

Global Solar Radiation on a Horizontal Surface
Hourly Integrated and Daily Totals
Watt-Hours per Square Meter
Bluefield State College - May 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	10	140	348	563	757	906	992	1017	977	868	699	495	280	59	0	0	0	0	0	8112
2	0	0	0	0	0	10	142	361	578	771	919	999	1022	974	867	707	505	285	63	1	0	0	0	0	8204
3	0	0	0	0	0	11	148	363	584	750	897	1010	1025	981	873	710	504	281	62	0	0	0	0	0	8199
4	0	0	0	0	0	10	137	344	547	734	882	958	987	942	837	676	361	186	45	2	0	0	0	0	7648
5	0	0	0	0	0	7	91	141	265	234	361	189	188	202	345	537	452	228	64	1	0	0	0	0	3306
6	0	0	0	0	0	0	17	152	260	392	436	492	755	701	680	390	333	220	77	3	0	0	0	0	4907
7	0	0	0	0	0	9	130	223	459	463	617	678	795	785	676	405	10	70	25	0	0	0	0	0	5346
8	0	0	0	0	0	14	122 ?	420 ?	574	655	458	490	334	565	349	230	109	137	78	2	0	0	0	0	4538
9	0	0	0	0	0	18	157	372	568	775	756	505	461	500	469	575	352	202	74	2	0	0	0	0	5787
10	0	0	0	0	0	20	107 ?	446 ?	571 ?	759	898	984	1001	955	845	688	486	284	72	1	0	0	0	0	8119
11	0	0	0	0	0	17	161	369	572	766	904	977	994	944	829	689	489	281	73	1	0	0	0	0	8067
12	0	0	0	0	0	16	149	319	462	675	861	770	359	526	567	391	175	127	52	1	0	0	0	0	5450
13	0	0	0	0	0	19	112	246	345	310	195	189	262	825	314	185	93	50	29	1	0	0	0	0	3175
14	0	0	0	0	0	2	20	71	89	121	235	285	103	144	140	92	78	69	30	1	0	0	0	0	1480
15	0	0	0	0	0	6	75	168	365	736	916	1000	1023	980	871	712	510	290	86	1	0	0	0	0	7739
16	0	0	0	0	0	23	178	384	424	590	886	976	975	926	851	696	503	294	81	3	0	0	0	0	7791
17	0	0	0	0	0	24	165	317	479	618	890	729	617	649	567	577	492	197	78	3	0	0	0	0	6403
18	0	0	0	0	0	8	119	207	329	466	545	676	209	782	837	488	228	35 ?	3	1	0	0	0	0	4934
19	0	0	0	0	0	5	44	219	308	690	635	991	845	908	604	427	192	185	102	4	0	0	0	0	6157
20	0	0	0	0	0	31	96 ?	437 ?	614	801	926	1022	1035	993	883	723	533	323	94	3	0	0	0	0	8513
21	0	0	0	0	0	28	109 ?	398	584	768	922	986	1003	955	846	711	495	270	91	5	0	0	0	0	8170
22	0	0	0	0	0	30	134	223	363	89	328	697	656	697	448	443	330	132	41	3	0	0	0	0	4615
23	0	0	0	0	0	6	57	100	168	295	689	823	958	974	834	634	389	218	61	3	0	0	0	0	6209
24	0	0	0	0	0	12	31	83	445	673	683	684	843	729	472	670	299	231	102	3	0	0	0	0	5960
25	0	0	0	0	0	5	25	59	151	288	605	315	952	737	747	731	382	287	84	6	0	0	0	0	5373
26	0	0	0	0	0	15	121	161	216	506	664	719	990	789	612	597	431	243	57	4	0	0	0	0	6125
27	0	0	0	0	0	41	137 ?	428 ?	570	774	950	1028	1044	996	892	734	540	330	108	6	0	0	0	0	8577
28	0	0	0	0	0	45	200	402	603	784	919	1000	1031	986	833	720	531	301	82	7	0	0	0	0	8443
