

**July 2011**

**Global Solar Radiation on a Horizontal Surface**  
**Hourly Integrated and Daily Totals**  
**Instrument: Eppley PSP**  
**Watt-Hours per Square Meter**

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily
1	0	0	0	0	0	33	164	320	525	700	838	927	956	924	827	695	511	314	121	7	0	0	0	0	7861
2	0	0	0	0	0	30	117	322	528	689	782	871	908	860	675	444	322	189	111	31	0	0	0	0	6878
3	0	0	0	0	0	33	131	310	486	620	787	752	862	754	755	655	384	344	96	13	0	0	0	0	6983
4	0	0	0	0	0	16	97	276	416	596	612	682	697	339 ?	64 ?	79 ?	183	369	97	36	0	0	0	0	4559 ?
5	0	0	0	0	0	15	66	128	184	281	628	662	771	635	613	596	539	210	115	18	0	0	0	0	5462
6	0	0	0	0	0	9	76	146	420	576	733	739	797	770	552	319	443	188	103	12	0	0	0	0	5883
7	0	0	0	0	0	22	142	321 ?	482	671	866	548	293	148	396	550	194	186	80	17	0	0	0	0	4915
8	0	0	0	0	0	11	51	202	338	416	250	594	457	799	729	277	108	?	23 ?	8	0	0	0	0	4262 ?
9	0	0	0	0	0	25	50	71	129	392	584	858	895	885	631	579	483	173	104	13	0	0	0	0	5871
10	0	0	0	0	0	24	144	324	517	611	592	451	267	570	505	631	315	202	101	14	0	0	0	0	5267
11	0	0	0	0	0	22	131	315	503	530	666	864	903	877	744	620	477	257	102	4	0	0	0	0	7017
12	0	0	0	0	0	6	37	168	555	365	543	714	888	718	673	516	433	263	73	12	0	0	0	0	5963
13	0	0	0	0	0	12	95	168	288	195	137	129	214	504	482	340	455	292	119	17	0	0	0	0	3447
14	0	0	0	0	0	23	129	320	518	701	848	907	952	859	698	536	490	311	118	18	0	0	0	0	7429
15	0	0	0	0	0	10	37	92	145	97	166	125	183	224	228	162	187	139	49	9	0	0	0	0	1853
16	0	0	0	0	0	4	13 ?	32	69	107	139	120	126	124	200	248	128	46	27	8	0	0	0	0	1391
17	0	0	0	0	0	5	40	203	407	657	758	498	519	858	807	597	371	255	85	16	0	0	0	0	6076
18	0	0	0	0	0	12	45	121	317	441	604	711	804	768	680	495	498	304	109	19	0	0	0	0	5927
19	0	0	0	0	0	3	58	57	132	183	234	323	406	476	556	466	404	188	87	13	0	0	0	0	3588
20	0	0	0	0	0	16	48	65	159	188	490	740	769	903	736	650	475	276	111	16	0	0	0	0	5641
21	0	0	0	0	0	19	114	252	453	626	517	543	743	886	736	646	473	146	129	15	0	0	0	0	6297
22	0	0	0	0	0	8	44	98	271	452	325	623	521	78 ?	258	172	130	49 ?	3 ?	1	0	0	0	0	3034 ?
23	0	0	0	0	0	12	63	110	192	130	285 ?	339	384	813	710	601	365	155	84	18	0	0	0	0	4260
24	0	0	0	0	0	12	71	146	223	331	555	571	753	812	431	307	107	81	86	15	0	0	0	0	4501
25	0	0	0	0	0	21	43	164	283	394	328	215 ?	137 ?	215	234	187	199	152	59	45 ?	0	0	0	0	2675
26	0	0	0	0	0	4	32	163	481	589	847	916	936	902	802	670	493	296	101	9	0	0	0	0	7242
27	0	0	0	0	0	20	128	156	484	619	641	745	863	878	780	677	494	293	99	9	0	0	0	0	6886
28	0	0	0	0	0	12	123	250	470	642	786	878	907	878	788	615	432	209	87	20	0	0	0	0	7097
29	0	0	0	0	0	16	126	253	453	567	748	870	956	855	802	520	465	273	91	15	0	0	0	0	7009
30	0	0	0	0	0	11	94	254	348	498	670	834	868	900	791	544	385	62 ?	13 ?	2	0	0	0	0	6275
31	0	0	0	0	0	12	56	99	364	488	682	249	915	392	235	158	244	245	96	9	0	0	0	0	4245
Avg	0	0	0	0	0	15	83	191	359	463	569	613	666	665	584	469	361	215	86	15	0	0	0	0	5348
S D	0	0	0	0	0	8	42	93	146	192	227	256	282	275	222	187	140	87	32	9	0	0	0	0	1694
S/A	0	0	0	0	0	0.54	0.5	0.49	0.41	0.41	0.4	0.42	0.42	0.41	0.38	0.4	0.39	0.4	0.38	0.61	0	0	0	0	0.32
Min	0	0	0	0	0	3	13	32	69	97	137	120	126	78	64	79	107	46	3	1	0	0	0	0	1391
Max	0	0	0	0	0	33	164	324	555	701	866	927	956	924	827	695	539	369	129	45	0	0	0	0	7861
n	0	0	0	0	0	269	363	368	372	372	368	367	365	358	359	369	370	348	352	243	0	0	0	0	5243

