

JORGE CHAVEZ INTL, PE

Latitude = 12.02 S

Longitude = 77.11 W

Period of Record = 1988 To 2017

Station ID = ICAO_SPIM

Elevation = 113 Feet

Average Pressure = 29.86 inches Hg

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	86	74	110	11.1	S
0.4% Occurrence	84	73	106	10.8	S
1.0% Occurrence	82	72	103	10.4	S
2.0% Occurrence	81	72	103	10.3	S
Mean Daily Range	9	-	-	-	S
97.5% Occurrence	59	57	67	5.1	S
99.0% Occurrence	58	57	66	4.9	S
99.6% Occurrence	57	56	64	4.2	S
Median of Extreme Lows	57	56	64	4.2	S

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	75	81	117	10.7	S
0.4% Occurrence	75	81	117	10.7	S
1.0% Occurrence	73	80	110	10	S
2.0% Occurrence	73	80	110	10	S

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	118	79	0.78	9.8	S
0.4% Occurrence	118	79	0.78	9.8	S
1.0% Occurrence	116	79	0.78	9.5	S
2.0% Occurrence	110	77	0.73	9	S

Air Conditioning/ Humid Area Criteria	Threshold	T ≥ 93 °F	T ≥ 80 °F	Twb ≥ 73 °F	Twb ≥ 67 °F
	# of Hours	0	238	184	2388

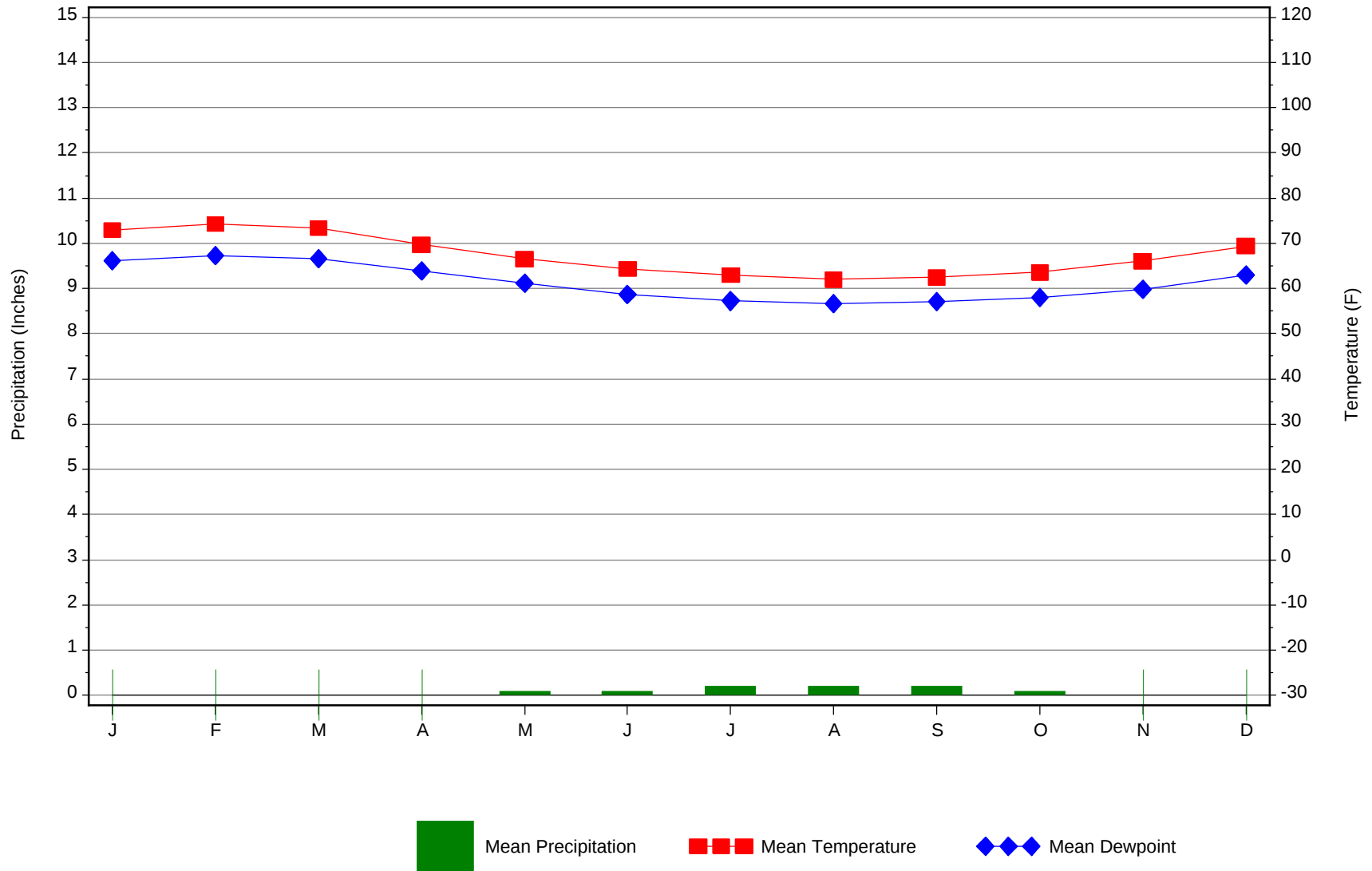
Other Site Data

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	N/A	3.5 + 0.3
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 (#)
69.8	N/A	N/A	0

