VILLAFRANCA, IT	
Latitude = 45.40 N	Station ID = ICAO_LIPX
Longitude = 10.89 E	Elevation = 239 Feet
Period of Record = 1988 To 2017	Average Pressure = 29.76 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	96	74	90	5.2	SW
0.4% Occurrence	93	74	94	5.3	SW
1.0% Occurrence	91	73	96	5.1	SW
2.0% Occurrence	88	72	94	5.1	SW
Mean Daily Range	17	-	-	-	N
97.5% Occurrence	28	27	19	2.8	N
99.0% Occurrence	25	24	17	2.6	N
99.6% Occurrence	23	22	16	2.8	N
Median of Extreme Lows	19	18	13	2.1	N

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	82	87	153	4.6	SW
0.4% Occurrence	79	86	137	4.4	SW
1.0% Occurrence	77	84	127	4.3	E
2.0% Occurrence	75	83	117	4.4	E

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	160	84	1.05	4.3	E
0.4% Occurrence	141	81	0.94	4.1	E
1.0% Occurrence	133	83	0.88	4.2	E
2.0% Occurrence	125	81	0.83	4.2	E

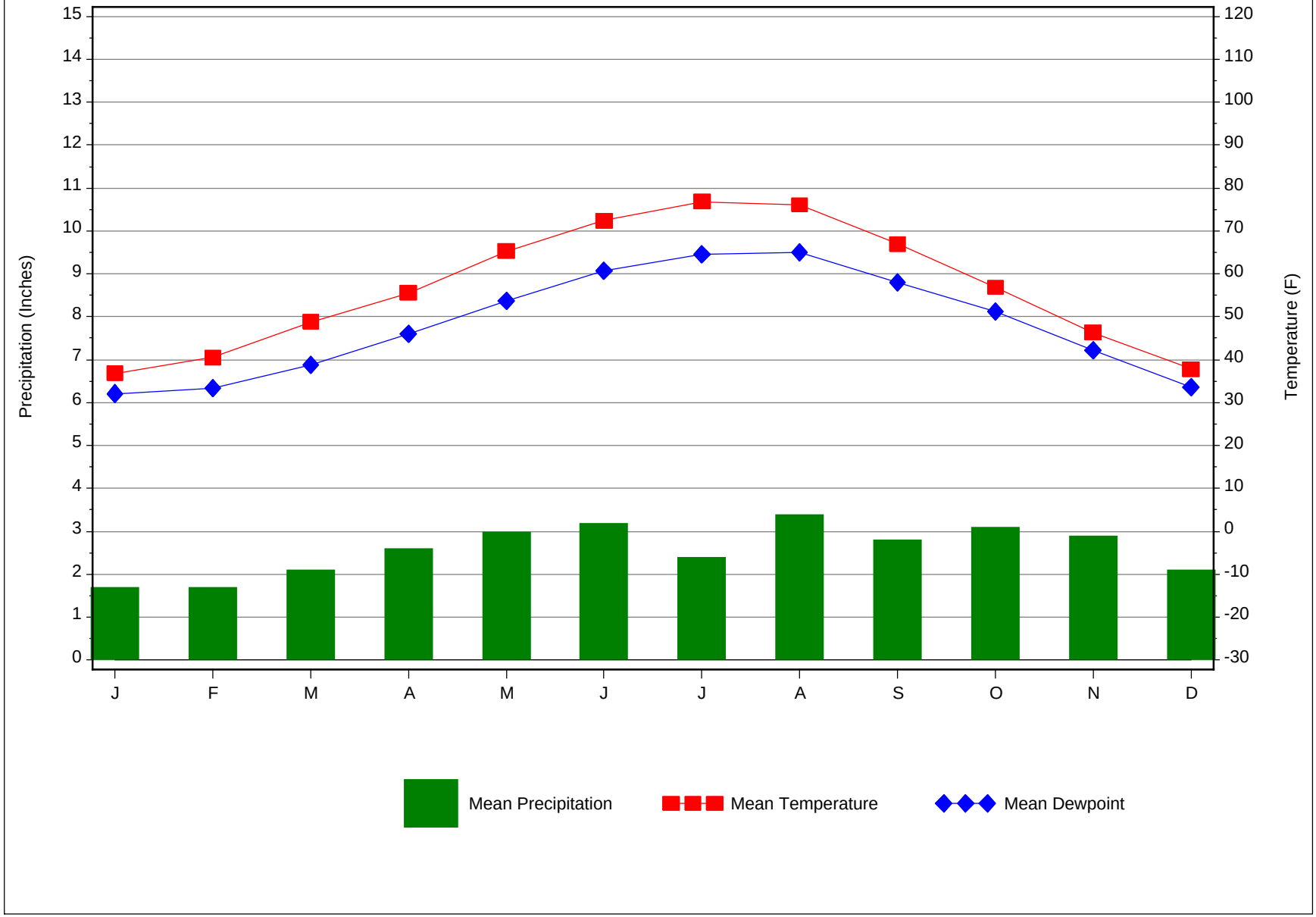
Air Conditioning/ Humid Area Criteria	**Threshold**	**T ≥ 93°F**	**T ≥ 80°F**	**Twb ≥ 73°F**	**Twb ≥ 67°F**
	# of Hours	49	802	469	1532

