

December 2002

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	71	205	356	500	561	550	463	328	174	30	0	0	0	0	0	0	0	3241
2	0	0	0	0	0	0	6	75	227	239	318	378	309	320	220	158	59	0	0	0	0	0	0	0	2312
3	0	0	0	0	0	0	2	71	119	152	168 ?	253	309	244	179	59	12	0	0	0	0	0	0	0	1568
4	0	0	0	0	0	0	0	0	?	?	50 ?	?	42 ?	40 ?	?	?	7	0	0	0	0	0	0	0	140 ?
5	0	0	0	0	0	0	0	6	25 ?	39	60	97	85	50	46	23	5	0	0	0	0	0	0	0	435
6	0	0	0	0	0	0	1	80	289	409	488	539	535	463	332	166	36	0	0	0	0	0	0	0	3338
7	0	0	0	0	0	0	1	109	324 ?	382	492	540	526	410	285	123	24	0	0	0	0	0	0	0	3215
8	0	0	0	0	0	0	0	20	84	177	198	147	118	209	152	88	34	0	0	0	0	0	0	0	1228
9	0	0	0	0	0	0	2	66	251	445	417	427	213	348	189	116	18	0	0	0	0	0	0	0	2493
10	0	0	0	0	0	0	0	5	33	56	97	205	286	121	201	58	14	0	0	0	0	0	0	0	1075
11	0	0	0	0	0	0	0	14	73	112	134	214	330	459	242	90	25	0	0	0	0	0	0	0	1694
12	0	0	0	0	0	0	0	41	166	316	412	383	323	201	103	40	10	0	0	0	0	0	0	0	1994
13	0	0	0	0	0	0	0	4	31 ?	38	62	108	180	156	123 ?	33	7	0	0	0	0	0	0	0	741
14	0	0	0	0	0	0	0	32	176	330	448	511	506	445	314	162	32	0	0	0	0	0	0	0	2956
15	0	0	0	0	0	0	0	42	186	344	462	516	515	451	325	169	39	0	0	0	0	0	0	0	3050
16	0	0	0	0	0	0	0	54	151	152 ?	206 ?	496 ?	374	409	186	120	28	0	0	0	0	0	0	0	2176 ?
17	0	0	0	0	0	0	0	27	83	176	254	409	499	272	317	159	21	0	0	0	0	0	0	0	2216
18	0	0	0	0	0	0	0	40	60	84	55 ?	82	81	86	163	92	8	0	0	0	0	0	0	0	750
19	0	0	0	0	0	0	0	1	?	57 ?	75	73 ?	70 ?	214	286	169	40	0	0	0	0	0	0	0	985 ?
20	0	0	0	0	0	0	0	39	202 ?	352	473	534	534	468	341	181	40	0	0	0	0	0	0	0	3163
21	0	0	0	0	0	0	0	45	129	369	448	528	527	464	337	165	21	0	0	0	0	0	0	0	3032
22	0	0	0	0	0	0	0	35	173	308	415	534	516	426	342	182	48	0	0	0	0	0	0	0	2979
23	0	0	0	0	0	0	0	16	45	53 ?	75	71	106	75	32 ?	27 ?	3	0	0	0	0	0	0	0	504 ?
24	0	0	0	0	0	0	0	14	66	75	80	91	90	56 ?	29 ?	?	6	0	0	0	0	0	0	0	506 ?
25	0	0	0	0	0	0	0	35	181	345	460	534	533	459	332	161	40	0	0	0	0	0	0	0	3080
26	0	0	0	0	0	0	0	31	152	227	302	347	295	406	281	125	38	0	0	0	0	0	0	0	2204
27	0	0	0	0	0	0	0	41	130	349	280	457	527	463	337	183	45	0	0	0	0	0	0	0	2810
28	0	0	0	0	0	0	0	40	194	343	460	532	518	403	336	189	42	0	0	0	0	0	0	0	3055
29	0	0	0	0	0	0	0	35	174	332	452	519	495	373	288	167	35	0	0	0	0	0	0	0	2870
30	0	0	0	0	0	0	0	15	95	162	114	105	98	120	70	78	16	0	0	0	0	0	0	0	873
31	0	0	0	0	0	0	0	10	34	52	101	74 ?	106	99	76 ?	54	10	0	0	0	0	0	0	0	616
Avg	0	0	0	0	0	0	0	36	140	228	276	342	329	296	226	121	26	0	0	0	0	0	0	0	1977
S D	0	0	0	0	0	0	1	26	80	133	171	190	187	157	107	55	15	0	0	0	0	0	0	0	1062
S/A	0	0	0	0	0	0	2.61	0.73	0.57	0.59	0.62	0.56	0.57	0.53	0.47	0.46	0.59	0	0	0	0	0	0	0	0.54
Min	0	0	0	0	0	0	0	0	25	38	50	71	42	40	29	23	3	0	0	0	0	0	0	0	140
Max	0	0	0	0	0	0	6	109	324	445	500	561	550	468	342	189	59	0	0	0	0	0	0	0	3338
n	0	0	0	0	0	0	25	362	328	341	350	342	357	360	334	341	326	0	0	0	0	0	0	0	3468

