29 10:32 (07)
15	05:36 20:30	06:06 19:58	19:25 (02) 19:08	06:37 06:57 (08) 07:17 (08)	06:44 07:08 16:39	07:07 (09) 16:29 10:36 (07)
16	05:37 20:29	06:07 19:56	19:26 (02) 19:07	06:38 06:58 (08) 07:17 (08)	06:46 07:09 16:38	07:09 (09) 16:29 10:41 (07)
17	05:38 20:29	06:08 19:55	19:28 (02) 19:05	06:39 06:59 (08) 07:16 (08)	06:47 07:10 (09) 16:37	07:10 (09) 16:29 10:43 (07)
18	05:39 20:28	06:09 19:54	19:30 (02) 19:03	06:40 07:00 (08) 07:16 (08)	06:48 07:11 (09) 16:36	07:11 (09) 16:28 10:46 (07)
19	05:40 20:27	06:10 19:52	19:31 (02) 19:01	06:41 07:01 (08) 07:13 (08)	06:49 07:12 (09) 16:36	07:12 (09) 16:30 10:48 (07)
20	05:41 20:26	06:11 19:51	19:32 (02) 19:00	06:42 07:02 (08) 07:14 (08)	06:50 07:13 (08) 16:35	07:14 (09) 16:30 10:51 (07)
21	05:41 20:26	06:12 19:49	19:33 (02) 18:58	06:43 07:03 (08) 07:15 (08)	06:52 07:14 (09) 17:23 (04) 16:34	07:15 (09) 16:31 10:53 (07)
22	05:42 20:25	06:13 19:48	19:34 (02) 18:56	06:44 07:04 (08) 07:16 (08)	06:53 07:16 (09) 17:20 (04) 16:34	07:16 (09) 16:31 10:54 (07)
23	05:43 20:24	06:14 19:46	19:35 (02) 18:55	06:45 07:05 (08) 07:17 (08)	06:54 07:17 (09) 17:18 (04) 16:33	07:17 (09) 16:32 10:56 (07)
24	05:44 20:23	06:15 19:45	19:36 (02) 18:53	06:46 07:18 (08) 07:18 (08)	06:55 07:19 (09) 17:16 (04) 16:32	09:45 (07) 16:32 10:58 (07)
25	05:45 20:22	06:16 19:43	19:38 (02) 18:51	06:47 07:19 (09) 17:03 (08) 16:38 (04)	06:56 07:20 (09) 16:16 (04) 16:32	09:44 (07) 16:33 11:00 (07)
26	05:46 20:21	06:17 19:42	19:40 (02) 18:49	06:48 07:21 (09) 17:02 (08) 16:38 (04)	06:57 07:22 (09) 16:15 (04) 16:31	09:43 (07) 16:34 11:01 (07)
27	05:47 20:20	06:18 19:40	19:41 (02) 18:48	06:49 07:22 (09) 17:00 (08) 16:37 (04)	06:58 07:23 (09) 16:14 (04) 16:31	09:43 (07) 16:34 11:02 (07)
28	05:48 20:20	9 19:33 (02) 06:19	19:42 (02) 18:46	06:50 16:59	07:00 16:35 (04)	09:42 (07) 16:35
29	05:49 20:19	13 19:31 (02) 19:37	19:38 18:44	06:51 16:58	07:01 16:35 (04)	09:42 (07) 16:36
30	05:50 20:17	16 19:30 (02) 19:35	19:39 18:43	06:52 16:56	07:02 16:34 (04)	09:41 (07) 16:36
31	05:51 20:16	18 19:29 (02) 19:34	19:40 18:43	06:53 16:55	07:03 16:33 (04)	09:41 (07) 16:37
Ore potenziali eliofanía	460	428	375	345	297	287
Totale, caso peggiore	56	288	199	208	1559	2897

### Legenda della tabella:

Giorno del mese Alba (hh:mm) Tramonto (hh:mm) Minuti d'ombra Inizio ombreggiamento (hh:mm) Fine ombreggiamento (hh:mm) (WTG che provoca l'inizio dell'ombreggiamento) (WTG che provoca l'ultimo ombreggiamento)

### SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: S-09-88 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (18)  
Assunzioni sui calcoli d'ombra

- I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:
- Il sole splende tutto il di, dall'alba al tramonto
- Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole
- La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno
1	07:23 16:38 89	12:33 (08)   07:10 14:02 (08)   17:13	06:33 17:47	06:42 19:21	05:56 19:54 33	18:56 (06) 19:29 (06) 20:23
2	07:23 16:39 89	12:33 (08)   07:09 14:02 (08)   17:14	16:48 (07)   06:32 17:48	06:41 19:23	05:55 19:55 32	18:57 (06) 19:29 (06) 20:24
3	07:23 16:40 88	12:34 (08)   07:08 14:02 (08)   17:15	16:47 (07)   06:30 17:49	06:39 19:24	05:53 19:56 32	18:57 (06) 19:29 (06) 20:25
4	07:24 16:41 87	12:35 (08)   07:07 14:02 (08)   17:16	16:46 (07)   06:29 17:51	06:37 19:25	05:52 19:57 30	18:58 (06) 19:28 (06) 20:26
5	07:24 16:42 87	12:36 (08)   07:06 14:03 (08)   17:18	16:45 (07)   06:27 17:52	06:36 19:26	05:51 19:58 30	18:58 (06) 19:28 (06) 20:26
6	07:23 16:43 86	12:37 (08)   07:04 14:03 (08)   17:19	16:44 (07)   06:26 17:53	06:34 19:27	05:50 19:59 28	18:58 (06) 19:26 (06) 20:27
7	07:23 16:44 85	12:38 (08)   07:03 14:03 (08)   17:20	16:44 (07)   06:24 17:54	06:32 19:28	05:49 20:00 27	18:59 (06) 19:26 (06) 20:28
8	07:23 16:45 84	12:38 (08)   07:02 14:02 (08)   17:21	16:44 (07)   06:22 17:55	06:31 19:29	05:47 20:01 25	19:00 (06) 19:25 (06) 20:28
9	07:23 16:46 83	12:39 (08)   07:01 14:02 (08)   17:23	16:44 (07)   06:21 17:56	06:29 19:30	05:46 20:02 23	19:01 (06) 19:24 (06) 20:29
10	07:23 16:47 82	12:41 (08)   07:00 14:03 (08)   17:24	16:44 (07)   06:19 17:57	06:27 19:31	05:45 20:03 21	19:02 (06) 19:23 (06) 20:29
11	07:23 16:48 81	12:41 (08)   06:59 14:02 (08)   17:25	16:44 (07)   06:17 17:59	06:26 19:32	05:44 20:04 17	19:04 (06) 19:21 (06) 20:30
12	07:22 16:49 79	12:43 (08)   06:57 14:02 (08)   17:26	16:44 (07)   06:16 18:00	06:24 19:33	05:43 20:05 13	19:06 (06) 19:19 (06) 20:31
13	07:22 16:50 78	12:44 (08)   06:56 14:02 (08)   17:28	16:45 (07)   06:14 18:01	06:23 19:34	05:42 20:06 7	19:09 (06) 19:16 (06) 20:31
14	07:22 16:51 76	12:45 (08)   06:55 14:01 (08)   17:29	16:45 (07)   06:12 18:02	06:21 19:35	05:41 20:07	19:16 (06) 20:31
15	07:21 16:52 74	12:47 (08)   06:54 14:01 (08)   17:30	16:47 (07)   06:11 18:03	06:19 19:37	05:40 20:08	19:16 (06) 20:32
16	07:21 16:53 72	12:48 (08)   06:52 14:00 (08)   17:31	16:49 (07)   06:09 18:04	06:18 19:38	05:39 20:09	19:16 (06) 20:32
17	07:21 16:54 70	12:50 (08)   06:51 14:00 (08)   17:33	16:51 (07)   06:07 18:05	06:16 19:39	05:38 20:10	19:16 (06) 20:33
18	07:20 16:55 68	12:51 (08)   06:50 13:59 (08)   17:34	06:06 18:06	06:15 19:40	19:10 (06) 05:37 19:18 (06)	20:11 20:33
19	07:20 16:57 65	12:54 (08)   06:48 13:59 (08)   17:35	06:04 18:07	06:13 19:41	19:06 (06) 05:36 19:19 (06)	20:12 20:33
20	07:19 16:58 63	12:55 (08)   06:47 13:58 (08)   17:36	06:02 18:08	06:12 19:42	19:05 (06) 05:35 19:20 (06)	20:13 20:34
21	07:18 16:59 59	12:57 (08)   06:45 13:56 (08)   17:37	06:01 18:10	06:10 19:43	19:03 (06) 05:34 19:20 (06)	20:14 20:34
22	07:18 17:00 56	13:00 (08)   06:44 13:56 (08)   17:39	05:59 18:11	06:09 19:44	19:02 (06) 05:33 19:22 (06)	20:15 20:34
23	07:17 17:01 52	13:02 (08)   06:42 13:54 (08)   17:40	05:57 18:12	06:07 19:45	19:00 (06) 05:33 19:22 (06)	20:16 20:34
24	07:16 17:03 47	13:05 (08)   06:41 13:52 (08)   17:41	05:56 18:13	06:06 19:46	19:00 (06) 05:32 19:24 (06)	20:17 20:34
25	07:16 17:04 42	13:08 (08)   06:39 13:50 (08)   17:42	05:54 18:14	06:04 19:47	18:58 (06) 05:31 19:24 (06)	20:18 20:34
26	07:15 17:05 35	13:12 (08)   06:38 13:47 (08)   17:43	05:52 18:15	06:03 19:48	18:58 (06) 05:30 19:26 (06)	20:19 20:35
27	07:14 17:06 27	13:17 (08)   06:36 13:44 (08)   17:45	05:51 18:16	06:02 19:49	18:58 (06) 05:30 19:27 (06)	20:20 20:35
28	07:13 17:08 14	13:24 (08)   06:35 13:38 (08)   17:46	05:49 18:17	06:00 19:50	18:57 (06) 05:29 19:27 (06)	20:21 20:35
29	07:12 17:09		06:47 19:18	05:59 19:52	18:57 (06) 05:29 19:29 (06)	20:22 20:35
30	07:12 17:10		06:46 19:19	05:57 19:53	18:57 (06) 05:28 19:30 (06)	20:23 20:35
31	07:11 17:11		06:44 19:20		05:27 20:23	
Ore potenziali eliofanìa	297	297	369	399	449	453
Totale, caso peggiore	1918	206		297	318	

Legenda della tabella:

Giorno del mese    Alba (hh:mm)    Tramonto (hh:mm)    Minuti d'ombra    Inizio ombreggiamento (hh:mm)    Fine ombreggiamento (hh:mm)    (WTG che provoca l'inizio dell'ombreggiamento)    (WTG che provoca l'ultimo ombreggiamento)

**SHADOW - Calendario**

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: S-09-88 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (18)  
Assunzioni sui calcoli d'ombra

- I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:
- Il sole splende tutto il di, dall'alba al tramonto
- Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole
- La turbina è costantemente operativa

	Luglio	Agosto	Settembre	ottobre	Novembre	Dicembre
1	05:27 20:34	05:51 20:15	19:16 (06) 19:31 (06)	06:23 19:32	06:53 18:41	06:28 16:54
2	05:28 20:34	05:52 20:14	19:14 (06) 19:32 (06)	06:24 19:30	06:54 18:39	06:29 16:53
3	05:28 20:34	05:53 20:13	19:12 (06) 19:34 (06)	06:25 19:29	06:55 18:38	06:30 16:51
4	05:29 20:34	05:54 20:12	19:11 (06) 19:35 (06)	06:26 19:27	06:56 18:36	06:31 16:50
5	05:29 20:34	05:55 20:11	19:09 (06) 19:35 (06)	06:27 19:25	06:57 18:34	06:32 16:49
6	05:30 20:34	05:56 20:10	19:08 (06) 19:36 (06)	06:28 19:24	06:58 18:33	06:34 16:48
7	05:31 20:33	05:57 20:08	19:08 (06) 19:36 (06)	06:29 19:22	06:59 18:31	06:35 16:47
8	05:31 20:33	05:58 20:07	19:07 (06) 19:37 (06)	06:30 19:20	07:00 18:29	06:36 16:46
9	05:32 20:33	05:59 20:06	19:06 (06) 19:37 (06)	06:31 19:19	07:01 18:28	06:37 16:45
10	05:33 20:32	06:00 20:05	19:06 (06) 19:37 (06)	06:32 19:17	07:03 18:26	06:38 16:44
11	05:33 20:32	06:01 20:03	19:05 (06) 19:38 (06)	06:33 19:15	07:04 18:24	06:40 16:43
12	05:34 20:31	06:02 20:02	19:05 (06) 19:38 (06)	06:34 19:13	07:05 18:23	06:41 16:42
13	05:35 20:31	06:03 20:01	19:05 (06) 19:37 (06)	06:35 19:12	07:06 18:21	06:42 16:41
14	05:36 20:30	06:04 19:59	19:05 (06) 19:36 (06)	06:36 19:10	07:07 18:20	06:43 16:40
15	05:36 20:30	06:05 19:58	19:05 (06) 19:35 (06)	06:37 19:08	07:08 18:18	06:44 16:39
16	05:37 20:29	06:06 19:56	19:05 (06) 19:33 (06)	06:38 19:07	07:09 18:16	06:46 16:38
17	05:38 20:28	06:07 19:55	19:05 (06) 19:32 (06)	06:39 19:05	07:10 18:15	06:47 16:37
18	05:39 20:28	06:08 19:54	19:05 (06) 19:31 (06)	06:40 19:03	07:11 18:13	06:48 16:36
19	05:40 20:27	06:09 19:52	19:05 (06) 19:29 (06)	06:41 19:01	07:12 18:12	06:49 16:36
20	05:40 20:26	06:10 19:51	19:06 (06) 19:28 (06)	06:42 19:00	07:14 18:10	06:50 16:35
21	05:41 20:26	06:11 19:49	19:07 (06) 19:27 (06)	06:43 18:58	07:15 18:09	06:52 16:34
22	05:42 20:25	06:13 19:48	19:08 (06) 19:25 (06)	06:44 18:56	07:16 18:07	06:53 16:33
23	05:43 20:24	06:14 19:46	19:09 (06) 19:24 (06)	06:45 18:55	07:17 18:06	06:54 16:33
24	05:44 20:23	06:15 19:45	19:11 (06) 19:22 (06)	06:46 18:53	07:18 18:05	06:55 16:32
25	05:45 20:22	06:16 19:43	19:13 (06) 19:21 (06)	06:47 18:51	07:19 17:03	06:56 16:32
26	05:46 20:21	06:17 19:41	19:14 (06) 19:20 (06)	06:48 18:49	07:20 17:02	06:57 16:31
27	05:47 20:20	06:18 19:40	19:15 (06) 19:18 (06)	06:49 18:48	07:21 17:01	06:58 16:31
28	05:48 20:19	06:19 19:38	19:16 (06) 19:17 (06)	06:50 18:46	07:22 16:59	07:00 16:30
29	05:49 20:18	06:20 19:37	19:17 (06) 19:18 (06)	06:51 18:44	07:23 16:58	07:01 16:30
30	05:50 20:17	06:21 19:35	19:18 (06) 19:19 (06)	06:52 18:43	07:24 16:56	07:02 16:30
31	05:50 20:16	19:18 (06) 19:28 (06)	06:22 19:33	06:26 19:33	07:25 16:55	07:03 16:31
Ore potenziali eliofanía	460	428	375	345	297	287
Totale, caso peggiore	10	610	113	1071	2764	

**Legenda della tabella:**

Giorno del mese    Alba (hh:mm)    Tramonto (hh:mm)    Inizio ombreggiamento (hh:mm)    Fine ombreggiamento (hh:mm)    (WTG che provoca l'inizio dell'ombreggiamento)    (WTG che provoca l'ultimo ombreggiamento)

## SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: S-11-1138 - Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (19)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il dì, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno		
1	07:23 16:38	07:10 17:13	06:33 17:47	06:42 19:22	05:56 19:54	05:27 20:23	49	05:51 (09) 06:40 (09)
2	07:23 16:39	07:09 17:14	06:32 17:48	06:41 19:23	05:55 19:55	05:27 20:24	50	05:50 (09) 06:40 (09)
3	07:23 16:40	07:08 17:15	06:30 17:49	06:39 19:24	05:54 19:56	05:26 20:25	51	05:50 (09) 06:41 (09)
4	07:24 16:41	07:07 17:16	06:29 17:51	06:37 19:25	05:52 19:57	05:26 20:26	52	05:49 (09) 06:41 (09)
5	07:24 16:42	07:06 17:18	06:27 17:52	06:36 19:26	05:51 19:58	05:25 20:26	53	05:49 (09) 06:42 (09)
6	07:23 16:43	07:05 17:19	06:26 17:53	06:34 19:27	05:50 19:59	05:25 20:27	54	05:49 (09) 06:43 (09)
7	07:23 16:44	07:03 17:20	06:24 17:54	06:32 19:28	05:49 20:00	05:25 20:28	55	05:49 (09) 06:44 (09)
8	07:23 16:45	07:02 17:21	06:22 17:55	06:31 19:29	05:47 20:01	05:24 20:28	56	05:48 (09) 06:44 (09)
9	07:23 16:46	07:01 17:23	06:21 17:56	06:29 19:30	05:46 20:02	05:24 20:29	56	05:48 (09) 06:44 (09)
10	07:23 16:47	07:00 17:24	06:19 17:57	06:27 19:31	05:45 20:03	05:24 20:29	57	05:48 (09) 06:45 (09)
11	07:23 16:48	06:59 17:25	06:17 17:59	06:26 19:32	05:44 20:04	05:24 20:30	58	05:48 (09) 06:46 (09)
12	07:22 16:49	06:57 17:27	06:16 18:00	06:24 19:33	05:43 20:05	05:24 20:31	58	05:48 (09) 06:46 (09)
13	07:22 16:50	06:56 17:28	06:14 18:01	06:33 (10) 06:37 (10)	06:23 19:34	05:42 20:06	59	05:48 (09) 06:47 (09)
14	07:22 16:51	06:55 17:29	06:13 18:02	06:31 (10) 06:38 (10)	06:21 19:35	05:41 20:07	59	05:48 (09) 06:47 (09)
15	07:21 16:52	06:54 17:30	06:11 18:03	06:30 (10) 06:39 (10)	06:19 19:37	05:40 20:08	59	05:48 (09) 06:47 (09)
16	07:21 16:53	06:52 17:31	06:09 18:04	06:28 (10) 06:39 (10)	06:18 19:38	05:39 20:09	60	05:48 (09) 06:48 (09)
17	07:21 16:54	06:51 17:33	06:08 18:05	06:26 (10) 06:39 (10)	06:16 19:39	05:38 20:10	60	05:48 (09) 06:48 (09)
18	07:20 16:56	06:50 17:34	06:06 18:06	06:25 (10) 06:39 (10)	06:15 19:40	05:37 20:11	60	05:48 (09) 06:48 (09)
19	07:20 16:57	06:48 17:35	06:04 18:07	06:23 (10) 06:39 (10)	06:13 19:41	05:36 20:12	60	05:48 (09) 06:48 (09)
20	07:19 16:58	06:47 17:36	06:02 18:09	06:21 (10) 06:38 (10)	06:12 19:42	05:35 20:13	5	06:11 (09) 06:16 (09)
21	07:18 16:59	06:45 17:38	06:01 18:10	06:19 (10) 06:36 (10)	06:10 19:43	05:34 20:14	17	06:05 (09) 06:22 (09)
22	07:18 17:00	06:44 17:39	05:59 18:11	06:19 (10) 06:36 (10)	06:09 19:44	05:33 20:15	23	06:02 (09) 06:25 (09)
23	07:17 17:01	06:42 17:40	05:57 18:12	06:20 (10) 06:33 (10)	06:07 19:45	05:33 20:16	28	06:00 (09) 06:28 (09)
24	07:16 17:03	06:41 17:41	05:56 18:13	06:22 (10) 06:30 (10)	06:06 19:46	05:32 20:17	32	05:58 (09) 06:30 (09)
25	07:16 17:04	06:40 17:42	05:54 18:14	06:04 19:47	05:31 20:18	05:25 20:34	35	05:56 (09) 06:31 (09)
26	07:15 17:05	06:38 17:44	05:52 18:15	06:03 19:48	05:30 20:19	05:25 20:35	37	05:56 (09) 06:33 (09)
27	07:14 17:06	06:37 17:45	05:51 18:16	06:02 19:49	05:30 20:19	05:26 20:35	40	05:54 (09) 06:34 (09)
28	07:13 17:08	06:35 17:46	05:49 18:17	06:00 19:51	05:29 20:20	05:26 20:35	42	05:53 (09) 06:35 (09)
29	07:12 17:09		06:47 19:18	05:59 19:52	05:29 20:21	05:27 20:35	44	05:52 (09) 06:36 (09)
30	07:12 17:10		06:46 19:19	05:57 19:53	05:28 20:22	05:27 20:35	46	05:51 (09) 06:37 (09)
31	07:11 17:11		06:44 19:20		05:28 20:23	05:27 06:38 (09)	47	
Ore potenziali eliofania Totale, caso peggiore	297	297	369	399	449	453	1721	

Legenda della tabella:

Giorno del mese	Alba (hh:mm) Tramonto (hh:mm)	Minuti d'ombra	Inizio ombreggiamento (hh:mm) Fine ombreggiamento (hh:mm)	(WTG che provoca l'inizio dell'ombreggiamento) (WTG che provoca l'ultimo ombreggiamento)
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### SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: S-11-1138 - Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (19)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

- Il sole splende tutto il di, dall'alba al tramonto
- Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole
- La turbina è costantemente operativa

	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre	
1	05:27 20:34 58	05:52 (09) 06:50 (09)	05:52 20:15	06:23 19:32	06:53 18:41	07:13 (10) 16:54	07:03 16:29
2	05:28 20:34 57	05:53 (09) 06:50 (09)	05:53 20:14	06:24 19:30	06:54 18:39	07:15 (10) 16:53	07:04 16:29
3	05:28 20:34 57	05:53 (09) 06:50 (09)	05:53 20:13	06:25 19:29	06:55 18:38	06:30 16:51	07:05 16:29
4	05:29 20:34 56	05:54 (09) 06:50 (09)	05:54 20:12	06:26 19:27	06:56 18:36	06:31 16:50	07:06 16:29
5	05:30 20:34 55	05:54 (09) 06:49 (09)	05:55 20:11	06:27 19:25	06:57 18:34	06:32 16:49	07:07 16:28
6	05:30 20:34 54	05:55 (09) 06:49 (09)	05:56 20:10	06:28 19:24	06:58 18:33	06:34 16:48	07:08 16:28
7	05:31 20:33 54	05:55 (09) 06:49 (09)	05:57 20:08	06:29 19:22	06:59 18:31	06:35 16:47	07:09 16:28
8	05:31 20:33 53	05:56 (09) 06:49 (09)	05:58 20:07	06:30 19:20	07:00 18:29	06:36 16:46	07:10 16:28
9	05:32 20:33 52	05:57 (09) 06:49 (09)	05:59 20:06	06:31 19:19	07:01 18:28	06:37 16:45	07:11 16:28
10	05:33 20:32 50	05:57 (09) 06:47 (09)	06:00 20:05	06:32 19:17	07:03 18:26	06:38 16:44	07:11 16:28
11	05:33 20:32 49	05:58 (09) 06:47 (09)	06:01 20:03	06:33 19:15	07:04 18:24	06:40 16:43	07:12 16:28
12	05:34 20:31 48	05:59 (09) 06:47 (09)	06:02 20:02	06:34 19:13	07:05 18:23	06:41 16:42	07:13 16:28
13	05:35 20:31 47	06:00 (09) 06:47 (09)	06:03 20:01	06:35 19:12	07:06 18:21	06:42 16:41	07:14 16:28
14	05:36 20:30 45	06:00 (09) 06:45 (09)	06:04 19:59	06:36 19:10	07:07 18:20	06:43 16:40	07:15 16:29
15	05:36 20:30 43	06:02 (09) 06:45 (09)	06:05 19:58	06:37 19:08	07:08 18:18	06:44 16:39	07:15 16:29
16	05:37 20:29 41	06:03 (09) 06:44 (09)	06:07 19:56	06:38 19:07	07:09 18:17	06:46 16:38	07:16 16:29
17	05:38 20:28 39	06:04 (09) 06:43 (09)	06:08 19:55	06:39 19:05	07:10 18:15	06:47 16:37	07:17 16:29
18	05:39 20:28 36	06:05 (09) 06:41 (09)	06:09 19:54	06:40 19:03	07:11 18:13	06:48 16:36	07:18 16:30
19	05:40 20:27 33	06:07 (09) 06:40 (09)	06:10 19:52	06:41 19:01	07:12 07:10 (10) 07:17 (10)	06:49 16:36	07:18 16:30
20	05:40 20:26 30	06:09 (09) 06:39 (09)	06:11 19:51	06:42 19:00	07:14 07:07 (10) 07:19 (10)	06:50 16:35	07:19 16:30
21	05:41 20:26 26	06:11 (09) 06:37 (09)	06:12 19:49	06:43 18:58	07:15 07:05 (10) 07:21 (10)	06:52 16:34	07:19 16:31
22	05:42 20:25 20	06:14 (09) 06:34 (09)	06:13 19:48	06:44 18:56	07:16 07:04 (10) 07:21 (10)	06:53 16:34	07:20 16:31
23	05:43 20:24 13	06:18 (09) 06:31 (09)	06:14 19:46	06:45 18:55	07:17 07:22 (10) 07:22 (10)	06:54 16:33	07:20 16:32
24	05:44 20:23		06:15 19:45	06:46 18:53	07:18 07:06 (10) 07:22 (10)	06:55 16:32	07:21 16:32
25	05:45 20:22		06:16 19:43	06:47 18:51	06:19 07:07 (10) 07:22 (10)	06:56 16:32	07:21 16:33
26	05:46 20:21		06:17 19:41	06:48 18:49	06:21 07:08 (10) 07:21 (10)	06:57 16:31	07:22 16:34
27	05:47 20:20		06:18 19:40	06:49 18:48	06:22 07:09 (10) 07:21 (10)	06:58 16:31	07:22 16:34
28	05:48 20:19		06:19 19:38	06:50 18:46	06:23 07:10 (10) 07:20 (10)	07:00 16:30	07:22 16:35
29	05:49 20:18		06:20 19:37	06:51 18:44	06:24 07:11 (10) 07:19 (10)	07:01 16:30	07:23 16:36
30	05:50 20:17		06:21 19:35	06:52 18:43	06:25 07:12 (10) 07:17 (10)	07:02 16:30	07:23 16:36
31	05:51 20:16		06:22 19:33		06:26 16:55		07:23 16:37
Ore potenziali eliofanìa	460		428	375	345	297	287
Totale, caso peggiore	1016			148	2		

Legenda della tabella:

Giorno del mese    Alba (hh:mm)    Tramonto (hh:mm)    Minuti d'ombra    Inizio ombreggiamento (hh:mm)    Fine ombreggiamento (hh:mm)    (WTG che provoca l'inizio dell'ombreggiamento)    (WTG che provoca l'ultimo ombreggiamento)

## SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara NordRecettore d'ombra: S-11-1192 - Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (20 Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre	
1	07:23 16:38	07:10 17:13	06:33 17:47	06:42 19:21	07:01 (10) 25 07:26 (10)	05:56 19:54	05:27 20:23	05:27 20:34	05:52 20:15	06:23 19:32	06:53 18:41	06:28 16:54	07:03 16:29
2	07:23 16:39	07:09 17:14	06:32 17:48	06:41 19:23	07:00 (10) 24 07:24 (10)	05:55 19:55	05:27 20:24	05:28 20:34	05:53 20:14	06:24 19:30	06:54 18:39	06:29 16:53	07:04 16:29
3	07:23 16:40	07:08 17:15	06:30 17:49	06:39 19:24	07:01 (10) 22 07:23 (10)	05:54 19:56	05:26 20:25	05:28 20:34	05:53 20:13	06:25 19:29	06:55 18:38	06:30 16:51	07:05 16:29
4	07:24 16:41	07:07 17:16	06:29 17:51	06:37 19:25	07:02 (10) 20 07:22 (10)	05:52 19:57	05:26 20:26	05:29 20:34	05:54 20:12	06:26 19:27	06:56 18:36	06:31 16:50	07:06 16:28
5	07:24 16:42	07:06 17:18	06:27 17:52	06:36 19:26	07:03 (10) 17 07:20 (10)	05:51 19:58	05:25 20:26	05:30 20:34	05:55 20:11	06:27 19:25	06:57 18:34	06:32 16:49	07:07 16:28
6	07:23 16:43	07:04 17:19	06:26 17:53	06:34 19:27	07:06 (10) 12 07:18 (10)	05:50 19:59	05:25 20:27	05:30 20:34	05:56 20:10	06:28 19:24	06:58 18:33	06:34 16:48	07:08 16:28
7	07:23 16:44	07:03 17:20	06:24 17:54	06:32 19:28	07:18 (10) 20:00	05:49 20:28	05:25 20:33	05:31 20:33	05:57 20:08	06:29 19:22	06:59 18:31	06:35 16:47	07:09 16:28
8	07:23 16:45	07:02 17:21	06:22 17:55	06:31 19:29	07:02 (10) 20:01	05:48 20:28	05:24 20:33	05:31 20:33	05:58 20:07	06:30 19:20	06:56 18:29	06:36 16:46	07:10 16:28
9	07:23 16:46	07:01 17:23	06:21 17:56	06:29 19:30	07:01 (10) 20:02	05:47 20:29	05:24 20:33	05:32 20:06	05:59 19:19	06:31 22 07:17 (10)	06:55 18:28	07:01 16:45	07:11 16:28
10	07:23 16:47	07:00 17:24	06:19 17:57	06:27 19:31	07:00 (10) 20:03	05:46 20:29	05:24 20:32	06:00 20:05	06:32 19:17	07:03 24 07:18 (10)	07:00 18:26	06:38 16:44	07:11 16:28
11	07:23 16:48	06:59 17:25	06:17 17:59	06:26 19:32	07:00 (10) 20:04	05:45 20:30	05:24 20:32	06:01 20:03	06:33 19:15	07:04 25 07:18 (10)	07:04 18:24	06:40 16:43	07:12 16:28
12	07:22 16:49	06:57 17:26	06:16 18:00	06:24 19:33	07:00 (10) 20:05	05:44 20:31	05:24 20:31	06:02 20:02	06:34 19:13	07:05 24 07:18 (10)	07:05 18:23	06:41 16:42	07:13 16:28
13	07:22 16:50	06:56 17:28	06:14 18:01	06:23 19:34	07:00 (10) 20:06	05:42 20:31	05:24 20:31	06:03 20:01	06:35 19:12	07:06 23 07:18 (10)	07:06 18:21	06:42 16:41	07:14 16:28
14	07:22 16:51	06:55 17:29	06:13 18:02	06:21 19:35	07:00 (10) 20:07	05:41 20:31	05:24 20:30	06:04 19:59	06:36 19:10	07:07 22 07:18 (10)	07:07 18:20	06:43 16:40	07:15 16:29
15	07:21 16:52	06:54 17:30	06:11 18:03	06:19 19:37	07:00 (10) 20:08	05:40 20:32	05:24 20:30	06:05 19:58	06:37 19:08	07:08 20 07:17 (10)	07:08 18:18	06:44 16:39	07:15 16:29
16	07:21 16:53	06:52 17:31	06:09 18:04	06:18 19:38	07:00 (10) 20:09	05:39 20:32	05:24 20:29	06:06 19:56	06:38 19:07	07:09 19 07:17 (10)	07:09 18:17	06:46 16:38	07:16 16:29
17	07:21 16:54	06:51 17:33	06:08 18:05	06:16 19:39	07:00 (10) 20:10	05:38 20:33	05:24 20:28	06:08 19:55	06:39 19:05	07:10 17 07:16 (10)	07:10 18:15	06:47 16:37	07:17 16:29
18	07:20 16:56	06:50 17:34	06:06 18:06	06:15 19:40	07:00 (10) 20:11	05:37 20:33	05:24 20:28	06:09 19:54	06:40 19:03	07:11 15 07:15 (10)	07:11 18:13	06:48 16:36	07:18 16:30
19	07:20 16:57	06:48 17:35	06:04 18:07	06:13 19:41	07:00 (10) 20:12	05:36 20:33	05:24 20:27	06:10 19:52	06:41 19:01	07:12 12 07:13 (10)	07:12 18:12	06:49 16:36	07:18 16:30
20	07:19 16:58	06:47 17:36	06:02 18:09	06:12 19:42	07:00 (10) 20:13	05:35 20:34	05:24 20:26	06:11 19:51	06:42 19:00	07:13 10 07:12 (10)	07:14 18:10	06:50 16:35	07:19 16:30
21	07:18 16:59	06:45 17:38	06:01 18:10	06:10 19:43	07:00 (10) 20:14	05:34 20:34	05:24 20:26	06:12 19:49	06:43 18:58	07:14 6 07:09 (10)	07:15 18:09	06:52 16:34	07:19 16:31
22	07:18 17:00	06:44 17:39	05:59 18:11	06:09 19:44	07:00 (10) 20:15	05:33 20:34	05:24 20:25	06:13 19:48	06:44 18:56	07:15 2 07:06 (10)	07:16 18:07	06:53 16:34	07:20 16:31
23	07:17 17:01	06:42 17:40	05:57 18:12	06:07 19:45	07:00 (10) 20:16	05:32 20:34	05:24 20:24	06:14 19:46	06:45 18:55	07:16 07:17 (10)	07:17 18:06	06:54 16:33	07:20 16:32
24	07:16 17:03	06:41 17:41	05:56 18:13	06:06 19:46	07:00 (10) 20:17	05:32 20:34	05:24 20:23	06:15 19:45	06:46 18:53	07:18 18:05	07:18 16:32	06:55 16:32	07:21 16:32
25	07:16 17:04	06:39 17:42	05:54 18:14	06:04 19:47	07:00 (10) 20:18	05:31 20:34	05:25 20:22	06:16 19:43	06:47 18:51	07:19 16:19	07:19 16:32	06:56 16:32	07:21 16:33
26	07:15 17:05	06:38 17:44	05:52 18:15	06:03 19:48	07:00 (10) 20:19	05:30 20:35	05:25 20:35	06:17 19:41	06:48 18:49	07:20 16:21	07:20 16:31	06:57 16:31	07:22 16:34
27	07:14 17:06	06:36 17:45	05:51 18:16	06:02 19:49	07:00 (10) 20:20	05:29 20:35	05:26 20:35	06:18 19:40	06:49 18:48	07:21 16:22	07:21 16:31	06:58 16:34	07:22 16:34
28	07:13 17:08	06:35 17:46	05:49 18:17	06:00 19:50	07:00 (10) 20:21	05:29 20:35	05:26 20:35	06:19 19:38	06:50 18:46	07:22 16:23	07:22 16:30	06:59 16:30	07:22 16:35
29	07:12 17:09	06:47 19:18	06:07 21 07:27 (10)	05:59 19:52	07:00 (10) 20:22	05:29 20:35	05:27 20:35	06:20 19:37	06:51 18:44	07:23 16:24	07:23 16:30	06:57 16:30	07:23 16:36
30	07:12 17:10	06:46 19:19	06:06 23 07:27 (10)	05:57 19:53	07:00 (10) 20:23	05:28 20:35	05:27 20:35	06:21 19:35	06:52 18:43	07:24 16:25	07:24 16:30	06:58 16:30	07:23 16:36
31	07:11 17:11	06:44 19:20	06:04 24 07:26 (10)	05:59 19:54	07:00 (10) 20:24	05:28 20:35	05:26 20:35	06:22 19:33	06:51 18:43	07:25 16:26	07:25 16:35	06:59 16:31	07:23 16:37
Ore potenziali eliofanìa	297	297	369	399	449	453	460	428	375	290	345	297	287
Totale, caso peggiore			162	120									

Legenda della tabella:

Giorno del mese    Alba (hh:mm)    Inizio ombreggiamento (hh:mm)    (WTG che provoca l'inizio dell'ombreggiamento)  
 Tramonto (hh:mm)Minuti d'ombra    Fine ombreggiamento (hh:mm)    (WTG che provoca l'ultimo ombreggiamento)

## SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: S-12-2 - Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (27)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Gennaio		Febbraio		Marzo		Aprile		Maggio		Giugno	
1	07:23	15:45 (09)	07:10	16:04 (09)	06:33	06:42	18:29 (08)	05:56	18:13 (08)	05:27	19:40 (06)	
	16:38	27 16:12 (09)	17:13	15 16:19 (09)	17:47	19:21	29 18:58 (08)	19:54	46 18:59 (08)	20:23	10 19:50 (06)	
2	07:23	15:45 (09)	07:09	16:08 (09)	06:32	06:41	18:26 (08)	05:55	18:14 (08)	05:26	19:43 (06)	
	16:39	28 16:13 (09)	17:14	7 16:15 (09)	17:48	19:23	34 19:00 (08)	19:55	45 18:59 (08)	20:24	6 19:49 (06)	
3	07:23	15:46 (09)	07:08		06:30	06:39	18:24 (08)	05:53	18:16 (08)	05:26		
	16:40	28 16:14 (09)	17:15		17:49	19:24	37 19:01 (08)	19:56	42 18:58 (08)	20:25		
4	07:23	15:46 (09)	07:07		06:29	06:37	18:22 (08)	05:52	18:17 (08)	05:26		
	16:41	29 16:15 (09)	17:16		17:50	19:25	41 19:03 (08)	19:57	40 18:57 (08)	20:26		
5	07:23	15:46 (09)	07:06		06:27	06:36	18:20 (08)	05:51	18:18 (08)	05:25		
	16:42	30 16:16 (09)	17:18		17:52	19:26	44 19:04 (08)	19:58	37 18:55 (08)	20:26		
6	07:23	15:47 (09)	07:04		06:26	06:34	18:18 (08)	05:50	18:19 (08)	05:25		
	16:43	30 16:17 (09)	17:19		17:53	19:27	47 19:05 (08)	19:59	34 18:53 (08)	20:27		
7	07:23	15:46 (09)	07:03		06:24	06:32	18:17 (08)	05:48	18:21 (08)	05:25		
	16:44	31 16:17 (09)	17:20		17:54	19:28	49 19:06 (08)	20:00	30 18:51 (08)	20:28		
8	07:23	15:46 (09)	07:02		06:22	06:31	18:16 (08)	05:47	18:23 (08)	05:24		
	16:45	32 16:18 (09)	17:21		17:55	19:29	50 19:06 (08)	20:01	27 18:50 (08)	20:28		
9	07:23	15:47 (09)	07:01		06:21	06:29	18:15 (08)	05:46	18:25 (08)	05:24		
	16:46	33 16:20 (09)	17:23		17:56	19:30	52 19:07 (08)	20:02	22 18:47 (08)	20:29		
10	07:23	15:47 (09)	07:00		06:19	06:27	18:14 (08)	05:45	18:28 (08)	05:24		
	16:47	34 16:21 (09)	17:24		17:57	19:31	54 19:08 (08)	20:03	19 19:40 (06)	20:29		
11	07:23	15:47 (09)	06:59		06:17	06:26	18:13 (08)	05:44	18:32 (08)	05:24		
	16:48	34 16:21 (09)	17:25		17:58	19:32	54 19:07 (08)	20:04	12 19:41 (06)	20:30		
12	07:22	15:48 (09)	06:57		06:16	06:24	18:13 (08)	05:43	19:36 (06)	05:24		
	16:49	35 16:23 (09)	17:26		18:00	19:33	55 19:08 (08)	20:05	6 19:42 (06)	20:30		
13	07:22	15:48 (09)	06:56		06:14	06:23	18:11 (08)	05:42	19:35 (06)	05:24		
	16:50	36 16:24 (09)	17:28		18:01	19:34	57 19:08 (08)	20:06	7 19:42 (06)	20:31		
14	07:22	15:48 (09)	06:55		06:12	06:21	18:11 (08)	05:41	19:34 (06)	05:23		
	16:51	36 16:24 (09)	17:29		18:02	19:35	58 19:09 (08)	20:07	9 19:43 (06)	20:31		
15	07:21	15:49 (09)	06:54		06:11	06:19	18:10 (08)	05:40	19:34 (06)	05:23		
	16:52	36 16:25 (09)	17:30		18:03	19:36	58 19:08 (08)	20:08	10 19:44 (06)	20:32		
16	07:21	15:49 (09)	06:52		06:09	06:18	18:11 (08)	05:39	19:33 (06)	05:23		
	16:53	36 16:25 (09)	17:31		18:04	19:38	58 19:09 (08)	20:09	12 19:45 (06)	20:32		
17	07:21	15:50 (09)	06:51		06:07	06:16	18:10 (08)	05:38	19:33 (06)	05:24		
	16:54	36 16:26 (09)	17:33		18:05	19:39	58 19:08 (08)	20:10	13 19:46 (06)	20:33		
18	07:20	15:50 (09)	06:50		06:06	06:15	18:10 (08)	05:37	19:33 (06)	05:24		
	16:55	35 16:25 (09)	17:34		18:06	19:40	58 19:08 (08)	20:11	14 19:47 (06)	20:33		
19	07:20	15:51 (09)	06:48		06:04	06:13	18:09 (08)	05:36	19:33 (06)	05:24		
	16:57	35 16:26 (09)	17:35		18:07	19:41	59 19:08 (08)	20:12	14 19:47 (06)	20:33		
20	07:19	15:51 (09)	06:47		06:02	06:12	18:10 (08)	05:35	19:34 (06)	05:24		
	16:58	35 16:26 (09)	17:36		18:08	19:42	58 19:08 (08)	20:13	15 19:49 (06)	20:34		
21	07:18	15:51 (09)	06:45		06:01	06:10	18:09 (08)	05:34	19:34 (06)	05:24		
	16:59	35 16:26 (09)	17:37		18:10	19:43	58 19:07 (08)	20:14	16 19:50 (06)	20:34		
22	07:18	15:52 (09)	06:44		05:59	06:09	18:10 (08)	05:33	19:34 (06)	05:24		
	17:00	34 16:26 (09)	17:39		18:11	19:44	57 19:07 (08)	20:15	16 19:50 (06)	20:34		
23	07:17	15:53 (09)	06:42		05:57	06:07	18:09 (08)	05:33	19:34 (06)	05:24		
	17:01	33 16:26 (09)	17:40		18:12	19:45	57 19:06 (08)	20:16	17 19:51 (06)	20:34		
24	07:16	15:53 (09)	06:41		05:56	06:06	18:10 (08)	05:32	19:35 (06)	05:25		
	17:03	33 16:26 (09)	17:41		18:13	19:46	56 19:06 (08)	20:17	17 19:52 (06)	20:34		
25	07:16	15:54 (09)	06:39		05:54	06:04	18:10 (08)	05:31	19:35 (06)	05:25		
	17:04	31 16:25 (09)	17:42		18:14	19:47	54 19:04 (08)	20:18	18 19:53 (06)	20:34		
26	07:15	15:54 (09)	06:38		05:52	06:03	18:11 (08)	05:30	19:36 (06)	05:25		
	17:05	31 16:25 (09)	17:43		18:15	19:48	53 19:04 (08)	20:19	18 19:54 (06)	20:35		
27	07:14	15:56 (09)	06:36		05:51	06:02	18:11 (08)	05:30	19:36 (06)	05:26		
	17:06	29 16:25 (09)	17:45		18:16	19:49	53 19:04 (08)	20:19	18 19:54 (06)	20:35		
28	07:13	15:57 (09)	06:35		05:49	06:00	18:11 (08)	05:29	19:36 (06)	05:26		
	17:08	27 16:24 (09)	17:46		18:17	19:50	51 19:02 (08)	20:20	17 19:53 (06)	20:35		
29	07:12	15:59 (09)			06:47	05:59	18:12 (08)	05:29	19:38 (06)	05:26		
	17:09	24 16:23 (09)			19:18	19:52	50 19:02 (08)	20:21	15 19:53 (06)	20:35		
30	07:12	16:00 (09)			06:46	05:57	18:13 (08)	05:28	19:38 (06)	05:27		
	17:10	22 16:22 (09)			19:19	19:53	48 19:01 (08)	20:22	13 19:51 (06)	20:35		
31	07:11	16:02 (09)			06:44	05:55		05:27	19:40 (06)			
	17:11	19 16:21 (09)			19:20	23 18:55 (08)		20:23	11 19:51 (06)			
Ore potenziali eliofania	297	297			369	399		449		453		
Totale, caso peggiore	974	22			35	1547		630		16		

## Legenda della tabella:

Giorno del mese Alba (hh:mm) Tramonto (hh:mm) Minuti d'ombra Inizio ombreggiamento (hh:mm) Fine ombreggiamento (hh:mm) (WTG che provoca l'inizio dell'ombreggiamento) (WTG che provoca l'ultimo ombreggiamento)



SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara NordRecettore d'ombra: S-12-280 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (25)
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

- Il sole splende tutto il di, dall'alba al tramonto
Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole
La turbina è costantemente operativa

Table with 13 columns for months from January to December and multiple rows of time intervals (hh:mm) for each day. Includes summary rows at the bottom for 'Ore potenziali eliofanía' and 'Totale, caso peggiore' with values like 297, 765, 369, 399, 449, 453, 460, 428, 375, 345, 297, 304, 1365.

Legenda della tabella:

- Giorno del mese
Alba (hh:mm)
Tramonto (hh:mm)Minuti d'ombra
Inizio ombreggiamento (hh:mm)
Fine ombreggiamento (hh:mm)
(WTG che provoca l'inizio dell'ombreggiamento)
(WTG che provoca l'ultimo ombreggiamento)



## SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: S-12-37 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (26)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il dì, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno	
1	07:23 16:38	07:10 17:13	06:33 17:47	06:42 19:21	18:28 (10) 19:00 (10)	05:56 19:54	18:20 (10) 20:23
2	07:23 16:39	07:09 17:14	06:32 17:48	06:41 19:22	18:26 (10) 19:01 (10)	05:55 19:55	18:22 (10) 20:24
3	07:23 16:40	07:08 17:15	06:30 17:49	06:39 19:24	18:23 (10) 19:02 (10)	05:53 19:56	18:24 (10) 20:25
4	07:23 16:41	07:07 17:16	06:29 17:50	06:37 19:25	18:22 (10) 19:03 (10)	05:52 19:57	18:27 (10) 20:26
5	07:23 16:42	07:05 17:18	06:27 17:52	06:36 19:26	18:21 (10) 19:04 (10)	05:51 19:58	18:30 (10) 20:26
6	07:23 16:43	07:04 17:19	06:25 17:53	06:34 19:27	18:19 (10) 19:05 (10)	05:50 19:59	18:45 (10) 20:27
7	07:23 16:44	07:03 17:20	06:24 17:54	06:32 19:28	18:18 (10) 19:06 (10)	05:48 20:00	20:28
8	07:23 16:45	07:02 17:21	06:22 17:55	06:31 19:29	18:17 (10) 19:07 (10)	05:47 20:01	20:28
9	07:23 16:46	07:01 17:23	06:21 17:56	06:29 19:30	18:17 (10) 19:08 (10)	05:46 20:02	05:24 20:29
10	07:23 16:47	07:00 17:24	06:19 17:57	06:27 19:31	18:16 (10) 19:07 (10)	05:45 20:03	05:24 20:29
11	07:23 16:48	06:59 17:25	06:17 17:58	06:26 19:32	18:15 (10) 19:07 (10)	05:44 20:04	05:24 20:30
12	07:22 16:49	06:57 17:26	06:16 18:00	06:24 19:33	18:15 (10) 19:08 (10)	05:43 20:05	05:24 20:30
13	07:22 16:50	06:56 17:28	06:14 18:01	06:23 19:34	18:14 (10) 19:07 (10)	05:42 20:06	05:24 20:31
14	07:22 16:51	06:55 17:29	06:12 18:02	06:21 19:35	18:14 (10) 19:08 (10)	05:41 20:07	05:23 20:31
15	07:21 16:52	06:53 17:30	06:11 18:03	06:19 19:36	18:13 (10) 19:07 (10)	05:40 20:08	05:23 20:32
16	07:21 16:53	06:52 17:31	06:09 18:04	06:18 19:38	18:13 (10) 19:07 (10)	05:39 20:09	05:23 20:32
17	07:20 16:54	06:51 17:33	06:07 18:05	06:16 19:39	18:13 (10) 19:07 (10)	05:38 20:10	05:23 20:33
18	07:20 16:55	06:49 17:34	06:06 18:06	06:15 19:40	18:12 (10) 19:06 (10)	05:37 20:11	05:24 20:33
19	07:19 16:57	06:48 17:35	06:04 18:07	06:13 19:41	18:13 (10) 19:06 (10)	05:36 20:12	05:24 20:33
20	07:19 16:58	06:47 17:36	06:02 18:08	06:12 19:42	18:13 (10) 19:06 (10)	05:35 20:13	05:24 20:33
21	07:18 16:59	06:45 17:37	06:01 18:09	06:10 19:43	18:13 (10) 19:04 (10)	05:34 20:14	05:24 20:34
22	07:18 17:00	06:44 17:39	05:59 18:11	06:09 19:44	18:14 (10) 19:04 (10)	05:33 20:15	05:24 20:34
23	07:17 17:01	06:42 17:40	05:57 18:12	06:07 19:45	18:14 (10) 19:03 (10)	05:33 20:16	05:24 20:34
24	07:16 17:03	06:41 17:41	05:56 18:13	06:06 19:46	18:15 (10) 19:03 (10)	05:32 20:17	05:25 20:34
25	07:16 17:04	06:39 17:42	05:54 18:14	06:04 19:47	18:15 (10) 19:01 (10)	05:31 20:18	05:25 20:34
26	07:15 17:05	06:38 17:43	05:52 18:15	06:03 19:48	18:16 (10) 19:00 (10)	05:30 20:18	05:25 20:34
27	07:14 17:06	06:36 17:45	05:51 18:16	06:01 19:49	18:17 (10) 19:00 (10)	05:30 20:19	05:26 20:35
28	07:13 17:08	06:35 17:46	05:49 18:17	06:00 19:50	18:17 (10) 18:58 (10)	05:29 20:20	05:26 20:35
29	07:12 17:09		06:47 19:18	18:39 (10) 18:52 (10)	05:59 19:51	18:18 (10) 18:57 (10)	05:28 20:21
30	07:11 17:10		06:46 19:19	18:34 (10) 18:56 (10)	05:57 19:53	18:20 (10) 18:56 (10)	05:28 20:22
31	07:11 17:11		06:44 19:20	18:30 (10) 18:58 (10)		05:27 20:23	05:27 20:34
Ore potenziali eliofanìa Totale, caso peggiore	297	297	369	399	449	453	
			63	1417	125		

Legenda della tabella:

Giorno del mese	Alba (hh:mm) Tramonto (hh:mm)	Minuti d'ombra	Inizio ombreggiamento (hh:mm) Fine ombreggiamento (hh:mm)	(WTG che provoca l'inizio dell'ombreggiamento) (WTG che provoca l'ultimo ombreggiamento)
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### SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: S-12-37 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (26) Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il dì, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre
1	05:27 20:34	05:51 20:15	06:23 19:32	18:13 (10) 19:06 (10)	06:53 18:41	06:27 16:54
2	05:28 20:34	05:52 20:14	06:24 19:30	18:14 (10) 19:05 (10)	06:54 18:39	06:29 16:53
3	05:28 20:34	05:53 20:13	06:25 19:28	18:14 (10) 19:05 (10)	06:55 18:37	06:30 16:51
4	05:29 20:34	05:54 20:12	06:26 19:27	18:14 (10) 19:04 (10)	06:56 18:36	06:31 16:50
5	05:29 20:34	05:55 20:11	06:27 19:25	18:14 (10) 19:03 (10)	06:57 18:34	06:32 16:49
6	05:30 20:33	05:56 20:09	06:28 19:23	18:15 (10) 19:01 (10)	06:58 18:32	06:33 16:48
7	05:31 20:33	05:57 20:08	18:42 (10) 06:29	18:16 (10) 19:22	06:59 18:31	06:35 16:47
8	05:31 20:33	05:58 20:07	18:38 (10) 06:30	18:59 (10) 19:20	07:00 18:29	06:36 16:46
9	05:32 20:32	05:59 20:06	18:35 (10) 06:31	18:17 (10) 19:18	07:01 18:28	06:37 16:45
10	05:33 20:32	06:00 20:04	18:32 (10) 06:32	18:56 (10) 19:17	07:02 18:26	06:38 16:44
11	05:33 20:32	06:01 20:03	18:30 (10) 06:33	18:20 (10) 19:15	07:04 18:24	06:40 16:42
12	05:34 20:31	06:02 20:02	18:29 (10) 06:34	18:53 (10) 19:13	07:05 18:23	06:41 16:42
13	05:35 20:31	06:03 20:00	18:27 (10) 06:35	18:22 (10) 19:12	07:06 18:21	06:42 16:41
14	05:36 20:30	06:04 19:59	18:26 (10) 06:36	18:47 (10) 19:10	07:07 18:20	06:43 16:40
15	05:36 20:30	06:05 19:58	18:24 (10) 06:37	18:28 (10) 19:08	07:08 18:18	06:44 16:39
16	05:37 20:29	06:06 19:56	18:23 (10) 06:38	19:06 (10) 19:07	07:09 18:16	06:46 16:38
17	05:38 20:28	06:07 19:55	18:22 (10) 06:39	19:07 (10) 19:05	07:10 18:15	06:47 16:37
18	05:39 20:28	06:08 19:53	18:21 (10) 06:40	19:07 (10) 19:03	07:11 18:13	06:48 16:36
19	05:40 20:27	06:09 19:52	18:20 (10) 06:41	18:21 (10) 19:01	07:12 18:12	06:49 16:36
20	05:40 20:26	06:10 19:50	18:19 (10) 06:42	19:08 (10) 19:00	07:13 18:10	06:50 16:35
21	05:41 20:25	06:11 19:49	18:19 (10) 06:43	19:08 (10) 18:58	07:15 18:09	06:51 16:34
22	05:42 20:25	06:12 19:47	18:18 (10) 06:44	18:19 (10) 18:56	07:16 18:07	06:53 16:33
23	05:43 20:24	06:13 19:46	18:17 (10) 06:45	19:09 (10) 18:54	07:17 18:06	06:54 16:33
24	05:44 20:23	06:14 19:44	18:17 (10) 06:46	19:09 (10) 18:53	07:18 18:05	06:55 16:32
25	05:45 20:22	06:15 19:43	18:16 (10) 06:47	19:10 (10) 18:51	06:19 17:03	06:56 16:32
26	05:46 20:21	06:17 19:41	18:16 (10) 06:48	19:10 (10) 18:49	06:20 17:02	06:57 16:31
27	05:47 20:20	06:18 19:40	18:15 (10) 06:49	19:09 (10) 18:48	06:22 17:00	06:58 16:31
28	05:48 20:19	06:19 19:38	18:15 (10) 06:50	19:09 (10) 18:46	06:23 16:59	06:59 16:30
29	05:49 20:18	06:20 19:37	18:15 (10) 06:51	19:09 (10) 18:44	06:24 16:58	07:00 16:30
30	05:49 20:17	06:21 19:35	18:15 (10) 06:52	19:08 (10) 18:43	06:25 16:56	07:02 16:29
31	05:50 20:16	06:22 19:33	18:13 (10) 06:53	19:07 (10) 18:41	06:26 16:55	07:03 16:28
Ore potenziali eliofania	460	428	375	345	297	287
Totale, caso peggiore		1073	559			

Legenda della tabella:

Giorno del mese	Alba (hh:mm) Tramonto (hh:mm)	Minuti d'ombra	Inizio ombreggiamento (hh:mm) Fine ombreggiamento (hh:mm)	(WTG che provoca l'inizio dell'ombreggiamento) (WTG che provoca l'ultimo ombreggiamento)
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SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: S-12-43 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (28)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:  
Il sole splende tutto il di, dall'alba al tramonto  
Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole  
La turbina è costantemente operativa

Table with columns for months (Luglio to Dicembre) and rows for wind turbine positions (1 to 31). Each cell contains time intervals and potential shadow hours. Includes a summary row for 'Ore potenziali eliofanìa Totale, caso peggiore'.

Legenda della tabella:

Giorno del mese    Alba (hh:mm)    Tramonto (hh:mm)    Minuti d'ombra    Inizio ombreggiamento (hh:mm)    Fine ombreggiamento (hh:mm)    (WTG che provoca l'inizio dell'ombreggiamento)    (WTG che provoca l'ultimo ombreggiamento)

Progetto:

Stornara Nord

Utente autorizzato:

Studio Tecnico BFP s.r.l.

