

**Global Solar Radiation on a Horizontal Surface**  
**Hourly Integrated and Daily Totals**  
**Watt-Hours per Square Meter**  
**Bluefield State College - June 1998**

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	4	44	133	445	611	760	945	946	914	684	526	428	265	81	9	0	0	0	0	6795
2	0	0	0	0	0	23	155	355	438	601	469	781	827	885	723	699	387	280	112	8	0	0	0	0	6742
3	0	0	0	0	0	24	132	386	586	765	898	973	1000	660	313	265	228	25	5	14	0	0	0	0	6273
4	0	0	0	0	0	12	24	316	158	448	720	581	292	95	87	241	180	141	90	10	0	0	0	0	3395
5	0	0	0	0	0	5	37	46	67	96	233	330	798	783	549	333	259	70	44	5	0	0	0	0	3657
6	0	0	0	0	0	6	21	32	111	153	154	165	270	117	130	107	51	57	45	2	0	0	0	0	1422
7	0	0	0	0	0	28	121	206	307	456	852	584	508	436	355	309	446	324	133	10	0	0	0	0	5074
8	0	0	0	0	0	40	110	? 364	508	522	624	634	326	203	111	85	113	71	45	9	0	0	0	0	3765
9	0	0	0	0	0	8	58	54	62	116	123	86	143	113	247	205	231	182	48	5	0	0	0	0	1681
10	0	0	0	0	0	6	16	80	193	522	732	721	797	753	526	103	137	83	104	11	0	0	0	0	4785
11	0	0	0	0	0	12	124	181	330	332	160	515	616	744	669	299	446	283	97	13	0	0	0	0	4820
12	0	0	0	0	0	6	27	42	61	144	174	252	781	563	713	693	497	340	133	10	0	0	0	0	4436
13	0	0	0	0	0	13	38	139	145	366	538	494	973	732	544	301	195	158	120	9	0	0	0	0	4766
14	0	0	0	0	0	30	80	189	363	557	752	549	511	368	350	415	498	160	141	8	0	0	0	0	4971
15	0	0	0	0	0	34	217	397	601	774	815	792	925	540	239	201	357	131	138	9	0	0	0	0	6170
16	0	0	0	0	0	20	68	229	538	786	810	754	952	926	584	430	244	365	106	11	0	0	0	0	6822
17	0	0	0	0	0	7	53	41	39	229	456	499	590	572	816	590	462	338	133	8	0	0	0	0	4834
18	0	0	0	0	0	34	130	? 386	? 563	758	883	969	1002	912	836	551	353	285	91	24	0	0	0	0	7778
19	0	0	0	0	0	17	33	18	70	91	183	242	395	868	680	596	436	338	127	13	0	0	0	0	4106
20	0	0	0	0	0	42	117	? 418	? 593	573	881	809	876	900	942	776	566	349	148	9	0	0	0	0	8001
21	0	0	0	0	0	44	188	300	491	598	694	354	273	182	300	367	283	130	135	25	0	0	0	0	4362
22	0	0	0	0	0	9	61	201	403	662	634	777	781	967	678	617	511	309	111	4	0	0	0	0	6725
23	0	0	0	0	0	25	116	322	? 546	710	786	527	265	127	267	455	186	212	121	19	0	0	0	0	4682
24	0	0	0	0	0	15	70	114	334	686	752	856	952	960	892	389	199	240	54	6	0	0	0	0	6520
25	0	0	0	0	0	33	187	338	? 515	704	849	825	795	915	807	714	503	330	129	10	0	0	0	0	7655
26	0	0	0	0	0	29	129	345	? 412	374	651	741	814	905	748	697	498	295	116	16	0	0	0	0	6772
27	0	0	0	0	0	21	81	101	362	538	656	692	848	891	805	603	458	311	130	13	0	0	0	0	6510
28	0	0	0	0	0	5	49	126	116	135	207	465	664	813	889	728	491	312	150	19	0	0	0	0	5168
29	0	0	0	0	0	9	18	34	260	542	495	271	238	247	203	224	307	186	94	15	0	0	0	0	3143
30	0	0	0	0	0	46	130	111	156	507	798	717	224	89	49	61	90	169	149	9	0	0	0	0	3306
Avg	0	0	0	0	0	20	88	200	326	479	591	597	646	606	524	419	335	225	104	11	0	0	0	0	5171
S D	0	0	0	0	0	13	55	132	188	221	256	241	279	315	273	214	147	102	37	5	0	0	0	0	1674
S/A	0	0	0	0	0	0.64	0.62	0.66	0.58	0.46	0.43	0.4	0.43	0.52	0.52	0.51	0.44	0.45	0.36	0.48	0	0	0	0	0.32
Min	0	0	0	0	0	4	16	18	39	91	123	86	143	89	49	61	51	25	5	2	0	0	0	0	1422
Max	0	0	0	0	0	46	217	418	601	786	898	973	1002	967	942	776	566	365	150	25	0	0	0	0	8001

