ROTA NS, SP

Latitude = 36.65 N	Station ID = ICAO_LERT
Longitude = 6.35 W	Elevation = 86 Feet
Period of Record = 1989 To 2018	Average Pressure = 29.95 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	99	71	70	13.4	VRB
0.4% Occurrence	93	70	75	13.2	VRB
1.0% Occurrence	90	70	77	12.9	VRB
2.0% Occurrence	87	69	78	11.9	VRB
Mean Daily Range	15	-	-	-	NE
97.5% Occurrence	43	41	34	6.2	NE
99.0% Occurrence	39	37	29	6.7	NE
99.6% Occurrence	37	34	25	6.9	NNE
Median of Extreme Lows	34	31	21	7.3	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	77	86	121	9.2	VRB
0.4% Occurrence	75	84	114	9.6	VRB
1.0% Occurrence	74	83	110	9.5	VRB
2.0% Occurrence	72	81	102	9.3	VRB

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	131	81	0.88	7.9	VRB
0.4% Occurrence	119	78	0.79	7.9	VRB
1.0% Occurrence	111	77	0.74	8	VRB
2.0% Occurrence	111	77	0.74	7.9	VRB

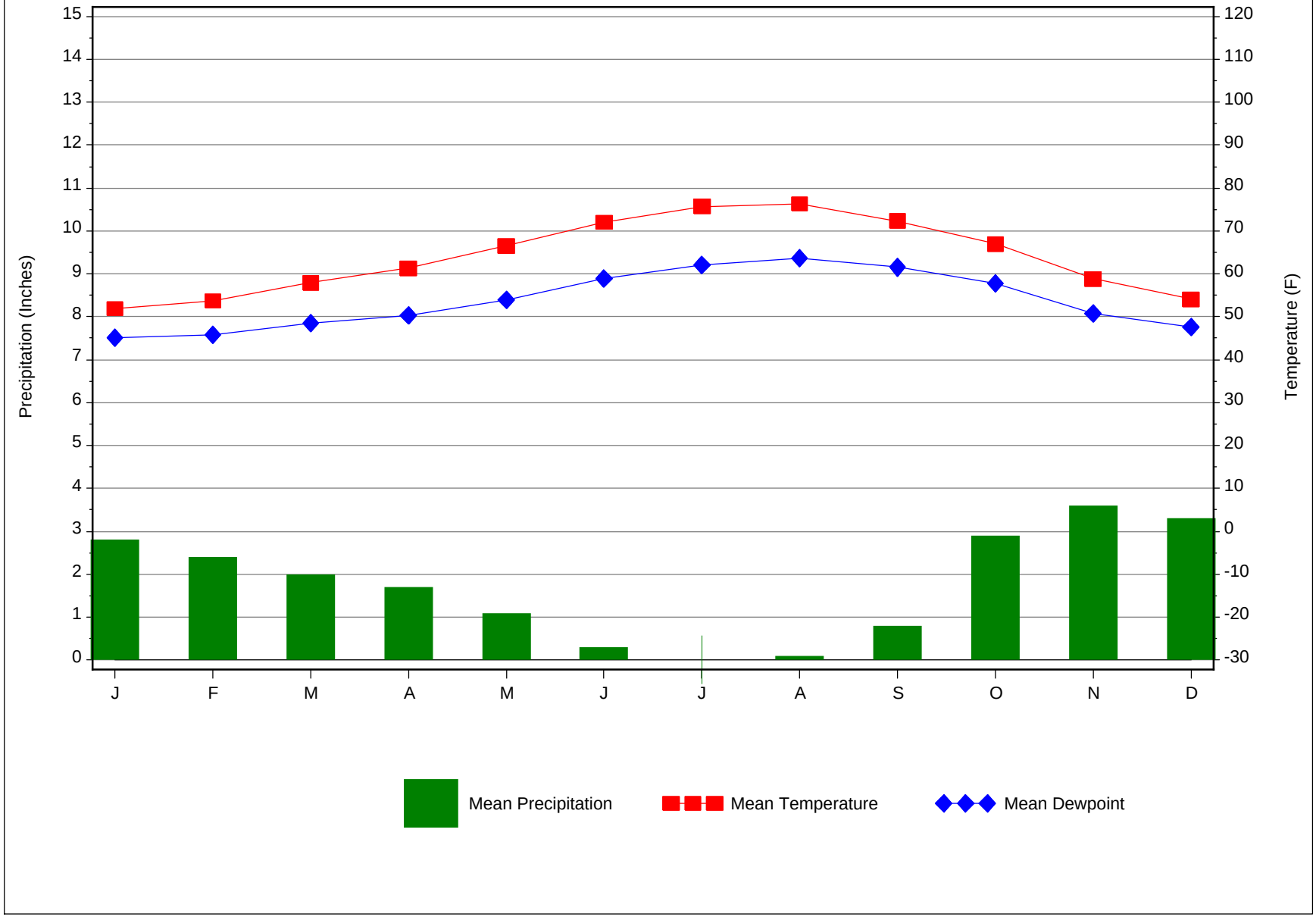
Air Conditioning/ Humid Area Criteria	**Threshold**	**T ≥ 93°F**	**T ≥ 80°F**	**Twb ≥ 73°F**	**Twb ≥ 67°F**
	# of Hours	42	635	163	1491

