

**Global Solar Radiation on a Horizontal Surface**  
**Hourly Integrated and Daily Totals**  
**Watt-Hours per Square Meter**  
**Bluefield State College - June 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	13	76	151	220	364	670	648	670	833	688	638	423	193	70	6	0	0	0	0	5662	
2	0	0	0	0	0	32	209	431	655	509	211	184	20	221	548 ?	464	369	297	124	9	0	0	0	0	4283	
3	0	0	0	0	0	7	16	57	113	127	225	305	196	144	182	142	94	32	32	5	0	0	0	0	1677	
4	0	0	0	0	0	8	37	100	134	228	290	443	603	506	430	231	248	149	128 ?	6	0	0	0	0	3541	
5	0	0	0	0	0	34	107	259	401	763	778	843	712	625	730	643	545	357	123	9	0	0	0	0	6929	
6	0	0	0	0	0	24	100	189	243	264	405	479	555	793	854	621	495	369	57	3	0	0	0	0	5453	
7	0	0	0	0	0	21	76	149	121	135	186	155	116	343	390	291	501	141	21	7	0	0	0	0	2653	
8	0	0	0	0	0	9	27	116	233	422	614	419	335	254	317	260	109	33	22	1	0	0	0	0	3172	
9	0	0	0	0	0	18	70	36	56	167	183	227	226	396	329	277	329	357	135	9	0	0	0	0	2813	
10	0	0	0	0	0	43	203	411	614	821	922	1007	839	745	843	614	434	323	117	11	0	0	0	0	7948	
11	0	0	0	0	0	8	45	122	256	448	557	798	567	723	502	424	219	186	24	5	0	0	0	0	4885	
12	0	0	0	0	0	5	30	149	161	334	395	233	591	371	418	479	362	278	77	11	0	0	0	0	3895	
13	0	0	0	0	0	37	167	245	478	550	716	866	880	827	565	420	423	126	13	1	0	0	0	0	6316	
14	0	0	0	0	0	6	37	86	218	150	309	234	102	221	286	380	253	130	141	8	0	0	0	0	2562	
15	0	0	0	0	0	16	77	148	396	786	891	645	932	1046	763	518	331	229	146	18	0	0	0	0	6941	
16	0	0	0	0	0	20	114	302	368	639	810	859	1020	978	868	594	295	219	51	10	0	0	0	0	7147	
17	0	0	0	0	0	26	46	57	179	320	666	680	850	460	636	193	245	137	73	12	0	0	0	0	4581	
18	0	0	0	0	0	19	168	281	597	539	632	643	772	736	356	389	219	170	113	19	0	0	0	0	5652	
19	0	0	0	0	0	17	109	207	504	657	793	864	1006	916	872	696	379	283	72	14	0	0	0	0	7390	
20	0	0	0	0	0	19	137	408 ?	564	514	612	914	1038	741	912	822	311	280	70	14	0	0	0	0	7355	
21	0	0	0	0	0	21	170	370	560	750	885	958	707	834	796	655	521	400	205	27	0	0	0	0	7860	
22	0	0	0	0	0	25	139	299	78	238	141	166	465	804	529	587	339	281	138	15	0	0	0	0	4244	
23	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
24	*	*	*	*	*	*	*	*	*	602	738	881	910	844	747 ?	489 ?	610	586	353	111	11	0	0	0	0	6881 *
25	0	0	0	0	0	25	142	331	448	232	131	562	497	235	541	514	272	130	15	0	0	0	0	0	4549	
26	0	0	0	0	0	21	145	275	204	278	296	641	653	691	642	132	11	14	40	7	0	0	0	0	4049	
27	0	0	0	0	0	21	94	399	604	784	928	913	932	1060	808	628	464	302	143	15	0	0	0	0	8099	
28	0	0	0	0	0	40	211 ?	390	599	835	923	1031	1019	963	811	637	499	359	78	26	0	0	0	0	8420	
29	0	0	0	0	0	20	79	143	268	814	772	698	583	643	831	654	544	164	67	14	0	0	0	0	6293	
30	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
Avg	0	0	0	0	0	21	105	226	354	486	569	603	636	647	594	484	359	230	90	11	0	0	0	0	5042	
S D	0	0	0	0	0	10	58	122	193	235	270	296	295	259	220	183	145	107	48	6	0	0	0	0	2279	
S/A	0	0	0	0	0	0.48	0.55	0.54	0.55	0.48	0.47	0.49	0.46	0.4	0.37	0.38	0.4	0.47	0.53	0.57	0	0	0	0	0.45	
Min	0	0	0	0	0	5	16	36	56	127	141	131	20	144	182	132	11	14	13	1	0	0	0	0	0	
