

**Global Solar Radiation on a Horizontal Surface  
Hourly Integrated and Daily Totals  
Watt-Hours per Square Meter  
Bluefield State College - January 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	0	0	2	44	95 ?	238	575 ?	614 ?	499	288	155	65	1	0	0	0	0	0	0	2575
2	0	0	0	0	0	0	0	2	26	101	218	162	206	152	91	99	51	1	0	0	0	0	0	0	1108
3	0	0	0	0	0	0	0	1	21	106	105	136	105	64	45	29	17	0	0	0	0	0	0	0	630
4	0	0	0	0	0	0	0	2	39	127	324	487	510	534	353	168	63	2	0	0	0	0	0	0	2610
5	0	0	0	0	0	0	0	3	54	185	382	506	605	568	432	251	93	2	0	0	0	0	0	0	3080
6	0	0	0	0	0	0	0	4	78	222	356	164	68	92	81	73	35	2	0	0	0	0	0	0	1174
7	0	0	0	0	0	0	0	2	17	54	82	91	167	163	171	136	35	1	0	0	0	0	0	0	919
8	0	0	0	0	0	0	0	1	26	94	168	207	297	111	55	44	13	0	0	0	0	0	0	0	1018
9	0	0	0	0	0	0	0	1	10	16	42	54	23	40	37	61	21	3	0	0	0	0	0	0	307
10	0	0	0	0	0	0	0	3	62	218	414	508	544	505	417	275	96	4	0	0	0	0	0	0	3045
11	0	0	0	0	0	0	0	4	103	269	410	491	526	463	320	162	93	8	0	0	0	0	0	0	2850
12	0	0	0	0	0	0	0	1	30	58	99	279	439	307	294	169	70	5	0	0	0	0	0	0	1751
13	0	0	0	0	0	0	0	1	25	118	206	367	299	145	76	41	16	1	0	0	0	0	0	0	1294
14	0	0	0	0	0	0	0	0	21	36	107	117	292	217	85	47	8	1	0	0	0	0	0	0	930
15	0	0	0	0	0	0	0	0	4	35	66	75	95	106	102 ?	93	116	12	0	0	0	0	0	0	706
16	0	0	0	0	0	0	0	4	83	309	394	533	539	496	439	316	118	6	0	0	0	0	0	0	3238
17	0	0	0	0	0	0	0	3	43	212	316	319	319	220	231	144	35	2	0	0	0	0	0	0	1843
18	0	0	0	0	0	0	0	0	28	182	264	34	191	347	408	341	115	10	0	0	0	0	0	0	1921
19	0	0	0	0	0	0	0	3	113	288	433	530	564	532	443	295	93	4	0	0	0	0	0	0	3298
20	0	0	0	0	0	0	0	1	37	58	125	293	333	254	158	159	133	9	0	0	0	0	0	0	1559
21	0	0	0	0	0	0	0	8	65	113	322	205	152	93	116	114	67	11	0	0	0	0	0	0	1267
22	0	0	0	0	0	0	0	7	78	150	259	298	555	455	439	300	67	5	0	0	0	0	0	0	2612
23	0	0	0	0	0	0	0	2	9	33	89	53	22	132	97	65	25	4	0	0	0	0	0	0	531
24	0	0	0	0	0	0	0	1	4	16	24	70	81	94	95	91	35	10	0	0	0	0	0	0	521
25	0	0	0	0	0	0	0	4	133	293	438	509	501	521	371	203	32	6	0	0	0	0	0	0	3011
26	0	0	0	0	0	0	0	5	132	303	452	552	582	528	473	338	147	25	0	0	0	0	0	0	3537
27	0	0	0	0	0	0	0	7	128	314	446	533	582	564	460	322	149	19	0	0	0	0	0	0	3525
28	0	0	0	0	0	0	0	2	16	87	269	331	271	231	355	268	153	17	0	0	0	0	0	0	2000
29	0	0	0	0	0	0	0	4	35	135	334	281	267	251	212	129	67	8	0	0	0	0	0	0	1722
30	0	0	0	0	0	0	0	7	75	274	429	611	617	644	399	246	103	15	0	0	0	0	0	0	3418
31	0	0	0	0	0	0	0	7	59	119	161	205	251	192	136	100	48	10	0	0	0	0	0	0	1286
Avg	0	0	0	0	0	0	0	3	52	149	257	309	343	307	248	169	70	7	0	0	0	0	0	0	1912
S D	0	0	0	0	0	0	0	2	38	95	137	185	197	188	151	98	43	6	0	0	0	0	0	0	1019
S/A	0	0	0	0	0	0	0	0.77	0.74	0.64	0.53	0.6	0.58	0.61	0.61	0.58	0.61	0.91	0	0	0	0	0	0	0.53
Min	0	0	0	0	0	0	0	0	4	16	24	34	22	40	37	29	8	0	0	0	0	0	0	0	307