Via Napoli 363/I

IT-70123 Bari

+39 080 5046361

Antonio Crisafulli / crisafulli@studiobfp.com

Redatto il:

01/08/2019 13:28/3.3.261

### SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara Nord Recettore d'ombra: S-12-490 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (22) Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre	
1	07:23 16:38	07:10 17:13	06:33 17:47	06:42 19:21	05:56 19:54	05:27 20:23	05:27 20:34	19:59 (07) 20:09 (07)	05:52 20:15	06:23 19:32	06:53 18:41	06:28 16:54	07:03 16:29
2	07:23 16:39	07:09 17:14	06:32 17:48	06:41 19:23	05:55 19:55	05:27 20:24	05:28 20:34	20:00 (07) 20:14	05:52 20:14	06:24 19:30	06:54 18:39	06:29 16:53	07:04 16:29
3	07:23 16:40	07:08 17:15	06:30 17:49	06:39 19:24	05:54 19:56	05:26 20:25	05:28 20:34	19:59 (07) 20:00 (07)	05:53 20:09 (07)	06:25 20:13	06:55 18:38	06:30 16:51	07:05 16:29
4	07:24 16:41	07:07 17:16	06:29 17:51	06:37 19:25	05:52 19:57	05:26 20:26	05:29 20:34	19:57 (07) 20:01 (07)	05:49 20:12	05:26 19:27	06:56 18:36	06:31 16:50	07:06 16:28
5	07:24 16:42	07:06 17:18	06:27 17:52	06:36 19:26	05:51 19:58	05:25 20:26	05:30 20:34	19:57 (07) 20:01 (07)	05:55 20:11	06:27 19:25	06:57 18:34	06:32 16:49	07:07 16:28
6	07:23 16:43	07:04 17:19	06:26 17:53	06:34 19:27	05:50 19:59	05:25 20:27	05:30 20:34	19:56 (07) 20:02 (07)	05:56 20:10	06:28 19:24	06:58 18:33	06:34 16:48	07:08 16:28
7	07:23 16:44	07:03 17:20	06:24 17:54	06:32 19:28	05:49 20:00	05:25 20:28	05:31 20:33	19:56 (07) 20:03 (07)	05:57 20:08	06:29 19:22	06:59 18:31	06:35 16:47	07:09 16:28
8	07:23 16:45	07:02 17:21	06:22 17:55	06:31 19:29	05:47 20:01	05:24 20:28	05:31 20:33	19:55 (07) 20:03 (07)	05:58 20:07	06:30 19:20	07:00 18:29	06:36 16:46	07:10 16:28
9	07:23 16:46	07:01 17:23	06:21 17:56	06:29 19:30	05:46 20:02	05:24 20:29	05:32 20:33	19:55 (07) 20:03 (07)	05:59 20:06	06:31 19:19	07:01 18:28	06:37 16:45	07:11 16:28
10	07:23 16:47	07:00 17:24	06:19 17:57	06:27 19:31	05:45 20:03	05:24 20:29	05:33 20:32	19:55 (07) 20:05 (07)	06:00 20:05	06:32 19:17	07:03 18:26	06:38 16:44	07:11 16:28
11	07:23 16:48	06:59 17:25	06:17 18:00	06:26 19:32	05:44 20:04	05:24 20:30	05:33 20:32	19:55 (07) 20:05 (07)	06:01 20:03	06:33 19:15	07:04 18:24	06:40 16:43	07:12 16:28
12	07:22 16:49	06:57 17:26	06:16 18:00	06:24 19:33	05:43 20:05	05:24 20:31	05:34 20:31	19:55 (07) 20:05 (07)	06:02 20:02	06:34 19:13	07:05 18:23	06:41 16:42	07:13 16:28
13	07:22 16:50	06:56 17:28	06:14 18:01	06:23 19:34	05:42 20:06	05:24 20:31	05:35 20:31	19:55 (07) 20:06 (07)	06:03 20:01	06:35 19:12	07:06 18:21	06:42 16:41	07:14 16:28
14	07:22 16:51	06:55 17:29	06:13 18:02	06:21 19:35	05:41 20:07	05:24 20:31	05:36 20:30	19:55 (07) 20:06 (07)	06:04 19:59	06:36 19:10	07:07 18:20	06:43 16:40	07:15 16:29
15	07:21 16:52	06:54 17:30	06:11 18:03	06:20 19:37	05:40 20:08	05:24 20:32	05:36 20:30	19:55 (07) 20:06 (07)	06:05 19:58	06:37 19:08	07:08 18:16	06:44 16:39	07:15 16:29
16	07:21 16:53	06:52 17:31	06:09 18:04	06:18 19:38	05:39 20:09	05:24 20:32	05:37 20:29	19:55 (07) 20:07 (07)	06:06 19:56	06:38 19:07	07:06 18:17	06:46 16:38	07:16 16:29
17	07:21 16:54	06:51 17:33	06:08 18:05	06:16 19:39	05:38 20:10	05:24 20:33	05:38 20:28	19:55 (07) 20:07 (07)	06:07 19:55	06:39 19:05	07:04 18:23	06:47 16:37	07:17 16:29
18	07:20 16:56	06:50 17:34	06:06 18:06	06:15 19:40	05:37 20:11	05:24 20:33	05:39 20:28	19:55 (07) 20:07 (07)	06:09 19:54	06:40 19:03	07:03 18:24	06:48 16:36	07:18 16:30
19	07:20 16:57	06:48 17:35	06:04 18:07	06:13 19:41	05:36 20:12	05:24 20:33	05:40 20:27	19:55 (07) 20:07 (07)	06:10 19:52	06:41 19:01	07:02 18:25	06:49 16:36	07:18 16:30
20	07:19 16:58	06:47 17:36	06:02 18:08	06:12 19:42	05:35 20:13	05:24 20:34	05:41 20:26	19:55 (07) 20:08 (07)	06:11 19:51	06:42 19:00	07:02 18:26	06:50 16:35	07:19 16:30
21	07:18 16:59	06:45 17:38	06:01 18:10	06:10 19:43	05:34 20:14	05:24 20:34	05:41 20:26	19:56 (07) 20:09 (07)	06:12 19:49	06:43 18:58	07:03 18:27	06:52 16:34	07:19 16:31
22	07:18 17:00	06:44 17:39	05:59 18:11	06:09 19:44	05:33 20:15	05:24 20:34	05:42 20:25	19:56 (07) 20:09 (07)	06:13 19:48	06:44 18:56	07:04 18:23	06:53 16:34	07:20 16:31
23	07:17 17:01	06:42 17:40	05:57 18:12	06:07 19:45	05:33 20:16	05:24 20:34	05:43 20:24	19:56 (07) 20:08 (07)	06:14 19:46	06:45 18:55	07:05 18:22	06:54 16:33	07:20 16:32
24	07:16 17:03	06:41 17:41	05:56 18:13	06:06 19:46	05:32 20:17	05:25 20:34	05:44 20:23	19:56 (07) 20:08 (07)	06:15 19:45	06:46 18:53	07:06 18:20	06:55 16:32	07:21 16:32
25	07:16 17:04	06:39 17:42	05:54 18:14	06:04 19:47	05:31 20:18	05:25 20:34	05:45 20:22	19:57 (07) 20:09 (07)	06:16 19:43	06:47 18:51	07:07 18:26	06:56 16:32	07:21 16:33
26	07:15 17:05	06:38 17:44	05:52 18:15	06:03 19:48	05:30 20:19	05:25 20:35	05:46 20:21	19:57 (07) 20:09 (07)	06:17 19:41	06:48 18:49	07:08 18:25	06:57 16:31	07:22 16:34
27	07:14 17:06	06:36 17:45	05:51 18:16	06:02 19:49	05:30 20:19	05:26 20:35	05:47 20:20	19:57 (07) 20:09 (07)	06:18 19:40	06:49 18:48	07:09 18:23	06:58 16:31	07:22 16:34
28	07:13 17:08	06:35 17:46	05:49 18:17	06:00 19:50	05:29 20:20	05:26 20:35	05:48 20:19	19:58 (07) 20:09 (07)	06:19 19:38	06:50 18:46	07:10 18:22	07:00 16:30	07:22 16:35
29	07:12 17:09	06:47 19:18	05:59 18:12	05:29 19:52	05:29 20:21	05:26 20:35	05:49 20:18	19:58 (07) 20:09 (07)	06:20 19:37	06:51 18:44	07:11 18:26	07:01 16:30	07:23 16:36
30	07:12 17:10	06:46 19:19	06:04 18:15	05:57 19:53	05:28 20:22	05:27 20:35	05:50 20:17	19:57 (07) 20:09 (07)	06:21 19:35	06:52 18:43	07:12 18:27	07:02 16:56	07:23 16:36
31	07:11 17:11	06:44 19:20	06:04 18:15	06:04 19:45	05:27 20:23	05:27 20:34	05:51 20:16	05:51 20:16	06:22 19:33	06:51 18:48	07:11 18:28	07:02 16:55	07:23 16:37
Ore potenziali eliofanía	297	297	369	399	449	453	460	428	375	312	345	297	287
Totale, caso peggiore			307			278		60					

Legenda della tabella:

Giorno del mese Alba (hh:mm) Tramonto (hh:mm) Minuti d'ombra Inizio ombreggiamento (hh:mm) Fine ombreggiamento (hh:mm) (WTG che provoca l'inizio dell'ombreggiamento) (WTG che provoca l'ultimo ombreggiamento)





## SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara NordRecettore d'ombra: S-12-497 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (21)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno
1	07:23 16:38	07:10 17:13	06:33 17:47	06:42 19:22	05:56 19:54	06:27 (09) 05:27 86 06:03 (09)
2	07:23 16:39	07:09 17:14	06:32 17:48	06:41 19:23	05:55 19:55	38 06:24 (09) 05:27 86 06:02 (09)
3	07:23 16:40	07:08 17:15	06:30 17:49	06:39 19:24	05:54 19:56	42 07:06 (09) 20:24 86 07:28 (09)
4	07:24 16:41	07:07 17:16	06:29 17:51	06:37 19:25	05:52 19:57	46 07:08 (09) 20:25 86 07:29 (09)
5	07:24 16:42	07:06 17:18	06:27 17:52	06:46 (10) 06:36 06:47 (10) 19:26	05:51 19:58	50 06:20 (09) 05:26 86 07:28 (09)
6	07:23 16:43	07:05 17:19	06:26 17:53	06:44 (10) 06:34 06:48 (10) 19:27	05:50 19:59	54 07:12 (09) 20:26 86 07:29 (09)
7	07:23 16:44	07:03 17:20	06:24 17:54	06:43 (10) 06:32 06:43 (10) 19:28	05:49 20:00	57 07:13 (09) 20:27 86 07:29 (09)
8	07:23 16:45	07:02 17:21	06:22 17:55	06:41 (10) 06:31 06:51 (10) 19:29	05:47 20:01	59 06:15 (09) 05:25 86 07:29 (09)
9	07:23 16:46	07:01 17:23	06:21 17:56	06:40 (10) 06:29 06:52 (10) 19:30	05:46 20:02	61 07:15 (09) 20:28 86 07:29 (09)
10	07:23 16:47	07:00 17:24	06:19 17:57	06:38 (10) 06:27 06:51 (10) 19:31	05:45 20:03	64 07:17 (09) 20:29 87 07:30 (09)
11	07:23 16:48	06:59 17:25	06:17 17:59	06:36 (10) 06:26 06:51 (10) 19:32	05:44 20:04	66 06:12 (09) 05:24 87 07:30 (09)
12	07:22 16:49	06:57 17:26	06:16 18:00	06:35 (10) 06:24 06:51 (10) 19:33	05:43 20:05	68 07:19 (09) 20:30 87 07:30 (09)
13	07:22 16:50	06:56 17:28	06:14 18:01	06:33 (10) 06:23 06:50 (10) 19:34	05:42 20:06	69 06:09 (09) 05:24 87 07:31 (09)
14	07:22 16:51	06:55 17:29	06:13 18:02	06:31 (10) 06:21 06:49 (10) 19:35	05:41 20:07	71 07:20 (09) 20:31 87 07:31 (09)
15	07:21 16:52	06:54 17:30	06:11 18:03	06:30 (10) 06:19 06:49 (10) 19:37	05:40 20:08	73 07:21 (09) 20:31 87 07:31 (09)
16	07:21 16:53	06:52 17:31	06:09 18:04	06:31 (10) 06:18 06:47 (10) 19:38	05:39 20:09	74 07:21 (09) 20:32 87 07:31 (09)
17	07:21 16:54	06:51 17:33	06:08 18:05	06:32 (10) 06:16 06:45 (10) 19:39	05:38 20:10	75 07:22 (09) 20:32 88 07:32 (09)
18	07:20 16:56	06:50 17:34	06:06 18:06	06:36 (10) 06:15 06:41 (10) 19:40	05:37 20:11	76 07:22 (09) 20:33 87 07:32 (09)
19	07:20 16:57	06:48 17:35	06:04 18:07	06:13 19:41	05:36 20:12	78 06:06 (09) 05:24 87 07:32 (09)
20	07:19 16:58	06:47 17:36	06:02 18:09	06:12 19:42	05:35 20:13	78 06:05 (09) 05:24 87 07:32 (09)
21	07:18 16:59	06:45 17:38	06:01 18:10	06:10 19:43	05:34 20:14	79 07:24 (09) 20:34 87 07:33 (09)
22	07:18 17:00	06:44 17:39	05:59 18:11	06:09 19:44	05:33 20:15	81 06:04 (09) 05:24 87 07:33 (09)
23	07:17 17:01	06:42 17:40	05:57 18:12	06:07 19:45	05:33 20:16	81 06:04 (09) 05:24 87 07:33 (09)
24	07:16 17:03	06:41 17:41	05:56 18:13	06:06 19:46	05:32 20:17	82 07:26 (09) 20:34 87 07:33 (09)
25	07:16 17:04	06:40 17:42	05:54 18:14	06:04 19:47	05:31 20:18	82 06:03 (09) 05:25 87 07:33 (09)
26	07:15 17:05	06:38 17:44	05:52 18:15	06:03 19:48	05:30 20:19	83 06:03 (09) 05:25 88 07:34 (09)
27	07:14 17:06	06:37 17:45	05:51 18:16	06:02 19:49	05:30 20:19	84 06:27 (09) 20:35 88 07:34 (09)
28	07:13 17:08	06:35 17:46	05:49 18:17	06:00 19:51	05:30 20:20	84 07:27 (09) 20:35 88 07:34 (09)
29	07:12 17:09		06:47 19:18	05:59 19:52	05:29 20:21	85 06:02 (09) 05:26 87 07:34 (09)
30	07:12 17:10		06:46 19:19	05:57 19:53	05:28 20:22	84 07:27 (09) 20:35 87 07:34 (09)
31	07:11 17:11		06:44 19:20		05:28 20:23	31 07:01 (09) 05:28 85 07:27 (09) 20:35 87 07:35 (09)
Ore potenziali eliofanìa	297	297	369	399	449	453
Totale, caso peggiore			166	64	2194	2606

Legenda della tabella:

Giorno del mese Alba (hh:mm) Tramonto (hh:mm) Minuti d'ombra Inizio ombreggiamento (hh:mm) Fine ombreggiamento (hh:mm) (WTG che provoca l'inizio dell'ombreggiamento) (WTG che provoca l'ultimo ombreggiamento)









SHADOW - Calendario

Calcolo: Flicker\_su\_recettori\_Stornara NordRecettore d'ombra: S-13-201 - Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (30) Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il dì, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

Table with 13 columns (Gennaio to Dicembre) and 32 rows (1 to 31). The table shows start and end times for shadow casting for each day of the month across the 12 months. Summary rows at the bottom show 'Ore potenziali eliofanía' and 'Totale, caso peggiore' for each month.

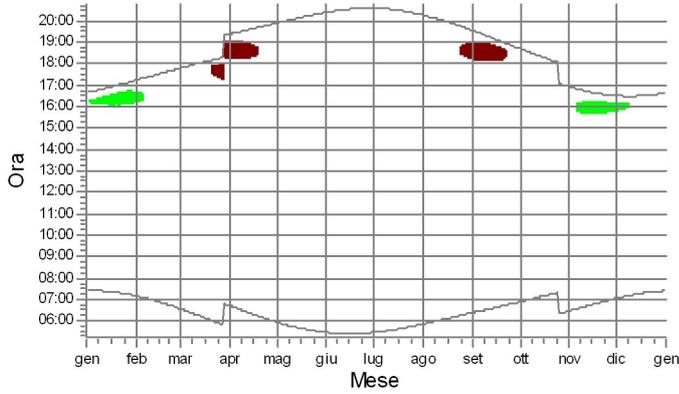
Legenda della tabella:

Giorno del mese Alba (hh:mm) Tramonto (hh:mm)Minuti d'ombra Inizio ombreggiamento (hh:mm) Fine ombreggiamento (hh:mm) (WTG che provoca l'inizio dell'ombreggiamento) (WTG che provoca l'ultimo ombreggiamento)

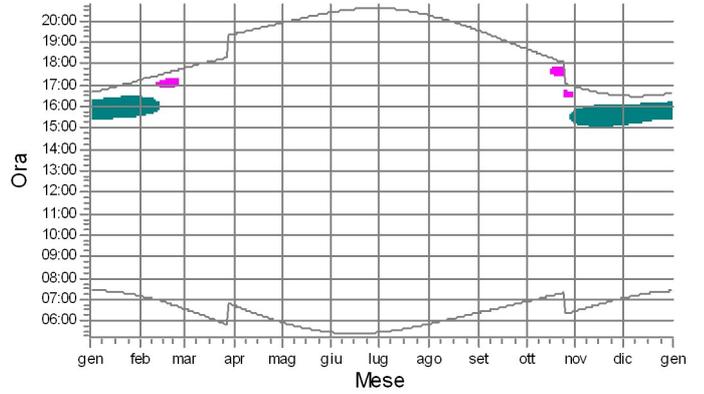
## SHADOW - Calendario, grafico

Calcolo: Flicker\_su\_recettori\_Stornara Nord

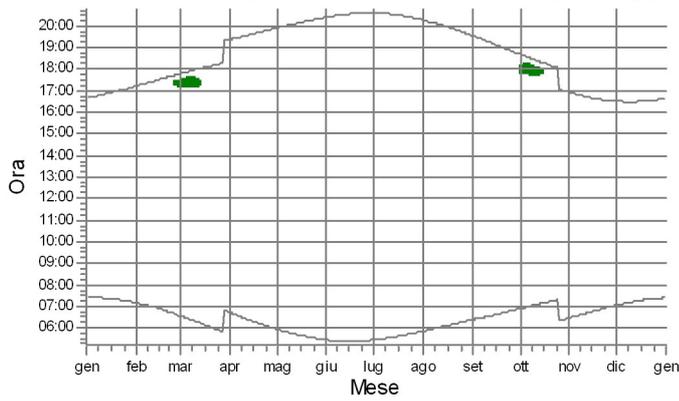
C-101-900: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (6)



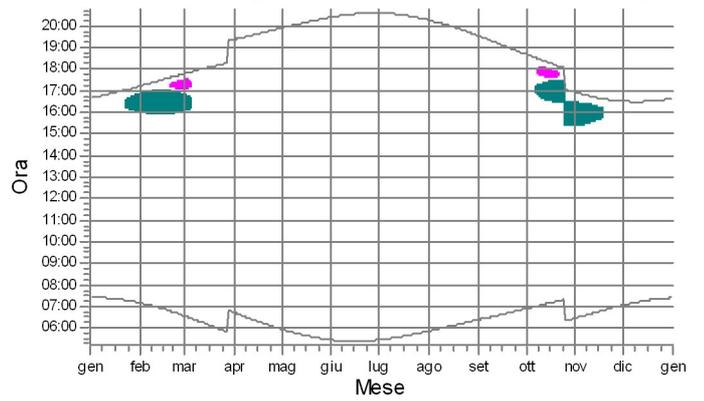
O-37-591: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (2)



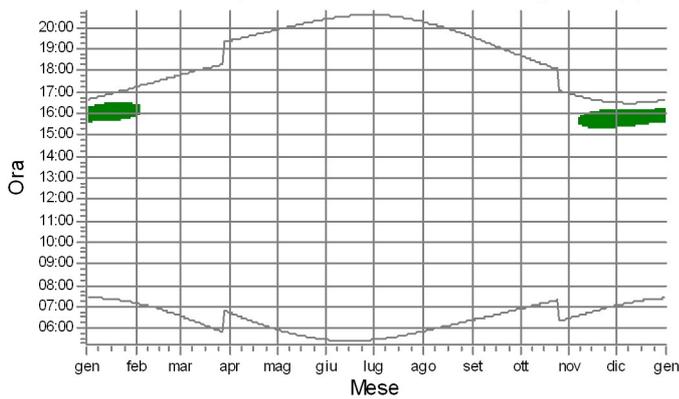
O-37-870: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (1)



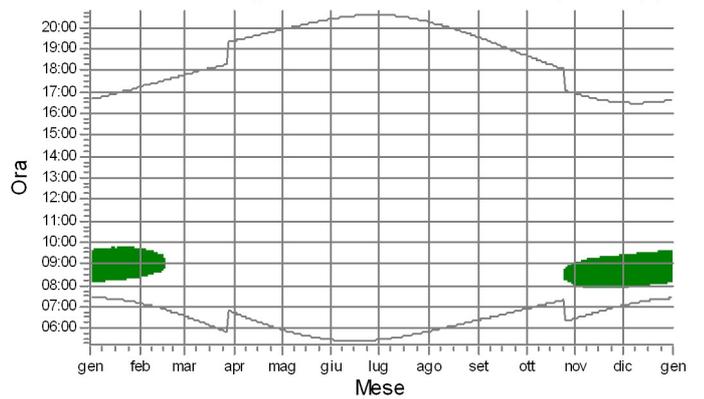
O-37-881: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (3)



O-39-4: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (4)



O-40-291: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (5)



WTG

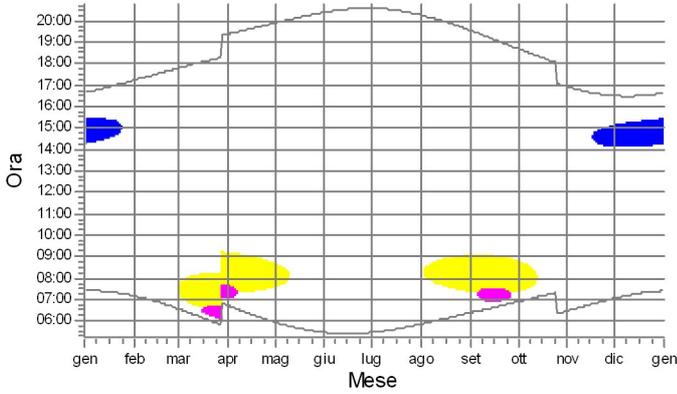


01: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (5)  
02: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (5)  
03: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (5)  
04: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (5)  
05: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (5)  
06: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (60)

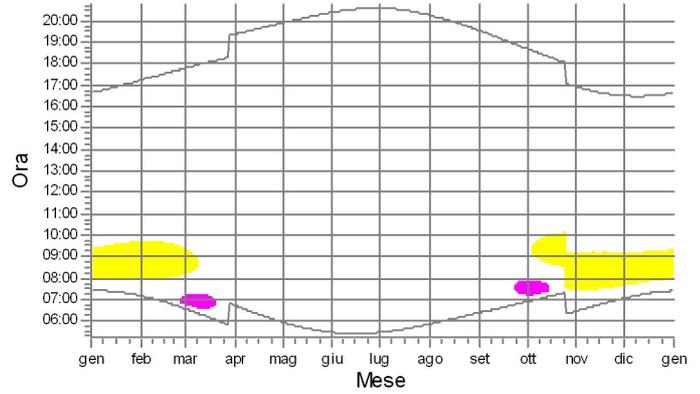
## SHADOW - Calendario, grafico

Calcolo: Flicker\_su\_recettori\_Stornara Nord

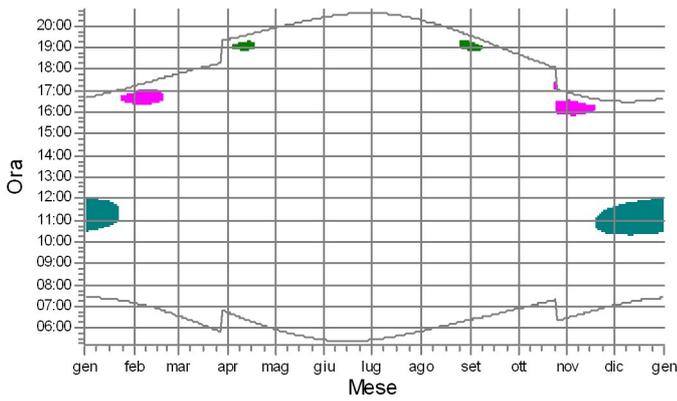
S-01-182: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (7)



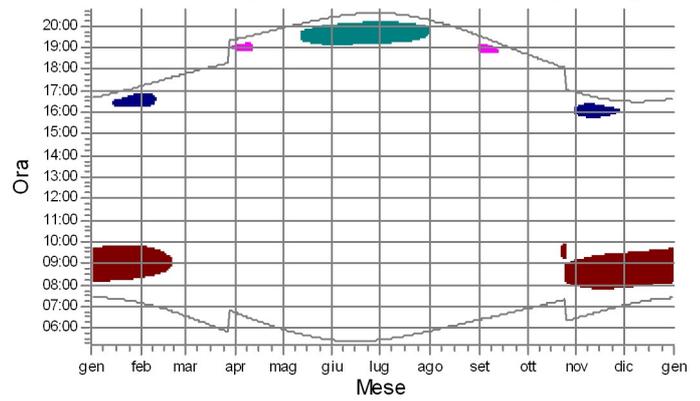
S-01-184: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (8)



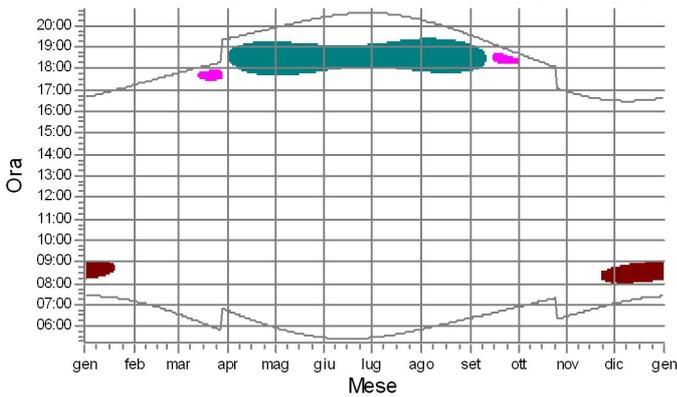
S-02-231: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (9)



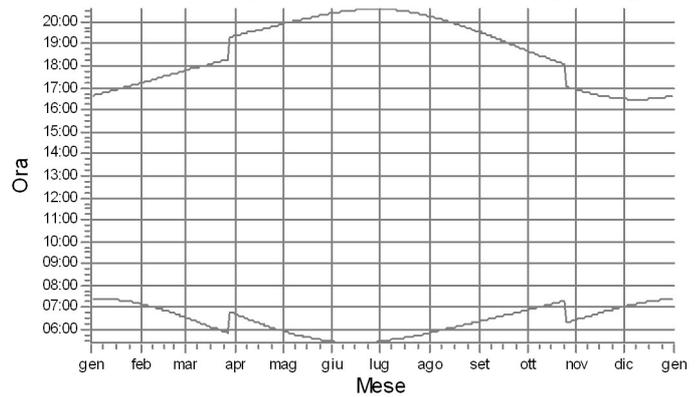
S-05-124: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (11)



S-05-36: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (10)



S-06-553: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (12)



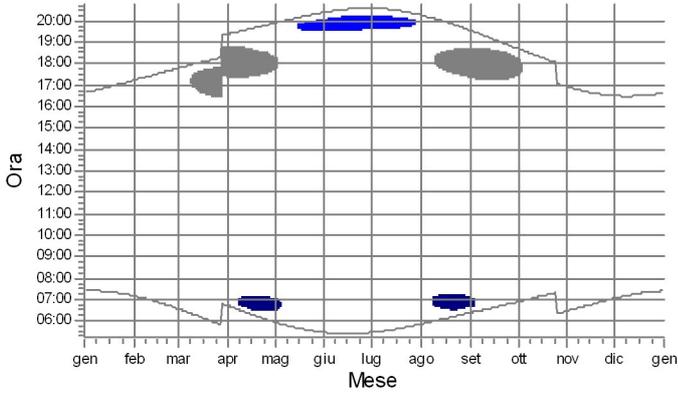
### WTG

- 01: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (55)
- 02: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (56)
- 03: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (57)
- 05: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (59)

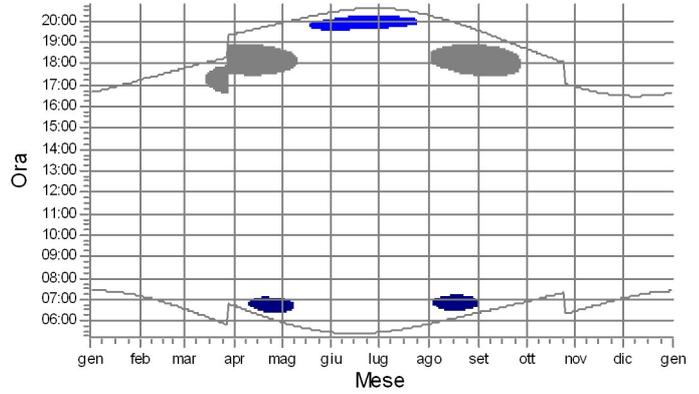
SHADOW - Calendario, grafico

Calcolo: Flicker\_su\_recettori\_Stornara Nord

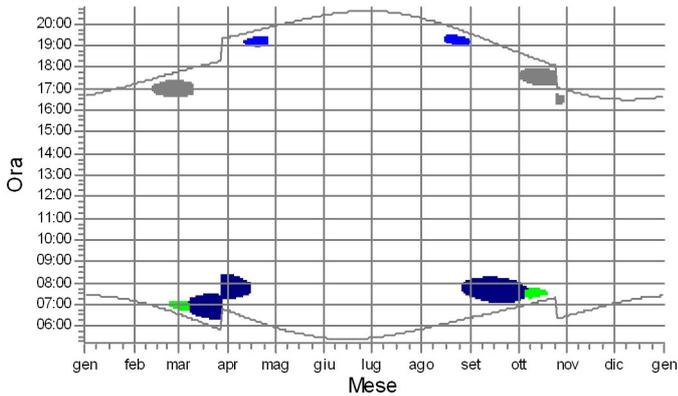
S-07-130: Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (14)



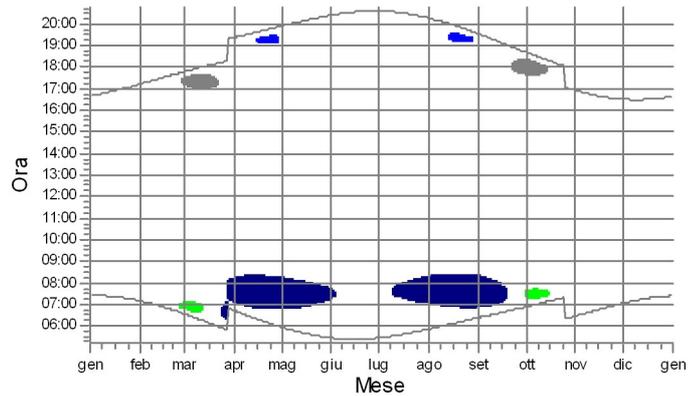
S-07-158: Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (13)



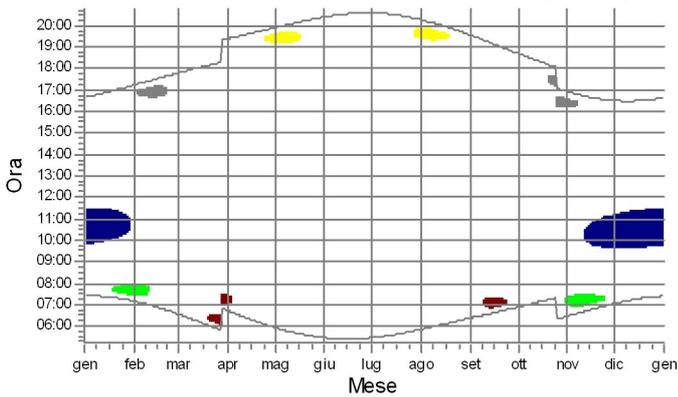
S-08-205: Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (15)



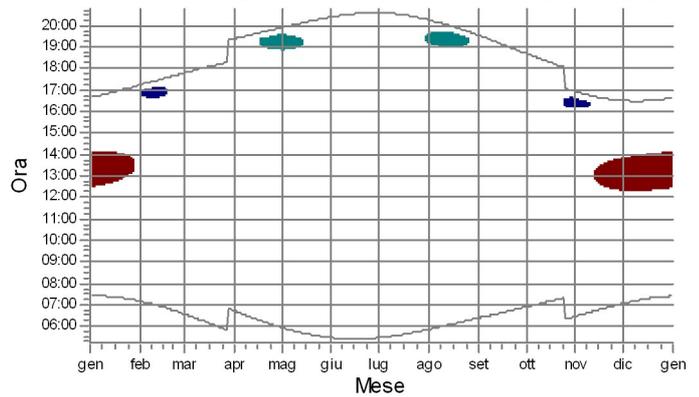
S-08-210: Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (16)



S-08-222: Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (17)



S-09-88: Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (18)



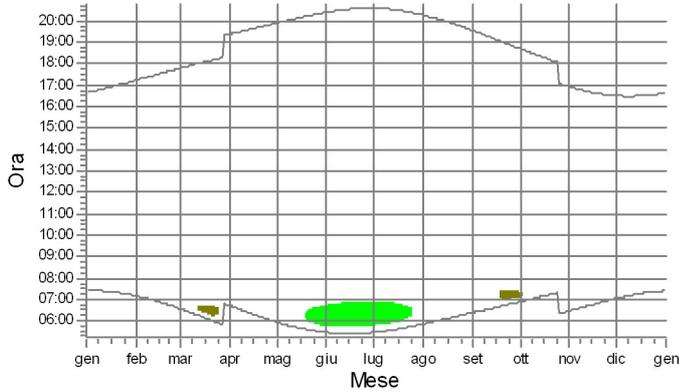
WTG

- 02: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (56)
- 03: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (57)
- 04: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (58)
- 06: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (60)

