

CORDOBA, SP	
Latitude = 37.84 N	Station ID = ICAO_LEBA
Longitude = 4.85 W	Elevation = 297 Feet
Period of Record = 1988 To 2017	Average Pressure = 29.74 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	109	72	59	6.7	W
0.4% Occurrence	105	71	60	7.4	W
1.0% Occurrence	102	70	57	7.5	W
2.0% Occurrence	100	70	61	7.6	W
Mean Daily Range	23	-	-	-	E
97.5% Occurrence	38	37	30	2.1	E
99.0% Occurrence	34	33	26	1.6	E
99.6% Occurrence	32	31	24	1.3	E
Median of Extreme Lows	28	27	18	1.1	E

	Design Value (°F)	Dry Bulb Temperature (°F)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Wet Bulb Temperature (T _{wb})					
Median of Extreme Highs	85	88	144	11.7	WSW
0.4% Occurrence	75	98	91	7.8	W
1.0% Occurrence	73	95	84	7.5	W
2.0% Occurrence	72	94	81	7.3	W

	Design Value (gr/lb)	Dry Bulb Temperature (°F)	Vapor Pressure (in. Hg)	Wind Speed (mph)	Prevailing Direction (NSEW)
Humidity Ratio (HR)					
Median of Extreme Highs	118	90	0.78	6.8	WSW
0.4% Occurrence	102	83	0.68	6.7	WSW
1.0% Occurrence	97	81	0.65	6.4	W
2.0% Occurrence	91	80	0.61	6.3	WSW

Air Conditioning/ Humid Area Criteria	Threshold	T ≥ 93 °F	T ≥ 80 °F	Twb ≥ 73 °F	Twb ≥ 67 °F
	# of Hours	416	1240	97	759

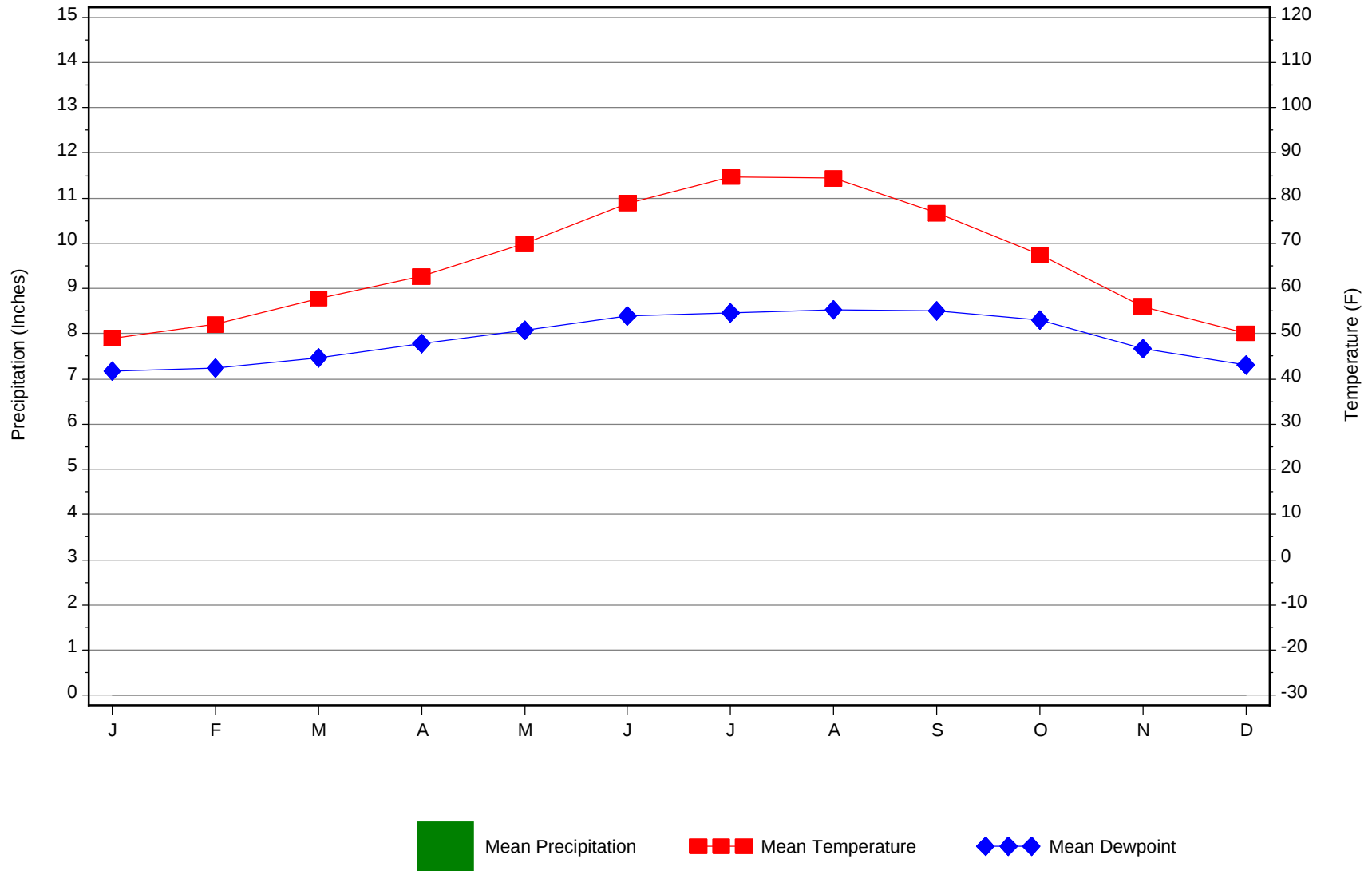
Other Site Data

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
11	N/A	N/A	0.2 + 2.2
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 (#)
68.4	N/A	N/A	6

