

**Global Solar Radiation on a Horizontal Surface**  
**Hourly Integrated and Daily Totals**  
**Watt-Hours per Square Meter**  
**Bluefield State College - September 1997**

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	0	48	215	426	617	768	867	662	762	388	512	161	166	23	0	0	0	0	0	5617
2	0	0	0	0	0	0	33	165	385	587	732	733	644	770	672	560	358	169	22	0	0	0	0	0	5830
3	0	0	0	0	0	0	25	63	35	73	105	178	414	239	195	171	223	124	31	0	0	0	0	0	1878
4	0	0	0	0	0	0	66	268	478	678	832	921	948	898	786	620	416	195	14	0	0	0	0	0	7121
5	0	0	0	0	0	0	49	?	479	?	666	816	906	926	875	764	605	397	182	16	0	0	0	0	6681
6	0	0	0	0	0	0	53	179	248	546	658	706	595	592	470	531	338	136	12	0	0	0	0	0	5064
7	0	0	0	0	0	0	38	170	325	?	450	640	909	559	648	590	500	292	93	11	0	0	0	0	5225
8	0	0	0	0	0	0	39	191	383	582	569	591	512	386	442	365	214	131	6	0	0	0	0	0	4412
9	0	0	0	0	0	0	28	79	123	115	154	189	134	114	181	138	32	27	5	0	0	0	0	0	1318
10	0	0	0	0	0	0	9	54	147	238	154	168	290	586	421	197	28	9	4	0	0	0	0	0	2305
11	0	0	0	0	0	0	23	130	260	372	632	602	856	498	561	353	153	40	5	0	0	0	0	0	4484
12	0	0	0	0	0	0	26	148	428	?	622	550	620	653	476	656	443	329	108	8	0	0	0	0	5069
13	0	0	0	0	0	0	26	169	292	?	572	694	773	827	861	689	543	339	130	6	0	0	0	0	5921
14	0	0	0	0	0	0	18	135	301	363	605	664	535	499	358	220	153	64	5	0	0	0	0	0	3920
15	0	0	0	0	0	0	20	118	254	?	460	729	856	831	518	424	484	351	116	3	0	0	0	0	5164
16	0	0	0	0	0	0	34	140	?	?	547	722	614	613	626	712	406	299	103	5	0	0	0	0	4822
17	0	0	0	0	0	0	45	146	315	446	645	367	462	605	399	331	166	31	0	0	0	0	0	0	3957
18	0	0	0	0	0	0	6	93	154	457	718	828	792	617	698	517	260	110	3	0	0	0	0	0	5253
19	0	0	0	0	0	0	29	185	391	581	728	820	831	745	528	466	316	102	3	0	0	0	0	0	5726
20	0	0	0	0	0	0	27	168	360	541	381	242	255	285	195	123	139	20	0	0	0	0	0	0	2735
21	0	0	0	0	0	0	29	143	317	588	643	666	836	793	691	487	254	76	1	0	0	0	0	0	5525
22	0	0	0	0	0	0	22	122	315	600	727	778	715	620	471	286	249	88	3	0	0	0	0	0	4996
23	0	0	0	0	0	0	19	108	154	97	136	82	85	42	40	31	32	27	1	0	0	0	0	0	853
24	0	0	0	0	0	0	3	38	65	101	88	54	82	86	76	45	34	24	1	0	0	0	0	0	696
25	0	0	0	0	0	0	6	71	66	111	124	179	325	353	616	519	299	91	1	0	0	0	0	0	2760
26	0	0	0	0	0	0	17	146	357	?	631	?	686	819	737	674	460	347	253	81	0	0	0	0	5208
27	0	0	0	0	0	0	32	83	440	481	233	357	835	790	655	483	284	82	1	0	0	0	0	0	4756
28	0	0	0	0	0	0	1	8	37	87	154	184	139	73	90	91	34	8	0	0	0	0	0	0	907
29	0	0	0	0	0	0	17	88	329	547	658	799	844	781	648	467	274	77	1	0	0	0	0	0	5529
30	0	0	0	0	0	0	20	173	380	565	690	793	741	629	507	309	155	44	0	0	0	0	0	0	5007
Avg	0	0	0	0	0	0	27	131	284	444	532	576	589	548	479	372	228	88	6	0	0	0	0	0	4291
S D	0	0	0	0	0	0	15	56	131	196	249	284	261	246	211	171	113	52	8	0	0	0	0	0	1747
S/A	0	0	0	0	0	2.63	0.56	0.43	0.46	0.44	0.47	0.49	0.44	0.45	0.44	0.46	0.5	0.58	1.2	0	0	0	0	0	0.41
Min	0	0	0	0	0	0	1	8	35	73	88	54	82	42	40	31	28	8	0	0	0	0	0	0	696
Max	0	0	0	0	0	0	66	268	479	678	832	921	948	898	786	620	416	195	31	0	0	0	0	0	7121

