PORT HEIDEN, AK

Latitude = 56.96 N	Station ID = ICAO_PAPH
Longitude =158.63 W	Elevation = 95 Feet
Period of Record = 1988 To 2017	Average Pressure = 29.64 inches Hg

Design Criteria Data

	Mean Coincident (Average) Values				
Dry Bulb Temperature (T)	**Design Value (°F)**	**Wet Bulb Temperature (°F)**	**Humidity Ratio (gr/lb)**	**Wind Speed (mph)**	**Prevailing Direction (NSEW)**
Median of Extreme Highs	72	61	59	15.8	SSE
0.4% Occurrence	64	55	52	15.3	SSE
1.0% Occurrence	62	54	51	15	SSE
2.0% Occurrence	60	53	49	14.4	SSE
Mean Daily Range	10	-	-	-	NE
97.5% Occurrence	5	4	5	13.3	NE
99.0% Occurrence	0	-1	4	13.5	NE
99.6% Occurrence	-6	-7	2	13.6	NE
Median of Extreme Lows	-8	-9	2	14	NE

Wet Bulb Temperature (T_{wb})	**Design Value (°F)**	**Dry Bulb Temperature (°F)**	**Humidity Ratio (gr/lb)**	**Wind Speed (mph)**	**Prevailing Direction (NSEW)**
Median of Extreme Highs	62	65	71	14	SSE
0.4% Occurrence	59	63	65	14	SSE
1.0% Occurrence	56	60	59	12.7	SSE
2.0% Occurrence	54	57	55	12.1	SSE

Humidity Ratio (HR)	**Design Value (gr/lb)**	**Dry Bulb Temperature (°F)**	**Vapor Pressure (in. Hg)**	**Wind Speed (mph)**	**Prevailing Direction (NSEW)**
Median of Extreme Highs	67	60	0.45	13.1	SSE
0.4% Occurrence	65	61	0.44	12	SSE
1.0% Occurrence	61	58	0.41	10.7	SSE
2.0% Occurrence	57	57	0.39	11.2	SSE

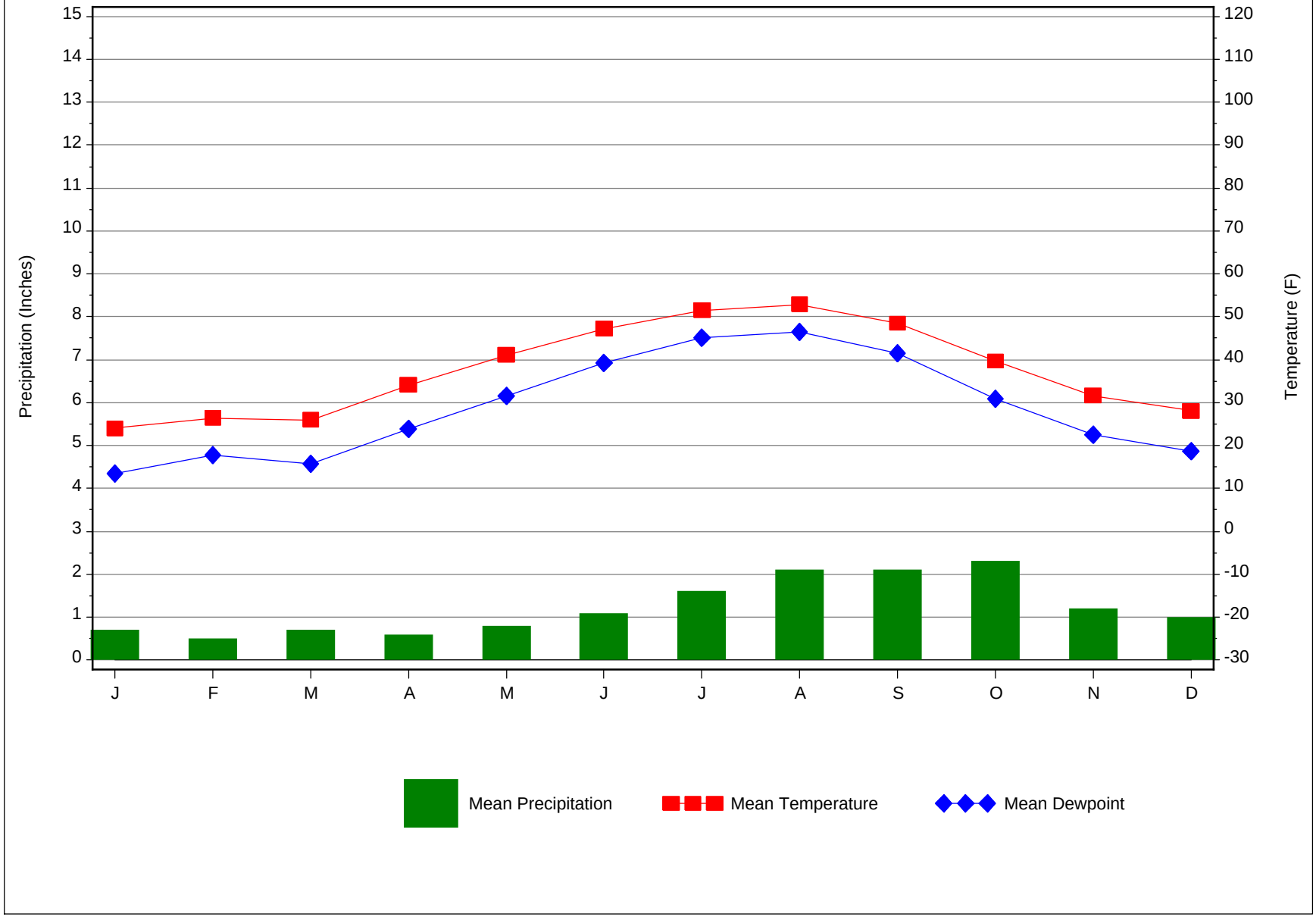
Air Conditioning/ Humid Area Criteria	**Threshold**	**T ≥ 93°F**	**T ≥ 80°F**	**Twb ≥ 73°F**	**Twb ≥ 67°F**
	# of Hours	0	2	2	7

