

Global Solar Radiation on a Horizontal Surface
Hourly Integrated and Daily Totals
Watt-Hours per Square Meter
Bluefield State College - April 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	41	232	466	676	842	943	974	932	819	643	433	203	19	0	0	0	0	0	7223
2	0	0	0	0	0	0	43	231	445	656	821	893	962	905	796	622	438	206	20	0	0	0	0	0	7039
3	0	0	0	0	0	0	43	228	458	655	805	922	957	913	798	626	421	198	22	0	0	0	0	0	7046
4	0	0	0	0	0	0	43	224	438	638	796	897	927	879	685	400	206	128	21	0	0	0	0	0	6283
5	0	0	0	0	0	0	9	43	65	123	522	777	393	539	574	415	133	103	22	0	0	0	0	0	3716
6	0	0	0	0	0	0	12	40	97	126	224	162	148	202	256	340	371	198	24	0	0	0	0	0	2199
7	0	0	0	0	0	0	49	254	471	681	845	950	984	941	830	658	450	218	28	0	0	0	0	0	7359
8	0	0	0	0	0	0	58	252	476	675	835	933	965	928	828	572	363	214	30	0	0	0	0	0	7127
9	0	0	0	0	0	0	24	192	421	663	854	958	991	957	841	668	454	227	31	0	0	0	0	0	7279
10	0	0	0	0	0	0	65	267	491	688	848	938	971	933	822	642	445	235	29	0	0	0	0	0	7373
11	0	0	0	0	0	0	63	255	466	666	825	923	964	930	816	615	359	178	27	0	0	0	0	0	7088
12	0	0	0	0	0	0	5	29	47	91	117	135	194	251	155	163	140	140	55	0	0	0	0	0	1522
13	0	0	0	0	0	0	5	19	53	65	121	216	190	264	304	87	35	32	6	0	0	0	0	0	1397
14	0	0	0	0	0	0	18	40	95	291	395	477	981	835	753	654	456	227	32	0	0	0	0	0	5254
15	0	0	0	0	0	1	101	?	524	706	879	978	1004	961	849	676	463	236	33	0	0	0	0	0	7410
16	0	0	0	0	0	1	85	291	512	714	868	962	992	952	830	650	438	216	27	0	0	0	0	0	7537
17	0	0	0	0	0	0	25	122	223	418	392	307	518	442	316	398	230	149	42	0	0	0	0	0	3582
18	0	0	0	0	0	0	24	48	80	78	184	476	623	811	853	693	476	248	42	0	0	0	0	0	4638
19	0	0	0	0	0	1	67	290	176	217	257	317	413	439	452	360	240	94	24	0	0	0	0	0	3347
20	0	0	0	0	0	2	62	192	512	?	719	884	947	1001	930	741	580	400	158	38	0	0	0	0	7166
21	0	0	0	0	0	1	9	45	31	74	80	104	225	169	99	75	30	19	4	0	0	0	0	0	966
22	0	0	0	0	0	0	11	42	56	64	133	196	379	463	680	417	331	237	24	0	0	0	0	0	3034
23	0	0	0	0	0	1	27	145	149	149	209	85	55	54	75	88	58	33	2	0	0	0	0	0	1130
24	0	0	0	0	0	1	12	37	43	56	124	242	290	467	521	327	197	138	24	0	0	0	0	0	2476
25	0	0	0	0	0	3	56	227	?	479	?	580	802	796	650	759	365	468	416	242	44	0	0	0	5887
26	0	0	0	0	0	10	116	265	469	606	715	870	947	799	565	544	343	196	45	0	0	0	0	0	6490
27	0	0	0	0	0	0	4	13	35	40	26	42	46	40	124	89	109	80	9	0	0	0	0	0	658
28	0	0	0	0	0	2	14	40	107	54	81	60	42	79	107	70	106	34	5	0	0	0	0	0	802
29	0	0	0	0	0	3	98	339	568	779	927	1015	1032	987	868	662	492	226	57	0	0	0	0	0	8054
30	0	0	0	0	0	7	136	247	353	546	798	959	1005	949	829	567	463	235	75	1	0	0	0	0	7170
Avg	0	0	0	0	0	1	44	160	294	416	540	616	661	657	585	459	317	168	29	0	0	0	0	0	4942
S D	0	0	0	0	0	2	35	105	197	278	329	363	366	327	277	212	150	71	16	0	0	0	0	0	2527
S/A	0	0	0	0	0	1.94	0.79	0.66	0.67	0.67	0.61	0.59	0.55	0.5	0.47	0.46	0.47	0.42	0.56	2.7	0	0	0	0	0.51
Min	0	0	0	0	0	0	4	13	31	40	26	42	42	40	75	70	30	19	2	0	0	0	0	0	658
Max	0	0	0	0	0	10	136	339	568	779	927	1015	1032	987	868	693	492	248	75	1	0	0	0	0	8054