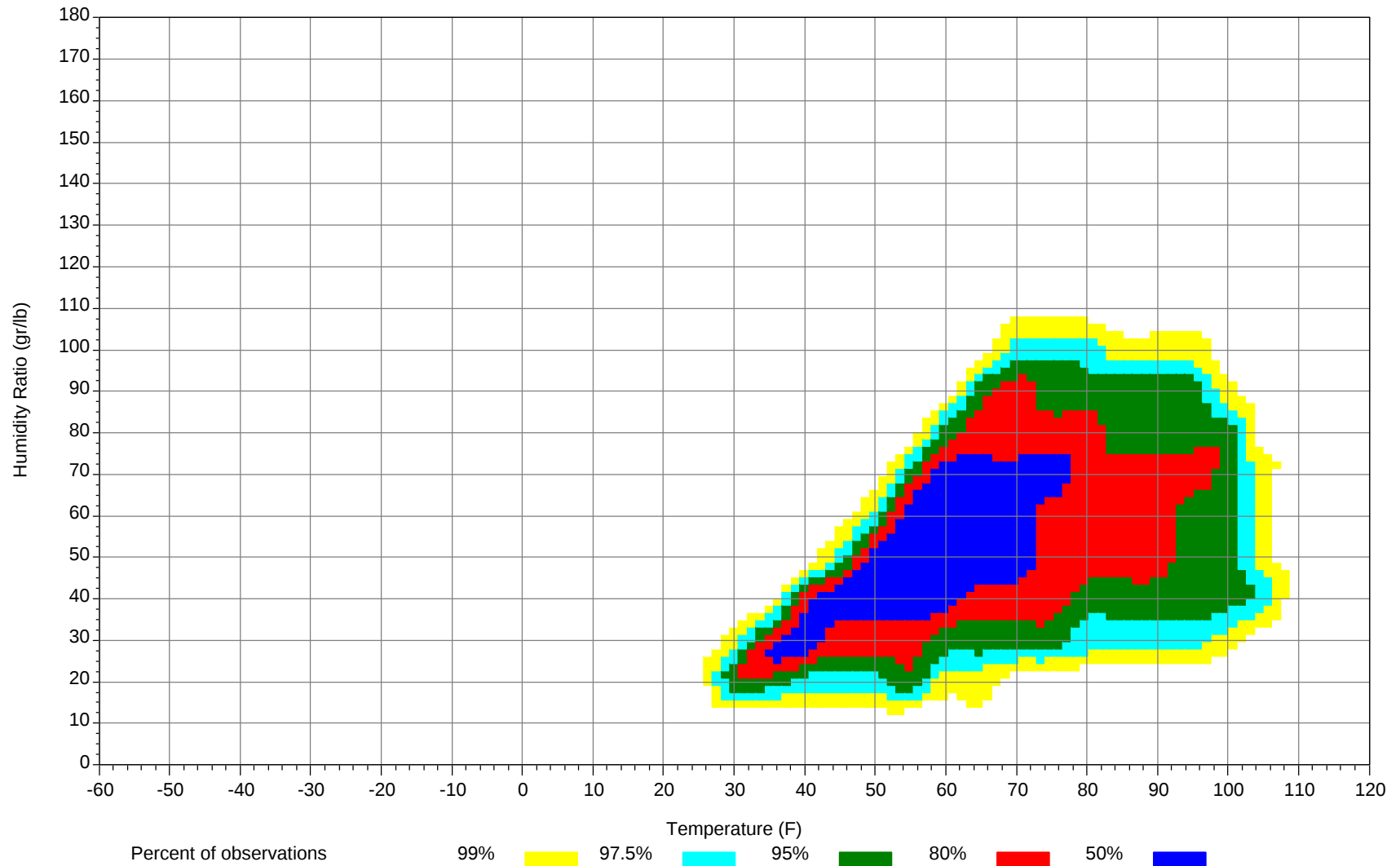
*Note: Temperatures at greater depths can be estimated by adding 1.5° F per 100 feet additional depth.