Other Site Data

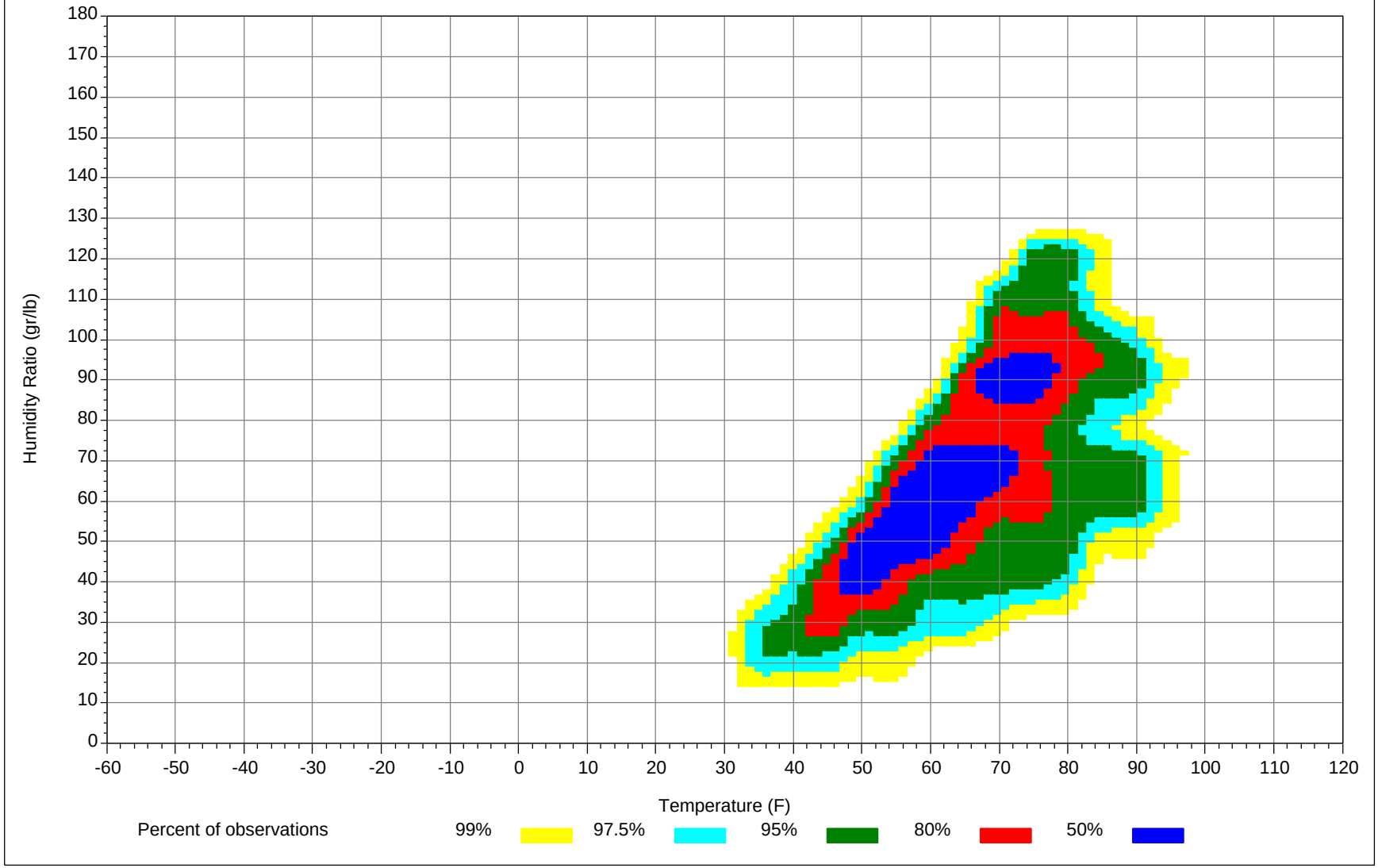
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
9	N/A	90	1.7 + 0.7
Ground Water Temperature (°F) 50 Foot Depth*	Frost Depth 50 Year Recurrence (in)	Ground Snow Load 50 Year Recurrence (lb/ft^2)	Average Annual Freeze-Thaw Cycles (#)
66.5	5	5	0

