

ALLENTOWN/BETHLEHEM PA

Latitude = 40.65 N

WMO No. 725170

Longitude = 75.43 W

Elevation = 384 feet

Period of Record = 1973 to 1996

Average Pressure = 29.60 inches Hg

Design Criteria Data

	Design Value	Mean Coincident (Average) Values			
		Wet Bulb Temperature (°F)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Dry Bulb Temperature (T)	(°F)				
Median of Extreme Highs	95	76	106	12.7	W
0.4% Occurrence	91	74	99	10.6	WSW
1.0% Occurrence	88	72	96	10.6	WSW
2.0% Occurrence	85	71	92	10.0	WSW
Mean Daily Range	18	-	-	-	-
97.5% Occurrence	16	14	8	10.3	W
99.0% Occurrence	10	9	6	10.3	W
99.6% Occurrence	6	5	5	9.8	W
Median of Extreme Lows	-2	-3	3	10.1	W
	Design Value	Mean Coincident (Average) Values			
		Dry Bulb Temperature (°F)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Wet Bulb Temperature (T_{wb})	(°F)				
Median of Extreme Highs	78	88	127	9.8	WSW
0.4% Occurrence	76	86	119	9.4	WSW
1.0% Occurrence	75	84	115	9.1	WSW
2.0% Occurrence	73	81	109	8.5	WSW
	Design Value	Mean Coincident (Average) Values			
		Dry Bulb Temperature (°F)	Vapor Pressure (in. Hg)	Wind Speed (mph)	Prevailing Direction (NSEW)
Humidity Ratio (HR)	(gr/lb)				
Median of Extreme Highs	137	83	0.90	7.1	SW
0.4% Occurrence	125	81	0.82	8.5	WSW
1.0% Occurrence	120	79	0.79	7.4	WSW
2.0% Occurrence	114	78	0.76	7.5	SW
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		17	572	255	1177

Other Site Data

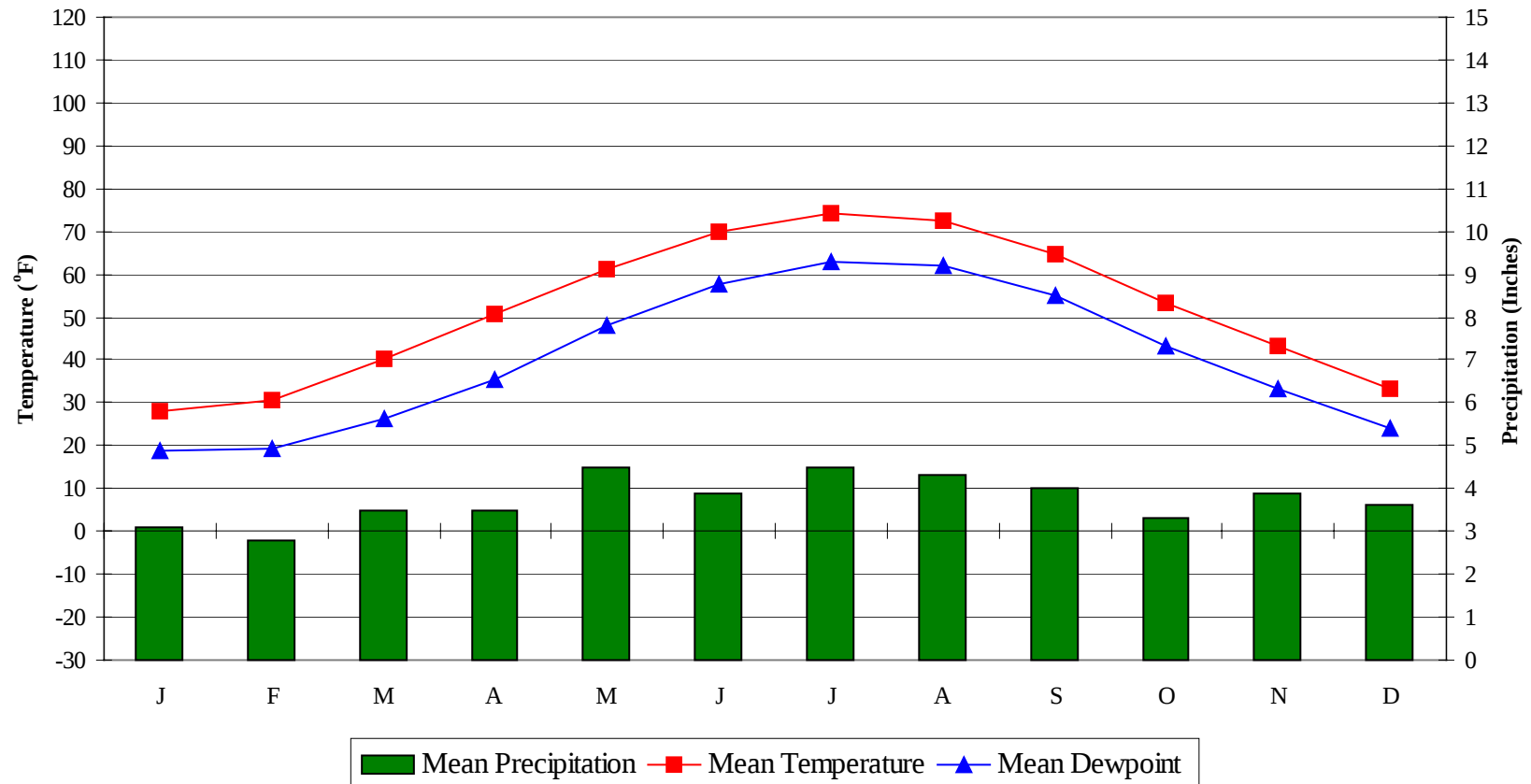
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
6	3.1	100	1.5 + 0.5
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
54.3	N/A	23	65