29	0	0	0	0	0	45	172	393	604	798	843	987	813	481	629	607	385	321	111	9	0	0	0	0	7197
30	0	0	0	0	0	38	194	385	588	745	877	956	923	857	688	580	362	272	97	8	0	0	0	0	7569
31	0	0	0	0	0	23	114	283	478	693	864	979	864	940	667	701	541	306	87	4	0	0	0	0	7545
Avg	0	0	0	0	0	18	116	285	443	596	725	777	777	787	675	572	374	224	70	3	0	0	0	0	6440
S D	0	0	0	0	0	12	50	119	153	213	224	264	296	225	202	171	153	84	25	2	0	0	0	0	1789
S/A	0	0	0	0	0	0.69	0.43	0.42	0.35	0.36	0.31	0.34	0.38	0.29	0.3	0.3	0.41	0.38	0.36	0.79	0	0	0	0	0.28
Min	0	0	0	0	0	0	17	59	89	89	195	189	103	144	140	92	10	35	3	0	0	0	0	0	1480
Max	0	0	0	0	0	45	200	446	614	801	950	1028	1044	996	892	734	541	330	111	9	0	0	0	0	8577

Daylight Data Recovery: 0% missing; 1% exceed the 15% QC threshold -- 5264 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: 9.02 uV/Wm-2
Serial Number: 25821F3
Calibration Date: 5/21/98

**Direct Normal Solar Radiation
Hourly Integrated and Daily Totals
Watt-Hours per Square Meter
Bluefield State College - May 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	74	551	766	881	938	976	994	997	989	970	916	846	731	203	0	0	0	0	0	10831
2	0	0	0	0	0	82	569	804	910	959	985	994	997	987	970	937	869	732	214	0	0	0	0	0	11009
3	0	0	0	0	0	70	555	790	891	838	908	971	982	977	966	928	847	690	202	0	0	0	0	0	10617
4	0	0	0	0	0	58	477	728	828	881	907	887	893	903	883	812	435	166	32	0	0	0	0	0	8890
5	0	0	0	0	0	1	30	12	20	16	17	0	0	0	42	274	364	170	36	0	0	0	0	0	983
6	0	0	0	0	0	1	1	2	39	92	41	92	261	258	441	67	166	142	60	0	0	0	0	0	1664
7	0	0	0	0	0	12	150	193	406	105	214	157	494	549	481	217	0	27	1	0	0	0	0	0	3005
8	0	0	0	0	0	51	442	? 770	? 828	689	197	75	21	276	77	32	5	150	209	0	0	0	0	0	3822
9	0	0	0	0	0	72	480	692	787	820	554	134	14	8	34	399	291	235	164	0	0	0	0	0	4684
10	0	0	0	0	0	33	331	? 755	? 838	884	914	930	928	919	888	844	763	639	210	0	0	0	0	0	9877
11	0	0	0	0	0	79	502	717	813	886	915	905	902	869	819	815	741	591	181	0	0	0	0	0	9735
12	0	0	0	0	0	58	356	239	322	551	676	521	64	228	86	173	3	137	68	0	0	0	0	0	3483
13	0	0	0	0	0	2	64	77	81	10	1	1	6	356	23	2	0	0	1	0	0	0	0	0	624
14	0	0	0	0	0	0	0	0	0	1	1	3	0	1	1	0	0	0	0	0	0	0	0	0	8
15	0	0	0	0	0	0	0	1	215	843	971	985	986	979	956	922	836	669	290	0	0	0	0	0	8653
16	0	0	0	0	0	129	599	768	189	157	755	894	851	835	865	849	797	664	231	0	0	0	0	0	8582
17	0	0	0	0	0	95	438	401	199	330	801	492	265	333	285	525	572	282	179	0	0	0	0	0	5197
18	0	0	0	0	0	1	173	149	34	60	162	175	2	404	664	295	21	0	0	0	0	0	0	0	2141