Other Site Data

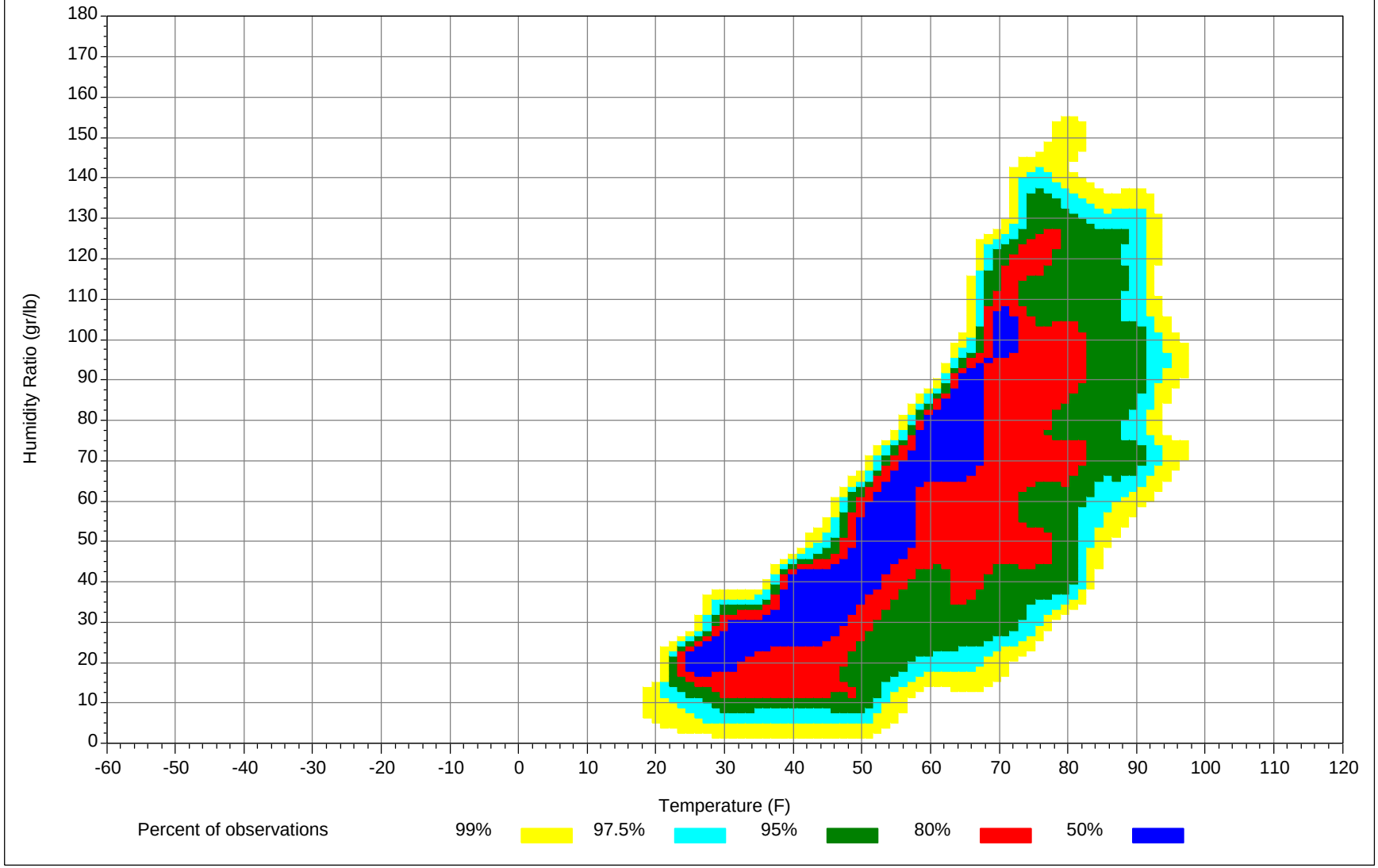
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
7	N/A	N/A	2.5 + 0.8
Ground Water Temperature (°F) 50 Foot Depth*	Frost Depth 50 Year Recurrence (in)	Ground Snow Load 50 Year Recurrence (lb/ft^2)	Average Annual Freeze-Thaw Cycles (#)
59.3	N/A	N/A	44