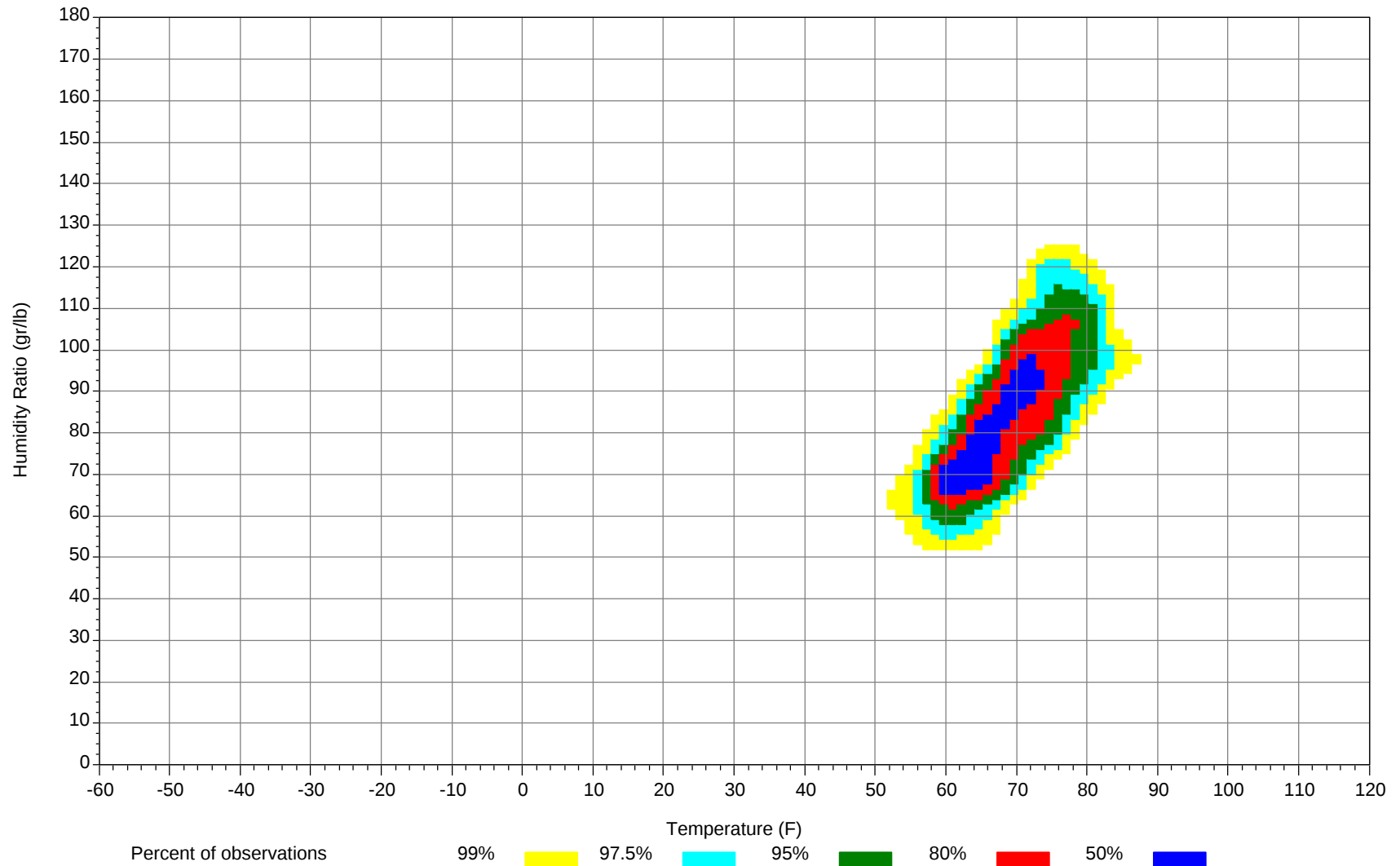
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.