*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

ALLENTOWN/BETHLEHEM PA

WMO No. 725170

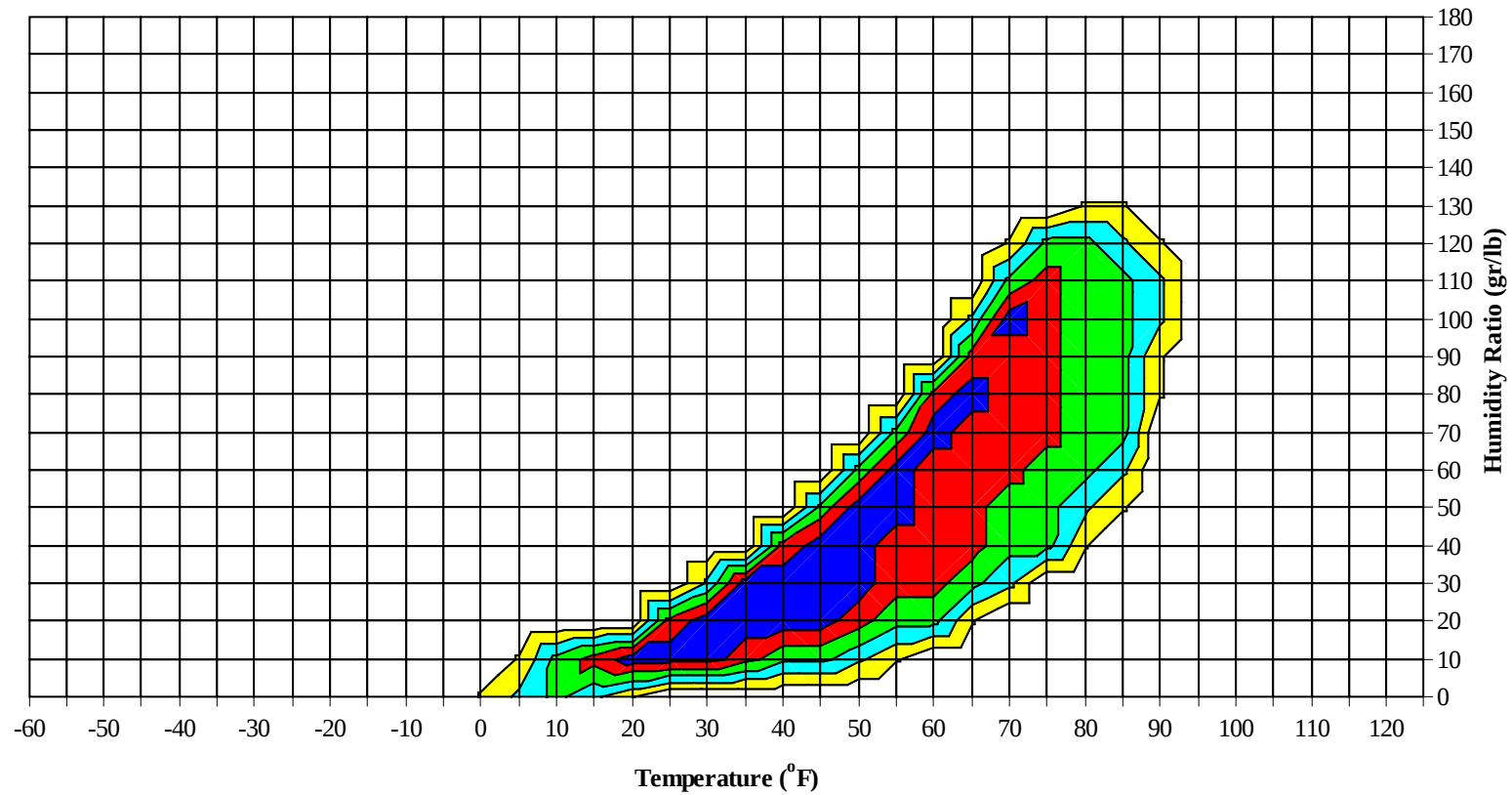
Average Annual Climate



ALLENTOWN/BETHLEHEM PA

WMO No. 725170

Long Term Psychrometric Summary

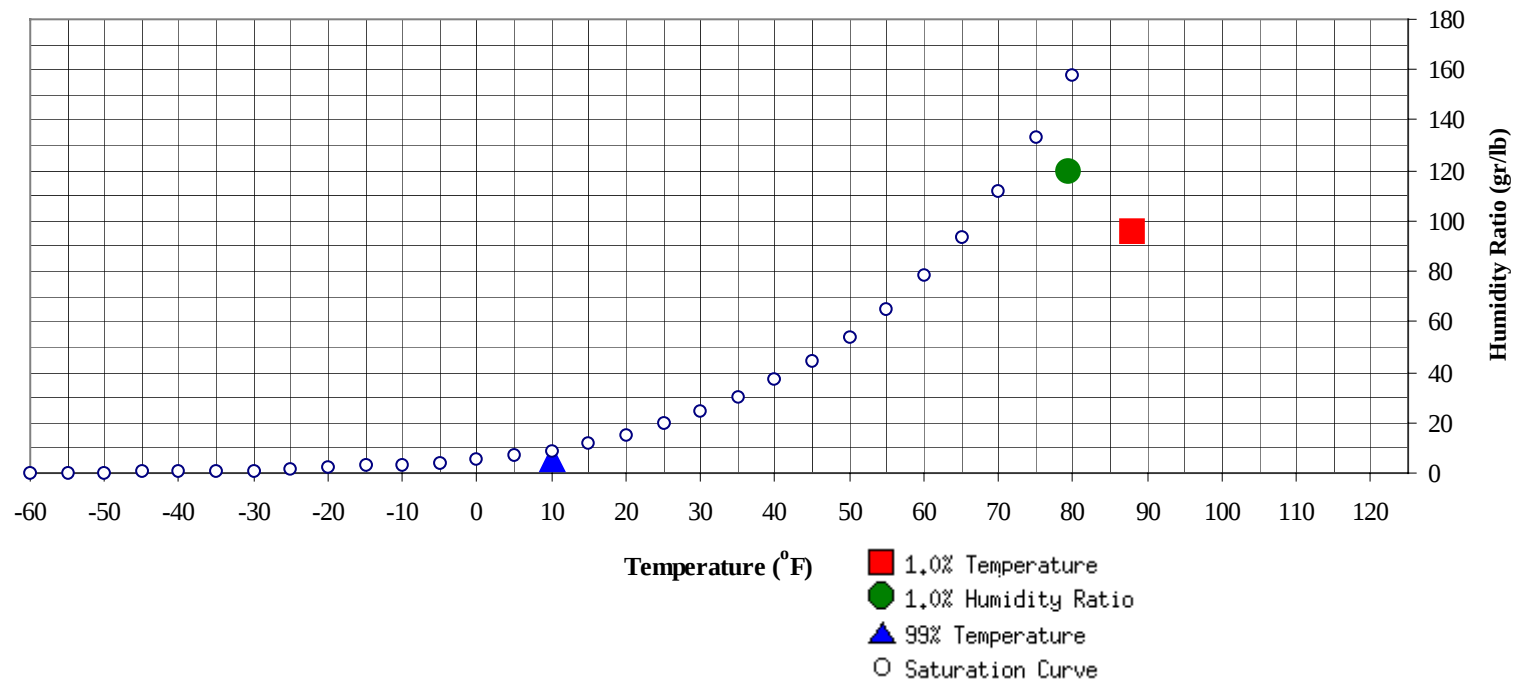


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

ALLENTOWN/BETHLEHEM PA

WMO No. 725170

Psychrometric Summary of Peak Design Values



	(°F)	MCHR	Enthalpy	1.0% Humidity Ratio	(gr/lb)	MCDB	MCWB	MC Dewpt	Enthalpy
		(gr/lb)	(btu/lb)			(°F)	(°F)	(°F)	(btu/lb)
99% Dry Bulb	10	5.7	3.3	Ratio	119.7	79.4	74.1	72	37.8

