

TINDOUF, AG	Station ID = ICAO_DAOF
Latitude = 27.70 N	Elevation = 1453 Feet
Longitude = 8.17 W	Average Pressure = 28.45 inches Hg
Period of Record = 1988 To 2017	

Design Criteria Data

Dry Bulb Temperature (T)	Mean Coincident (Average) Values				
	Design Value (°F)	Wet Bulb Temperature (°F)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	116	69	43	9	E
0.4% Occurrence	113	69	44	9.3	E
1.0% Occurrence	112	69	44	10	E
2.0% Occurrence	110	68	44	10.4	E
Mean Daily Range	27	-	-	-	W
97.5% Occurrence	46	40	29	8	W
99.0% Occurrence	43	37	26	6.9	NNE
99.6% Occurrence	40	35	23	6.3	NNE
Median of Extreme Lows	36	32	20	5.2	NNE

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	76	101	97	9.6	***
0.4% Occurrence	72	101	74	11.1	E
1.0% Occurrence	71	102	68	11.1	E
2.0% Occurrence	70	102	64	11.1	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	108	81	0.69	9.5	***
0.4% Occurrence	98	78	0.63	9.1	N
1.0% Occurrence	89	78	0.57	11.9	W
2.0% Occurrence	80	77	0.51	15.9	W

Air Conditioning/ Humid Area Criteria	Threshold	T ≥ 93 °F	T ≥ 80 °F	Twb ≥ 73 °F	Twb ≥ 67 °F
	# of Hours	1318	2774	29	732

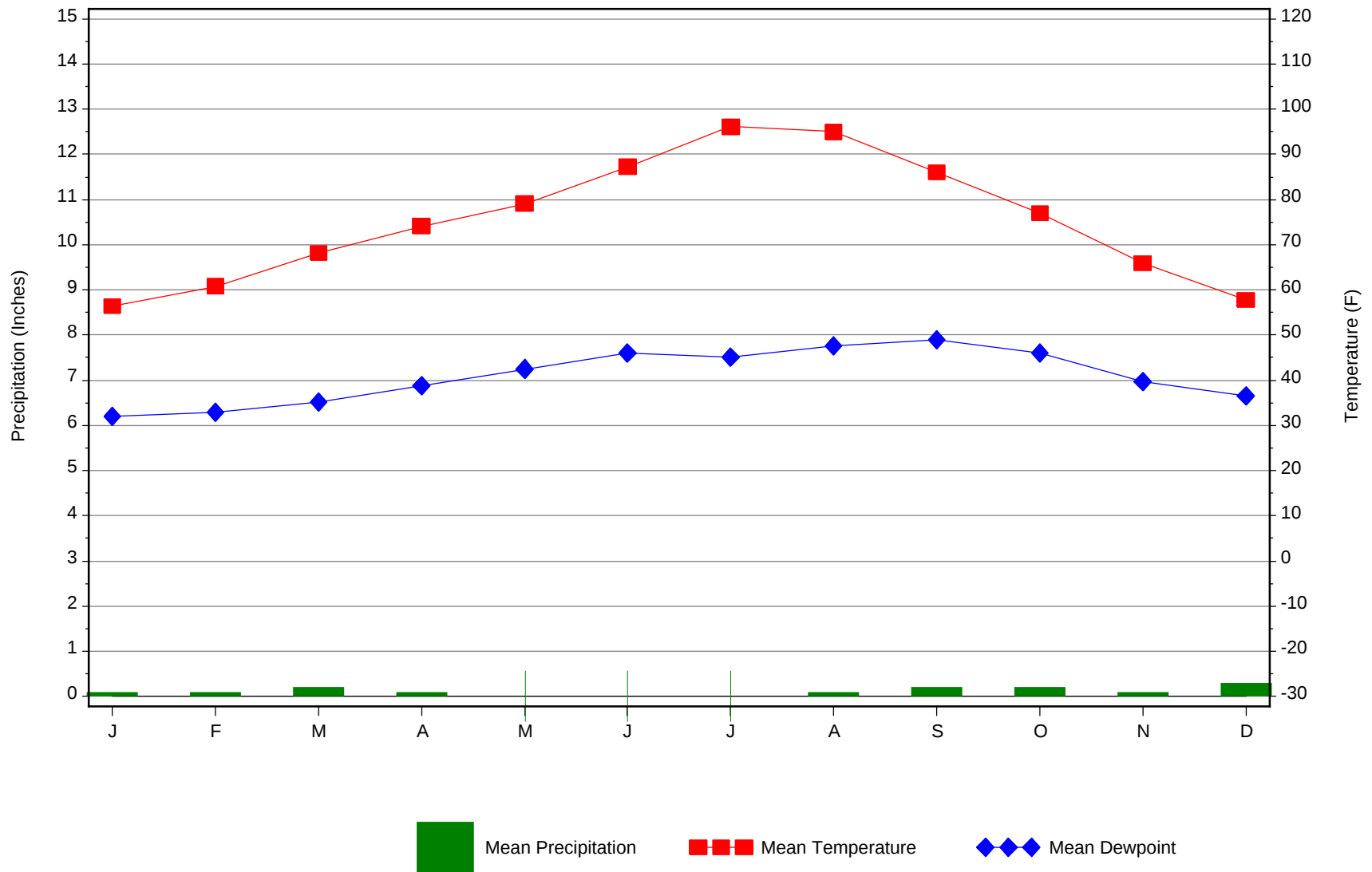
Other Site Data

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
10	N/A	N/A	0.2 + 5.3
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 (#)
77.8	N/A	N/A	0