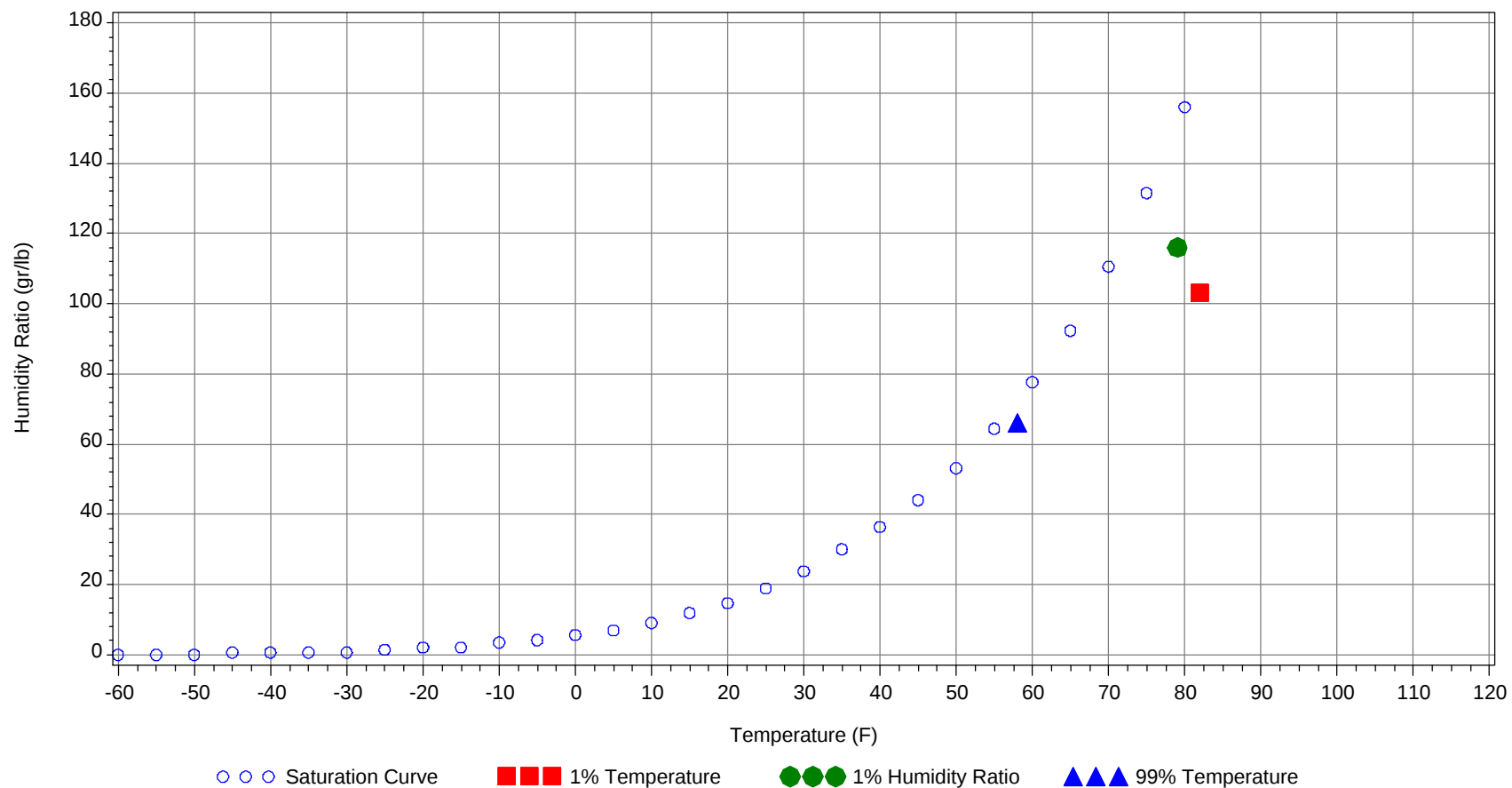
Average Annual Climate



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	82.0		72		103.0	36.0
99.0% Dry Bulb	58.0				66.0	24.0
1.0% Humidity Ratio	116.0	79.0	73.7	71.6		37.1

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)
90/ 94		0		0	76		0		0	74		0		0	75
85/ 89		4		4	75.3		7	0	7	74.7		8	0	8	74.2
80/ 84	0	39	3	42	71.9	0	73	7	80	72.3	0	63	7	70	72.3
75/ 79	14	142	48	204	70.1	22	115	78	215	70.7	20	125	65	210	70.4
70/ 74	127	59	169	355	67.8	141	28	129	298	68.5	126	47	148	321	68.1
65/ 69	103	3	27	133	65.8	59	1	10	70	66.1	96	5	28	129	65.9
60/ 64	4	0	0	4	63.1	1	0	0	1	63.3	7	0	1	8	63.1
55/ 59															
50/ 54															

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)
90/ 94															
85/ 89		1		1	72.9		0		0	72					
80/ 84		14	1	15	71.7		2	0	2	70		1	0	1	69.8
75/ 79	3	85	16	104	69.1	0	28	2	30	68	0	8	1	9	68
70/ 74	38	106	92	236	67	14	97	41	152	65.7	9	44	15	68	65.1
65/ 69	127	30	112	269	64.7	77	79	99	255	63.7	41	84	56	181	62.6
60/ 64	73	4	20	97	62.3	144	41	104	289	60.9	150	99	154	403	59.7
55/ 59	0			0	58	13	1	2	16	58.1	40	5	14	59	57.3
50/ 54											1		0	1	51.8

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

	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)
90/ 94															
85/ 89															
80/ 84		0		0	69										
75/ 79		5	0	5	67.4		3	0	3	67.1	0	3		3	67.5
70/ 74	7	20	9	36	64.6	3	10	6	19	65.2	1	15	5	21	64.6
65/ 69	18	75	28	121	61.6	5	57	7	69	61.1	9	72	12	93	61.6
60/ 64	151	139	179	469	59.1	135	168	190	493	58.7	133	142	193	468	59
55/ 59	73	9	32	114	56.9	105	10	46	161	56.9	97	8	31	136	57
50/ 54	0			0	52.4	0			0	52.8					

