

Global Solar Radiation on a Horizontal Surface
Hourly Integrated and Daily Totals
Watt-Hours per Square Meter
Bluefield State College - December 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	14	154 ?	450 ?	470	513	525	473	367	215	59	0	0	0	0	0	0	0	3241
2	0	0	0	0	0	0	0	15	151	309	434	508	521	476	354	216	46	0	0	0	0	0	0	0	3030
3	0	0	0	0	0	0	0	12	106	271	412	468	494	260	200	198	37	0	0	0	0	0	0	0	2460
4	0	0	0	0	0	0	0	6	46	101	153	298	124	195	103	93	22	0	0	0	0	0	0	0	1140
5	0	0	0	0	0	0	0	10	146	311	417	432	336	365	347	139	31	0	0	0	0	0	0	0	2535
6	0	0	0	0	0	0	0	7	29	36	19	55	46	44	20	28	9	0	0	0	0	0	0	0	293
7	0	0	0	0	0	0	0	8	83	235	437	499	459	429	319	173	48	0	0	0	0	0	0	0	2689
8	0	0	0	0	0	0	0	11	147 ?	291	361	502 ?	472	411	276	150	50	0	0	0	0	0	0	0	2672
9	0	0	0	0	0	0	0	8	95	164	91	263	185	139	87	97	27	0	0	0	0	0	0	0	1157
10	0	0	0	0	0	0	0	0	12	32	217	381	134	55	42	25	4	0	0	0	0	0	0	0	903
11	0	0	0	0	0	0	0	8		?	?	470 ?	486	511	465	357	207	61	0	0	0	0	0	0	2564
12	0	0	0	0	0	0	0	6	63	152	299	335	375	252	269	216	56	0	0	0	0	0	0	0	2024
13	0	0	0	0	0	0	0	0	21	33	56	71	117	64	63	100	22	1	0	0	0	0	0	0	549
14	0	0	0	0	0	0	0	3	50	55	52	170	327	240	66	49	14	0	0	0	0	0	0	0	1027
15	0	0	0	0	0	0	0	3	187 ?	282 ?	406	480	508	465	356	208	59	0	0	0	0	0	0	0	2955
16	0	0	0	0	0	0	0	5	127	261	417	497	519	474	268	157	58	0	0	0	0	0	0	0	2784
17	0	0	0	0	0	0	0	10	81	273	405	483	504	466	358	151	36	0	0	0	0	0	0	0	2766
18	0	0	0	0	0	0	0	4	107	264	393	471	480	435	293	161	39	0	0	0	0	0	0	0	2647
19	0	0	0	0	0	0	0	3	83	317	459	528	445	446	391	241	42	0	0	0	0	0	0	0	2953
20	0	0	0	0	0	0	0	2	20	88	174	247	167	63	134	95	33	0	0	0	0	0	0	0	1022
21	0	0	0	0	0	0	0	2	20	53	53	35	39	29	20	17	8	0	0	0	0	0	0	0	276
22	0	0	0	0	0	0	0	1	17	72	147	199	241 ?	405 ?	391 ?	203 ?	23	0	0	0	0	0	0	0	1699 ?
23	0	0	0	0	0	0	0	3	67	57	169	207	396	380	164	30	8	0	0	0	0	0	0	0	1482
24	0	0	0	0	0	0	0	3	17	79	100	136	124	123	120	69	24	0	0	0	0	0	0	0	797
25	0	0	0	0	0	0	0	3	57	158	413	495	518	474	376	228	71	0	0	0	0	0	0	0	2795
26	0	0	0	0	0	0	0	4	106	269	404	485	511	405	201	220	39	1	0	0	0	0	0	0	2645
27	0	0	0	0	0	0	0	2	106	286	408	366	250	247	224	91	24	1	0	0	0	0	0	0	2005
28	0	0	0	0	0	0	0	1	22	41	114	196	221	242	103	48	20	1	0	0	0	0	0	0	1010
29	0	0	0	0	0	0	0	1	46	108	198	300	227	462	360	225	75	1	0	0	0	0	0	0	2002
30	0	0	0	0	0	0	0	3	102	156	287	414	461	388	355	260	65	1	0	0	0	0	0	0	2490
31	0	0	0	0	0	0	0	4	74	104	228	463	501	471	376	231	77	0	0	0	0	0	0	0	2531
Avg	0	0	0	0	0	0	0	5	78	177	279	354	346	317	237	147	38	0	0	0	0	0	0	0	1972
S D	0	0	0	0	0	0	0	4	48	113	150	153	164	156	127	75	21	0	0	0	0	0	0	0	892
S/A	0	0	0	0	0	0	0	0.74	0.62	0.64	0.54	0.43	0.47	0.49	0.53	0.51	0.54	1.05	0	0	0	0	0	0	0.45
Min	0	0	0	0	0	0	0	0	12	32	19	35	39	29	20	17	4	0	0	0	0	0	0	0	276
Max	0	0	0	0	0	0	0	15	187	450	470	528	525	476	391	260	77	1	0	0	0	0	0	0	3241

