

**July 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	16	117	276	438	630	559	607	689	506	379	278 ?	221	225	97	17	0	0	0	0	5053
2	0	0	0	0	0	26	115	177	241	364	547	506	153 ?	91	?	?	?	28 ?	25	9	0	0	0	0	2279 ?
3	0	0	0	0	0	24	122	253	468	536	643	579	766	807	438	422	?	35 ?	6 ?	4	0	0	0	0	5103 ?
4	0	0	0	0	0	27	121	336 ?	476	680	833	921	847	747	793	680	504	217	50	22	0	0	0	0	7254
5	0	0	0	0	0	28	130	289	501	678	813	873	737	474	704	649	300	176	113	8	0	0	0	0	6473
6	0	0	0	0	0	19	126	325	554	637	828	942	997	964	851	703	530	340	131	6	0	0	0	0	7954
7	0	0	0	0	0	25	153	343	540	706	839	921	973	579	739	587	419	255	119	9	0	0	0	0	7206
8	0	0	0	0	0	20	124	180	215	669	527	420	639	832	748	626	442	269	115	13	0	0	0	0	5837
9	0	0	0	0	0	19	113	283	332	447	517	585	164	777	564	580	369	212	89	6	0	0	0	0	5058
10	0	0	0	0	0	14	49	166	316	358	345	358	511	699	327	448	400	160	59	13	0	0	0	0	4222
11	0	0	0	0	0	10	45	55	156	74	161	364	481	672	514	476	369	204	115	11	0	0	0	0	3706
12	0	0	0	0	0	24	117	250	202	212	424	454	320	301	329	506	301	233	100	12	0	0	0	0	3785
13	0	0	0	0	0	12	53	194	175	138	147	213	188	91	96	75	63	40 ?	8 ?	5	0	0	0	0	1497
14	0	0	0	0	0	5	53	160	355	286	280	324	215	222	418	338	166	117	29	3	0	0	0	0	2970
15	0	0	0	0	0	15	54	176	169	338	574	357	553	689	642	728	520	229	121	11	0	0	0	0	5175
16	0	0	0	0	0	11	64	164	414	618	729	776	565	744	639	461	340	221	156	23	0	0	0	0	5925
17	0	0	0	0	0	26	80	236	471	573	693	688	802	702	622	668	456	192	64	6	0	0	0	0	6278
18	0	0	0	0	0	11	21	50 ?	108	155	418	547	731	380	462	314	252	168	75	16	0	0	0	0	3708
19	0	0	0	0	0	16	75	256	191 ?	252	594	390	598	510	679	620	543	268	64	25	0	0	0	0	5081
20	0	0	0	0	0	15	33	128	113	196	339	663	823	887	758	664	511	292	149	16	0	0	0	0	5587
21	0	0	0	0	0	12	79	230	459	674	769	818	873	804	708	510	513	150	81	14	0	0	0	0	6696
22	0	0	0	0	0	18	115	294	484	662	851	698	631	639	596	658	436	203	63	59 ?	0	0	0	0	6407
23	0	0	0	0	0	19	61	100	403	530	748	760	866	586	646	459	369	185	69	13	0	0	0	0	5814
24	0	0	0	0	0	6	47	162	226	243	396	418	672	584	833	603	191	263	92	16	0	0	0	0	4753
25	0	0	0	0	0	23	98	218	361	589	518	723	813	791	463	149	63	71	47	28	0	0	0	0	4955
26	0	0	0	0	0	7	46	215	233	269	537	903	604	443	432	190	238	144	57	19	0	0	0	0	4338
27	0	0	0	0	0	19	103	160	225	340	444	264	280	308 ?	120	213	381	225	59	16	0	0	0	0	3157
28	0	0	0	0	0	8	75	232	318	289	677	625	278	703	716	625	481	119	129	24	0	0	0	0	5298
29	0	0	0	0	0	8	56	176	288	366	584	692	865	785	630	673	374	271	103	10	0	0	0	0	5881
30	0	0	0	0	0	6	74	167	195	491	627	752	816	649	524	381	179	109	79	12	0	0	0	0	5060
31	0	0	0	0	0	7	52	132	279	507	722	929	836	522	709	431	367	240	84	11	0	0	0	0	5828
Avg	0	0	0	0	0	16	83	206	320	436	570	615	622	596	569	491	355	189	82	15	0	0	0	0	5108
S D	0	0	0	0	0	7	35	75	133	193	195	217	251	223	192	181	137	78	38	10	0	0	0	0	1464
S/A	0	0	0	0	0	0.44	0.42	0.36	0.42	0.44	0.34	0.35	0.4	0.37	0.34	0.37	0.39	0.41	0.47	0.7	0	0	0	0	0.29
Min	0	0	0	0	0	5	21	50	108	74	147	213	153	91	96	75	63	28	6	3	0	0	0	0	1497
Max	0	0	0	0	0	28	153	343	554	706	851	942	997	964	851	728	543	340	156	59	0	0	0	0	7954
n	0	0	0	0	0	269	372	361	368	371	372	372	365	366	357	355	345	345	350	241	0	0	0	0	5210

