

Global Solar Radiation on a Horizontal Surface
Hourly Integrated and Daily Totals
Watt-Hours per Square Meter
Bluefield State College - June 1999

Field: GHI

Hour 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	21	117	377	272	541	855	649	410	405	102	244	215	120	53	4	0	0	0	0	4384
2	0	0	0	0	0	36	153	101	291	530	277	454	796	531	871	688	485	266	116	5	0	0	0	0	5601
3	0	0	0	0	0	6	92	306	405	606	692	800	817	816	894	636	466	317	128	8	0	0	0	0	6991
4	0	0	0	0	0	29	138 ?	293 ?	385	533	710	801	1106	755	809	507	546	332	120	8	0	0	0	0	7073
5	0	0	0	0	0	23	177	385	601	782	921	996	919	912	804	581	417	243	149	13	0	0	0	0	7924
6	0	0	0	0	0	30	177	363	562	785	775	638	880	574	624	525	501	288	102	8	0	0	0	0	6833
7	0	0	0	0	0	32	160	318	520	730	826	821	938	788	760	702	509	308	110	10	0	0	0	0	7533
8	0	0	0	0	0	33	146	316	540	548	688	801	921	953	854	555	518	302	102	4	0	0	0	0	7280
9	0	0	0	0	0	33	165	370	571	767	910	806	991	868	524	446	404	226	122	9	0	0	0	0	7213
10	0	0	0	0	0	39	206	382	578	757	869	957	1013	960	853	693	530	235	55	12	0	0	0	0	8140
11	0	0	0	0	0	48	197	242	508	725	836	900	960	977	811	640	458	308	76	9	0	0	0	0	7694
12	0	0	0	0	0	31	146	334	602	762	929	945	1017	993	899	747	538	337	133	4	0	0	0	0	8417
13	0	0	0	0	0	38	199	395	589	766	905	930	1037	432	607	468	507	337	57	9	0	0	0	0	7276
14	0	0	0	0	0	23	173	357	588	593	645	627	252	325	189	95	79	54	41	5	0	0	0	0	4046
15	0	0	0	0	0	27	87	287	464	642	730	641	506	693	623	523	296	153	76	6	0	0	0	0	5752
16	0	0	0	0	0	6	26	37	85	171	133	185	294	222	163	61	38	35	8	2	0	0	0	0	1467
17	0	0	0	0	0	3	64	198	398	690	392	281	246	278	388	177	191	153	26	9	0	0	0	0	3495
18	0	0	0	0	0	33	134 ?	445 ?	592	735	718	1023	1051	1010	911	760	562	364	151	7	0	0	0	0	8497
19	0	0	0	0	0	38	201	408	574	583	879	942	1010	926	868	682	462	341	77	22	0	0	0	0	8015
20	0	0	0	0	0	17	89	178	227	289	321	296	519	545	551	271	134	208	68	26	0	0	0	0	3740
21	0	0	0	0	0	12	92	192	344	648	921	967	1038	959	841	646	482	330	86	11	0	0	0	0	7568
22	0	0	0	0	0	34	188	384	547	405	754	627	800	985	596	644	446	247	125	13	0	0	0	0	6795
23	0	0	0	0	0	34	181	374	574	755	893	957	541	717	565	494	436	304	105	23	0	0	0	0	6952
24	0	0	0	0	0	19	136	336	530	668	802	478	309	252	399	193	146	146	49	10	0	0	0	0	4473
25	0	0	0	0	0	1	31	78	97	149	94	156	134	112	212	225	103	62	39	11	0	0	0	0	1503
26	0	0	0	0	0	11	98	161	176	374	703	1007	1024 ?	890	790	576	340	323	79	9	0	0	0	0	6561
27	0	0	0	0	0	13	116	190	422	411	575	561	630	393	362	143	264	132	52	2	0	0	0	0	4266
28	0	0	0	0	0	3	34	85	265 ?	372 ?	349 ?	652 ?	752	427	603	520	379	132	148	18	0	0	0	0	4740
29	0	0	0	0	0	8	103	179	254	311	361	613	374	462	706	408	385	71	23	1	0	0	0	0	4260
30	0	0	0	0	0	13	100	293 ?	408	398	835	952	900	853	784	566	552	347	152	20	0	0	0	0	7171
Avg	0	0	0	0	0	23	131	279	432	568	677	715	740	667	632	481	380	234	88	10	0	0	0	0	6055
S D	0	0	0	0	0	13	51	111	157	186	243	250	295	275	240	204	157	101	41	6	0	0	0	0	1928
S/A	0	0	0	0	0	0.55	0.39	0.4	0.36	0.33	0.36	0.35	0.4	0.41	0.38	0.43	0.41	0.43	0.47	0.64	0	0	0	0	0.32
Min	0	0	0	0	0	1	26	37	85	149	94	156	134	112	102	61	38	35	8	1	0	0	0	0	1467
Max	0	0	0	0	0	48	206	445	602	785	929	1023	1106	1010	911	760	562	364	152	26	0	0	0	0	8497

