OKECIE, PL	
Latitude = 52.17 N	Station ID = ICAO_EPWA
Longitude = 20.97 E	Elevation = 362 Feet
Period of Record = 1988 To 2017	Average Pressure = 29.61 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	91	70	77	8.1	S
0.4% Occurrence	86	69	78	8.2	S
1.0% Occurrence	82	67	74	8.4	SE
2.0% Occurrence	79	65	71	8.4	W
Mean Daily Range	14	-	-	-	E
97.5% Occurrence	17	16	11	7.7	E
99.0% Occurrence	10	9	7	7.4	E
99.6% Occurrence	5	4	6	6.7	E
Median of Extreme Lows	1	0	5	5.6	E

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	74	86	104	8.9	SE
0.4% Occurrence	71	82	95	8	SE
1.0% Occurrence	69	79	90	7.6	VRB
2.0% Occurrence	67	76	85	7.3	W

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	111	77	0.73	7.5	VRB
0.4% Occurrence	100	75	0.66	7.1	W
1.0% Occurrence	95	74	0.63	6.9	SE
2.0% Occurrence	90	72	0.6	6.7	W

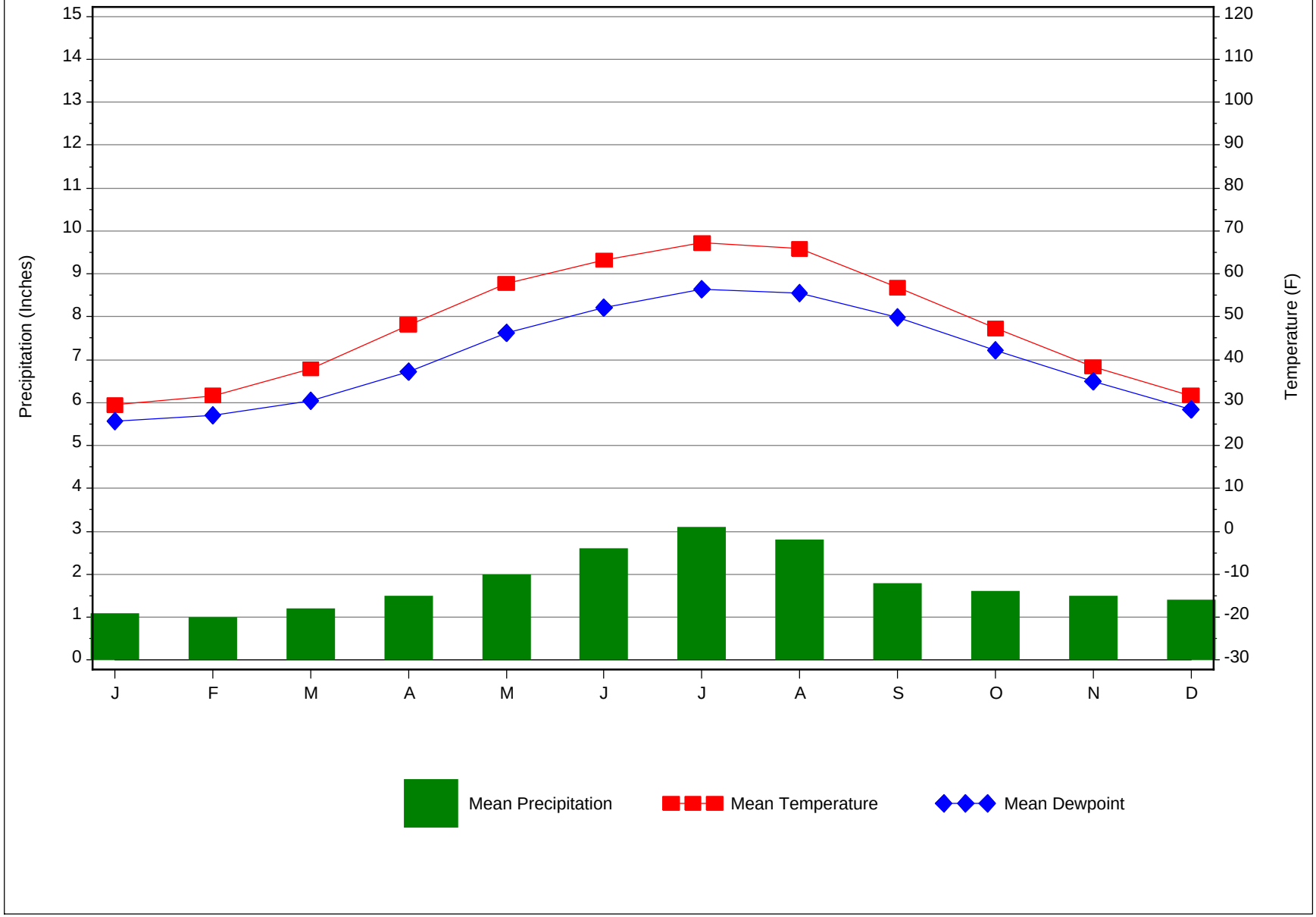
Air Conditioning/ Humid Area Criteria	**Threshold**	**T ≥ 93°F**	**T ≥ 80°F**	**Twb ≥ 73°F**	**Twb ≥ 67°F**
	# of Hours	12	169	11	234