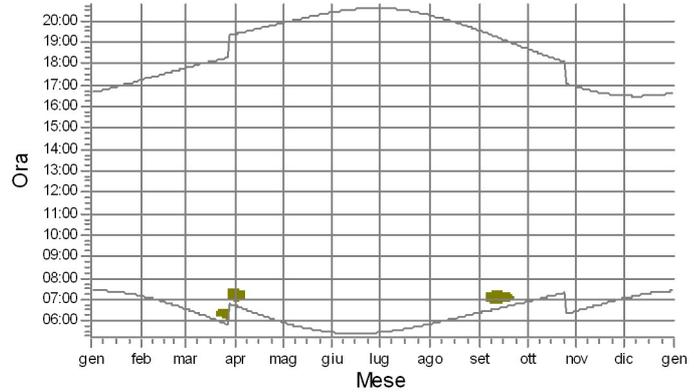
**SHADOW - Calendario, grafico**

Calcolo: Flicker\_su\_recettori\_Stornara Nord

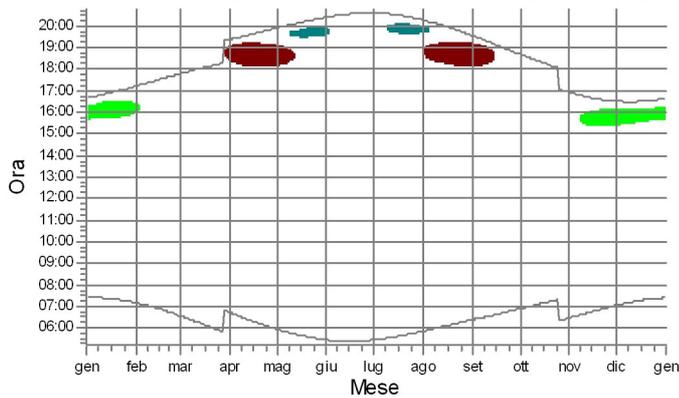
S-11-1138: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (19)



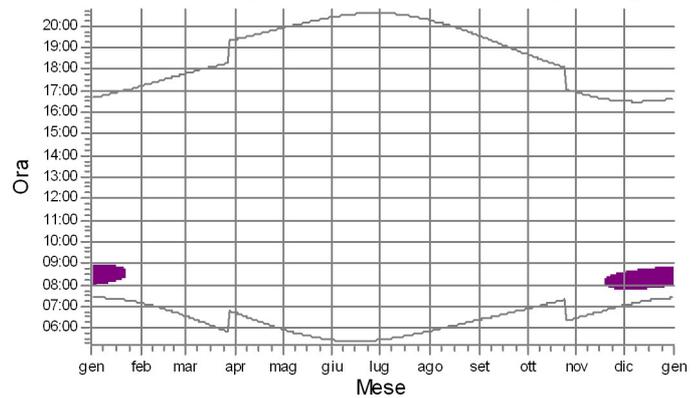
S-11-1192: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (20)



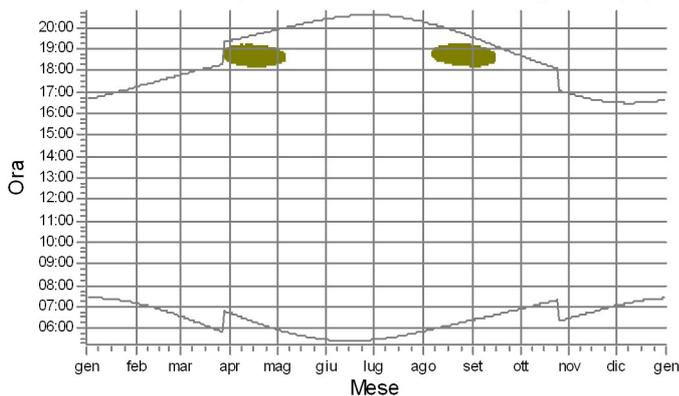
S-12-2: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (27)



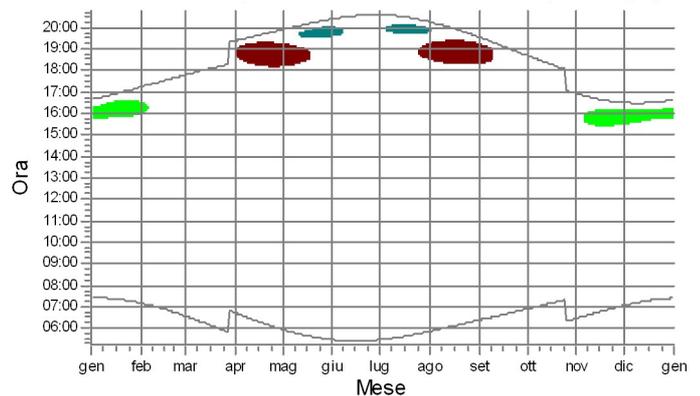
S-12-280: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (25)



S-12-37: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (26)



S-12-43: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (28)



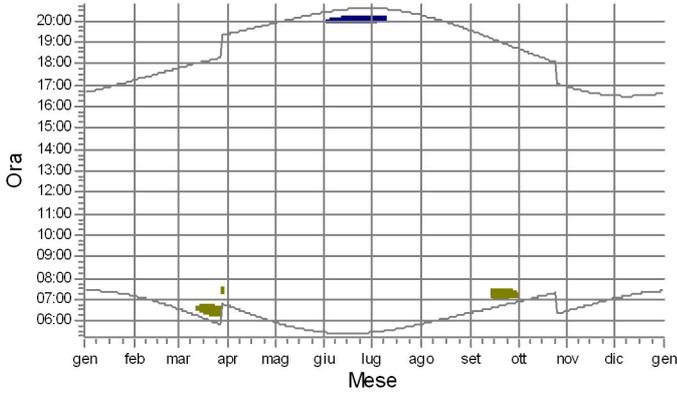
WTG

- |  |   |
|--|---|
|  | 06: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (62) |
|  | 08: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (62) |
|  | 09: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (63) |

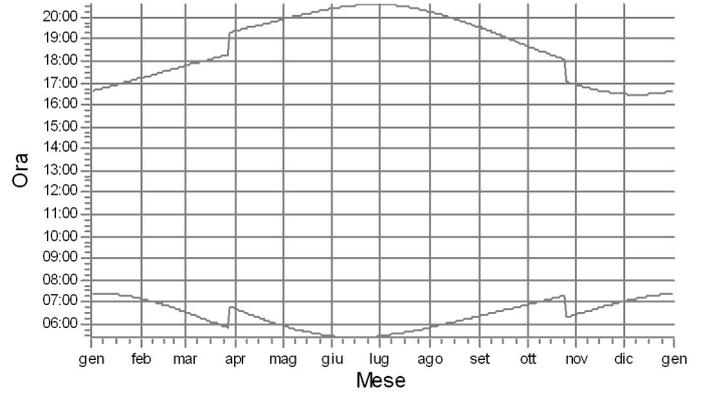
## SHADOW - Calendario, grafico

Calcolo: Flicker\_su\_recettori\_Stornara Nord

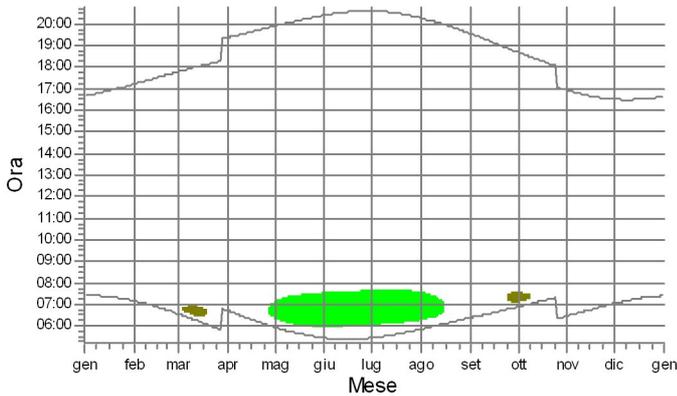
S-12-490: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (22)



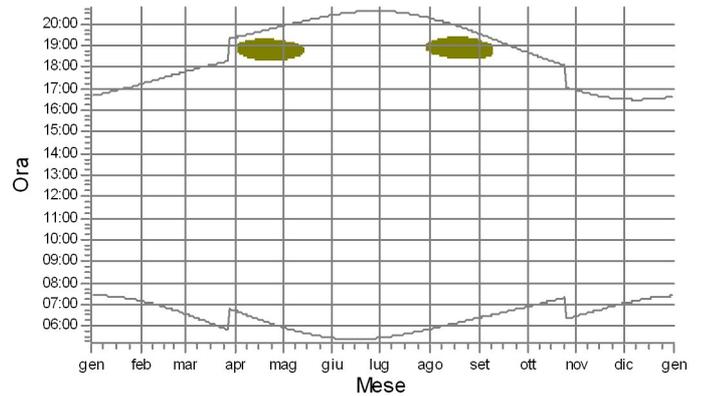
S-12-494: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (24)



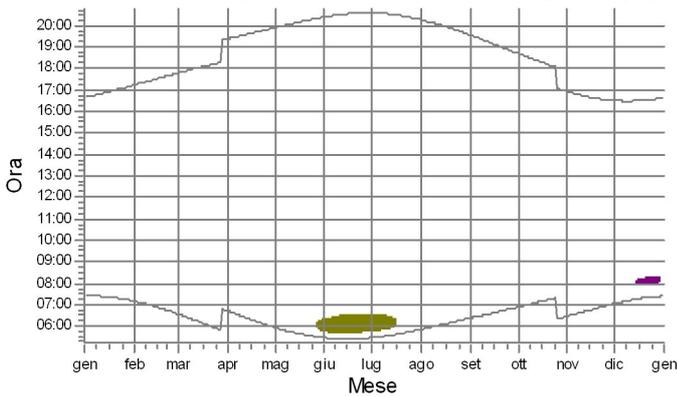
S-12-497: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (21)



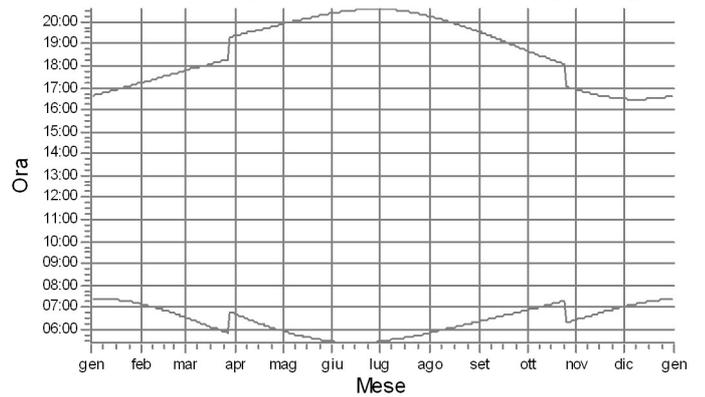
S-12-515: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (29)



S-12-523: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (23)



S-13-201: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (30)



WTG

- 07: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (WTG)
- 08: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (WTG)
- 09: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (WTG)
- 10: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (WTG)





SHADOW - Calendario per WTG

Calcolo: Flicker\_su\_recettori\_Stornara NordWTG: 02 - VESTAS V162-5.6MW(User) 5600 162.0 !OI hub: 119,0 m (TOT: 200,0 m) (56)

Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

Table with columns for months (Gennaio to Giugno) and rows for days (1 to 31). Each cell contains time intervals representing shadow events. Summary rows at the bottom show 'Ore potenziali eliofanía' and 'Somma minuti d'ombra' for each month.

Legenda della tabella:

Giorno del mese Alba (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra Tramonto (hh:mm)inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra



## SHADOW - Calendario per WTG

Calcolo: Flicker\_su\_recettori\_Stornara NordWTG: 03 - VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (57)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:  
Il sole splende tutto il di, dall'alba al tramonto  
Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole  
La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno
1	07:23 14:21-15:20/59 16:38	07:10 17:13	06:34 17:47	06:42 19:22	05:56 19:54	05:27 19:35-19:59/24 20:24
2	07:24 14:22-15:20/58 16:39	07:09 17:14	06:32 17:48	06:41 19:23	05:55 19:55	05:27 19:34-19:59/25 20:24
3	07:24 14:23-15:21/58 16:40	07:08 17:15	06:30 17:50	06:39 19:24	05:54 19:56	05:26 19:35-20:00/25 20:25
4	07:24 14:24-15:21/57 16:41	07:07 17:17	06:29 17:51	06:37 19:25	05:52 19:57	05:26 19:35-20:01/26 20:26
5	07:24 14:24-15:21/57 16:42	07:06 17:18	06:27 17:52	06:36 19:26	05:51 19:58	05:25 19:35-20:01/26 20:27
6	07:24 14:25-15:21/56 16:43	07:05 17:19	06:26 17:53	06:34 19:27	05:50 19:59	05:25 19:35-20:02/27 20:27
7	07:24 14:26-15:21/55 16:44	07:04 17:20	06:24 17:54	06:32 19:28	05:49 20:00	05:25 19:36-20:03/27 20:28
8	07:23 14:27-15:21/54 16:45	07:02 17:22	06:23 17:55	06:31 19:29	05:48 20:01	05:25 19:36-20:04/28 20:28
9	07:23 14:28-15:21/53 16:46	07:01 17:23	06:21 17:56	06:29 19:30	05:46 20:02	05:24 19:36-20:03/27 20:29
10	07:23 14:29-15:21/52 16:47	07:00 17:24	06:19 17:58	06:28 19:31	05:45 20:03	05:24 19:36-20:04/28 20:30
11	07:23 14:30-15:21/51 16:48	06:59 17:25	06:18 17:59	06:26 19:32	05:44 20:04	05:24 19:36-20:05/29 20:30
12	07:23 14:31-15:20/49 16:49	06:58 17:27	06:16 18:00	06:24 19:09-19:12/3 19:33	05:43 20:05	05:24 19:37-20:05/28 20:31
13	07:22 14:32-15:20/48 16:50	06:56 17:28	06:14 18:01	06:23 19:06-19:12/6 19:35	05:42 20:06	05:24 19:37-20:06/29 20:31
14	07:22 14:33-15:19/46 16:51	06:55 17:29	06:13 18:02	06:21 19:06-19:14/8 19:36	05:41 20:07	05:24 19:37-20:06/29 20:32
15	07:22 14:35-15:19/44 16:52	06:54 17:30	06:11 18:03	06:20 19:04-19:14/10 19:37	05:40 20:08	05:24 19:38-20:06/28 20:32
16	07:21 14:37-15:19/42 16:53	06:52 17:32	06:09 18:04	06:18 19:04-19:16/12 19:38	05:39 19:43-19:45/2 20:09	05:24 19:38-20:07/29 20:32
17	07:21 14:38-15:18/40 16:54	06:51 17:33	06:08 18:05	06:17 19:03-19:16/13 19:39	05:38 19:41-19:46/5 20:10	05:24 19:38-20:07/29 20:33
18	07:20 14:39-15:17/38 16:56	06:50 17:34	06:06 18:06	06:15 19:03-19:18/15 19:40	05:37 19:39-19:47/8 20:11	05:24 19:38-20:07/29 20:33
19	07:20 14:42-15:17/35 16:57	06:48 17:35	06:04 18:08	06:13 19:02-19:19/17 19:41	05:36 19:39-19:48/9 20:12	05:24 19:38-20:07/29 20:33
20	07:19 14:43-15:15/32 16:58	06:47 17:36	06:03 18:09	06:12 19:03-19:20/17 19:42	05:35 19:38-19:49/11 20:13	05:24 19:38-20:08/30 20:34
21	07:19 14:46-15:14/28 16:59	06:46 17:38	06:01 18:10	06:10 19:02-19:20/18 19:43	05:34 19:37-19:50/13 20:14	05:24 19:39-20:09/30 20:34
22	07:18 14:49-15:12/23 17:00	06:44 17:39	05:59 18:11	06:09 19:03-19:22/19 19:44	05:34 19:36-19:50/14 20:15	05:24 19:39-20:09/30 20:34
23	07:17 14:52-15:09/17 17:02	06:43 17:40	05:58 18:12	06:07 19:03-19:22/19 19:45	05:33 19:36-19:52/16 20:16	05:25 19:39-20:08/29 20:34
24	07:17 15:00-15:01/1 17:03	06:41 17:41	05:56 18:13	06:06 19:05-19:24/19 19:46	05:32 19:35-19:52/17 20:17	05:25 19:39-20:08/29 20:35
25	07:16 17:04	06:40 17:42	05:54 18:14	06:05 19:07-19:25/18 19:47	05:31 19:35-19:53/18 20:18	05:25 19:40-20:09/29 20:35
26	07:15 17:05	06:38 17:44	05:53 18:15	06:03 19:08-19:26/18 19:49	05:31 19:35-19:54/19 20:19	05:25 19:40-20:09/29 20:35
27	07:14 17:07	06:37 17:45	05:51 18:16	06:02 19:11-19:25/14 19:50	05:30 19:35-19:55/20 20:20	05:26 19:40-20:09/29 20:35
28	07:13 17:08	06:35 17:46	05:49 18:17	06:00 19:12-19:22/10 19:51	05:29 19:35-19:56/21 20:20	05:26 19:40-20:09/29 20:35
29	07:13 17:09		06:47 19:18	05:59 19:52	05:29 19:35-19:56/21 20:21	05:27 19:40-20:09/29 20:35
30	07:12 17:10		06:46 19:19	05:58 19:53	05:28 19:35-19:58/23 20:22	05:27 19:41-20:09/28 20:35
31	07:11 17:12		06:44 19:21		05:28 19:34-19:58/24 20:23	
Ore potenziali eliofanìa	297	297	369	399	449	453
Somma minuti d'ombra	1053	0	0	236	241	843

Legenda della tabella:

Giorno del mese Alba (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra  
Tramonto (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra

## SHADOW - Calendario per WTG

Calcolo: Flicker\_su\_recettori\_Stornara NordWTG: 03 - VESTAS V162-5.6MW(User) 5600 162.0 !0! hub: 119,0 m (TOT: 200,0 m) (57)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:  
Il sole splende tutto il dì, dall'alba al tramonto  
Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole  
La turbina è costantemente operativa

	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre
1	05:28 19:41-20:09/28   20:35	05:52   20:15	06:23   19:32	06:53   18:41	06:28   16:54	07:03 14:13-15:03/50   16:29
2	05:28 19:41-20:09/28   20:35	05:53   20:14	06:24   19:30	06:54   18:39	06:29   16:53	07:04 14:12-15:04/52   16:29
3	05:29 19:41-20:09/28   20:34	05:54   20:13	06:25   19:29	06:55   18:38	06:30   16:52	07:05 14:12-15:05/53   16:29
4	05:29 19:41-20:09/28   20:34	05:55   20:12	06:26   19:27	06:56   18:36	06:31   16:50	07:06 14:12-15:06/54   16:29
5	05:30 19:41-20:08/27   20:34	05:56   20:11	06:27   19:25	06:57   18:34	06:33   16:49	07:07 14:12-15:06/54   16:28
6	05:30 19:42-20:08/26   20:34	05:57   20:10	06:28   19:24	06:58   18:33	06:34   16:48	07:08 14:12-15:07/55   16:28
7	05:31 19:42-20:08/26   20:33	05:58   20:09	06:29   19:22	06:59   18:31	06:35   16:47	07:09 14:12-15:08/56   16:28
8	05:31 19:42-20:08/26   20:33	05:59   20:07	06:30   19:20	07:01   18:29	06:36   16:46	07:10 14:12-15:09/57   16:28
9	05:32 19:42-20:08/26   20:33	06:00   20:06	06:31   19:19	07:02   18:28	06:37   16:45	07:11 14:12-15:10/58   16:28
10	05:33 19:43-20:08/25   20:32	06:01   20:05	06:32   19:17	07:03   18:26	06:39   16:44	07:12 14:11-15:09/58   16:28
11	05:34 19:42-20:06/24   20:32	06:02   20:03	06:33   19:15	07:04   18:25	06:40   16:43	07:12 14:11-15:10/59   16:28
12	05:34 19:43-20:06/23   20:31	06:03   20:02	06:34   19:14	07:05   18:23	06:41   16:42	07:13 14:12-15:11/59   16:28
13	05:35 19:43-20:06/23   20:31	06:04   20:01	06:35   19:12	07:06   18:21	06:42   16:41	07:14 14:12-15:12/60   16:28
14	05:36 19:43-20:05/22   20:30	06:05 19:23-19:27/4   19:59	06:36   19:10	07:07   18:20	06:43   16:40	07:15 14:13-15:13/60   16:29
15	05:37 19:43-20:05/22   20:30	06:06 19:20-19:30/10   19:58	06:37   19:08	07:08   18:18	06:45   16:39	07:16 14:12-15:13/61   16:29
16	05:37 19:44-20:04/20   20:29	06:07 19:18-19:32/14   19:57	06:38   19:07	07:09   18:17	06:46   16:38	07:16 14:13-15:14/61   16:29
17	05:38 19:44-20:04/20   20:29	06:08 19:14-19:32/18   19:55	06:39   19:05	07:10   18:15	06:47   16:37	07:17 14:14-15:14/60   16:29
18	05:39 19:44-20:03/19   20:28	06:09 19:12-19:31/19   19:54	06:40   19:03	07:12   18:14	06:48 14:33-14:36/3   16:37	07:18 14:13-15:14/61   16:30
19	05:40 19:45-20:02/17   20:27	06:10 19:10-19:29/19   19:52	06:41   19:02	07:13   18:12	06:49 14:27-14:44/17   16:36	07:18 14:14-15:15/61   16:30
20	05:41 19:45-20:02/17   20:27	06:11 19:09-19:28/19   19:51	06:42   19:00	07:14   18:11	06:51 14:24-14:47/23   16:35	07:19 14:14-15:15/61   16:31
21	05:41 19:46-20:01/15   20:26	06:12 19:08-19:27/19   19:49	06:43   18:58	07:15   18:09	06:52 14:21-14:49/28   16:34	07:19 14:15-15:16/61   16:31
22	05:42 19:47-20:01/14   20:25	06:13 19:07-19:25/18   19:48	06:44   18:56	07:16   18:08	06:53 14:19-14:51/32   16:33	07:20 14:15-15:16/61   16:31
23	05:43 19:48-20:00/12   20:24	06:14 19:07-19:24/17   19:46	06:45   18:55	07:17   18:06	06:54 14:18-14:53/35   16:33	07:21 14:16-15:17/61   16:32
24	05:44 19:49-19:59/10   20:23	06:15 19:06-19:22/16   19:45	06:46   18:53	07:18   18:05	06:55 14:17-14:55/38   16:32	07:21 14:16-15:17/61   16:32
25	05:45 19:49-19:58/9   20:22	06:16 19:06-19:21/15   19:43	06:47   18:51	07:20   17:03	06:56 14:16-14:56/40   16:32	07:21 14:17-15:18/61   16:33
26	05:46 19:51-19:57/6   20:22	06:17 19:06-19:19/13   19:42	06:48   18:50	07:21   17:02	06:57 14:15-14:57/42   16:31	07:22 14:18-15:18/60   16:34
27	05:47 19:53-19:56/3   20:21	06:18 19:06-19:18/12   19:40	06:49   18:48	07:22   17:01	06:59 14:14-14:58/44   16:31	07:22 14:18-15:18/60   16:34
28	05:48   20:20	06:19 19:06-19:16/10   19:38	06:50   18:46	07:23   16:59	07:00 14:13-14:59/46   16:30	07:22 14:18-15:19/61   16:35
29	05:49   20:19	06:20 19:07-19:15/8   19:37	06:51   18:44	07:24   16:58	07:01 14:13-15:00/47   16:30	07:23 14:20-15:20/60   16:36
30	05:50   20:18	06:21 19:07-19:13/6   19:35	06:52   18:43	07:25   16:57	07:02 14:13-15:02/49   16:30	07:23 14:20-15:20/60   16:36
31	05:51   20:17	06:22 19:09-19:12/3   19:34	 	07:26   16:55	 	07:23 14:21-15:20/59   16:37
Ore potenziali eliofania	460	428	375	345	297	287
Somma minuti d'ombra	544	240	0	0	444	1815

Legenda della tabella:

Giorno del mese Alba (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra  
Tramonto (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra

## SHADOW - Calendario per WTG

Calcolo: Flicker\_su\_recettori\_Stornara NordWTG: 04 - VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (58)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno
1	07:23 16:38	07:10 17:13	06:34 17:47	06:42 19:22	05:56 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 19:55	05:27 20:24
3	07:24 16:40	07:08 17:15	06:30 17:50	06:39 19:24	05:54 19:56	05:26 20:25
4	07:24 16:41	07:07 17:17	06:29 17:51	06:37 19:25	05:52 19:57	05:26 20:26
5	07:24 16:42	07:06 17:18	06:27 17:52	06:36 19:26	05:51 19:58	05:25 20:27
6	07:24 16:43	07:05 17:19	06:26 17:53	06:34 19:27	05:50 19:59	05:25 20:27
7	07:24 16:44	07:04 17:20	06:24 17:54	06:32 19:28	05:49 20:00	05:25 20:28
8	07:23 16:45	07:02 17:22	06:22 17:55	06:31 19:29	05:47 20:01	05:25 20:28
9	07:23 16:46	07:01 17:23	06:21 17:56	06:29 19:30	05:46 20:02	05:24 20:29
10	07:23 16:47	07:00 17:24	06:19 17:58	06:28 19:31	05:45 20:03	05:24 20:30
11	07:23 16:48	06:59 17:25	06:18 17:59	06:26 19:32	05:44 20:04	05:24 20:30
12	07:23 16:49	06:58 17:27	06:16 18:00	06:24 19:33	05:43 20:05	05:24 20:31
13	07:22 16:50	06:56 17:28	06:14 18:01	06:23 19:35	05:42 20:06	05:24 20:31
14	07:22 16:51	06:55 17:29	06:13 18:02	06:21 19:36	05:41 20:07	05:24 20:32
15	07:22 16:52	06:54 17:30	06:11 18:03	06:20 19:37	05:40 20:08	05:24 20:32
16	07:21 16:53	06:52 17:32	06:09 18:04	06:18 19:38	05:39 20:09	05:24 20:32
17	07:21 16:54	06:51 17:33	06:08 18:05	06:16 19:39	05:38 20:10	05:24 20:33
18	07:20 16:56	06:50 17:34	06:06 18:06	06:15 19:40	05:37 20:11	05:24 20:33
19	07:20 16:57	06:48 17:35	06:04 18:08	06:13 19:41	05:36 20:12	05:24 20:33
20	07:19 16:58	06:47 17:36	06:03 18:09	06:12 19:42	05:35 20:13	05:24 20:34
21	07:19 16:59	06:45 17:38	06:01 18:10	06:10 19:43	05:34 20:14	05:24 20:34
22	07:18 17:00	06:44 17:39	05:59 18:11	06:09 19:44	05:34 20:15	05:24 20:34
23	07:17 17:02	06:43 17:40	05:58 18:12	06:07 19:45	05:33 20:16	05:25 20:34
24	07:17 17:03	06:41 17:41	05:56 18:13	06:06 19:46	05:32 20:17	05:25 20:35
25	07:16 17:04	06:40 17:42	05:54 18:14	06:05 19:47	05:31 20:18	05:25 20:35
26	07:15 17:05	06:38 17:44	05:52 18:15	06:03 19:48	05:31 20:19	05:25 20:35
27	07:14 17:07	06:37 17:45	05:51 18:16	06:02 19:50	05:30 20:20	05:26 20:35
28	07:13 17:08	06:35 17:46	05:49 18:17	06:00 19:51	05:29 20:20	05:26 20:35
29	07:13 17:09		06:47 19:18	05:59 19:52	05:29 20:21	05:27 20:35
30	07:12 17:10		06:46 19:19	05:58 19:53	05:28 20:22	05:27 20:35
31	07:11 17:12		06:44 19:21	05:58 19:53	05:28 20:23	
Ore potenziali eliofanía	297	297	369	399	449	453
Somma minuti d'ombra	0	615	1816	2298	366	0

Legenda della tabella:

Giorno del mese Alba (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra  
Tramonto (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra

## SHADOW - Calendario per WTG

Calcolo: Flicker\_su\_recettori\_Stornara NordWTG: 04 - VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (58)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

- Il sole splende tutto il di, dall'alba al tramonto
- Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole
- La turbina è costantemente operativa