1.0% Dry Bulb	(°F)	MCHR	MCWB	Enthalpy
		(gr/lb)	(°F)	(btu/lb)
	88	96.3	72.4	36.3

ALLENTOWN/BETHLEHEM PA

WMO No. 725170

Dry-Bulb Temperature Hours For An Average Year (Sheet 1 of 5)

Period of Record = 1973 to 1996

Temperature Range (°F)	January					February					March				
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00		
100 / 104															
95 / 99															
90 / 94															
85 / 89															
80 / 84												1	0	1	63.8
75 / 79							0		0	58.5		2	1	3	61.5
70 / 74							0	0	0	56.8	0	4	2	6	57.4
65 / 69		0	0	0	60.2		1	0	1	52.6	1	7	4	12	55.2
60 / 64	1	1	1	3	57.2	0	3	1	4	50.7	1	11	7	19	51.8
55 / 59	1	2	2	5	52.8	1	5	2	8	49.7	6	19	14	39	48.7
50 / 54	2	5	3	10	47.3	2	10	7	19	45.8	9	29	22	60	44.4
45 / 49	4	11	6	21	42.1	5	17	13	35	41.4	18	42	35	95	40.9
40 / 44	8	25	18	51	37.6	13	29	23	65	37.2	36	47	47	130	37.0
35 / 39	30	49	42	121	33.3	26	41	41	108	33.1	52	42	51	145	32.7
30 / 34	50	48	53	151	29.1	41	42	44	127	28.6	55	25	34	114	28.6
25 / 29	41	38	43	122	24.3	36	32	37	105	23.7	34	12	18	64	23.6
20 / 24	38	30	32	100	19.7	37	24	28	89	19.4	21	5	9	35	19.2
15 / 19	32	19	25	76	15.3	29	12	17	58	15.0	10	2	3	15	14.9
10 / 14	21	10	14	45	10.3	19	6	8	33	10.4	4	0	1	5	9.9
5 / 9	13	5	5	23	5.8	10	2	2	14	5.8	1		0	1	6.1
0 / 4	5	2	2	9	1.0	4	1	1	6	1.2					
-5 / -1	3	1	1	5	-3.2	1	0	0	1	-3.0					
-10 / -6	1	0	0	1	-7.5	0			0	-6.4					
-15 / -11	0			0	-11.6										

Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.

ALLENTOWN/BETHLEHEM PA

WMO No. 725170

Dry-Bulb Temperature Hours For An Average Year (Sheet 2 of 5)

Period of Record = 1973 to 1996

Temperature Range (°F)	April					May					June				
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00		
100 / 104															
95 / 99															
90 / 94		1	0	1	66.1		2	0	2	69.0		0		0	74.8
85 / 89		2	1	3	64.8		10	3	13	68.4		8	2	10	73.5
80 / 84		3	2	5	63.0	0	19	8	27	66.1	1	24	9	33	71.0
75 / 79	0	6	4	10	60.9	1	27	18	46	63.7	9	51	25	76	68.2
70 / 74	1	15	10	26	58.0	6	41	30	77	60.7	37	57	43	108	66.1
65 / 69	4	22	14	40	54.8	21	44	41	106	58.6	64	49	61	147	64.5
60 / 64	9	34	24	67	51.7	40	43	48	131	55.4	64	29	48	141	61.7
55 / 59	16	41	34	91	48.5	54	35	44	133	51.9	60	16	35	111	57.8
50 / 54	31	44	46	121	45.4	59	19	37	115	47.9	42	5	14	61	53.7
45 / 49	51	37	46	135	41.8	40	6	15	61	43.3	21	1	4	26	49.2
40 / 44	57	23	36	116	37.7	21	1	5	27	39.0	6	0	0	6	44.8
35 / 39	40	7	15	62	33.3	6	0	0	6	34.7	0			0	41.5
30 / 34	24	2	7	33	28.7	1			1	31.8					
25 / 29	7	1	1	9	24.6										
20 / 24	1	0	0	1	19.0										
15 / 19	0	0	0	0	15.1										
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															

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ALLENTOWN/BETHLEHEM PA

WMO No. 725170

Dry-Bulb Temperature Hours For An Average Year (Sheet 3 of 5)

Period of Record = 1973 to 1996

Temperature Range (°F)	July					August					September				
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00		
100 / 104		0	0	0	75.4										
95 / 99		3	1	4	76.7		1	0	1	74.8		1		1	73.7
90 / 94		17	5	22	74.9		10	3	13	74.3		2	0	2	73.7
85 / 89	0	44	20	64	72.4		35	11	46	72.8		9	2	11	70.5
80 / 84	3	71	42	116	69.9	1	65	31	97	70.2	0	24	8	32	69.3
75 / 79	24	61	63	148	68.4	15	66	60	141	68.3	3	38	21	62	67.1
70 / 74	79	34	69	182	66.9	65	45	72	181	66.8	20	53	39	111	64.6
65 / 69	74	13	34	122	63.3	73	19	43	135	63.4	38	51	51	139	61.4
60 / 64	48	4	13	65	59.0	55	6	22	83	59.2	47	38	51	136	57.6
55 / 59	16	0	2	18	54.5	27	1	6	34	54.6	52	17	40	109	53.7
50 / 54	4		0	4	50.2	10	0	1	11	50.3	42	5	19	66	49.1
45 / 49						2		0	2	44.2	26	1	7	34	45.1
40 / 44						1			1	41.2	12	0	2	14	40.5
35 / 39											2		0	2	36.8
30 / 34											0			0	33.3
25 / 29															
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															

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ALLENTOWN/BETHLEHEM PA

WMO No. 725170

Dry-Bulb Temperature Hours For An Average Year (Sheet 4 of 5)

