

**July 2007**

**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	18	105	333	376	669	872	922	887	768	784	627	505	336	137	9	0	0	0	0	7346
2	0	0	0	0	0	32	124	263	475	681	776	934	881	839	450	230	418	169	65	13	0	0	0	0	6351
3	0	0	0	0	0	22	124	302	424	580	695	722	762	823	839	555	386	345	122	18	0	0	0	0	6719
4	0	0	0	0	0	31	133	223	381	575	725	794	834	839	815	634	501	292	102	20	0	0	0	0	6899
5	0	0	0	0	0	20	79	227	301	414	410	364	297	305	406	484	448	169	64	14	0	0	0	0	4004
6	0	0	0	0	0	16	123	170	339	593	812	836	893	1007	774	662	469	348	134	12	0	0	0	0	7187
7	0	0	0	0	0	45	156	325	503	681	811	571	858	898	740	732	544	332	126	12	0	0	0	0	7333
8	0	0	0	0	0	31	159	321	521	695	848	942	920	851	839	642	489	306	120	12	0	0	0	0	7695
9	0	0	0	0	0	27	139	313	502	668	807	925	747	619	198	431	228	?	20 ?	13	0	0	0	0	5636 ?
10	0	0	0	0	0	2	51	180	215	338	416	681	794	620	499	200	140	?	36	33	0	0	0	0	4204
11	0	0	0	0	0	13	53	82	327	407	197	199	351	324	372	395	439	195	104	32	0	0	0	0	3490
12	0	0	0	0	0	22	121	291	543	728	740	962	878	948	794	662	551	309	141	16	0	0	0	0	7706
13	0	0	0	0	0	38	145	138	170	180	324	343	792	845	709	444	382	265	88	33	0	0	0	0	4896
14	0	0	0	0	0	19	97	266	494	685	811	805	796	790	753	643	370	196	109	17	0	0	0	0	6850
15	0	0	0	0	0	23	105	310	486	547	638	537	594	831	346	423	288	259	76	18	0	0	0	0	5483
16	0	0	0	0	0	20	111	256	415	391	463	710	447	195	219	309	236	222	28	8	0	0	0	0	4031
17	0	0	0	0	0	21	112	252	471 ?	460	585	611	815	566	366 ?	262	95 ?	51 ?	28	7	0	0	0	0	4704 ?
18	0	0	0	0	0	9	28 ?	67	226	368	658	665	809	828	761	546	154	217	98	19	0	0	0	0	5455
19	0	0	0	0	0	20	83	247	409	600	476	477	612	674	750	485	341	258	53	6	0	0	0	0	5492
20	0	0	0	0	0	3	4 ?	60	258	349	585	862	772	951	861	673	491	335	167	13	0	0	0	0	6385
21	0	0	0	0	0	23	113	292	503	734	539	917	572	782	899	489	149	183	120	8	0	0	0	0	6324
22	0	0	0	0	0	27	126	325	416	723	804	823	895	733	819	527 ?	492	338	76	11	0	0	0	0	7135
23	0	0	0	0	0	15	152	316	510	681	702	530	708	788	422	127	127	107	52	8	0	0	0	0	5247
24	0	0	0	0	0	4	2 ?	?	?	?	222 ?	242	226 ?	260	255	325	102	41 ?	22 ?	5	0	0	0	0	1707 ?
25	0	0	0	0	0	4	59	57	151	188	96	130	223	303	413	369	322	241	69	20	0	0	0	0	2645
26	0	0	0	0	0	11	101	363 ?	476	529	506	867	883	495	322	576	295	241	53	3	0	0	0	0	5721
27	0	0	0	0	0	13	94	219	430	594	596	523	278	436 ?	146 ?	609	477	110	40	8	0	0	0	0	4573
28	0	0	0	0	0	18	101	216	361	555	527	659	671	339	241	249	170	104	44	9	0	0	0	0	4265
29	0	0	0	0	0	13	98	217	396	524	573	589	585	651	519	558	238	79	33	14	0	0	0	0	5086
30	0	0	0	0	0	22	87	237	460	618	637	820	815	723	632	522	441	255	46	27	0	0	0	0	6342
31	0	0	0	0	0	11	78	237	450	677	846	931	914	902	336	417	168	268	94	14	0	0	0	0	6343
Avg	0	0	0	0	0	19	99	237	400	548	603	674	694	675	557	478	337	227	79	15	0	0	0	0	5589
S D	0	0	0	0	0	10	40	86	108	156	205	237	220	232	241	159	148	93	41	8	0	0	0	0	1494
S/A	0	0	0	0	0	0.53	0.41	0.36	0.27	0.28	0.34	0.35	0.32	0.34	0.43	0.33	0.44	0.41	0.52	0.54	0	0	0	0	0.27
Min	0	0	0	0	0	2	2	57	151	180	96	130	223	195	146	127	95	41	20	3	0	0	0	0	1707
Max	0	0	0	0	0	45	159	363	543	734	872	962	920	1007	899	732	551	348	167	33	0	0	0	0	7706
n	0	0	0	0	0	270	349	345	357	355	364	367	365	366	358	368	358	339	358	246	0	0	0	0	5165