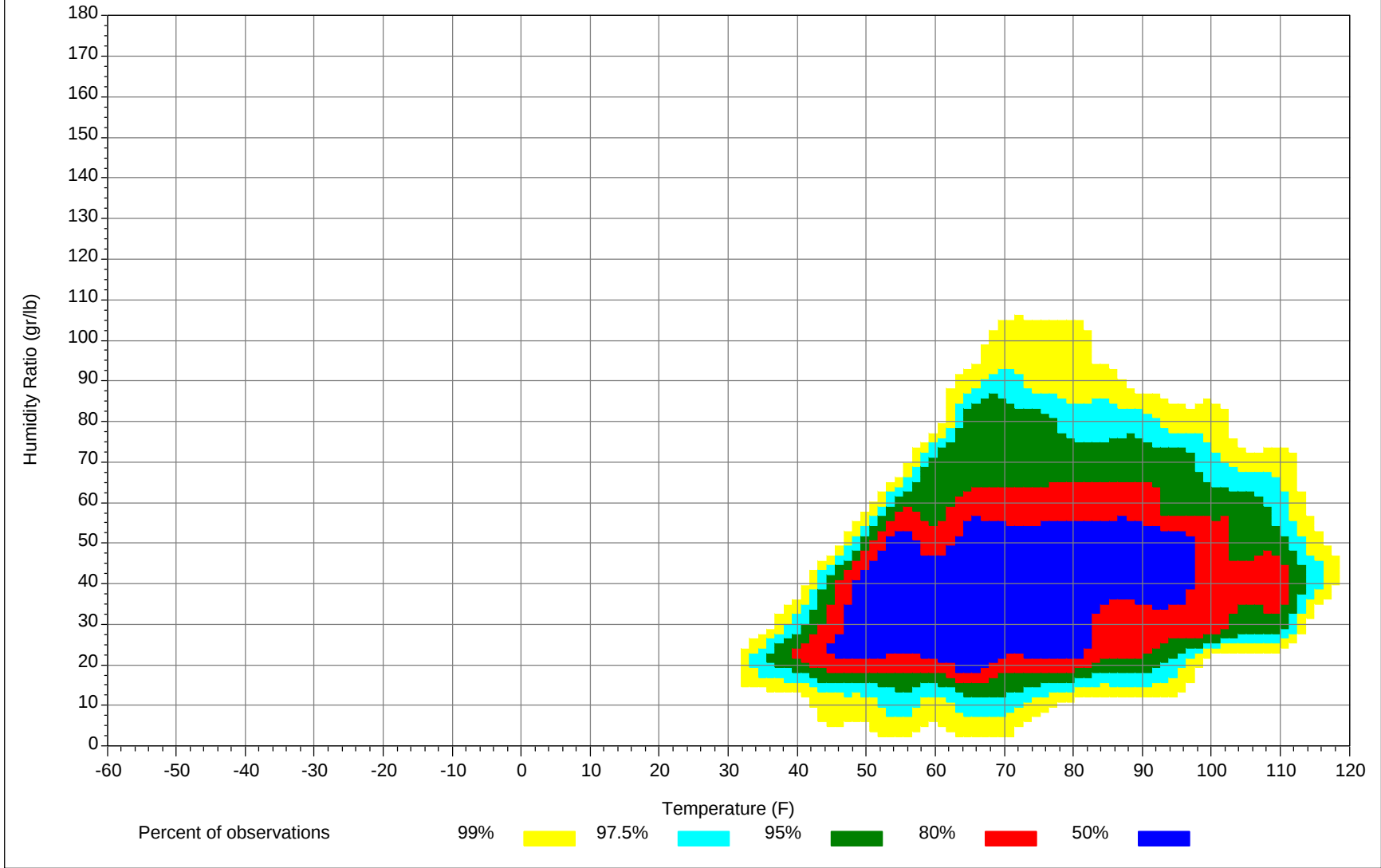
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.