Daylight Data Recovery: 0.0% missing; 2.6% exceed the 15% QC threshold -- 5350 total daylight measurements.

Instrument: Eppley PSP    Serial Number: 25821F3    Calibration Factor: 9.020 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.

**July 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	4	108	371	465	407	180	169	237	108	69	46	56	56	55	0	0	0	0	0	2332
2	0	0	0	0	0	5	61	14	50	39	97	110	0	1	0	0	0	0	0	0	0	0	0	0	377
3	0	0	0	0	0	6	53	296	403	176	267	171	395	482	178	201	0	0	0	0	0	0	0	0	2630
4	0	0	0	0	0	25	216	446 ?	571	632	686	703	555	423	669	682	606	205	27	0	0	0	0	0	6447
5	0	0	0	0	0	37	263	463	585	627	654	606	393	194	466	537	174	119	192	0	0	0	0	0	5310
6	0	0	0	0	0	0	33	504	775	645	628	777	851	885	865	809	783	685	400	0	0	0	0	0	8639
7	0	0	0	0	0	96	437	626	718	739	752	746	687	281	492	471	420	335	262	0	0	0	0	0	7063
8	0	0	0	0	0	32	195	49	47	445	187	68	255	464	425	410	271	257	132	0	0	0	0	0	3237
9	0	0	0	0	0	5	61	228	72	63	107	105	2	360	213	282	154	98	51	0	0	0	0	0	1800
10	0	0	0	0	0	0	0	4	44	23	21	17	58	135	37	90	223	61	2	0	0	0	0	0	715
11	0	0	0	0	0	0	0	0	3	0	1	12	27	122	50	89	112	15	59	0	0	0	0	0	490
12	0	0	0	0	0	8	49	100	1	2	33	6	2	2	2	74	20	100	52	0	0	0	0	0	452
13	0	0	0	0	0	0	0	29	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	33
14	0	0	0	0	0	0	0	5	48	4	44	7	4	1	106	49	2	1	0	0	0	0	0	0	272
15	0	0	0	0	0	0	1	7	1	50	127	19	114	353	393	709	596	249	189	0	0	0	0	0	2807
16	0	0	0	0	0	0	0	3	141	383	429	415	179	350	204	148	78	63	127	0	0	0	0	0	2519
17	0	0	0	0	0	5	49	238	389	314	295	207	293	228	196	381	320	102	0	0	0	0	0	0	3018
18	0	0	0	0	0	1	0	0	1	1	75	115	342	108	88	56	48	18	8	0	0	0	0	0	861
19	0	0	0	0	0	1	53	285	3	34	138	121	266	105	381	419	680	265	42	0	0	0	0	0	2793
20	0	0	0	0	0	0	0	1	1	2	10	221	432	544	450	522	602	397	184	0	0	0	0	0	3365
21	0	0	0	0	0	0	1	65	573	671	640	541	568	579	519	357	551	89	95	0	0	0	0	0	5248
22	0	0	0	0	0	35	218	430	550	618	616	276	216	248	282	539	409	203	17	0	0	0	0	0	4656
23	0	0	0	0	0	3	6	11	215	233	474	417	523	275	370	150	225	83	4	0	0	0	0	0	2989
24	0	0	0	0	0	0	1	2	3	2	19	64	336	225	523	416	49	178	65	0	0	0	0	0	1881
25	0	0	0	0	0	7	19	35	115	204	44	170	323	305	89	0	0	1	6	0	0	0	0	0	1318
26	0	0	0	0	0	0	0	102	24	79	277	592	260	63	240	16	58	2	0	0	0	0	0	0	1714
27	0	0	0	0	0	0	21	13	8	25	27	3	3	3	1	9	154	117	11	0	0	0	0	0	394
28	0	0	0	0	0	2	25	214	76	49	361	311	46	477	489	570	608	83	159	0	0	0	0	0	3471
29	0	0	0	0	0	4	18	24	102	160	387	392	533	543	420	639	403	498	294	0	0	0	0	0	4417
30	0	0	0	0	0	0	11	25	12	192	354	502	571	348	262	128	12	0	8	0	0	0	0	0	2425
31	0	0	0	0	0	0	0	15	25	303	499	754	554	194	444	249	315	316	153	0	0	0	0	0	3821
Avg	0	0	0	0	0	9	61	148	194	230	272	278	291	271	288	292	256	148	84	0	0	0	0	0	2822
S D	0	0	0	0	0	19	101	187	251	249	244	258	236	211	221	248	245	164	102	0	0	0	0	0	2132
S/A	0	0	0	0	0	2.15	1.65	1.26	1.29	1.08	0.9	0.93	0.81	0.78	0.77	0.85	0.96	1.11	1.22	2.89	0	0	0	0	0.76
Min	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	33
Max	0	0	0	0	0	96	437	626	775	739	752	777	851	885	865	809	783	685	400	0	0	0	0	0	8639
n	0	0	0	0	0	269	372	365	372	372	372	372	372	372	372	372	372	372	372	245	0	0	0	0	5343