Daylight Data Recovery: 4% missing; 2% exceed the 15% QC threshold -- 14925 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 - September 1997**

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	102	445	638	745	804	820	461	553	157	450	120	307	33	0	0	0	0	0	5635
2	0	0	0	0	0	0	25	280	515	592	621	511	378	520	563	560	459	302	29	0	0	0	0	0	5354
3	0	0	0	0	0	0	0	0	0	0	1	4	105	5	1	0	189	226	53	0	0	0	0	0	584
4	0	0	0	0	0	0	285	778	905	972	1002	1016	1018	1004	977	952	862	659	76	0	0	0	0	0	10507
5	0	0	0	0	0	0	250	?	812	?	969	1001	1015	1003	968	951	924	821	571	56	0	0	0	0	9341
6	0	0	0	0	0	0	141	244	51	276	424	436	204	250	155	585	455	162	0	0	0	0	0	0	3383
7	0	0	0	0	0	0	41	193	276	?	311	396	737	308	471	469	470	237	6	1	0	0	0	0	3917
8	0	0	0	0	0	0	44	371	489	544	322	140	80	51	89	83	90	114	0	0	0	0	0	0	2418
9	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	0	0	0	4
10	0	0	0	0	0	0	0	0	1	3	1	1	1	104	64	5	0	0	0	0	0	0	0	0	180
11	0	0	0	0	0	0	0	154	104	154	490	369	665	193	393	216	39	0	0	0	0	0	0	0	2776
12	0	0	0	0	0	0	0	91	571	?	577	262	332	351	187	464	337	509	187	1	0	0	0	0	3867
13	0	0	0	0	0	0	1	136	372	?	673	687	674	726	843	761	776	630	343	3	0	0	0	0	6625
14	0	0	0	0	0	0	0	43	74	63	295	288	105	134	36	8	6	5	0	0	0	0	0	0	1057
15	0	0	0	0	0	0	0	3	291	?	538	776	858	644	243	258	426	342	152	0	0	0	0	0	4531
16	0	0	0	0	0	0	30	216	?	?	662	711	381	324	405	631	389	466	215	0	0	0	0	0	4431
17	0	0	0	0	0	0	61	88	220	305	386	18	74	363	96	61	27	0	0	0	0	0	0	0	1700
18	0	0	0	0	0	0	0	30	50	280	754	883	722	569	832	686	410	287	0	0	0	0	0	0	5503
19	0	0	0	0	0	0	99	474	689	785	816	815	848	730	327	527	601	186	0	0	0	0	0	0	6896
20	0	0	0	0	0	0	83	363	514	510	86	3	1	6	1	1	9	0	0	0	0	0	0	0	1577
21	0	0	0	0	0	0	54	140	380	801	538	324	853	893	931	755	343	153	0	0	0	0	0	0	6167
22	0	0	0	0	0	0	0	45	220	590	653	540	498	321	288	131	219	99	0	0	0	0	0	0	3605
23	0	0	0	0	0	0	2	18	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26
24	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
25	0	0	0	0	0	0	0	0	0	1	1	1	5	32	536	837	711	407	0	0	0	0	0	0	2531
26	0	0	0	0	0	0	0	108	701	?	902	783	881	643	476	211	176	351	177	0	0	0	0	0	5409
27	0	0	0	0	0	0	72	131	734	420	26	69	682	871	877	818	676	318	0	0	0	0	0	0	5692
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
29	0	0	0	0	0	0	6	29	353	679	682	875	889	953	907	799	662	315	0	0	0	0	0	0	7149
30	0	0	0	0	0	0	109	588	787	889	894	951	819	630	518	329	123	72	0	0	0	0	0	0	6710
Avg	0	0	0	0	0	0	47	171	336	441	447	432	414	392	383	377	312	175	8	0	0	0	0	0	3919
S D	0	0	0	0	0	0	72	197	294	328	339	371	347	337	338	325	274	172	20	0	0	0	0	0	2808
S/A	0	0	0	0	0	0	1.53	1.15	0.87	0.74	0.76	0.86	0.84	0.86	0.88	0.86	0.88	0.98	2.33	0	0	0	0	0	0.72
Min	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
Max	0	0	0	0	0	0	285	778	905	972	1002	1016	1018	1004	977	952	862	659	76	0	0	0	0	0	10507

Daylight Data Recovery: 4% missing; 2% exceed the 15% QC threshold -- 14925 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 - September 1997**