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

	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)
90/ 94															
85/ 89												0		0	72.5
80/ 84							0		0	70	0	6	0	6	71.5
75/ 79		2	0	2	66.2		11	0	11	67	2	73	9	84	68.4
70/ 74	0	39	2	41	63.8	5	112	17	134	64.5	34	137	88	259	66.2
65/ 69	12	121	36	169	61.9	55	95	106	256	62.7	152	30	135	317	64.3
60/ 64	193	84	198	475	59.5	175	22	116	313	60.5	60	2	15	77	61.9
55/ 59	42	2	12	56	57.1	5	0	1	6	57.7					
50/ 54	0			0	54										

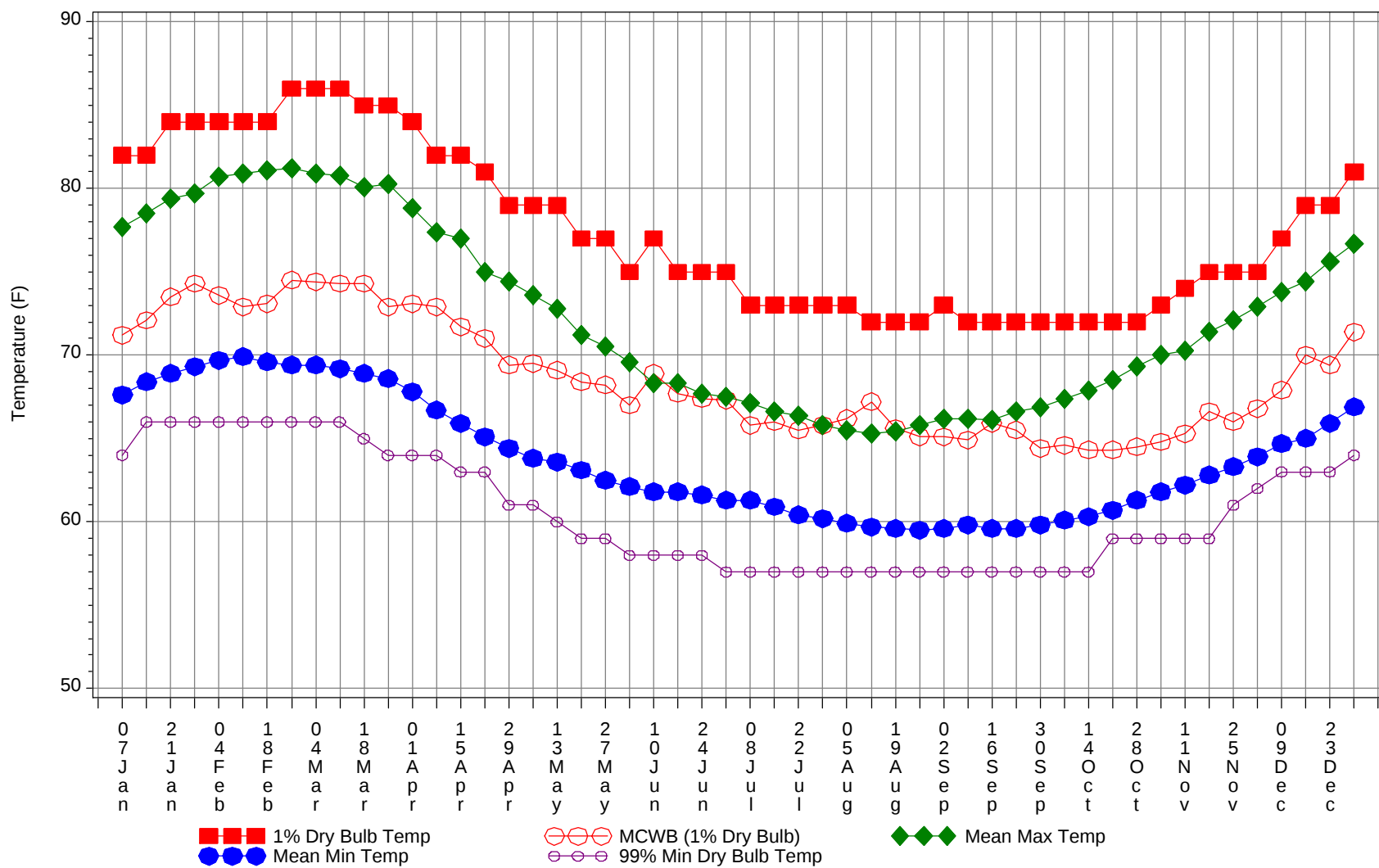
Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary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