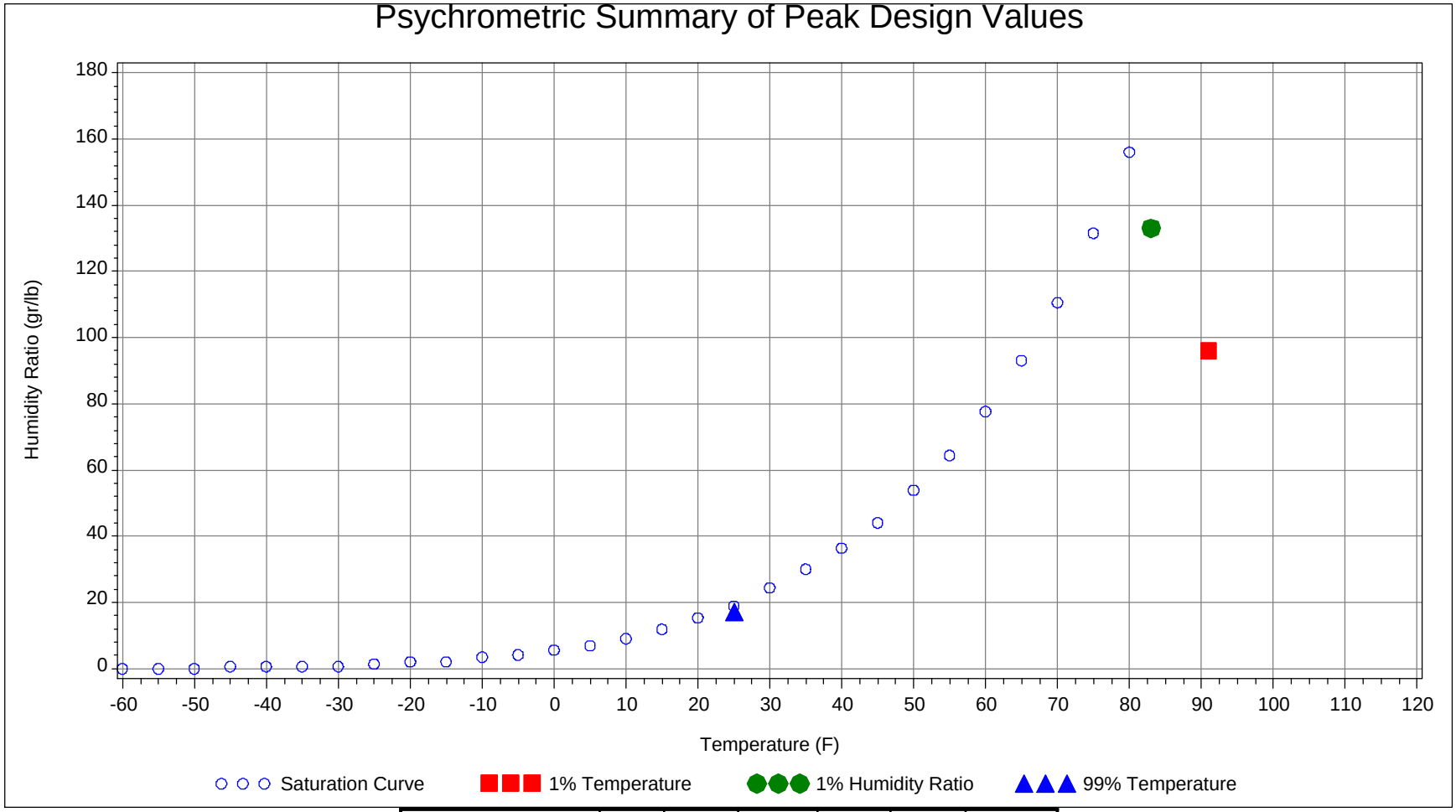
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

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	91.0		73		96.0	36.7
99.0% Dry Bulb	25.0				17.0	8.7
1.0% Humidity Ratio	133.0	83.0	77.3	75.2		40.7

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)**
100/104															
95/ 99															
90/ 94															
85/ 89															
80/ 84												0		0	57
75/ 79												1	1	2	57.4
70/ 74							0	0	0	53.4		4	2	6	54.8
65/ 69							0	0	0	53.7		10	6	16	54
60/ 64							3	1	4	51	0	32	18	50	51.7
55/ 59		2	0	2	47.1	0	15	6	21	47.7	1	61	41	103	49.3
50/ 54	0	16	4	20	45.2	2	39	21	62	45	32	67	74	173	47.4
45/ 49	10	49	29	88	42.8	23	60	55	138	42.9	77	45	62	184	43.9
40/ 44	36	58	53	147	39.9	36	42	54	132	39.6	62	16	27	105	39.9
35/ 39	63	62	78	203	35.9	67	36	54	157	35.6	53	9	13	75	36
30/ 34	70	40	62	172	31.2	62	21	26	109	31.1	18	2	4	24	31.2
25/ 29	53	17	19	89	26.4	26	6	6	38	26.4	4	1	0	5	26
20/ 24	12	3	3	18	21.8	6	1	1	8	21.9	1	0	0	1	21.6
15/ 19	3	1	0	4	17.9	2	0	0	2	18.2	0			0	17.5
10/ 14		0		0	14	0	0		0	12.6					
5/ 9															

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)**
100/104															
95/ 99							0	0	0	68.2		1	1	2	73.6
90/ 94							1	1	2	68.7		15	11	26	72.1
85/ 89		0	0	0	63		5	3	8	67.3	0	24	16	40	70.4
80/ 84		1	1	2	61.6	0	20	12	32	64.8	3	54	39	96	69
75/ 79		9	4	13	58.9	1	51	33	85	63	19	66	53	138	67.2
70/ 74		24	14	38	57.4	6	65	45	116	61.2	47	46	50	143	65.8
65/ 69	1	31	19	51	56	20	47	44	111	60.3	57	19	34	110	63.9
60/ 64	5	58	42	105	54.2	72	38	59	169	58.8	74	12	26	112	61
55/ 59	36	61	65	162	52.5	93	16	37	146	55.4	33	4	9	46	56.6
50/ 54	85	40	61	186	49.8	45	5	12	62	51.1	7	0	1	8	52.2
45/ 49	72	13	27	112	45.4	10	0	1	11	46.5	1		0	1	47
40/ 44	27	2	5	34	41.1	1		0	1	42.3					
35/ 39	14	0	2	16	37.2	0		0	0	38.3					
30/ 34	1			1	31.6			0	0	34					
25/ 29															
20/ 24															
15/ 19															
10/ 14															
5/ 9															

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)**
100/104		0	0	0	71		0	0	0	71.4					
95/ 99		5	3	8	73.1	0	7	4	11	73.4					
90/ 94	0	29	20	49	73.4	0	29	19	48	73.8		1	0	1	70.3
85/ 89	0	49	33	82	72.2	0	43	27	70	72.4		7	3	10	69.4
80/ 84	5	80	59	144	70.7	4	74	53	131	71		26	13	39	67.2
75/ 79	44	53	63	160	69.9	32	56	63	151	70.1	1	61	34	96	65.3
70/ 74	91	23	41	155	68.3	88	28	50	166	68.6	13	67	53	133	64.2
65/ 69	57	6	19	82	65.3	71	9	21	101	65.5	41	38	48	127	63.4
60/ 64	39	3	8	50	61.7	42	3	9	54	61.8	78	30	56	164	60.5
55/ 59	10	0	1	11	57.1	10	0	2	12	57	74	9	27	110	56.1
50/ 54	1			1	52.5	1		0	1	52	29	1	5	35	52
45/ 49						0			0	48	5		0	5	46.9
40/ 44											0			0	43.5
35/ 39															
30/ 34															
25/ 29															
20/ 24															
15/ 19															
10/ 14															
5/ 9															