Other Site Data

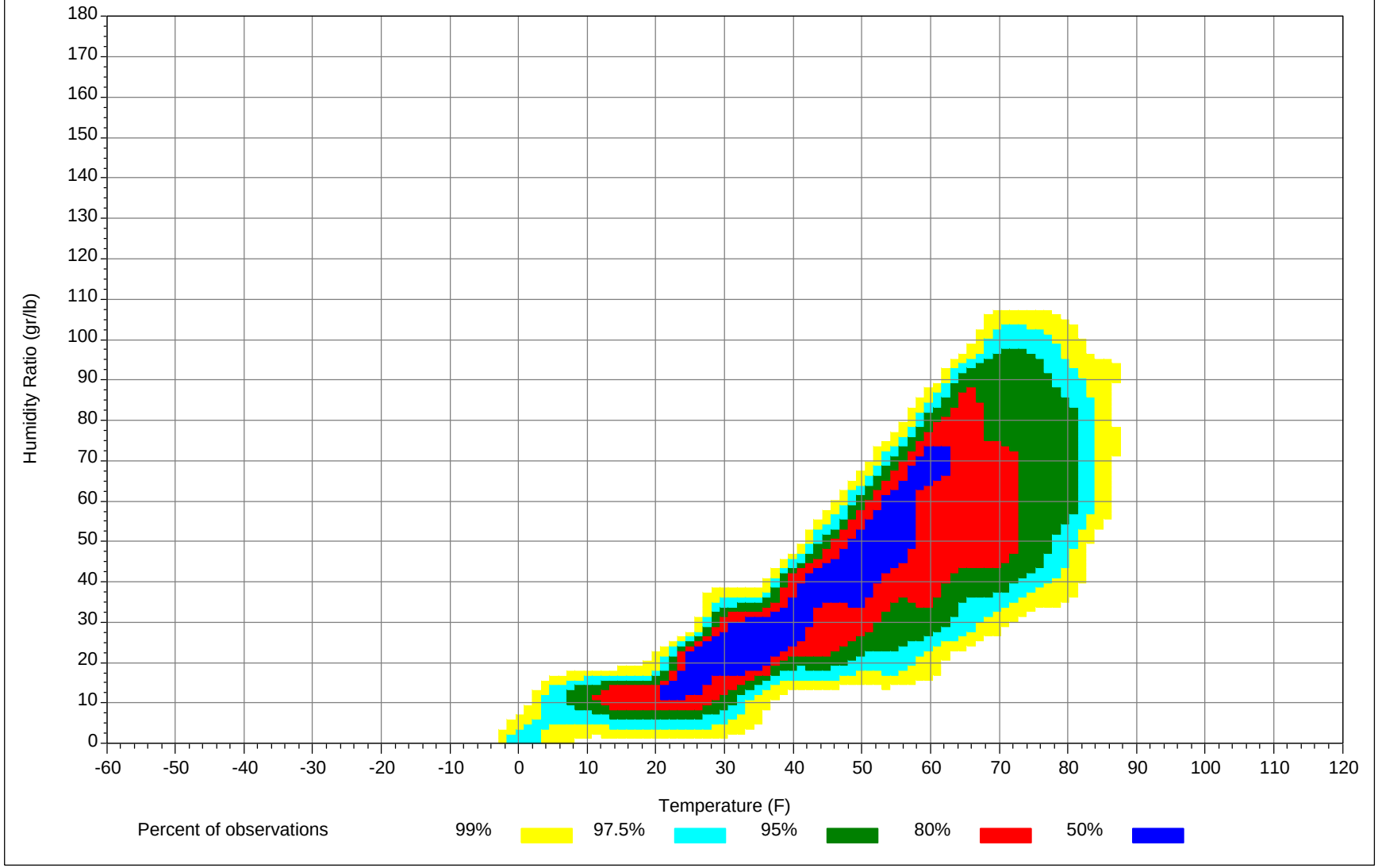
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
6	N/A	N/A	0.2 + 0.2
Ground Water Temperature (°F) 50 Foot Depth*	Frost Depth 50 Year Recurrence (in)	Ground Snow Load 50 Year Recurrence (lb/ft^2)	Average Annual Freeze-Thaw Cycles (#)
50.5	N/A	N/A	45

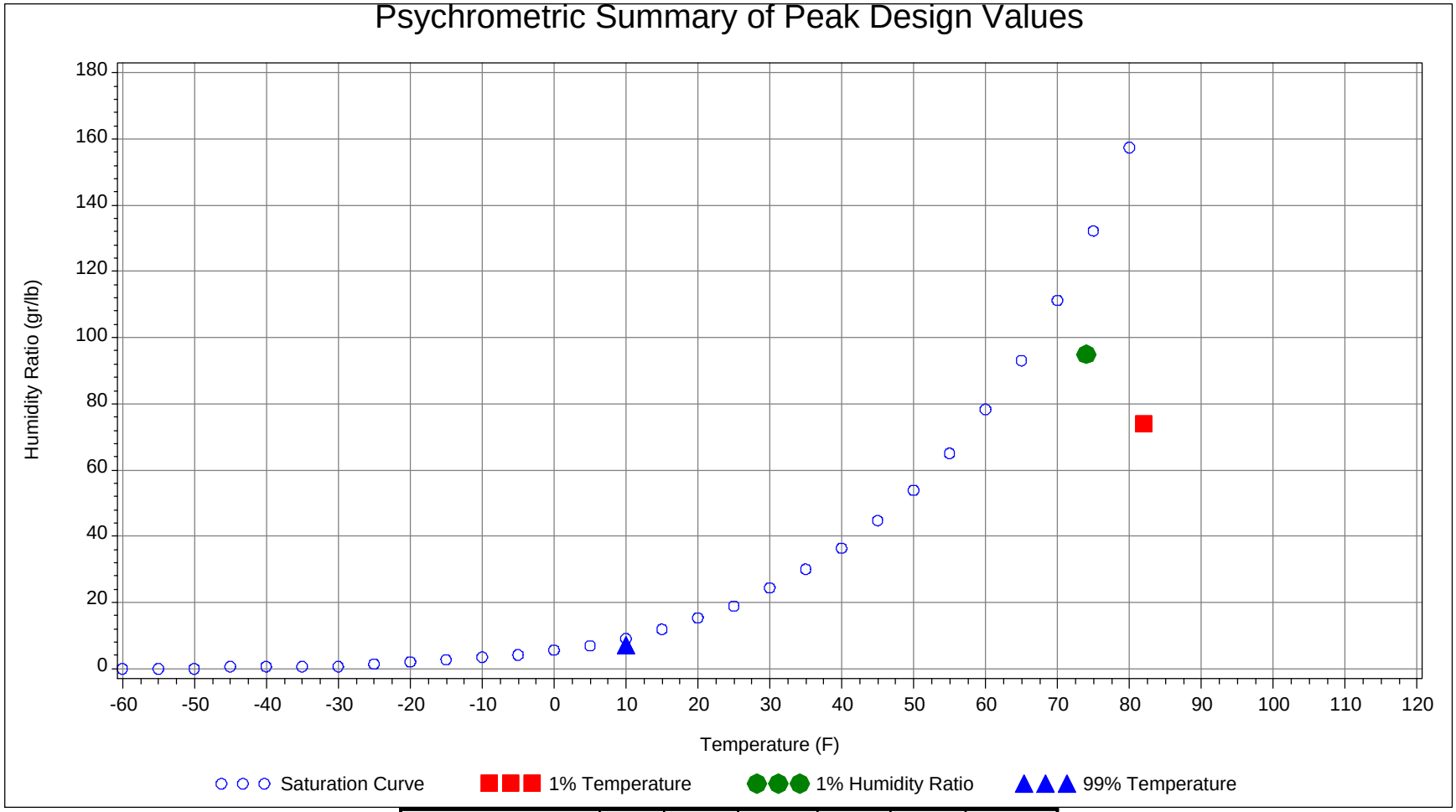
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

