

Global Solar Radiation on a Horizontal Surface
Hourly Integrated and Daily Totals
Watt-Hours per Square Meter
Bluefield State College - August 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	88 ?	? 534	733	891	920	1028	945	877	658	545	319	98	2	0	0	0	0	0	7650
2	0	0	0	0	0	9	85 ?	? 525	722	879	971	985	933	874	690	423	302	80	4	0	0	0	0	0	7483
3	0	0	0	0	0	6	63	166 505	587	564	452	761	412	570	606	474	268	82	2	0	0	0	0	0	5520
4	0	0	0	0	0	4	66	215 337	271	547	284	50	45	244	259	318	190	31	2	0	0	0	0	0	2864
5	0	0	0	0	0	3	83	217 210	430	457	595	755	666	465	616	498	169	90	2	0	0	0	0	0	5255
6	0	0	0	0	0	3	82	186 ? 495 ?	699	652	840	758	600	802	707	537	278	63	3	0	0	0	0	0	6705
7	0	0	0	0	0	4	114	335 502	697	871	670	721	529	546	349	484	193	38	4	0	0	0	0	0	6055
8	0	0	0	0	0	3	94	277 483	668	680	428	588	359	447	218	448	271	77	3	0	0	0	0	0	5044
9	0	0	0	0	0	2	94	201 421	650	701	568	686	328	561	428	97	84	66	1	0	0	0	0	0	4889
10	0	0	0	0	0	2	33	114 485	587	803	515	736	513	538	374	250	133	56	1	0	0	0	0	0	5140
11	0	0	0	0	0	5	95	222 222	427	497	298	736	532	685	371	354	254	70	1	0	0	0	0	0	4767
12	0	0	0	0	0	3	68	269 308	423	640	664	637	443	366	424	323	124	56	3	0	0	0	0	0	4749
13	0	0	0	0	0	1	19	88 188	295	346	480	271	190	352	304	316	84	14	1	0	0	0	0	0	2949
14	0	0	0	0	0	2	21	142 151	354	102	393	566	697	534	518	376	238	65	0	0	0	0	0	0	4158
15	0	0	0	0	0	2	86	284 479 ?	618	683	612	812	686	614	551	399	186	67	1	0	0	0	0	0	6079
16	0	0	0	0	0	1	57	219 406	489	580	576	862	756	776	631	453	244	70	1	0	0	0	0	0	6121
17	0	0	0	0	0	3	79	159 451	600	626	633	614	831	690	600	383	174	35	0	0	0	0	0	0	5878
18	0	0	0	0	0	1	6	53 67	340	163	380	712	183	273	361	384	228	57	0	0	0	0	0	0	3207
19	0	0	0	0	0	3	73	209 377	548	652	659	660	831	678	615	408	181	32	0	0	0	0	0	0	5927
20	0	0	0	0	0	1	22	30 72	200	371	140	276	332	147	306	201	99	43	1	0	0	0	0	0	2242
21	0	0	0	0	0	1	27	71 217	348	586	335	749	825	425	519	430	198	47	1	0	0	0	0	0	4780
22	0	0	0	0	0	0	22	124 288	325	401	639	751	483	902	713	371	188	33	0	0	0	0	0	0	5241
23	0	0	0	0	0	2	57 ?	? 337 ?	540	596	669	865	754	466	461	394	257	44	0	0	0	0	0	0	5443
24	0	0	0	0	0	1	77	203 ? 510 ?	678	771	608	880	839	758	584	412	234	35	0	0	0	0	0	0	6589
25	0	0	0	0	0	0	80	218 259	563	652	847	708	749	795	625	396	167	36	0	0	0	0	0	0	6095
26	0	0	0	0	0	1	68	139 ? 309 ?	600	654	818	849	811	808	595	409	170	34	0	0	0	0	0	0	6264