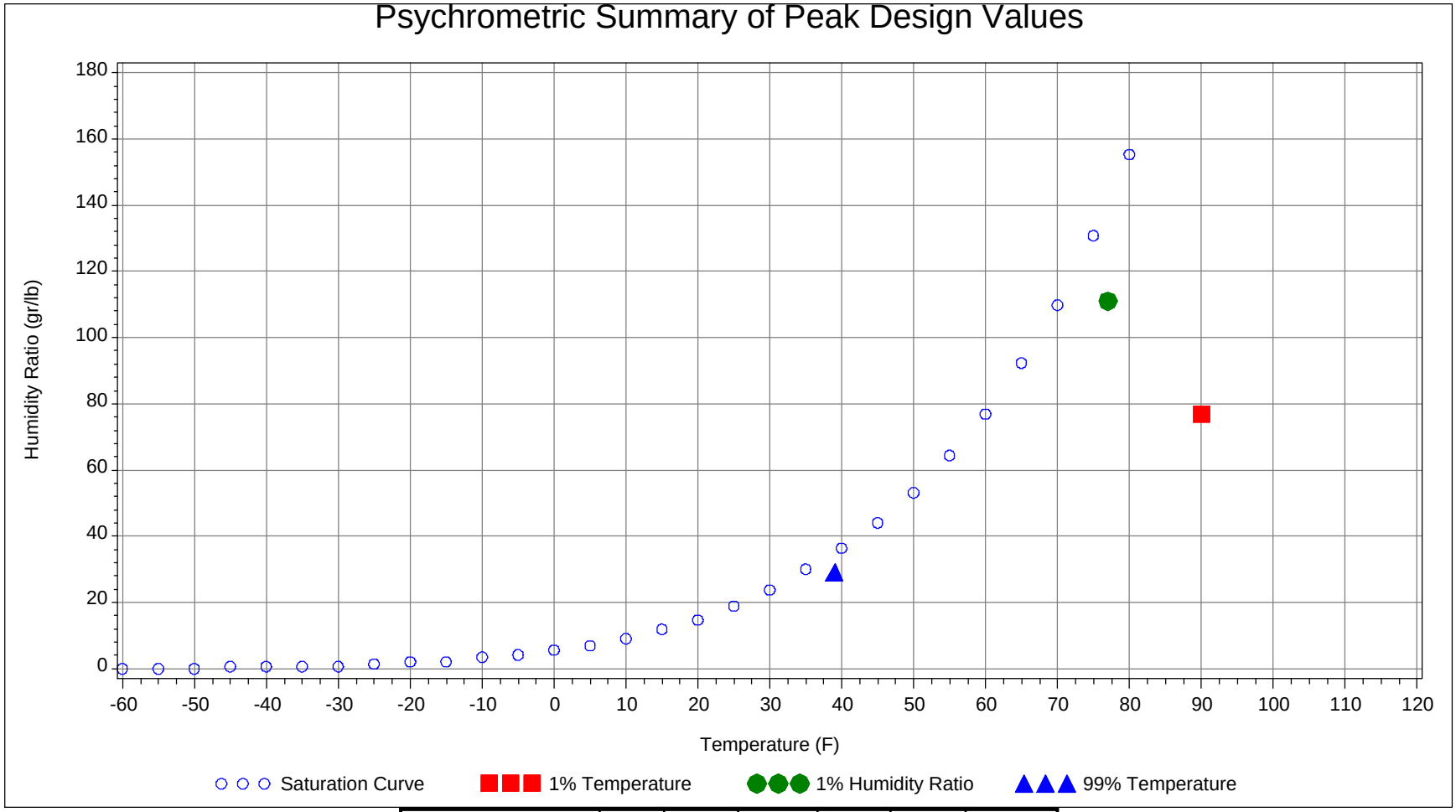
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

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	90.0		70		77.0	33.7
99.0% Dry Bulb	39.0				29.0	13.8
1.0% Humidity Ratio	111.0	77.0	72	70.0		35.9

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)**
105/109															
100/104															
95/ 99															
90/ 94															
85/ 89															
80/ 84												1	0	1	62.8
75/ 79							0	0	0	62.2		4	2	6	60.7
70/ 74		0	0	0	56.6		4	1	5	58.7		24	10	34	59.2
65/ 69	0	6	2	8	58	0	13	4	17	57	0	34	18	52	57.8
60/ 64	9	52	30	91	56.5	6	58	39	103	56.1	18	85	80	183	56.2
55/ 59	35	80	83	198	52.8	43	70	93	206	52.7	87	68	106	261	52.9
50/ 54	51	50	83	184	48.8	62	44	64	170	48.6	90	24	28	142	49.1
45/ 49	84	35	40	159	44.4	69	24	18	111	44.3	42	6	3	51	44.5
40/ 44	41	15	7	63	40	26	7	4	37	39.8	8	1	0	9	39.4
35/ 39	23	8	3	34	35.9	14	3	1	18	35.2	2	0	0	2	35
30/ 34	4	1	0	5	30.6	3	1	0	4	29	0			0	30.8
25/ 29	0	0	0	0	23.5	0	0		0	25					

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)**
105/109															
100/104							0		0	65		0	0	0	71.3
95/ 99							0	0	0	65.5		2	1	3	68.8
90/ 94		0		0	68.5		2	1	3	65		10	3	13	67.6
85/ 89		0	0	0	65.3		6	2	8	64.2	0	17	7	24	67.2
80/ 84		5	2	7	62.6	0	19	7	26	63.6	2	38	21	61	66.7
75/ 79		15	5	20	60.7	2	41	21	64	62.6	12	64	47	123	65.9
70/ 74	0	36	19	55	59.8	12	70	52	134	61.8	54	82	92	228	64.3
65/ 69	5	46	32	83	58.6	31	58	66	155	60.3	85	22	55	162	62.4
60/ 64	52	93	114	259	56.7	113	44	85	242	58.1	77	4	13	94	59.3
55/ 59	101	39	60	200	53.2	70	8	13	91	53.9	9		0	9	55.3
50/ 54	66	6	7	79	49	18	0	1	19	49.9	0			0	51.3
45/ 49	15	0	0	15	44.3	1			1	45.4					
40/ 44	1		0	1	39.7										
35/ 39															
30/ 34															
25/ 29															

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)**
105/109							0		0	75					
100/104		0	0	0	73.5		1	0	1	71.9					
95/ 99		6	2	8	71		7	2	9	71.8		1		1	69.7
90/ 94		25	9	34	70.2		25	8	33	71.4		8	2	10	69.7
85/ 89	0	24	12	36	69.8	0	27	13	40	70.8	0	14	5	19	69.4
80/ 84	5	57	40	102	69	8	65	43	116	70.2	0	41	17	58	69.1
75/ 79	35	84	82	201	68	43	87	87	217	68.8	14	79	58	151	67.9
70/ 74	116	47	91	254	66	128	35	88	251	66.9	81	76	115	272	66
65/ 69	65	3	11	79	63.2	52	2	7	61	63.6	72	16	35	123	63.1
60/ 64	25	0	1	26	59.6	18	0	0	18	60	59	5	8	72	59.3
55/ 59	1			1	55.2	0			0	55.9	13	0	0	13	54.6
50/ 54											1		0	1	51.4
45/ 49															
40/ 44															
35/ 39															
30/ 34															
25/ 29															