Dry-Bulb Temperature Hours For An Average Year

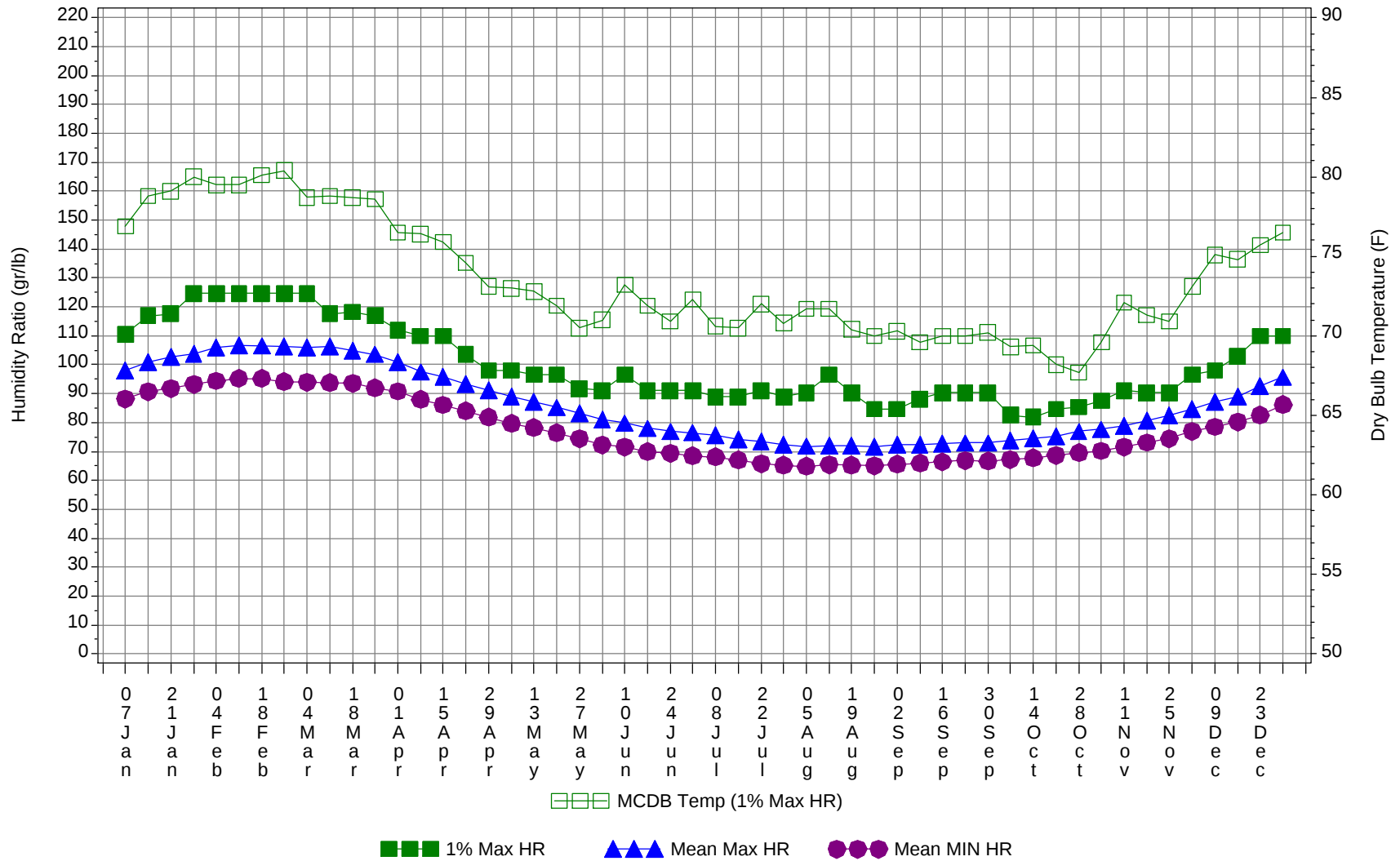
	Annual				
Temperature Range (° F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (° F)
90/ 94		0		0	74.9
85/ 89		19	0	19	74.5
80/ 84	1	200	18	219	72.1
75/ 79	61	600	220	881	69.8
70/ 74	506	714	720	1940	67
65/ 69	752	651	655	2058	63.6
60/ 64	1226	701	1170	3097	59.7
55/ 59	374	35	136	545	57
50/ 54	1		0	1	52.2

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



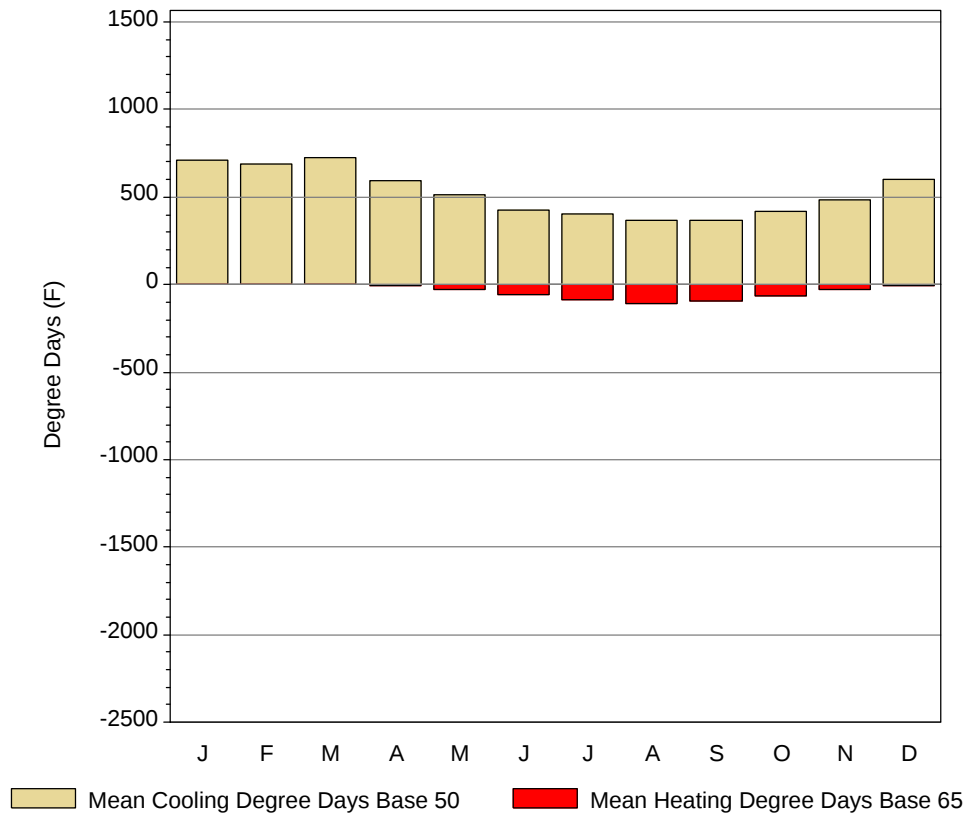
Long Term Humidity and Dry Bulb Temperature Summary