27	0	0	0	0	0	1	50	178 351 ?	529	435	793	739	786	698	608	326	123	22	0	0	0	0	0	0	5637
28	0	0	0	0	0	0	24	125 249	419	650	864	759	779	620	567	249	23	29	0	0	0	0	0	0	5357
29	0	0	0	0	0	0	28	71 229	515	627	740	805	881	796	623	399	191	36	0	0	0	0	0	0	5941
30	0	0	0	0	0	1	65	288 439 ?	653	760	817	843	736	382	408	175	83	33	0	0	0	0	0	0	5682
31	0	0	0	0	0	0	51	220 409	569	567	708	718	528	515	587	389	205	24	0	0	0	0	0	0	5490
Avg	0	0	0	0	0	3	61	179 349	519	594	610	706	612	587	512	375	189	50	1	0	0	0	0	0	5329
S D	0	0	0	0	0	3	28	75 134	145	182	201	196	233	197	138	99	70	21	1	0	0	0	0	0	1224
S/A	0	0	0	0	0	1.07	0.46	0.42 0.38	0.28	0.31	0.33	0.28	0.38	0.33	0.27	0.26	0.37	0.43	1.14	0	0	0	0	0	0.23
Min	0	0	0	0	0	0	6	30 67	200	102	140	50	45	147	218	97	23	14	0	0	0	0	0	0	2242
Max	0	0	0	0	0	13	114	335 534	733	891	971	1028	945	902	713	545	319	98	4	0	0	0	0	0	7650

Daylight Data Recovery: 6% missing; 2% exceed the 15% QC threshold -- 10438 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 - August 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	40	422 ?	? ?	873	896	925	831	944	808	782	619	848	732	304	0	0	0	0	0	9024
2	0	0	0	0	0	21	279 ?	? ?	859	904	932	949	883	635	830	688	313	431	60	0	0	0	0	0	7783
3	0	0	0	0	0	3	7	14	261	237	52	3	157	2	89	359	454	327	113	0	0	0	0	0	2078
4	0	0	0	0	0	0	10	130	76	18	131	35	0	0	7	25	120	103	0	0	0	0	0	0	654
5	0	0	0	0	0	0	24	101	43	194	122	165	411	271	225	575	685	204	272	0	0	0	0	0	3290
6	0	0	0	0	0	0	50	403 ?	762 ?	669	380	626	507	335	647	742	729	355	33	0	0	0	0	0	6237
7	0	0	0	0	0	3	296	507	645	776	805	367	407	239	238	148	513	162	17	0	0	0	0	0	5122
8	0	0	0	0	0	6	251	475	604	626	429	135	263	43	187	0	418	362	75	0	0	0	0	0	3874
9	0	0	0	0	0	3	112	82	302	531	447	89	183	5	154	117	0	0	8	0	0	0	0	0	2033
10	0	0	0	0	0	0	0	1	551	455	575	21	254	55	269	31	21	5	80	0	0	0	0	0	2320
11	0	0	0	0	0	5	237	217	48	80	100	8	271	153	363	17	195	377	124	0	0	0	0	0	2193
12	0	0	0	0	0	0	32	262	104	158	352	337	261	117	89	107	193	1	1	0	0	0	0	0	2014
13	0	0	0	0	0	0	0	0	1	17	9	34	15	0	13	5	218	0	0	0	0	0	0	0	313
14	0	0	0	0	0	0	0	27	1	35	0	17	96	331	229	388	264	417	165	0	0	0	0	0	1970
15	0	0	0	0	0	1	213	544	667 ?	456	432	331	439	274	394	412	276	101	67	0	0	0	0	0	4608
16	0	0	0	0	0	0	4	201	414	322	364	313	637	507	639	605	662	507	106	0	0	0	0	0	5281
17	0	0	0	0	0	0	123	75	480	529	413	398	302	645	605	605	450	148	0	0	0	0	0	0	4775
18	0	0	0	0	0	0	0	0	0	53	1	10	267	3	1	101	292	333	131	0	0	0	0	0	1193