Daylight Data Recovery: 0.0% missing; 0.1% exceed the 15% QC threshold -- 5350 total daylight measurements.

Instrument: Eppley NIP    Serial Number: 17664E6    Calibration Factor: 8.480 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.

**July 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	17	94	175	234	347	429	475	493	432	340	194	184	216	93	17	0	0	0	0	3739
2	0	0	0	0	0	26	108	183	231	354	490	430	121 ?	94	47 ?	?	27 ?	28	26	9	0	0	0	0	2173 ?
3	0	0	0	0	0	24	112	182	261	409	422	433	420	378	298	285	?	32 ?	11 ?	4	0	0	0	0	3273 ?
4	0	0	0	0	0	28	89	148 ?	179	216	243	265	326	359	239	193	172	100	44	22	0	0	0	0	2623
5	0	0	0	0	0	28	89	143	175	227	265	323	370	306	323	268	204	145	79	9	0	0	0	0	2954
6	0	0	0	0	0	22	121	147	109	169	282	216	192	152	123	119	94	82	53	7	0	0	0	0	1888
7	0	0	0	0	0	23	71	108	138	176	210	242	333	326	339	253	192	135	71	11	0	0	0	0	2627
8	0	0	0	0	0	22	97	172	197	356	383	375	415	425	411	348	305	181	93	14	0	0	0	0	3794
9	0	0	0	0	0	21	106	204	310	415	443	503	174	448	400	388	288	186	81	7	0	0	0	0	3972
10	0	0	0	0	0	16	52	174	302	357	344	363	467	584	251	398	279	136	60	12	0	0	0	0	3796
11	0	0	0	0	0	11	47	51	163	77	170	374	473	571	483	425	313	207	109	11	0	0	0	0	3485
12	0	0	0	0	0	27	115	217	216	228	412	477	342	320	351	466	306	202	93	13	0	0	0	0	3784
13	0	0	0	0	0	12	57	190	187	146	158	221	204	96	103	79	67	36	11	5	0	0	0	0	1574
14	0	0	0	0	0	6	56	166	336	301	250	338	220	234	331	312	175	122	29	3	0	0	0	0	2877
15	0	0	0	0	0	17	57	183	178	312	461	359	463	369	303	214	184	142	84	10	0	0	0	0	3337
16	0	0	0	0	0	12	67	174	346	346	387	412	412	439	484	376	314	211	138	25	0	0	0	0	4143
17	0	0	0	0	0	29	77	186	279	360	457	516	542	509	477	414	291	157	68	7	0	0	0	0	4370
18	0	0	0	0	0	13	22	44	114	164	359	460	407	283	377	278	235	170	76	17	0	0	0	0	3019