Long Term Humidity and Dry Bulb Temperature Summary

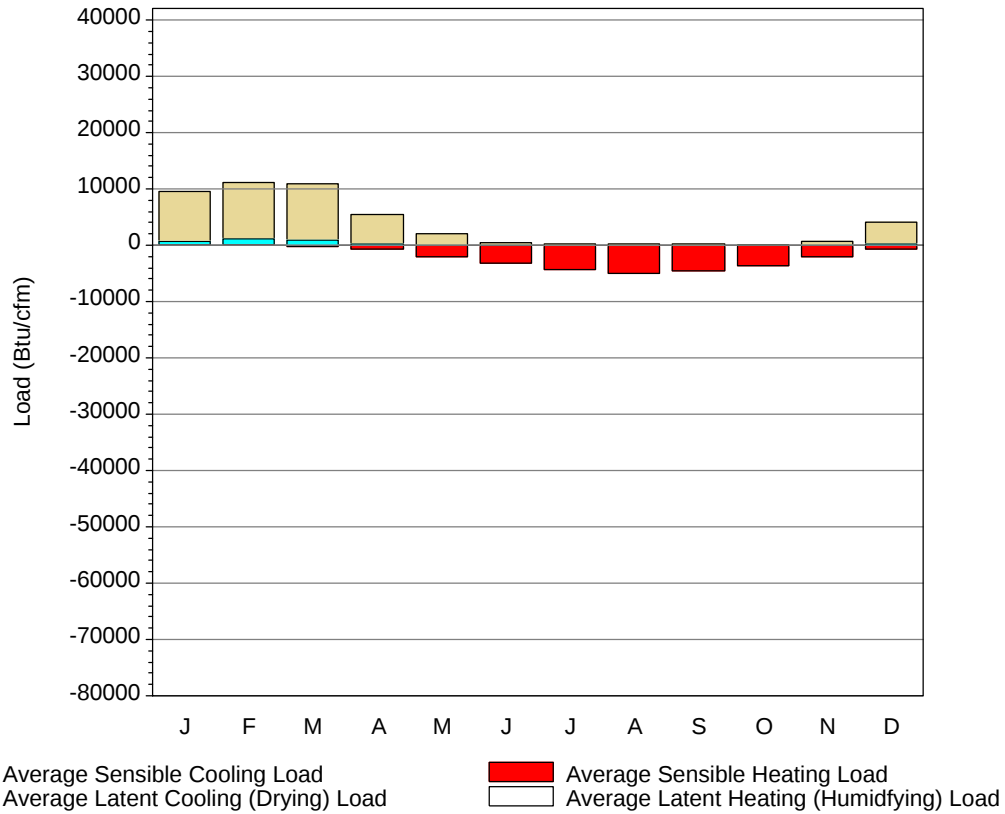
Week Ending	1.0% Temp (° F)	MCWB@ 1% Temp (° F)	Mean Max Temp (° F)	Mean Min Temp (° F)	99% Temp (° F)	1.0% HR (gr/lb)	MCDB@ 1% HR (° F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	82	71.2	77.7	67.6	64	110.6	76.9	98.1	88.2
14-Jan	82	72.1	78.5	68.4	66	116.9	78.8	101	90.7
21-Jan	84	73.5	79.4	68.9	66	117.6	79.1	102.6	91.8
28-Jan	84	74.3	79.7	69.3	66	124.6	80	103.9	93.2
4-Feb	84	73.6	80.7	69.7	66	124.6	79.5	106	94.4
11-Feb	84	72.9	80.9	69.9	66	124.6	79.5	106.6	95.3
18-Feb	84	73.1	81.1	69.6	66	124.6	80.1	106.5	95.3
25-Feb	86	74.5	81.2	69.4	66	124.6	80.4	106.4	94.1
4-Mar	86	74.4	80.9	69.4	66	124.6	78.7	106	93.9
11-Mar	86	74.3	80.8	69.2	66	117.6	78.8	106.3	93.8
18-Mar	85	74.3	80.1	68.9	65	118.3	78.7	104.9	93.6
25-Mar	85	72.9	80.3	68.6	64	116.9	78.6	103.6	92
1-Apr	84	73.1	78.8	67.8	64	112	76.5	101	90.8
8-Apr	82	72.9	77.4	66.7	64	109.9	76.4	97.5	88
15-Apr	82	71.7	77	65.9	63	109.9	75.9	95.9	86.1
22-Apr	81	71	75	65.1	63	103.6	74.6	93.2	84
29-Apr	79	69.4	74.4	64.4	61	98	73.1	91.1	81.9
6-May	79	69.5	73.6	63.8	61	98	73	89.1	79.7
13-May	79	69.1	72.8	63.6	60	96.6	72.8	87.2	78.2
20-May	77	68.4	71.2	63.1	59	96.6	71.9	85.2	76.5
27-May	77	68.2	70.5	62.5	59	91.7	70.5	83.1	74.4
4-Jun	75	67	69.6	62.1	58	91	71	81	72.3
10-Jun	77	68.9	68.3	61.8	58	96.6	73.2	79.8	71.5