Average Annual Climate



Long Term Psychrometric Summary





	(°F) / (gr/lb)	MCDB (°F)	MCWB (°F)	MCDP (°F)	MCHR (gr/lb)	Enthalpy (btu/lb)
1.0% Dry Bulb	82.0		67		74.0	31.3
99.0% Dry Bulb	10.0				7.0	3.5
1.0% Humidity Ratio	95.0	74.0	68.1	65.5		32.6

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)**
95/ 99															
90/ 94															
85/ 89															
80/ 84															
75/ 79															
70/ 74												0		0	54.4
65/ 69												1	0	1	53.1
60/ 64							0		0	53.1		7	1	8	50.3
55/ 59		0	0	0	50.3		2	0	2	48.1	1	16	6	23	47.5
50/ 54	1	3	2	6	46.8	2	7	3	12	46.1	4	25	15	44	45.4
45/ 49	8	13	9	30	43.4	7	18	12	37	43.2	17	42	35	94	42.4
40/ 44	18	27	21	66	39.7	16	32	25	73	39.2	35	48	47	130	38.8
35/ 39	43	52	47	142	35.6	39	47	48	134	35.1	58	50	55	163	34.6
30/ 34	63	57	64	184	31.2	63	55	61	179	30.9	66	39	53	158	30.3
25/ 29	37	33	35	105	26	40	32	37	109	25.7	41	15	26	82	25.5
20/ 24	26	26	25	77	21.1	20	16	16	52	20.9	16	3	8	27	21
15/ 19	23	19	21	63	16.3	16	9	12	37	16.1	7	1	2	10	16.5
10/ 14	14	9	12	35	11.6	10	4	5	19	11.3	3	0	0	3	11.7
5/ 9	7	5	6	18	6.4	4	2	3	9	6.2	1		0	1	6.6
0/ 4	5	2	3	10	1.4	3	1	1	5	1.5	0			0	3
-5/ -1	2	1	1	4	-3	2	0	0	2	-2.7					
-10/ -6	2	0	0	2	-7.2	0	0		0	-7.3					
-15/-11	0	0	0	0	-12.5										
-20/-16	0			0	-16.2										

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)**
95/ 99															
90/ 94							0		0	67		1	0	1	70.8
85/ 89		0	0	0	59		1	0	1	65.6		5	1	6	68.4
80/ 84		1	0	1	59.6	0	8	2	10	64.4	0	16	5	21	66.1
75/ 79		5	1	6	58.5	0	24	7	31	61.6	2	37	15	54	63.7
70/ 74	0	9	3	12	56.3	2	35	16	53	59.2	8	49	30	87	61.1
65/ 69	0	16	6	22	54.1	8	40	27	75	57.1	23	49	44	116	59.2
60/ 64	2	32	16	50	51.4	27	49	46	122	54.8	55	48	61	164	56.9
55/ 59	9	45	32	86	48.9	53	46	59	158	51.8	73	28	55	156	53.7
50/ 54	33	45	50	128	46.5	67	30	49	146	48.3	58	7	25	90	50.2
45/ 49	54	41	52	147	42.9	56	11	30	97	44.5	17	0	4	21	45.7
40/ 44	54	27	40	121	39	24	2	8	34	40.4	3		0	3	41.5
35/ 39	47	14	25	86	34.9	9		2	11	36	0			0	38.7
30/ 34	28	4	13	45	30.8	2		0	2	31.2					
25/ 29	10	0	2	12	26.5	0			0	28.2					
20/ 24	0			0	22.7										
15/ 19															
10/ 14															
5/ 9															
0/ 4															
-5/ -1															
-10/ -6															
-15/-11															
-20/-16															