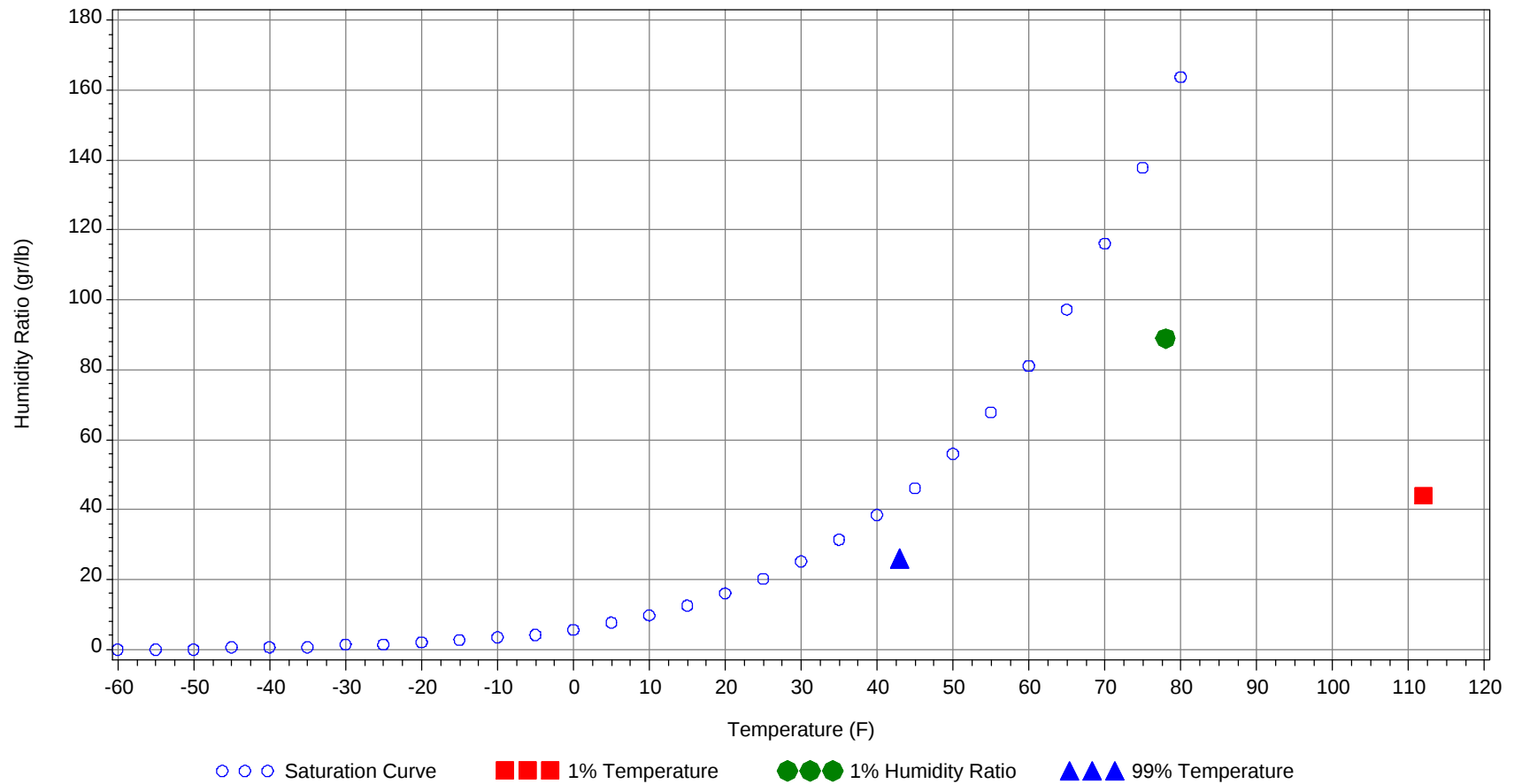
Average Annual Climate



Long Term Psychrometric Summary



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	112.0		69		44.0	33.6
99.0% Dry Bulb	43.0				26.0	14.3
1.0% Humidity Ratio	89.0	78.0	67.4	62.5		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	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												0	0	0	64.7
95/ 99							0	0	0	59		2	2	4	60.5
90/ 94							0	0	0	58.4		7	8	15	59.6
85/ 89		0		0	59		1	1	2	57		18	17	35	57.8
80/ 84		1	1	2	55		8	9	17	55.2	0	36	38	74	56.1
75/ 79		9	9	18	53.4		27	29	56	53.5	2	44	53	99	54.5
70/ 74		31	31	62	51.7	1	39	43	83	51.9	13	43	55	111	52.8
65/ 69	0	41	38	79	50	3	36	41	80	50.4	28	33	35	96	51.4
60/ 64	2	49	62	113	47.9	16	37	51	104	48.5	56	30	27	113	49.3
55/ 59	25	42	63	130	45.9	50	31	36	117	46.6	73	22	12	107	47.2
50/ 54	71	30	34	135	43.6	81	26	12	119	44	58	10	2	70	45.3
45/ 49	94	28	8	130	40.3	56	14	1	71	41	16	2	0	18	42.3
40/ 44	40	12	1	53	36.5	13	4	0	17	36.6	1	0		1	38.8
35/ 39	14	4	0	18	32.8	4	1	0	5	32.5	0			0	32
30/ 34	1	0		1	28.8	1	0		1	27.5					
25/ 29	0	0		0	25.4										

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												0	0	0	67.4
110/114							0		0	67		8	8	16	67.7
105/109							6	5	11	64.4		29	28	57	66.9
100/104		1	1	2	62		18	17	35	64.1		37	44	81	65.8
95/ 99		14	13	27	61.2	0	30	32	62	62.7	3	41	48	92	64.4
90/ 94	0	30	31	61	59.8	0	37	43	80	61.5	15	40	44	99	63.4
85/ 89	0	33	33	66	58.7	5	34	36	75	60.3	27	25	23	75	62.3
80/ 84	2	40	46	88	57.1	20	41	42	103	59	40	24	20	84	61.1
75/ 79	14	39	47	100	55.8	37	33	31	101	57.6	37	17	15	69	60
70/ 74	36	34	33	103	54.2	39	23	21	83	56.5	36	13	8	57	59.2
65/ 69	46	21	17	84	52.9	37	15	12	64	55.5	39	6	2	47	58.2
60/ 64	57	17	15	89	51.9	54	11	8	73	54	40	1	0	41	56.5
55/ 59	58	8	3	69	50.4	46	2	1	49	51.3	4	0	0	4	54
50/ 54	25	1	0	26	48.1	10		0	10	48.9			0	0	47
45/ 49	1	0		1	44	0			0	47.5					
40/ 44															
35/ 39															
30/ 34															
25/ 29															

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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		11	11	22	69.3		2	2	4	69.6					
110/114		46	45	91	68.6		31	27	58	68.7		2	1	3	68.6
105/109	0	57	56	113	67.4	0	59	58	117	68		18	14	32	67.6
100/104	2	39	53	94	66.1	2	48	57	107	67.2	0	32	31	63	66.6
95/ 99	22	33	44	99	64.9	15	37	53	105	65.9	0	41	44	85	65.4
90/ 94	62	27	22	111	63.5	56	33	29	118	64.8	8	43	53	104	64.6
85/ 89	53	12	8	73	62.5	66	17	11	94	63.7	23	33	36	92	63.7
80/ 84	46	10	6	62	61.8	54	11	8	73	63.2	53	30	33	116	62.5
75/ 79	27	6	2	35	61.2	28	6	3	37	62.6	57	22	17	96	61.6
70/ 74	18	4	1	23	60.8	16	3	0	19	61.5	50	14	9	73	60.8
65/ 69	13	1	0	14	59.6	9	1	0	10	60.1	32	5	1	38	59.6
60/ 64	5	0		5	58.6	2	0		2	58.1	16	1	0	17	57.9
55/ 59	0			0	54.8						0			0	57.3
50/ 54															
45/ 49															
40/ 44															
35/ 39															
30/ 34															
25/ 29															