17-Jun	75	67.7	68.3	61.8	58	91	71.9	78	69.9
24-Jun	75	67.4	67.7	61.6	58	91	70.9	76.9	69.4
1-Jul	75	67.3	67.5	61.3	57	91	72.3	76.5	68.5
8-Jul	73	65.8	67.1	61.3	57	88.9	70.6	75.5	68.1
15-Jul	73	66	66.6	60.9	57	88.9	70.5	74.2	67
22-Jul	73	65.5	66.4	60.4	57	91	72	73.5	65.8
29-Jul	73	65.8	65.8	60.2	57	88.9	70.8	72.5	65.3
5-Aug	73	66.2	65.5	59.9	57	90.3	71.7	71.8	64.9
12-Aug	72	67.2	65.3	59.7	57	96.6	71.7	71.9	65.4
19-Aug	72	65.6	65.4	59.6	57	90.3	70.4	71.9	65.2
26-Aug	72	65.1	65.8	59.5	57	84.7	70	71.7	65
2-Sep	73	65.1	66.2	59.6	57	84.7	70.3	72.5	65.6
9-Sep	72	64.9	66.2	59.8	57	88.2	69.6	72.5	65.9
16-Sep	72	65.9	66.1	59.6	57	90.3	70	72.8	66.4
23-Sep	72	65.5	66.6	59.6	57	90.3	70	72.9	66.8
30-Sep	72	64.4	66.9	59.8	57	90.3	70.2	72.9	66.7
7-Oct	72	64.6	67.4	60.1	57	82.6	69.3	73.8	67.2
14-Oct	72	64.3	67.9	60.3	57	81.9	69.4	74.4	67.8
21-Oct	72	64.3	68.5	60.7	59	84.7	68.2	75.3	68.6
28-Oct	72	64.5	69.3	61.3	59	85.4	67.7	76.9	69.6
4-Nov	73	64.8	70	61.8	59	87.5	69.6	77.6	70.2
11-Nov	74	65.3	70.3	62.2	59	91	72.1	78.8	71.5
18-Nov	75	66.6	71.4	62.8	59	90.3	71.3	80.6	73.1
25-Nov	75	66	72.1	63.3	61	90.3	70.9	82.5	74.5
2-Dec	75	66.8	72.9	63.9	62	96.6	73.1	84.7	77
9-Dec	77	67.9	73.8	64.7	63	98	75.1	87.2	78.5
16-Dec	79	70	74.4	65	63	102.9	74.8	89	80.2
23-Dec	79	69.4	75.6	65.9	63	109.9	75.7	92.5	82.5
31-Dec	81	71.4	76.7	66.9	64	109.9	76.5	95.7	86.2