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)**
100/104															
95/ 99															
90/ 94															
85/ 89															
80/ 84		1	0	1	61.8										
75/ 79		7	2	9	64.2										
70/ 74		27	9	36	62.7		1	0	1	67.4					
65/ 69	2	39	20	61	60.6	0	2	0	2	60.5					
60/ 64	31	69	57	157	58.8	2	17	5	24	56.9		1	0	1	53
55/ 59	66	61	76	203	54.9	14	46	28	88	53.8	1	4	1	6	50.5
50/ 54	71	30	53	154	50.5	42	67	57	166	49.7	4	23	8	35	47.2
45/ 49	49	11	23	83	45.6	57	56	64	177	44.9	27	62	39	128	43.8
40/ 44	18	2	5	25	41.4	38	25	37	100	40.6	35	51	48	134	40.1
35/ 39	9	1	2	12	37.1	44	18	34	96	36.4	53	55	73	181	36.1
30/ 34	2	0	0	2	32.4	31	8	14	53	31.6	67	34	55	156	31.3
25/ 29						9	2	1	12	26.9	46	14	20	80	26.5
20/ 24						1	0	0	1	22.4	12	4	3	19	21.8
15/ 19						0	0		0	18.8	3	1	1	5	18.3
10/ 14											0	0	0	0	13
5/ 9											0			0	9

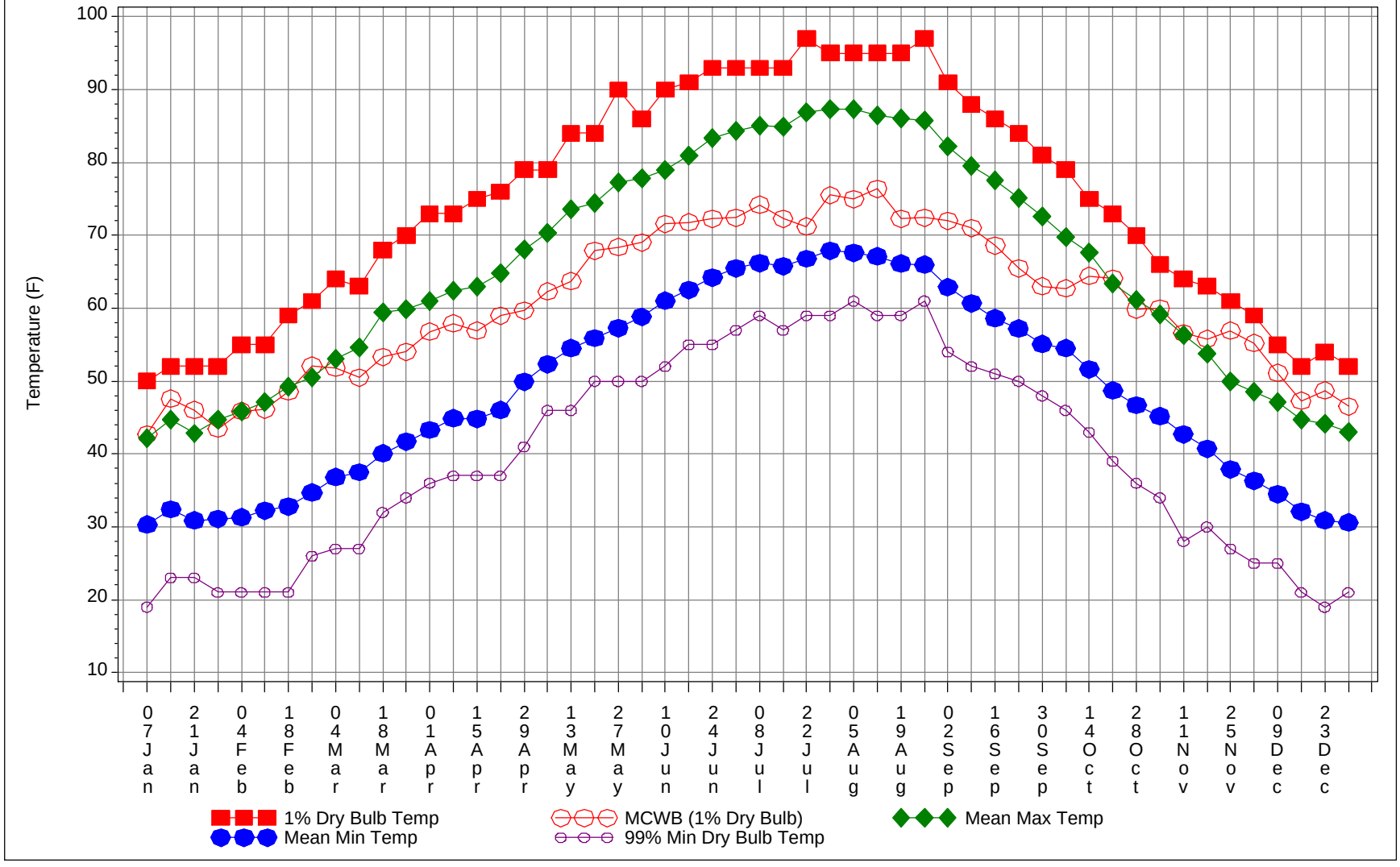
Caution: This summary reflects the typical distribtion of temperature in a typical year. It does not reflect the typical mositure distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary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