19	0	0	0	0	0	0	0	57	218	488	339	669	516	636	371	316	110	270	255	0	0	0	0	0	4247
20	0	0	0	0	0	68	315	? 845	? 915	968	934	991	972	962	908	848	781	680	258	0	0	0	0	0	10445
21	0	0	0	0	0	107	394	? 696	? 773	831	890	852	815	816	799	797	662	453	200	0	0	0	0	0	9086
22	0	0	0	0	0	34	117	42	162	0	17	219	157	280	115	211	266	45	0	0	0	0	0	0	1665
23	0	0	0	0	0	0	1	5	1	10	276	468	643	703	622	487	306	148	35	0	0	0	0	0	3708
24	0	0	0	0	0	3	1	9	315	501	363	302	522	402	92	577	98	265	191	0	0	0	0	0	3640
25	0	0	0	0	0	0	0	0	1	17	165	68	677	476	522	701	339	354	71	0	0	0	0	0	3390
26	0	0	0	0	0	1	27	3	8	186	368	420	753	545	403	515	402	204	0	0	0	0	0	0	3833
27	0	0	0	0	0	128	462	? 753	? 706	822	965	972	962	952	933	893	827	701	303	0	0	0	0	0	10379
28	0	0	0	0	0	192	576	764	847	899	934	946	955	896	803	830	780	516	62	0	0	0	0	0	10000
29	0	0	0	0	0	177	412	712	805	869	790	889	619	275	478	518	379	558	232	0	0	0	0	0	7714
30	0	0	0	0	0	172	534	708	802	751	742	666	574	530	381	333	195	274	82	0	0	0	0	0	6743
31	0	0	0	0	0	10	18	208	380	516	662	677	430	727	423	731	724	556	183	0	0	0	0	0	6245
Avg	0	0	0	0	0	55	277	409	459	514	563	560	557	583	526	541	433	357	134	0	0	0	0	0	5964
S D	0	0	0	0	0	57	226	343	354	369	360	371	370	321	342	312	317	252	99	0	0	0	0	0	3497
S/A	0	0	0	0	0	1.04	0.82	0.84	0.77	0.72	0.64	0.66	0.66	0.55	0.65	0.58	0.73	0.71	0.74	0	0	0	0	0	0.59
Min	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	8
Max	0	0	0	0	0	192	599	845	915	968	985	994	997	989	970	937	869	732	303	0	0	0	0	0	11009

Daylight Data Recovery: 0% missing; 1% exceed the 15% QC threshold -- 5264 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: 8.48 uV/Wm-2
Serial Number: 17664E6
Calibration Date: 5/21/98

Diffuse Solar Radiation on a Horizontal Surface (Shadow Band PSP)
Hourly Integrated and Daily Totals
Watt-Hours per Square Meter
Bluefield State College - May 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	7	51	72	83	93	97	97	97	100	95	89	80	62	28	0	0	0	0	0	1051
2	0	0	0	0	0	7	52	70	78	88	97	100	99	96	90	83	74	63	29	1	0	0	0	0	1028
3	0	0	0	0	0	9	56	74	90	146	133	127	111	106	96	89	82	70	30	0	0	0	0	0	1219
4	0	0	0	0	0	8	57	79	89	103	120	153	157	133	126	131	125	125	37	1	0	0	0	0	1443
5	0	0	0	0	0	6	80	127	232	210	324	167	167	179	288	348	259	168	57	1	0	0	0	0	2613
6	0	0	0	0	0	0	16	131	231	293	368	370	489	448	307	331	251	182	65	3	0	0	0	0	3487
7	0	0	0	0	0	9	105	137	217	366	416	522	310	288	270	240	9	61	21	0	0	0	0	0	2970
8	0	0	0	0	0	10	60 ?	82 ?	96	147	284	407	303	298	272	193	96	90	43	2	0	0	0	0	2383