19	0	0	0	0	0	0	81	144	413	440	358	344	346	513	508	555	395	250	0	0	0	0	0	0	4347
20	0	0	0	0	0	0	0	0	0	1	42	1	5	26	0	25	14	6	0	0	0	0	0	0	122
21	0	0	0	0	0	0	7	0	24	120	233	3	382	510	180	399	561	299	57	0	0	0	0	0	2776
22	0	0	0	0	0	0	0	37	258	120	153	333	454	251	808	735	283	334	11	0	0	0	0	0	3776
23	0	0	0	0	0	1	292 ?	? ?	264 ?	424	396	333	636	516	220	341	587	663	161	0	0	0	0	0	4835
24	0	0	0	0	0	0	241	569 ?	878 ?	914	713	261	660	594	591	663	607	526	120	0	0	0	0	0	7338
25	0	0	0	0	0	0	259	383	91	453	406	581	262	465	827	696	441	268	73	0	0	0	0	0	5206
26	0	0	0	0	0	0	134	189 ?	358 ?	689	525	632	668	653	726	520	392	169	17	0	0	0	0	0	5672
27	0	0	0	0	0	0	38	203	371 ?	397	177	556	481	538	520	493	263	24	8	0	0	0	0	0	4068
28	0	0	0	0	0	0	0	6	29	176	435	588	430	549	495	456	86	0	6	0	0	0	0	0	3257
29	0	0	0	0	0	0	0	1	54	353	402	497	604	885	907	851	667	353	59	0	0	0	0	0	5634
30	0	0	0	0	0	0	192	630	752 ?	807	727	673	565	514	140	259	35	39	39	0	0	0	0	0	5374
31	0	0	0	0	0	0	67	343	447	468	253	322	265	126	162	469	437	402	52	0	0	0	0	0	3814
Avg	0	0	0	0	0	3	109	198	343	397	364	316	389	341	382	387	368	255	70	0	0	0	0	0	3903
S D	0	0	0	0	0	8	121	200	293	283	258	264	233	260	284	261	226	200	76	0	0	0	0	0	2133
S/A	0	0	0	0	0	2.88	1.11	1.01	0.86	0.71	0.71	0.84	0.6	0.76	0.74	0.67	0.61	0.78	1.09	0	0	0	0	0	0.55
Min	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	122
Max	0	0	0	0	0	40	422	630	878	914	932	949	944	885	907	851	848	732	304	0	0	0	0	0	9024

Daylight Data Recovery: 6% missing; 2% exceed the 15% QC threshold -- 10438 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 - August 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	9	40 ?	61 ?	65	90	103	136	118	183	206	203	79	56	39	1	0	0	0	0	1389
2	0	0	0	0	0	7	40 ?	62 ?	62	74	87	86	122	309	158	167	225	133	66	3	0	0	0	0	1602
3	0	0	0	0	0	6	56	144	362	417	494	393	604	357	494	365	237	160	66	2	0	0	0	0	4158
4	0	0	0	0	0	3	57	190	298	245	450	236	44	39	219	220	240	143	27	2	0	0	0	0	2413
5	0	0	0	0	0	2	74	188	182	289	348	426	352	400	253	217	134	99	44	2	0	0	0	0	3012
6	0	0	0	0	0	3	67	76 ?	102 ?	206	322	267	276	267	251	181	141	143	55	3	0	0	0	0	2361
7	0	0	0	0	0	4	61	157	155	153	204	335	336	297	343	239	218	131	33	3	0	0	0	0	2671
8	0	0	0	0	0	3	64	122	170	230	328	299	335	298	279	192	240	152	64	3	0	0	0	0	2779
9	0	0	0	0	0	2	78	167	269	278	331	479	516	292	429	325	86	74	58	1	0	0	0	0	3386