Period of Record = 1973 to 1996

Temperature Range (°F)	October					November					December				
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00		
100 / 104															
95 / 99															
90 / 94															
85 / 89		0		0	66.7										
80 / 84		3	0	3	66.4										
75 / 79	0	9	2	11	65.2		1		1	63.9					
70 / 74	2	23	8	33	62.2		5	1	6	61.6		0		0	59.0
65 / 69	7	35	21	62	59.7	2	8	5	15	59.9	0	1	0	1	60.3
60 / 64	17	44	37	97	55.8	6	16	11	33	55.8	1	2	2	5	57.6
55 / 59	29	51	41	120	51.3	10	25	18	52	51.3	3	4	3	10	53.1
50 / 54	41	48	55	144	47.3	19	42	30	91	47.0	4	11	5	20	47.3
45 / 49	53	24	45	122	43.2	31	47	40	118	42.2	10	25	14	49	42.7
40 / 44	46	9	27	82	39.2	38	43	44	125	37.4	20	44	32	96	38.1
35 / 39	34	1	11	46	35.1	53	35	49	136	33.2	39	58	56	153	33.5
30 / 34	16	0	3	19	30.8	44	14	29	87	29.3	58	44	59	161	29.0
25 / 29	3		0	3	26.1	25	3	11	39	24.9	45	28	35	109	24.4
20 / 24	0			0	22.8	9	1	3	13	20.5	31	17	20	68	19.8
15 / 19						3	0	1	4	16.4	18	9	15	42	15.1
10 / 14						0			0	11.2	12	3	5	20	10.6
5 / 9											5	1	1	7	6.3
0 / 4											2	0	1	3	0.6
-5 / -1											1	0		1	-2.7
-10 / -6															
-15 / -11															

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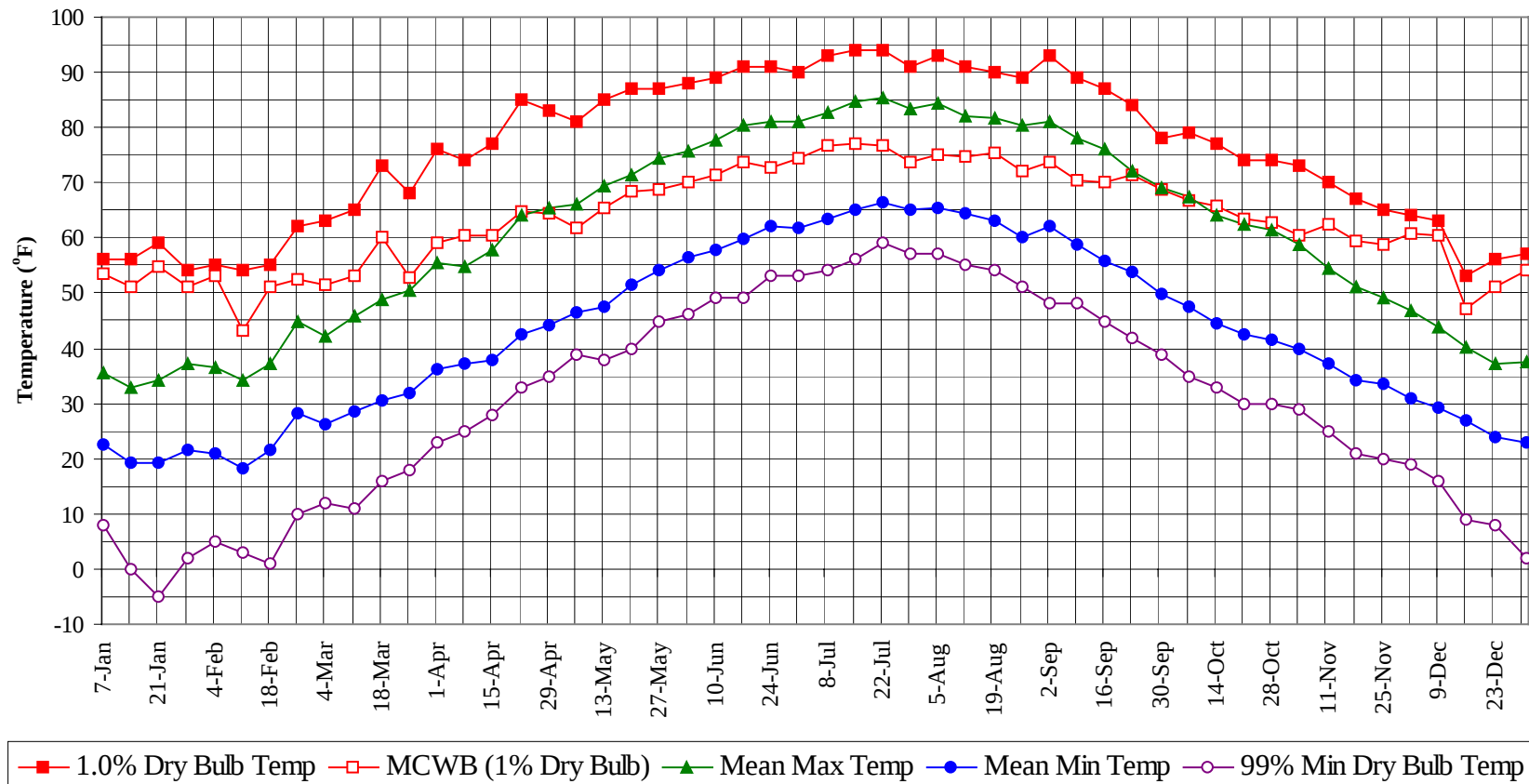
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)