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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		0		0	67.3										
100/104		3	2	5	64.9										
95/ 99		23	17	40	63.8		0	0	0	62.9					
90/ 94	0	36	31	67	62.8		5	3	8	61.2					
85/ 89	1	34	36	71	61.7		12	8	20	59.8		0	0	0	55.7
80/ 84	9	48	57	114	60.5	0	25	21	46	58		1	1	2	57.6
75/ 79	34	40	50	124	59.3	1	42	39	82	56.4		10	8	18	56
70/ 74	58	32	36	126	58.2	9	48	54	111	54.7	0	35	30	65	53.9
65/ 69	64	20	15	99	57.2	22	35	44	101	53.1	1	48	43	92	51.9
60/ 64	60	10	4	74	55.2	50	34	44	128	51.1	8	53	69	130	49.9
55/ 59	19	2	0	21	51.7	77	22	23	122	49	41	40	62	143	47.8
50/ 54	2	0		2	47.8	57	12	4	73	46.1	85	32	29	146	44.9
45/ 49	0			0	44.5	21	4	0	25	42.1	81	20	5	106	41.2
40/ 44						2	0		2	37.1	26	7	0	33	37.3
35/ 39						1	0		1	32.5	5	1		6	33
30/ 34											0	0		0	29.4
25/ 29															

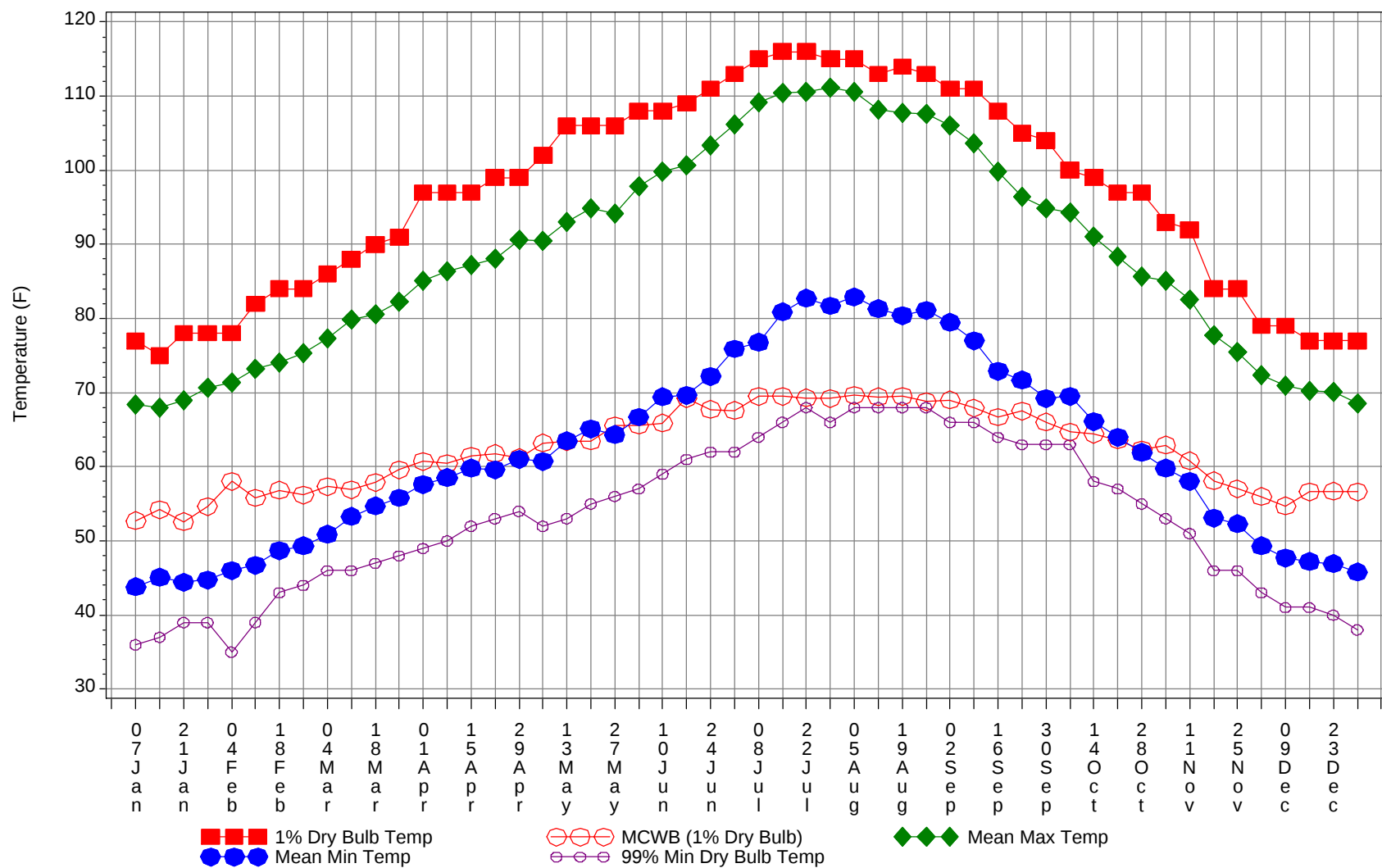
Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary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