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

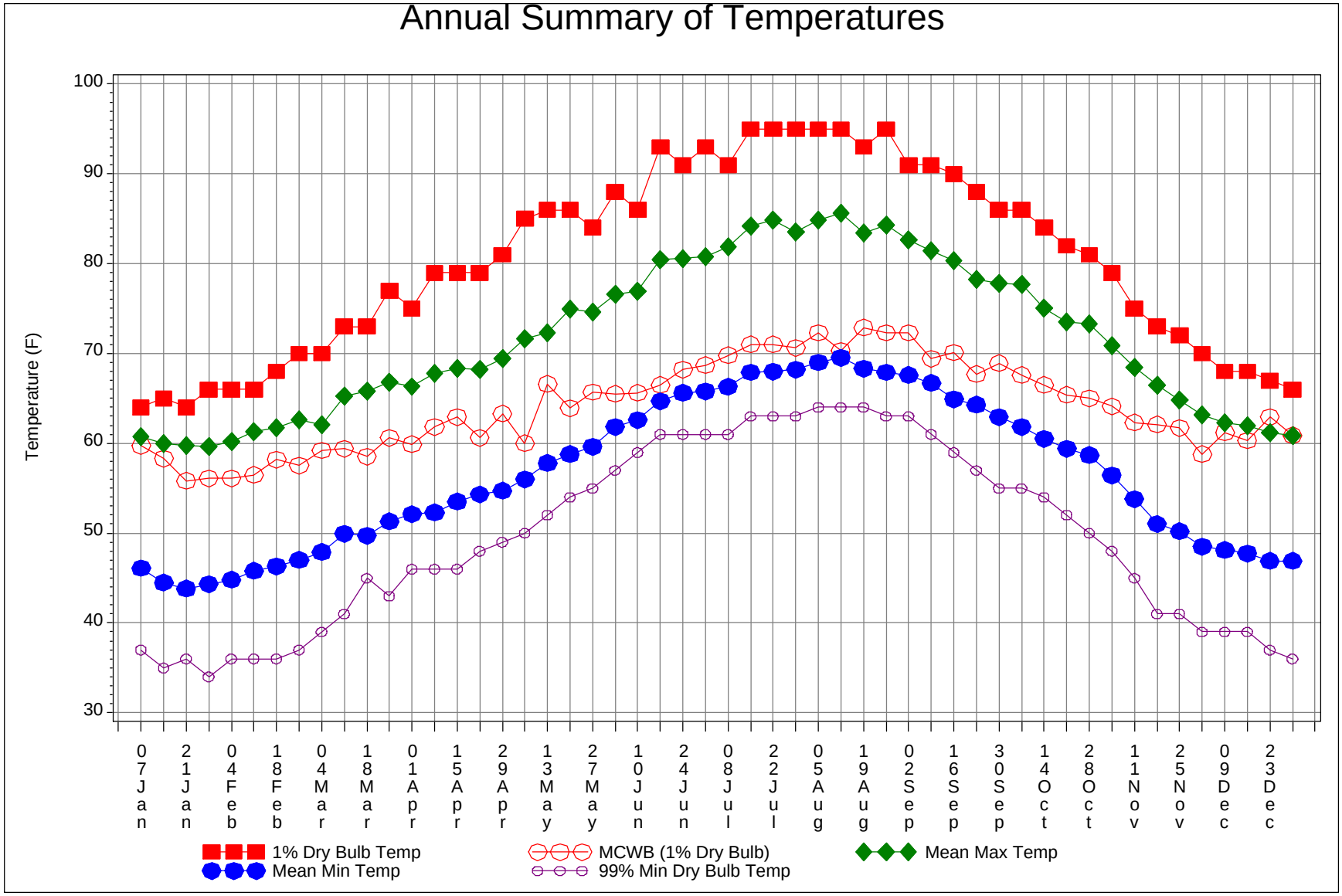
	October					November					December				
Temperature Range (°F)	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
105/109															
100/104															
95/ 99															
90/ 94		0	0	0	66.3										
85/ 89		3	0	3	66.8										
80/ 84		18	4	22	66.2		0		0	63					
75/ 79	2	47	21	70	65.4		5	1	6	63.2		0	0	0	62.4
70/ 74	22	83	72	177	64.6	1	32	10	43	62.4	0	2	0	2	60.2
65/ 69	53	50	79	182	62.5	11	41	30	82	60.9	2	16	5	23	60.6
60/ 64	99	35	58	192	59.3	47	79	87	213	57.8	26	72	53	151	57.8
55/ 59	54	10	12	76	54.4	62	48	72	182	53.3	45	73	86	204	53.3
50/ 54	16	2	1	19	49.7	67	23	33	123	49.3	60	43	67	170	49.2
45/ 49	2	0		2	43.8	41	10	7	58	44.3	68	26	31	125	44.6
40/ 44	0			0	39.5	9	2	1	12	39.3	31	10	5	46	40
35/ 39						3	0	0	3	35.5	15	5	1	21	36.2
30/ 34						0	0		0	33	1	0		1	31.1
25/ 29															

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.