Period of Record = 1973 to 1996

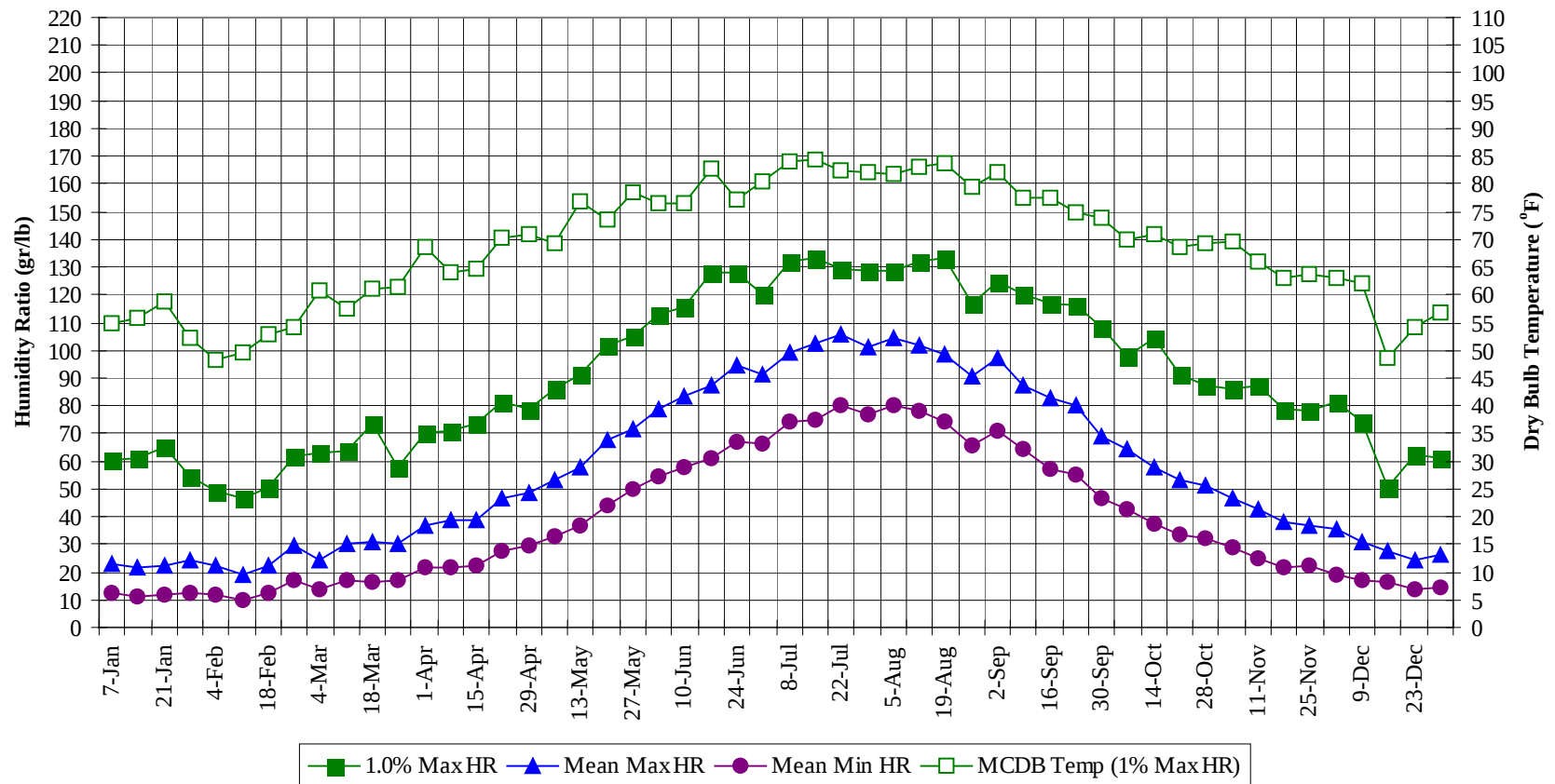
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
100 / 104		0	0	0	75.4
95 / 99		5	1	6	75.8
90 / 94		40	11	51	74.0
85 / 89	0	122	45	167	71.7
80 / 84	5	233	115	353	69.1
75 / 79	51	267	209	527	67.1
70 / 74	209	268	290	766	64.8
65 / 69	284	230	260	774	61.1
60 / 64	283	220	250	753	56.5
55 / 59	254	206	219	680	51.8
50 / 54	242	213	228	684	47.0
45 / 49	244	211	220	676	42.4
40 / 44	253	223	234	711	37.8
35 / 39	282	235	266	783	33.3
30 / 34	289	178	229	696	29.0
25 / 29	192	116	146	453	24.1
20 / 24	137	79	93	309	19.6
15 / 19	92	42	61	196	15.2
10 / 14	57	19	29	105	10.4
5 / 9	30	8	8	46	5.9
0 / 4	10	2	4	16	1.0
-5 / -1	5	1	1	7	-3.1
-10 / -6	2	0	0	2	-7.3
-15 / -11	0			0	-11.6

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Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary

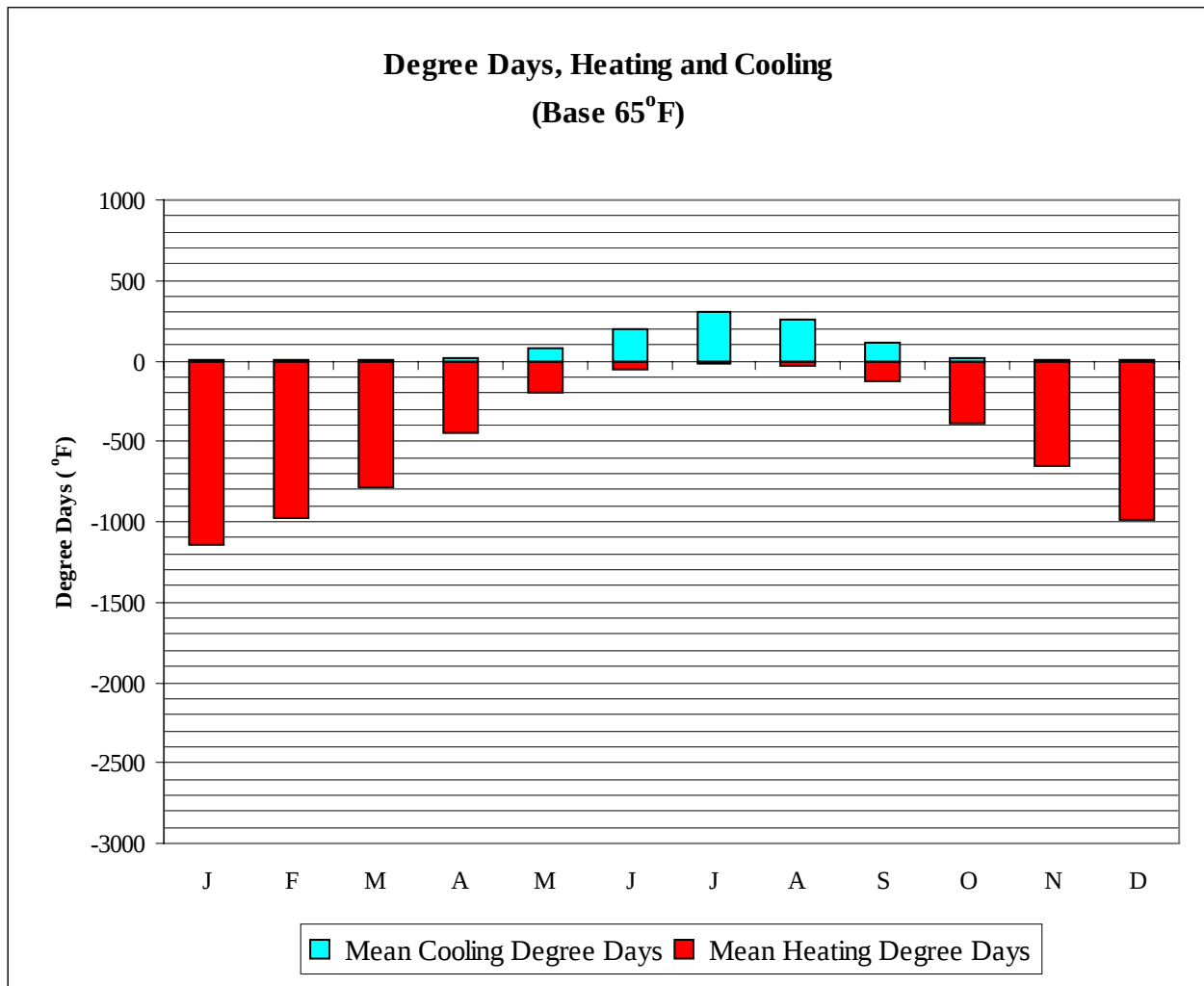


ALLENTOWN/BETHLEHEM PA

WMO No. 725170

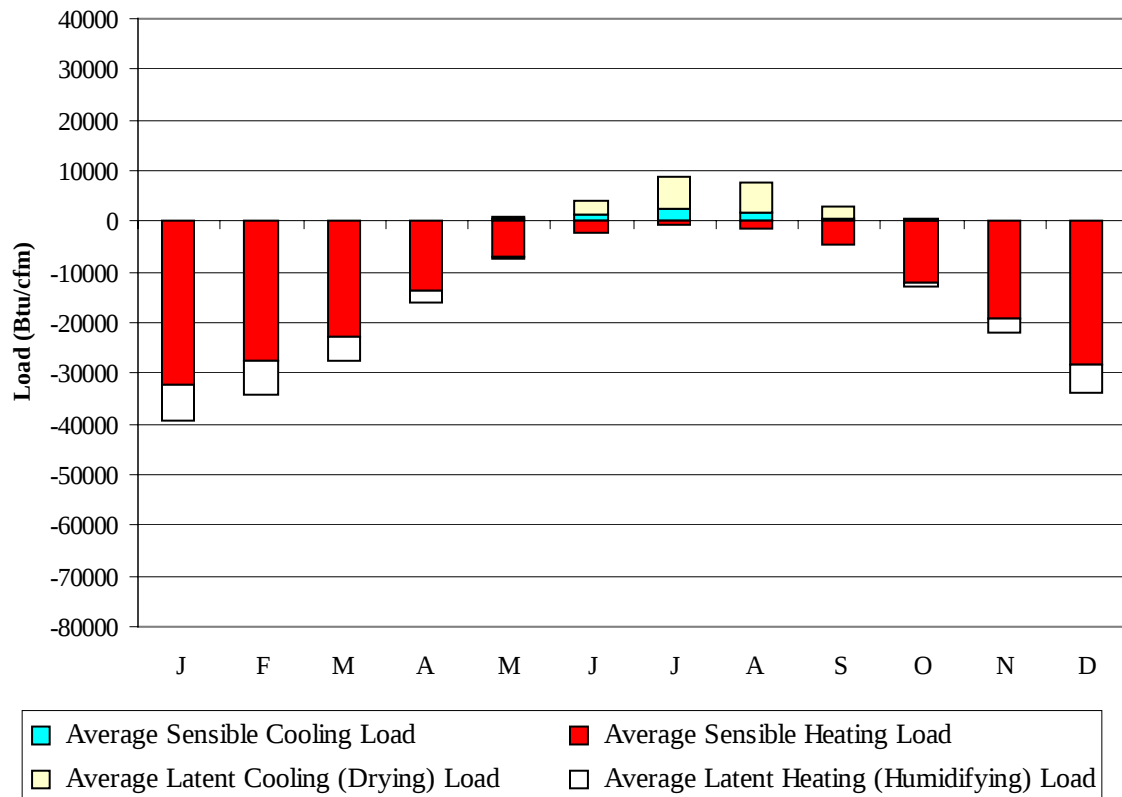
Long Term Dry Bulb Temperature and Humidity Summary

Week Ending	1.0% Temp (°F)	MCWB @ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB @ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	56.0	53.6	35.6	22.5	8.0	60.2	55.0	23.2	12.6
14-Jan	56.0	51.2	33.0	19.2	0.0	60.9	55.9	21.4	10.9
21-Jan	59.0	54.6	34.2	19.2	-5.0	65.1	58.8	22.3	12.0
28-Jan	54.0	51.0	37.1	21.7	2.0	54.6	52.1	24.2	12.7
4-Feb	55.0	53.1	36.7	20.8	5.0	49.0	48.2	22.3	11.5
11-Feb	54.0	43.3	34.2	18.3	3.0	46.9	49.7	18.8	9.9
18-Feb	55.0	51.3	37.1	21.4	1.0	50.4	53.0	22.5	12.2
25-Feb	62.0	52.4	44.7	28.1	10.0	61.6	54.2	29.8	17.0
4-Mar	63.0	51.4	42.1	26.1	12.0	63.0	60.8	24.5	13.7
11-Mar	65.0	53.0	46.0	28.5	11.0	63.7	57.6	30.5	16.8
18-Mar	73.0	60.1	48.7	30.7	16.0	73.5	61.0	30.8	16.7
25-Mar	68.0	52.8	50.6	31.9	18.0	58.1	61.5	30.4	17.1
1-Apr	76.0	59.0	55.5	36.3	23.0	70.0	68.6	36.7	21.9
8-Apr	74.0	60.4	54.9	37.2	25.0	70.7	63.9	38.5	21.9
15-Apr	77.0	60.4	57.9	37.8	28.0	73.5	64.6	39.0	22.5
22-Apr	85.0	64.9	64.0	42.5	33.0	81.2	70.1	46.6	27.8
29-Apr	83.0	64.4	65.5	44.2	35.0	79.1	71.1	48.6	29.7
6-May	81.0	61.9	66.1	46.6	39.0	86.1	69.3	53.5	32.9
13-May	85.0	65.5	69.5	47.5	38.0	91.0	76.9	57.9	36.6
20-May	87.0	68.3	71.4	51.6	40.0	101.5	73.4	67.7	44.1
27-May	87.0	68.8	74.5	54.0	45.0	105.0	78.6	71.6	50.2
3-Jun	88.0	70.2	75.9	56.5	46.0	112.7	76.6	78.9	54.4
10-Jun	89.0	71.4	77.7	57.9	49.0	115.5	76.4	83.1	57.9
17-Jun	91.0	73.9	80.3	59.7	49.0	128.1	82.8	87.3	60.8
24-Jun	91.0	72.8	81.2	62.0	53.0	128.1	77.2	94.6	66.8
1-Jul	90.0	74.5	81.1	61.8	53.0	120.4	80.4	91.3	66.0
8-Jul	93.0	76.7	82.9	63.4	54.0	132.3	84.1	99.2	74.3
15-Jul	94.0	77.0	84.7	65.2	56.0	133.0	84.4	102.5	75.0
22-Jul	94.0	76.9	85.4	66.4	59.0	129.5	82.5	105.6	80.1
29-Jul	91.0	73.9	83.3	65.0	57.0	128.8	82.0	101.2	76.9
5-Aug	93.0	75.0	84.3	65.5	57.0	128.8	81.7	104.6	80.4
12-Aug	91.0	74.6	81.9	64.4	55.0	132.3	82.9	102.0	78.0
19-Aug	90.0	75.5	81.6	63.2	54.0	133.0	83.8	98.2	74.2
26-Aug	89.0	72.0	80.5	60.2	51.0	116.9	79.4	90.4	65.4
2-Sep	93.0	73.8	81.0	62.0	48.0	124.6	82.1	96.9	71.0
9-Sep	89.0	70.6	78.2	58.8	48.0	120.4	77.4	87.7	64.3
16-Sep	87.0	70.0	76.0	55.7	45.0	116.9	77.6	82.6	57.0
23-Sep	84.0	71.5	72.1	53.9	42.0	116.2	74.9	80.4	54.9
30-Sep	78.0	68.6	69.2	50.0	39.0	108.5	73.7	69.0	46.7
7-Oct	79.0	66.8	67.4	47.6	35.0	98.0	69.9	64.6	42.4
14-Oct	77.0	65.7	64.2	44.6	33.0	104.3	71.0	58.0	37.7
21-Oct	74.0	63.4	62.5	42.5	30.0	91.0	68.6	53.0	33.5
28-Oct	74.0	62.7	61.3	41.5	30.0	87.5	69.4	51.2	32.3
4-Nov	73.0	60.6	58.9	39.9	29.0	86.1	69.6	46.9	28.8
11-Nov	70.0	62.4	54.3	37.1	25.0	87.5	65.9	42.9	25.2
18-Nov	67.0	59.6	51.3	34.2	21.0	79.1	62.9	37.8	21.6
25-Nov	65.0	58.8	49.3	33.5	20.0	78.4	63.7	36.9	22.1
2-Dec	64.0	60.7	46.9	30.9	19.0	81.2	63.1	35.4	19.2
9-Dec	63.0	60.4	43.7	29.1	16.0	74.2	62.0	31.1	17.1
16-Dec	53.0	47.1	40.3	26.8	9.0	50.4	48.5	27.7	16.5
23-Dec	56.0	51.0	37.3	24.0	8.0	62.3	54.3	24.5	14.0
31-Dec	57.0	54.2	37.7	23.1	2.0	60.9	56.8	26.4	14.2