10	0	0	0	0	0	1	29	100	196	243	305	452	489	431	303	328	227	117	44	1	0	0	0	0	3267
11	0	0	0	0	0	4	58	168	183	354	403	261	469	381	366	322	253	133	49	1	0	0	0	0	3406
12	0	0	0	0	0	3	61	209	257	327	348	355	389	322	282	344	221	110	49	3	0	0	0	0	3280
13	0	0	0	0	0	1	17	78	165	264	315	437	235	169	321	277	192	74	12	1	0	0	0	0	2556
14	0	0	0	0	0	2	18	124	133	306	88	343	465	394	345	259	242	115	39	0	0	0	0	0	2871
15	0	0	0	0	0	2	49	99	134 ?	320	313	318	403	420	281	275	257	154	56	1	0	0	0	0	3081
16	0	0	0	0	0	1	51	148	197	269	284	287	266	292	259	226	123	85	52	1	0	0	0	0	2541
17	0	0	0	0	0	3	62	130	196	247	286	274	332	253	198	191	155	118	31	0	0	0	0	0	2476
18	0	0	0	0	0	1	5	47	58	281	142	342	451	160	238	279	236	132	36	0	0	0	0	0	2408
19	0	0	0	0	0	3	57	169	205	285	365	349	339	377	279	248	213	97	28	0	0	0	0	0	3013
20	0	0	0	0	0	1	19	26	63	175	324	123	245	287	130	275	188	87	37	1	0	0	0	0	1983
21	0	0	0	0	0	1	24	63	192	262	392	292	389	361	269	246	166	100	37	1	0	0	0	0	2794
22	0	0	0	0	0	0	19	108	149	236	279	331	332	255	270	238	222	89	29	0	0	0	0	0	2559
23	0	0	0	0	0	1	35 ?	73 ?	198 ?	260	267	360	284	299	284	234	122	65	22	0	0	0	0	0	2505
24	0	0	0	0	0	1	35	55	60	71	179	370	272	317	295	150	124	83	18	0	0	0	0	0	2029
25	0	0	0	0	0	0	40	111	205	245	322	330	460	348	152	178	188	91	24	0	0	0	0	0	2695
26	0	0	0	0	0	1	47	107 ?	163 ?	146	238	253	255	250	244	258	223	124	30	0	0	0	0	0	2339
27	0	0	0	0	0	1	43	141	209 ?	279	298	301	309	324	301	297	201	105	19	0	0	0	0	0	2827
28	0	0	0	0	0	0	21	111	231	298	304	344	359	304	235	281	204	20	26	0	0	0	0	0	2738
29	0	0	0	0	0	0	25	62	191	284	300	292	252	118	94	86	80	90	27	0	0	0	0	0	1902
30	0	0	0	0	0	0	38	84	105 ?	129	186	236	340	295	263	242	148	70	26	0	0	0	0	0	2162
31	0	0	0	0	0	0	45	122	197	256	364	424	476	421	391	288	190	101	16	0	0	0	0	0	3291
Avg	0	0	0	0	0	2	43	113	173	243	289	314	339	298	272	246	186	105	37	1	0	0	0	0	2661
S/D	0	0	0	0	0	2	19	46	70	79	97	89	120	89	82	60	52	32	15	1	0	0	0	0	563
S/A	0	0	0	0	0	0.95	0.43	0.41	0.41	0.32	0.33	0.29	0.35	0.3	0.3	0.24	0.28	0.3	0.4	1.13	0	0	0	0	0.21
Min	0	0	0	0	0	0	5	26	58	71	87	86	44	39	94	86	79	20	12	0	0	0	0	0	1389
Max	0	0	0	0	0	9	78	209	362	417	494	479	604	431	494	365	257	160	66	3	0	0	0	0	4158

Daylight Data Recovery: 6% missing; 2% exceed the 15% QC threshold -- 10438 total daylight 5-minute measurements.

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<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