Max	0	0	0	0	0	43	211	431	655	835	928	1031	1038	1060	912	822	586	400	205	27	0	0	0	0	8420	

Daylight Data Recovery: 2% missing; 1% exceed the 15% QC threshold -- 27029 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 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	3	3	10	20	139	184	233	458	316	404	350	81	5	0	0	0	0	0	2207	
2	0	0	0	0	0	130	564	641	577	145	1	1	0	6	390	158	183	405	252	0	0	0	0	0	3454	
3	0	0	0	0	0	0	0	0	0	0	1	2	1	0	1	0	0	0	0	0	0	0	0	0	5	
4	0	0	0	0	0	0	0	0	0	1	1	3	22	16	6	1	12	2	247 ?	0	0	0	0	0	311	
5	0	0	0	0	0	30	30	108	166	702	542	462	215	90	296	468	651	701	304	0	0	0	0	0	4764	
6	0	0	0	0	0	5	5	5	2	2	9	16	42	320	660	485	378	492	0	0	0	0	0	0	2420	
7	0	0	0	0	0	0	0	0	0	0	1	0	0	2	2	4	340	34	0	0	0	0	0	0	384	
8	0	0	0	0	0	0	0	0	1	4	19	2	2	1	1	1	0	0	0	0	0	0	0	0	30	
9	0	0	0	0	0	5	0	0	0	0	0	1	1	7	2	0	139	728	402	0	0	0	0	0	1286	
10	0	0	0	0	0	229	604	764	851	895	723	780	493	385	615	433	428	597	313	0	0	0	0	0	8110	
11	0	0	0	0	0	0	0	1	3	11	52	330	95	132	7	18	1	10	0	0	0	0	0	0	659	
12	0	0	0	0	0	0	0	1	1	17	35	8	163	21	76	157	119	135	13	0	0	0	0	0	745	
13	0	0	0	0	0	104	266	88	365	294	392	556	542	549	272	227	276	11	0	0	0	0	0	0	3941	
14	0	0	0	0	0	0	0	0	3	1	4	2	0	1	1	8	10	3	133	0	0	0	0	0	166	
15	0	0	0	0	0	0	0	1	71	597	661	305	576	710	454	280	123	188	200	0	0	0	0	0	4165	
16	0	0	0	0	0	2	31	188	113	384	487	421	579	585	528	320	45	46	10	0	0	0	0	0	3738	
17	0	0	0	0	0	0	0	0	9	51	261	209	450	85	221	31	74	9	8	0	0	0	0	0	1409	
18	0	0	0	0	0	0	190	216	803	335	363	268	378	245	13	49	9	34	55	0	0	0	0	0	2959	
19	0	0	0	0	0	0	15	28	352	423	518	583	781	654	687	674	324	362	15	0	0	0	0	0	5418	
20	0	0	0	0	0	4	220	564 ?	624	351	335	623	758	461	727	622	102	175	111	0	0	0	0	0	5677	
21	0	0	0	0	0	26	329	589	702	761	700	693	353	516	608	499	492	496	281	0	0	0	0	0	7045	
22	0	0	0	0	0	50	281	373	0	2	0	1	101	352	148	376	248	335	308	0	0	0	0	0	2574	
23	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
24	*	*	*	*	*	*	*	*	724 *	751	771	671	514	399 ?	151 ?	388	588	531	215	0	0	0	0	0	5703 *	
25	0	0	0	0	0	33	200	376	353	91	12	0	97	118	19	289	377	194	181	0	0	0	0	0	2342	
26	0	0	0	0	0	25	154	156	41	56	11	187	268	373	334	3	0	0	0	0	0	0	0	0	1607	
27	0	0	0	0	0	1	9	502	844	892	884	674	677	892	658	576	512	470	362	0	0	0	0	0	7955	
28	0	0	0	0	0	166	525 ?	658	777	745	597	612	679	683	602	517	490	463	19	0	0	0	0	0	7532	
29	0	0	0	0	0	21	0	1	69	453	345	197	51	122	509	496	584	69	1	0	0	0	0	0	2917	
30	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
Avg	0	0	0	0	0	31	127	195	266	285	281	278	288	292	297	267	245	235	123	0	0	0	0	0	2984	
S D	0	0	0	0	0	57	186	253	320	314	292	271	264	263	259	224	209	238	135	0	0	0	0	0	2526	
S/A	0	0	0	0	0	1.86	1.46	1.3	1.2	1.1	1.04	0.97	0.92	0.9	0.87	0.84	0.85	1.01	1.1	5.2	0	0	0	0	0.85	
Min	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	
Max	0	0	0	0	0	229	604	764	851	895	884	780	781	892	727	674	651	728	402	0	0	0	0	0	8110	

Daylight Data Recovery: 2% missing; 2% exceed the 15% QC threshold -- 27029 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 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	12	67	130	193	328	527	465	434	391	403	347	231	158	61	5	0	0	0	0	3751	