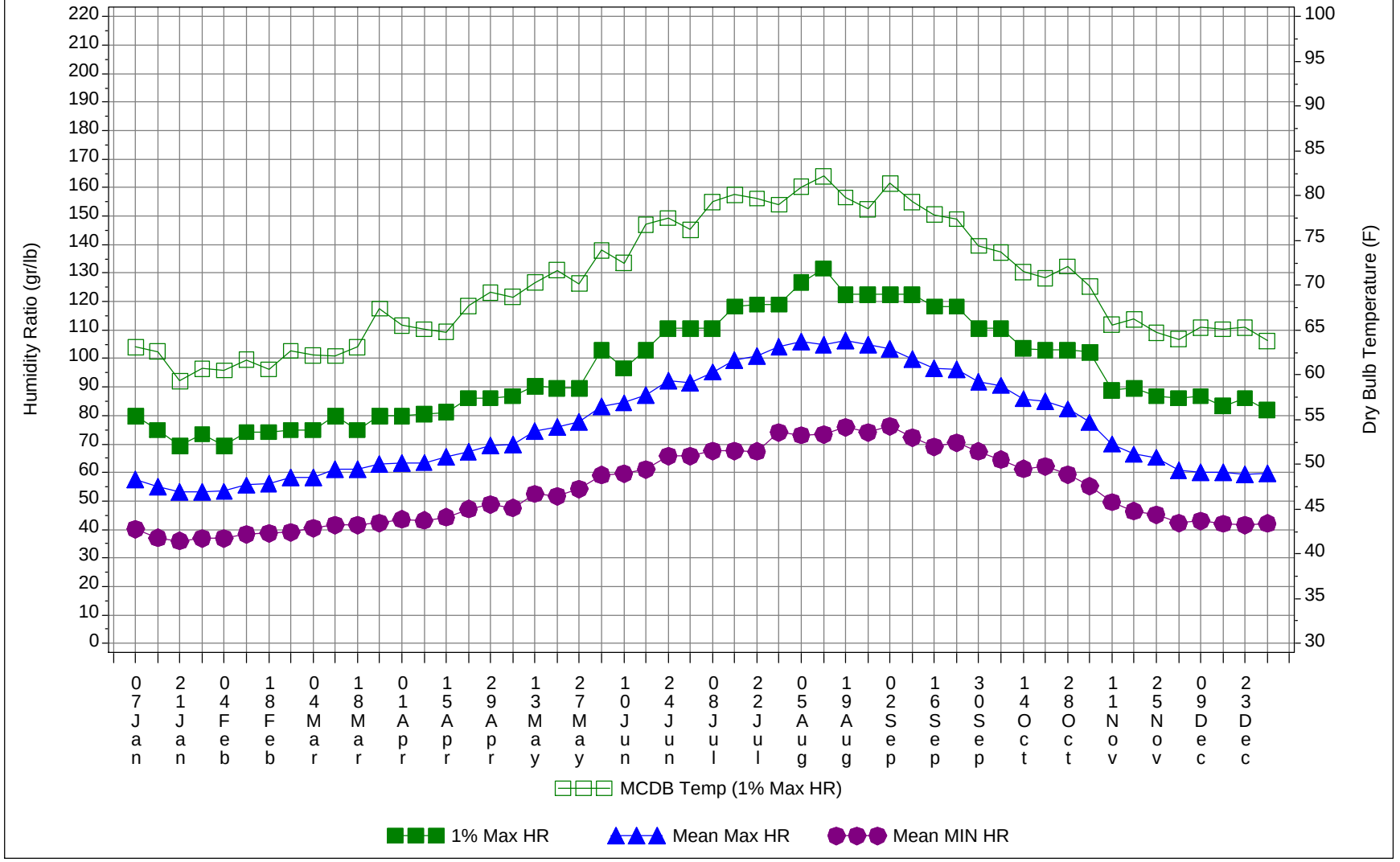
Dry-Bulb Temperature Hours For An Average Year

	Annual				
Temperature Range (°F)	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
105/109		0		0	75
100/104		2	0	2	71.9
95/ 99		16	4	20	70.9
90/ 94		71	23	94	70
85/ 89	1	92	39	132	69.1
80/ 84	16	245	135	396	68.4
75/ 79	108	427	325	860	67
70/ 74	414	492	552	1458	64.8
65/ 69	375	307	343	1025	61.5
60/ 64	550	527	569	1646	57.7
55/ 59	521	395	525	1441	53.2
50/ 54	433	192	283	908	49
45/ 49	322	101	100	523	44.4
40/ 44	116	34	16	166	39.9
35/ 39	57	17	4	78	35.7
30/ 34	7	2	0	9	30.1
25/ 29	1	0	0	1	23.8

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
Temperature (F)
100
90
80
70
60
50
40
30
07 Jan
21 Jan
04 Feb
18 Feb
04 Mar
18 Mar
01 Apr
15 Apr
29 Apr
13 May
27 May
10 Jun
24 Jun
08 Jul
22 Jul
05 Aug
19 Aug
02 Sep
16 Sep
30 Sep
14 Oct
28 Oct
11 Nov
25 Nov
09 Dec
23 Dec
1% Dry Bulb Temp
Mean Min Temp
MCWB (1% Dry Bulb)
99% Min Dry Bulb Temp
Mean Max Temp