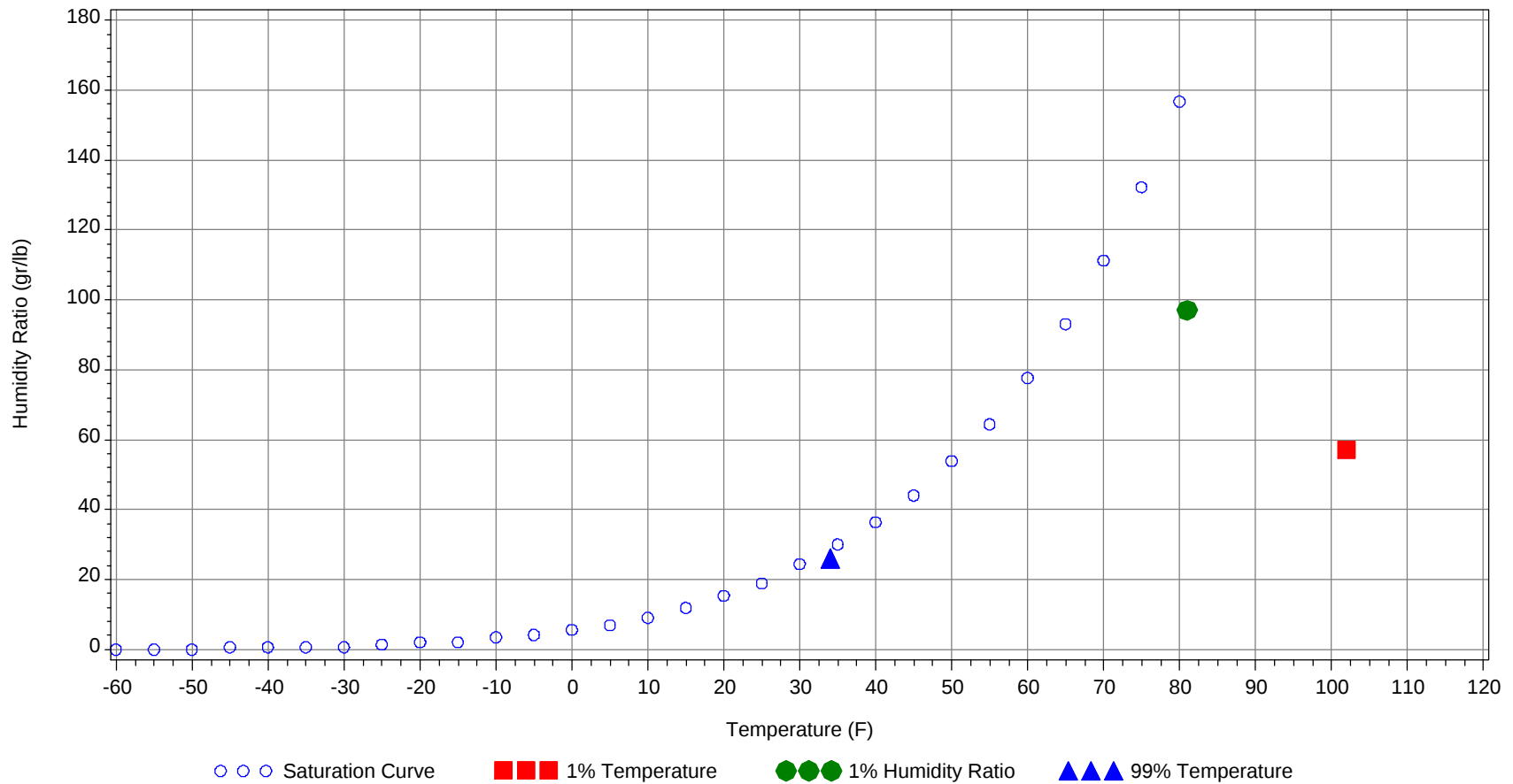
Average Annual Climate



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	102.0		70		57.0	34.2
99.0% Dry Bulb	34.0				26.0	12.1
1.0% Humidity Ratio	97.0	81.0	70.7	66.1		34.6

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	M C W B (°F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (°F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (°F)
115/119															
110/114															
105/109															
100/104															
95/ 99															
90/ 94												0	0	0	66.5
85/ 89												0	0	0	62.6
80/ 84											0	3	5	8	61.4
75/ 79							0	1	1	58.2	0	14	22	36	59.2
70/ 74		0	1	1	57.2		5	10	15	56.6	0	27	30	57	57.4
65/ 69		4	4	8	54.9		15	18	33	55	0	38	34	72	55.4
60/ 64	1	25	27	53	53.4	1	38	44	83	53.2	2	51	45	98	53.6
55/ 59	12	57	64	133	51.2	14	54	57	125	51.1	28	54	56	138	51.8
50/ 54	30	65	71	166	48.3	37	50	52	139	48.2	68	40	40	148	48.7
45/ 49	49	46	47	142	44.4	56	34	28	118	44.4	81	16	12	109	44.6
40/ 44	64	26	26	116	40.5	58	17	11	86	40.3	45	4	3	52	40.3
35/ 39	58	17	8	83	36.2	37	8	3	48	35.8	20	1	0	21	36.1
30/ 34	30	7	1	38	31.6	16	2	1	19	30.5	4	0		4	31.8
25/ 29	4	1		5	26.8	5	0	0	5	24.9	0	0		0	23.7
20/ 24	1	0		1	21.6	0			0	21.7					
15/ 19	0	0		0	17.7										

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.

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	M C W B (°F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (°F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (°F)
115/119															
110/114												0	0	0	70.7
105/109							0		0	66		2	2	4	71
100/104							0	0	0	67.6		7	12	19	69.6
95/ 99							3	5	8	67.1		22	32	54	68.7
90/ 94		1	1	2	64.8		11	15	26	65.5		35	42	77	67.2
85/ 89		4	6	10	62.8	0	23	27	50	64	0	38	34	72	65.9
80/ 84		12	16	28	61.8	0	35	32	67	62.9	3	43	42	88	64.7
75/ 79		27	30	57	60	0	43	39	82	61.2	17	42	34	93	63.2
70/ 74	0	39	35	74	58.3	5	47	42	94	59.7	46	30	23	99	62
65/ 69	1	45	42	88	56.4	26	39	38	103	58.3	75	14	12	101	60.3
60/ 64	18	54	52	124	55	74	32	32	138	56.8	73	6	6	85	58.1
55/ 59	76	39	40	155	53.1	84	13	16	113	54	24	0	1	25	54.4
50/ 54	84	16	16	116	49.5	46	2	2	50	50.1	2			2	50.9
45/ 49	46	3	3	52	45.3	11	0	0	11	45.5	0			0	47.5
40/ 44	12	0	0	12	41	1			1	41.9					
35/ 39	2	0		2	36.7	0			0	37					
30/ 34															
25/ 29															
20/ 24															
15/ 19															