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: 8.99 uV/Wm-2  
Serial Number: 25765F3  
Calibration Date: 9/13/96

**Direct Normal Solar Radiation  
Hourly Integrated and Daily Totals  
Watt-Hours per Square Meter  
Bluefield State College - June 1998**

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	0	0	16	254	420	510	698	715	706	475	426	435	389	56	0	0	0	0	0	5102
2	0	0	0	0	0	7	206	353	285	277	50	349	408	552	465	562	339	344	202	0	0	0	0	0	4399
3	0	0	0	0	0	34	118	633	740	798	830	791	750	157	59	43	34	0	0	0	0	0	0	0	4988
4	0	0	0	0	0	0	3	407	2	113	354	174	3	0	0	3	1	1	6	0	0	0	0	0	1066
5	0	0	0	0	0	0	0	0	0	0	1	4	224	371	193	114	113	7	4	0	0	0	0	0	1033
6	0	0	0	0	0	0	0	0	0	1	1	2	2	0	1	0	0	0	0	0	0	0	0	0	9
7	0	0	0	0	0	21	142	52	47	199	628	245	190	102	46	19	456	557	281	0	0	0	0	0	2983
8	0	0	0	0	0	152	401	?	384	297	114	269	241	89	41	1	0	0	0	0	0	0	0	0	1990
9	0	0	0	0	0	0	0	0	0	1	0	0	1	0	3	2	1	29	0	0	0	0	0	0	37
10	0	0	0	0	0	0	0	1	25	166	363	217	291	287	221	0	1	0	41	0	0	0	0	0	1612
11	0	0	0	0	0	1	24	4	31	6	2	91	174	186	195	22	184	126	83	0	0	0	0	0	1130
12	0	0	0	0	0	0	0	0	0	1	1	3	214	154	450	527	489	550	294	0	0	0	0	0	2685
13	0	0	0	0	0	0	1	48	2	54	220	193	702	521	286	78	81	99	202	0	0	0	0	0	2486
14	0	0	0	0	0	0	1	50	130	324	367	49	36	6	7	177	469	30	317	0	0	0	0	0	1961
15	0	0	0	0	0	120	598	730	728	830	603	463	575	155	11	32	199	87	294	0	0	0	0	0	5424
16	0	0	0	0	0	1	0	76	413	755	600	453	677	708	373	315	109	610	118	0	0	0	0	0	5208
17	0	0	0	0	0	0	0	0	0	18	151	197	243	231	611	442	498	543	300	0	0	0	0	0	3235
18	0	0	0	0	0	53	371	?	731	?	788	803	833	855	856	695	629	325	225	199	58	0	0	0	7422
19	0	0	0	0	0	0	0	0	1	1	1	3	29	541	417	436	384	512	283	0	0	0	0	0	2607
20	0	0	0	0	0	216	495	?	796	?	843	430	685	492	534	655	924	878	812	664	422	0	0	0	8845
21	0	0	0	0	0	51	294	362	339	383	278	3	2	0	2	44	23	0	121	0	0	0	0	0	1903
22	0	0	0	0	0	0	1	15	156	435	381	499	498	784	442	499	590	450	180	0	0	0	0	0	4930
23	0	0	0	0	0	43	107	478	?	689	665	603	87	42	1	4	72	2	68	98	0	0	0	0	2960
24	0	0	0	0	0	0	0	1	113	462	451	571	700	738	695	196	100	241	26	0	0	0	0	0	4295
25	0	0	0	0	0	44	288	515	?	597	604	633	498	439	693	664	692	565	547	297	0	0	0	0	7074
26	0	0	0	0	0	39	245	437	?	264	35	230	326	431	513	401	484	478	344	167	0	0	0	0	4395
27	0	0	0	0	0	0	1	2	76	142	200	260	477	508	473	454	330	374	237	0	0	0	0	0	3534
28	0	0	0	0	0	0	0	1	1	1	2	22	161	434	784	740	493	351	178	0	0	0	0	0	3168
29	0	0	0	0	0	0	0	1	21	183	40	2	2	2	1	1	60	28	7	0	0	0	0	0	347
30	0	0	0	0	0	140	95	5	1	264	526	302	17	0	0	0	0	31	273	0	0	0	0	0	1654
Avg	0	0	0	0	0	31	113	203	228	283	327	270	316	325	294	253	249	239	151	0	0	0	0	0	3283
S D	0	0	0	0	0	54	168	266	279	275	266	247	273	280	278	260	230	228	124	0	0	0	0	0	2161
S/A	0	0	0	0	0	1.76	1.48	1.31	1.22	0.97	0.81	0.91	0.86	0.86	0.94	1.03	0.92	0.95	0.82	2.86	0	0	0	0	0.66
Min	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	9
Max	0	0	0	0	0	216	598	796	843	830	833	855	856	784	924	878	812	664	422	0	0	0	0	0	8845

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: 8.52 uV/Wm-2  
Serial Number: 19791E6  
Calibration Date: 9/13/96