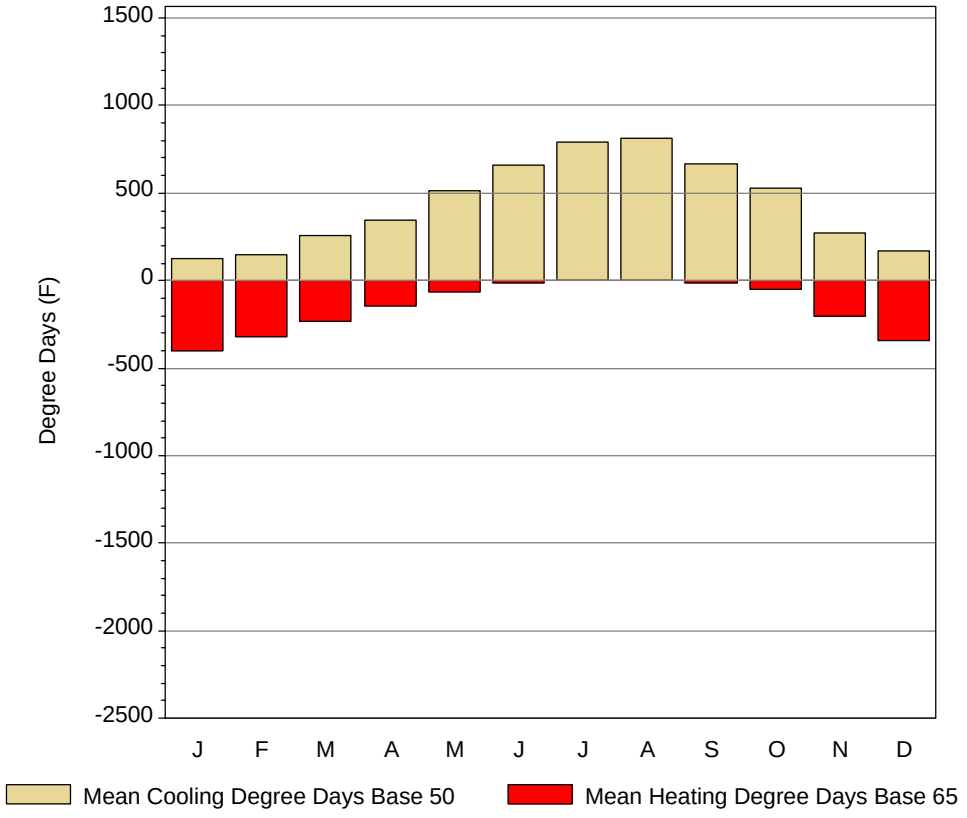
Long Term Humidity and Dry Bulb Temperature Summary