Dry-Bulb Temperature Hours For An Average Year

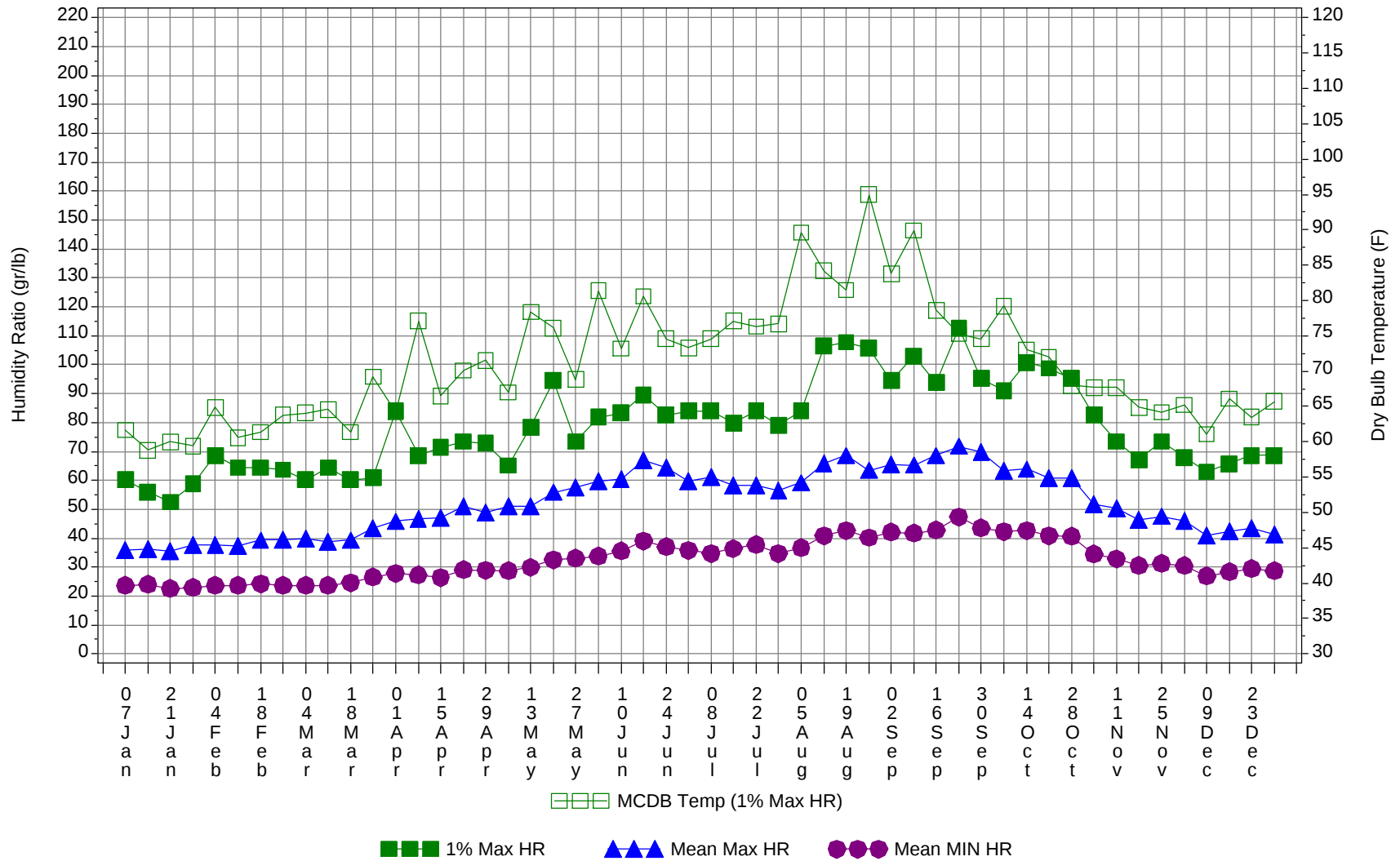
	Annual				
Temperature Range (°F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (°F)
115/119		13	12	25	69.3
110/114		88	80	168	68.5
105/109	0	169	159	328	67.4
100/104	4	177	203	384	66.2
95/ 99	40	221	252	513	64.5
90/ 94	140	257	263	660	63.1
85/ 89	173	220	210	603	61.7
80/ 84	223	277	284	784	59.9
75/ 79	236	296	306	838	57.8
70/ 74	275	322	323	920	55.6
65/ 69	295	261	250	806	53.6
60/ 64	369	243	280	892	51.1
55/ 59	396	169	200	765	48
50/ 54	392	112	80	584	44.9
45/ 49	268	66	15	349	41
40/ 44	81	22	2	105	36.8
35/ 39	24	6	0	30	32.8
30/ 34	2	1		3	28.4
25/ 29	0	0		0	25.4