Dry-Bulb Temperature Hours For An Average Year

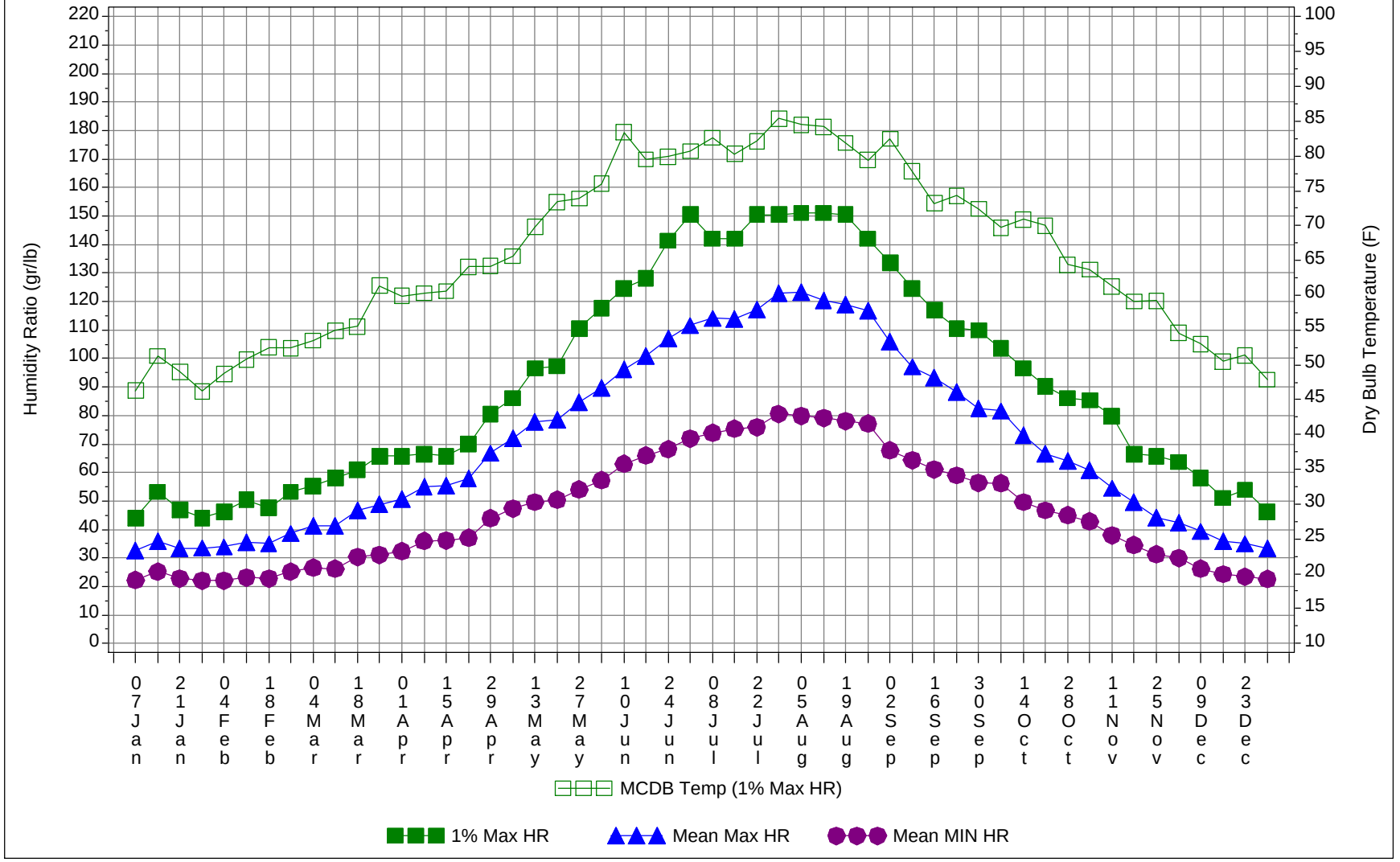
	Annual				
Temperature Range (°F)	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
100/104		0	0	0	71.3
95/ 99	0	13	9	22	73.3
90/ 94	0	75	51	126	73.2
85/ 89	0	127	82	209	71.6
80/ 84	12	255	177	444	69.6
75/ 79	95	303	253	651	67.5
70/ 74	245	284	264	793	65.3
65/ 69	248	202	211	661	62.4
60/ 64	342	265	282	889	58.7
55/ 59	339	279	294	912	53.9
50/ 54	320	289	295	904	49.1
45/ 49	332	295	301	928	44.2
40/ 44	253	197	230	680	40.1
35/ 39	302	180	255	737	36
30/ 34	252	105	160	517	31.2
25/ 29	137	40	47	224	26.4
20/ 24	32	8	7	47	21.8
15/ 19	9	2	1	12	18.1
10/ 14	0	0	0	0	12.9
5/ 9	0			0	9