Other Site Data

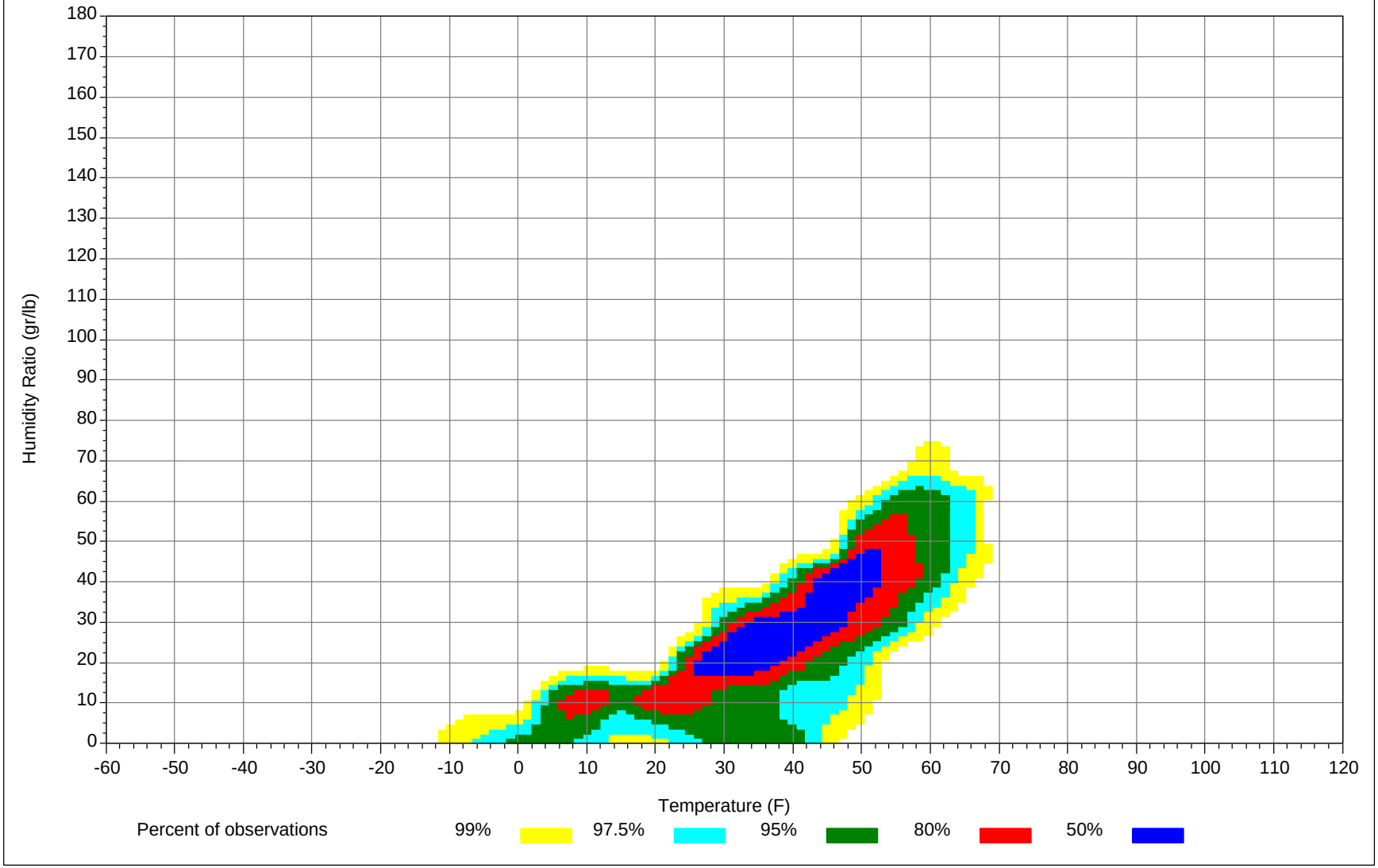
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
4	0.6	130	0.0 + 0.0
Ground Water Temperature (°F) 50 Foot Depth*	Frost Depth 50 Year Recurrence (in)	Ground Snow Load 50 Year Recurrence (lb/ft^2)	Average Annual Freeze-Thaw Cycles (#)
40.3	N/A	N/A	67