2	0	0	0	0	0	23	91	164	327	394	185	162	18	197	290	343	276	163	75	8	0	0	0	0	2715	
3	0	0	0	0	0	6	14	50	99	111	201	270	173	127	163	126	82	28	28	4	0	0	0	0	1483	
4	0	0	0	0	0	7	32	88	117	200	255	390	522	444	378	203	214	130	77	5	0	0	0	0	3063	
5	0	0	0	0	0	30	99	208	296	217	283	378	497	547	476	304	187	99	61	7	0	0	0	0	3688	
6	0	0	0	0	0	21	88	167	212	231	347	438	497	488	280	256	299	172	51	3	0	0	0	0	3548	
7	0	0	0	0	0	22	68	135	109	121	167	139	104	309	347	258	303	113	19	6	0	0	0	0	2221	
8	0	0	0	0	0	8	24	103	206	369	540	369	296	226	282	231	96	29	21	1	0	0	0	0	2801	
9	0	0	0	0	0	18	62	31	49	147	161	198	199	351	290	245	243	88	52	8	0	0	0	0	2142	
10	0	0	0	0	0	33	69	80	86	124	255	238	331	368	300	287	200	104	53	10	0	0	0	0	2537	
11	0	0	0	0	0	7	39	108	224	398	486	468	452	584	435	367	192	165	21	5	0	0	0	0	3949	
12	0	0	0	0	0	4	26	130	141	303	345	210	388	328	333	349	288	220	69	10	0	0	0	0	3144	
13	0	0	0	0	0	25	106	207	261	321	366	324	349	302	321	251	259	114	12	1	0	0	0	0	3219	
14	0	0	0	0	0	5	33	75	190	131	266	202	88	193	249	340	221	115	110	7	0	0	0	0	2225	
15	0	0	0	0	0	14	68	131	337	330	314	339	374	383	371	306	249	164	109	16	0	0	0	0	3505	
16	0	0	0	0	0	18	104	214	288	335	377	444	444	421	404	352	256	197	47	9	0	0	0	0	3910	
17	0	0	0	0	0	23	41	49	160	272	434	471	406	365	450	162	190	120	66	10	0	0	0	0	3218	
18	0	0	0	0	0	18	126	170	111	273	290	376	389	493	313	335	190	145	98	16	0	0	0	0	3345	
19	0	0	0	0	0	16	98	177	299	344	333	300	236	290	278	199	202	146	64	12	0	0	0	0	2992	
20	0	0	0	0	0	19	103	162	195	252	311	323	299	300	281	362	253	210	51	12	0	0	0	0	3131	
21	0	0	0	0	0	21	84	121	143	174	273	301	359	340	261	292	231	221	151	26	0	0	0	0	2997	
22	0	0	0	0	0	21	72	155	68	208	124	146	348	470	396	302	202	162	77	14	0	0	0	0	2763	
23	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
24	*	*	*	*	*	*	*	*	144	168	198	263	338	358	333	316	260	158	68	10	0	0	0	0	2613	
25	0	0	0	0	0	22	108	187	278	390	210	115	463	369	193	341	305	202	98	13	0	0	0	0	3293	
26	0	0	0	0	0	19	109	218	177	225	264	454	380	331	350	116	10	12	35	6	0	0	0	0	2706	
27	0	0	0	0	0	19	84	177	104	108	148	258	257	210	234	206	161	118	73	14	0	0	0	0	2171	
28	0	0	0	0	0	33	101	126	144	286	394	440	355	315	288	247	219	182	70	23	0	0	0	0	3222	
29	0	0	0	0	0	18	69	126	208	470	462	496	511	497	383	286	212	133	59	12	0	0	0	0	3943	
30	0	0	0	0	0	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	0
Avg	0	0	0	0	0	18	73	137	184	258	304	321	339	357	324	276	215	138	63	10	0	0	0	0	2810	
S.D	0	0	0	0	0	8	30	51	79	99	112	113	129	109	74	69	66	54	31	6	0	0	0	0	950	
S/A	0	0	0	0	0	0.44	0.41	0.37	0.43	0.39	0.37	0.35	0.38	0.3	0.23	0.25	0.31	0.39	0.48	0.59	0	0	0	0	0.34	
Min	0	0	0	0	0	4	14	31	49	108	124	115	18	127	163	116	10	12	12	1	0	0	0	0	0	
Max	0	0	0	0	0	33	126	218	337	470	540	496	522	584	476	367	305	221	151	26	0	0	0	0	3949	

Daylight Data Recovery: 2% missing; 1% exceed the 15% QC threshold -- 27029 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