19	0	0	0	0	0	17	64	178	179 ?	203	480	281	343	433	357	334	171	165	58	27	0	0	0	0	3288
20	0	0	0	0	0	17	35	136	120	208	351	471	427	397	394	297	187	153	120	17	0	0	0	0	3330
21	0	0	0	0	0	14	83	207	191	200	239	339	349	282	285	253	220	123	68	15	0	0	0	0	2869
22	0	0	0	0	0	20	81	145	191	233	353	461	440	430	381	287	223	137	62	54 ?	0	0	0	0	3497
23	0	0	0	0	0	22	64	101	292	373	365	392	384	346	356	358	250	156	72	13	0	0	0	0	3544
24	0	0	0	0	0	6	50	173	235	260	404	379	365	392	404	318	168	197	86	17	0	0	0	0	3453
25	0	0	0	0	0	23	102	215	301	453	501	579	526	531	400	158	61	75	48	30 ?	0	0	0	0	4004
26	0	0	0	0	0	7	49	190	233	220	311	374	365	397	233	171	214	151	60	20	0	0	0	0	2995
27	0	0	0	0	0	23	106	167	233	334	438	278	299	293 ?	129	219	300	183	59	16	0	0	0	0	3078
28	0	0	0	0	0	9	74	180	285	269	376	345	254	272	298	219	149	77	107	25	0	0	0	0	2939
29	0	0	0	0	0	10	54	173	243	256	268	334	363	286	286	230	156	105	49	11	0	0	0	0	2824
30	0	0	0	0	0	7	75	166	197	356	337	304	277	333	314	302	184	115	82	12	0	0	0	0	3061
31	0	0	0	0	0	7	55	134	280	298	313	248	323	349	361	257	205	134	61	12	0	0	0	0	3037
Avg	0	0	0	0	0	17	75	162	224	278	352	373	358	357	319	280	204	137	69	15	0	0	0	0	3205
S D	0	0	0	0	0	7	25	41	64	91	94	104	118	107	93	77	52	29	10	0	0	0	0	0	631
S/A	0	0	0	0	0	0.43	0.34	0.25	0.29	0.33	0.27	0.25	0.29	0.33	0.34	0.33	0.38	0.38	0.42	0.64	0	0	0	0	0.2
Min	0	0	0	0	0	6	22	44	109	77	158	216	121	94	47	79	27	28	11	3	0	0	0	0	1574
Max	0	0	0	0	0	29	121	217	346	453	501	579	542	584	484	466	314	216	138	54	0	0	0	0	4370
n	0	0	0	0	0	249	372	364	369	372	372	372	368	369	364	359	354	361	363	238	0	0	0	0	5247

Daylight Data Recovery: 0.0% missing; 1.9% exceed the 15% QC threshold -- 5350 total daylight measurements.

Instrument: Eppley PSP    Serial Number: 17860F3    Calibration Factor: 7.010 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.