Daylight Data Recovery: 0.0% missing; 6.1% exceed the 15% QC threshold -- 3693 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 2002

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	0	*
3	0	0	0	0	0	0	*	*	*	?	?	?	?	*	*	*	*	0	0	0	0	0	0	0	0	*
4	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	*
5	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	*
6	0	0	0	0	0	0	?	?	?	708 ?	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	?
7	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	*
8	0	0	0	0	0	0	?	616	?	?	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	*
9	0	0	0	0	0	0	?	?	278 *?	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	*
10	0	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	0	*
12	0	0	0	0	0	0	*	?	*	*	*	*	*	*	*	*	*	133 ?	0	0	0	0	0	0	0	*
13	0	0	0	0	0	0	?	*	*	*	*	*	*	*	*	*	*	231 *	0	0	0	0	0	0	0	*
14	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	*
15	0	0	0	0	0	0	*	*	*	*	?	543 ?	?	*	*	*	*	0	0	0	0	0	0	0	0	*
16	0	0	0	0	0	0	0	367 ?	?	?	?	604 ?	*	*	*	*	*	0	0	0	0	0	0	0	0	?
17	0	0	0	0	0	0	0	*	*	*	*	?	*	*	*	*	*	0	0	0	0	0	0	0	0	*
18	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	*
19	0	0	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	0	0	0	0	0	0	0	0	*
20	0	0	0	0	0	0	0	?	378 ?	?	?	32 ?	?	?	?	?	?	402 ?	0	0	0	0	0	0	0	811 ?
21	0	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	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	0	492	328	708	N/A	393	N/A	N/A	N/A	N/A	255	0	0	0	0	0	0	0	811 *?	
SD	0	0	0	0	0	0	0	176	71	0	0	314	0	0	0	0	136	0	0	0	0	0	0	0	0	
S/A	0	0	0	0	0	0	0	0.36	0.22	0	0	0.8	0	0	0	0	0.53	0	0	0	0	0	0	0	0	
Min	0	0	0	0	0	0	0	367	278	708	N/A	32	N/A	N/A	N/A	N/A	133	0	0	0	0	0	0	0	811	
Max	0	0	0	0	0	0	0	616	378	708	N/A	604	N/A	N/A	N/A	N/A	402	0	0	0	0	0	0	0	811	
n	0	0	0	0	0	0	0	12	8	3	0	12	0	0	0	0	11	0	0	0	0	0	0	0	15	

Daylight Data Recovery: 81.8% missing; 16.7% exceed the 15% QC threshold -- 3693 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 2002**