Max	0	0	0	0	0	0	0	8	133	314	452	611	617	644	473	341	153	25	0	0	0	0	0	0	3537

Daylight Data Recovery: 0% missing; 1% exceed the 15% QC threshold -- 3684 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 - January 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	0	0	0	0	26 ?	337	936 ?	889 ?	540	141	40	37	0	0	0	0	0	0	0	2947
2	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	2	0	0	0	0	0	0	0	7
3	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	4
4	0	0	0	0	0	0	0	0	1	37	361	614	796	732	325	206	86	2	0	0	0	0	0	0	3160
5	0	0	0	0	0	0	0	0	6	155	467	796	822	898	805	663	560	55	0	0	0	0	0	0	5226
6	0	0	0	0	0	0	0	0	36	187	236	7	0	0	0	0	0	0	0	0	0	0	0	0	466
7	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	3
8	0	0	0	0	0	0	0	0	0	6	36	7	103	0	0	0	0	0	0	0	0	0	0	0	153
9	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
10	0	0	0	0	0	0	0	0	38	385	870	964	983	954	902	813	349	10	0	0	0	0	0	0	6268
11	0	0	0	0	0	0	0	0	428	710	804	849	893	639	268	35	100	35	0	0	0	0	0	0	4759
12	0	0	0	0	0	0	0	0	0	0	0	112	408	97	139	119	48	0	0	0	0	0	0	0	923
13	0	0	0	0	0	0	0	0	0	6	26	265	70	1	1	0	0	0	0	0	0	0	0	0	369
14	0	0	0	0	0	0	0	0	0	0	1	10	100	48	0	0	0	0	0	0	0	0	0	0	159
15	0	0	0	0	0	0	0	0	0	8	1	23	34	70 ?	56	365	104	0	0	0	0	0	0	0	661
16	0	0	0	0	0	0	0	0	197	752	766	945	736	848	900	684	488	27	0	0	0	0	0	0	6344
17	0	0	0	0	0	0	0	0	40	513	325	106	57	13	28	5	0	0	0	0	0	0	0	0	1088
18	0	0	0	0	0	0	0	0	0	228	293	0	14	319	623	709	335	129	0	0	0	0	0	0	2651
19	0	0	0	0	0	0	0	0	579	851	940	982	984	973	934	816	344	0	0	0	0	0	0	0	7404
20	0	0	0	0	0	0	0	0	0	0	1	41	55	84	2	2	287	24	0	0	0	0	0	0	497
21	0	0	0	0	0	0	0	0	3	5	314	51	1	0	1	0	13	1	0	0	0	0	0	0	389
22	0	0	0	0	0	0	0	0	12	37	75	57	570	510	661	610	29	3	0	0	0	0	0	0	2565
23	0	0	0	0	0	0	0	0	0	0	0	0	0	8	1	1	0	0	0	0	0	0	0	0	11
24	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2
25	0	0	0	0	0	0	0	0	548	772	864	802	652	714	454	155	0	0	0	0	0	0	0	0	4960
26	0	0	0	0	0	0	0	0	619	833	948	983	971	849	889	880	578	201	0	0	0	0	0	0	7752
27	0	0	0	0	0	0	0	0	547	825	832	827	781	869	805	784	591	172	0	0	0	0	0	0	7034
28	0	0	0	0	0	0	0	0	0	1	66	127	113	112	363	379	334	20	0	0	0	0	0	0	1516
29	0	0	0	0	0	0	0	0	0	11	250	37	8	9	3	2	0	0	0	0	0	0	0	0	321
30	0	0	0	0	0	0	0	0	3	273	609	856	661	806	475	102	21	0	0	0	0	0	0	0	3804
31	0	0	0	0	0	0	0	0	0	0	1	3	10	1	0	0	0	0	0	0	0	0	0	0	15
Avg	0	0	0	0	0	0	0	0	99	213	304	335	345	325	284	228	147	25	0	0	0	0	0	0	2305
S D	0	0	0	0	0	0	0	0	200	309	341	404	386	376	346	318	202	52	0	0	0	0	0	0	2579
S/A	0	0	0	0	0	0	0	2.69	2.03	1.45	1.12	1.21	1.12	1.16	1.22	1.39	1.37	2.06	0	0	0	0	0	0	1.12
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	0	0	619	851	948	983	984	973	934	880	591	201	0	0	0	0	0	0	7752