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

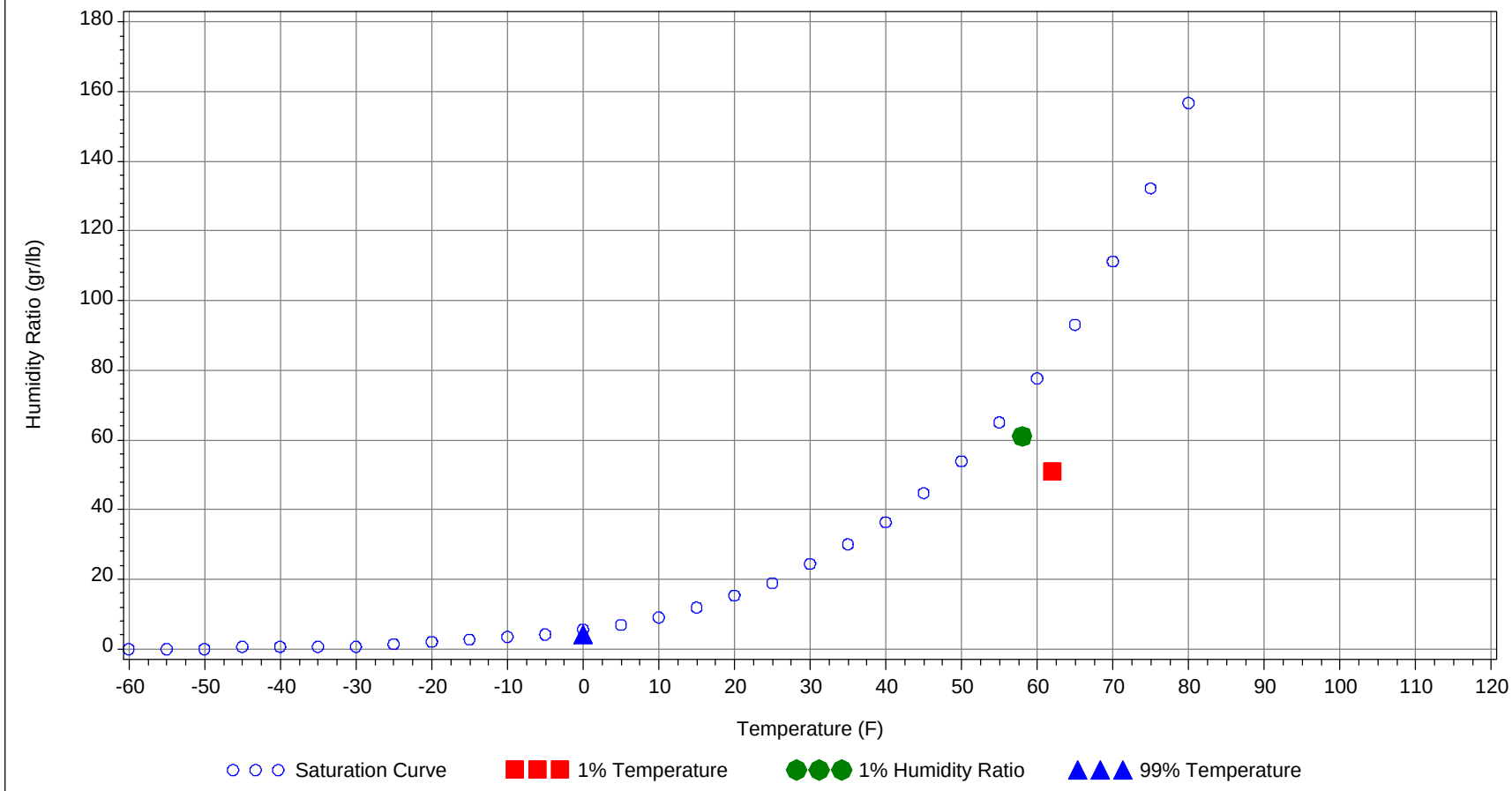
Average Annual Climate



Long Term Psychrometric Summary



Psychrometric Summary of Peak Design Values



	(°F) / (gr/lb)	MCDB (°F)	MCWB (°F)	MCDP (°F)	MCHR (gr/lb)	Enthalpy (btu/lb)
1.0% Dry Bulb	62.0		54		51.0	22.7
99.0% Dry Bulb	0.0				4.0	0.5
1.0% Humidity Ratio	61.0	58.0	55.5	53.5		23.4

Dry-Bulb Temperature Hours For An Average Year

	January					February					March				
Temperature Range (°F)	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
80/ 84															
75/ 79															
70/ 74															
65/ 69															
60/ 64												0		0	41
55/ 59		0		0			0	0	0	46.1		1	0	1	42.5
50/ 54	0	0	0	0	38.6	0	1	1	2	39.9	0	1	1	2	41.5
45/ 49	2	4	3	9	39.7	2	6	3	11	40.3	2	8	3	13	38.9
40/ 44	12	17	13	42	36.7	10	19	13	42	37	4	20	11	35	35.3
35/ 39	49	51	51	151	33.5	48	55	55	158	33.6	38	53	48	139	32.8
30/ 34	45	45	47	137	29.2	47	42	48	137	29.8	49	48	53	150	29.3
25/ 29	40	35	36	111	24.4	35	29	31	95	25.1	42	37	41	120	24.5
20/ 24	16	16	16	48	19.8	16	14	15	45	19.7	22	21	22	65	19.7
15/ 19	18	18	20	56	15.8	20	19	18	57	15.6	33	27	30	90	15.6
10/ 14	18	18	18	54	10.6	13	12	13	38	10.4	24	15	18	57	10.6
5/ 9	19	16	16	51	6.1	11	11	9	31	5.9	17	12	14	43	6.1
0/ 4	13	14	14	41	0.4	10	9	10	29	0.7	12	6	5	23	0.8
-5/ -1	6	6	7	19	-3.6	6	4	4	14	-3.7	2	1	1	4	-3.6
-10/ -6	7	5	5	17	-8	3	2	2	7	-7.7	2	0	0	2	-7.4
-15/-11	2	2	1	5	-12.4	1	1	1	3	-13	0			0	-11.7
-20/-16	2	1	1	4	-17.2	1	1	1	3	-17.4					
-25/-21	0	0	1	1	-21.9	0	0	0	0	-21.7					
-30/-26	0	0		0	-26.3										

Caution: This summary reflects the typical distribtion of temperature in a typical year. It does not reflect the typical mositure 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.

Dry-Bulb Temperature Hours For An Average Year

	April					May					June				
Temperature Range (°F)	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
80/ 84															
75/ 79															
70/ 74							0	0	0	55.2		0		0	56.3
65/ 69			0	0			1	0	1	50.9		1	1	2	55.9
60/ 64			0	0			3	2	5	48.3	0	12	5	17	52.1
55/ 59	0	1	1	2	47.2	0	11	6	17	46.7	2	37	22	61	49.3
50/ 54	1	6	3	10	42.8	2	36	19	57	44.5	18	77	59	154	46.3
45/ 49	3	27	15	45	39.7	28	75	60	163	41	105	78	99	282	42.9
40/ 44	15	48	34	97	36.8	50	49	53	152	37.7	66	22	34	122	39.1
35/ 39	64	70	76	210	33.5	99	48	70	217	34.5	41	9	17	67	36
30/ 34	70	43	55	168	29.4	52	19	29	100	30.1	5	1	2	8	31.6
25/ 29	53	28	37	118	24.8	15	4	7	26	25.4	2	1	1	4	26.6
20/ 24	16	8	10	34	19.8	2		1	3	20.4	0	0	0	0	21.4
15/ 19	14	7	8	29	16.3	0			0	17.3	1	0	0	1	17.7
10/ 14	4	1	1	6	10.9										
5/ 9	1	0	0	1	6.8										
0/ 4	0	0	0	0	0.7										
-5/ -1	0			0	-3										
-10/ -6	0			0	-8										
-15/-11															
-20/-16															
-25/-21															
-30/-26															

Caution: This summary reflects the typical distribtion of temperature in a typical year. It does not reflect the typical mositure 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.