Long Term Humidity and Dry Bulb Temperature Summary

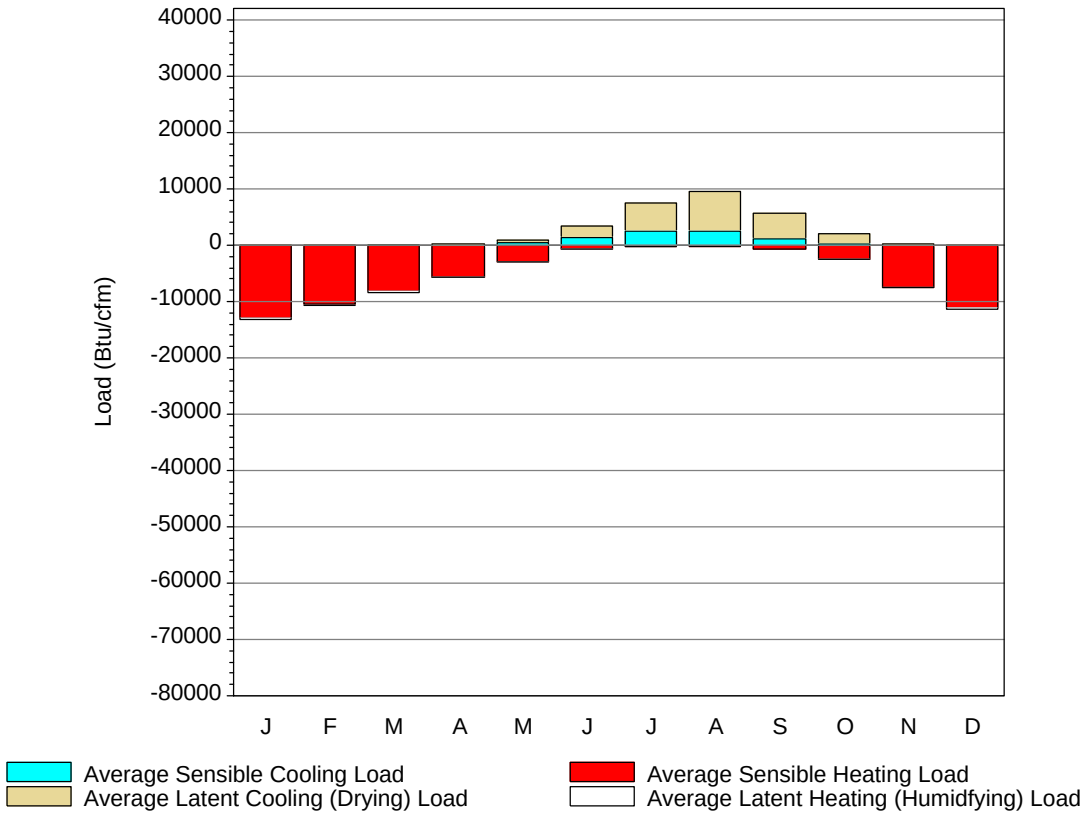
Week Ending	1.0% Temp (°F)	MCWB@ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB@ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	64	59.7	60.7	46.1	37	79.8	63.1	57.5	40.1
14-Jan	65	58.3	60	44.5	35	74.9	62.6	55	37.1
21-Jan	64	55.8	59.7	43.8	36	69.3	59.3	53.2	35.9
28-Jan	66	56.1	59.6	44.3	34	73.5	60.7	53.2	36.9
4-Feb	66	56.1	60.2	44.8	36	69.3	60.5	53.4	36.8
11-Feb	66	56.5	61.3	45.8	36	74.2	61.7	55.6	38.3
18-Feb	68	58.2	61.7	46.3	36	74.2	60.6	56.2	38.7
25-Feb	70	57.5	62.6	47	37	74.9	62.7	58.3	39.1
4-Mar	70	59.2	62.1	47.9	39	74.9	62.2	58.2	40.4
11-Mar	73	59.4	65.2	49.9	41	79.8	62.1	61.3	41.5
18-Mar	73	58.5	65.8	49.7	45	74.9	63.1	61.1	41.5
25-Mar	77	60.6	66.8	51.3	43	79.8	67.4	63	42.3
1-Apr	75	59.9	66.3	52.1	46	79.8	65.5	63.3	43.5
8-Apr	79	61.8	67.8	52.3	46	80.5	65.1	63.5	43.2
15-Apr	79	62.9	68.3	53.5	46	81.2	64.8	65.4	44.2
22-Apr	79	60.6	68.2	54.3	48	86.1	67.7	67.2	47.2
29-Apr	81	63.3	69.4	54.7	49	86.1	69.2	69.6	48.8
6-May	85	60	71.6	56	50	86.8	68.7	69.7	47.6
13-May	86	66.6	72.3	57.8	52	90.3	70.3	74.6	52.5
20-May	86	63.9	74.9	58.8	54	89.6	71.7	76	51.6
27-May	84	65.7	74.6	59.6	55	89.6	70.2	77.9	54.2
4-Jun	88	65.5	76.6	61.8	57	102.9	73.9	83.1	59.1
10-Jun	86	65.6	76.9	62.6	59	96.6	72.5	84.5	59.6
17-Jun	93	66.5	80.4	64.7	61	102.9	76.8	87.2	61.1
24-Jun	91	68.2	80.6	65.6	61	110.6	77.5	92.2	65.7
1-Jul	93	68.7	80.8	65.8	61	110.6	76.2	91.6	65.8
8-Jul	91	69.8	81.9	66.3	61	110.6	79.3	95.3	67.5
15-Jul	95	71	84.2	67.9	63	118.3	80.1	99.6	67.6
22-Jul	95	71	84.9	68	63	119	79.7	101	67.4
29-Jul	95	70.6	83.5	68.2	63	119	79	104.1	74
5-Aug	95	72.3	84.9	69	64	126.7	81	106	73.1
12-Aug	95	70.3	85.6	69.5	64	131.6	82.2	104.9	73.4
19-Aug	93	72.9	83.4	68.3	64	122.5	79.8	106.3	75.9
26-Aug	95	72.3	84.3	67.9	63	122.5	78.5	104.8	74
2-Sep	91	72.3	82.6	67.6	63	122.5	81.4	103.5	76.2
9-Sep	91	69.4	81.4	66.7	61	122.5	79.3	99.7	72.2
16-Sep	90	70.1	80.3	64.9	59	118.3	77.9	96.5	69
23-Sep	88	67.7	78.2	64.3	57	118.3	77.4	96.1	70.5
30-Sep	86	68.9	77.8	62.9	55	110.6	74.4	92	67.4
7-Oct	86	67.6	77.7	61.8	55	110.6	73.7	90.6	64.5
14-Oct	84	66.5	75	60.5	54	103.6	71.5	85.9	61.2
21-Oct	82	65.4	73.5	59.4	52	102.9	70.8	85.1	62.2
28-Oct	81	65	73.3	58.7	50	102.9	72.1	82.3	59.3
4-Nov	79	64.1	70.9	56.4	48	102.2	69.9	77.6	55.2
11-Nov	75	62.3	68.4	53.8	45	88.9	65.6	70	49.6
18-Nov	73	62.1	66.5	51	41	89.6	66.2	66.4	46.4
25-Nov	72	61.7	64.8	50.2	41	86.8	64.7	65.3	45.2
2-Dec	70	58.8	63.2	48.5	39	86.1	64	60.9	42.3
9-Dec	68	61.2	62.3	48.1	39	86.8	65.3	60	43
16-Dec	68	60.3	61.9	47.7	39	83.3	65.1	60	42
23-Dec	67	62.9	61.2	46.9	37	86.1	65.3	59.4	41.6
31-Dec	66	60.9	60.8	46.9	36	81.9	63.8	59.7	42.1

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	124.3	0.6	404.2
FEB	146.9	2.8	317.9
MAR	257.7	16.1	234.5
APR	341.7	35.8	146.2
MAY	511.6	108.4	62
JUN	660.6	220	9.4
JUL	794.9	331.9	2
AUG	814.9	351.2	1.3
SEP	670	230.3	10.3
OCT	531.3	117.9	51.9
NOV	275.6	19.6	206.5
DEC	169	2.1	340.6
ANN	5298.5	1436.7	1786.8

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	-12873	9	-247
FEB	0	-10385	9	-256
MAR	13	-8252	15	-103
APR	85	-5688	53	-39
MAY	477	-2933	389	-15
JUN	1290	-736	2076	-5
JUL	2430	-202	4987	-1
AUG	2622	-141	6867	0
SEP	1149	-648	4458	0
OCT	362	-2460	1748	-13
NOV	8	-7370	305	-78
DEC	0	-11192	60	-145
ANN	8436	-62880	20976	-902