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	709.5	244.6	0.1
FEB	686.2	262.3	0.1
MAR	724.7	260.1	0.4
APR	591.8	147	5.2
MAY	511.2	76	29.7
JUN	427.7	36.3	58.5
JUL	400.8	19.7	83.8
AUG	370.8	10.6	104.8
SEP	368.9	13.2	94.4
OCT	421	23.5	67.5
NOV	482.9	58.2	25.3
DEC	602.8	141.2	3.5
ANN	6298.3	1292.7	473.3

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	729	-79	8947	0
FEB	1087	-33	9976	0
MAR	988	-105	9879	0
APR	262	-725	5256	0
MAY	58	-2056	1982	0
JUN	19	-3241	561	0
JUL	10	-4242	194	0
AUG	2	-4939	134	0
SEP	3	-4529	153	0
OCT	1	-3694	123	0
NOV	12	-2039	715	0
DEC	144	-653	4048	0
ANN	3315	-26335	41968	0

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													

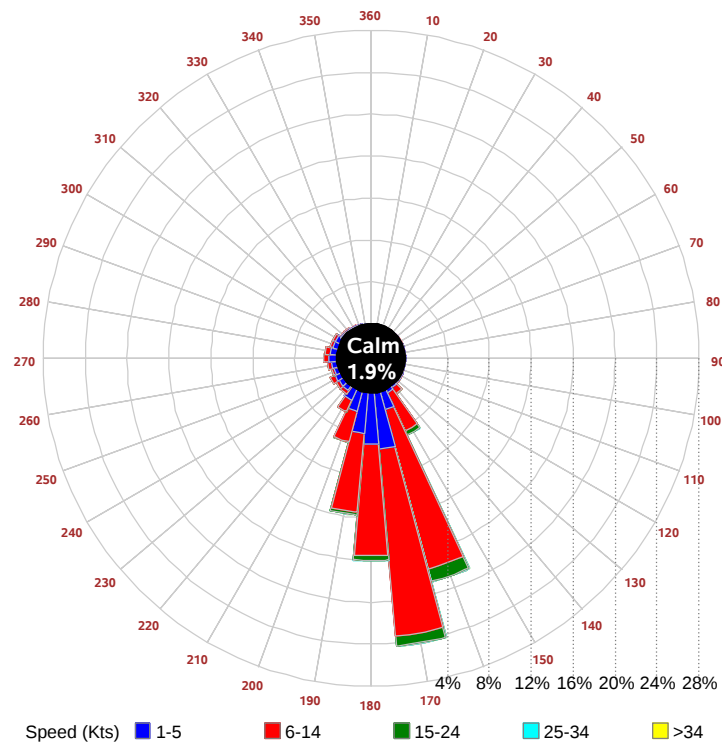
Average Annual Solar Radiation - Nearest Available Site Source: National Renewable Energy Laboratory, Golden CO, 1995

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													

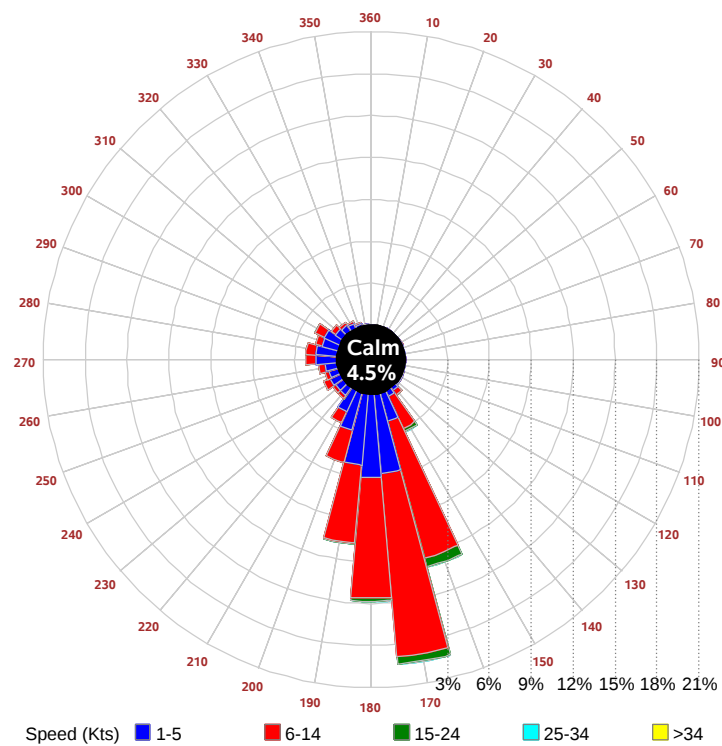
AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9												
		March						June				
		9am	11am	1pm	3pm	5pm		9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear											
	M.Cloudy											
NORTH	M.Clear											
	M.Cloudy											
EAST	M.Clear			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

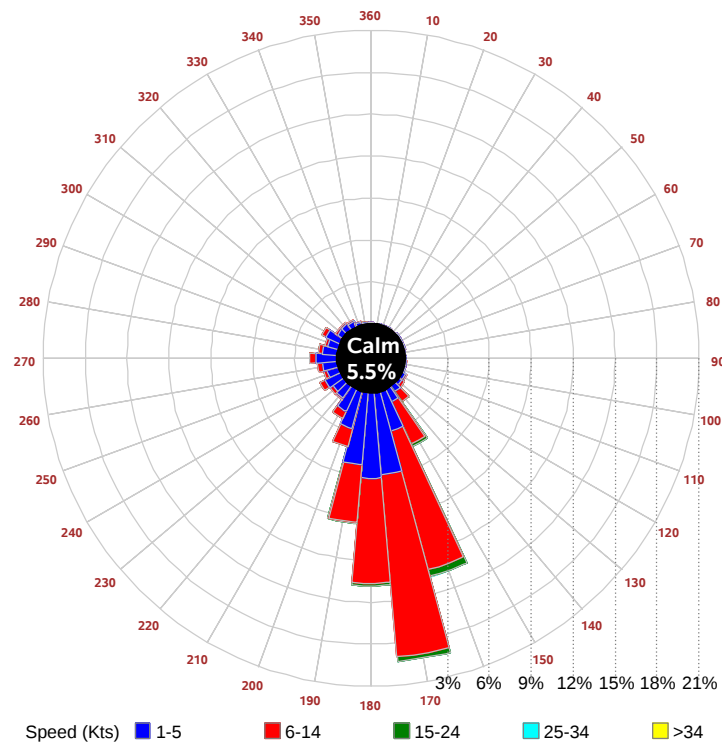
Wind Summary - December, January, and February



Wind Summary - March, April, and May



Wind Summary - June, July, and August



Wind Summary - September, October, and November