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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	M C W B (° F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (° F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (° F)
115/119		0	0	0	73.4			0	0	77					
110/114		1	1	2	72.5		1	1	2	71.6					
105/109		6	10	16	71	0	5	8	13	71.4		1	1	2	71
100/104		25	40	65	70	0	23	34	57	70		2	4	6	69.8
95/ 99		43	51	94	69	0	41	52	93	69		11	15	26	68.4
90/ 94		48	43	91	68	0	49	44	93	68.1		29	34	63	67.5
85/ 89	0	41	40	81	66.6	1	41	41	83	67		37	37	74	66.1
80/ 84	11	43	37	91	65.6	13	43	40	96	66.1	1	46	42	89	64.9
75/ 79	48	26	20	94	64.2	52	31	21	104	64.8	9	47	47	103	63.8
70/ 74	88	13	6	107	62.9	89	13	6	108	63.2	46	38	37	121	62.8
65/ 69	74	2	1	77	60.6	68	2	1	71	60.8	89	21	19	129	61.3
60/ 64	24	0		24	57.5	22	0		22	57.3	72	8	4	84	57.9
55/ 59	3	0		3	54	1	0		1	53	19	1	0	20	53.2
50/ 54		0		0	46	0			0	54	4	0		4	49.3
45/ 49											0			0	43.8
40/ 44															
35/ 39															
30/ 34															
25/ 29															
20/ 24															
15/ 19															

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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	M C W B (°F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (°F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (°F)
115/119															
110/114															
105/109															
100/104															
95/ 99		0	1	1	66.2										
90/ 94		4	4	8	64.5										
85/ 89		10	11	21	64.4		0		0	64					
80/ 84		27	25	52	63.7		1	0	1	62.5	0		0	0	78.5
75/ 79	0	40	38	78	62.5	0	5	4	9	60.7	0		0	0	74
70/ 74	3	48	50	101	61.5	0	19	15	34	59.2	0	1	1	2	58.5
65/ 69	30	49	57	136	60.3	1	33	28	62	57.6	0	8	4	12	56.8
60/ 64	84	42	44	170	57.9	13	55	53	121	55.5	4	35	30	69	54.9
55/ 59	79	20	15	114	54	37	58	64	159	52.6	17	66	65	148	51.9
50/ 54	39	5	3	47	49.7	57	40	47	144	49	36	62	67	165	48.5
45/ 49	11	1	1	13	44.8	65	19	20	104	44.7	47	39	43	129	44.5
40/ 44	2	0	0	2	41	41	7	7	55	40.3	56	21	29	106	40.4
35/ 39	0			0	38	20	3	1	24	36.1	63	13	9	85	36.2
30/ 34						5	0	0	5	31.4	23	4	0	27	31.9
25/ 29						0			0	27.7	2	0	0	2	27
20/ 24															
15/ 19															

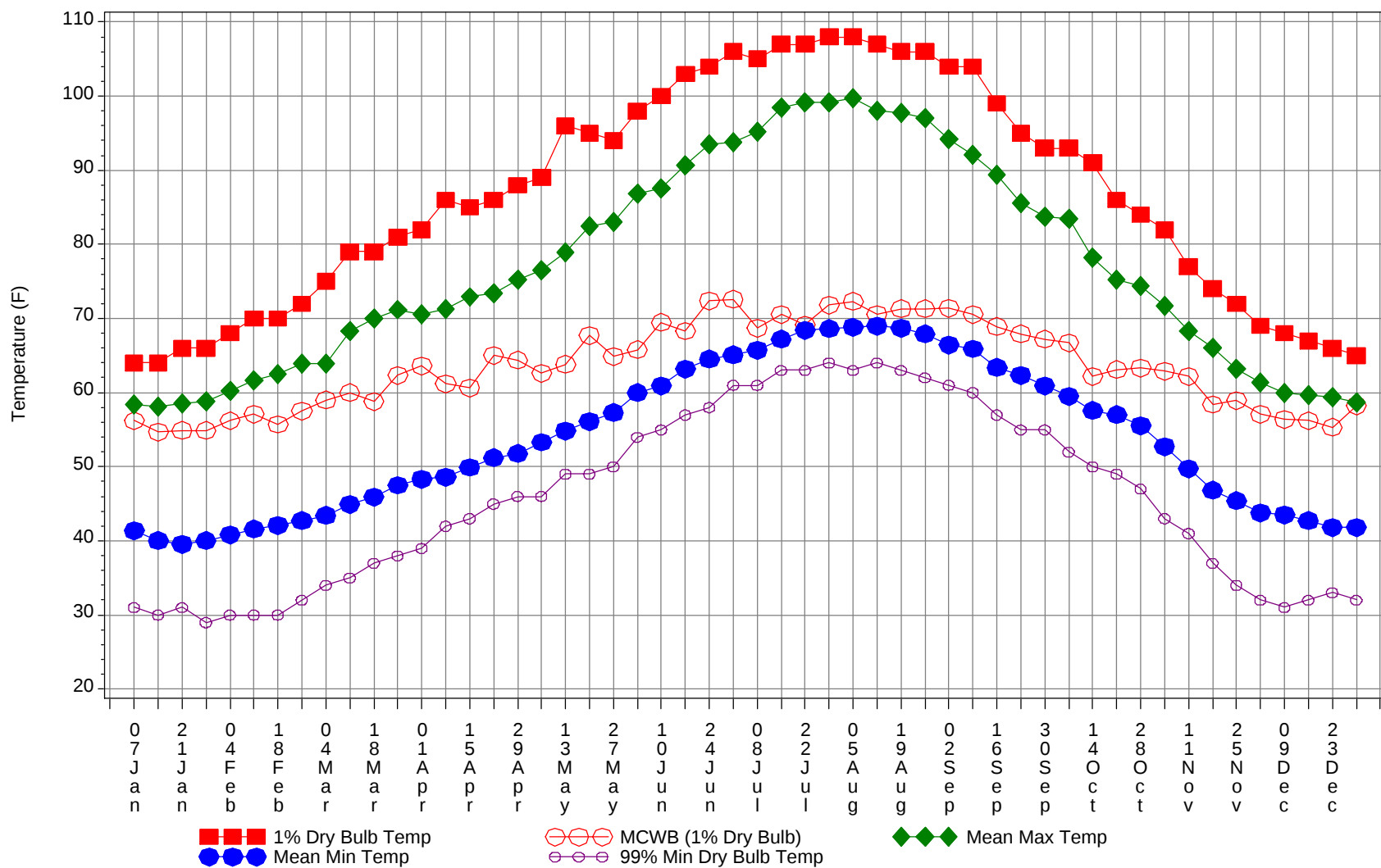
Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary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