Daylight Data Recovery: 0.0% missing; 0.0% untested; 3.5% exceed the 15% QC threshold -- 5352 total daylight measurements.

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

**July 2007**

**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	*	*	*	*	749*	*	*	?	*	*	681*?	*	*	*	*	*	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	108	?	300?	171?	*	*	*	*	*	*	*	*	*	*	*	*	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	108	N/A	300	171	749	N/A	N/A	N/A	N/A	N/A	681	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	108	N/A	300	171	749	N/A	N/A	N/A	N/A	N/A	681	N/A	N/A	N/A	N/A	0	0	0	0	N/A	
Max	0	0	0	0	0	108	N/A	300	171	749	N/A	N/A	N/A	N/A	N/A	681	N/A	N/A	N/A	N/A	0	0	0	0	N/A	
n	0	0	0	0	0	7	0	3	2	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0

Daylight Data Recovery: 92.5% missing; 0.0% untested; 7.0% exceed the 15% QC threshold -- 5352 total daylight measurements.

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

**Bluefield State College**  
**37.27 N Latitude 81.24 W Longitude 803 Meters AMSL Time Zone -5**

**July 2007**

**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	20	107	173	314	301	119	156	325	516	198	151	206	96	55	10	0	0	0	0	2746
2	0	0	0	0	0	29	100	179	221	291	306	314	400	342	285	240	235	148	70	14	0	0	0	0	3173
3	0	0	0	0	0	22	92	186	311	419	435	394	381	299	287	311	241	202	99	19	0	0	0	0	3701
4	0	0	0	0	0	29	97	190	279	323	378	412	382	372	272	228	244	157	90	21	0	0	0	0	3474
5	0	0	0	0	0	22	84	208	300	394	408	369	308	327	409	386	229	147	67	15	0	0	0	0	3674
6	0	0	0	0	0	18	103	146	263	303	258	245	255	214	242	169	186	113	64	13	0	0	0	0	2595
7	0	0	0	0	0	32	86	123	159	186	179	204	280	213	222	168	150	106	58	13	0	0	0	0	2180
8	0	0	0	0	0	24	70	105	119	143	169	249	247	282	261	221	166	117	68	13	0	0	0	0	2255
9	0	0	0	0	0	26	77	124	157	185	220	309	358	397	213	362	193	?	19 ?	14	0	0	0	0	2655
10	0	0	0	0	0	2	52	184	226	351	414	464	413	368	363	194	135	23 ?	37	28 ?	0	0	0	0	3253
11	0	0	0	0	0	12	56	84	319	297	211	199	364	307	339	277	235	150	80	33	0	0	0	0	2964
12	0	0	0	0	0	22	69	87	105	176	249	227	196	259	221	204	125	93	64	17	0	0	0	0	2115
13	0	0	0	0	0	35	123	140	181	192	329	363	473	281	386	307	254	169	91	34	0	0	0	0	3357