Daylight Data Recovery: 0% missing; 3% exceed the 15% QC threshold -- 3596 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:	5/21/1998

**Direct Normal Solar Radiation
Hourly Integrated and Daily Totals
Watt-Hours per Square Meter
Bluefield State College - December 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	26	541 ?	899 ?	938	967	968	945	897	788	480	7	0	0	0	0	0	0	7456	
2	0	0	0	0	0	0	0	79	710	876	935	962	964	944	808	707	257	2	0	0	0	0	0	0	7244	
3	0	0	0	0	0	0	0	14	224	368	823	814	809	156	180	484	60	0	0	0	0	0	0	0	3933	
4	0	0	0	0	0	0	0	0	0	0	1	116	1	18	10	8	17	1	0	0	0	0	0	0	172	
5	0	0	0	0	0	0	0	56	715	814	817	511	267	495	664	142	2	0	0	0	0	0	0	0	4483	
6	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	
7	0	0	0	0	0	0	0	0	2	210	950	961	702	715	538	445	285	2	0	0	0	0	0	0	4809	
8	0	0	0	0	0	0	0	10	428	568	499	869	731	544	308	330	184	0	0	0	0	0	0	0	4472	
9	0	0	0	0	0	0	0	17	265	177	1	77	4	3	0	51	43	0	0	0	0	0	0	0	639	
10	0	0	0	0	0	0	0	0	0	1	239	575	67	0	0	0	0	0	0	0	0	0	0	0	882	
11	0	0	0	0	0	0	0	3	530 ?	860	942	960	994	979	923	822	483	5	0	0	0	0	0	0	7501	
12	0	0	0	0	0	0	0	0	12	66	364	231	266	66	449	622	461	1	0	0	0	0	0	0	2537	
13	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	31	10	1	0	0	0	0	0	0	45	
14	0	0	0	0	0	0	0	0	2	5	0	1	165	33	0	0	0	0	0	0	0	0	0	0	206	
15	0	0	0	0	0	0	0	0	559 ?	852 ?	947	972	976	951	862	737	398	4	0	0	0	0	0	0	7258	
16	0	0	0	0	0	0	0	0	517	726	942	990	997	979	421	357	306	9	0	0	0	0	0	0	6245	
17	0	0	0	0	0	0	0	0	228	814	909	942	957	955	861	331	102	0	0	0	0	0	0	0	6100	
18	0	0	0	0	0	0	0	0	419	822	904	938	903	833	589	432	111	0	0	0	0	0	0	0	5951	
19	0	0	0	0	0	0	0	0	314	700	846	866	660	740	813	653	129	0	0	0	0	0	0	0	5722	
20	0	0	0	0	0	0	0	0	0	0	2	6	1	0	0	3	48	0	0	0	0	0	0	0	62	
21	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	
22	0	0	0	0	0	0	0	0	0	0	1	77	337 ?	669	864 ?	801 ?	488	8	0	0	0	0	0	0	0	3243
23	0	0	0	0	0	0	0	0	162	1	7	9	531	469	130	0	0	0	0	0	0	0	0	0	1309	
24	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	
25	0	0	0	0	0	0	0	0	0	17	712	974	991	978	929	825	541	26	0	0	0	0	0	0	5994	
26	0	0	0	0	0	0	0	0	539	831	919	950	954	632	348	664	32	0	0	0	0	0	0	0	5869	
27	0	0	0	0	0	0	0	0	293	520	729	308	3	5	9	0	0	0	0	0	0	0	0	0	1866	
28	0	0	0	0	0	0	0	0	0	0	0	1	5	12	0	0	0	0	0	0	0	0	0	0	17	
29	0	0	0	0	0	0	0	0	0	0	14	118	7	712	856	775	529	34	0	0	0	0	0	0	3045	
30	0	0	0	0	0	0	0	0	531	271	317	588	566	486	760	691	148	0	0	0	0	0	0	0	4358	
31	0	0	0	0	0	0	0	0	125	14	281	867	937	954	918	819	554	33	0	0	0	0	0	0	5502	
Avg	0	0	0	0	0	0	0	7	230	336	453	505	476	460	424	372	183	4	0	0	0	0	0	0	3449	
S D	0	0	0	0	0	0	0	17	245	365	409	417	413	399	375	330	202	9	0	0	0	0	0	0	2686	
S/A	0	0	0	0	0	0	0	2.59	1.07	1.09	0.9	0.83	0.87	0.87	0.89	0.89	1.1	2.14	0	0	0	0	0	0	0.78	
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	79	715	899	950	990	997	979	929	825	554	34	0	0	0	0	0	0	7501	

Daylight Data Recovery: 0% missing; 2% exceed the 15% QC threshold -- 3596 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: 5/21/1998