Daylight Data Recovery: 0% missing; 1% exceed the 15% QC threshold -- 5285 total daylight 5-minute measurements.

Note: Fractional values that do not appear in the hour columns are included in the calculation for daily values.

Data and Flag	Hour Column	Day Column
<value>*	20% < Missing < 100%	10% < Missing < 100%
<value>?	20% < Fail QC < 100%	10% < Fail QC < 100%
<blank>*	100% Missing	100% Missing
<blank>?	100% Fail QC	100% Fail QC

Station: BS
Latitude: 37.27° N
Longitude: 81.24° W
Elevation: 803 Meters AMSL
Time Zone: -5

Instrument: PSP
Calibration Constant: 9.02 uV/Wm-2
Serial Number: 25821F3
Calibration Date: 5/21/98

**Direct Normal Solar Radiation
Hourly Integrated and Daily Totals
Watt-Hours per Square Meter
Bluefield State College - June 1999**

Field: DNI

Hour 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	11	90	420	19	267	373	135	30	31	0	2	57	10	10	0	0	0	0	0	1454
2	0	0	0	0	0	53	186	1	119	176	1	54	326	118	739	624	603	275	168	0	0	0	0	0	3442
3	0	0	0	0	0	0	20	233	265	408	394	513	502	527	790	556	418	387	209	0	0	0	0	0	5222
4	0	0	0	0	0	36	238	?	375	?	195	252	326	349	753	428	625	413	753	629	320	0	0	0	5690
5	0	0	0	0	0	19	388	646	778	830	865	849	561	526	520	348	320	226	143	0	0	0	0	0	7019
6	0	0	0	0	0	94	385	523	619	644	542	280	493	294	405	406	583	420	171	0	0	0	0	0	5860
7	0	0	0	0	0	65	234	250	373	564	539	481	569	427	519	621	586	487	222	0	0	0	0	0	5938
8	0	0	0	0	0	61	257	368	464	190	342	406	495	628	634	397	587	438	152	0	0	0	0	0	5418
9	0	0	0	0	0	57	311	565	719	816	825	605	723	618	284	219	235	198	155	0	0	0	0	0	6332
10	0	0	0	0	0	133	469	649	740	778	758	767	843	801	778	653	553	292	0	0	0	0	0	0	8214
11	0	0	0	0	0	64	299	122	365	545	480	462	544	633	551	509	427	414	63	0	0	0	0	0	5478
12	0	0	0	0	0	39	143	378	636	733	749	687	869	906	912	876	766	668	389	0	0	0	0	0	8751
13	0	0	0	0	0	141	542	716	789	824	876	707	751	147	353	333	534	488	29	0	0	0	0	0	7231
14	0	0	0	0	0	6	198	365	598	338	154	105	1	7	0	0	0	0	0	0	0	0	0	0	1772
15	0	0	0	0	0	5	2	194	408	560	514	258	81	314	279	246	100	14	6	0	0	0	0	0	2979
16	0	0	0	0	0	0	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	0	0	0	6
17	0	0	0	0	0	0	0	35	237	421	145	44	24	3	88	2	24	27	0	0	0	0	0	0	1051
18	0	0	0	0	0	52	283	?	767	?	848	744	399	804	964	954	939	914	828	747	429	0	0	0	9671
19	0	0	0	0	0	189	584	745	660	359	638	550	655	545	601	575	432	479	55	0	0	0	0	0	7066
20	0	0	0	0	0	0	8	4	1	1	2	2	11	10	41	1	0	18	8	0	0	0	0	0	106
21	0	0	0	0	0	0	0	15	41	409	867	829	889	850	759	608	534	582	155	0	0	0	0	0	6539
22	0	0	0	0	0	132	485	645	594	124	381	289	477	709	330	482	353	245	235	0	0	0	0	0	5482
23	0	0	0	0	0	129	449	631	730	796	811	754	256	364	250	234	317	295	30	0	0	0	0	0	6046
24	0	0	0	0	0	3	121	326	353	338	364	13	2	2	10	0	1	1	0	0	0	0	0	0	1534
25	0	0	0	0	0	0	0	0	0	1	0	1	1	1	2	1	0	0	0	0	0	0	0	0	7
26	0	0	0	0	0	0	2	3	1	37	282	686	799	?	610	570	347	89	268	32	0	0	0	0	3727
27	0	0	0	0	0	1	50	8	87	16	98	142	187	21	54	18	75	75	19	0	0	0	0	0	850
28	0	0	0	0	0	0	0	0	0	?	0	?	0	?	314	?	396	105	259	356	287	43	179	0	1940
29	0	0	0	0	0	0	30	10	39	27	25	94	18	52	358	105	138	0	0	0	0	0	0	0	896
30	0	0	0	0	0	0	3	245	?	245	97	600	675	603	539	520	375	608	457	174	0	0	0	0	5141
Avg	0	0	0	0	0	43	193	308	364	376	412	395	427	372	406	341	340	273	112	0	0	0	0	0	4362
S D	0	0	0	0	0	53	186	266	290	292	294	288	320	309	291	265	262	230	120	0	0	0	0	0	2777
S/A	0	0	0	0	0	1.24	0.97	0.86	0.8	0.77	0.71	0.73	0.75	0.83	0.72	0.78	0.77	0.84	1.07	3.12	0	0	0	0	0.64
Min	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	6
Max	0	0	0	0	0	189	584	767	848	830	876	849	964	954	939	914	828	747	429	0	0	0	0	0	9671