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

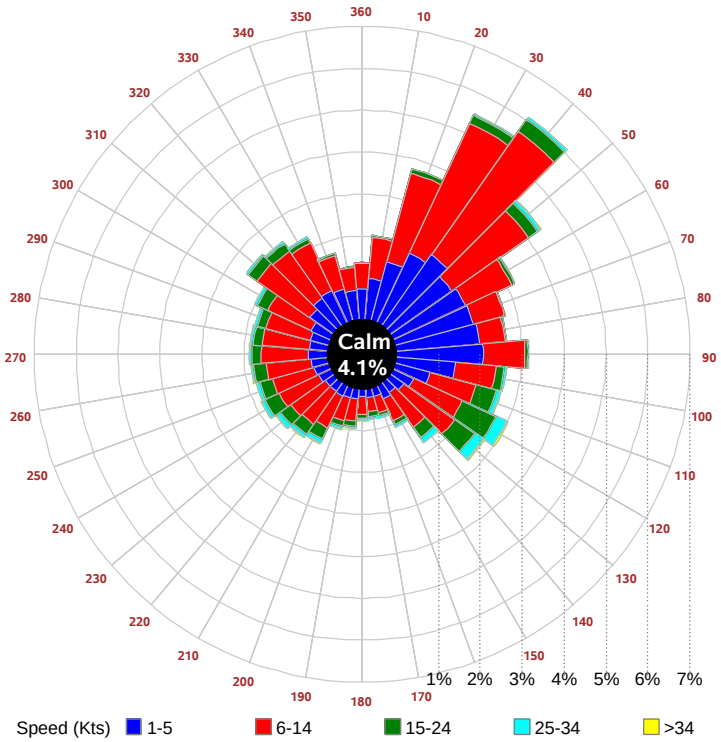
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ.	Global													
	Std.Dev.													
	Minimum													
	Maximum													
	Diffuse													
Clear Day	Global													
NORTH	Global													
	Diffuse													
Clear Day	Global													
EAST	Global												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

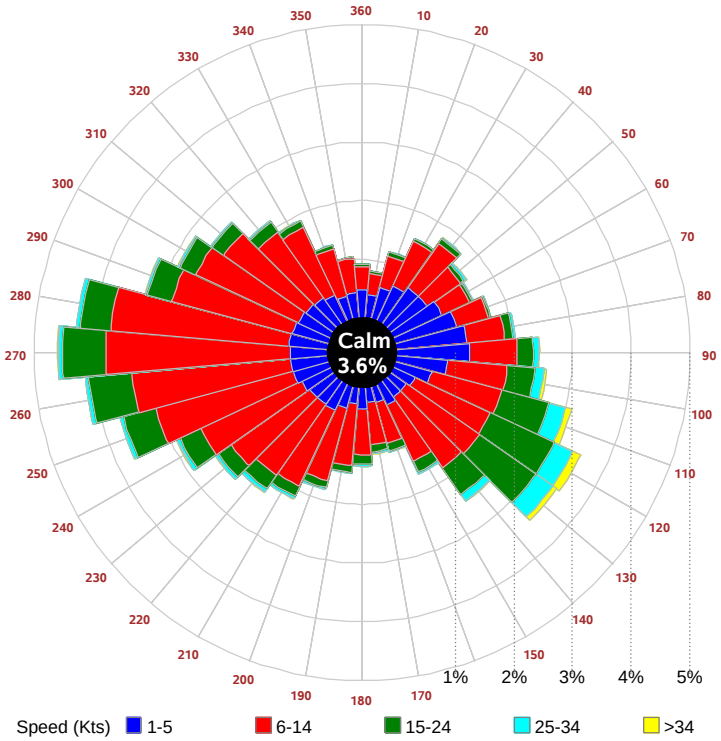
AVERAGE INCIDENT ILLUMINENCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9											
				March					June		
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear										
	M.Cloudy										
NORTH	M.Clear										
	M.Cloudy										
EAST	M.Clear										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

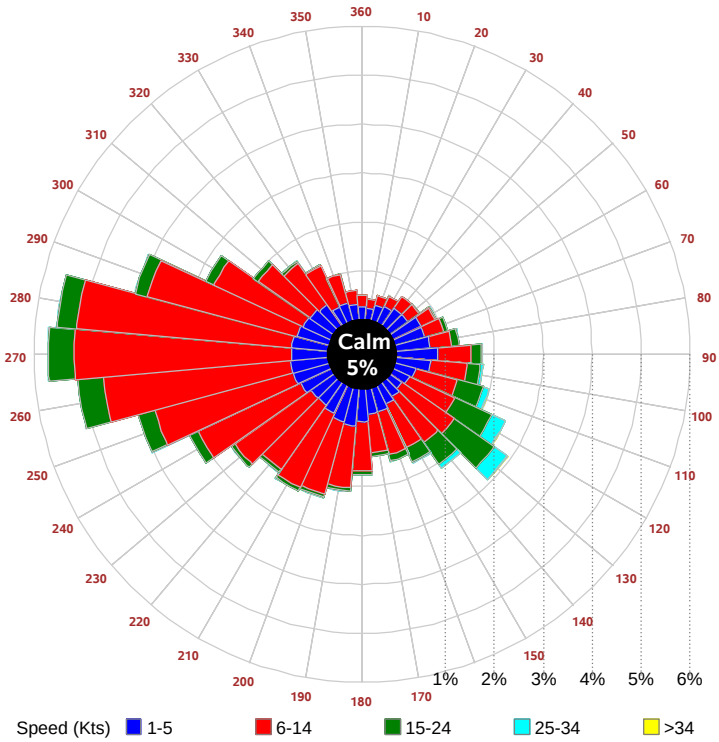
Wind Summary - December, January, and February



Wind Summary - March, April, and May



Wind Summary - June, July, and August



Wind Summary - September, October, and November