Daylight Data Recovery: 1% missing; 0% exceed the 15% QC threshold -- 16480 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 - April 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	302	793	964	1016 ?	?	1075 ?	1074	1067 ?	1021 ?	987	906	724	108	0	0	0	0	0	10039 ?
2	0	0	0	0	0	0	295	759	855	920	942	900	1005	983	961	895	860	672	95	0	0	0	0	0	10142
3	0	0	0	0	0	0	281	736	897	943	955	1025	1032	1017	985	934	845	654	99	0	0	0	0	0	10403
4	0	0	0	0	0	0	254	695	852	926	963	984	972	903	648	187	11	27	0	0	0	0	0	0	7423
5	0	0	0	0	0	0	0	0	0	0	291	551	12	171	292	270	3	59	18	0	0	0	0	0	1667
6	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	61	296	411	38	0	0	0	0	0	811
7	0	0	0	0	0	0	144	702	867	974	1003	1028	1031	1025	997	948	870	676	117	0	0	0	0	0	10382
8	0	0	0	0	0	0	325	718	863	932	964	980	986	989	957	619	459	596	103	0	0	0	0	0	9491
9	0	0	0	0	0	0	0	209	540	768	949	996	1016	1034	1007	963	875	702	132	0	0	0	0	0	9192
10	0	0	0	0	0	0	360	748	890	952	983	992	995	993	971	886	780	630	119	0	0	0	0	0	10298
11	0	0	0	0	0	0	262	638	791	880	932	964	986	985	933	765	401	252	3	0	0	0	0	0	8792
12	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	1	41	94	0	0	0	0	0	140
13	0	0	0	0	0	0	0	0	0	0	0	7	10	8	10	0	0	0	0	0	0	0	0	0	35
14	0	0	0	0	0	0	0	0	0	17	19	39	632	648	634	839	809	639	127	0	0	0	0	0	4403
15	0	0	0	0	0	0	288 ?	722 ?	864	936	993	1022	1022	1015	997	953	871	708	152	0	0	0	0	0	10545
16	0	0	0	0	0	0	447	774	884	942	970	985	995	989	935	846	737	543	57	0	0	0	0	0	10104
17	0	0	0	0	0	0	0	8	70	250	120	2	124	136	78	183	94	151	63	0	0	0	0	0	1280
18	0	0	0	0	0	0	0	0	0	0	7	156	291	658	876	941	860	689	154	0	0	0	0	0	4633
19	0	0	0	0	0	0	92	376	1	1	1	3	23	10	11	16	23	1	0	0	0	0	0	0	558
20	0	0	0	0	0	2	13	41	750 ?	861	920	906	952	895	643	456	393	141	15	0	0	0	0	0	6986
21	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	3
22	0	0	0	0	0	0	0	0	0	0	1	2	39	67	467	311	207	489	2	0	0	0	0	0	1585
23	0	0	0	0	0	0	0	1	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	4
24	0	0	0	0	0	0	0	0	0	0	1	3	30	144	287	146	85	102	1	0	0	0	0	0	799
25	0	0	0	0	0	0	44	371 ?	431 ?	429	688	573	319	410	108	324	502	378	90	0	0	0	0	0	4666
26	0	0	0	0	0	38	209	361	471	377	345	508	620	380	77	306	176	123	1	0	0	0	0	0	3992
27	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
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	2
29	0	0	0	0	0	0	286	744	893	984	1013	1026	1019	1017	971	761	848	519	206	0	0	0	0	0	10286
30	0	0	0	0	0	18	423	153	82	329	512	794	919	844	708	456	606	384	148	0	0	0	0	0	6379
Avg	0	0	0	0	0	2	134	318	399	448	468	517	537	546	519	469	417	344	65	0	0	0	0	0	5168
S D	0	0	0	0	0	7	153	333	405	435	447	459	461	441	421	379	361	280	62	0	0	0	0	0	4192
S/A	0	0	0	0	0	3.83	1.14	1.04	1.02	0.97	0.95	0.89	0.86	0.81	0.81	0.81	0.87	0.81	0.95	0	0	0	0	0	0.81
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	1
Max	0	0	0	0	0	38	447	793	964	1016	1013	1075	1074	1067	1021	987	906	724	206	0	0	0	0	0	10545