Dry-Bulb Temperature Hours For An Average Year

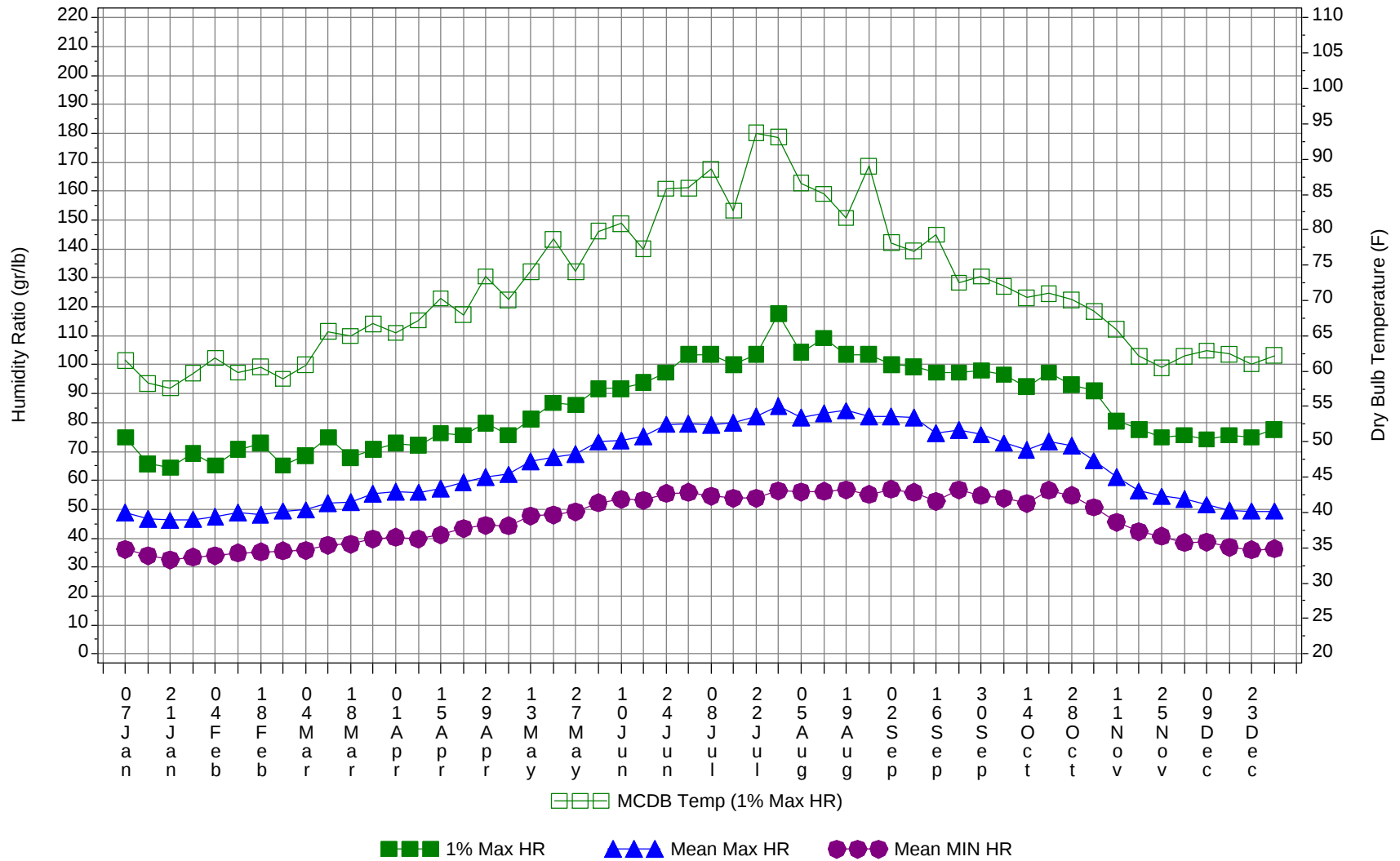
	Annual				
Temperature Range (°F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (°F)
115/119		0	0	0	74
110/114		1	2	3	71.9
105/109	0	13	20	33	71.1
100/104	0	56	89	145	69.9
95/ 99	0	119	155	274	68.8
90/ 94	0	174	182	356	67.5
85/ 89	2	193	196	391	65.9
80/ 84	27	251	239	517	64.6
75/ 79	129	273	255	657	62.8
70/ 74	282	280	254	816	61
65/ 69	369	269	257	895	58.8
60/ 64	392	349	338	1079	55.8
55/ 59	396	367	381	1144	52.4
50/ 54	402	283	299	984	48.8
45/ 49	361	159	153	673	44.6
40/ 44	274	75	77	426	40.4
35/ 39	197	42	22	261	36.1
30/ 34	75	13	2	90	31.5
25/ 29	11	2	0	13	26.2
20/ 24	1	0		1	21.6
15/ 19	0	0		0	17.7

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.