	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre
1	05:28 20:35	05:52 20:15	06:23 17:25-18:49/84 19:32	06:53 17:32-18:16/44 18:41	06:28 16:13-16:30/17 16:54	07:03 16:29
2	05:28 20:34	05:53 20:14	06:24 17:24-18:49/85 19:30	06:54 17:35-18:16/41 18:39	06:29 16:15-16:29/14 16:53	07:04 16:29
3	05:29 20:34	05:54 18:09-18:26/17 20:13	06:25 17:23-18:49/86 19:29	06:55 17:31-18:15/44 18:38	06:30 16:15-16:28/13 16:52	07:05 16:29
4	05:29 20:34	05:55 18:06-18:30/24 20:12	06:26 17:23-18:48/85 19:27	06:56 17:27-18:13/46 18:36	06:31 16:15-16:26/11 16:50	07:06 16:29
5	05:30 20:34	05:56 18:03-18:32/29 20:11	06:27 17:21-18:47/86 19:25	06:57 17:24-18:11/47 18:34	06:33 16:16-16:25/9 16:49	07:07 16:28
6	05:30 20:34	05:57 18:00-18:34/34 20:10	06:28 17:20-18:46/86 19:24	06:58 17:23-18:10/47 18:33	06:34 16:18-16:24/6 16:48	07:08 16:28
7	05:31 20:33	05:58 17:58-18:36/38 20:08	06:29 17:20-18:46/86 19:22	06:59 17:21-18:08/47 18:31	06:35 16:20-16:23/3 16:47	07:09 16:28
8	05:31 20:33	05:59 17:55-18:37/42 20:07	06:30 17:19-18:45/86 19:20	07:01 17:19-18:07/48 18:29	06:36 16:46	07:10 16:28
9	05:32 20:33	06:00 17:54-18:38/44 20:06	06:31 17:19-18:44/85 19:19	07:02 17:18-18:05/47 18:28	06:37 16:45	07:11 16:28
10	05:33 20:32	06:01 17:52-18:40/48 20:05	06:32 17:19-18:43/84 19:17	07:03 17:17-18:03/46 18:26	06:39 16:44	07:12 16:28
11	05:34 20:32	06:02 17:50-18:41/51 20:03	06:33 17:18-18:43/85 19:15	07:04 17:16-18:01/45 18:25	06:40 16:43	07:12 16:28
12	05:34 20:31	06:03 17:49-18:42/53 20:02	06:34 17:18-18:42/84 19:14	07:05 17:15-18:00/45 18:23	06:41 16:42	07:13 16:28
13	05:35 20:31	06:04 17:48-18:43/55 20:01	06:35 17:18-18:41/83 19:12	07:06 17:14-17:58/44 18:21	06:42 16:41	07:14 16:28
14	05:36 20:30	06:05 17:46-18:44/58 19:59	06:36 17:18-18:39/81 19:10	07:07 17:13-17:56/43 18:20	06:43 16:40	07:15 16:29
15	05:36 20:30	06:06 17:45-18:45/60 19:58	06:37 17:18-18:38/80 19:08	07:08 17:14-17:53/39 18:18	06:45 16:39	07:16 16:29
16	05:37 20:29	06:07 17:44-18:46/62 19:57	06:38 17:18-18:37/79 19:07	07:09 17:13-17:53/40 18:17	06:46 16:38	07:16 16:29
17	05:38 20:29	06:08 17:43-18:47/64 19:55	06:39 17:18-18:36/78 19:05	07:10 17:13-17:52/39 18:15	06:47 16:37	07:17 16:29
18	05:39 20:28	06:09 17:41-18:47/66 19:54	06:40 17:18-18:34/76 19:03	07:11 17:13-17:50/37 18:14	06:48 16:36	07:18 16:30
19	05:40 20:27	06:10 17:40-18:48/68 19:52	06:41 17:18-18:32/74 19:02	07:13 17:13-17:48/35 18:12	06:49 16:36	07:18 16:30
20	05:41 20:26	06:11 17:39-18:48/69 19:51	06:42 17:19-18:31/72 19:00	07:14 17:13-17:47/34 18:11	06:50 16:35	07:19 16:30
21	05:41 20:26	06:12 17:37-18:49/72 19:49	06:43 17:19-18:29/70 18:58	07:15 17:14-17:46/32 18:09	06:52 16:34	07:19 16:31
22	05:42 20:25	06:13 17:36-18:49/73 19:48	06:44 17:20-18:26/66 18:56	07:16 17:15-17:44/29 18:08	06:53 16:34	07:20 16:31
23	05:43 20:24	06:14 17:34-18:49/75 19:46	06:45 17:20-18:25/65 18:55	07:17 17:15-17:43/28 18:06	06:54 16:33	07:20 16:32
24	05:44 20:23	06:15 17:33-18:49/76 19:45	06:46 17:21-18:23/62 18:53	07:18 17:16-17:41/25 18:05	06:55 16:32	07:21 16:32
25	05:45 20:22	06:16 17:32-18:50/78 19:43	06:47 17:22-18:22/60 18:51	06:19 16:16-16:40/24 17:03	06:56 16:32	07:21 16:33
26	05:46 20:21	06:17 17:31-18:50/79 19:42	06:48 17:23-18:20/57 18:50	06:21 16:15-16:39/24 17:02	06:57 16:31	07:22 16:34
27	05:47 20:21	06:18 17:30-18:50/80 19:40	06:49 17:25-18:18/53 18:48	06:22 16:14-16:37/23 17:01	06:59 16:31	07:22 16:34
28	05:48 20:20	06:19 17:29-18:50/81 19:38	06:50 17:26-18:16/50 18:46	06:23 16:13-16:35/22 16:59	07:00 16:30	07:22 16:35
29	05:49 20:19	06:20 17:28-18:50/82 19:37	06:51 17:28-18:16/48 18:44	06:24 16:14-16:35/21 16:58	07:01 16:30	07:23 16:36
30	05:50 20:18	06:21 17:27-18:50/83 19:35	06:52 17:30-18:16/46 18:43	06:25 16:14-16:33/19 16:57	07:02 16:30	07:23 16:36
31	05:51 20:16	06:22 17:26-18:49/83 19:34		06:27 16:13-16:31/18 16:55		07:23 16:37
Ore potenziali eliofania	460	428	375	345	297	287
Somma minuti d'ombra	0	1744	2222	1123	73	0

Legenda della tabella:

Giorno del mese Alba (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra  
Tramonto (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra

## SHADOW - Calendario per WTG

Calcolo: Flicker\_su\_recettori\_Stornara NordWTG: 05 - VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (59)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il dì, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno
1	07:23 16:38	07:10 16:28-16:49/21 17:13	06:34 06:53-07:06/13 17:47 17:10-17:26/16	06:42 18:57-19:00/3 19:22 07:08-07:35/27	05:56 19:54	05:27 20:24
2	07:24 16:39	07:09 16:28-16:50/22 17:14	06:32 06:51-07:07/16 17:48 17:10-17:27/17	06:41 18:55-19:01/6 19:23 07:08-07:33/25	05:55 19:55	05:27 20:24
3	07:24 16:40	07:08 16:27-16:52/25 17:15	06:30 06:49-07:08/19 17:51 17:13-17:25/12	06:39 18:54-19:02/8 19:24 07:10-07:32/22	05:54 19:56	05:26 20:25
4	07:24 16:41	07:07 16:27-16:53/26 17:16	06:29 06:48-07:09/21 17:51 17:13-17:25/12	06:37 18:54-19:03/9 19:25 07:11-07:30/19	05:52 19:57	05:26 20:26
5	07:24 16:42	07:06 16:27-16:55/28 17:18	06:27 06:46-07:10/24 17:52 17:15-17:21/6	06:36 18:53-19:04/11 19:26 07:13-07:27/14	05:51 19:58	05:25 20:26
6	07:24 16:43	07:05 16:26-16:55/29 17:19	06:26 06:45-07:11/26 17:53	06:34 18:53-19:06/13 19:27 07:18-07:22/4	05:50 19:59	05:25 20:27
7	07:24 16:44	07:03 16:27-16:57/30 17:20	06:24 06:43-07:10/27 17:54	06:32 18:53-19:06/13 19:28	05:49 20:00	05:25 20:28
8	07:23 16:45	07:02 16:27-16:58/31 17:22	06:22 06:41-07:10/29 17:55	06:31 18:53-19:07/14 19:29	05:47 20:01	05:24 20:28
9	07:23 16:46	07:01 16:27-16:59/32 17:23	06:21 06:40-07:11/31 17:56	06:29 18:54-19:09/15 19:30	05:46 20:02	05:24 20:29
10	07:23 16:47	07:00 16:28-16:59/31 17:24	06:19 06:38-07:10/32 17:57	06:28 18:55-19:08/13 19:31	05:45 20:03	05:24 20:30
11	07:23 16:48	06:59 16:28-16:58/30 17:25	06:18 06:37-07:09/32 17:59	06:26 18:56-19:06/10 19:32	05:44 20:04	05:24 20:30
12	07:23 16:49	06:58 16:29-16:57/28 17:27	06:16 06:38-07:09/31 18:00	06:24 19:33	05:43 20:05	05:24 20:31
13	07:22 16:50	06:56 16:30-16:57/27 17:28	06:14 06:38-07:08/30 18:01	06:23 19:34	05:42 20:06	05:24 20:31
14	07:22 16:51	06:55 16:30-16:55/25 17:29	06:13 17:38-17:41/3 18:02 06:38-07:07/29	06:21 19:36	05:41 20:07	05:24 20:32
15	07:22 16:52	06:54 16:31-16:55/24 17:30	06:11 17:36-17:42/6 18:03 06:40-07:06/26	06:20 19:37	05:40 20:08	05:24 20:32
16	07:21 16:53	06:52 16:33-16:53/20 17:32	06:09 17:34-17:43/9 18:04 06:40-07:04/24	06:18 19:38	05:39 20:09	05:24 20:32
17	07:21 16:54	06:51 16:35-16:51/16 17:33	06:08 17:33-17:44/11 18:05 06:41-07:02/21	06:16 19:39	05:38 20:10	05:24 20:33
18	07:20 16:56	06:50 16:38-16:48/10 17:34	06:06 17:32-17:46/14 18:06 06:44-07:00/16	06:15 19:40	05:37 20:11	05:24 20:33
19	07:20 16:57	06:48 16:39-16:48/10 17:35	06:04 17:31-17:47/16 18:07 06:47-06:56/9	06:13 19:41	05:36 20:12	05:24 20:33
20	07:19 16:58	06:47 16:39-16:48/10 17:36	06:03 17:31-17:47/16 18:09 06:21-06:36/15	06:12 19:42	05:35 20:13	05:24 20:34
21	07:19 16:59	06:45 17:00-17:16/16 17:38	06:01 17:30-17:48/18 18:10 06:20-06:38/18	06:10 19:43	05:34 20:14	05:24 20:34
22	07:18 17:00	06:44 17:00-17:17/17 17:39	05:59 17:31-17:50/19 18:11 06:18-06:39/21	06:09 19:44	05:33 20:15	05:24 20:34
23	07:17 17:02	06:43 17:02-17:18/16 17:40	05:58 17:31-17:51/20 18:12 06:16-06:39/23	06:07 19:45	05:33 20:16	05:25 20:34
24	07:17 17:03	06:41 17:03-17:19/16 17:41	05:56 17:31-17:51/20 18:13 06:14-06:39/25	06:06 19:46	05:32 20:17	05:25 20:34
25	07:16 17:04	16:36-16:39/3 06:40	17:10-17:21/11 17:42	06:04 19:47	05:31 20:18	05:25 20:35
26	07:15 17:05	16:34-16:41/7 06:38	17:09-17:22/13 17:44	05:52 18:15	17:34-17:48/14 06:11-06:39/28	05:25 20:19
27	07:14 17:06	16:33-16:42/9 06:37	06:56-07:00/4 17:45	05:51 18:16	17:36-17:45/9 06:09-06:39/30	05:26 20:20
28	07:13 17:08	16:31-16:43/12 06:35	06:54-07:04/10 17:46	05:49 18:17	06:08-06:39/31 17:38-17:51/20	05:26 20:20
29	07:13 17:09	16:30-16:45/15 06:34	06:54-07:04/10 17:46	05:48 18:17	06:07-06:39/31 17:38-17:51/20	05:27 20:20
30	07:12 17:10	16:29-16:46/17 06:33	06:54-07:04/10 17:46	05:47 18:17	06:06-06:39/31 17:38-17:51/20	05:27 20:20
31	07:11 17:11	16:29-16:47/18 06:32	06:54-07:04/10 17:46	05:46 18:17	06:05-06:39/31 17:38-17:51/20	05:27 20:20
Ore potenziali eliofania	297	297	369	399	449	453
Somma minuti d'ombra	81	671	1045	226	0	0

Legenda della tabella:

Giorno del mese Alba (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra  
Tramonto (hh:mm)Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra

### SHADOW - Calendario per WTG

Calcolo: Flicker\_su\_recettori\_Stornara NordWTG: 05 - VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (59)  
Assunzioni sui calcoli d'ombra

- I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:
- Il sole splende tutto il dì, dall'alba al tramonto
- Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole
- La turbina è costantemente operativa

	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre
1	05:27 20:35	05:52 20:15	06:23 18:56-19:06/10 19:32	06:53 07:17-07:47/30 18:41	06:28 15:57-16:28/31 16:54	07:03 16:29
2	05:28 20:34	05:53 20:14	06:24 18:53-19:06/13 19:30	06:54 07:16-07:48/32 18:39	06:29 15:57-16:29/32 16:53	07:04 16:29
3	05:28 20:34	05:54 20:13	06:25 18:51-19:06/15 19:29	06:55 07:15-07:47/32 18:38	06:30 15:57-16:28/31 16:51	07:05 16:29
4	05:29 20:34	05:55 20:12	06:26 18:50-19:04/14 19:27	06:56 07:16-07:47/31 18:36	06:31 15:56-16:26/30 16:50	07:06 16:29
5	05:30 20:34	05:56 20:11	06:27 18:49-19:03/14 19:25	06:57 07:18-07:48/30 18:34	06:32 15:56-16:25/29 16:49	07:07 16:28
6	05:30 20:34	05:56 20:10	06:28 18:48-19:01/13 19:24	06:58 07:19-07:47/28 18:33	06:34 15:57-16:24/27 16:48	07:08 16:28
7	05:31 20:33	05:57 20:08	06:29 18:48-18:59/11 19:22	06:59 07:20-07:47/27 18:31	06:35 15:57-16:23/26 16:47	07:09 16:28
8	05:31 20:33	05:58 20:07	06:30 18:48-18:58/10 19:20	07:00 07:21-07:46/25 18:29	06:36 15:57-16:21/24 16:46	07:10 16:28
9	05:32 20:33	05:59 20:06	06:31 18:48-18:56/8 19:19	07:02 07:22-07:45/23 18:28	06:37 15:59-16:21/22 16:45	07:11 16:28
10	05:33 20:32	06:00 20:05	06:32 18:48-18:54/6 19:17	07:03 07:23-07:43/20 18:26	06:39 15:59-16:20/21 16:44	07:12 16:28
11	05:33 20:32	06:02 20:03	06:33 18:49-18:53/4 19:15	07:04 07:24-07:42/18 18:24	06:40 16:00-16:18/18 16:43	07:12 16:28
12	05:34 20:31	06:03 20:02	06:34 18:50-18:51/1 19:14	07:05 07:25-07:40/15 18:23	06:41 16:00-16:17/17 16:42	07:13 16:28
13	05:35 20:31	06:04 20:01	06:35 06:58-07:28/30 19:12	07:06 07:26-07:38/12 18:21	06:42 16:02-16:17/15 16:41	07:14 16:28
14	05:36 20:30	06:05 19:59	06:36 06:57-07:28/31 19:10	07:07 07:28-07:36/8 18:20	06:43 16:03-16:15/12 16:40	07:15 16:29
15	05:36 20:30	06:06 19:58	06:37 06:57-07:28/31 19:08	07:08 17:42-17:55/13 18:18	06:45 16:05-16:14/9 16:39	07:16 16:29
16	05:37 20:29	06:07 19:56	06:38 18:26-18:33/7 19:07	07:09 17:42-17:54/12 18:17	06:46 16:07-16:14/7 16:38	07:16 16:29
17	05:38 20:29	06:08 19:55	06:39 18:22-18:36/14 19:05	07:10 17:37-17:52/15 18:15	06:47 16:10-16:13/3 16:37	07:17 16:29
18	05:39 20:28	06:09 19:54	06:40 18:20-18:37/17 19:03	07:11 17:34-17:50/16 18:14	06:48 16:36	07:18 16:30
19	05:40 20:27	06:10 19:52	06:41 18:19-18:38/19 19:02	07:12 17:32-17:48/16 18:12	06:49 16:36	07:18 16:30
20	05:41 20:26	06:11 19:51	06:42 18:17-18:37/20 19:00	07:13 17:30-17:47/17 18:10	06:50 16:35	07:19 16:30
21	05:41 20:26	06:12 19:49	06:43 18:16-18:36/20 18:58	07:14 17:30-17:46/16 18:09	06:52 16:34	07:19 16:31
22	05:42 20:25	06:13 19:48	06:44 18:16-18:34/18 18:56	07:15 17:29-17:44/15 18:08	06:53 16:34	07:20 16:31
23	05:43 20:24	06:14 19:46	06:45 18:15-18:32/17 18:55	07:16 17:29-17:43/14 18:06	06:54 16:33	07:20 16:32
24	05:44 20:23	06:15 19:45	06:46 18:15-18:30/15 07:06-07:19/13 18:53	07:17 17:29-17:43/14 18:05	06:55 16:32	07:21 16:32
25	05:45 20:22	06:16 19:43	06:47 18:15-18:29/14 07:07-07:17/10 18:51	07:18 17:07-17:19/12 16:19	06:56 16:32	07:21 16:33
26	05:46 20:21	06:17 19:42	06:48 18:15-18:27/12 07:08-07:13/5 18:50	07:19 16:05-16:22/17 17:02	06:57 16:31	07:22 16:34
27	05:47 20:21	06:18 19:40	06:49 18:15-18:25/10 18:48	07:20 16:29-16:39/10 17:01	06:59 16:31	07:22 16:34
28	05:48 20:20	06:19 19:38	06:50 18:16-18:23/7 18:46	07:21 15:59-16:25/26 16:59	07:00 16:30	07:22 16:35
29	05:49 20:19	06:20 19:37	06:51 18:17-18:22/5 18:44	07:22 16:01-16:25/24 16:24	07:01 16:30	07:23 16:36
30	05:50 20:18	06:21 19:35	06:52 18:19-18:20/1 18:43	07:23 16:29-16:40/11 16:57	07:02 16:30	07:23 16:36
31	05:51 20:16	06:22 19:34	 	07:24 15:58-16:27/29 16:55	 	07:23 16:37
Ore potenziali eliofanía	460	428	375	345	297	287
Somma minuti d'ombra	0	0	905	790	354	0

Legenda della tabella:

Giorno del mese Alba (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra  
Tramonto (hh:mm)inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra

Progetto:

Stornara Nord

Utente autorizzato:

Studio Tecnico BFP s.r.l.

Via Napoli 363/I

IT-70123 Bari

+39 080 5046361

Antonio Crisafulli / crisafulli@studiobfp.com

Redatto il:

01/08/2019 13:28/3.3.261

## SHADOW - Calendario per WTG

Calcolo: Flicker\_su\_recettori\_Stornara NordWTG: 06 - VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (60 Assunzioni sui calcoli d'ombra)

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il dì, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno
1	07:23 10:32-11:54/82 16:38 15:29-16:11/42 07:23 10:33-11:54/81 16:39 15:29-16:11/42	07:10 15:37-16:47/70 17:13 07:09 15:38-16:48/70 17:14	06:33 16:08-16:45/37 17:47 06:32 16:09-16:43/34 17:48	06:42 19:22 06:41 18:29-18:37/8 19:23	05:56 17:44-19:29/105 19:54 05:55 17:44-19:29/105 19:55	05:27 19:12-19:59/47 20:24 17:58-19:00/62 05:27 19:11-19:59/48 20:24 17:58-19:00/62
2	07:24 10:34-11:54/80 16:40 15:30-16:12/42 07:24 10:35-11:54/79 16:41 15:30-16:13/43	07:08 15:39-16:50/71 17:15 07:07 15:40-16:51/71 17:16	06:30 16:11-16:40/29 17:49 06:29 16:14-16:38/24 17:51	06:39 18:20-18:44/24 19:24 06:37 18:16-18:49/33 19:25	05:54 17:44-19:29/105 19:56 05:52 17:44-19:28/104 19:57	05:26 19:12-20:00/48 20:25 17:59-19:00/61 05:26 19:11-20:00/49 20:26 17:59-18:59/60
3	07:24 10:36-11:54/78 16:42 15:30-16:14/44	07:06 15:41-16:52/71 17:18 07:05 15:42-16:52/70 17:19	06:27 16:17-16:34/17 17:52 06:26 17:53	06:36 18:12-18:52/40 19:26 06:34 18:10-18:55/45 19:27	05:51 17:45-19:28/103 19:58 05:50 17:44-19:26/102 19:59	05:25 19:11-20:01/50 20:26 18:00-18:59/59 05:25 19:11-20:02/51 20:27 18:01-18:59/58
4	07:23 10:38-11:54/76 16:44 15:30-16:15/45	07:03 15:43-16:52/69 17:20 07:02 15:45-16:53/68 17:21	06:24 17:54 06:22 17:55	06:32 18:07-18:56/49 19:28 06:31 18:04-18:58/54 19:29	05:49 17:44-19:26/102 20:00 05:47 17:45-19:25/100 20:01	05:25 19:12-20:02/50 20:28 18:02-18:59/57 05:24 18:02-18:58/56 20:28 19:11-20:02/51
5	07:23 10:39-11:52/73 16:46 15:30-16:16/46	07:01 15:47-16:54/67 17:23 07:00 15:49-16:55/66 17:24	06:21 17:56 06:19 17:57	06:29 18:03-19:00/57 19:30 06:27 18:00-19:01/61 19:31	05:46 17:45-19:24/99 20:02 05:45 19:38-19:40/2 20:03 17:45-19:23/98	05:24 18:02-18:58/56 20:29 19:11-20:02/51 05:24 18:03-18:58/55 20:30 19:12-20:03/51
6	07:23 10:41-11:52/71 16:47 15:31-16:17/46	07:00 15:49-16:55/66 17:24 06:59 15:51-16:54/63 17:25	06:18 17:59 06:16 18:00	06:26 17:58-19:01/63 19:32 06:24 17:57-19:03/66 19:33	05:44 19:37-19:41/4 20:04 17:46-19:21/95 05:43 19:36-19:42/6 20:05 17:46-19:19/93	05:24 18:04-18:58/54 20:30 19:12-20:03/51 05:24 18:04-18:58/54 20:31 19:12-20:03/51
7	07:22 10:42-11:52/70 16:48 15:31-16:18/47	06:57 15:55-16:55/60 17:26 07:22 10:45-11:50/65 17:28	06:16 18:01 06:14 18:01	06:23 17:55-19:04/69 19:34 06:21 17:54-19:05/71 19:36	05:42 19:28-19:42/14 17:46-19:07/81 20:06 19:09-19:16/7 05:41 19:25-19:43/18 20:07 17:47-19:06/79	05:24 18:05-18:58/53 20:31 19:12-20:04/52 05:24 18:05-18:58/53 20:32 19:13-20:04/51
8	07:22 10:48-11:48/60 16:52 15:31-16:20/49	06:54 15:59-16:55/56 17:30 07:21 10:49-11:46/57 17:31	06:11 18:03 06:09 18:04	06:19 17:53-19:05/72 19:37 06:18 17:52-19:06/74 19:38	05:40 19:22-19:44/22 20:08 17:47-19:06/79 05:39 19:21-19:45/24 20:09 17:48-19:06/78	05:24 18:06-18:58/52 20:32 19:13-20:04/51 05:24 18:06-18:57/51 20:32 19:12-20:04/51
9	07:21 10:51-11:45/54 16:54 15:31-16:21/50	06:51 15:59-16:55/56 17:33 07:21 10:51-11:45/54 17:33	06:08 18:05 06:08 18:05	06:16 17:51-19:06/75 19:39 06:15 19:10-19:18/8 19:40	05:38 19:19-19:46/27 20:10 17:48-19:05/77 05:37 19:18-19:47/29 20:11 17:48-19:05/77	05:24 18:07-18:57/50 20:33 19:13-20:04/51 05:24 18:07-18:57/50 20:33 19:13-20:05/52
10	07:20 10:53-11:43/50 16:56 15:31-16:22/51	06:50 15:59-16:55/56 17:34 07:20 10:56-11:41/45 17:35	06:06 18:06 06:04 18:07	06:13 17:49-19:19/90 19:41 06:12 17:49-19:20/91 19:42	05:36 19:17-19:48/31 20:12 17:50-19:05/75 05:35 19:16-19:49/33 20:13 17:50-19:05/75	05:24 18:08-18:58/50 20:34 19:13-20:05/52 05:24 18:08-18:58/50 20:34 19:14-20:06/52
11	07:18 11:02-11:34/32 16:59 15:32-16:23/51	06:45 16:01-16:54/53 17:38 07:18 11:07-11:30/23 17:39	06:01 18:10 05:59 18:11	06:10 17:47-19:20/93 19:43 06:09 17:47-19:22/95 19:44	05:34 19:15-19:50/35 20:14 17:50-19:04/74 05:33 19:14-19:50/36 20:15 17:51-19:03/72	05:24 18:08-18:58/50 20:34 19:14-20:06/52 05:24 18:08-18:58/50 20:34 19:14-20:06/52
12	07:17 15:33-16:24/51 17:01	06:42 16:02-16:53/51 17:40 07:16 15:33-16:31/58 17:41	05:57 18:12 05:56 18:13	06:07 17:46-19:22/96 19:45 06:06 17:46-19:24/98 19:46	05:33 19:14-19:52/38 20:16 17:52-19:04/72 05:32 19:14-19:52/38 20:17 17:52-19:03/71	05:24 18:08-18:58/50 20:34 19:14-20:06/52 05:25 18:09-18:59/50 20:35 19:15-20:06/51
13	07:16 15:33-16:34/61 17:04	06:40 16:03-16:51/48 17:42 07:15 15:34-16:38/64 17:44	05:54 18:14 05:52 18:15	06:04 17:45-19:24/99 19:47 06:03 17:45-19:26/101 19:48	05:31 19:13-19:53/40 20:18 17:53-19:02/69 05:30 19:13-19:54/41 20:19 17:54-19:03/69	05:25 18:09-18:59/50 20:35 19:15-20:06/51 05:26 18:08-19:00/52 20:35 19:15-20:06/51
14	07:14 15:35-16:40/65 17:06	06:37 16:05-16:48/43 17:45 07:13 15:35-16:42/67 17:46	05:51 18:16 05:49 18:17	06:02 17:45-19:27/102 19:49 06:00 17:44-19:27/103 19:51	05:30 19:12-19:55/43 20:20 17:54-19:02/68 05:29 19:12-19:55/43 20:20 17:54-19:01/67	05:26 18:09-19:01/52 20:35 19:15-20:06/51 05:26 18:08-19:01/53 20:35 19:15-20:07/52
15	07:12 15:35-16:43/68 17:09		06:47 19:18 06:46 19:19	05:59 17:44-19:29/105 19:52 05:57 17:45-19:30/105 19:53	05:29 19:12-19:56/44 20:21 17:56-19:01/65 05:28 19:11-19:57/46 20:22 17:56-19:00/64	05:27 18:09-19:02/53 20:35 19:16-20:07/51
16	07:12 15:36-16:45/69 17:10		06:44 19:20		05:27 19:11-19:58/47 20:23 17:57-19:00/63	
17	07:11 15:37-16:46/69 17:11		06:44 19:20			
Ore potenziali eliofanis	297	297	369	399	449	453
Somma minuti d'ombra	3003	1645	141	2125	3254	3139

Legenda della tabella:

Giorno del mese Alba (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra  
Tramonto (hh:mm)nizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra

## SHADOW - Calendario per WTG

Calcolo: Flicker\_su\_recettori\_Stornara NordWTG: 06 - VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (60 Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre
1	05:27 18:08-19:02/54 20:35 19:16-20:07/51	05:52 19:46-19:52/6 20:15 17:57-19:31/94	06:23 17:58-19:01/63 19:32	06:53 18:41	06:28 15:17-16:23/66 16:54	07:03 10:24-11:34/70 16:29 15:13-16:00/47
2	05:28 18:08-19:03/55 20:34 19:17-20:08/51	05:52 19:48-19:51/3 20:14 17:56-19:32/96	06:24 17:59-19:00/61 19:30	06:54 18:39	06:29 15:16-16:24/68 16:53	07:04 10:24-11:35/71 16:29 15:14-16:00/46
3	05:28 18:08-19:03/55 20:34 19:16-20:07/51	05:53 19:49-19:50/1 20:13 17:56-19:34/98	06:25 18:00-18:57/57 19:29	06:55 18:38	06:30 15:14-16:23/69 16:51	07:05 10:23-11:36/73 16:29 15:14-16:00/46
4	05:29 18:08-19:04/56 20:34 19:17-20:08/51	05:54 17:56-19:35/99 20:12	06:26 18:01-18:55/54 19:27	06:56 18:36	06:31 15:13-16:22/69 16:50	07:06 10:23-11:38/75 16:28 15:15-16:00/45
5	05:30 18:07-19:04/57 20:34 19:17-20:07/50	05:55 17:54-19:35/101 20:11	06:27 18:03-18:52/49 19:25	06:57 18:34	06:32 15:11-16:21/70 16:49	07:07 10:23-11:39/76 16:28 15:16-16:00/44
6	05:30 19:18-20:08/50 20:34 18:07-19:05/58	05:56 17:54-19:36/102 20:10	06:28 18:05-18:50/45 19:24	06:58 18:33	06:34 15:11-16:21/70 16:48	07:08 10:23-11:40/77 16:28 15:16-16:01/45
7	05:31 19:17-20:07/50 20:33 18:06-19:05/59	05:57 17:54-19:36/102 20:08	06:29 18:07-18:47/40 19:22	06:59 18:31	06:35 15:10-16:20/70 16:47	07:09 10:23-11:41/78 16:28 15:17-16:01/44
8	05:31 19:18-20:08/50 20:33 18:06-19:06/60	05:58 17:53-19:37/104 20:07	06:30 18:10-18:43/33 19:20	07:00 16:56-17:07/11 18:29	06:36 15:09-16:19/70 16:46	07:10 10:23-11:42/79 16:28 15:18-16:01/43
9	05:32 19:19-20:08/49 20:33 18:06-19:07/61	05:59 17:53-19:37/104 20:06	06:31 18:14-18:39/25 19:19	07:02 16:50-17:11/21 18:28	06:37 15:09-16:19/70 16:45	07:11 10:23-11:43/80 16:28 15:18-16:00/42
10	05:33 19:18-20:07/49 20:32 18:05-19:07/62	06:00 17:53-19:37/104 20:05	06:32 18:21-18:31/10 19:17	07:03 16:47-17:14/27 18:26	06:38 15:08-16:18/70 16:44	07:12 10:22-11:43/81 16:28 15:18-16:00/42
11	05:33 19:19-20:06/47 20:32 18:05-19:08/63	06:01 17:53-19:38/105 20:03	06:33 19:15	07:04 16:44-17:16/32 18:24	06:40 15:07-16:17/70 16:43	07:12 10:22-11:44/82 16:28 15:19-16:01/42
12	05:34 19:20-20:06/46 20:31 18:05-19:08/63	06:02 17:52-19:38/106 20:02	06:34 19:13	07:05 16:42-17:17/35 18:23	06:41 15:07-16:16/69 16:42	07:13 10:22-11:45/83 16:28 15:20-16:01/41
13	05:35 19:19-20:05/46 20:31 18:05-19:09/64	06:03 17:52-19:37/105 20:01	06:35 19:12	07:06 16:40-17:19/39 18:21	06:42 15:07-16:15/68 16:41	07:14 10:23-11:46/83 16:28 15:21-16:02/41
14	05:36 19:20-20:05/45 20:30 18:04-19:09/65	06:04 17:52-19:36/104 19:59	06:36 19:10	07:07 16:38-17:20/42 18:20	06:43 15:07-16:14/67 16:40	07:15 10:23-11:47/84 16:28 15:22-16:02/40
15	05:36 19:21-20:05/44 20:30 18:04-19:10/66	06:05 17:52-19:35/103 19:58	06:37 19:08	07:08 16:37-17:21/44 18:18	06:44 15:07-16:12/65 16:39	07:16 10:23-11:47/84 16:29 15:22-16:02/40
16	05:37 19:21-20:04/43 20:29 18:04-19:11/67	06:06 17:52-19:33/101 19:56	06:38 19:07	07:09 16:36-17:22/46 18:17	06:46 15:07-16:11/64 16:38	07:16 10:23-11:48/85 16:29 15:23-16:02/39
17	05:38 19:22-20:04/42 20:28 18:04-19:12/68	06:08 17:52-19:32/100 19:55	06:39 19:05	07:10 16:34-17:23/49 18:15	06:47 15:07-16:08/61 16:37	07:17 10:24-11:49/85 16:29 15:24-16:03/39
18	05:39 19:22-20:03/41 20:28 18:02-19:11/69	06:09 17:52-19:31/99 19:54	06:40 19:03	07:11 16:33-17:23/50 18:13	06:48 15:07-16:05/58 16:36	07:18 10:24-11:49/85 16:30 15:24-16:02/38
19	05:40 19:23-20:02/39 20:27 18:02-19:12/70	06:10 17:52-19:29/97 19:52	06:41 19:01	07:13 16:32-17:23/51 18:12	06:49 15:07-15:58/51 16:36	07:18 10:25-11:50/85 16:30 15:25-16:03/38
20	05:40 19:23-20:02/39 20:26 18:02-19:13/71	06:11 17:52-19:28/96 19:51	06:42 19:00	07:14 16:31-17:23/52 18:10	06:50 10:42-11:05/23 16:35 15:08-15:59/51	07:19 10:24-11:50/86 16:30 15:25-16:03/38
21	05:41 19:24-20:01/37 20:26 18:01-19:14/73	06:12 17:52-19:27/95 19:49	06:43 18:58	07:15 16:31-17:25/54 18:09	06:52 10:38-11:10/32 16:34 15:08-15:59/51	07:19 10:25-11:51/86 16:31 15:26-16:04/38
22	05:42 19:25-20:01/36 20:25 18:01-19:14/73	06:13 17:52-19:25/93 19:48	06:44 18:56	07:16 16:30-17:25/55 18:07	06:53 10:35-11:14/39 16:34 15:08-15:59/51	07:20 10:25-11:51/86 16:31 15:26-16:04/38
23	05:43 19:26-20:00/34 20:24 18:01-19:15/74	06:14 17:53-19:24/91 19:46	06:45 18:55	07:17 16:29-17:25/56 18:06	06:54 10:32-11:17/45 16:33 15:08-15:59/51	07:20 10:26-11:52/86 16:32 15:27-16:05/38
24	05:44 19:26-19:58/32 20:23 17:59-19:14/75	06:15 17:53-19:22/89 19:45	06:46 18:53	07:18 16:29-17:24/55 18:05	06:55 10:31-11:21/50 16:32 15:09-16:00/51	07:21 10:27-11:52/85 16:32 15:27-16:05/38
25	05:45 19:28-19:58/30 20:22 17:59-19:15/76	06:16 19:13-19:21/8 19:43 17:53-19:10/77	06:47 18:51	06:19 15:29-16:25/56 17:03	06:56 10:30-11:23/53 16:32 15:09-16:00/51	07:21 10:28-11:53/85 16:33 15:28-16:06/38
26	05:46 19:29-19:57/28 20:21 17:59-19:15/76	06:17 17:54-19:09/75 19:41	06:48 18:49	06:21 15:29-16:25/56 17:02	06:57 10:28-11:25/57 16:31 15:10-15:59/49	07:22 10:28-11:53/85 16:34 15:28-16:07/39
27	05:47 19:30-19:56/26 20:20 17:58-19:16/78	06:18 17:54-19:08/74 19:40	06:49 18:48	06:22 15:28-16:25/57 17:00	06:58 10:27-11:27/60 16:31 15:10-15:59/49	07:22 10:29-11:53/85 16:34 15:28-16:07/39
28	05:48 19:32-19:55/23 20:19 17:58-19:16/78	06:19 17:55-19:07/72 19:38	06:50 18:46	06:23 15:28-16:24/56 16:59	07:00 10:26-11:28/62 16:30 15:11-15:59/48	07:22 10:29-11:53/84 16:35 15:28-16:07/39
29	05:49 19:34-19:54/20 20:18 17:58-19:17/79	06:20 17:55-19:06/71 19:37	06:51 18:44	06:24 15:28-16:24/56 16:58	07:01 10:25-11:30/65 16:30 15:11-15:59/48	07:23 10:30-11:54/84 16:36 15:29-16:09/40
30	05:50 19:36-19:54/18 20:17 17:57-19:17/80	06:21 17:56-19:04/68 19:35	06:52 18:43	06:25 15:23-16:24/61 16:56	07:02 10:24-11:31/67 16:30 15:11-15:59/48	07:23 10:31-11:54/83 16:36 15:29-16:09/40
31	05:51 19:40-19:53/13 17:57-19:17/80 20:16 19:18-19:28/10	06:22 17:57-19:03/66 19:34	06:53 18:43	06:26 15:20-16:24/64 16:55	07:03 10:24-11:32/68 16:30 15:11-15:59/48	07:23 10:31-11:54/83 16:37 15:29-16:10/41
Ore potenziali eliofania	460	428	375	345	297	287
Somma minuti d'ombra	3326	2909	437	1125	2366	3802

### Legenda della tabella:

Giorno del mese Alba (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra  
Tramonto (hh:mm)nizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra

## SHADOW - Calendario per WTG

Calcolo: Flicker\_su\_recettori\_Stornara NordWTG: 07 - VESTAS V162-5.6MW(User) 5600 162.0 !0! hub: 119,0 m (TOT: 200,0 m) (61)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno
1	07:23 09:52-11:26/94 16:38	07:10 16:20-16:49/29 17:13	06:33 17:47	06:42 07:11-08:19/68 19:22	05:56 06:28-08:11/103 19:54	05:27 07:21-07:40/19 20:24
2	07:23 09:52-11:26/94 16:39	07:09 16:21-16:50/29 17:14	06:32 17:48	06:41 07:09-08:18/69 19:23	05:55 06:28-08:10/102 19:55	05:27 07:23-07:37/14 20:24
3	07:24 09:53-11:26/93 16:40	07:08 16:22-16:52/30 17:15	06:30 17:49	06:39 07:08-08:17/69 19:24	05:54 06:29-08:09/100 19:56	05:26 19:59-20:00/1 20:25 07:28-07:33/5
4	07:24 09:54-11:26/92 16:41	07:07 16:22-16:53/31 17:16	06:29 17:51	06:37 07:06-08:16/70 19:25	05:52 06:31-08:09/98 19:57	05:26 19:57-20:00/3 20:26
5	07:24 09:55-11:26/91 16:42	07:06 16:23-16:55/32 17:18	06:27 17:52	06:36 07:04-08:14/70 19:26	05:51 06:53-08:08/75 19:58 06:32-06:52/20	05:25 19:57-20:01/4 20:26
6	07:24 09:56-11:26/90 16:43	07:05 16:23-16:55/32 17:19	06:26 17:53	06:34 07:03-08:15/72 19:27	05:50 06:53-08:07/74 19:59 06:34-06:50/16	05:25 19:56-20:02/6 20:27
7	07:23 09:57-11:26/89 16:44	07:03 16:25-16:57/32 17:20	06:24 17:54	06:32 07:02-08:15/73 19:28	05:49 06:53-08:06/73 20:00 06:36-06:46/10	05:25 19:56-20:03/7 20:28
8	07:23 09:57-11:25/88 16:45	07:02 16:27-16:58/31 17:22	06:22 06:49-07:05/16 17:55	06:31 07:00-08:15/75 19:29	05:47 06:54-08:05/71 20:01	05:24 19:55-20:03/8 20:28
9	07:23 09:58-11:25/87 16:46	07:01 16:44-17:00/16 17:23 16:29-16:42/13	06:21 06:45-07:10/25 17:56	06:29 07:00-08:16/76 19:30 06:48-06:57/9	05:46 06:54-08:05/71 20:02	05:24 19:55-20:03/8 20:29
10	07:23 09:59-11:25/86 16:47	07:00 16:44-17:01/17 17:24 16:34-16:38/4	06:19 06:42-07:13/31 17:57	06:27 06:46-08:16/90 19:31	05:45 06:55-08:04/69 20:03	05:24 19:55-20:04/9 20:30
11	07:23 10:00-11:25/85 16:48	06:59 16:44-17:02/18 17:25	06:18 06:39-07:14/35 17:59	06:26 06:45-08:17/92 19:32	05:44 06:56-08:03/67 20:04	05:24 19:55-20:05/10 20:30
12	07:23 10:00-11:24/84 16:49	06:57 16:44-17:04/20 17:27	06:16 06:37-07:17/40 18:00	06:24 06:43-08:17/94 19:33	05:43 06:56-08:02/66 20:05	05:24 19:55-20:05/10 20:31
13	07:22 10:02-11:24/82 16:50	06:56 16:45-17:05/20 17:28	06:14 06:35-07:18/43 18:01	06:23 06:41-08:16/95 19:34	05:42 06:57-08:01/64 20:06	05:24 19:55-20:06/11 20:31
14	07:22 10:02-11:23/81 16:51	06:55 16:45-17:03/18 17:29	06:13 06:33-07:19/46 18:02	06:21 06:40-08:17/97 19:36	05:41 06:58-08:01/63 20:07	05:24 19:55-20:06/11 20:32
15	07:22 10:04-11:23/79 16:52 16:26-16:27/1	06:54 16:47-17:03/16 17:30	06:11 06:32-07:20/48 18:03	06:20 06:38-08:16/98 19:37	05:40 06:59-08:00/61 20:08	05:24 19:55-20:06/11 20:32
16	07:21 10:04-11:22/78 16:53 16:24-16:27/3	06:52 16:49-17:01/12 17:31	06:09 06:30-07:21/51 18:04	06:18 06:37-08:17/100 19:38	05:39 06:59-07:59/60 20:09	05:24 19:55-20:07/12 20:32
17	07:21 10:06-11:22/76 16:54 16:23-16:29/6	06:51 16:51-16:58/7 17:33	06:08 06:29-07:21/52 18:05	06:16 06:35-08:16/101 19:39	05:38 07:00-07:58/58 20:10	05:24 19:55-20:07/12 20:33
18	07:20 10:07-11:20/73 16:56 16:22-16:30/8	06:50 17:34	06:06 06:28-07:23/55 18:06	06:15 06:34-08:17/103 19:40	05:37 07:01-07:56/55 20:11	05:24 19:55-20:07/12 20:33
19	07:20 10:09-11:20/71 16:57 16:22-16:32/10	06:48 17:35	06:04 06:27-07:23/56 18:07	06:13 06:32-08:16/104 19:41	05:36 07:03-07:56/53 20:12	05:24 19:55-20:07/12 20:33
20	07:19 10:10-11:18/68 16:58 16:21-16:33/12	06:47 17:36	06:03 06:26-07:23/57 18:09	06:12 06:31-08:16/105 19:42	05:35 07:04-07:55/51 20:13	05:24 19:55-20:08/13 20:34
21	07:18 10:11-11:17/66 16:59 16:20-16:34/14	06:45 17:38	06:01 06:24-07:23/59 18:10	06:10 06:29-08:15/106 19:43	05:34 07:04-07:54/50 20:14	05:24 19:56-20:09/13 20:34
22	07:18 10:13-11:16/63 17:00 16:20-16:36/16	06:44 17:39	05:59 06:24-07:23/59 18:11	06:09 06:28-08:15/107 19:44	05:33 07:05-07:53/48 20:15	05:24 19:56-20:09/13 20:34
23	07:17 10:15-11:14/59 17:02 16:20-16:37/17	06:43 17:40	05:57 06:23-07:23/60 18:12	06:07 06:26-08:15/109 19:45	05:33 07:07-07:52/45 20:16	05:25 19:56-20:08/12 20:34
24	07:16 10:17-11:12/55 17:03 16:19-16:38/19	06:41 17:41	05:56 06:23-07:23/60 18:13	06:06 06:26-08:15/109 19:46	05:32 07:08-07:51/43 20:17	05:25 19:56-20:08/12 20:34
25	07:16 10:19-11:09/50 17:04 16:19-16:39/20	06:40 17:42	05:54 06:23-07:23/60 18:14	06:04 06:26-08:14/108 19:47	05:31 07:09-07:49/40 20:18	05:25 19:57-20:09/12 20:35
26	07:15 10:22-11:07/45 17:05 16:19-16:40/21	06:38 17:44	05:52 06:22-07:22/60 18:15	06:03 06:25-08:13/108 19:48	05:31 07:11-07:49/38 20:19	05:25 19:57-20:09/12 20:35
27	07:14 10:25-11:04/39 17:06 16:20-16:42/22	06:37 17:45	05:51 06:21-07:22/61 18:16	06:02 06:26-08:13/107 19:49	05:30 07:12-07:47/35 20:19	05:26 19:57-20:09/12 20:35
28	07:13 10:28-11:00/32 17:08 16:19-16:44/25	06:35 17:46	05:49 06:21-07:22/61 18:17	06:00 06:26-08:12/106 19:51	05:29 07:14-07:46/32 20:20	05:26 19:58-20:09/11 20:35
29	07:12 10:33-10:55/22 17:09 16:20-16:45/25		06:47 07:18-08:21/63 19:18	05:59 06:26-08:12/106 19:52	05:29 07:15-07:44/29 20:21	05:27 19:58-20:09/11 20:35
30	07:12 16:20-16:46/26 17:10		06:46 07:15-08:20/65 19:19	05:58 06:27-08:11/104 19:53	05:28 07:16-07:42/26 20:22	05:27 19:59-20:09/10 20:35
31	07:11 16:20-16:47/27 17:11		06:44 07:13-08:20/67 19:20		05:28 07:18-07:41/23 20:23	
Ore potenziali eliofanìa	297	297	369	399	449	453
Somma minuti d'ombra	2384	407	1230	2800	1889	316

### Legenda della tabella:

Giorno del mese Alba (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra  
Tramonto (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra

## SHADOW - Calendario per WTG

Calcolo: Flicker\_su\_recettori\_Stornara NordWTG: 07 - VESTAS V162-5.6MW(User) 5600 162.0 !0! hub: 119,0 m (TOT: 200,0 m) (61 Assunzioni sui calcoli d'ombra)

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre
1	05:27 19:59-20:09/10 20:35	05:52 07:07-08:13/66 20:15	06:23 06:44-08:16/92 19:32	06:53 07:15-07:56/41 18:41	06:28 16:13-16:30/17 16:54 16:01-16:08/7	07:03 09:42-11:07/85 16:29
2	05:28 20:00-20:09/9 20:34	05:53 07:06-08:14/68 20:14	06:24 06:45-08:15/90 19:30	06:54 07:16-07:54/38 18:39	06:29 16:14-16:29/15 16:53 15:59-16:12/13	07:04 09:42-11:08/86 16:29
3	05:28 20:00-20:09/9 20:34	05:54 07:05-08:15/70 20:13	06:25 06:58-08:14/76 19:29 06:46-06:55/9	06:55 07:18-07:51/33 18:38	06:30 15:56-16:28/32 16:51	07:05 09:42-11:09/87 16:29
4	05:29 20:01-20:09/8 20:34	05:54 07:05-08:16/71 20:12	06:26 06:57-08:12/75 19:27	06:56 07:20-07:48/28 18:36	06:31 15:55-16:26/31 16:50	07:06 09:42-11:10/88 16:29
5	05:30 20:01-20:08/7 20:34	05:55 07:04-08:16/72 20:11 06:51-06:53/2	06:27 06:58-08:11/73 19:25	06:57 07:24-07:44/20 18:34	06:32 15:53-16:25/32 16:49	07:07 09:42-11:11/89 16:28
6	05:30 20:02-20:08/6 20:34	05:56 07:04-08:17/73 20:10 06:46-06:58/12	06:28 06:58-08:10/72 19:24	06:58 07:30-07:39/9 18:33	06:34 15:53-16:24/31 16:48	07:08 09:42-11:12/90 16:28
7	05:31 20:02-20:07/5 20:33	05:57 07:02-08:17/75 20:08 06:43-07:01/18	06:29 06:59-08:09/70 19:22	06:59 18:31	06:35 15:52-16:23/31 16:47	07:09 09:42-11:13/91 16:28
8	05:31 20:04-20:07/3 20:33	05:58 07:02-08:17/75 20:07 06:40-07:01/21	06:30 07:00-08:10/70 19:20	07:00 18:29	06:36 15:51-16:21/30 16:46	07:10 09:42-11:14/92 16:28
9	05:32 20:05-20:08/3 20:33	05:59 06:39-08:18/99 20:06	06:31 07:01-08:10/69 19:19	07:02 18:28	06:37 15:52-16:21/29 16:45	07:11 09:42-11:15/93 16:28
10	05:33 07:32-07:42/10 20:32	06:00 06:38-08:18/100 20:05	06:32 07:02-08:11/69 19:17	07:03 18:26	06:38 15:51-16:20/29 16:44	07:12 09:42-11:15/93 16:28
11	05:33 07:29-07:46/17 20:32	06:01 06:36-08:19/103 20:03	06:33 07:03-08:11/68 19:15	07:04 18:24	06:40 15:51-16:18/27 16:43	07:12 09:42-11:16/94 16:28
12	05:34 07:28-07:48/20 20:31	06:02 06:35-08:19/104 20:02	06:34 07:04-08:11/67 19:14	07:05 18:23	06:41 15:51-16:17/26 16:42	07:13 09:42-11:17/95 16:28
13	05:35 07:26-07:51/25 20:31	06:04 06:35-08:19/104 20:01	06:35 07:06-08:11/65 19:12	07:06 18:21	06:42 10:05-10:27/22 16:41 15:51-16:17/26	07:14 09:43-11:17/94 16:28
14	05:36 07:24-07:52/28 20:30	06:05 06:34-08:20/106 19:59	06:36 07:07-08:11/64 19:10	07:07 18:20	06:43 10:00-10:32/32 16:40 15:51-16:15/24	07:15 09:43-11:18/95 16:29
15	05:36 07:23-07:54/31 20:30	06:06 06:33-08:20/107 19:58	06:37 07:10-08:11/61 19:08	07:08 18:18	06:44 09:57-10:36/39 16:39 15:51-16:14/23	07:16 09:43-11:18/95 16:29
16	05:37 07:22-07:56/34 20:29	06:07 06:33-08:20/107 19:56	06:38 07:11-08:11/60 19:07	07:09 18:17	06:46 09:55-10:41/46 16:38 15:53-16:14/21	07:16 09:44-11:19/95 16:29
17	05:38 07:21-07:57/36 20:28	06:08 06:32-08:20/108 19:55	06:39 07:10-08:11/61 19:05	07:10 18:15	06:47 09:52-10:43/51 16:37 15:53-16:13/20	07:17 09:44-11:20/96 16:29
18	05:39 07:19-07:58/39 20:28	06:09 06:32-08:20/108 19:54	06:40 07:10-08:10/60 19:03	07:11 18:13	06:48 09:51-10:46/55 16:36 15:53-16:12/19	07:18 09:44-11:20/96 16:30
19	05:40 07:18-07:59/41 20:27	06:10 06:32-08:20/108 19:52	06:41 07:10-08:10/60 19:02	07:13 18:12	06:49 09:49-10:48/59 16:36 15:54-16:11/17	07:18 09:45-11:21/96 16:30
20	05:41 07:17-08:01/44 20:26	06:11 06:32-08:20/108 19:51	06:42 07:10-08:09/59 19:00	07:14 18:10	06:50 09:48-10:51/63 16:35 15:55-16:11/16	07:19 09:45-11:21/96 16:30
21	05:41 07:16-08:02/46 20:26	06:12 06:33-08:20/107 19:49	06:43 07:10-08:09/59 18:58	07:15 18:09	06:52 09:47-10:53/66 16:34 15:56-16:10/14	07:19 09:46-11:22/96 16:31
22	05:42 07:15-08:04/49 20:25	06:13 06:34-08:20/106 19:48	06:44 07:10-08:08/58 18:56	07:16 18:08	06:53 09:46-10:54/68 16:34 15:57-16:09/12	07:20 09:46-11:22/96 16:31
23	05:43 07:15-08:05/50 20:24	06:14 06:35-08:20/105 19:46	06:45 07:10-08:07/57 18:55	07:17 18:06	06:54 09:45-10:56/71 16:33 15:58-16:08/10	07:20 09:47-11:23/96 16:32
24	05:44 07:14-08:06/52 20:23	06:15 06:36-08:20/104 19:45	06:46 07:10-08:06/56 18:53	07:18 18:05	06:55 09:45-10:58/73 16:32 16:00-16:08/8	07:21 09:47-11:23/96 16:32
25	05:45 07:12-08:06/54 20:22	06:16 06:37-08:19/102 19:43	06:47 07:10-08:05/55 18:51	06:19 16:20-16:28/8 17:03	06:56 09:44-11:00/76 16:32 16:01-16:07/6	07:21 09:48-11:24/96 16:33
26	05:46 07:11-08:07/56 20:21	06:17 06:38-08:19/101 19:42	06:48 07:11-08:04/53 18:49	06:21 16:18-16:31/13 17:02	06:57 09:43-11:01/78 16:31 16:03-16:06/3	07:22 09:48-11:24/96 16:34
27	05:47 07:10-08:09/59 20:20	06:18 06:39-08:19/100 19:40	06:49 07:11-08:03/52 18:48	06:22 16:16-16:33/17 17:00	06:58 09:43-11:02/79 16:31 16:05-16:06/1	07:22 09:48-11:24/96 16:34
28	05:48 07:10-08:10/60 20:19	06:19 06:40-08:18/98 19:38	06:50 07:12-08:01/49 18:46	06:23 16:15-16:33/18 16:59	07:00 09:42-11:03/81 16:30	07:22 09:49-11:24/95 16:35
29	05:49 07:09-08:11/62 20:18	06:20 06:41-08:18/97 19:37	06:51 07:13-08:00/47 18:44	06:24 16:14-16:34/20 16:58	07:01 09:42-11:04/82 16:30	07:23 09:50-11:25/95 16:36
30	05:50 07:08-08:12/64 20:17	06:21 06:42-08:17/95 19:35	06:52 07:14-07:58/44 18:43	06:25 16:14-16:33/19 16:56	07:02 09:41-11:05/84 16:30	07:23 09:51-11:25/94 16:36
31	05:51 07:07-08:12/65 20:16	06:22 06:43-08:16/93 19:34		06:26 16:13-16:31/18 16:55		07:23 09:51-11:26/95 16:37
Ore potenziali eliofanìa	460	428	375	345	297	287
Somma minuti d'ombra	1002	2993	1920	282	1695	2897

### Legenda della tabella:

Giorno del mese Alba (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra  
Tramonto (hh:mm)inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra

## SHADOW - Calendario per WTG

Calcolo: Flicker\_su\_recettori\_Stornara NordWTG: 08 - VESTAS V162-5.6MW(User) 5600 162.0 !0! hub: 119,0 m (TOT: 200,0 m) (62)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

- Il sole splende tutto il di, dall'alba al tramonto
- Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole
- La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno
1	07:23 12:33-14:02/89 16:38 08:11-09:37/86	07:10 08:24-09:42/78 17:13	06:33 17:47	06:42 18:18-19:00/42 19:21 07:07-07:22/15	05:56 18:13-19:09/56 19:54	05:27 20:23
2	07:23 12:33-14:02/89 16:39 08:12-09:37/85	07:09 08:25-09:42/77 17:14	06:32 17:48	06:41 18:17-19:00/43 19:23 07:09-07:19/10	05:55 18:14-19:09/55 19:55	05:26 20:24
3	07:23 12:34-14:02/88 16:40 08:12-09:38/86	07:08 08:26-09:41/75 17:15	06:30 17:49	06:39 18:16-19:01/45 19:24	05:53 18:16-19:08/52 19:56	05:26 20:25
4	07:24 12:35-14:02/87 16:41 08:12-09:38/86	07:07 08:27-09:41/74 17:16	06:29 17:51	06:37 18:16-19:03/47 19:25	05:52 18:17-19:08/51 19:57	05:26 20:26
5	07:24 12:36-14:03/87 16:42 08:13-09:39/86	07:06 08:28-09:40/72 17:18	06:27 17:52	06:36 18:16-19:04/48 19:26	05:51 18:18-19:07/49 19:58	05:25 20:26
6	07:23 12:37-14:03/86 16:43 08:13-09:39/86	07:04 08:28-09:38/70 17:19	06:26 17:53	06:34 18:15-19:05/50 19:27	05:50 18:18-19:05/47 19:59	05:25 20:27
7	07:23 12:38-14:03/85 16:44 08:14-09:40/86	07:03 08:29-09:38/69 17:20	06:24 17:54	06:32 18:16-19:06/50 19:28	05:49 18:19-19:04/45 20:00	05:25 20:28
8	07:23 12:38-14:02/84 16:45 08:13-09:40/87	07:02 08:30-09:37/67 17:21	06:22 17:55	06:31 18:16-19:07/51 19:29	05:47 18:20-19:04/44 20:01	05:24 20:28
9	07:23 12:39-14:02/83 16:46 08:14-09:40/86	07:01 08:31-09:36/65 17:23	06:21 17:56	06:29 18:15-19:09/54 19:30	05:46 18:21-19:03/42 20:02	05:24 20:29
10	07:23 12:41-14:03/82 16:47 08:15-09:41/86	07:00 08:33-09:35/62 17:24	06:19 17:57	06:27 18:14-19:09/55 19:31	05:45 18:23-19:01/38 20:03	05:24 20:29
11	07:23 12:41-14:02/81 16:48 08:15-09:42/87	06:59 08:33-09:32/59 17:25	06:17 17:59	06:26 18:13-19:10/57 19:32	05:44 18:24-19:00/36 20:04	05:24 20:30
12	07:22 12:43-14:02/79 16:49 08:15-09:42/87	06:57 08:35-09:31/56 17:26	06:16 18:00	06:24 18:13-19:11/58 19:33	05:43 18:25-18:59/34 20:05	05:24 20:31
13	07:22 12:44-14:02/78 16:50 08:16-09:42/86	06:56 08:37-09:29/52 17:28	06:14 18:01	06:23 18:11-19:11/60 19:34	05:42 18:27-18:58/31 20:06	05:24 20:31
14	07:22 12:45-14:01/76 16:51 08:16-09:42/86	06:55 08:38-09:27/49 17:29	06:13 18:02	06:21 18:11-19:12/61 19:35	05:41 18:28-18:56/28 20:07	05:24 20:31
15	07:21 12:47-14:01/74 16:52 08:16-09:43/87	06:54 08:40-09:25/45 17:30	06:11 18:03	06:19 18:10-19:12/62 19:37	05:40 18:30-18:54/24 20:08	05:23 20:32
16	07:21 12:48-14:00/72 16:53 08:16-09:43/87	06:52 08:42-09:22/40 17:31	06:09 18:04	06:18 18:11-19:13/62 19:38	05:39 18:32-18:52/20 20:09	05:23 20:32
17	07:21 12:50-14:00/70 16:54 08:17-09:44/87	06:51 08:44-09:19/35 17:33	06:07 18:05	06:16 18:10-19:13/63 19:39	05:38 18:35-18:48/13 20:10	05:24 20:33
18	07:20 12:51-13:59/68 16:55 08:17-09:43/86	06:50 08:48-09:15/27 17:34	06:06 18:06	06:15 18:10-19:14/64 19:40	05:37 18:32-18:52/20 20:11	05:24 20:33
19	07:20 12:54-13:59/65 16:57 08:18-09:44/86	06:48 08:53-09:11/18 17:35	06:04 18:07	06:13 18:09-19:13/64 19:41	05:36 18:31-18:52/20 20:12	05:24 20:33
20	07:19 12:55-13:58/63 16:58 08:18-09:44/86	06:47 17:36	06:02 06:21-06:24/3 18:08	06:12 18:10-19:14/64 19:42	05:35 18:30-18:54/24 20:13	05:24 20:34
21	07:18 13:00-13:56/59 16:59 08:18-09:44/86	06:45 17:38	06:01 06:19-06:26/7 18:10 17:41-17:43/2	06:10 18:09-19:13/64 19:43	05:34 18:29-18:53/24 20:14	05:24 20:34
22	07:18 13:00-13:56/56 17:00 08:19-09:45/86	06:44 17:39	05:59 06:18-06:27/9 18:11 17:34-17:50/16	06:09 18:10-19:13/63 19:44	05:33 18:28-18:52/20 20:15	05:24 20:34
23	07:17 13:02-13:54/52 17:01 08:19-09:44/85	06:42 17:40	05:57 06:16-06:28/12 18:12 17:30-17:51/21	06:07 18:09-19:13/64 19:45	05:33 18:27-18:51/21 20:16	05:24 20:34
24	07:16 13:05-13:52/47 17:03 08:20-09:44/84	06:41 17:41	05:56 06:14-06:28/14 18:13 17:28-17:51/23	06:06 18:10-19:13/63 19:46	05:32 18:26-18:50/22 20:17	05:25 20:34
25	07:16 13:08-13:50/42 17:04 08:20-09:44/84	06:39 17:42	05:54 06:13-06:29/16 18:14 17:26-17:53/27	06:04 18:10-19:12/62 19:47	05:31 18:25-18:49/23 20:18	05:25 20:34
26	07:15 13:12-13:47/35 17:05 08:20-09:44/84	06:38 17:43	05:52 06:11-06:28/17 18:15 17:24-17:54/30	06:03 18:11-19:12/61 19:48	05:30 18:24-18:48/24 20:19	05:25 20:35
27	07:14 13:17-13:44/27 17:06 08:22-09:44/82	06:36 17:45	05:51 06:09-06:27/18 18:16 17:22-17:55/33	06:02 18:11-19:12/61 19:49	05:30 18:23-18:47/25 20:19	05:26 20:35
28	07:13 13:24-13:38/14 17:08 08:22-09:44/82	06:35 17:46	05:49 06:08-06:28/20 18:17 17:21-17:55/34	06:00 18:11-19:11/60 19:50	05:29 18:22-18:46/26 20:20	05:26 20:35
29	07:12 08:23-09:44/81 17:09		06:47 07:06-07:26/20 19:18 18:20-18:57/37	05:59 18:12-19:11/59 19:52	05:29 18:21-18:45/27 20:21	05:26 20:35
30	07:12 08:23-09:43/80 17:10		06:46 18:19-18:58/39 19:19 07:05-07:25/20	05:57 18:13-19:10/57 19:53	05:28 18:20-18:44/28 20:22	05:27 20:35
31	07:11 08:24-09:43/79 17:11		06:44 18:18-18:59/41 19:20 07:06-07:24/18		05:27 18:19-18:43/29 20:23	
Ore potenziali eliofanía	297	297	369	399	449	453
Somma minuti d'ombra	4556	1090	477	1739	665	0