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)**
95/ 99		1	0	1	70.5		1	0	1	70.9					
90/ 94		5	1	6	69.6		4	1	5	70.3		0	0	0	66.9
85/ 89	0	15	4	19	69		9	3	12	69.6		1	0	1	67.2
80/ 84	1	32	13	46	67	0	28	8	36	67.3	0	4	0	4	65.6
75/ 79	6	50	27	83	64.8	3	47	21	71	64.6	0	11	2	13	63.4
70/ 74	19	55	47	121	63.2	12	62	41	115	62.6	1	30	7	38	61.3
65/ 69	47	49	57	153	61.4	36	50	57	143	61	4	40	18	62	59.1
60/ 64	77	30	59	166	58.8	75	34	64	173	58.5	20	59	45	124	56.7
55/ 59	68	11	32	111	55.1	75	11	41	127	54.7	57	58	68	183	53.7
50/ 54	26	1	7	34	51.1	37	2	13	52	51	77	30	63	170	50.1
45/ 49	4		1	5	47.1	8		1	9	46.8	52	8	28	88	45.8
40/ 44	0			0	43	1			1	42.9	23	1	7	31	41.4
35/ 39											6		1	7	37.2
30/ 34											0		0	0	32.5
25/ 29															
20/ 24															
15/ 19															
10/ 14															
5/ 9															
0/ 4															
-5/ -1															
-10/ -6															
-15/-11															
-20/-16															

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)**
95/ 99															
90/ 94															
85/ 89															
80/ 84															
75/ 79		0		0	65										
70/ 74		5	0	5	61.6										
65/ 69	0	11	2	13	59		0		0	54					
60/ 64	2	30	10	42	56	0	1	0	1	53.8					
55/ 59	14	40	32	86	53	2	8	2	12	52.1	0	1	0	1	50.3
50/ 54	44	59	56	159	49.2	9	24	15	48	48.5	2	5	3	10	48
45/ 49	63	53	58	174	44.8	32	45	39	116	44.8	10	16	12	38	44.3
40/ 44	50	29	43	122	40.3	49	51	51	151	40.5	24	31	28	83	40
35/ 39	37	15	30	82	36	56	48	52	156	36	48	57	52	157	35.7
30/ 34	26	5	14	45	31.1	51	40	47	138	31.2	71	66	69	206	31.2
25/ 29	10	0	3	13	26.9	26	14	23	63	26.5	40	35	38	113	26.2
20/ 24	1		0	1	21.7	9	5	6	20	21.5	19	17	20	56	21.5
15/ 19	0			0	17.6	4	3	3	10	16.6	15	10	13	38	16.6
10/ 14						3	1	2	6	11.6	8	6	7	21	11.6
5/ 9						0	0	0	0	6.7	5	4	4	13	6.7
0/ 4						0			0	2.6	3	1	2	6	1.7
-5/ -1											1	0	0	1	-2.9
-10/ -6											0			0	-5.5
-15/-11															
-20/-16															

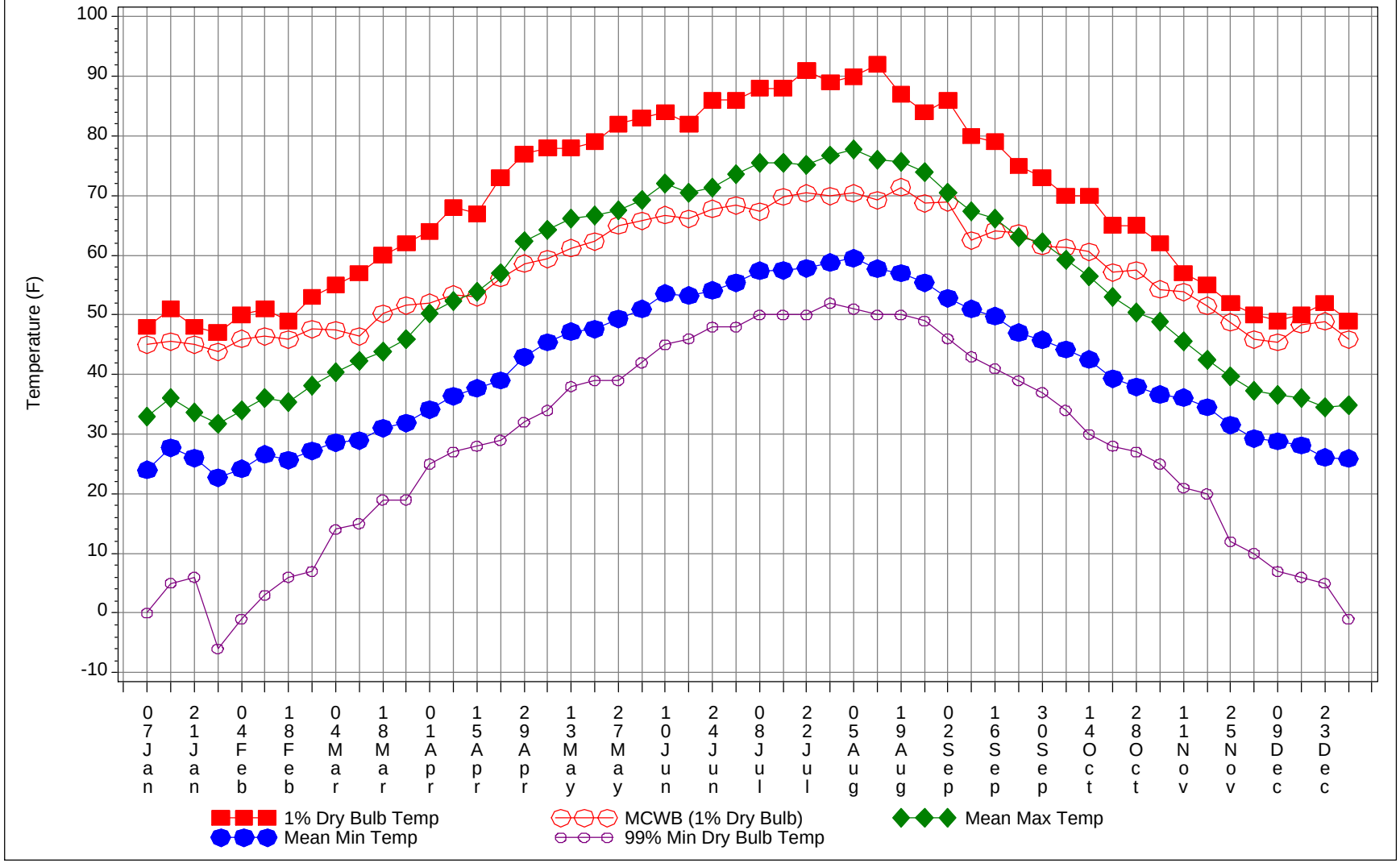
Caution: This summary reflects the typical distribtion of temperature in a typical year. It does not reflect the typical mositure distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary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