Dry-Bulb Temperature Hours For An Average Year

	July					August					September				
Temperature Range (°F)	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
80/ 84							0	0	0	73.5					
75/ 79		0		0	64		0	0	0	69					
70/ 74		2	1	3	60.3		3	1	4	60.9		0	0	0	60.3
65/ 69	0	5	2	7	56.9		6	3	9	58.4	0	1	0	1	57.8
60/ 64	2	29	16	47	54.4	4	39	20	63	55	2	11	4	17	54.3
55/ 59	16	69	53	138	51.1	34	74	63	171	51.8	9	38	23	70	50.5
50/ 54	88	90	93	271	48.4	111	98	106	315	48.3	50	91	76	217	47.3
45/ 49	117	49	75	241	44.5	87	28	53	168	44.7	112	78	97	287	43.5
40/ 44	21	3	7	31	40.7	9	0	2	11	40.3	34	13	24	71	38.4
35/ 39	4	0	1	5	36.7	4	0	1	5	36	24	6	12	42	34.4
30/ 34	0	0	0	0	31.8	0	0		0	27.8	8	1	3	12	29.3
25/ 29	0		0	0	26.5						1	0	0	1	23.5
20/ 24											0	0		0	22
15/ 19											0			0	19
10/ 14															
5/ 9															
0/ 4															
-5/ -1															
-10/ -6															
-15/-11															
-20/-16															
-25/-21															
-30/-26															

Caution: This summary reflects the typical distribtion of temperature in a typical year. It does not reflect the typical mositure 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.

Dry-Bulb Temperature Hours For An Average Year

	October					November					December				
Temperature Range (°F)	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
80/ 84															
75/ 79															
70/ 74															
65/ 69		0	0	0	51.8										
60/ 64		0	0	0	53		0	0	0	47					
55/ 59	1	5	1	7	49.8	0	0	0	0	49.2		0	0	0	38.5
50/ 54	8	23	15	46	47.1	2	4	2	8	45.5	1	1	0	2	41.3
45/ 49	44	69	52	165	42.6	12	17	12	41	41.1	6	8	6	20	41.3
40/ 44	47	50	55	152	38.6	21	27	25	73	37.7	16	20	18	54	37.5
35/ 39	75	59	71	205	34.4	59	64	60	183	34.3	54	59	55	168	33.5
30/ 34	45	27	37	109	29.4	57	52	59	168	29.7	61	54	59	174	29.9
25/ 29	20	11	11	42	24.8	35	32	33	100	24.5	31	34	33	98	24.7
20/ 24	5	2	3	10	19.3	16	14	18	48	19.9	19	16	19	54	20
15/ 19	3	1	2	6	15.5	22	16	18	56	15.8	24	23	22	69	15.9
10/ 14	1	0	0	1	11.1	10	9	8	27	10.6	14	13	14	41	10.5
5/ 9	0		0	0	4	5	4	4	13	6.5	12	11	12	35	5.9
0/ 4	0			0	2	1	1	1	3	2	8	6	8	22	0.7
-5/ -1											1	1	1	3	-3.7
-10/ -6											0	1	1	2	-7.2
-15/-11											0	0		0	-12
-20/-16															
-25/-21															
-30/-26															

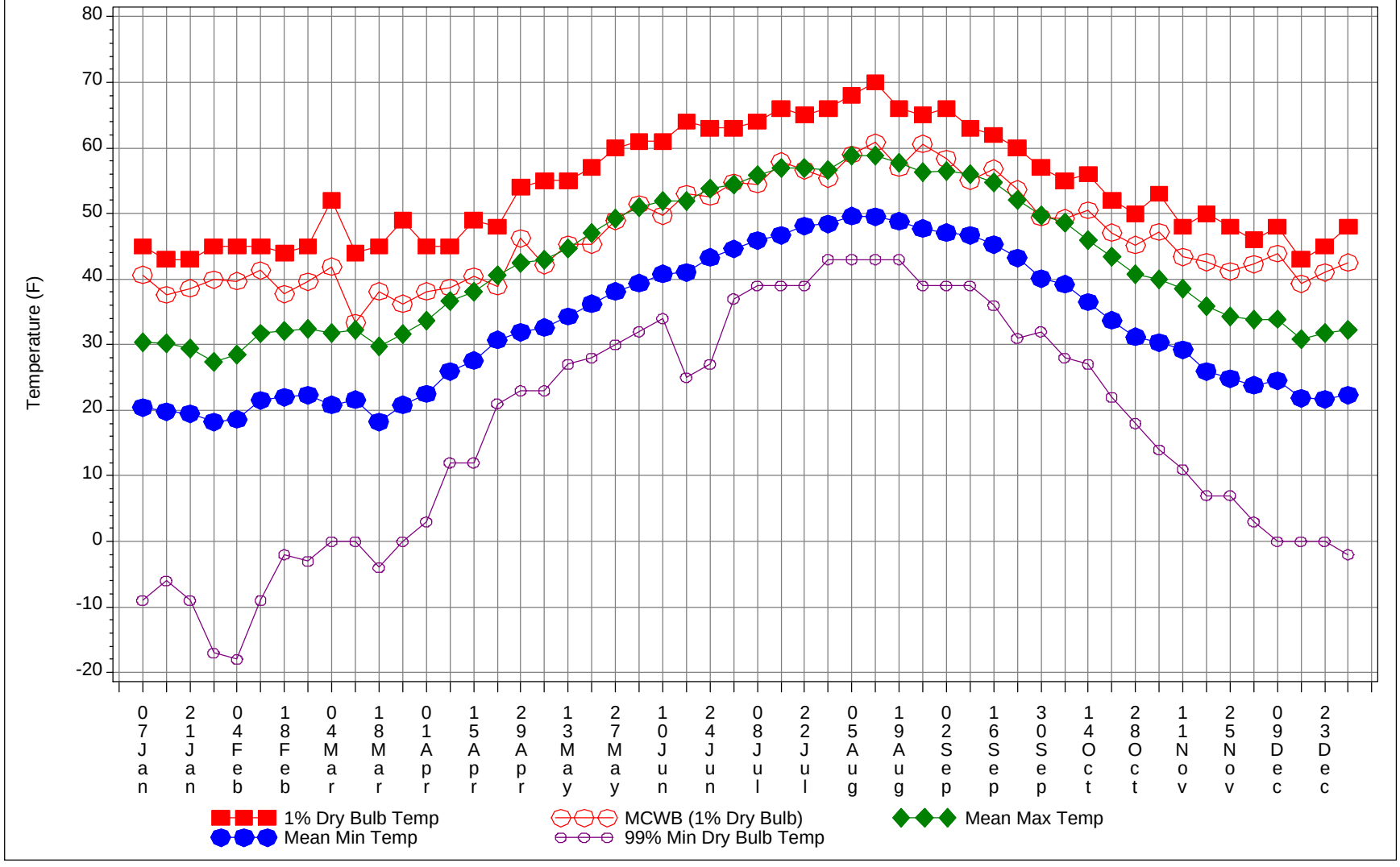
Caution: This summary reflects the typical distribtion of temperature in a typical year. It does not reflect the typical mositure distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary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