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



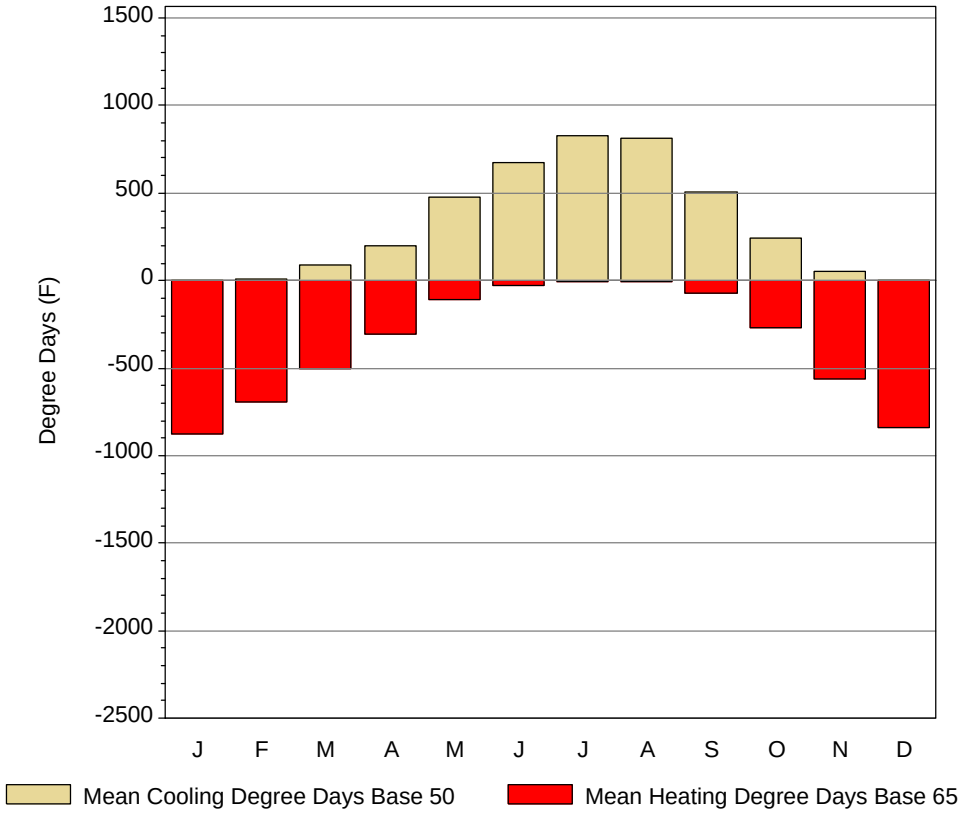
Long Term Humidity and Dry Bulb Temperature Summary