Dry-Bulb Temperature Hours For An Average Year

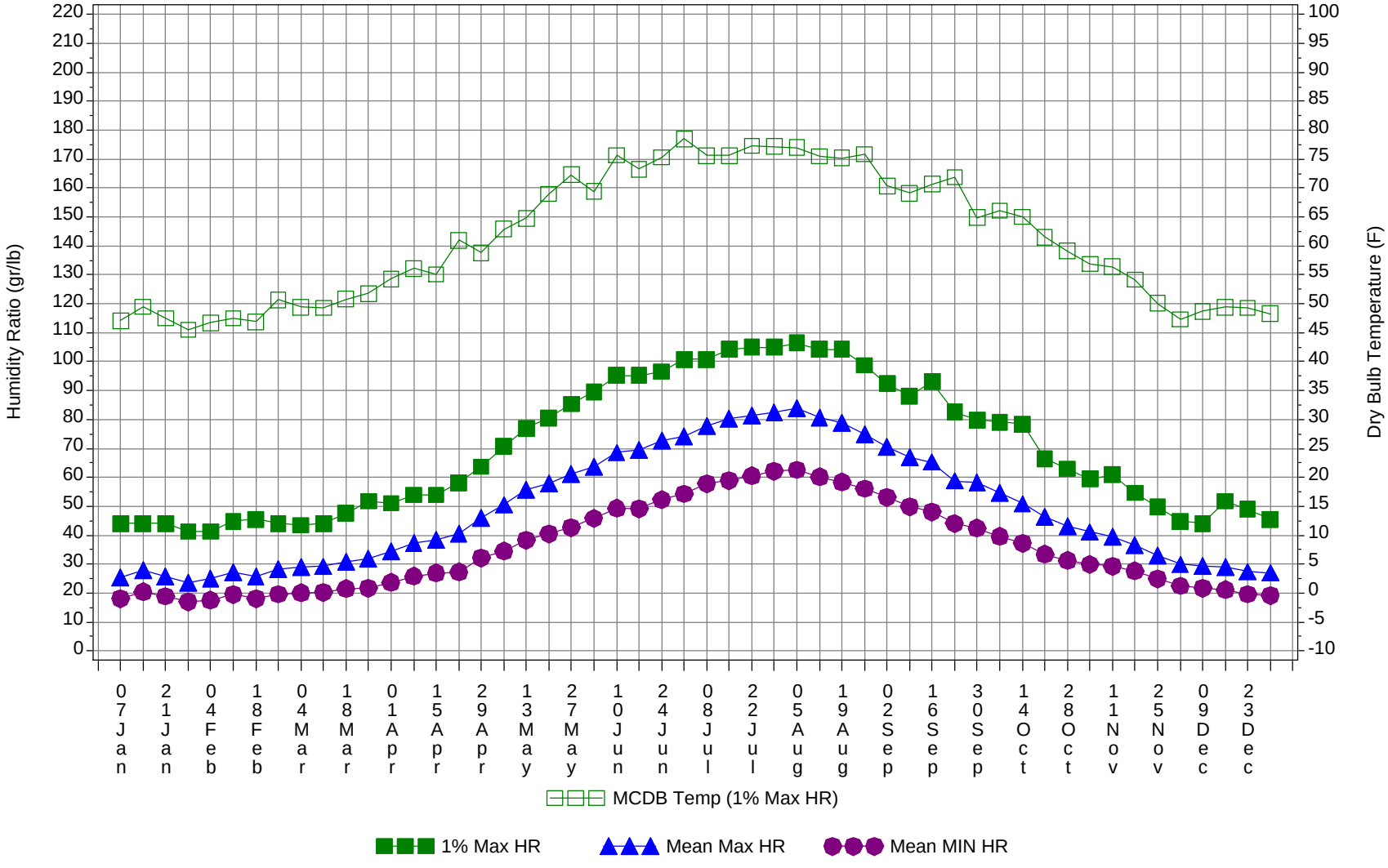
	Annual				
Temperature Range (°F)	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
95/ 99		2	0	2	70.7
90/ 94		10	2	12	69.9
85/ 89	0	30	8	38	68.9
80/ 84	1	88	27	116	66.6
75/ 79	11	174	73	258	63.9
70/ 74	42	246	144	432	61.7
65/ 69	119	257	212	588	59.7
60/ 64	258	290	303	851	56.8
55/ 59	352	265	327	944	53
50/ 54	359	238	300	897	48.8
45/ 49	329	246	280	855	44.2
40/ 44	297	249	270	816	39.8
35/ 39	344	285	312	941	35.4
30/ 34	370	266	321	957	31
25/ 29	205	130	164	499	26
20/ 24	93	67	75	235	21.1
15/ 19	65	41	51	157	16.4
10/ 14	37	20	26	83	11.5
5/ 9	18	11	14	43	6.4
0/ 4	12	3	7	22	1.6
-5/ -1	5	1	2	8	-2.9
-10/ -6	2	0	0	2	-7
-15/-11	0	0	0	0	-12.5
-20/-16	0			0	-16.2