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	1145
FEB	0	977
MAR	4	780
APR	22	451
MAY	83	200
JUN	199	50
JUL	304	15
AUG	255	27
SEP	109	126
OCT	20	386
NOV	3	650
DEC	0	992
ANN	999	5799

Average Ventilation and Infiltration Loads
(Outside Air vs. 75°F, 60% RH summer; 68°F, 30% RH winter)



	Average Sensible Cooling Load	Average Sensible Heating Load	Average Latent Cooling Load	Average Latent Heating Load
	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)
JAN	0	-32084	1	-7301
FEB	0	-27513	0	-6534
MAR	10	-22572	3	-4885
APR	106	-13812	19	-2253
MAY	450	-6888	555	-346
JUN	1295	-2117	2980	-8
JUL	2403	-799	6509	0
AUG	1738	-1290	5805	-1
SEP	536	-4618	2167	-26
OCT	34	-12167	297	-724
NOV	1	-19137	40	-2917
DEC	0	-28133	1	-5715
ANN	6573	-171130	18377	-30710

Average Annual Solar Radiation – Nearest Available Site

(Source: National Renewable Energy Laboratory, Golden CO, 1995)

City: ALLENTOWN
 State: PA
 WBAN No: 14737
 Lat(N): 40.65
 Long(W): 75.43
 Elev(ft): 384

Stn Type: Secondary
 SHADING GEOMETRY IN DIMENSIONLESS UNITS
 Window: 1
 Overhang: 0.552
 Vert Gap: 0.323

AVERAGE INCIDENT SOLAR RADIATION (Btu/sq.ft./day), Percentage Uncertainty = 11		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ	Global	590	850	1170	1490	1720	1880	1860	1650	1330	970	620	490	1220
	Std Dev	42	75	72	111	134	125	106	93	101	77	53	35	29
	Minimum	500	730	1060	1260	1500	1590	1650	1470	1130	840	490	400	1160
	Maximum	680	1060	1310	1720	1990	2150	2050	1860	1490	1160	730	540	1290
	Diffuse	320	440	580	730	860	920	890	780	630	450	340	280	600
Clear Day	Global	860	1210	1680	2170	2480	2590	2510	2230	1800	1300	900	740	1710
NORTH	Global	190	270	350	440	540	610	580	480	380	280	210	170	370
	Diffuse	190	270	350	430	500	540	530	460	380	280	210	170	360
Clear Day	Global	190	250	330	430	570	680	620	480	360	270	200	160	380
EAST	Global	400	550	710	870	960	1030	1020	940	790	610	410	330	720
	Diffuse	240	330	430	530	600	640	630	570	470	350	250	200	440
Clear Day	Global	650	850	1090	1300	1410	1440	1410	1310	1130	890	670	570	1060
SOUTH	Global	930	1050	1040	940	830	790	820	930	1040	1090	870	800	930
	Diffuse	350	430	500	540	580	590	590	570	520	440	350	300	480
Clear Day	Global	1820	1910	1780	1440	1110	970	1020	1270	1600	1800	1770	1730	1510
WEST	Global	410	550	720	860	950	1020	1010	940	790	620	400	330	720
	Diffuse	240	330	430	530	610	650	640	580	470	350	250	200	440
Clear Day	Global	650	850	1090	1300	1410	1440	1410	1310	1130	890	670	570	1060

Average Annual Solar Heat and Illumination – Nearest Available Site

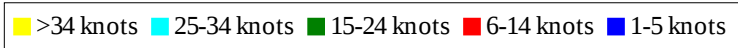
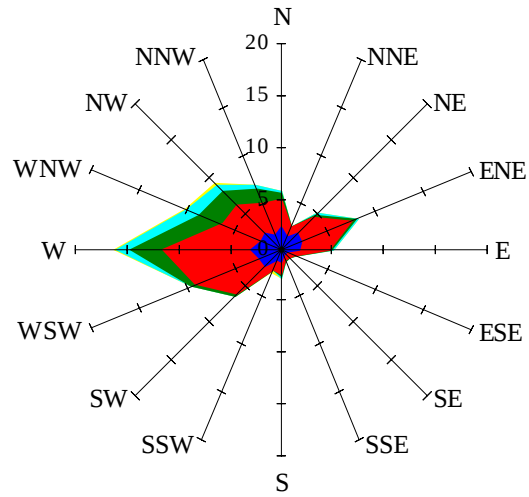
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