Long Term Humidity and Dry Bulb Temperature Summary

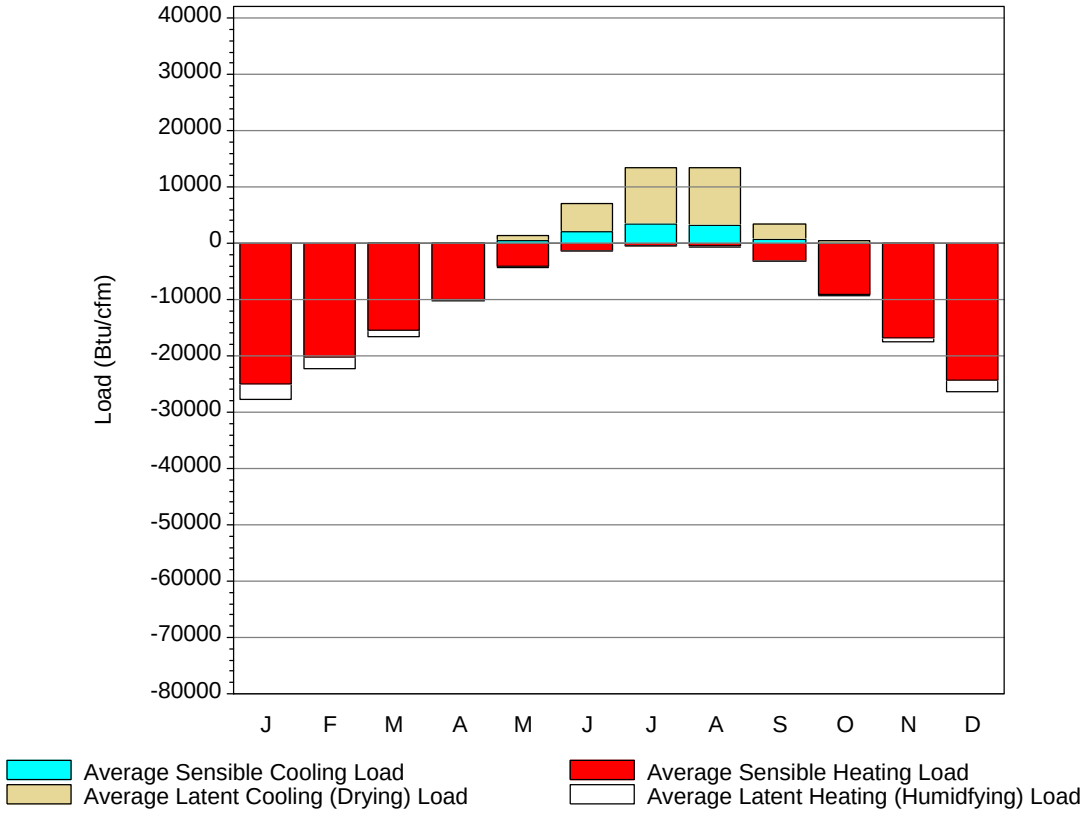
Week Ending	1.0% Temp (°F)	MCWB@ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB@ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	50	42.7	42.1	30.3	19	44.1	46.3	32.6	22.2
14-Jan	52	47.6	44.7	32.4	23	53.2	51.3	35.8	25.2
21-Jan	52	46	42.8	30.9	23	46.9	49	33.2	22.8
28-Jan	52	43.5	44.7	31.1	21	44.1	46.2	33.5	22.1
4-Feb	55	45.9	45.8	31.3	21	46.2	48.7	33.9	22
11-Feb	55	46.1	47.1	32.2	21	50.4	50.8	35.5	23.2
18-Feb	59	48.6	49.3	32.8	21	47.6	52.5	35	22.8
25-Feb	61	52.1	50.5	34.7	26	53.2	52.4	38.6	25.2
4-Mar	64	51.8	53.1	36.8	27	55.3	53.5	41.4	26.6
11-Mar	63	50.5	54.6	37.5	27	58.1	54.9	41.2	26.2
18-Mar	68	53.3	59.4	40.1	32	60.9	55.5	46.8	30.4
25-Mar	70	54	59.8	41.7	34	65.8	61.4	48.8	31.1
1-Apr	73	56.8	61	43.3	36	65.8	59.9	50.8	32.4
8-Apr	73	57.9	62.4	44.9	37	66.5	60.3	55.1	35.9
15-Apr	75	56.9	63	44.8	37	65.8	60.6	55.3	36.1
22-Apr	76	59	64.8	46	37	70	64.1	58	37.1
29-Apr	79	59.7	68.1	49.9	41	80.5	64.2	66.8	43.9
6-May	79	62.3	70.3	52.3	46	86.1	65.6	72.1	47.3
13-May	84	63.7	73.6	54.5	46	96.6	69.8	77.7	49.6
20-May	84	67.9	74.5	55.9	50	97.3	73.4	78.4	50.4
27-May	90	68.4	77.2	57.3	50	110.6	73.9	84.6	54
4-Jun	86	69	77.8	58.8	50	117.6	76	89.6	57.3
10-Jun	90	71.6	79	61	52	124.6	83.4	96.1	63.1
17-Jun	91	71.8	81	62.5	55	128.1	79.5	100.9	65.9
24-Jun	93	72.3	83.4	64.2	55	141.4	79.9	107.1	68.2
1-Jul	93	72.4	84.3	65.5	57	150.5	80.7	111.6	71.9
8-Jul	93	74.2	85.1	66.2	59	142.1	82.6	114.1	73.9
15-Jul	93	72.3	84.9	65.8	57	142.1	80.3	113.9	75.3
22-Jul	97	71.2	86.9	66.8	59	150.5	82.1	117.2	75.9
29-Jul	95	75.5	87.3	67.9	59	150.5	85.4	123	80.5
5-Aug	95	75	87.3	67.6	61	151.2	84.5	123.3	79.8
12-Aug	95	76.4	86.4	67.1	59	151.2	84.2	120.3	79.1
19-Aug	95	72.3	86.1	66.1	59	150.5	81.9	119	78
26-Aug	97	72.4	85.7	66	61	142.1	79.4	116.9	77.2
2-Sep	91	72	82.2	62.9	54	133.7	82.5	105.9	67.8
9-Sep	88	71	79.6	60.7	52	124.6	77.8	97.1	64.3
16-Sep	86	68.6	77.5	58.6	51	116.9	73.2	93.2	61.1
23-Sep	84	65.5	75.1	57.2	50	110.6	74.3	88.4	59
30-Sep	81	63	72.6	55.1	48	109.9	72.4	82.5	56.3
7-Oct	79	62.7	69.7	54.5	46	103.6	69.7	81.6	56.2
14-Oct	75	64.4	67.6	51.6	43	96.6	70.9	73.2	49.6
21-Oct	73	64.1	63.4	48.7	39	90.3	70	66.6	46.7
28-Oct	70	59.8	61.1	46.7	36	86.1	64.4	64	45
4-Nov	66	60	59.1	45.2	34	85.4	63.7	60.9	42.9
11-Nov	64	56.6	56.3	42.7	28	79.8	61.3	54.5	37.9
18-Nov	63	55.8	53.7	40.7	30	66.5	59.1	49.6	34.5
25-Nov	61	56.9	49.9	37.9	27	65.8	59.2	44.3	31.2
2-Dec	59	55.2	48.6	36.3	25	63.7	54.6	42.5	30
9-Dec	55	51.1	47.1	34.5	25	58.1	53	39.3	26.2
16-Dec	52	47.3	44.7	32.1	21	51.1	50.5	35.8	24.3
23-Dec	54	48.7	44.1	30.9	19	53.9	51.4	35	23.4
31-Dec	52	46.5	43	30.6	21	46.2	47.9	33.3	22.6

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	1.5	0	874.5
FEB	12.4	0.1	692.4
MAR	86.4	3.8	505.8
APR	201.8	21.7	304.8
MAY	475	115.3	107.1
JUN	672.6	251.6	29.2
JUL	830.7	373.5	7.9
AUG	809.7	353.5	8.7
SEP	509.8	132.4	73.2
OCT	240.3	19	270.2
NOV	50.2	0.3	561
DEC	3.7	0	842.4
ANN	3894.1	1271.2	4277.2

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	-25077	0	-2553
FEB	0	-20142	0	-2074
MAR	3	-15462	1	-1152
APR	31	-9953	17	-265
MAY	538	-4155	924	-74
JUN	2001	-1403	5096	-19
JUL	3544	-477	9872	-2
AUG	3306	-545	10205	-2
SEP	627	-3048	2815	-24
OCT	17	-9143	491	-141
NOV	0	-16868	25	-722
DEC	0	-24246	0	-2204
ANN	10067	-130519	29446	-9232