Daylight Data Recovery: 0.0% missing; 0.0% untested; 2.0% exceed the 15% QC threshold -- 5351 total daylight measurements.

Instrument: Eppley PSP Serial Number: 25821F3 Calibration Factor: 9.020  $\mu\text{V}/\text{W}/\text{m}^2$  Calibration Date: 05/1998

Data & Flag	Hour Column	Day Column
<value> *	> 20% Missing	> 10% Missing
<value> ?	> 20% Fail QC	> 10% Fail QC
<blank> *	> 90% Missing	> 90% Missing
<blank> ?	> 90% Fail QC	> 90% Fail QC

Note: Daily values with a missing flag (\*) are not used in monthly statistics.

**July 2011**

**Direct Normal Solar Radiation**  
**Hourly Integrated and Daily Totals**  
**Instrument: Eppley NIP**  
**Watt-Hours per Square Meter**

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily	
1	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
2	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
3	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
4	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
5	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
6	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
7	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
8	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
9	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
10	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
11	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
12	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
13	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
14	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
15	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
16	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
17	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
18	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
19	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
20	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
21	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
22	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
23	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
24	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
25	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
26	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
27	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
28	0	0	0	0	0	?	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
29	0	0	0	0	0	?	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	*	
30	0	0	0	0	0	?	*	*	*	*	*	*	*	*	*	*	*	*	*	?	?	0	0	0	0	*
31	0	0	0	0	0	?	?	?	*	*	*	*	*	*	*	*	*	*	*	*	?	0	0	0	0	*
Avg	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	N/A	*
SD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S/A	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	N/A	0
Max	0	0	0	0	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0	0	0	N/A	0
n	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Daylight Data Recovery: 98.4% missing; 0.0% untested; 1.6% exceed the 15% QC threshold -- 5351 total daylight measurements.

Instrument: Eppley NIP    Serial Number: 17664E6    Calibration Factor: 8.480  $\mu\text{V}/\text{W}/\text{m}^2$     Calibration Date: 05/1998

Data & Flag	Hour Column	Day Column
<value> *	> 20% Missing	> 10% Missing
<value> ?	> 20% Fail QC	> 10% Fail QC
<blank> *	> 90% Missing	> 90% Missing
<blank> ?	> 90% Fail QC	> 90% Fail QC

Note: Daily values with a missing flag (\*) are not used in monthly statistics.

**July 2011**

**Diffuse Solar Radiation (Shadow Band) on a Horizontal Surface**  
**Hourly Integrated and Daily Totals**  
**Instrument: Eppley PSP**  
**Watt-Hours per Square Meter**

Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Daily	
1	0	0	0	0	0	41	166	?	?	?	?	?	?	?	?	?	?	294 ?	140	7	0	0	0	0	648 ?	
2	0	0	0	0	0	32	131	?	?	?	?	?	?	?	663 ?	496	353	206	120	33	0	0	0	0	2036 ?	
3	0	0	0	0	0	36	148	314 ?	?	559 ?	?	528 ?	786 ?	768 ?	?	?	360 ?	290 ?	110	14	0	0	0	0	3911 ?	
4	0	0	0	0	0	17	106	290 ?	380 ?	543 ?	501 ?	599 ?	600 ?	244 ?	60 ?	77	200	?	74	37	0	0	0	0	3729 ?	
5	0	0	0	0	0	17	70	137	197	300	543 ?	681 ?	593 ?	519 ?	551 ?	547 ?	?	165 ?	130	18	0	0	0	0	4468 ?	
6	0	0	0	0	0	9	81	166	380 ?	459 ?	630 ?	257 ?	638 ?	521 ?	479 ?	347	384 ?	210	112	13	0	0	0	0	4686 ?	
7	0	0	0	0	0	28	121	358 ?	?	?	?	403 ?	323	156	429	365 ?	208	202	89	19	0	0	0	0	2699 ?	
8	0	0	0	0	0	12	55	206	339	399	275	525 ?	475	683 ?	638 ?	271	104	?	20 ?	8	0	0	0	0	4012 ?	
9	0	0	0	0	0	30	54	76	138	377	521 ?	623 ?	390 ?	444 ?	400 ?	439 ?	424 ?	172	119	14	0	0	0	0	4220 ?	
10	0	0	0	0	0	29	167	?	?	489 ?	478 ?	392	287	457 ?	280 ?	517 ?	245 ?	226	114	14	0	0	0	0	3695 ?	
11	0	0	0	0	0	24	152	303 ?	?	486 ?	588 ?	663 ?	?	?	516 ?	581 ?	418 ?	243 ?	99	4	0	0	0	0	4078 ?	
12	0	0	0	0	0	6	39	185	?	398	602	699 ?	?	701 ?	621 ?	562 ?	376 ?	266	80	12	0	0	0	0	4545 ?	
13	0	0	0	0	0	13	104	148	277	210	147	139	234	353 ?	424	368	430 ?	293 ?	137	18	0	0	0	0	3296 ?	
14	0	0	0	0	0	30	134	318 ?	?	?	?	?	?	743 ?	565 ?	386 ?	491 ?	307 ?	120	19	0	0	0	0	3113 ?	
15	0	0	0	0	0	11	39	99	156	105	180	135	200	244	247	175	200	150	53	9	0	0	0	0	2004	
16	0	0	0	0	0	4	15	34	76	118	153	132	138	133	216	268	138	49	26	8	0	0	0	0	1507	
17	0	0	0	0	0	6	43	166	358 ?	638 ?	?	474	485	623 ?	?	520 ?	355 ?	279	95	16	0	0	0	0	4060 ?	
18	0	0	0	0	0	13	48	129	276	406 ?	325 ?	553 ?	629 ?	593 ?	360 ?	368 ?	?	270 ?	122	20	0	0	0	0	4111 ?	
19	0	0	0	0	0	3	62	61	141	197	252	352	446	520	537 ?	430 ?	423 ?	191	95	14	0	0	0	0	3725	
20	0	0	0	0	0	17	52	70	173	203	418 ?	535 ?	666 ?	?	?	?	?	290 ?	125	17	0	0	0	0	2566 ?	
21	0	0	0	0	0	22	101	296	429 ?	494 ?	425 ?	598	727 ?	?	680 ?	?	342 ?	163	143	16	0	0	0	0	4436 ?	
22	0	0	0	0	0	10	48	105	307	?	?	?	?	?	?	?	?	?	?	?	0	0	0	0	0	469 ?
23	0	0	0	0	0	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	0	0	0	0	?
24	0	0	0	0	0	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	0	0	0	0	?
25	0	0	0	0	0	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	0	0	0	0	?
26	0	0	0	0	0	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	0	0	0	0	?
27	0	0	0	0	0	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	0	0	0	0	?
28	0	0	0	0	0	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	0	0	0	0	?
29	0	0	0	0	0	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	0	0	0	0	?
30	0	0	0	0	0	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	0	0	0	0	?
31	0	0	0	0	0	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	0	0	0	0	?
Avg	0	0	0	0	0	19	88	182	259	375	403	460	476	481	451	395	321	225	101	16	0	0	0	0	3273 ?	
S/D	0	0	0	0	0	11	47	102	111	161	168	190	198	206	175	140	115	67	34	8	0	0	0	0	1247	
S/A	0	0	0	0	0	0.6	0.53	0.56	0.43	0.43	0.42	0.41	0.42	0.43	0.39	0.36	0.36	0.3	0.34	0.49	0	0	0	0	0.38	
Min	0	0	0	0	0	3	15	34	76	105	147	132	138	133	60	77	104	49	20	4	0	0	0	0	469	
Max	0	0	0	0	0	41	167	358	429	638	630	699	786	768	680	581	491	307	143	37	0	0	0	0	4686	
n	0	0	0	0	0	194	260	190	135	133	128	136	123	99	111	136	130	178	245	179	0	0	0	0	2394	

Daylight Data Recovery: 0.0% missing; 0.0% untested; 55.2% exceed the 15% QC threshold -- 5351 total daylight measurements.

Instrument: Eppley PSP Serial Number: 17860F3 Calibration Factor: 7.010 μV/W/m² Calibration Date: 05/1998

Data & Flag	Hour Column	Day Column
<value> *	> 20% Missing	> 10% Missing
<value> ?	> 20% Fail QC	> 10% Fail QC
<blank> *	> 90% Missing	> 90% Missing
<blank> ?	> 90% Fail QC	> 90% Fail QC

Note: Daily values with a missing flag (\*) are not used in monthly statistics.