Daylight Data Recovery: 1% missing; 1% exceed the 15% QC threshold -- 16480 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 - April 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	19	46	57	64	70	75	78	76	72	66	56	40	10	0	0	0	0	0	728
2	0	0	0	0	0	0	21	51	74	100	124	146	112	102	94	90	78	53	12	0	0	0	0	0	1058
3	0	0	0	0	0	0	23	50	67	82	99	81	84	84	80	71	62	46	12	0	0	0	0	0	842
4	0	0	0	0	0	0	24	52	61	71	78	83	95	131	191	276	185	117	18	0	0	0	0	0	1384
5	0	0	0	0	0	0	8	38	59	113	283	311	351	359	319	230	119	82	19	0	0	0	0	0	2291
6	0	0	0	0	0	0	10	35	86	113	200	145	131	181	228	292	237	99	19	0	0	0	0	0	1777
7	0	0	0	0	0	0	31	67	72	74	86	95	101	94	92	86	73	54	16	0	0	0	0	0	940
8	0	0	0	0	0	0	29	61	79	92	104	113	116	106	117	177	162	68	19	0	0	0	0	0	1242
9	0	0	0	0	0	0	21	116	169	173	134	125	116	99	90	82	71	54	17	0	0	0	0	0	1270
10	0	0	0	0	0	0	31	62	77	87	97	104	109	102	94	94	98	78	16	0	0	0	0	0	1050
11	0	0	0	0	0	0	37	76	93	104	105	106	104	100	108	136	168	109	24	0	0	0	0	0	1271
12	0	0	0	0	0	0	5	25	40	79	102	120	176	219	137	144	122	123	45	0	0	0	0	0	1337
13	0	0	0	0	0	0	5	17	46	56	106	191	164	240	273	78	30	28	5	0	0	0	0	0	1237
14	0	0	0	0	0	0	16	34	84	257	354	416	417	261	260	135	95	64	18	0	0	0	0	0	2412
15	0	0	0	0	0	1	41 ?	95 ?	89	95	102	101	102	98	90	82	70	54	17	0	0	0	0	0	1040
16	0	0	0	0	0	1	38	61	78	93	104	110	109	108	112	116	102	73	19	0	0	0	0	0	1125
17	0	0	0	0	0	0	22	107	177	235	276	270	378	310	240	262	178	105	24	0	0	0	0	0	2583
18	0	0	0	0	0	0	21	43	71	69	166	344	355	236	175	97	80	64	23	0	0	0	0	0	1743
19	0	0	0	0	0	1	49	184	154	191	226	281	354	390	397	319	215	83	21	0	0	0	0	0	2866
20	0	0	0	0	0	2	57	167	136 ?	133	144	146	144	150	224	281	211	107	34	0	0	0	0	0	1938
21	0	0	0	0	0	1	8	39	28	64	69	91	196	149	87	66	26	17	4	0	0	0	0	0	845
22	0	0	0	0	0	0	10	37	48	56	117	170	314	387	308	205	237	101	21	0	0	0	0	0	2010
23	0	0	0	0	0	0	24	126	134	129	185	75	48	47	66	77	50	29	2	0	0	0	0	0	991
24	0	0	0	0	0	0	10	32	37	49	108	214	255	332	286	220	146	99	21	0	0	0	0	0	1809
25	0	0	0	0	0	2	41	123 ?	245 ?	273	237	277	351	381	264	260	169	128	31	0	0	0	0	0	2784
26	0	0	0	0	0	8	86	157	225	333	416	383	340	426	490	325	255	167	40	0	0	0	0	0	3651
27	0	0	0	0	0	0	4	11	30	35	23	36	40	35	109	81	97	70	8	0	0	0	0	0	578
28	0	0	0	0	0	2	12	35	94	47	71	52	36	68	92	60	91	30	5	0	0	0	0	0	695
29	0	0	0	0	0	2	45	77	83	82	84	85	89	86	93	156	82	85	27	0	0	0	0	0	1076
30	0	0	0	0	0	6	65	197	294	343	359	234	151	187	254	252	171	122	53	1	0	0	0	0	2688
Avg	0	0	0	0	0	1	27	74	100	123	154	166	181	185	181	160	125	78	20	0	0	0	0	0	1575
S D	0	0	0	0	0	2	19	50	64	83	96	101	116	117	107	87	64	35	12	0	0	0	0	0	762
S/A	0	0	0	0	0	2.01	0.71	0.68	0.65	0.67	0.62	0.61	0.64	0.63	0.59	0.54	0.51	0.44	0.58	2.87	0	0	0	0	0.48
Min	0	0	0	0	0	0	4	11	28	35	23	36	36	35	66	60	26	17	2	0	0	0	0	0	578
Max	0	0	0	0	0	8	86	197	294	343	416	416	417	426	490	325	255	167	53	1	0	0	0	0	3651

Daylight Data Recovery: 1% missing; 0% exceed the 15% QC threshold -- 16480 total daylight 5-minute measurements.

Note: Fractional values that do not appear in the hour columns are included in the calculation for daily values.

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<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