14	0	0	0	0	0	21	82	162	205	226	290	323	363	358	303	260	242	155	90	18	0	0	0	0	3097
15	0	0	0	0	0	24	86	147	229	339	382	400	395	388	242	348	270	168	74	19	0	0	0	0	3508
16	0	0	0	0	0	22	85	160	266	301	357	415	347	211	237	316	244	190	26	7	0	0	0	0	3184
17	0	0	0	0	0	22	79	139	163	260	274	347	316	312	188 ?	244	52 ?	49 ?	30	7	0	0	0	0	2483
18	0	0	0	0	0	10	25	71	223	313	315	353	300	248	230	232	151	154	82	20	0	0	0	0	2728
19	0	0	0	0	0	22	72	177	236	336	404	416	385	353	282	320	210	156	52	6	0	0	0	0	3425
20	0	0	0	0	0	2	8 ?	61	249	334	468	385	297	141	128	190	213	208	120	14	0	0	0	0	2820
21	0	0	0	0	0	19	67	113	122	221	236	225	339	304	245	182	119	100	63	8	0	0	0	0	2362
22	0	0	0	0	0	24	96	160	185	198	180	281	395	386	421	247 ?	158	120	65	11	0	0	0	0	2925
23	0	0	0	0	0	15	118	180	136	117	183	256	255	334	222	135	134	111	55	8	0	0	0	0	2261
24	0	0	0	0	0	4	1 ?	?	28 ?	34 ?	138	241	264	274	275	333	110	38	19	5	0	0	0	0	1764 ?
25	0	0	0	0	0	4	61	56	162	203	104	140	239	322	408	360	296	199	71	20	0	0	0	0	2647
26	0	0	0	0	0	11	89	265 ?	427	350	315	288	315	375	301	253	235	205	43	2	0	0	0	0	3472
27	0	0	0	0	0	14	98	233	441	491	483	413	246	366	127 ?	266	189	102	41	8	0	0	0	0	3517
28	0	0	0	0	0	22	81	196	298 ?	450 ?	384	538	453	342	257	264	183	77	45	10	0	0	0	0	3599
29	0	0	0	0	0	14	98	209 ?	337 ?	427 ?	473	474	487	342	296	295	168	67	34	15	0	0	0	0	3735
30	0	0	0	0	0	26	91	186 ?	?	487 ?	414	384	430	505 ?	474 ?	297 ?	357 ?	253 ?	49	27	0	0	0	0	3981 ?
31	0	0	0	0	0	13	80	154	182	221	288	282	277	632 ?	264	337 ?	184	284 ?	106	15	0	0	0	0	3319 ?
Avg	0	0	0	0	0	19	79	153	228	286	302	325	338	335	277	261	197	139	62	15	0	0	0	0	2999
S D	0	0	0	0	0	9	28	50	92	109	110	97	74	96	82	67	62	61	25	8	0	0	0	0	568
S/A	0	0	0	0	0	0.45	0.35	0.33	0.4	0.38	0.36	0.3	0.22	0.29	0.29	0.26	0.31	0.44	0.41	0.52	0	0	0	0	0.19
Min	0	0	0	0	0	2	1	56	28	34	104	140	196	141	127	135	52	23	19	2	0	0	0	0	1764
Max	0	0	0	0	0	35	123	265	441	491	483	538	487	632	474	386	357	284	120	34	0	0	0	0	3981
n	0	0	0	0	0	252	358	340	340	346	369	369	371	354	354	356	357	346	368	243	0	0	0	0	5125

Daylight Data Recovery: 0.0% missing; 0.0% untested; 4.2% exceed the 15% QC threshold -- 5352 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.