Annual Summary of Temperatures



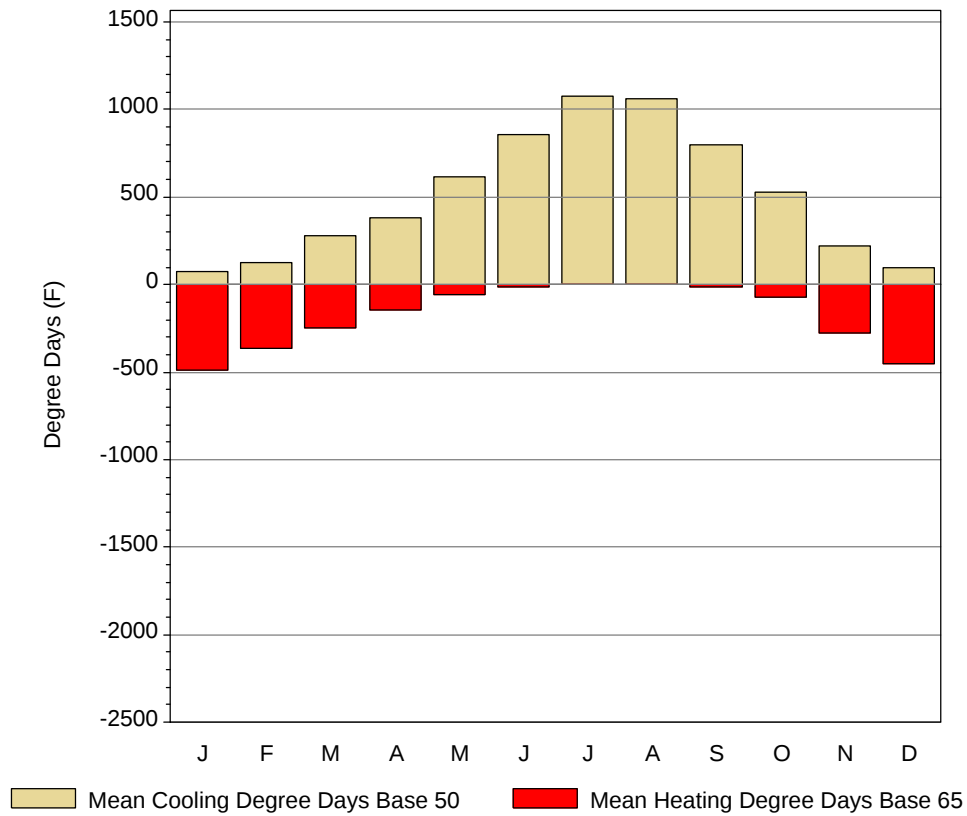
Long Term Humidity and Dry Bulb Temperature Summary