Daylight Data Recovery: 0% missing; 1% exceed the 15% QC threshold -- 5285 total daylight 5-minute measurements.

Note: Fractional values that do not appear in the hour columns are included in the calculation for daily values.

Data and Flag	Hour Column	Day Column
<value>*	20% < Missing < 100%	10% < Missing < 100%
<value>?	20% < Fail QC < 100%	10% < Fail QC < 100%
<blank>*	100% Missing	100% Missing
<blank>?	100% Fail QC	100% Fail QC

Station: BS
Latitude: 37.27° N
Longitude: 81.24° W
Elevation: 803 Meters AMSL
Time Zone: -5

Instrument: NIP
Calibration Constant: 8.48 uV/Wm-2
Serial Number: 17664E6
Calibration Date: 5/21/98

Diffuse Solar Radiation on a Horizontal Surface (Shadow Band PSP)
Hourly Integrated and Daily Totals
Watt-Hours per Square Meter
Bluefield State College - June 1999

Field: DHI

Hour 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	19	85	206	244	318	522	511	360	353	89	211	177	104	48	3	0	0	0	0	3250
2	0	0	0	0	0	32	115	89	201	392	246	375	462	414	248	239	150	167	82	4	0	0	0	0	3217
3	0	0	0	0	0	6	80	207	240	303	345	311	321	324	227	238	246	181	89	7	0	0	0	0	3124
4	0	0	0	0	0	25	100 ?	179 ?	262	324	418	463	377	344	265	219	135	102	54	7	0	0	0	0	3273
5	0	0	0	0	0	21	85	117	129	148	159	189	361	413	360	333	234	155	120	11	0	0	0	0	2836
6	0	0	0	0	0	24	95	153	192	295	299	365	409	293	277	231	183	137	70	7	0	0	0	0	3030
7	0	0	0	0	0	31	112	216	305	302	359	366	395	382	328	262	188	132	67	8	0	0	0	0	3451
8	0	0	0	0	0	30	104	185	269	414	386	425	449	369	319	280	197	146	73	3	0	0	0	0	3650
9	0	0	0	0	0	31	103	132	140	141	180	222	288	285	272	284	268	154	92	8	0	0	0	0	2603
10	0	0	0	0	0	29	80	107	135	163	197	222	193	209	189	207	222	121	49	11	0	0	0	0	2133
11	0	0	0	0	0	52	132	193	283	316	418	466	441	394	343	275	220	155	60	8	0	0	0	0	3757
12	0	0	0	0	0	27	119	166	216	196	262	282	171	137	114	109	106	88	51	3	0	0	0	0	2048
13	0	0	0	0	0	28	79	95	113	134	130	242	302	279	294	230	215	153	48	8	0	0	0	0	2349
14	0	0	0	0	0	21	135	207	231	334	498	486	224	285	167	84	69	47	35	5	0	0	0	0	2828
15	0	0	0	0	0	23	76	172	182	216	268	378	408	386	365	348	231	139	67	5	0	0	0	0	3264
16	0	0	0	0	0	6	22	32	74	150	117	161	256	194	142	53	33	31	8	1	0	0	0	0	1280