Diffuse Solar Radiation on a Horizontal Surface (Shadow Band PSP)
Hourly Integrated and Daily Totals
Watt-Hours per Square Meter
Bluefield State College - December 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	8	36 ?	49 ?	47	50	53	49	42	32	14	0	0	0	0	0	0	0	380
2	0	0	0	0	0	0	0	7	27	34	42	49	51	53	50	48	19	0	0	0	0	0	0	0	380
3	0	0	0	0	0	0	0	10	59	145	60	74	94	167	122	86	28	0	0	0	0	0	0	0	846
4	0	0	0	0	0	0	0	6	45	98	148	234	119	179	96	88	21	0	0	0	0	0	0	0	1033
5	0	0	0	0	0	0	0	6	28	64	77	179	202	129	101	99	29	0	0	0	0	0	0	0	915
6	0	0	0	0	0	0	0	7	27	34	18	53	44	42	19	27	8	0	0	0	0	0	0	0	280
7	0	0	0	0	0	0	0	7	82	157	51	50	109	107	113	67	26	0	0	0	0	0	0	0	769
8	0	0	0	0	0	0	0	9	84	106	131	79	108	156	153	67	29	0	0	0	0	0	0	0	923
9	0	0	0	0	0	0	0	6	56	112	87	219	179	134	84	84	22	0	0	0	0	0	0	0	983
10	0	0	0	0	0	0	0	0	12	31	114	108	98	53	40	24	4	0	0	0	0	0	0	0	484
11	0	0	0	0	0	0	0	5	38 ?	50	49	45	44	39	32	23	18	0	0	0	0	0	0	0	344
12	0	0	0	0	0	0	0	6	60	122	136	206	230	214	100	77	15	0	0	0	0	0	0	0	1167
13	0	0	0	0	0	0	0	0	20	32	54	68	114	62	59	89	20	1	0	0	0	0	0	0	519
14	0	0	0	0	0	0	0	3	49	52	50	163	240	219	64	47	13	0	0	0	0	0	0	0	900
15	0	0	0	0	0	0	0	3	31 ?	38	39	44	49	50	51	40	21	0	0	0	0	0	0	0	366
16	0	0	0	0	0	0	0	5	51	49	45	49	52	48	103	78	30	0	0	0	0	0	0	0	510
17	0	0	0	0	0	0	0	10	36	42	47	56	56	51	49	65	22	0	0	0	0	0	0	0	432
18	0	0	0	0	0	0	0	4	44	36	39	47	54	65	74	53	23	0	0	0	0	0	0	0	440
19	0	0	0	0	0	0	0	2	32	123	132	138	119	117	105	93	25	0	0	0	0	0	0	0	887
20	0	0	0	0	0	0	0	2	19	85	165	238	162	60	130	91	30	0	0	0	0	0	0	0	982
21	0	0	0	0	0	0	0	2	19	51	51	34	37	28	19	16	7	0	0	0	0	0	0	0	264
22	0	0	0	0	0	0	0	1	16	70	143	169	129 ?	161	73	33	17	0	0	0	0	0	0	0	811
23	0	0	0	0	0	0	0	3	35	54	159	196	144	152	109	29	8	0	0	0	0	0	0	0	889
24	0	0	0	0	0	0	0	3	16	77	96	133	120	117	108	62	20	0	0	0	0	0	0	0	750
25	0	0	0	0	0	0	0	3	54	145	124	58	56	51	46	35	18	0	0	0	0	0	0	0	591
26	0	0	0	0	0	0	0	4	29	42	50	56	62	122	83	58	33	1	0	0	0	0	0	0	539
27	0	0	0	0	0	0	0	2	57	128	111	198	240	234	210	87	22	1	0	0	0	0	0	0	1289
28	0	0	0	0	0	0	0	1	22	39	110	189	213	232	99	46	19	1	0	0	0	0	0	0	970
29	0	0	0	0	0	0	0	1	44	104	186	234	216	143	51	36	19	0	0	0	0	0	0	0	1036
30	0	0	0	0	0	0	0	3	26	75	152	133	179	157	73	91	40	1	0	0	0	0	0	0	930
31	0	0	0	0	0	0	0	4	58	98	107	68	57	47	39	30	16	0	0	0	0	0	0	0	525
Avg	0	0	0	0	0	0	0	4	39	76	91	117	117	111	81	58	21	0	0	0	0	0	0	0	714
S D	0	0	0	0	0	0	0	3	18	38	46	70	66	63	41	25	8	0	0	0	0	0	0	0	281
S/A	0	0	0	0	0	0	0	0.66	0.47	0.51	0.51	0.6	0.56	0.57	0.51	0.44	0.38	1.19	0	0	0	0	0	0	0.39
Min	0	0	0	0	0	0	0	0	12	31	18	34	37	28	19	16	4	0	0	0	0	0	0	0	264
Max	0	0	0	0	0	0	0	10	84	157	186	238	240	234	210	99	40	1	0	0	0	0	0	0	1289

Daylight Data Recovery: 0% missing; 1% exceed the 15% QC threshold -- 3596 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: 5/21/1998