Daylight Data Recovery: 0% missing; 1% exceed the 15% QC threshold -- 3684 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 - January 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	0	0	2	44	91 ?	87	78 ?	118 ?	190	215	139	54	1	0	0	0	0	0	0	1019
2	0	0	0	0	0	0	0	2	25	95	205	153	195	145	88	94	48	1	0	0	0	0	0	0	1050
3	0	0	0	0	0	0	0	0	20	100	100	128	99	61	43	27	16	0	0	0	0	0	0	0	596
4	0	0	0	0	0	0	0	2	37	111	168	192	121	193	216	115	47	2	0	0	0	0	0	0	1204
5	0	0	0	0	0	0	0	3	52	131	181	130	204	162	123	72	24	1	0	0	0	0	0	0	1084
6	0	0	0	0	0	0	0	4	70	151	260	155	65	87	77	69	32	2	0	0	0	0	0	0	973
7	0	0	0	0	0	0	0	2	16	51	79	88	161	158	165	130	33	1	0	0	0	0	0	0	883
8	0	0	0	0	0	0	0	1	25	90	146	195	239	107	51	42	12	0	0	0	0	0	0	0	908
9	0	0	0	0	0	0	0	1	9	15	39	50	21	38	35	57	20	3	0	0	0	0	0	0	290
10	0	0	0	0	0	0	0	3	53	96	69	60	63	62	61	51	37	3	0	0	0	0	0	0	559
11	0	0	0	0	0	0	0	4	39	67	84	85	81	144	193	150	80	6	0	0	0	0	0	0	931
12	0	0	0	0	0	0	0	1	28	56	95	219	227	250	227	129	62	5	0	0	0	0	0	0	1300
13	0	0	0	0	0	0	0	1	24	113	187	222	257	141	72	40	15	0	0	0	0	0	0	0	1072
14	0	0	0	0	0	0	0	0	19	34	102	106	231	180	81	45	8	1	0	0	0	0	0	0	808
15	0	0	0	0	0	0	0	0	3	32	61	71	87	95	85 ?	75	57	4	0	0	0	0	0	0	571
16	0	0	0	0	0	0	0	3	33	58	65	75	154	75	63	113	34	5	0	0	0	0	0	0	679
17	0	0	0	0	0	0	0	3	34	55	180	267	290	211	220	134	32	2	0	0	0	0	0	0	1428
18	0	0	0	0	0	0	0	0	27	102	142	32	175	181	145	125	66	6	0	0	0	0	0	0	999
19	0	0	0	0	0	0	0	2	26	40	45	49	54	51	48	43	26	4	0	0	0	0	0	0	387
20	0	0	0	0	0	0	0	1	35	55	120	263	302	201	150	148	82	7	0	0	0	0	0	0	1365
21	0	0	0	0	0	0	0	8	61	107	179	175	145	89	111	110	63	10	0	0	0	0	0	0	1059
22	0	0	0	0	0	0	0	7	74	135	220	267	244	184	146	103	61	4	0	0	0	0	0	0	1446
23	0	0	0	0	0	0	0	2	8	32	85	51	21	123	94	62	24	4	0	0	0	0	0	0	505
24	0	0	0	0	0	0	0	0	4	15	22	67	78	90	90	86	33	9	0	0	0	0	0	0	494
25	0	0	0	0	0	0	0	4	34	53	65	95	136	144	156	140	30	6	0	0	0	0	0	0	863
26	0	0	0	0	0	0	0	4	29	43	44	50	55	76	73	46	34	13	0	0	0	0	0	0	467
27	0	0	0	0	0	0	0	7	37	54	78	95	142	103	93	55	36	8	0	0	0	0	0	0	709
28	0	0	0	0	0	0	0	2	15	82	223	258	202	162	191	135	86	14	0	0	0	0	0	0	1372
29	0	0	0	0	0	0	0	4	32	126	192	239	249	233	198	120	63	7	0	0	0	0	0	0	1466
30	0	0	0	0	0	0	0	6	70	171	140	155	217	198	150	191	96	14	0	0	0	0	0	0	1408
31	0	0	0	0	0	0	0	6	55	112	153	192	238	183	130	95	45	9	0	0	0	0	0	0	1217
Avg	0	0	0	0	0	0	0	3	34	80	123	137	157	139	122	95	44	5	0	0	0	0	0	0	939
S D	0	0	0	0	0	0	0	2	19	40	62	75	80	56	58	41	23	4	0	0	0	0	0	0	341
S/A	0	0	0	0	0	0	0	0.79	0.56	0.5	0.51	0.55	0.51	0.4	0.48	0.44	0.52	0.81	0	0	0	0	0	0	0.36
Min	0	0	0	0	0	0	0	0	3	15	22	32	21	38	35	27	8	0	0	0	0	0	0	0	290
Max	0	0	0	0	0	0	0	8	74	171	260	267	302	250	227	191	96	14	0	0	0	0	0	0	1466

Daylight Data Recovery: 0% missing; 1% exceed the 15% QC threshold -- 3684 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