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



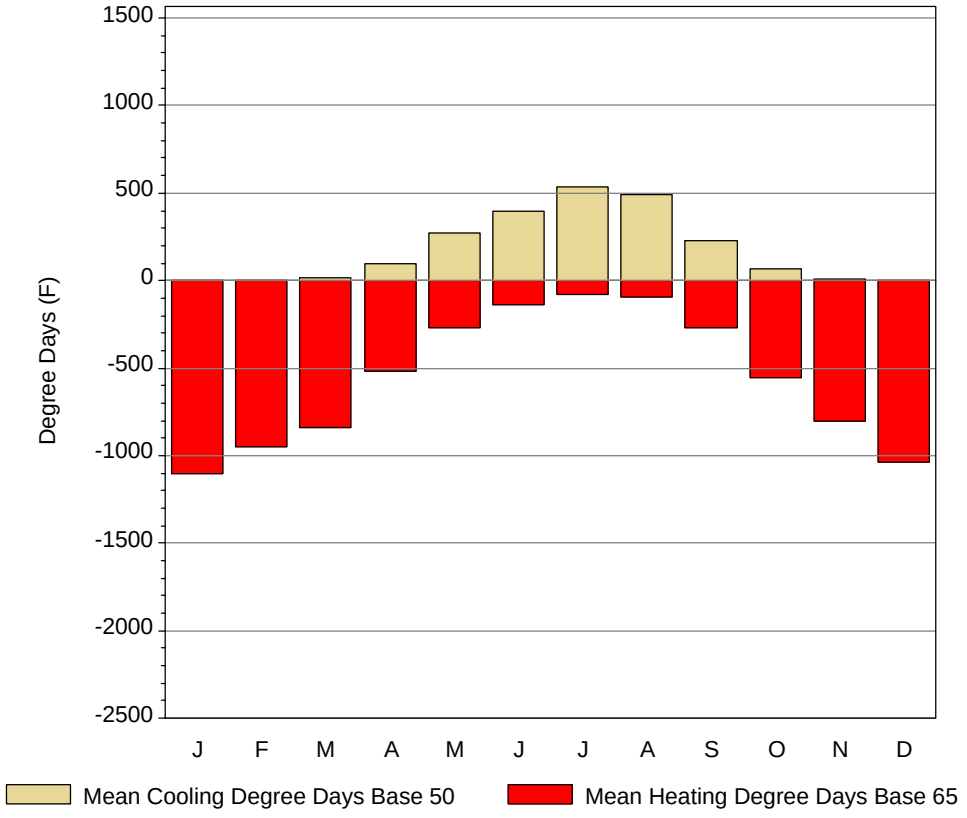
Long Term Humidity and Dry Bulb Temperature Summary