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



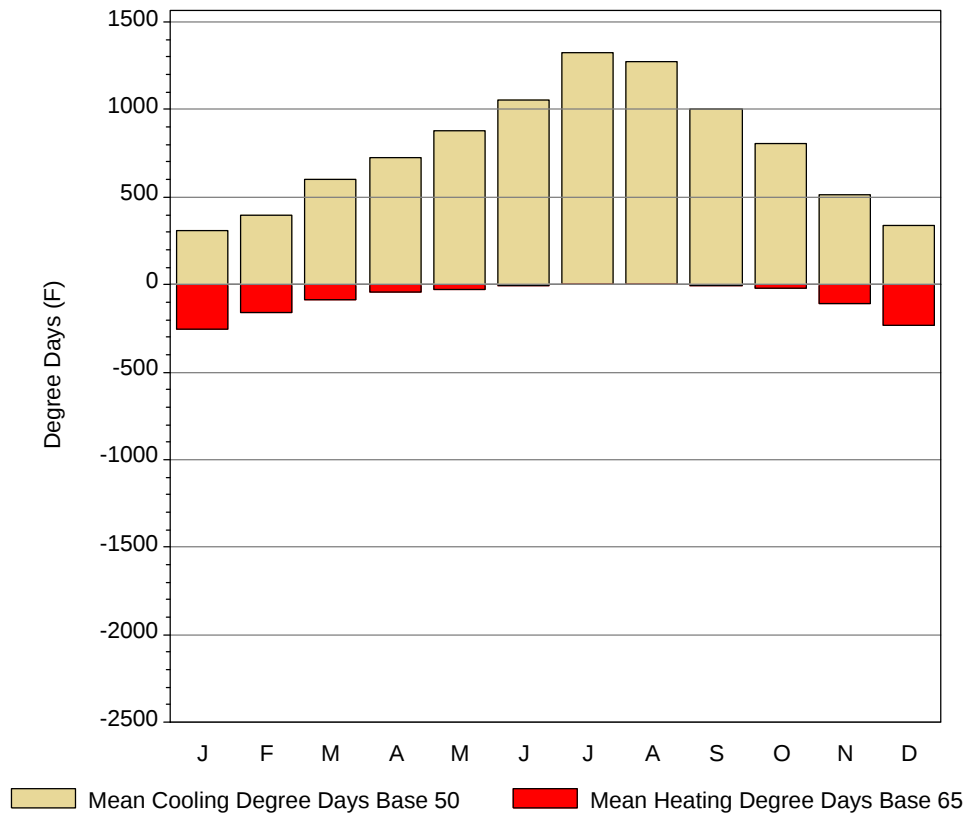
Long Term Humidity and Dry Bulb Temperature Summary