AVERAGE TRANSMITTED SOLAR RADIATION (Btu/sq.ft./day) FOR DOUBLE GLAZING, Percentage Uncertainty = 11		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ	Unshaded	390	580	820	1070	1240	1370	1350	1190	950	670	410	310	860
NORTH	Unshaded	140	180	240	300	360	400	380	330	260	200	140	120	250
	Shaded	120	160	210	260	320	350	340	290	230	170	120	100	220
EAST	Unshaded	270	380	500	620	680	730	720	660	560	430	280	220	510
	Shaded	240	330	430	530	570	610	600	560	480	370	250	200	430
SOUTH	Unshaded	700	770	730	620	520	490	510	600	710	790	650	600	640
	Shaded	680	710	570	410	350	360	360	380	510	690	620	580	520
WEST	Unshaded	280	380	510	610	670	720	710	670	550	430	280	220	500
	Shaded	250	340	440	520	560	600	600	560	480	380	250	200	430

AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 11											
		March					June				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	38	70	79	61	24	46	82	99	93	65
	M.Cloudy	22	42	46	37	15	28	51	67	63	43
NORTH	M.Clear	10	14	15	13	8	18	17	17	17	16
	M.Cloudy	9	15	16	14	6	13	18	20	19	15
EAST	M.Clear	69	54	15	13	8	73	71	31	17	16
	M.Cloudy	24	29	16	14	6	29	37	26	19	15
SOUTH	M.Clear	38	72	82	63	24	12	33	48	43	21
	M.Cloudy	16	35	38	30	10	11	24	35	32	18
WEST	M.Clear	10	14	23	65	58	12	17	17	52	75
	M.Cloudy	9	15	19	30	19	11	18	20	36	40
M.Clear	(% hrs)	34	30	31	33	35	40	39	35	33	35
		Sept					Dec				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	27	64	82	74	44	13	37	43	25	1
	M.Cloudy	15	37	52	48	26	8	21	23	15	1
NORTH	M.Clear	9	14	16	16	12	5	9	10	8	1
	M.Cloudy	7	14	18	17	11	4	9	10	7	0
EAST	M.Clear	60	67	28	16	12	35	36	10	8	1
	M.Cloudy	18	29	22	17	11	9	15	10	7	0
SOUTH	M.Clear	21	56	74	67	36	33	75	83	56	2
	M.Cloudy	9	26	40	38	18	8	24	25	17	1
WEST	M.Clear	9	14	16	52	68	5	9	21	43	3
	M.Cloudy	7	14	18	31	27	4	9	12	15	1
M.Clear	(% hrs)	42	44	39	36	40	29	28	29	28	32

Wind Summary - December, January, and February

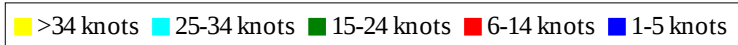
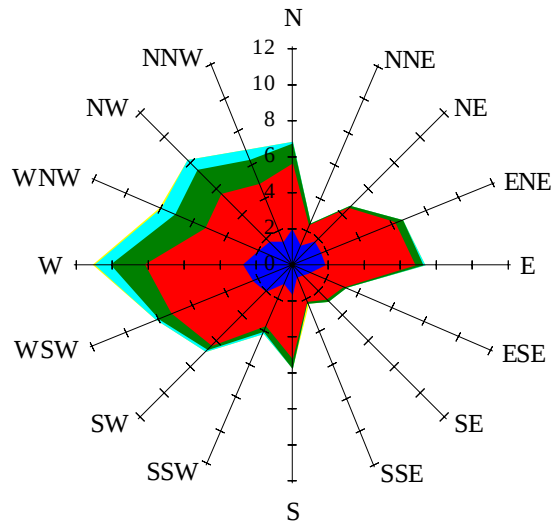
Labels of Percent Frequency on North Axis



Percent Calm = 7.76

Wind Summary - March, April, and May

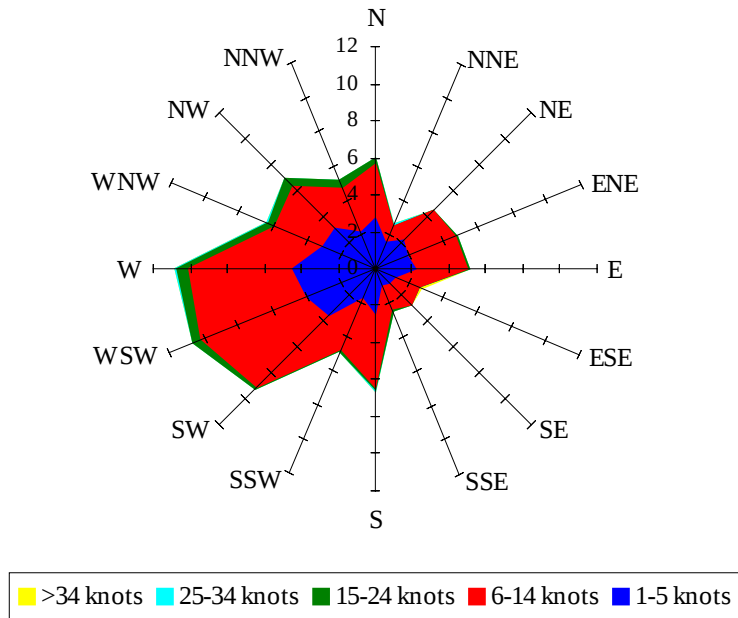
Labels of Percent Frequency on North Axis



Percent Calm = 6.06

Wind Summary - June, July, and August

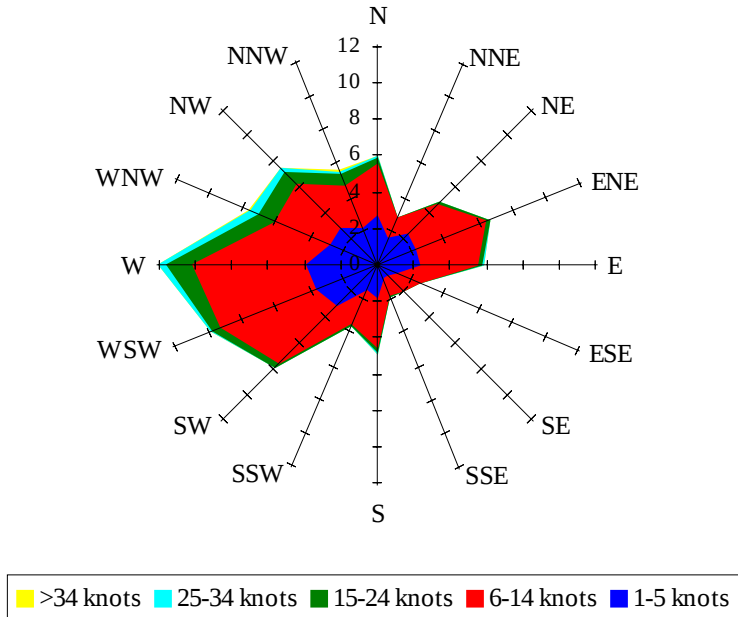
Labels of Percent Frequency on North Axis



Percent Calm = 8.91

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 9.33