

**December 2004**

**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	0	2	73	237	396	506	556	549	440	320	163	32	0	0	0	0	0	0	0	3272
2	0	0	0	0	0	0	2	41	198	379	493	544	496	399	257	160	28	0	0	0	0	0	0	0	2997
3	0	0	0	0	0	0	4	53	209	324	478	511 ?	520 ?	417 ?	229	104	24	0	0	0	0	0	0	0	2873 ?
4	0	0	0	0	0	0	1	54	205	367	475	528	537 ?	346 ?	240	105	19	0	0	0	0	0	0	0	2878
5	0	0	0	0	0	0	0	12	29 ?	58	116	72	?	41 ?	42	15 ?	6	0	0	0	0	0	0	0	389 ?
6	0	0	0	0	0	0	0	5	39 ?	65	86	99	106	52	35 ?	26 ?	7	0	0	0	0	0	0	0	520 ?
7	0	0	0	0	0	0	0	56	214	366	477	526	520	445	318	163	31	0	0	0	0	0	0	0	3116
8	0	0	0	0	0	0	3	56	185	343	415	416	437	352	158	58	12	0	0	0	0	0	0	0	2437
9	0	0	0	0	0	0	0	19	57	286	471	490	515	423	315	161	36	0	0	0	0	0	0	0	2773
10	0	0	0	0	0	0	1	58	95	221	474	525	406	418	252	136	24	0	0	0	0	0	0	0	2611
11	0	0	0	0	0	0	0	15	47	83	92	133	211	156	98	62	20	0	0	0	0	0	0	0	918
12	0	0	0	0	0	0	2	48	194	344	452	505	504	432	309	153	34	0	0	0	0	0	0	0	2978
13	0	0	0	0	0	0	0	49	203	357	468	525	523	452	327	169	37	0	0	0	0	0	0	0	3108
14	0	0	0	0	0	0	0	50	209	365	480	538	537	462	334	172	38	0	0	0	0	0	0	0	3185
15	0	0	0	0	0	0	0	75	265	411	482	537	531	460	329	166	32	0	0	0	0	0	0	0	3289
16	0	0	0	0	0	0	0	45	192	345	472	442	347	130	29 ?	27	6	0	0	0	0	0	0	0	2035 ?
17	0	0	0	0	0	0	0	37	177	346	442	495	496	425	311	130 ?	32	0	0	0	0	0	0	0	2892
18	0	0	0	0	0	0	0	40	168	336	449	505	335	320	212	125	35	0	0	0	0	0	0	0	2525
19	0	0	0	0	0	0	0	40	184	290	470	425	530	466	341	178	39	0	0	0	0	0	0	0	2964
20	0	0	0	0	0	0	0	44	188	338	464	525	526	458	335	176	40	0	0	0	0	0	0	0	3094
21	0	0	0	0	0	0	0	39	175	340	398	433	457	444	319	158	37	0	0	0	0	0	0	0	2800
22	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
23	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
24	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
25	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
26	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
27	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
28	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
29	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
30	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
31	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
Avg	0	0	0	0	0	0	1	43	165	303	412	444	454	359	243	124	27	0	0	0	0	0	0	0	2555 *
S D	0	0	0	0	0	0	1	18	68	106	134	149	120	139	107	54	11	0	0	0	0	0	0	0	870
S/A	0	0	0	0	0	0	1.95	0.42	0.41	0.35	0.32	0.34	0.26	0.39	0.44	0.44	0.42	0	0	0	0	0	0	0	0.34
Min	0	0	0	0	0	0	0	5	29	58	86	72	106	41	29	15	6	0	0	0	0	0	0	0	389
Max	0	0	0	0	0	0	4	75	265	411	506	556	549	466	341	178	40	0	0	0	0	0	0	0	3289
n	0	0	0	0	0	0	24	251	245	251	252	248	225	234	236	231	213	0	0	0	0	0	0	0	2411

Daylight Data Recovery: 32.2% missing; 2.5% exceed the 15% QC threshold -- 3692 total daylight measurements.

Instrument: Eppley PSP    Serial Number: 18036F3    Calibration Factor: 7.430 μV/W/m<sup>2</sup>    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.

December 2004

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	0	0	0	0	*
2	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
3	0	0	0	0	0	0	*	*	*	*	?	?	657 ?	793 ?	?	?	?	0	0	0	0	0	0	0	?
4	0	0	0	0	0	0	*	*	*	*	*	880 *?	790 ?	?	?	*	*	0	0	0	0	0	0	0	*
5	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
6	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
7	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
8	0	0	0	0	0	0	*	*	*	*	*	*	?	?	?	?	?	0	0	0	0	0	0	0	?
9	0	0	0	0	0	0	*	*	*	*	*	*	682 *?	?	?	?	594 ?	0	0	0	0	0	0	0	*
10	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
11	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
12	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
13	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
14	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
15	0	0	0	0	0	0	*	*	*	*	?	?	?	*	*	*	*	0	0	0	0	0	0	0	*
16	0	0	0	0	0	0	0	469 ?	?	522 ?	?	?	79 ?	78 ?	?	*	*	0	0	0	0	0	0	0	1148 *?
17	0	0	0	0	0	0	0	*	*	*	*	?	*	*	336 ?	49 ?	?	0	0	0	0	0	0	0	386 *?
18	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	?	125 ?	0	0	0	0	0	0	*
19	0	0	0	0	0	0	0	?	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
20	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
21	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
22	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
23	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
24	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
25	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
26	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
27	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
28	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
29	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
30	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
31	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*
Avg	0	0	0	0	0	0	0	469	N/A	522	N/A	880	552	436	336	49	360	0	0	0	0	0	0	0	N/A *?
SD	0	0	0	0	0	0	0	0	0	0	0	0	320	506	0	0	332	0	0	0	0	0	0	0	0
S/A	0	0	0	0	0	0	0	0	0	0	0	0.58	1.16	0	0	0.92	0	0	0	0	0	0	0	0	0
Min	0	0	0	0	0	0	0	469	N/A	522	N/A	880	79	78	336	49	125	0	0	0	0	0	0	0	N/A
Max	0	0	0	0	0	0	0	469	N/A	522	N/A	880	790	793	336	49	594	0	0	0	0	0	0	0	N/A
n	0	0	0	0	0	0	0	7	0	3	0	3	19	11	8	3	5	0	0	0	0	0	0	0	0