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	0	33	95	123	138	148	168	248	290	247	247	105	90	19	0	0	0	0	0	1951
2	0	0	0	0	0	0	31	112	170	215	253	297	307	327	246	219	156	93	18	0	0	0	0	0	2442
3	0	0	0	0	0	0	22	55	30	65	93	161	312	220	172	151	136	78	26	0	0	0	0	0	1521
4	0	0	0	0	0	0	26	50	58	62	66	66	67	66	61	54	46	33	7	0	0	0	0	0	662
5	0	0	0	0	0	0	22	45	58	57	60	61	66	77	64	56	45	39	10	0	0	0	0	0	661
6	0	0	0	0	0	0	32	116	220	360	319	341	406	371	338	187	144	89	11	0	0	0	0	0	2931
7	0	0	0	0	0	0	33	131	239	?	270	343	306	286	256	243	228	183	82	10	0	0	0	0	2610
8	0	0	0	0	0	0	32	105	167	236	312	460	426	328	354	311	171	99	5	0	0	0	0	0	3006
9	0	0	0	0	0	0	25	70	110	104	135	169	118	100	159	123	28	23	4	0	0	0	0	0	1170
10	0	0	0	0	0	0	8	47	130	209	138	150	257	493	356	175	24	8	4	0	0	0	0	0	1999
11	0	0	0	0	0	0	20	102	225	244	280	274	295	330	281	222	125	36	4	0	0	0	0	0	2437
12	0	0	0	0	0	0	23	122	198	?	233	337	343	353	322	320	255	124	62	8	0	0	0	0	2700
13	0	0	0	0	0	0	25	116	163	?	170	195	213	223	199	159	112	88	57	5	0	0	0	0	1725
14	0	0	0	0	0	0	16	120	269	324	390	412	441	382	319	198	136	59	5	0	0	0	0	0	3071
15	0	0	0	0	0	0	18	105	166	?	148	162	163	299	322	229	244	221	83	3	0	0	0	0	2163
16	0	0	0	0	0	0	26	90	?	?	172	204	303	339	300	284	190	121	62	4	0	0	0	0	2096
17	0	0	0	0	0	0	43	127	219	260	356	333	383	307	320	302	149	28	0	0	0	0	0	0	2827
18	0	0	0	0	0	0	5	81	126	274	166	121	192	166	132	138	104	54	3	0	0	0	0	0	1563
19	0	0	0	0	0	0	20	73	96	116	143	165	143	180	295	195	86	66	2	0	0	0	0	0	1578
20	0	0	0	0	0	0	20	82	139	237	305	216	235	258	173	108	128	17	0	0	0	0	0	0	1918
21	0	0	0	0	0	0	24	99	140	113	270	382	141	114	78	83	111	50	1	0	0	0	0	0	1607
22	0	0	0	0	0	0	20	103	222	250	257	335	300	359	260	213	169	74	3	0	0	0	0	0	2564
23	0	0	0	0	0	0	18	96	141	88	124	74	76	37	35	28	29	23	0	0	0	0	0	0	771
24	0	0	0	0	0	0	3	34	61	93	82	49	75	79	70	42	31	21	0	0	0	0	0	0	640
25	0	0	0	0	0	0	5	64	60	102	113	163	294	314	281	95	52	22	0	0	0	0	0	0	1565
26	0	0	0	0	0	0	15	102	70	88	125	140	216	292	310	252	129	48	0	0	0	0	0	0	1790
27	0	0	0	0	0	0	24	54	137	257	203	285	293	157	100	76	55	29	1	0	0	0	0	0	1670
28	0	0	0	0	0	0	1	7	35	80	141	168	128	66	81	83	31	7	0	0	0	0	0	0	827
29	0	0	0	0	0	0	16	76	177	156	185	145	167	94	76	65	49	25	0	0	0	0	0	0	1231
30	0	0	0	0	0	0	11	43	60	66	81	81	105	161	184	142	104	31	0	0	0	0	0	0	1069
Avg	0	0	0	0	0	0	21	84	138	173	199	218	240	232	208	160	103	50	5	0	0	0	0	0	1826
SD	0	0	0	0	0	0	10	31	66	85	95	111	110	116	101	79	53	27	6	0	0	0	0	0	731
S/A	0	0	0	0	0	2.8	0.48	0.37	0.47	0.49	0.48	0.51	0.46	0.5	0.49	0.49	0.51	0.54	1.18	0	0	0	0	0	0.4
Min	0	0	0	0	0	0	1	7	30	57	60	49	66	37	35	28	24	7	0	0	0	0	0	0	640
Max	0	0	0	0	0	0	43	131	269	360	390	460	441	493	356	311	221	99	26	0	0	0	0	0	3071

Daylight Data Recovery: 4% missing; 2% exceed the 15% QC threshold -- 14925 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