Dry-Bulb Temperature Hours For An Average Year

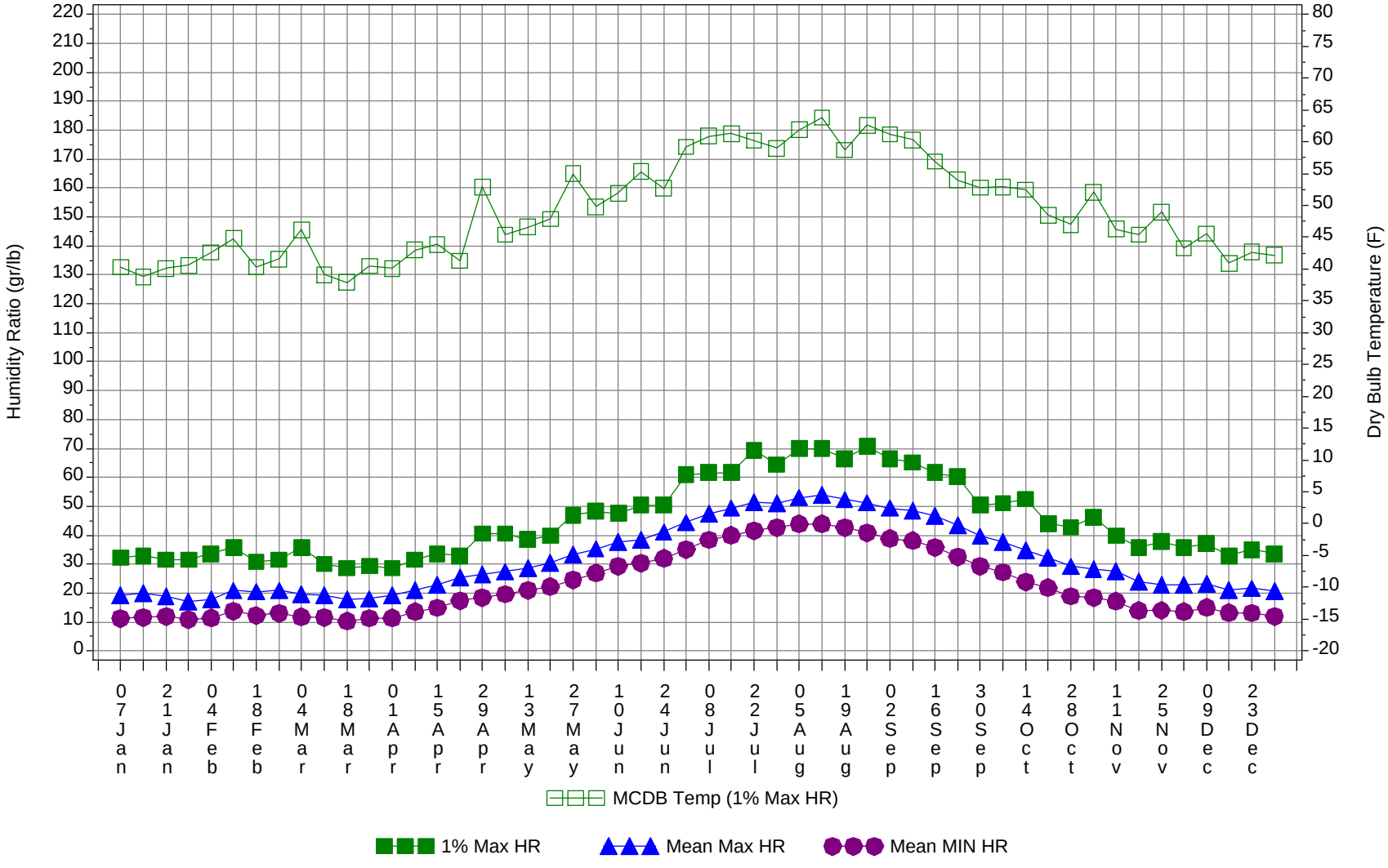
	Annual				
Temperature Range (°F)	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
80/ 84		0	0	0	73.5
75/ 79		0	0	0	67.8
70/ 74		6	2	8	60.2
65/ 69	0	15	6	21	57.1
60/ 64	7	95	48	150	54.2
55/ 59	63	240	170	473	50.8
50/ 54	287	434	380	1101	47.5
45/ 49	533	453	485	1471	43
40/ 44	309	289	291	889	38
35/ 39	557	471	516	1544	34
30/ 34	433	329	389	1151	29.6
25/ 29	270	209	228	707	24.7
20/ 24	109	88	101	298	19.8
15/ 19	131	111	116	358	15.8
10/ 14	82	66	71	219	10.6
5/ 9	63	53	54	170	6.1
0/ 4	43	36	37	116	0.7
-5/ -1	15	13	13	41	-3.7
-10/ -6	11	8	8	27	-7.8
-15/-11	3	2	2	7	-12.5
-20/-16	3	2	2	7	-17.2
-25/-21	1	0	1	2	-21.8
-30/-26	0	0		0	-26.3

Caution: This summary reflects the typical distribtion of temperature in a typical year. It does not reflect the typical mositure 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.