Long Term Humidity and Dry Bulb Temperature Summary

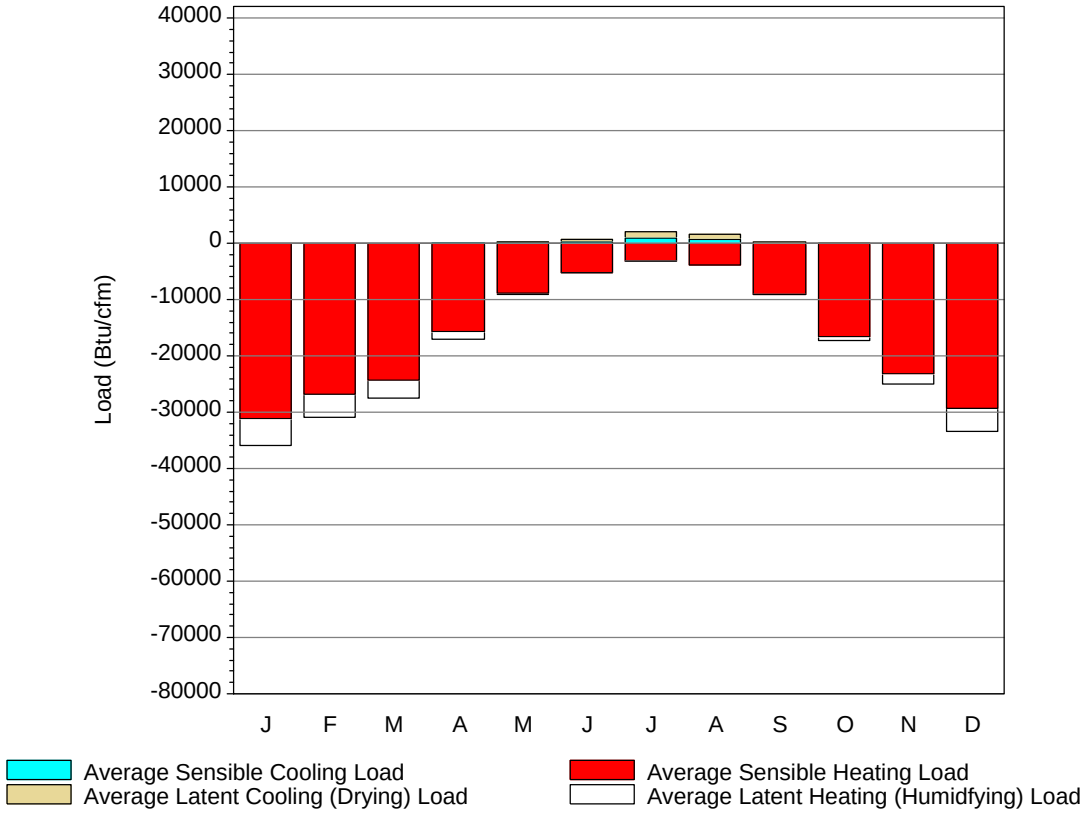
Week Ending	1.0% Temp (°F)	MCWB@ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB@ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	48	45	32.9	24	0	44.1	47.1	25.5	18
14-Jan	51	45.5	36.1	27.7	5	44.1	49.5	28	20.4
21-Jan	48	45	33.6	26	6	44.1	47.5	25.7	18.9
28-Jan	47	43.8	31.7	22.7	-6	41.3	45.5	23.7	17
4-Feb	50	46	33.9	24.2	-1	41.3	46.7	25.1	17.5
11-Feb	51	46.4	36.1	26.6	3	44.8	47.5	27.1	19.5
18-Feb	49	45.9	35.4	25.6	6	45.5	46.9	25.8	18.1
25-Feb	53	47.6	38.1	27.2	7	44.1	50.7	28.3	19.6
4-Mar	55	47.4	40.3	28.6	14	43.4	49.4	29	20
11-Mar	57	46.4	42.2	28.9	15	44.1	49.3	29.2	20.2
18-Mar	60	50.2	43.9	31	19	47.6	50.8	30.9	21.5
25-Mar	62	51.6	45.9	31.9	19	51.8	51.8	32	21.7
1-Apr	64	52	50.3	34.1	25	51.1	54.3	34.5	23.7
8-Apr	68	53.4	52.4	36.4	27	53.9	56.1	37.2	25.9
15-Apr	67	53	53.8	37.7	28	53.9	55.1	38.4	27
22-Apr	73	56.2	57	39	29	58.1	61	40.7	27.3
29-Apr	77	58.6	62.3	42.9	32	63.7	58.8	45.9	32.2
6-May	78	59.4	64.3	45.4	34	70.7	62.9	50.5	34.5
13-May	78	61.2	66.1	47.2	38	77	64.8	55.7	38.3
20-May	79	62.3	66.6	47.6	39	80.5	69	58	40.5
27-May	82	65	67.6	49.3	39	85.4	72.3	61.2	42.6
4-Jun	83	65.8	69.2	51	42	89.6	69.4	63.7	45.8
10-Jun	84	66.7	72.1	53.6	45	95.2	75.7	68.6	49.4
17-Jun	82	66.1	70.5	53.2	46	95.2	73.3	69.5	49.2
24-Jun	86	67.8	71.3	54.1	48	96.6	75.3	72.6	52.3
1-Jul	86	68.4	73.6	55.4	48	100.8	78.5	74.3	54.3
8-Jul	88	67.3	75.5	57.4	50	100.8	75.6	77.7	57.8
15-Jul	88	69.8	75.5	57.5	50	104.3	75.6	80.2	58.9
22-Jul	91	70.4	75.2	57.8	50	105	77.3	81.4	60.6
29-Jul	89	69.9	76.8	58.8	52	105	77.2	82.4	62.1
5-Aug	90	70.4	77.8	59.5	51	106.4	77	83.9	62.6
12-Aug	92	69.2	76.1	57.7	50	104.3	75.5	80.7	60.1
19-Aug	87	71.4	75.6	57	50	104.3	75.2	79	58.3
26-Aug	84	68.7	73.9	55.4	49	98.7	75.9	74.9	56.1
2-Sep	86	68.9	70.5	52.8	46	92.4	70.4	70.6	53.1
9-Sep	80	62.5	67.4	51	43	88.2	69.1	67	49.9
16-Sep	79	64.1	66.2	49.8	41	93.1	70.7	65.3	48
23-Sep	75	63.7	63	47	39	82.6	71.9	58.8	44
30-Sep	73	61.5	62.1	45.8	37	79.8	64.9	58.3	42.4
7-Oct	70	61.3	59.2	44.2	34	79.1	66.1	54.8	39.6
14-Oct	70	60.6	56.4	42.5	30	78.4	65	50.9	37.2
21-Oct	65	57.1	53	39.3	28	66.5	61.5	46.3	33.5
28-Oct	65	57.5	50.5	37.9	27	63	59.1	43.2	31.2
4-Nov	62	54.3	48.9	36.6	25	59.5	56.9	41.1	29.9
11-Nov	57	53.8	45.6	36.1	21	60.9	56.4	39.6	29.2
18-Nov	55	51.5	42.5	34.5	20	54.6	54.2	36.5	27.6
25-Nov	52	48.7	39.7	31.5	12	49.7	50.1	33.1	24.9
2-Dec	50	45.9	37.3	29.3	10	44.8	47.3	29.9	22.5
9-Dec	49	45.4	36.5	28.8	7	44.1	48.7	29.4	21.7
16-Dec	50	48.4	36.1	28.1	6	51.8	49.4	29	21.1
23-Dec	52	48.9	34.5	26.1	5	49	49.3	27.4	19.6
31-Dec	49	45.9	34.8	25.9	-1	45.5	48.3	27	19.2

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	0.3	0	1104
FEB	1.3	0	945.9
MAR	14.4	0.2	842
APR	93.7	8.8	516.8
MAY	270.9	44.1	268.1
JUN	397.5	81.2	137.1
JUL	532.3	142.9	76
AUG	490.3	119.9	95.6
SEP	226.2	25	272.5
OCT	70.5	2.3	551.9
NOV	6.4	0	802.6
DEC	0.6	0	1036.8
ANN	2104.4	424.4	6649.3

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	-31025	0	-4907
FEB	0	-26715	0	-4134
MAR	0	-24232	0	-3339
APR	19	-15623	0	-1420
MAY	141	-8898	38	-200
JUN	343	-5114	438	-8
JUL	837	-3188	1312	-1
AUG	641	-3838	1061	0
SEP	61	-9100	100	-13
OCT	0	-16676	8	-628
NOV	0	-23136	0	-1856
DEC	0	-29284	0	-4006
ANN	2042	-196829	2957	-20512