Long Term Humidity and Dry Bulb Temperature Summary

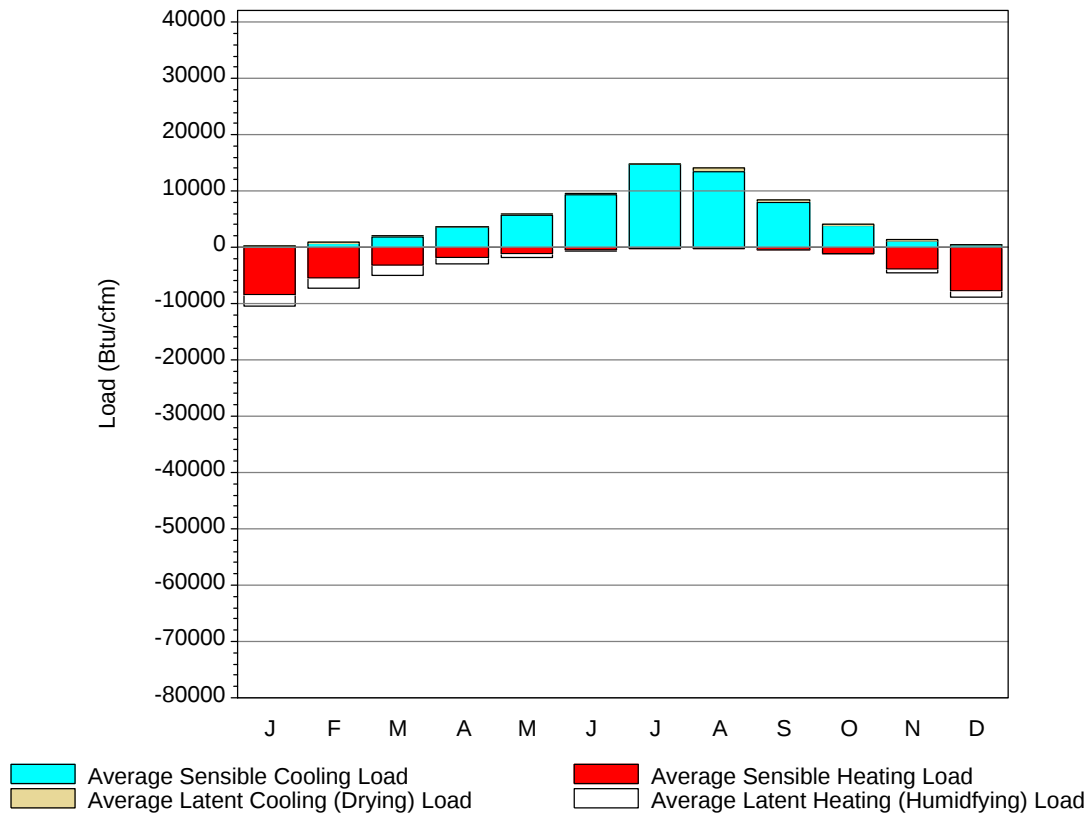
Week Ending	1.0% Temp (° F)	MCWB@ 1% Temp (° F)	Mean Max Temp (° F)	Mean Min Temp (° F)	99% Temp (° F)	1.0% HR (gr/lb)	MCDB@ 1% HR (° F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	77	52.7	68.4	43.8	36	60.2	61.7	36	23.6
14-Jan	75	54.2	67.9	45.1	37	56	58.8	36.3	24
21-Jan	78	52.6	69	44.4	39	52.5	60	35.4	22.6
28-Jan	78	54.6	70.7	44.7	39	58.8	59.4	37.6	23
4-Feb	78	58	71.3	46	35	68.6	64.9	37.6	23.7
11-Feb	82	55.8	73.2	46.7	39	64.4	60.6	37.3	23.7
18-Feb	84	56.8	74.1	48.7	43	64.4	61.4	39.3	24.2
25-Feb	84	56.2	75.3	49.3	44	63.7	63.8	39.6	23.6
4-Mar	86	57.3	77.3	50.9	46	60.2	64.1	39.8	23.7
11-Mar	88	56.9	79.8	53.3	46	64.4	64.6	38.8	23.6
18-Mar	90	57.9	80.6	54.7	47	60.2	61.4	39.3	24.6
25-Mar	91	59.6	82.2	55.8	48	60.9	69.2	43.6	26.6
1-Apr	97	60.7	85.1	57.6	49	84	64.2	45.8	27.8
8-Apr	97	60.4	86.4	58.5	50	68.6	77.1	46.7	27.3
15-Apr	97	61.4	87.2	59.8	52	71.4	66.5	47.1	26.3
22-Apr	99	61.8	88	59.6	53	73.5	70.1	51.1	29.1
29-Apr	99	61.2	90.6	61	54	72.8	71.5	48.8	28.9
6-May	102	63.2	90.5	60.7	52	65.1	67	51.1	28.7
13-May	106	63.4	93	63.5	53	78.4	78.4	51.1	29.9
20-May	106	63.5	94.9	65.1	55	94.5	76.1	55.9	32.5
27-May	106	65.5	94.1	64.3	56	73.5	68.8	57.5	33
4-Jun	108	65.6	97.8	66.7	57	81.9	81.4	59.8	33.8
10-Jun	108	65.9	99.8	69.4	59	83.3	73.2	60.5	35.6
17-Jun	109	69.2	100.6	69.6	61	89.6	80.6	67	39
24-Jun	111	67.7	103.4	72.2	62	82.6	74.6	64.5	37.1
1-Jul	113	67.6	106.2	75.9	62	84	73.3	59.6	35.7
8-Jul	115	69.5	109.2	76.8	64	84	74.6	61.1	34.7
15-Jul	116	69.5	110.4	80.9	66	79.8	77.1	58.2	36.4
22-Jul	116	69.3	110.6	82.7	68	84	76.3	58.3	37.7
29-Jul	115	69.2	111.1	81.7	66	79.1	76.7	56.4	34.7
5-Aug	115	69.6	110.6	82.9	68	84	89.6	59.2	36.7
12-Aug	113	69.4	108.2	81.3	68	106.4	84.2	66	40.8
19-Aug	114	69.5	107.7	80.4	68	107.8	81.5	68.6	42.6
26-Aug	113	68.8	107.6	81.1	68	105.7	95	63.5	40.2
2-Sep	111	69	106	79.5	66	94.5	83.8	65.5	42.1
9-Sep	111	67.9	103.7	77	66	102.9	89.9	65.3	41.8
16-Sep	108	66.7	99.8	72.9	64	93.8	78.6	68.6	42.9
23-Sep	105	67.5	96.4	71.7	63	112.7	75.3	71.8	47.3
30-Sep	104	66	94.9	69.2	63	95.2	74.6	69.8	43.5
7-Oct	100	64.7	94.3	69.5	63	91	79.2	63.4	42.2
14-Oct	99	64.4	91.1	66.1	58	100.8	73	63.9	42.7
21-Oct	97	63.6	88.4	64	57	98.7	72	60.7	40.8
28-Oct	97	62.3	85.7	61.9	55	95.2	68	60.9	40.7
4-Nov	93	62.9	85.1	59.8	53	82.6	67.7	51.8	34.5
11-Nov	92	60.8	82.6	58	51	73.5	67.7	50.2	32.8
18-Nov	84	58.1	77.8	53.1	46	67.2	64.9	46.4	30.6
25-Nov	84	57	75.4	52.3	46	73.5	64.2	47.6	31.3
2-Dec	79	56	72.4	49.3	43	67.9	65.2	46.1	30.6
9-Dec	79	54.7	70.9	47.7	41	63	61.1	41	26.9
16-Dec	77	56.6	70.2	47.2	41	65.8	66.1	42.5	28.3
23-Dec	77	56.7	70.1	46.9	40	68.6	63.5	43.4	29.4
31-Dec	77	56.6	68.5	45.8	38	68.6	65.7	41.2	28.7

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	310	68.5	257.1
FEB	398.2	117.5	155.9
MAR	602.5	221.1	85.4
APR	728.8	321.1	42.3
MAY	882.4	444.5	27.1
JUN	1055.5	613.2	7.8
JUL	1324.3	861.3	1.9
AUG	1272.4	809.5	2
SEP	1001.2	559.2	7.9
OCT	804.9	360.3	20.5
NOV	509.9	162.4	106.9
DEC	335.8	75.7	232.8
ANN	9225.9	4614.3	947.6

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	247	-8384	86	-2161
FEB	788	-5347	66	-1817
MAR	1931	-3233	70	-1815
APR	3562	-1773	48	-1144
MAY	5806	-1203	58	-556
JUN	9437	-446	66	-284
JUL	14834	-134	65	-149
AUG	13513	-138	534	-80
SEP	7885	-405	488	-54
OCT	3852	-1015	246	-209
NOV	1209	-3943	131	-689
DEC	373	-7760	117	-1156
ANN	63437	-33781	1975	-10114