Annual Summary of Temperatures



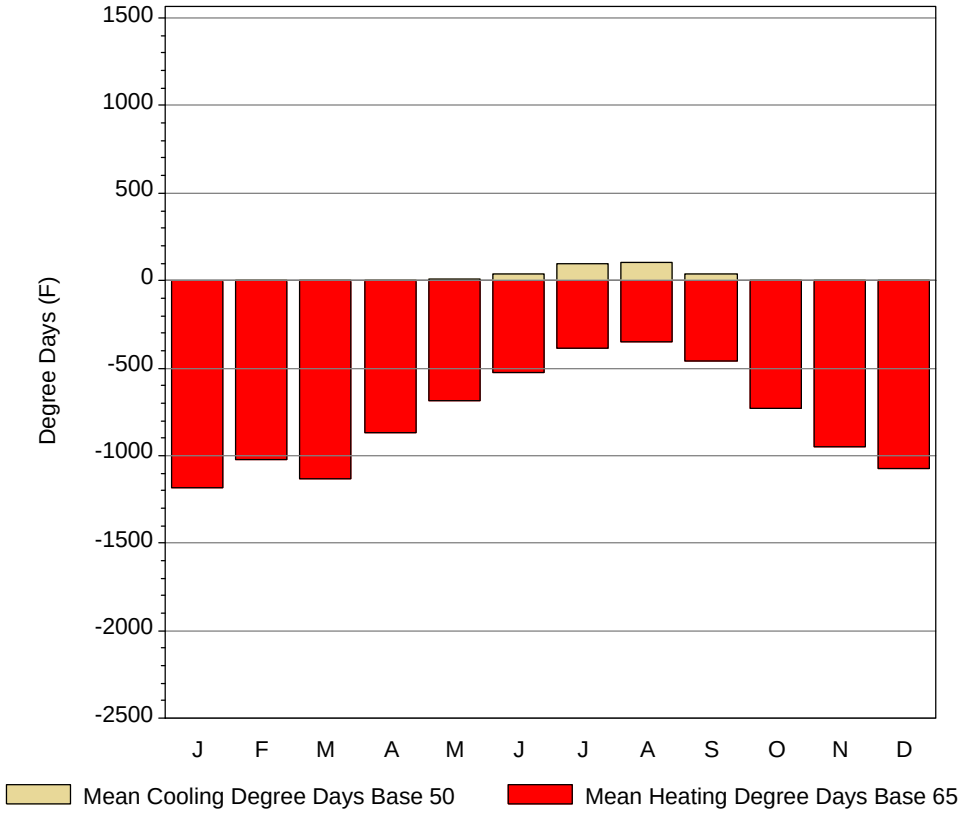
Long Term Humidity and Dry Bulb Temperature Summary



Long Term Humidity and Dry Bulb Temperature Summary

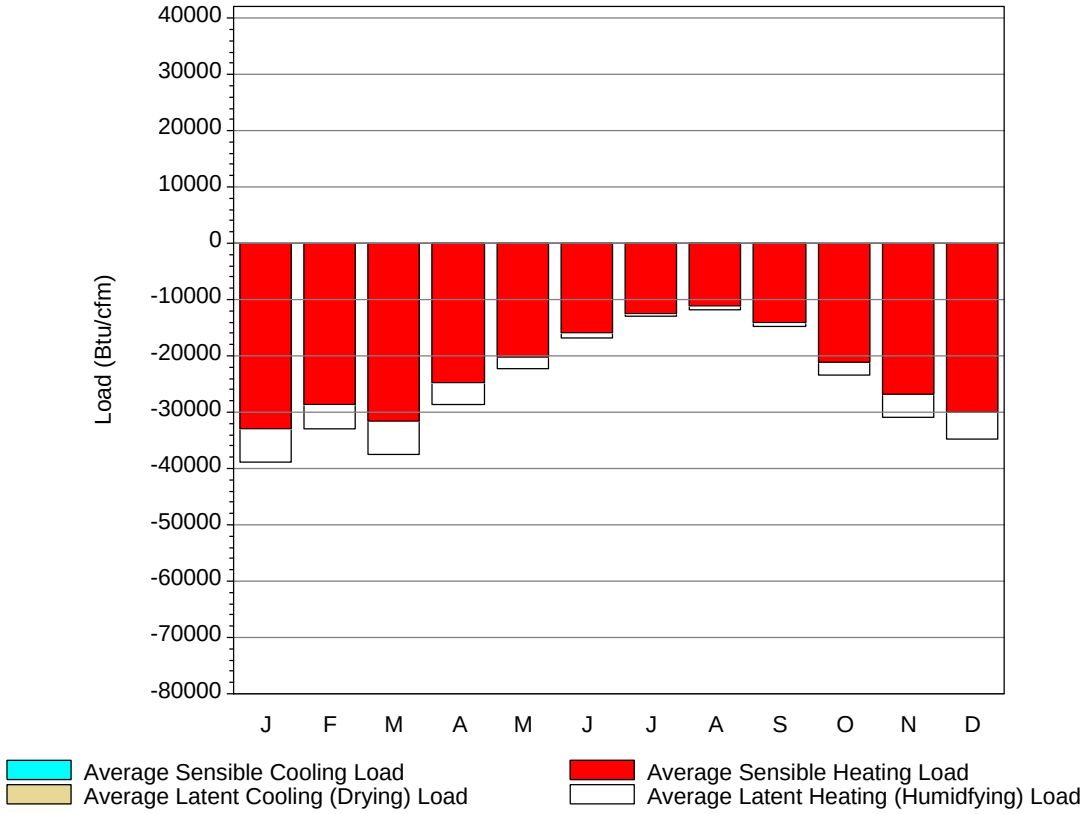
Week Ending	1.0% Temp (°F)	MCWB@ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB@ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	45	40.6	30.4	20.4	-9	32.2	40.3	19.3	11.2
14-Jan	43	37.6	30.2	19.8	-6	32.9	38.8	19.9	11.6
21-Jan	43	38.6	29.4	19.5	-9	31.5	40.1	19	12
28-Jan	45	39.9	27.3	18.2	-17	31.5	40.6	17	10.8
4-Feb	45	39.7	28.4	18.6	-18	33.6	42.6	17.8	11.4
11-Feb	45	41.3	31.7	21.5	-9	35.7	44.8	20.9	13.7
18-Feb	44	37.7	32.1	22	-2	30.8	40.3	20.5	12.2
25-Feb	45	39.6	32.4	22.3	-3	31.5	41.6	20.9	13
4-Mar	52	41.9	31.8	20.8	0	35.7	46.2	19.6	11.8
11-Mar	44	33.3	32.3	21.6	0	30.1	39.1	19.2	11.5
18-Mar	45	38.1	29.7	18.2	-4	28.7	37.9	17.8	10.3
25-Mar	49	36.2	31.6	20.8	0	29.4	40.5	18	11.3
1-Apr	45	38.1	33.6	22.5	3	28.7	40.1	19.3	11.4
8-Apr	45	38.7	36.6	25.9	12	31.5	43	21.1	13.6
15-Apr	49	40.4	38.1	27.6	12	33.6	43.9	22.8	14.9
22-Apr	48	38.9	40.6	30.7	21	32.9	41.3	25.4	17.3
29-Apr	54	46.2	42.5	31.9	23	40.6	52.9	26.5	18.5
6-May	55	42.1	43	32.6	23	40.6	45.4	27.4	19.6
13-May	55	45.3	44.6	34.3	27	38.5	46.6	28.6	21
20-May	57	45.3	47	36.2	28	39.9	47.9	30.4	22.2
27-May	60	48.9	49.2	38.1	30	46.9	55	33.4	24.6
4-Jun	61	51.4	50.9	39.4	32	48.3	49.8	35.3	27
10-Jun	61	49.7	51.9	40.8	34	47.6	51.9	37.7	29.2
17-Jun	64	53	51.9	41	25	50.4	55.3	38.4	30.3
24-Jun	63	52.6	53.8	43.3	27	50.4	52.7	41.1	32
1-Jul	63	54.7	54.5	44.6	37	60.9	59.2	44.4	35
8-Jul	64	54.5	55.8	45.9	39	61.6	60.9	47.3	38.4
15-Jul	66	57.9	56.9	46.7	39	61.6	61.3	49.4	40
22-Jul	65	56.6	57	48.1	39	69.3	60.2	51.4	41.5
29-Jul	66	55.3	56.6	48.4	43	64.4	59	51.1	42.7
5-Aug	68	59	58.8	49.6	43	70	61.9	53	43.9
12-Aug	70	60.8	58.9	49.5	43	70	63.8	53.9	43.9
19-Aug	66	57	57.8	48.8	43	66.5	58.7	52.3	42.7
26-Aug	65	60.6	56.3	47.7	39	70.7	62.6	51.2	40.9
2-Sep	66	58.3	56.4	47.1	39	66.5	61.2	49.4	38.9
9-Sep	63	55	56	46.7	39	65.1	60.3	48.6	38.2
16-Sep	62	56.8	54.8	45.3	36	61.6	56.9	46.6	35.8
23-Sep	60	53.7	52.1	43.2	31	60.2	54	43.4	32.6
30-Sep	57	49.4	49.7	40.1	32	50.4	52.8	39.7	29.2
7-Oct	55	49.3	48.6	39.2	28	51.1	52.9	37.7	27.2
14-Oct	56	50.5	45.9	36.5	27	52.5	52.5	34.9	23.9
21-Oct	52	47.1	43.4	33.7	22	44.1	48.5	32.2	21.8
28-Oct	50	45.2	40.8	31.2	18	42.7	47	29.2	18.9
4-Nov	53	47.2	40	30.3	14	46.2	52.1	28.3	18.4
11-Nov	48	43.4	38.6	29.2	11	39.9	46.3	27.6	17.2
18-Nov	50	42.6	35.8	25.9	7	35.7	45.4	23.9	13.9
25-Nov	48	41.2	34.3	24.8	7	37.8	49	23	14
2-Dec	46	42.3	33.8	23.8	3	35.7	43.3	22.8	13.5
9-Dec	48	43.9	33.9	24.5	0	37.1	45.6	23.1	15
16-Dec	43	39.3	30.9	21.8	0	32.9	40.9	21.1	13.2
23-Dec	45	41	31.8	21.7	0	35	42.7	21.6	13.1
31-Dec	48	42.5	32.3	22.3	-2	33.6	42.2	20.8	12