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

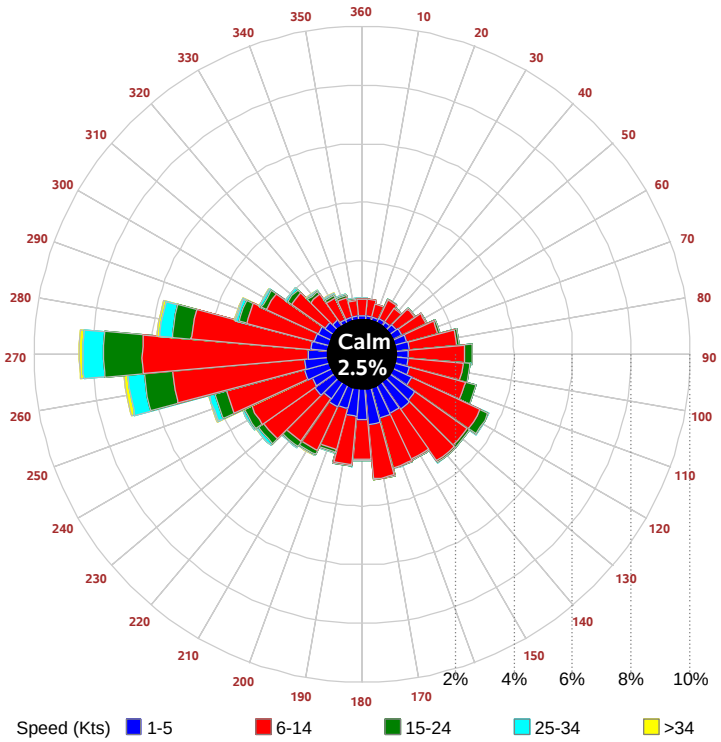
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ.	Global													
	Std.Dev.													
	Minimum													
	Maximum													
	Diffuse													
Clear Day	Global													
NORTH	Global													
	Diffuse													
Clear Day	Global													
EAST	Global												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

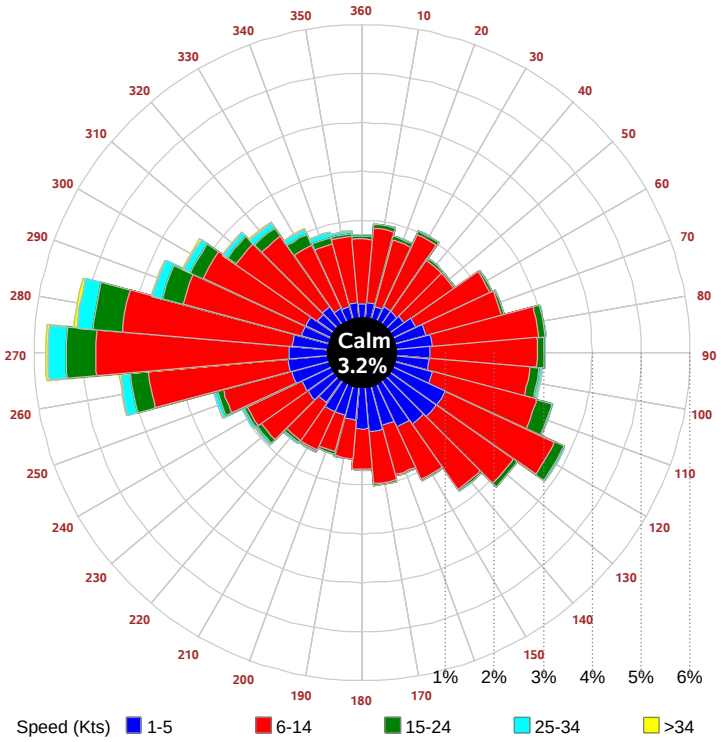
AVERAGE INCIDENT ILLUMINENCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9											
				March					June		
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear										
	M.Cloudy										
NORTH	M.Clear										
	M.Cloudy										
EAST	M.Clear										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

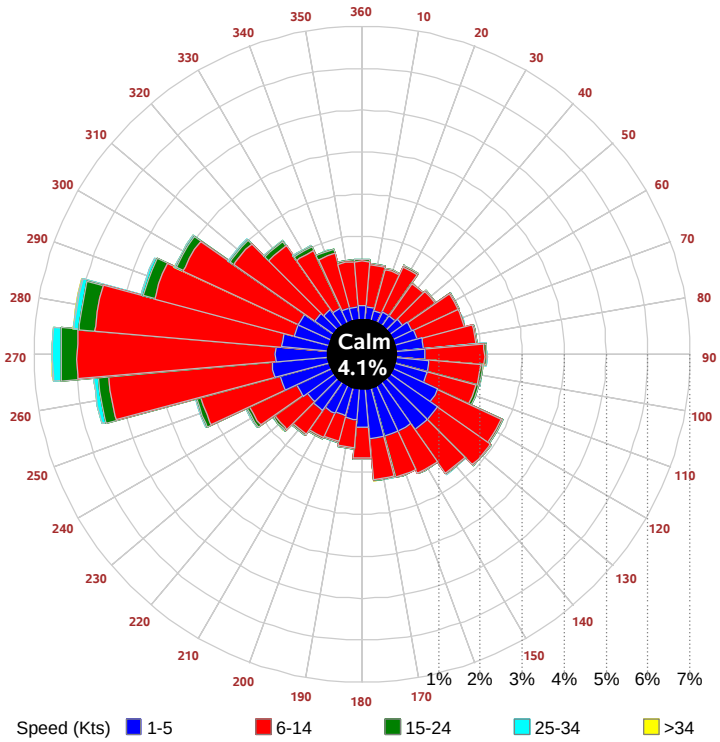
Wind Summary - December, January, and February



Wind Summary - March, April, and May



Wind Summary - June, July, and August



Wind Summary - September, October, and November