**Diffuse Solar Radiation on a Horizontal Surface**  
**Hourly Integrated and Daily Totals**  
**Watt-Hours per Square Meter**  
**Bluefield State College - June 1998**

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	4	39	112	283	285	310	281	245	246	270	214	176	124	70	9	0	0	0	0	2666
2	0	0	0	0	0	20	104	207	260	379	397	430	428	375	329	293	209	153	73	7	0	0	0	0	3664
3	0	0	0	0	0	22	96	116	133	149	160	204	270	495	253	231	199	22	5	13	0	0	0	0	2368
4	0	0	0	0	0	10	21	134	137	329	391	394	256	83	76	214	156	124	82	9	0	0	0	0	2415
5	0	0	0	0	0	5	32	40	58	84	205	299	544	401	359	244	190	61	40	4	0	0	0	0	2565
6	0	0	0	0	0	6	19	28	96	132	143	234	101	113	93	44	49	38	1	0	0	0	0	0	1231
7	0	0	0	0	0	25	95	161	269	294	295	350	301	321	302	278	202	112	75	9	0	0	0	0	3087
8	0	0	0	0	0	32	65	? 212	324	423	370	391	230	148	97	75	99	62	39	8	0	0	0	0	2574
9	0	0	0	0	0	7	51	47	54	102	107	75	125	99	220	176	202	162	42	5	0	0	0	0	1474
10	0	0	0	0	0	5	14	70	164	388	402	494	495	475	328	90	120	73	93	9	0	0	0	0	3220
11	0	0	0	0	0	10	113	157	300	286	140	417	435	571	494	272	344	235	76	11	0	0	0	0	3862
12	0	0	0	0	0	5	24	37	54	125	154	218	554	407	316	295	218	128	72	8	0	0	0	0	2615
13	0	0	0	0	0	12	33	114	125	319	338	298	280	235	290	228	141	120	81	8	0	0	0	0	2620
14	0	0	0	0	0	28	69	152	276	301	425	494	454	319	300	269	230	140	73	7	0	0	0	0	3537
15	0	0	0	0	0	18	68	88	150	133	280	336	348	386	215	166	235	91	73	8	0	0	0	0	2595
16	0	0	0	0	0	17	59	182	270	205	265	315	282	254	252	198	177	126	78	10	0	0	0	0	2690
17	0	0	0	0	0	6	46	36	33	207	305	303	344	329	289	249	187	133	72	7	0	0	0	0	2546
18	0	0	0	0	0	27	70	? 92	? 103	140	142	145	159	244	290	312	226	216	75	21	0	0	0	0	2263
19	0	0	0	0	0	15	29	16	61	80	162	212	339	330	304	271	198	134	61	11	0	0	0	0	2221
20	0	0	0	0	0	28	54	? 80	? 94	238	262	328	333	258	136	123	95	89	54	8	0	0	0	0	2180
21	0	0	0	0	0	43	111	161	269	291	438	309	237	158	259	312	244	114	110	22	0	0	0	0	3078
22	0	0	0	0	0	8	53	183	305	326	301	299	290	219	286	248	169	134	74	3	0	0	0	0	2899
23	0	0	0	0	0	21	95	134	? 136	198	249	406	204	113	235	392	165	182	94	17	0	0	0	0	2642
24	0	0	0	0	0	13	61	100	243	312	346	303	259	254	285	235	137	145	44	5	0	0	0	0	2742
25	0	0	0	0	0	26	96	147	? 185	251	296	355	363	263	235	204	179	119	69	9	0	0	0	0	2796
26	0	0	0	0	0	25	96	185	? 273	331	461	443	401	431	410	354	231	168	83	14	0	0	0	0	3906
27	0	0	0	0	0	18	71	88	322	444	493	449	390	414	400	273	269	166	82	11	0	0	0	0	3889
28	0	0	0	0	0	5	42	110	101	119	182	435	501	396	198	167	187	168	109	16	0	0	0	0	2735
29	0	0	0	0	0	8	16	30	230	425	438	236	209	216	178	196	259	168	84	13	0	0	0	0	2709
30	0	0	0	0	0	37	111	99	139	280	310	406	187	78	43	53	79	146	88	8	0	0	0	0	2063
Avg	0	0	0	0	0	17	62	111	182	253	292	326	323	287	259	224	186	129	70	10	0	0	0	0	2728
S D	0	0	0	0	0	11	31	56	92	106	109	104	112	129	98	80	60	46	22	5	0	0	0	0	618
S/A	0	0	0	0	0	0.62	0.5	0.5	0.51	0.42	0.37	0.32	0.35	0.45	0.38	0.36	0.32	0.36	0.31	0.48	0	0	0	0	0.23
Min	0	0	0	0	0	4	14	16	33	80	107	75	125	78	43	53	44	22	5	1	0	0	0	0	1231
Max	0	0	0	0	0	43	113	212	324	444	493	494	554	571	494	392	344	235	110	22	0	0	0	0	3906

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: 8.27 uV/Wm-2  
Serial Number: 17880F3  
Calibration Date: 9/13/96