9	0	0	0	0	0	14	64	89	119	174	278	366	404	435	403	299	189	128	45	2	0	0	0	0	3009
10	0	0	0	0	0	15	58 ?	94 ?	98	111	117	120	123	120	118	107	96	79	36	1	0	0	0	0	1293
11	0	0	0	0	0	14	66	90	105	113	119	138	144	157	162	133	113	93	42	1	0	0	0	0	1491
12	0	0	0	0	0	15	75	216	248	251	273	288	272	299	503	263	159	85	41	1	0	0	0	0	2988
13	0	0	0	0	0	18	95	219	300	278	170	165	239	496	271	163	82	44	28	1	0	0	0	0	2568
14	0	0	0	0	0	2	18	61	77	105	204	251	92	127	123	80	67	59	27	1	0	0	0	0	1295
15	0	0	0	0	0	6	67	149	189	86	82	84	86	84	81	75	73	67	35	1	0	0	0	0	1166
16	0	0	0	0	0	16	60	78	307	454	214	138	150	153	133	105	86	73	39	2	0	0	0	0	2009
17	0	0	0	0	0	19	80	149	350	357	198	268	343	330	312	222	186	108	46	2	0	0	0	0	2971
18	0	0	0	0	0	9	77	148	300	401	382	502	188	400	290	275	211	30 ?	3	1	0	0	0	0	3217
19	0	0	0	0	0	4	38	188	212	314	344	353	343	310	288	203	131	101	53	3	0	0	0	0	2884
20	0	0	0	0	0	21	52 ?	77 ?	78	80	114	95	106	109	125	131	117	90	43	3	0	0	0	0	1244
21	0	0	0	0	0	21	59 ?	110	124	137	144	178	213	198	177	151	141	121	53	4	0	0	0	0	1831
22	0	0	0	0	0	30	113	196	274	78	292	479	511	436	335	296	197	108	36	2	0	0	0	0	3382
23	0	0	0	0	0	5	49	88	146	263	444	384	346	330	315	295	210	173	50	2	0	0	0	0	3100
24	0	0	0	0	0	11	27	74	255	289	358	390	328	344	377	248	239	136	62	3	0	0	0	0	3139
25	0	0	0	0	0	4	22	51	131	244	458	236	295	296	301	237	191	151	68	5	0	0	0	0	2691
26	0	0	0	0	0	14	103	140	195	366	331	319	268	276	266	228	205	166	50	4	0	0	0	0	2929
27	0	0	0	0	0	26	62 ?	96 ?	146	141	103	107	115	109	104	98	89	80	46	5	0	0	0	0	1325
28	0	0	0	0	0	28	68	82	93	100	99	103	107	150	145	126	105	112	67	6	0	0	0	0	1391
29	0	0	0	0	0	30	64	89	116	135	133	138	198	213	230	230	178	121	63	8	0	0	0	0	1947
30	0	0	0	0	0	27	72	91	109	168	214	310	356	351	354	336	252	175	80	7	0	0	0	0	2901
31	0	0	0	0	0	21	101	191	238	289	270	331	440	249	274	176	146	107	50	3	0	0	0	0	2885
Avg	0	0	0	0	0	14	63	114	172	206	232	248	239	246	233	193	143	104	44	3	0	0	0	0	2253
S D	0	0	0	0	0	8	24	47	82	108	115	133	123	121	108	84	64	40	16	2	0	0	0	0	817
S/A	0	0	0	0	0	0.61	0.38	0.41	0.48	0.53	0.5	0.54	0.52	0.49	0.46	0.44	0.45	0.39	0.36	0.79	0	0	0	0	0.36
Min	0	0	0	0	0	0	16	51	77	78	82	84	86	84	81	75	9	30	3	0	0	0	0	0	1028
Max	0	0	0	0	0	30	113	219	350	454	458	522	511	496	503	348	259	182	80	8	0	0	0	0	3487

Daylight Data Recovery: 0% missing; 1% exceed the 15% QC threshold -- 5264 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: 7.01 uV/Wm-2
Serial Number: 17860F3
Calibration Date: 5/21/98