Long Term Humidity and Dry Bulb Temperature Summary

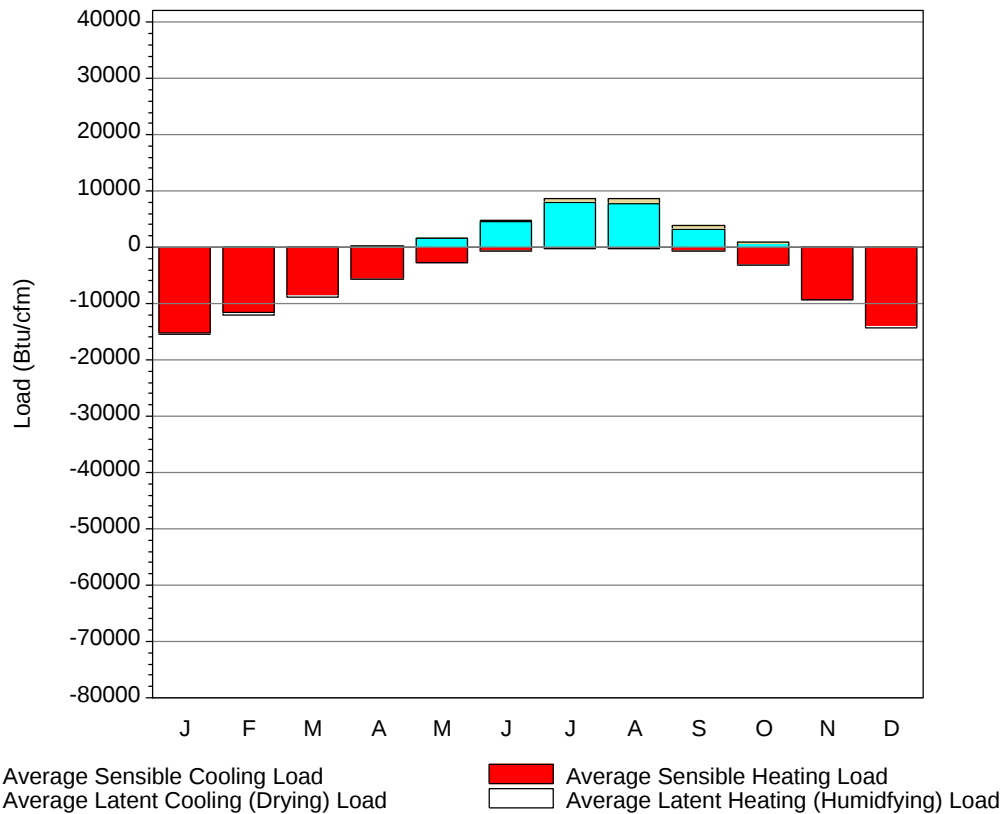
Week Ending	1.0% Temp (° F)	MCWB@ 1% Temp (° F)	Mean Max Temp (° F)	Mean Min Temp (° F)	99% Temp (° F)	1.0% HR (gr/lb)	MCDB@ 1% HR (° F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	64	56.2	58.4	41.4	31	74.9	61.5	48.9	36.2
14-Jan	64	54.7	58.1	40	30	65.8	58.3	46.8	33.9
21-Jan	66	54.9	58.5	39.5	31	64.4	57.6	46.2	32.6
28-Jan	66	54.9	58.8	40	29	69.3	59.7	46.5	33.5
4-Feb	68	56.2	60.2	40.8	30	65.1	61.9	47.5	33.9
11-Feb	70	57.1	61.7	41.6	30	70.7	59.8	49	34.9
18-Feb	70	55.7	62.5	42.1	30	72.8	60.6	48.2	35.2
25-Feb	72	57.5	63.9	42.7	32	65.1	58.9	49.4	35.6
4-Mar	75	59	63.9	43.4	34	68.6	60.9	49.8	35.8
11-Mar	79	60	68.3	44.9	35	74.9	65.6	52.2	37.5
18-Mar	79	58.8	70	45.9	37	67.9	65	52.5	37.9
25-Mar	81	62.3	71.2	47.5	38	70.7	66.7	55.4	39.8
1-Apr	82	63.6	70.5	48.3	39	72.8	65.4	56.1	40.3
8-Apr	86	61.2	71.3	48.6	42	72.1	67.2	55.9	39.7
15-Apr	85	60.6	72.9	49.9	43	76.3	70.3	57.1	41.1
22-Apr	86	65	73.4	51.2	45	75.6	68	59.3	43.3
29-Apr	88	64.4	75.2	51.8	46	79.8	73.4	61.3	44.5
6-May	89	62.6	76.5	53.3	46	75.6	70.1	62.1	44.2
13-May	96	63.8	78.9	54.8	49	81.2	74.1	66.7	47.7
20-May	95	67.7	82.5	56.1	49	86.8	78.7	68.1	48.1
27-May	94	64.9	83	57.3	50	86.1	74.1	69.1	49.2
4-Jun	98	65.8	86.9	60	54	91.7	79.8	73.3	52.2
10-Jun	100	69.5	87.6	60.9	55	91.7	80.9	73.9	53.4
17-Jun	103	68.3	90.7	63.2	57	93.8	77.3	75.4	53.1
24-Jun	104	72.4	93.5	64.5	58	97.3	85.8	79.4	55.5
1-Jul	106	72.6	93.8	65.1	61	103.6	85.9	79.7	55.8
8-Jul	105	68.7	95.2	65.7	61	103.6	88.6	79.1	54.6
15-Jul	107	70.5	98.5	67.2	63	100.1	82.7	80	53.8
22-Jul	107	69.1	99.1	68.4	63	103.6	93.7	82.2	53.9
29-Jul	108	71.8	99.2	68.6	64	117.6	93.1	85.8	56.4
5-Aug	108	72.3	99.7	68.8	63	104.3	86.6	81.7	56
12-Aug	107	70.5	98	69	64	109.2	85.1	83.1	56.2
19-Aug	106	71.3	97.7	68.7	63	103.6	81.7	84.1	56.7
26-Aug	106	71.3	97	67.9	62	103.6	89	82.1	55.1
2-Sep	104	71.4	94.2	66.4	61	100.1	78.2	82	56.9
9-Sep	104	70.5	92.1	65.9	60	99.4	77	81.8	55.9
16-Sep	99	68.9	89.4	63.4	57	97.3	79.3	76.4	52.8
23-Sep	95	67.9	85.6	62.3	55	97.3	72.5	77.4	56.8
30-Sep	93	67.2	83.7	60.9	55	98	73.4	75.8	54.8
7-Oct	93	66.7	83.4	59.5	52	96.6	72	72.9	53.8
14-Oct	91	62.2	78.2	57.6	50	92.4	70.4	70.6	52.1
21-Oct	86	63.1	75.2	57	49	97.3	71	73.5	56.5
28-Oct	84	63.3	74.4	55.5	47	93.1	70.1	71.9	54.7
4-Nov	82	62.9	71.7	52.7	43	91	68.5	66.8	50.7
11-Nov	77	62.2	68.3	49.7	41	80.5	65.9	61.1	45.6
18-Nov	74	58.4	66.1	46.8	37	77.7	62.1	56.3	42.3
25-Nov	72	58.9	63.2	45.4	34	74.9	60.5	54.5	40.6
2-Dec	69	57.1	61.3	43.8	32	75.6	62.1	53.5	38.5
9-Dec	68	56.4	59.9	43.5	31	74.2	62.9	51.6	38.6
16-Dec	67	56.2	59.7	42.7	32	75.6	62.4	49.7	36.8
23-Dec	66	55.3	59.4	41.8	33	74.9	61	49.4	36
31-Dec	65	58.2	58.7	41.8	32	77.7	62.2	49.4	36.3

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	76.2	0.5	491.5
FEB	126.2	4.9	362.5
MAR	282.5	36.4	244
APR	385.1	76.8	147.6
MAY	615.5	210.2	60
JUN	860.4	420.6	10.2
JUL	1073.1	610.2	1.6
AUG	1064.6	600.8	1.3
SEP	797.1	357	9.5
OCT	530.7	139.4	69.7
NOV	220.3	15.7	272.7
DEC	100	0.9	449.3
ANN	6131.7	2473.4	2119.9

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	-15200	0	-304
FEB	1	-11660	0	-366
MAR	89	-8578	6	-190
APR	338	-5667	10	-52
MAY	1539	-2622	82	-35
JUN	4478	-577	397	-9
JUL	7980	-129	688	-25
AUG	7765	-114	870	-20
SEP	3270	-592	586	-17
OCT	743	-3055	297	-22
NOV	14	-9251	31	-130
DEC	0	-14059	11	-239
ANN	26217	-71504	2978	-1409