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													

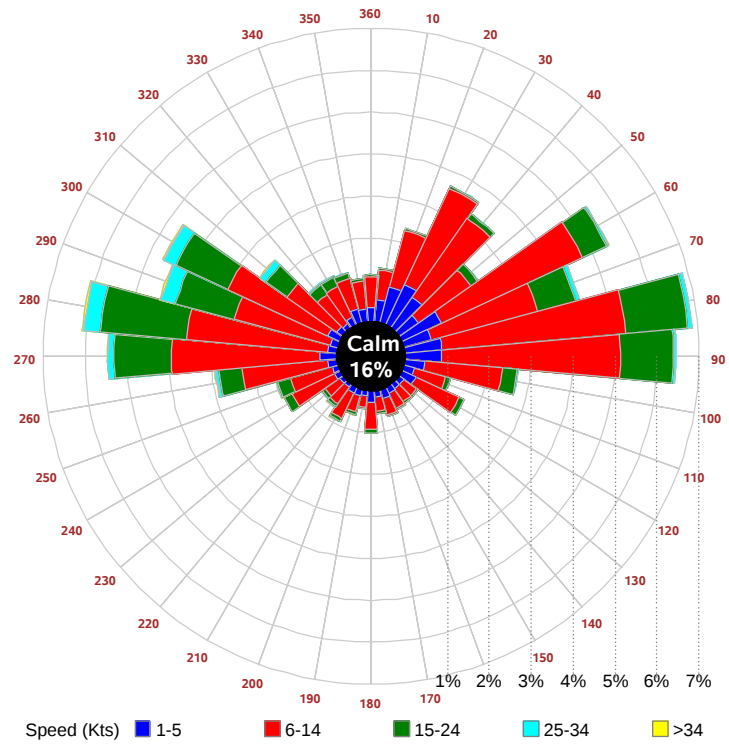
Average Annual Solar Radiation - Nearest Available Site Source: National Renewable Energy Laboratory, Golden CO, 1995

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													

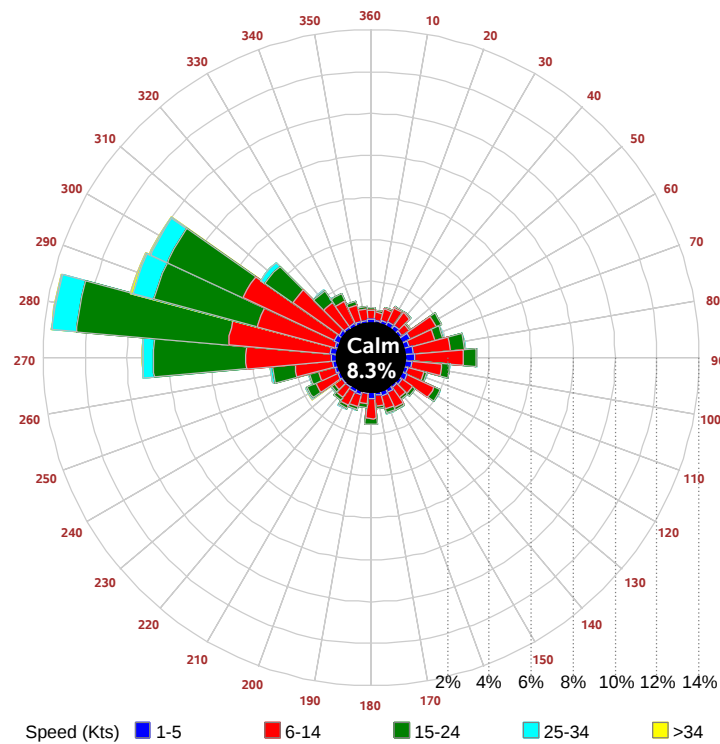
AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9												
				March						June		
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm	
HORIZ.	M.Clear											
	M.Cloudy											
NORTH	M.Clear											
	M.Cloudy											
EAST	M.Clear			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

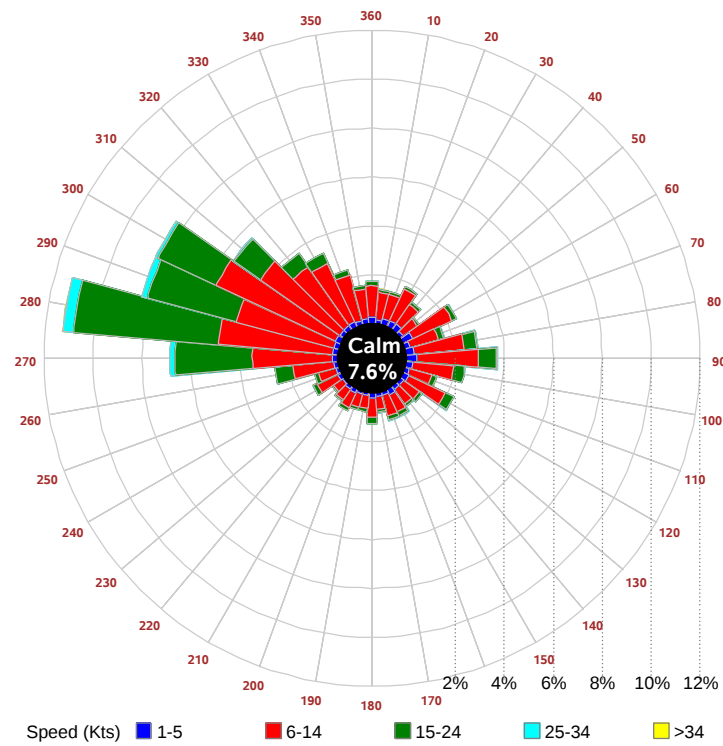
Wind Summary - December, January, and February



Wind Summary - March, April, and May



Wind Summary - June, July, and August



Wind Summary - September, October, and November