17	0	0	0	0	0	3	56	164	274	357	261	224	202	241	296	156	163	135	24	9	0	0	0	0	2564
18	0	0	0	0	0	28	68 ?	92 ?	93	170	366	247	110	109	100	89	87	80	60	7	0	0	0	0	1708
19	0	0	0	0	0	26	72	97	174	285	295	397	363	409	341	264	212	162	61	19	0	0	0	0	3178
20	0	0	0	0	0	16	77	158	202	258	286	262	463	484	496	237	117	186	61	25	0	0	0	0	3329
21	0	0	0	0	0	11	80	163	299	348	154	171	173	155	183	200	167	107	54	9	0	0	0	0	2274
22	0	0	0	0	0	25	83	121	191	296	403	350	326	316	302	297	239	160	79	11	0	0	0	0	3200
23	0	0	0	0	0	26	85	117	141	157	184	244	286	376	341	322	261	195	94	20	0	0	0	0	2851
24	0	0	0	0	0	18	112	209	324	411	484	429	274	221	358	169	130	130	43	9	0	0	0	0	3318
25	0	0	0	0	0	1	27	68	86	131	83	138	119	98	188	198	90	54	34	9	0	0	0	0	1323
26	0	0	0	0	0	10	86	141	154	322	426	343	222 ?	315	290	306	284	225	68	7	0	0	0	0	3200
27	0	0	0	0	0	11	104	175	350	379	470	415	429	342	301	125	212	102	45	2	0	0	0	0	3462
28	0	0	0	0	0	2	30	77	242 ?	317 ?	303 ?	341 ?	366	321	362	263	202	108	105	15	0	0	0	0	3055
29	0	0	0	0	0	7	90	158	213	273	321	519	341	402	396	330	307	62	20	0	0	0	0	0	3442
30	0	0	0	0	0	11	86	198 ?	256	307	303	309	308	344	340	284	202	170	115	18	0	0	0	0	3251
Avg	0	0	0	0	0	20	86	147	207	272	305	328	313	306	277	228	185	130	63	9	0	0	0	0	2875
S D	0	0	0	0	0	11	27	48	72	87	118	107	100	96	94	77	65	45	26	6	0	0	0	0	640
S/A	0	0	0	0	0	0.57	0.31	0.33	0.35	0.32	0.39	0.33	0.32	0.31	0.34	0.34	0.35	0.35	0.42	0.66	0	0	0	0	0.22
Min	0	0	0	0	0	1	22	32	74	131	83	138	110	98	89	53	33	31	8	0	0	0	0	0	1280
Max	0	0	0	0	0	52	135	216	350	414	522	519	463	484	496	348	307	225	120	25	0	0	0	0	3757

Daylight Data Recovery: 0% missing; 1% exceed the 15% QC threshold -- 5285 total daylight 5-minute measurements.

Note: Fractional values that do not appear in the hour columns are included in the calculation for daily values.

Data and Flag	Hour Column	Day Column
<value>*	20% < Missing < 100%	10% < Missing < 100%
<value>?	20% < Fail QC < 100%	10% < Fail QC < 100%
<blank>*	100% Missing	100% Missing
<blank>?	100% Fail QC	100% Fail QC

Station: BS
Latitude: 37.27° N
Longitude: 81.24° W
Elevation: 803 Meters AMSL
Time Zone: -5

Instrument: PSP
Calibration Constant: 7.01 uV/Wm-2
Serial Number: 17860F3
Calibration Date: 5/21/98