Legenda della tabella:

Giorno del mese Alba (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra  
Tramonto (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra

## SHADOW - Calendario per WTG

Calcolo: Flicker\_su\_recettori\_Stornara NordWTG: 08 - VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (62)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre
1	05:27 20:34	05:51 18:35-19:10/35 20:15	06:23 18:12-19:09/57 19:32	06:53 18:41	06:28 08:01-09:04/63 16:54	07:03 12:24-13:45/81 16:29 07:57-09:24/87
2	05:28 20:34	05:52 18:34-19:11/37 20:14	06:24 18:12-19:07/55 19:30	06:54 18:39	06:29 08:01-09:06/65 16:53	07:04 12:24-13:46/82 16:29 07:58-09:24/86
3	05:28 20:34	05:53 18:33-19:13/40 20:13	06:25 18:12-19:06/54 19:29	06:55 18:38	06:30 08:00-09:07/67 16:51	07:05 12:24-13:46/82 16:29 07:58-09:24/86
4	05:29 20:34	05:54 18:32-19:14/42 20:12	06:26 18:13-19:04/51 19:27	06:56 18:36	06:31 07:59-09:07/68 16:50	07:06 12:23-13:47/84 16:28 07:59-09:25/86
5	05:29 20:34	05:55 18:30-19:14/44 20:11	06:27 18:12-19:02/50 19:25	06:57 18:34	06:32 07:57-09:08/71 16:49	07:07 12:23-13:48/85 16:28 07:59-09:25/86
6	05:30 20:34	05:56 18:29-19:14/45 20:10	06:28 18:11-19:01/50 19:24	06:58 18:33	06:34 07:57-09:10/73 16:48	07:08 12:23-13:49/86 16:28 07:59-09:25/86
7	05:31 20:33	05:57 18:28-19:15/47 20:08	06:29 18:11-18:59/48 19:22	06:59 18:31	06:35 07:57-09:11/74 16:47	07:09 12:23-13:50/87 16:28 08:00-09:26/86
8	05:31 20:33	05:58 18:27-19:16/49 20:07	06:30 18:10-18:57/47 19:20	07:00 18:29	06:36 07:56-09:11/75 16:46	07:10 12:23-13:50/87 16:28 08:01-09:26/85
9	05:32 20:33	05:59 18:25-19:16/51 20:06	06:31 18:10-18:55/45 19:19	07:01 18:28	06:37 07:56-09:13/77 16:45	07:11 12:22-13:50/88 16:28 08:00-09:26/86
10	05:33 20:32	06:00 18:24-19:17/53 20:05	06:32 18:10-18:53/43 19:17	07:03 18:26	06:38 07:55-09:13/78 16:44	07:11 12:22-13:51/89 16:28 08:01-09:26/85
11	05:33 20:32	06:01 18:23-19:17/54 20:03	06:33 18:10-18:53/43 19:15	07:04 18:24	06:40 07:55-09:14/79 16:43	07:12 12:23-13:52/89 16:28 08:01-09:27/86
12	05:34 20:31	06:02 18:22-19:18/56 20:02	06:34 18:10-18:51/41 19:13	07:05 18:23	06:41 07:54-09:14/80 16:42	07:13 12:23-13:53/90 16:28 08:02-09:27/85
13	05:35 20:31	06:03 18:21-19:18/57 20:01	06:35 18:10-18:49/39 19:12	07:06 18:21	06:42 07:55-09:16/81 16:41	07:14 12:23-13:54/91 16:28 08:03-09:28/85
14	05:36 20:30	06:04 18:20-19:18/58 19:59	06:36 06:56-07:16/20 19:10	07:07 18:20	06:43 12:56-13:11/15 16:40	07:15 12:23-13:53/90 16:28 08:04-09:29/85
15	05:36 20:30	06:05 18:19-19:18/59 19:58	06:37 06:57-07:17/20 19:08	07:08 18:18	06:44 12:49-13:17/28 16:39	07:15 12:23-13:54/91 16:29 08:03-09:28/85
16	05:37 20:29	06:06 18:18-19:19/61 19:56	06:38 06:58-07:17/19 19:07	07:09 18:16	06:46 12:45-13:21/36 16:38	07:16 12:24-13:55/91 16:29 08:04-09:29/85
17	05:38 20:28	06:07 18:17-19:19/62 19:55	06:39 06:59-07:16/17 19:05	07:10 18:15	06:47 12:42-13:24/42 16:37	07:17 12:25-13:56/91 16:29 08:05-09:30/85
18	05:39 20:28	06:08 18:16-19:19/63 19:54	06:40 07:00-07:16/16 19:03	07:11 18:13	06:48 12:39-13:26/47 16:36	07:18 12:24-13:56/92 16:30 08:05-09:30/85
19	05:40 20:27	06:09 18:16-19:18/62 19:52	06:41 07:01-07:15/14 19:01	07:12 18:12	06:49 12:36-13:28/52 16:36	07:18 12:25-13:57/92 16:30 08:06-09:30/84
20	05:40 20:26	06:10 18:15-19:18/63 19:51	06:42 07:02-07:14/12 19:00	07:14 18:10	06:50 12:35-13:31/56 16:35	07:19 12:25-13:57/92 16:30 08:06-09:30/84
21	05:41 20:26	06:12 18:15-19:18/63 19:49	06:43 07:03-07:13/10 18:58	07:15 18:09	06:52 12:33-13:32/59 16:34	07:19 12:26-13:58/92 16:31 08:07-09:31/84
22	05:42 20:25	06:13 18:14-19:18/64 19:48	06:44 07:04-07:11/7 18:56	07:16 18:07	06:53 12:31-13:34/63 16:33	07:20 12:26-13:58/92 16:31 08:07-09:31/84
23	05:43 20:24	06:14 18:14-19:17/63 19:46	06:45 07:05-07:09/4 18:55	07:17 18:06	06:54 12:30-13:35/65 16:33	07:20 12:27-13:59/92 16:32 08:08-09:32/84
24	05:44 20:23	06:15 18:13-19:17/64 19:45	06:46 18:53	07:18 18:05	06:55 12:28-13:36/68 16:32	07:21 12:27-13:59/92 16:32 08:08-09:32/84
25	05:45 20:22	06:16 18:13-19:16/63 19:43	06:47 18:51	07:19 17:03	06:56 12:28-13:38/70 16:32	07:21 12:27-13:59/92 16:33 08:08-09:32/84
26	05:46 18:49-18:56/7 20:21	06:17 18:13-19:16/63 19:41	06:48 18:49	07:20 17:02	06:57 12:27-13:39/72 16:31	07:22 12:29-14:00/91 16:34 08:09-09:34/85
27	05:47 18:45-19:00/15 20:20	06:18 18:13-19:15/62 19:40	06:49 18:48	07:21 17:00	06:58 12:26-13:40/74 16:31	07:22 12:29-14:00/91 16:34 08:09-09:34/85
28	05:48 18:42-19:03/21 20:19	06:19 18:12-19:14/62 19:38	06:50 18:46	07:22 16:59	07:00 12:25-13:41/76 16:30	07:22 12:29-14:00/91 16:35 08:09-09:34/85
29	05:49 18:40-19:05/25 20:18	06:20 18:12-19:13/61 19:37	06:51 18:44	07:23 16:58	07:01 12:24-13:42/78 16:30	07:23 12:31-14:01/90 16:36 08:10-09:35/85
30	05:50 18:38-19:07/29 20:17	06:21 18:12-19:12/60 19:35	06:52 18:43	07:24 16:56	07:02 12:24-13:43/79 16:30	07:23 12:31-14:02/91 16:36 08:11-09:36/85
31	05:51 18:37-19:09/32 20:16	06:22 18:12-19:11/59 19:33		07:25 16:55	07:03 12:24-13:44/80 16:29	07:24 12:32-14:02/90 16:37 08:11-09:36/85
Ore potenziali eliofanìa	460	428	375	345	297	287
Somma minuti d'ombra	129	1722	1059	395	3382	5402

Legenda della tabella:

Giorno del mese Alba (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra  
Tramonto (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra

## SHADOW - Calendario per WTG

Calcolo: Flicker\_su\_recettori\_Stornara NordWTG: 09 - VESTAS V162-5.6MW(User) 5600 162.0 !0! hub: 119,0 m (TOT: 200,0 m) (63)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno
1	07:23 15:45-16:12/27 16:38	07:10 16:02-16:37/35 17:13 07:30-07:53/23	06:33 06:53-07:06/13 17:47	06:42 19:21	05:56 06:27-07:05/38 19:54	05:27 05:51-07:29/98 20:23
2	07:23 15:45-16:13/28 16:39	07:09 16:04-16:36/32 17:14 07:29-07:53/24	06:32 06:51-07:06/15 17:48	06:41 19:23	05:55 06:24-07:06/42 19:55	05:27 05:50-07:28/98 20:24
3	07:23 15:46-16:14/28 16:40	07:08 16:06-16:35/29 17:15 07:29-07:53/24	06:30 06:49-07:05/16 17:49	06:39 19:24	05:54 06:22-07:08/46 19:56	05:26 05:50-07:29/99 20:25
4	07:24 15:46-16:15/29 16:41	07:07 16:09-16:34/25 17:16 07:29-07:53/24	06:29 06:48-07:05/17 17:51	06:37 19:25	05:52 06:20-07:10/50 19:57	05:26 05:49-07:28/99 20:26
5	07:24 15:46-16:16/30 16:42	07:06 16:13-16:16/3 16:20-16:31/11 17:18 07:30-07:53/23	06:27 06:46-07:03/17 17:52	06:36 19:26	05:51 06:18-07:12/54 19:58	05:25 05:49-07:29/100 20:26
6	07:23 15:47-16:17/30 16:43	07:04 07:30-07:51/21 17:19	06:26 06:45-07:03/18 17:53	06:34 19:27	05:50 06:16-07:13/57 19:59	05:25 05:49-07:29/100 20:27
7	07:23 15:46-16:17/31 16:44	07:03 07:32-07:50/18 17:20	06:24 06:43-07:03/20 17:54	06:32 19:28	05:49 06:15-07:14/59 20:00	05:25 05:49-07:30/101 20:28
8	07:23 15:46-16:18/32 16:45	07:02 07:33-07:49/16 17:21	06:22 06:41-07:01/20 17:55	06:31 19:29	05:47 06:14-07:15/61 20:01	05:24 05:48-07:29/101 20:28
9	07:23 15:47-16:20/33 16:46	07:01 07:36-07:47/11 17:23	06:21 06:42-07:01/19 17:56	06:29 19:30	05:46 06:13-07:17/64 20:02	05:24 05:48-07:30/102 20:29
10	07:23 15:47-16:21/34 16:47	07:00 07:40-07:44/4 17:24	06:19 06:43-06:59/16 17:57	06:27 19:31	05:45 06:12-07:18/66 20:03	05:24 05:48-07:30/102 20:29
11	07:23 15:47-16:21/34 16:48	06:59 17:25	06:17 06:44-06:57/13 17:59	06:26 19:32	05:44 06:11-07:19/68 20:04	05:24 05:48-07:30/102 20:30
12	07:22 15:48-16:23/35 16:49	06:57 17:26	06:16 06:48-06:54/6 18:00	06:24 19:33	05:43 06:10-07:19/69 20:05	05:24 05:48-07:31/103 20:31
13	07:22 15:48-16:24/36 16:50	06:56 17:28	06:14 18:01	06:23 19:34	05:42 06:09-07:20/71 20:06	05:24 05:48-07:31/103 20:31
14	07:22 15:48-16:25/37 16:51	06:55 17:29	06:13 18:02	06:21 19:35	05:41 06:08-07:21/73 20:07	05:24 05:48-07:31/103 20:31
15	07:21 15:49-16:27/38 16:52	06:54 17:30	06:11 18:03	06:19 19:37	05:40 06:07-07:21/74 20:08	05:24 05:48-07:31/103 20:32
16	07:21 15:49-16:27/38 16:53	06:52 17:31	06:09 18:04	06:18 19:38	05:39 06:07-07:22/75 20:09	05:24 05:48-07:32/104 20:32
17	07:21 15:50-16:29/39 16:54	06:51 17:33	06:08 18:05	06:16 19:39	05:38 06:06-07:22/76 20:10	05:24 05:48-07:32/104 20:33
18	07:20 15:50-16:30/40 16:55	06:50 17:34	06:06 18:06	06:15 19:40	05:37 06:05-07:23/78 20:11	05:24 05:48-07:32/104 20:33
19	07:20 15:51-16:32/41 16:57 07:41-07:42/1	06:48 17:35	06:04 18:07	06:13 19:41	05:36 06:06-07:24/78 20:12	05:24 05:48-07:32/104 20:33
20	07:19 15:51-16:33/42 16:58 07:40-07:44/4	06:47 17:36	06:02 18:08	06:12 19:42	05:35 06:05-07:24/79 20:13	05:24 05:48-07:32/104 20:34
21	07:18 15:51-16:34/43 16:59 07:39-07:45/6	06:45 17:38	06:01 18:10	06:10 19:43	05:34 06:04-07:25/81 20:14	05:24 05:49-07:33/104 20:34
22	07:18 15:52-16:36/44 17:00 07:39-07:47/8	06:44 17:39	05:59 18:11	06:09 19:44	05:33 06:02-07:25/83 20:15	05:24 05:49-07:33/104 20:34
23	07:17 15:53-16:37/44 17:01 07:38-07:48/10	06:42 17:40	05:57 18:12	06:07 19:45	05:33 06:00-07:26/86 20:16	05:24 05:49-07:33/104 20:34
24	07:16 15:53-16:38/45 17:03 07:37-07:49/12	06:41 07:00-07:02/2 17:41	05:56 18:13	06:06 19:46	05:32 05:58-07:26/88 20:17	05:25 05:49-07:33/104 20:34
25	07:16 15:54-16:38/44 17:04 07:36-07:50/14	06:39 06:59-07:04/5 17:42	05:54 18:14	06:04 19:47	05:31 05:56-07:26/90 20:18	05:25 05:50-07:34/104 20:34
26	07:15 15:54-16:38/44 17:05 07:36-07:51/15	06:38 06:57-07:05/8 17:44	05:52 18:15	06:03 19:48	05:30 05:56-07:27/91 20:19	05:25 05:50-07:34/104 20:35
27	07:14 15:56-16:39/43 17:06 07:35-07:52/17	06:36 06:56-07:06/10 17:45	05:51 18:16	06:02 19:49	05:30 05:54-07:27/93 20:19	05:26 05:50-07:34/104 20:35
28	07:13 15:57-16:39/42 17:08 07:34-07:53/19	06:35 06:54-07:06/12 17:46	05:49 18:17	06:00 06:40-06:50/10 19:50	05:29 05:53-07:27/94 20:20	05:26 05:51-07:34/103 20:35
29	07:12 15:59-16:39/40 17:09 07:33-07:53/20		06:47 19:18	05:59 06:34-06:57/23 19:52	05:29 05:52-07:27/95 20:21	05:26 05:51-07:34/103 20:35
30	07:12 16:00-16:38/38 17:10 07:32-07:53/21		06:46 19:19	05:57 06:30-07:01/31 19:53	05:28 05:51-07:27/96 20:22	05:27 05:52-07:35/103 20:35
31	07:11 16:01-16:38/37 17:11 07:31-07:53/22		06:44 19:20		05:27 05:51-07:28/97 20:23	
Ore potenziali eliofanìa	297	297	369	399	449	453
Somma minuti d'ombra	1315	360	190	64	2272	3071

## Legenda della tabella:

Giorno del mese Alba (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra  
Tramonto (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra

## SHADOW - Calendario per WTG

Calcolo: Flicker\_su\_recettori\_Stornara NordWTG: 09 - VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (63)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre
1	05:27 05:52-07:35/103 20:34	05:52 06:21-07:30/69 20:15	06:23 19:32	06:53 18:41	06:28 07:08-07:14/6 16:54	07:03 15:29-16:04/35 16:29
2	05:28 05:53-07:35/102 20:34	05:52 06:22-07:29/67 20:14	06:24 19:30	06:54 07:24-07:34/10 18:39	06:29 07:05-07:18/13 16:53	07:04 15:30-16:04/34 16:29
3	05:28 05:53-07:35/102 20:34	05:53 06:23-07:28/65 20:13	06:25 19:29	06:55 07:21-07:36/15 18:38	06:30 07:03-07:19/16 16:51	07:05 15:31-16:04/33 16:29
4	05:29 05:54-07:36/102 20:34	05:54 06:24-07:27/63 20:12	06:26 19:27	06:56 07:19-07:37/18 18:36	06:31 07:01-07:20/19 16:50	07:06 15:31-16:03/32 16:28
5	05:30 05:54-07:35/101 20:34	05:55 06:25-07:26/61 20:11	06:27 19:25	06:57 07:18-07:38/20 18:34	06:32 07:00-07:21/21 16:49	07:07 15:32-16:03/31 16:28
6	05:30 05:55-07:36/101 20:34	05:56 06:25-07:23/58 20:10	06:28 19:24	06:58 07:19-07:39/20 18:33	06:34 15:43-15:48/5 15:51-16:02/11 16:48 07:00-07:23/23	07:08 15:33-16:03/30 16:28
7	05:31 05:55-07:35/100 20:33	05:57 06:26-07:22/56 20:08	06:29 19:22	06:59 07:20-07:39/19 18:31	06:35 15:38-16:04/26 16:47 06:59-07:23/24	07:09 15:33-16:03/30 16:28
8	05:31 05:56-07:36/100 20:33	05:58 06:28-07:20/52 20:07	06:30 19:20	07:00 07:21-07:39/18 18:29	06:36 15:36-16:05/29 16:46 06:59-07:23/24	07:10 15:33-16:02/29 16:28
9	05:32 05:57-07:36/99 20:33	05:59 06:29-07:18/49 20:06	06:31 19:19	07:01 07:22-07:39/17 18:28	06:37 15:35-16:06/31 16:45 07:00-07:24/24	07:11 15:34-16:02/28 16:28
10	05:33 05:57-07:36/99 20:32	06:00 06:31-07:16/45 20:05	06:32 19:17	07:03 07:23-07:39/16 18:26	06:38 15:33-16:08/35 16:44 07:01-07:24/23	07:11 15:34-16:02/28 16:28
11	05:33 05:58-07:36/98 20:32	06:01 06:33-07:14/41 20:03	06:33 19:15	07:04 07:24-07:39/15 18:24	06:40 15:32-16:09/37 16:43 07:02-07:24/22	07:12 15:35-16:02/27 16:28
12	05:34 05:59-07:36/97 20:31	06:02 06:36-07:11/35 20:02	06:34 19:13	07:05 07:25-07:39/14 18:23	06:41 15:31-16:09/38 16:42 07:03-07:24/21	07:13 15:36-16:02/26 16:28
13	05:35 06:00-07:37/97 20:31	06:03 06:39-07:08/29 20:01	06:35 19:12	07:06 07:26-07:39/13 18:21	06:42 15:30-16:11/41 16:41 07:05-07:25/20	07:14 15:37-16:03/26 16:28
14	05:36 06:00-07:36/96 20:30	06:04 06:43-07:04/21 19:59	06:36 19:10	07:07 07:27-07:38/11 18:20	06:43 15:29-16:11/42 16:40 07:06-07:24/18	07:15 15:37-16:02/25 16:28
15	05:36 06:02-07:36/94 20:30	06:05 19:58	06:37 19:08	07:08 07:29-07:38/9 18:18	06:44 15:28-16:11/43 16:39 07:07-07:24/17	07:15 15:38-16:03/25 16:29
16	05:37 06:03-07:36/93 20:29	06:06 19:56	06:38 19:07	07:09 07:30-07:37/7 18:16	06:46 15:28-16:12/44 16:38 07:09-07:24/15	07:16 15:39-16:03/24 16:29
17	05:38 06:04-07:36/92 20:28	06:07 19:55	06:39 19:05	07:10 07:31-07:35/4 18:15	06:47 15:28-16:12/44 16:37 07:10-07:24/14	07:17 15:40-16:04/24 16:29
18	05:39 06:05-07:35/90 20:28	06:08 19:54	06:40 19:03	07:11 07:32-07:33/1 18:13	06:48 15:27-16:12/45 16:36 07:11-07:23/12	07:18 15:39-16:03/24 16:30
19	05:40 06:07-07:35/88 20:27	06:10 19:52	06:41 19:01	07:12 18:12	06:49 15:27-16:11/44 16:36 07:12-07:22/10	07:18 15:40-16:04/24 16:30
20	05:40 06:09-07:35/86 20:26	06:11 19:51	06:42 19:00	07:14 18:10	06:50 15:27-16:11/44 16:35 07:14-07:22/8	07:19 15:40-16:04/24 16:30
21	05:41 06:11-07:35/84 20:26	06:12 19:49	06:43 18:58	07:15 18:09	06:52 15:27-16:10/43 16:34 07:15-07:21/6	07:19 15:41-16:05/24 16:31
22	05:42 06:14-07:35/81 20:25	06:13 19:48	06:44 18:56	07:16 18:07	06:53 15:27-16:09/42 16:34 07:16-07:20/4	07:20 15:41-16:05/24 16:31
23	05:43 06:15-07:35/80 20:24	06:14 19:46	06:45 18:55	07:17 18:06	06:54 15:27-16:08/41 16:33 07:17-07:18/1	07:20 15:42-16:06/24 16:32
24	05:44 06:15-07:34/79 20:23	06:15 19:45	06:46 18:53	07:18 18:05	06:55 15:27-16:07/40 16:32	07:21 15:42-16:06/24 16:32
25	05:45 06:15-07:34/79 20:22	06:16 19:43	06:47 18:51	06:19 17:03	06:56 15:28-16:07/39 16:32	07:21 15:42-16:06/24 16:33
26	05:46 06:16-07:33/77 20:21	06:17 19:41	06:48 18:49	06:21 17:02	06:57 15:28-16:06/38 16:31	07:22 15:44-16:08/24 16:34
27	05:47 06:17-07:33/76 20:20	06:18 19:40	06:49 18:48	06:22 17:00	06:58 15:28-16:06/38 16:31	07:22 15:44-16:08/24 16:34
28	05:48 06:17-07:32/75 20:19	06:19 19:38	06:50 18:46	06:23 16:59	07:00 15:28-16:05/37 16:30	07:22 15:44-16:08/24 16:35
29	05:49 06:18-07:32/74 20:18	06:20 19:37	06:51 18:44	06:24 16:58	07:01 15:28-16:05/37 16:30	07:23 15:44-16:09/25 16:36
30	05:50 06:19-07:31/72 20:17	06:21 19:35	06:52 18:43	06:25 16:56	07:02 15:29-16:04/35 16:30	07:23 15:45-16:11/26 16:36
31	05:51 06:20-07:31/71 20:16	06:22 19:33	 19:33	06:26 16:55	 16:30	07:23 15:45-16:11/26 16:37
Ore potenziali eliofanìa	460	428	375	345	297	287
Somma minuti d'ombra	2788	711	0	227	1310	828

Legenda della tabella:

Giorno del mese Alba (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra  
Tramonto (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra

## SHADOW - Calendario per WTG

Calcolo: Flicker\_su\_recettori\_Stornara NordWTG: 10 - VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (64)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno	
1	07:23 16:38	07:10 17:13	06:33 17:47	06:42 19:21	18:28-19:00/32 07:01-07:26/25	05:56 19:54	18:20-19:08/48 20:23
2	07:23 16:39	07:09 17:14	06:32 17:48	06:41 19:22	18:26-19:01/35 07:00-07:24/24	05:55 19:55	18:22-19:08/46 20:24
3	07:23 16:40	07:08 17:15	06:30 17:49	06:39 19:24	18:23-19:02/39 07:01-07:23/22	05:53 19:56	18:24-19:07/43 20:25
4	07:23 16:41	07:07 17:16	06:29 17:50	06:37 19:25	18:22-19:03/41 07:02-07:22/20	05:52 19:57	18:25-19:06/41 20:26
5	07:23 16:42	07:06 17:18	06:27 17:52	06:36 19:26	18:21-19:04/43 07:03-07:20/17	05:51 19:58	18:26-19:05/39 20:26
6	07:23 16:43	07:04 17:19	06:25 17:53	06:34 19:27	18:19-19:05/46 07:06-07:18/12	05:50 19:59	18:26-19:03/37 20:27
7	07:23 16:44	07:03 17:20	06:24 17:54	06:32 19:28	18:18-19:06/48 19:28	05:49 20:00	18:28-19:02/34 20:28
8	07:23 16:45	07:02 17:21	06:22 17:55	06:31 19:29	18:17-19:07/50 19:29	05:47 20:01	18:29-19:01/32 20:28
9	07:23 16:46	07:01 17:23	06:21 17:56	06:29 19:30	18:17-19:09/52 19:30	05:46 20:02	18:31-19:00/29 20:29
10	07:23 16:47	07:00 17:24	06:19 17:57	06:27 19:31	18:16-19:09/53 19:31	05:45 20:03	18:32-18:58/26 20:29
11	07:23 16:48	06:59 17:25	06:17 17:58	06:26 19:32	18:15-19:10/55 19:32	05:44 20:04	18:35-18:56/21 20:30
12	07:22 16:49	06:57 17:26	06:16 18:00	06:24 19:33	18:15-19:12/57 19:33	05:43 20:05	18:37-18:53/16 20:30
13	07:22 16:50	06:56 17:28	06:14 18:01	06:23 19:34	18:14-19:12/58 19:34	05:42 20:06	18:42-18:49/7 20:31
14	07:22 16:51	06:55 17:29	06:12 18:02	06:21 19:35	18:14-19:14/60 19:35	05:41 20:07	05:24 20:31
15	07:21 16:52	06:54 17:30	06:11 18:03	06:19 19:36	18:13-19:13/60 19:36	05:40 20:08	05:23 20:32
16	07:21 16:53	06:52 17:31	06:09 18:04	06:18 19:38	18:13-19:14/61 19:38	05:39 20:09	05:23 20:32
17	07:21 16:54	06:51 17:33	06:07 18:05	06:16 19:39	18:13-19:14/61 19:39	05:38 20:10	05:24 20:33
18	07:20 16:55	06:49 17:34	06:06 18:06	06:15 19:40	18:12-19:13/61 19:40	05:37 20:11	05:24 20:33
19	07:20 16:57	06:48 17:35	06:04 18:07	06:13 19:41	18:13-19:14/61 19:41	05:36 20:12	05:24 20:33
20	07:19 16:58	06:47 17:36	06:02 18:08	06:12 19:42	18:13-19:14/61 19:42	05:35 20:13	05:24 20:34
21	07:18 16:59	06:45 17:37	06:01 18:10	06:10 19:43	18:13-19:14/61 19:43	05:34 20:14	05:24 20:34
22	07:18 17:00	06:44 17:39	05:59 18:11	06:09 19:44	18:14-19:14/60 19:44	05:33 20:15	05:24 20:34
23	07:17 17:01	06:42 17:40	05:57 18:12	06:07 19:45	18:14-19:13/59 19:45	05:33 20:16	05:24 20:34
24	07:16 17:03	06:41 17:41	05:56 18:13	06:06 19:46	18:15-19:13/58 19:46	05:32 20:17	05:25 20:34
25	07:16 17:04	06:39 17:42	05:54 18:14	06:04 19:47	18:15-19:12/57 19:47	05:31 20:18	05:25 20:34
26	07:15 17:05	06:38 17:43	05:52 18:15	06:03 19:48	18:16-19:12/56 19:48	05:30 20:18	05:25 20:34
27	07:14 17:06	06:36 17:45	05:51 18:16	06:02 19:49	18:17-19:12/55 19:49	05:30 20:19	05:26 20:35
28	07:13 17:08	06:35 17:46	05:49 18:17	06:00 19:50	18:17-19:11/54 19:50	05:29 20:20	05:58-06:04/6 20:35
29	07:12 17:09		06:47 19:18	05:59 19:51	18:18-19:10/52 19:51	05:29 20:21	05:55-06:09/14 20:35
30	07:11 17:10		06:46 19:19	05:57 19:53	18:20-19:10/50 19:53	05:28 20:22	05:52-06:11/19 20:34
31	07:11 17:11		06:44 19:20		18:30-18:58/28 07:02-07:26/24	05:27 20:23	05:51-06:13/22 20:34
Ore potenziali eliofanía	297	297	369	399	449	453	
Somma minuti d'ombra	0	0	574	1716	480	1128	

Legenda della tabella:

Giorno del mese Alba (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra  
Tramonto (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra

### SHADOW - Calendario per WTG

Calcolo: Flicker\_su\_recettori\_Stornara NordWTG: 10 - VESTAS V162-5.6MW(User) 5600 162.0 !OI hub: 119,0 m (TOT: 200,0 m) (64) Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre
1	05:27 05:50-06:28/38 20:34	05:51 18:47-19:05/18 20:15	06:23 18:13-19:09/56 19:32	06:53 07:13-07:30/17 18:41	06:28 16:54	07:03 16:29
2	05:28 05:51-06:29/38 20:34	05:52 18:44-19:07/23 20:14	06:24 18:14-19:07/53 19:30	06:54 07:14-07:30/16 18:39	06:29 16:53	07:04 16:29
3	05:28 05:51-06:28/37 20:34	05:53 18:42-19:09/27 20:13	06:25 18:14-19:06/52 19:29	06:55 07:15-07:29/14 18:37	06:30 16:51	07:05 16:29
4	05:29 05:52-06:28/36 20:34	05:54 18:40-19:10/30 20:12	06:26 18:14-19:04/50 19:27	06:56 07:16-07:28/12 18:36	06:31 16:50	07:06 16:28
5	05:29 05:52-06:27/35 20:34	05:55 18:38-19:11/33 20:11	06:27 18:14-19:03/49 19:25	06:57 07:17-07:28/11 18:34	06:32 16:49	07:07 16:28
6	05:30 05:53-06:27/34 20:33	05:56 18:37-19:12/35 20:09	06:28 18:15-19:01/46 19:24	06:58 07:18-07:26/8 07:01-07:13/12 18:32	06:34 16:48	07:08 16:28
7	05:31 05:53-06:26/33 20:33	05:57 18:36-19:13/37 20:08	06:29 18:16-18:59/43 19:22	06:59 07:20-07:26/6 18:31	06:35 16:47	07:09 16:28
8	05:31 05:54-06:26/32 20:33	05:58 18:34-19:14/40 20:07	06:30 18:16-18:58/42 19:20	07:00 07:21-07:24/3 06:56-07:16/20 18:29	06:36 16:46	07:10 16:28
9	05:32 05:55-06:25/30 20:32	05:59 18:33-19:15/42 20:06	06:31 18:17-18:56/39 19:18	07:01 06:55-07:17/22 18:28	06:37 16:45	07:10 16:28
10	05:33 05:55-06:24/29 20:32	06:00 18:32-19:16/44 20:04	06:32 18:19-18:54/35 19:17	07:02 06:54-07:18/24 18:26	06:38 16:44	07:11 16:28
11	05:33 05:56-06:23/27 20:32	06:01 18:30-19:17/47 20:03	06:33 18:20-18:53/33 19:15	07:04 06:53-07:18/25 18:24	06:40 16:43	07:12 16:28
12	05:34 05:58-06:22/24 20:31	06:02 18:29-19:17/48 20:02	06:34 18:22-18:51/29 19:13	07:05 06:54-07:18/24 18:23	06:41 16:42	07:13 16:28
13	05:35 06:00-06:21/21 20:31	06:03 18:27-19:18/51 20:00	06:35 18:24-18:47/23 19:12	07:06 06:55-07:18/23 18:21	06:42 16:41	07:14 16:28
14	05:36 06:02-06:18/16 20:30	06:04 18:26-19:18/52 19:59	06:36 06:56-07:22/26 19:10	07:07 18:28-18:43/15 18:20	06:43 16:40	07:15 16:28
15	05:36 06:05-06:16/11 20:30	06:05 18:24-19:18/54 19:58	06:37 06:57-07:24/27 19:08	07:08 18:18 18:18	06:44 16:39	07:15 16:29
16	05:37 20:29	06:06 18:23-19:19/56 19:56	06:38 06:58-07:26/28 19:07	07:09 18:16	06:46 16:38	07:16 16:29
17	05:38 20:28	06:07 18:22-19:19/57 19:55	06:39 06:59-07:27/28 19:05	07:10 18:15	06:47 16:37	07:17 16:29
18	05:39 20:28	06:08 18:21-19:19/58 19:53	06:40 07:00-07:27/27 19:03	07:11 18:13	06:48 16:36	07:17 16:30
19	05:40 20:27	06:09 18:20-19:19/59 19:52	06:41 07:01-07:28/27 19:01	07:12 18:12	06:49 16:36	07:18 16:30
20	05:40 20:26	06:10 18:19-19:19/60 19:51	06:42 07:02-07:28/26 19:00	07:14 18:10	06:50 16:35	07:19 16:30
21	05:41 20:26	06:11 18:19-19:19/60 19:49	06:43 07:03-07:28/25 18:58	07:15 18:09	06:51 16:34	07:19 16:31
22	05:42 20:25	06:12 18:18-19:18/60 19:48	06:44 07:04-07:27/23 18:56	07:16 18:07	06:53 16:33	07:20 16:31
23	05:43 20:24	06:14 18:17-19:18/61 19:46	06:45 07:05-07:27/22 18:55	07:17 18:06	06:54 16:33	07:20 16:32
24	05:44 20:23	06:15 18:17-19:18/61 19:44	06:46 07:06-07:26/20 18:53	07:18 18:05	06:55 16:32	07:21 16:32
25	05:45 20:22	06:16 18:16-19:17/61 19:43	06:47 07:07-07:26/19 18:51	07:19 17:03	06:56 16:32	07:21 16:33
26	05:46 20:21	06:17 18:16-19:17/61 19:41	06:48 07:08-07:26/18 18:49	07:20 17:02	06:57 16:31	07:22 16:33
27	05:47 20:20	06:18 18:15-19:16/61 19:40	06:49 07:09-07:28/19 18:48	07:21 17:00	06:58 16:31	07:22 16:34
28	05:48 20:19	06:19 18:15-19:15/60 19:38	06:50 07:10-07:29/19 18:46	07:22 16:59	06:59 16:30	07:22 16:35
29	05:49 20:18	06:20 18:15-19:14/59 19:37	06:51 07:11-07:30/19 18:44	07:23 16:58	07:01 16:30	07:22 16:36
30	05:50 20:17	06:21 18:15-19:13/58 19:35	06:52 07:12-07:30/18 18:43	07:24 16:56	07:02 16:30	07:23 16:36
31	05:50 18:50-19:01/11 20:16	06:22 18:13-19:11/58 19:33		06:26 16:55		07:23 16:37
Ore potenziali eliofanía	460	428	375	345	297	287
Somma minuti d'ombra	452	1531	1123	87	0	0

Legenda della tabella:

Giorno del mese Alba (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra  
Tramonto (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra

## SHADOW - Calendario per WTG

Calcolo: Flicker\_su\_recettori\_Stornara NordWTG: 11 - VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0 m) (65)  
Assunzioni sui calcoli d'ombra

I tempi calcolati sono relativi al "caso peggiore", sulla base delle seguenti assunzioni:

Il sole splende tutto il di, dall'alba al tramonto

Il piano del rotore è sempre perpendicolare alla linea tra WTG e sole

La turbina è costantemente operativa

	Gennaio	Febbraio	Marzo	Aprile	Maggio	Giugno	Luglio	Agosto	Settembre	Ottobre	Novembre	Dicembre
1	07:23 08:03-08:48/45 16:38	07:10 17:13	06:33 17:47	06:42 19:21	05:56 19:54	05:27 20:23	05:27 20:34	05:51 20:15	06:23 19:32	06:53 18:41	06:27 16:54	07:03 07:52-08:30/38 16:29
2	07:23 08:04-08:48/44 16:39	07:09 17:14	06:32 17:48	06:41 19:22	05:55 19:55	05:26 20:24	05:28 20:34	05:52 20:14	06:24 19:30	06:54 18:39	06:29 16:53	07:04 07:52-08:31/39 16:29
3	07:23 08:04-08:48/44 16:40	07:08 17:15	06:30 17:49	06:39 19:24	05:53 19:56	05:26 20:25	05:28 20:34	05:53 20:13	06:25 19:28	06:55 18:37	06:30 16:51	07:05 07:53-08:33/40 16:29
4	07:23 08:05-08:48/43 16:41	07:07 17:16	06:29 17:50	06:37 19:25	05:52 19:57	05:26 20:26	05:29 20:34	05:54 20:12	06:26 19:27	06:56 18:36	06:31 16:50	07:06 07:53-08:33/40 16:28
5	07:23 08:06-08:49/43 16:42	07:05 17:18	06:27 17:52	06:36 19:26	05:51 19:58	05:25 20:26	05:29 20:34	05:55 20:11	06:27 19:25	06:57 18:34	06:32 16:49	07:07 07:53-08:34/41 16:28
6	07:23 08:07-08:49/42 16:43	07:04 17:19	06:25 17:53	06:34 19:27	05:50 19:59	05:25 20:27	05:30 20:33	05:56 20:09	06:28 19:23	06:58 18:32	06:33 16:48	07:08 07:53-08:35/42 16:28
7	07:23 08:07-08:48/41 16:44	07:03 17:20	06:24 17:54	06:32 19:28	05:49 20:00	05:25 20:28	05:31 20:33	05:57 20:08	06:29 19:22	06:59 18:31	06:35 16:47	07:09 07:52-08:35/43 16:28
8	07:23 08:07-08:48/41 16:45	07:02 17:21	06:22 17:55	06:31 19:29	05:47 20:01	05:24 20:28	05:31 20:33	05:58 20:07	06:30 19:20	07:00 18:29	06:36 16:46	07:10 07:52-08:35/43 16:28
9	07:23 08:08-08:49/41 16:46	07:01 17:23	06:21 17:56	06:29 19:30	05:46 20:02	05:24 20:29	05:32 20:32	05:59 20:06	06:31 19:18	07:01 18:28	06:37 16:45	07:10 07:52-08:36/44 16:28
10	07:23 08:10-08:49/39 16:47	07:00 17:24	06:19 17:57	06:27 19:31	05:45 20:03	05:24 20:29	05:33 20:32	06:00 20:04	06:32 19:17	07:02 18:26	06:38 16:44	07:11 07:53-08:37/44 16:28
11	07:23 08:10-08:48/38 16:48	07:00 17:25	06:17 17:58	06:26 19:32	05:44 20:04	05:24 20:30	05:33 20:32	06:01 20:03	06:33 19:15	07:04 18:24	06:39 16:43	07:12 07:53-08:38/45 16:28
12	07:22 08:11-08:48/37 16:49	07:00 17:26	06:16 18:00	06:24 19:33	05:43 20:05	05:24 20:30	05:34 20:31	06:02 20:02	06:34 19:13	07:05 18:23	06:41 16:42	07:13 07:54-08:38/44 16:28
13	07:22 08:12-08:48/36 16:50	07:00 17:28	06:14 18:01	06:23 19:34	05:42 20:06	05:24 20:31	05:35 20:31	06:03 20:00	06:35 19:12	07:06 18:21	06:42 16:41	07:14 07:54-08:39/45 16:28
14	07:22 08:13-08:48/35 16:51	06:55 17:29	06:12 18:02	06:21 19:35	05:41 20:07	05:24 20:31	05:36 20:30	06:04 19:59	06:36 19:10	07:07 18:20	06:43 16:40	07:15 07:54-08:39/45 16:28
15	07:21 08:14-08:48/34 16:52	06:53 17:30	06:11 18:03	06:19 19:36	05:40 20:08	05:23 20:32	05:36 20:30	06:05 19:58	06:37 19:08	07:08 18:18	06:44 16:39	07:15 07:55-08:40/45 16:29
16	07:21 08:15-08:47/32 16:53	06:52 17:31	06:09 18:04	06:18 19:37	05:39 20:09	05:23 20:32	05:37 20:29	06:06 19:56	06:38 19:07	07:09 18:16	06:45 16:38	07:16 07:55-08:41/46 16:29
17	07:20 08:17-08:46/29 16:54	06:51 17:33	06:07 18:05	06:16 19:39	05:38 20:10	05:24 20:33	05:38 20:28	06:07 19:55	06:39 19:05	07:10 18:15	06:47 16:37	07:17 07:55-08:41/46 16:29
18	07:20 08:18-08:45/27 16:55	06:49 17:34	06:06 18:06	06:15 19:40	05:37 20:11	05:24 20:33	05:39 20:28	06:08 19:53	06:40 19:03	07:11 18:13	06:48 16:36	07:17 07:56-08:41/45 16:30
19	07:19 08:20-08:45/25 16:57	06:48 17:35	06:04 18:07	06:13 19:41	05:36 20:12	05:24 20:33	05:40 20:27	06:09 19:52	06:41 19:01	07:12 18:12	06:49 16:36	07:18 07:57-08:42/45 16:30
20	07:19 08:22-08:43/21 16:58	06:47 17:36	06:02 18:08	06:12 19:42	05:35 20:13	05:24 20:33	05:40 20:26	06:10 19:50	06:42 19:00	07:13 18:10	06:50 16:35	08:02-08:13/11 07:19 07:56-08:42/46 16:30
21	07:18 08:24-08:41/17 16:59	06:45 17:37	06:01 18:09	06:10 19:43	05:34 20:14	05:24 20:34	05:41 20:25	06:11 19:49	06:43 18:58	07:15 18:09	06:51 16:34	08:00-08:17/17 07:19 07:57-08:43/46 16:31
22	07:18 08:28-08:39/11 17:00	06:44 17:39	05:59 18:11	06:09 19:44	05:33 20:15	05:24 20:34	05:42 20:25	06:12 19:47	06:44 18:56	07:16 18:07	06:53 16:33	07:58-08:19/21 07:20 07:57-08:43/46 16:31
23	07:17 17:01	06:42 17:40	05:57 18:12	06:07 19:45	05:33 20:16	05:24 20:34	05:43 20:24	06:13 19:46	06:45 18:54	07:17 18:06	06:54 16:33	07:56-08:21/25 07:20 07:58-08:44/46 16:32
24	07:16 17:03	06:41 17:41	05:56 18:13	06:06 19:46	05:32 20:17	05:25 20:34	05:44 20:23	06:15 19:44	06:46 18:53	07:18 18:05	06:55 16:32	07:55-08:22/27 07:21 07:59-08:44/45 16:32
25	07:16 17:04	06:39 17:42	05:54 18:14	06:04 19:47	05:31 20:18	05:25 20:34	05:45 20:22	06:16 19:43	06:47 18:51	07:19 17:03	06:56 16:32	07:55-08:24/29 07:21 07:59-08:44/45 16:33
26	07:15 17:05	06:38 17:43	05:52 18:15	06:03 19:48	05:30 20:18	05:25 20:34	05:46 20:21	06:17 19:41	06:48 18:49	07:20 17:02	06:57 16:31	07:54-08:26/32 07:21 08:00-08:45/45 16:34
27	07:14 17:06	06:36 17:45	05:51 18:16	06:02 19:49	05:30 20:19	05:26 20:34	05:47 20:20	06:18 19:40	06:49 18:48	07:22 17:00	06:58 16:31	07:53-08:27/34 07:22 08:00-08:46/46 16:34
28	07:13 17:08	06:35 17:46	05:49 18:17	06:00 19:50	05:29 20:20	05:26 20:34	05:48 20:19	06:19 19:38	06:50 18:46	07:23 16:59	06:59 16:30	07:53-08:28/35 07:22 08:00-08:46/46 16:35
29	07:12 17:09	06:47 19:18	05:59 19:51	05:29 20:21	05:29 20:34	05:26 20:18	05:49 19:37	06:20 18:44	06:51 16:58	07:24 16:30	07:00 16:30	07:52-08:28/36 07:22 08:01-08:46/45 16:36
30	07:11 17:10	06:46 19:19	05:57 19:53	05:28 20:22	05:28 20:34	05:27 20:17	05:50 19:35	06:21 18:43	06:52 16:56	07:25 16:30	06:25 16:30	07:52-08:29/37 07:23 08:02-08:47/45 16:36
31	07:10 17:11	06:44 19:20	05:56 19:53	05:27 20:23	05:27 20:23	05:27 20:16	05:50 19:33	06:22 18:43	06:26 16:55	07:26 16:30	06:26 16:30	08:03-08:47/44 16:37
Ore potenziali eliofanía	297	297	369	399	449	453	460	428	375	345	297	287
Somma minuti d'ombra	765	0	0	0	0	0	0	0	0	0	304	1365

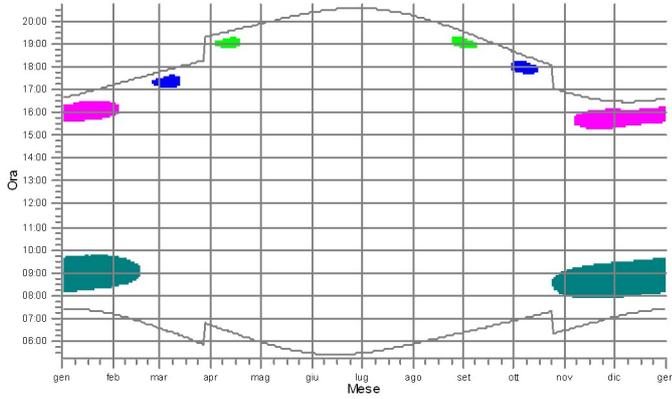
Legenda della tabella:

Giorno del mese Alba (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra  
Tramonto (hh:mm) Inizio ombreggiamento (hh:mm)-Fine ombreggiamento (hh:mm)/Minuti d'ombra

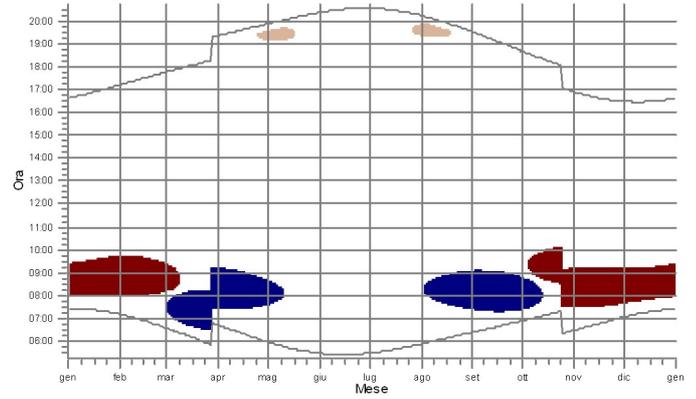
## SHADOW - Calendario per WTG, grafico

Calcolo: Flicker\_su\_recettori\_Stornara Nord

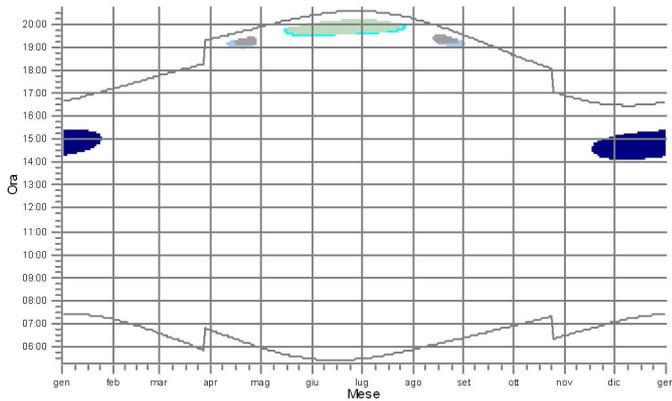
01: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0



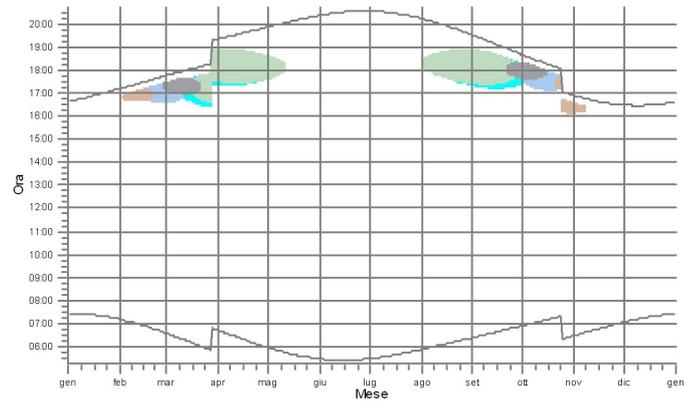
02: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0



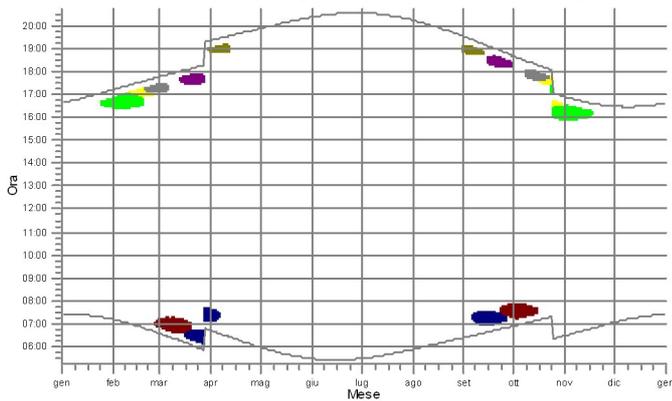
03: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0



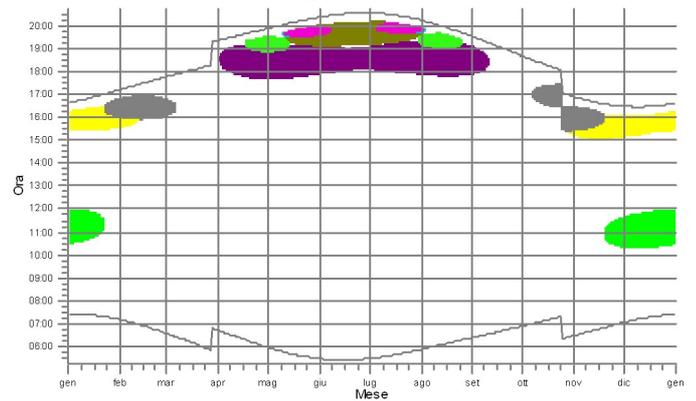
04: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0



05: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0



06: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0



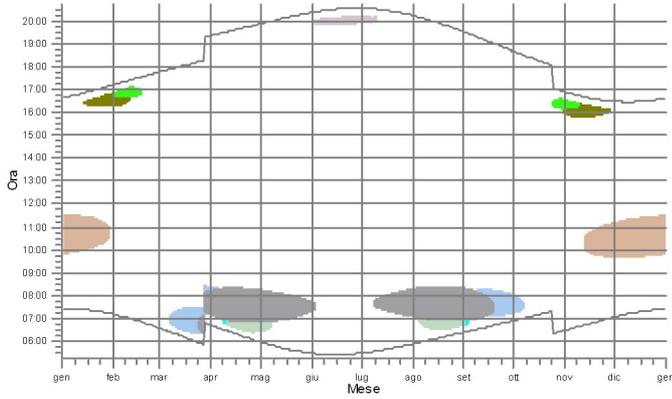
Recettori d'ombra

0-37-591: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 0,0° (2)	0-37-870: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 0,0° (15)	0-37-881: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 0,0° (16)
0-39-4: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (17)	0-40-291: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 0,0° (18)	S-01-182: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 0,0° (27)
0-37-591: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 0,0° (15)	0-37-870: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 0,0° (16)	0-37-881: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 0,0° (17)
0-39-4: Shadow Receptor: 1,0 × 2,0 Azimuth: 0,0° Slope: 0,0° (18)	0-40-291: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 0,0° (27)	S-01-182: Shadow Receptor: 1,0 × 1,0 Azimuth: 0,0° Slope: 0,0° (28)

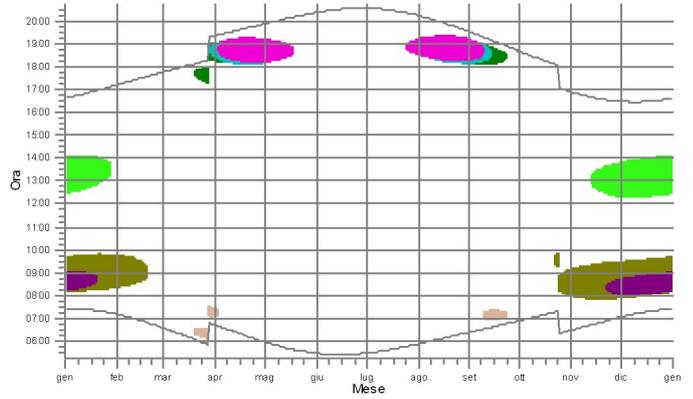
## SHADOW - Calendario per WTG, grafico

Calcolo: Flicker\_su\_recettori\_Stornara Nord

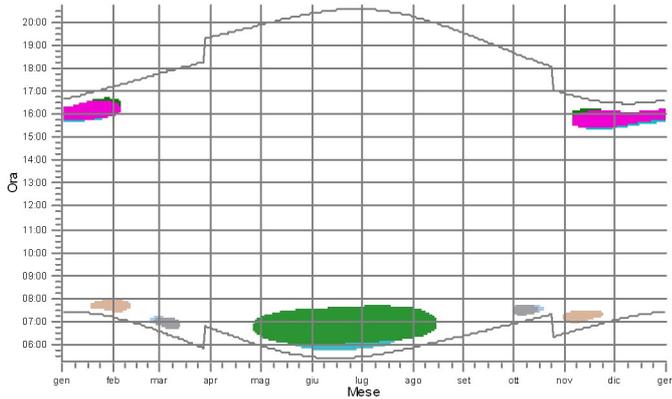
07: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0



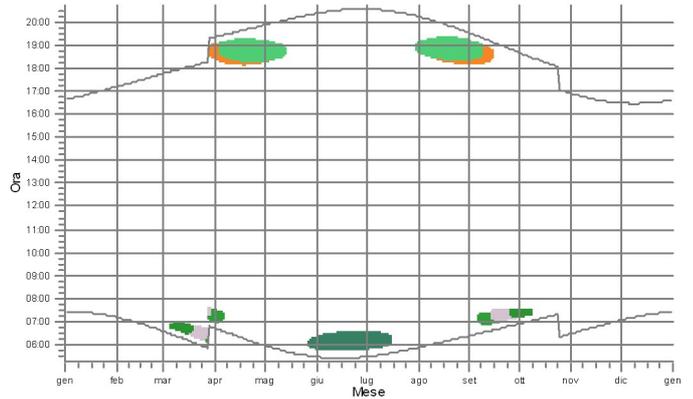
08: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0



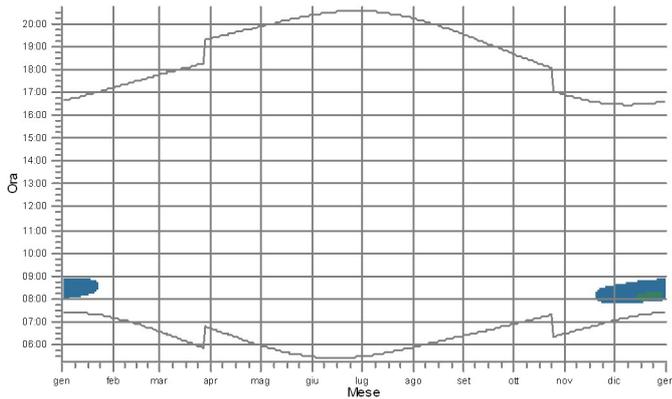
09: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0



10: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0

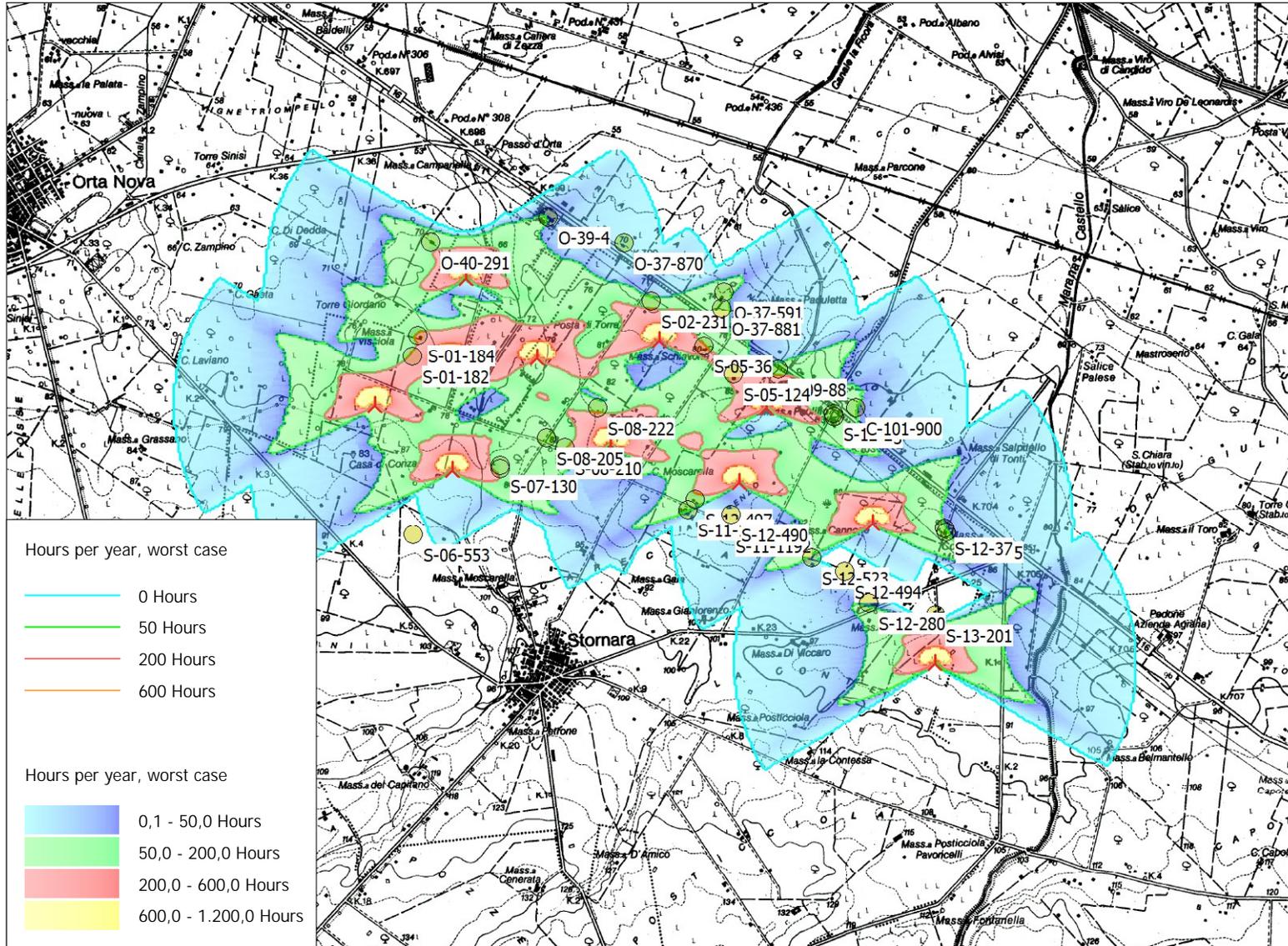


11: VESTAS V162-5.6MW(User) 5600 162.0 !O! hub: 119,0 m (TOT: 200,0



### Recettori d'ombra

C-101-900: Shadow Receptor: 1,0 x 1,0 h: 9,08 - 20,00	S-05-124: Shadow Receptor: 1,0 x 1,0 h: 9,08 - 20,00	S-05-124: Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (28)
S-05-124: Shadow Receptor: 1,0 x 1,0 h: 9,08 - 20,00	S-05-124: Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (22)	S-05-124: Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (21)
S-07-130: Shadow Receptor: 1,0 x 2,0 h: 9,02 - 19,00	S-07-130: Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (29)	S-07-130: Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (23)
S-07-158: Shadow Receptor: 1,0 x 2,0 h: 9,02 - 19,00	S-07-158: Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (25)	S-07-158: Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (26)
S-08-205: Shadow Receptor: 1,0 x 2,0 h: 9,02 - 19,00	S-08-205: Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (25)	S-08-210: Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (26)
S-08-210: Shadow Receptor: 1,0 x 2,0 h: 9,02 - 19,00	S-08-210: Shadow Receptor: 1,0 x 2,0 Azimuth: 0,0° Slope: 0,0° (26)	



**SHADOW -**  
**Mappa**  
Calcolo:  
Flicker\_su\_recettori\_Stornara Nord

Nuova WTG

Mappa: IGM\_50k , Scala di stampa 1:60.000, Centro mappa UTM (north)-WGS84 Zone: 33 Est: 565.440 Nord: 4.572.800

Recettore d'ombra

Flicker map level: Height Contours: CONTOURLINE\_ONLINEDATA\_0.wpo (1)

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