Daylight Data Recovery: 86.4% missing; 11.8% exceed the 15% QC threshold -- 3692 total daylight measurements.

Instrument: Eppley NIP Serial Number: 25796E6 Calibration Factor: 8.670 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.

**December 2004**

**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	0	2	78	177 ?	?	?	?	?	409 ?	357 ?	164	36	0	0	0	0	0	0	0	1225 ?	
2	0	0	0	0	0	0	2	36 ?	226 ?	?	?	?	?	337 ?	255 ?	164	31	0	0	0	0	0	0	0	1052 ?	
3	0	0	0	0	0	0	4	64	201 ?	256 ?	?	462 ?	?	350 ?	237	104	23	0	0	0	0	0	0	0	1701 ?	
4	0	0	0	0	0	0	1	68	186 ?	?	?	?	266 ?	314	225	103	19	0	0	0	0	0	0	0	1181 ?	
5	0	0	0	0	0	0	0	11	24	52	109	65	30 ?	34	40	14 ?	6	0	0	0	0	0	0	0	385	
6	0	0	0	0	0	0	2 ?	6	33	62	82	96	101	50	29	21	9	0	0	0	0	0	0	0	492	
7	0	0	0	0	0	0	0	60	178 ?	?	?	?	?	?	?	160	34	0	0	0	0	0	0	0	433 ?	
8	0	0	0	0	0	0	4 ?	66	141 ?	368 ?	425	415	410 ?	360	152	55	11	0	0	0	0	0	0	0	2408 ?	
9	0	0	0	0	0	0	2	19	54	246 ?	437 ?	424 ?	?	330 ?	?	154 ?	40	0	0	0	0	0	0	0	1706 ?	
10	0	0	0	0	0	0	1	37 ?	91	161 ?	?	?	?	302 ?	367 ?	226 ?	123	24	0	0	0	0	0	0	1332 ?	
11	0	0	0	0	0	0	0	14	44	79	86	125	198	147	92	59	19	0	0	0	0	0	0	0	863	
12	0	0	0	0	0	0	?	51	184	?	?	?	?	?	?	163	36	0	0	0	0	0	0	0	434 ?	
13	0	0	0	0	0	0	0	53	166 ?	?	?	?	?	?	?	149 ?	41	0	0	0	0	0	0	0	409 ?	
14	0	0	0	0	0	0	0	53	158 ?	?	?	?	?	?	?	151 ?	42	0	0	0	0	0	0	0	404 ?	
15	0	0	0	0	0	0	0	41 ?	?	?	?	?	?	?	?	148 ?	37	0	0	0	0	0	0	0	227 ?	
16	0	0	0	0	0	0	0	47	169 ?	?	?	354 ?	247 ?	115	35	24	5	0	0	0	0	0	0	0	996 ?	
17	0	0	0	0	0	0	0	42	164	286	396 ?	?	?	?	?	137 ?	35	0	0	0	0	0	0	0	1061 ?	
18	0	0	0	0	0	0	0	41	160	?	?	?	287	282	211	125	36	0	0	0	0	0	0	0	1141 ?	
19	0	0	0	0	0	0	0	42	181	289 ?	408 ?	315 ?	?	?	?	151 ?	42	0	0	0	0	0	0	0	1428 ?	
20	0	0	0	0	0	0	0	44	155 ?	?	?	?	?	?	?	158 ?	44	0	0	0	0	0	0	0	401 ?	
21	0	0	0	0	0	0	0	42	167	?	321 ?	409 ?	346 ?	?	?	160	39	0	0	0	0	0	0	0	1485 ?	
22	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	*	
23	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	*
24	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	*
25	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	*
26	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	*
27	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	*
28	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	*
29	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	*
30	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	*
31	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	*
Avg	0	0	0	0	0	0	1	44	143	200	283	296	243	258	169	118	29	0	0	0	0	0	0	0	989 *?	
S D	0	0	0	0	0	0	1	19	59	115	162	157	118	133	108	52	13	0	0	0	0	0	0	0	573	
S/A	0	0	0	0	0	0	1.92	0.44	0.42	0.58	0.57	0.53	0.49	0.52	0.64	0.44	0.44	0.47	0.0	0.0	0.0	0.0	0.0	0.0	0.58	
Min	0	0	0	0	0	0	0	6	24	52	82	65	30	34	29	14	5	0	0	0	0	0	0	0	227	
Max	0	0	0	0	0	0	4	78	226	368	437	462	410	409	357	164	44	0	0	0	0	0	0	0	2408	
n	0	0	0	0	0	0	21	237	176	84	64	70	68	99	112	210	213	0	0	0	0	0	0	0	1361	

Daylight Data Recovery: 32.2% missing; 31.0% exceed the 15% QC threshold -- 3692 total daylight measurements.

Instrument: Eppley PSP    Serial Number: 18039F3    Calibration Factor: 7.470 μV/W/m<sup>2</sup>    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.