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													

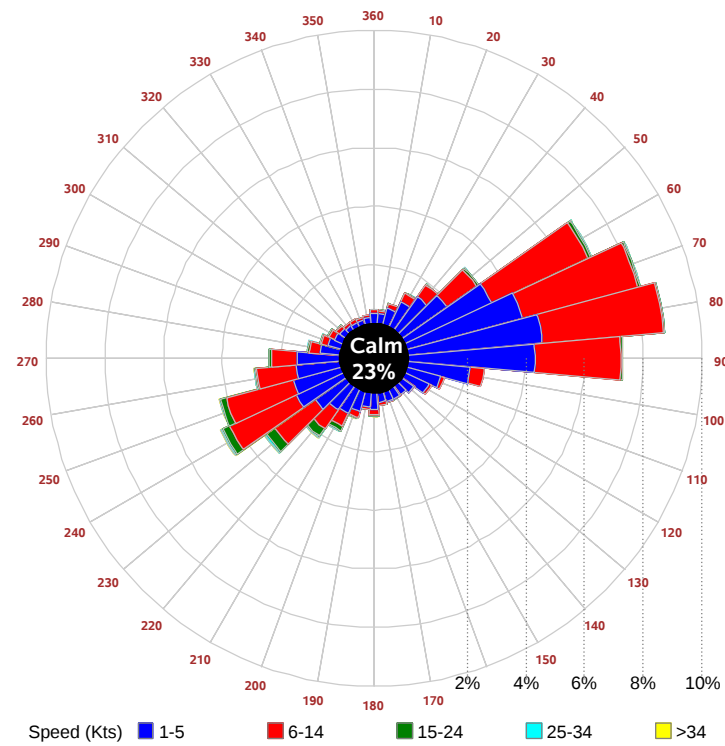
Average Annual Solar Radiation - Nearest Available Site Source: National Renewable Energy Laboratory, Golden CO, 1995

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													

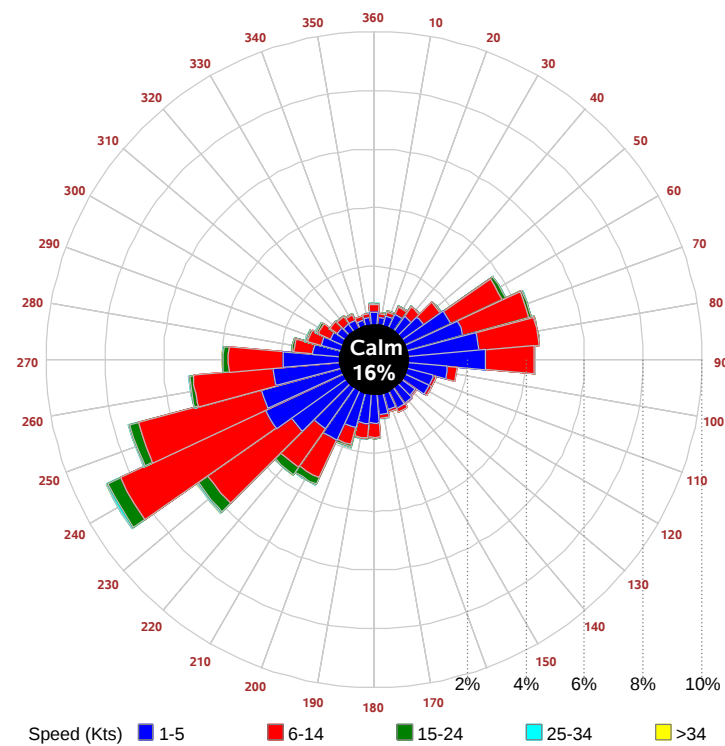
AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9												
				March						June		
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm	
HORIZ.	M.Clear											
	M.Cloudy											
NORTH	M.Clear											
	M.Cloudy											
EAST	M.Clear			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

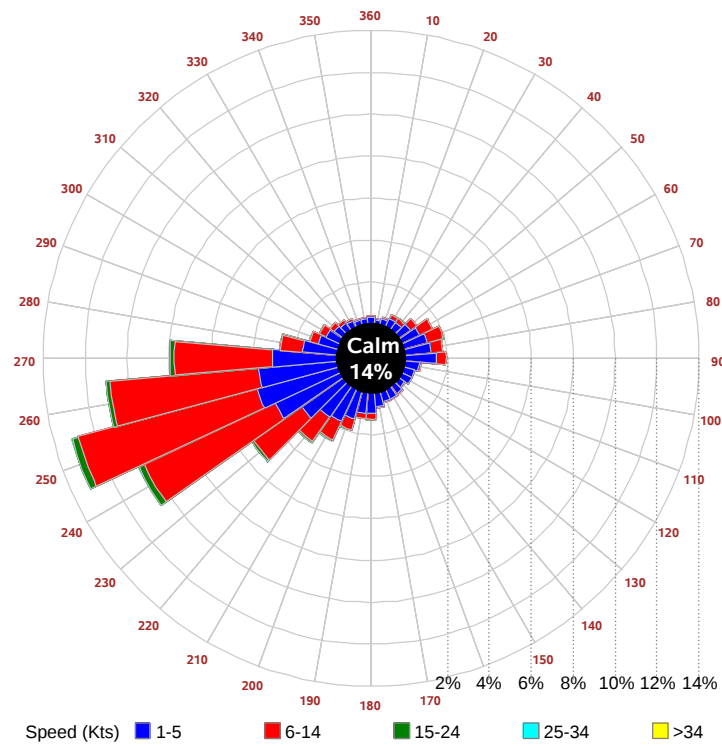
Wind Summary - December, January, and February



Wind Summary - March, April, and May



Wind Summary - June, July, and August



Wind Summary - September, October, and November