**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	75	191 ?	319 ?	?	?	?	?	?	145 ?	33	0	0	0	0	0	0	0	766 ?
2	0	0	0	0	0	0	7 ?	79	229 ?	239	301	369	309	279	195	154 ?	56	0	0	0	0	0	0	0	2215 ?
3	0	0	0	0	0	0	2	43 ?	114	146	186	245	258	240	153	57	12	0	0	0	0	0	0	0	1454
4	0	0	0	0	0	0	0	0	?	19 ?	39	29 ?	35	31	18 ?	13 ?	7	0	0	0	0	0	0	0	191 ?
5	0	0	0	0	0	0	0	6	20	38	57	92	81	47	43	21	5	0	0	0	0	0	0	0	411
6	0	0	0	0	0	0	1	27 ?	?	?	?	?	?	?	?	147 ?	39	0	0	0	0	0	0	0	214 ?
7	0	0	0	0	0	0	1	?	?	?	?	?	?	382 ?	268 ?	127	25	0	0	0	0	0	0	0	802 ?
8	0	0	0	0	0	0	0	21	81	169	192	141	113	202	147	86	33	0	0	0	0	0	0	0	1185
9	0	0	0	0	0	0	2	66	153 ?	?	395 ?	364 ?	206	325	187	115	17	0	0	0	0	0	0	0	1829 ?
10	0	0	0	0	0	0	0	5	31	54	92	196	273	115	191	54	12	0	0	0	0	0	0	0	1024
11	0	0	0	0	0	0	0	13	70	106	127	205	306	355 ?	167 ?	86	24	0	0	0	0	0	0	0	1460
12	0	0	0	0	0	0	0	36	181 ?	282	436 ?	397	324	194	99	37	10	0	0	0	0	0	0	0	1995
13	0	0	0	0	0	0	0	3	25	37	59	103	171	148	112	31	6	0	0	0	0	0	0	0	695
14	0	0	0	0	0	0	0	32	176	317 ?	?	?	?	?	?	157	34	0	0	0	0	0	0	0	716 ?
15	0	0	0	0	0	0	0	45	172 ?	?	?	?	?	?	?	150 ?	42	0	0	0	0	0	0	0	409 ?
16	0	0	0	0	0	0	0	39	133	132	150 ?	304 ?	351 ?	424 ?	187	120	28	0	0	0	0	0	0	0	1868 ?
17	0	0	0	0	0	0	0	26	80	171	252	334 ?	462 ?	276	224 ?	141 ?	21	0	0	0	0	0	0	0	1987 ?
18	0	0	0	0	0	0	0	38	57	81	45	78	78	83	161	90	7	0	0	0	0	0	0	0	718
19	0	0	0	0	0	0	0	1	11 ?	42 ?	72	65 ?	67	219	285 ?	165	43	0	0	0	0	0	0	0	969 ?
20	0	0	0	0	0	0	0	42	128 ?	?	?	?	?	?	?	146 ?	43	0	0	0	0	0	0	0	359 ?
21	0	0	0	0	0	0	0	49	130	317 ?	320 ?	?	?	?	?	126 ?	20	0	0	0	0	0	0	0	963 ?
22	0	0	0	0	0	0	0	37	180	333 ?	350 ?	?	?	356 ?	?	143 ?	51	0	0	0	0	0	0	0	1450 ?
23	0	0	0	0	0	0	0	15	43	42	64	65	101	72	24	23 ?	2	0	0	0	0	0	0	0	452
24	0	0	0	0	0	0	0	13	63	71	76	87	85	46	25	13	6	0	0	0	0	0	0	0	485
25	0	0	0	0	0	0	0	37	161 ?	?	?	?	?	?	?	164	42	0	0	0	0	0	0	0	404 ?
26	0	0	0	0	0	0	0	30	134	225	303	350	294	312 ?	265 ?	124	37	0	0	0	0	0	0	0	2074 ?
27	0	0	0	0	0	0	0	40 ?	122	257 ?	259	395 ?	?	?	?	158 ?	48	0	0	0	0	0	0	0	1280 ?
28	0	0	0	0	0	0	0	42	177 ?	?	?	?	468 ?	382 ?	211 ?	163 ?	44	0	0	0	0	0	0	0	1487 ?
29	0	0	0	0	0	0	0	39	156 ?	?	?	?	?	338 ?	298 ?	161	35	0	0	0	0	0	0	0	1028 ?
30	0	0	0	0	0	0	0	15	92	157	111	101	93	115	67	75	16	0	0	0	0	0	0	0	842
31	0	0	0	0	0	0	0	10	33	49	97	56	101	89	55	51	9	0	0	0	0	0	0	0	550
Avg	0	0	0	0	0	0	0	31	112	157	181	199	209	219	154	105	26	0	0	0	0	0	0	0	1041 ?
S D	0	0	0	0	0	0	1	21	62	108	125	133	135	127	88	53	16	0	0	0	0	0	0	0	601
S/A	0	0	0	0	0	0	2.81	0.67	0.55	0.69	0.69	0.67	0.64	0.58	0.57	0.5	0.61	0	0	0	0	0	0	0	0.58
Min	0	0	0	0	0	0	0	0	11	19	39	29	35	31	18	13	2	0	0	0	0	0	0	0	191
Max	0	0	0	0	0	0	7	79	229	333	436	397	468	424	298	165	56	0	0	0	0	0	0	0	2215
n	0	0	0	0	0	0	24	329	267	226	230	203	212	224	214	308	324	0	0	0	0	0	0	0	2565

Daylight Data Recovery: 0.0% missing; 30.5% exceed the 15% QC threshold -- 3693 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.