Degree Days, Heating and Cooling
(Base 65 F) & Cooling (Base 50F)



Month	Mean Cooling Degree Days (°F) Base 50	Mean Cooling Degree Days (°F) Base 65	Mean Heating Degree Days (°F) Base 65
JAN	0	0	1184.7
FEB	0.2	0	1020.9
MAR	0.3	0	1131.4
APR	0.9	0	869.2
MAY	12.4	0.1	688.4
JUN	38.5	0.2	526.3
JUL	93	0.9	389.1
AUG	106.3	1.7	345.8
SEP	41.1	0.1	456.4
OCT	4.5	0	730.3
NOV	0.5	0	949.4
DEC	0.1	0	1071.6
ANN	297.8	3	9363.5

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



Month	Average Sensible Cooling Load (Btu/cfm)	Average Sensible Heating Load (Btu/cfm)	Average Latent Cooling Load (Btu/cfm)	Average Latent Heating Load (Btu/cfm)
JAN	0	-33022	0	-5731
FEB	0	-28559	0	-4418
MAR	0	-31638	0	-5773
APR	0	-24747	1	-3971
MAY	0	-20139	2	-2103
JUN	0	-15976	4	-807
JUL	0	-12378	19	-485
AUG	1	-11157	21	-577
SEP	0	-13986	4	-845
OCT	0	-21167	0	-2203
NOV	0	-26835	0	-4053
DEC	0	-30045	0	-4779
ANN	1	-269649	51	-35745

Station Information		Shading Geometry in Dimensionless Units	
City, State, WBAN	N/A	N/A	N/A
Lat, Lon, Elev	N/A	N/A	N/A
Press Stn Type	N/A	N/A	N/A