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

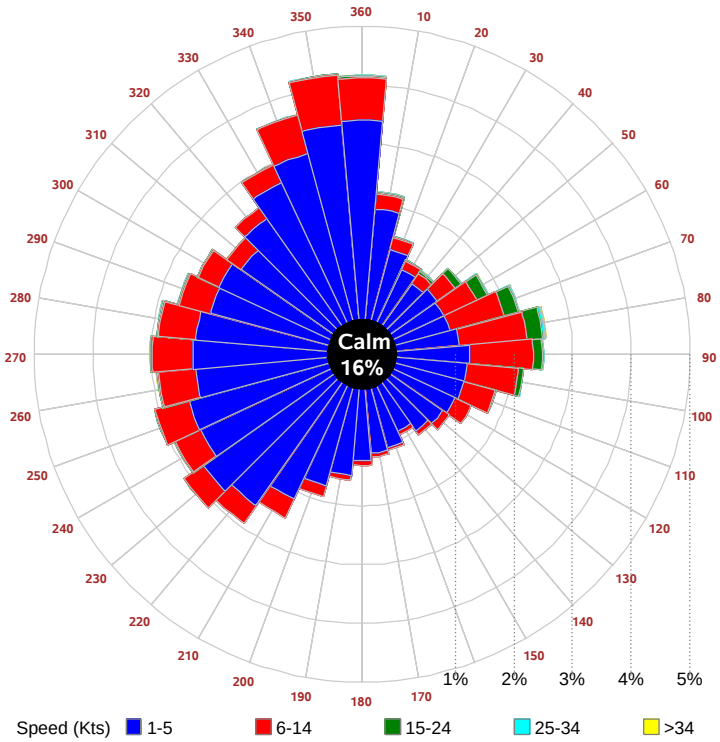
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ.	Global													
	Std.Dev.													
	Minimum													
	Maximum													
	Diffuse													
Clear Day	Global													
NORTH	Global													
	Diffuse													
Clear Day	Global													
EAST	Global												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

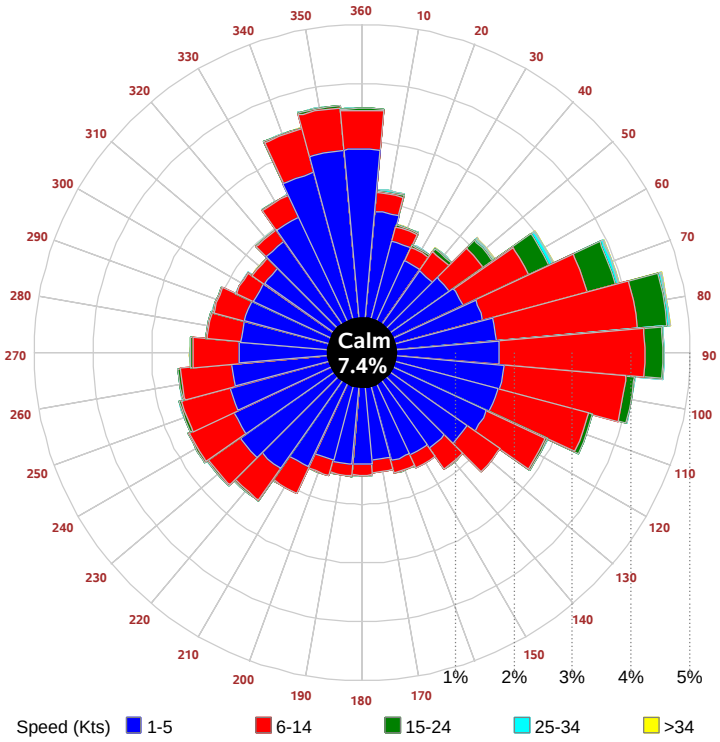
AVERAGE INCIDENT ILLUMINENCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9											
				March					June		
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear										
	M.Cloudy										
NORTH	M.Clear										
	M.Cloudy										
EAST	M.Clear										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

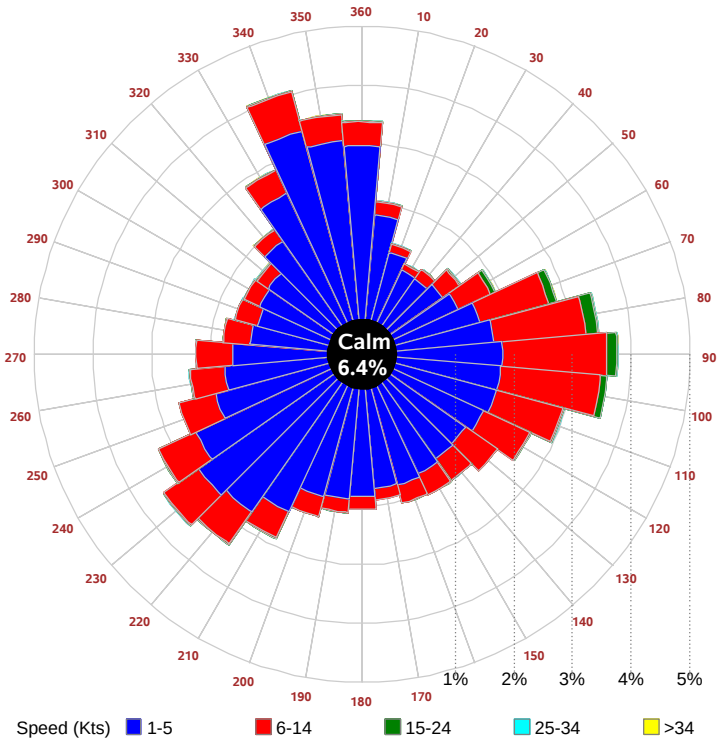
Wind Summary - December, January, and February



Wind Summary - March, April, and May



Wind Summary - June, July, and August



Wind Summary - September, October, and November