AVERAGE INCIDENT SOLAR RADIATION
(Btu/sq.ft./day), Percentage Uncertainty = 9

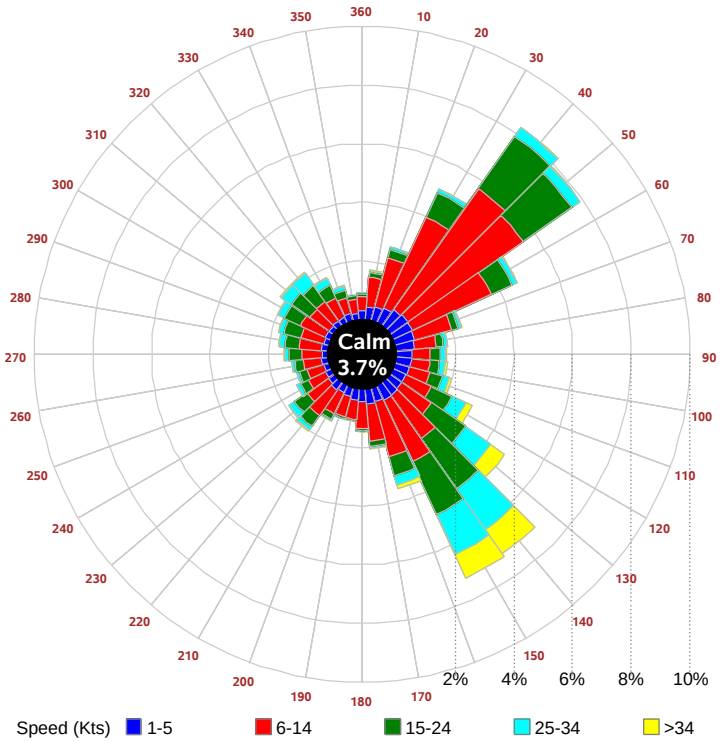
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ.	Global													
	Std.Dev.													
	Minimum													
	Maximum													
	Diffuse													
Clear Day	Global													
NORTH	Global													
	Diffuse													
Clear Day	Global													
EAST	Global													
	Diffuse													
Clear Day	Global													
SOUTH	Global													
	Diffuse													
Clear Day	Global													
WEST	Global													
	Diffuse													
Clear Day	Global													

AVERAGE TRANSMITTED SOLAR RADIATION (Btu/sq.ft./day) FOR DOUBLE GLAZING, Percentage Uncertainty = 9														
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ.	Unshaded													
NORTH	Unshaded													
	Shaded													
EAST	Unshaded													
	Shaded													
SOUTH	Unshaded													
	Shaded													
WEST	Unshaded													
	Shaded													

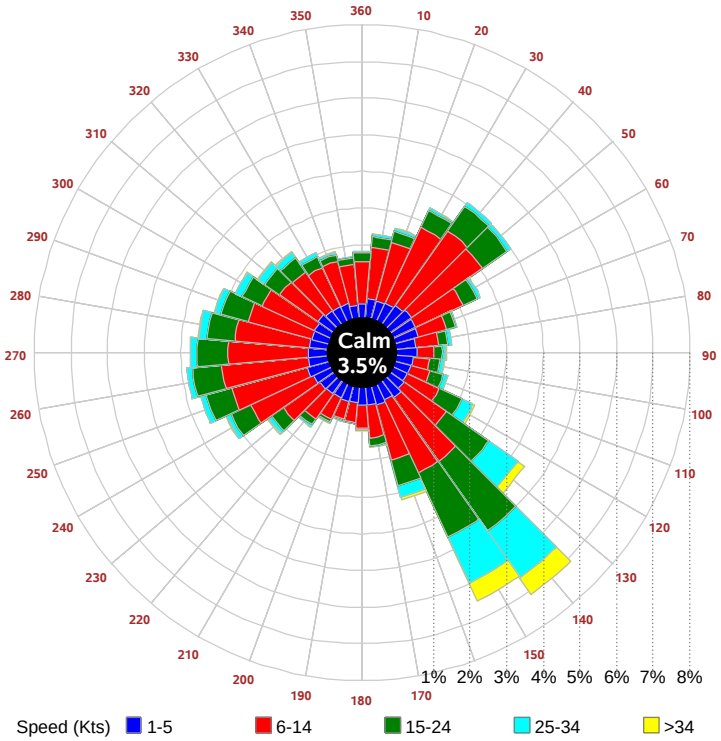
AVERAGE INCIDENT ILLUMINENCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9											
				March					June		
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear										
	M.Cloudy										
NORTH	M.Clear										
	M.Cloudy										
EAST	M.Clear										
	M.Cloudy										
SOUTH	M.Clear										
	M.Cloudy										
WEST	M.Clear										
	M.Cloudy										
M.Clear	(% hrs)										

				Sept					Dec		
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear										
	M.Cloudy										
NORTH	M.Clear										
	M.Cloudy										
EAST	M.Clear										
	M.Cloudy										
SOUTH	M.Clear										
	M.Cloudy										
WEST	M.Clear										
	M.Cloudy										
M.Clear	(% hrs)										

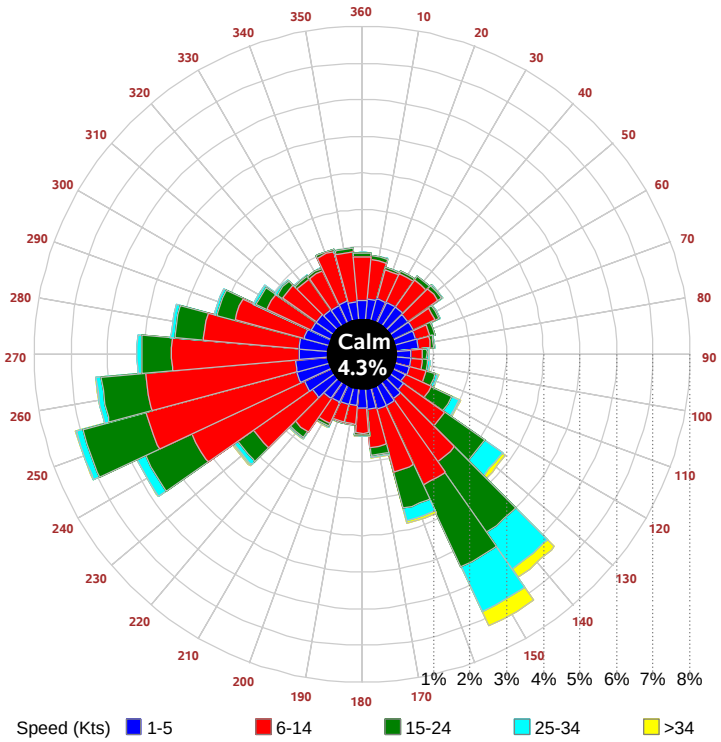
Wind Summary - December, January, and February



Wind Summary - March, April, and May



Wind Summary - June, July, and August



Wind Summary - September, October, and November