

PORONAJSK, RS

Latitude = 49.22 N

Longitude = 143.10 E

Period of Record = 1988 To 2017

Station ID = WMO_32098

Elevation = 26 Feet

Average Pressure = 29.85 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	82	66	71	11.9	W
0.4% Occurrence	73	64	76	8.9	W
1.0% Occurrence	69	63	79	8.2	S
2.0% Occurrence	67	62	77	7.9	S
Mean Daily Range	13	-	-	-	N
97.5% Occurrence	-10	-10	2	5.2	N
99.0% Occurrence	-15	-15	2	4.9	N
99.6% Occurrence	-20	-20	1	4.9	NW
Median of Extreme Lows	-26	-26	1	4.9	NW

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	71	76	104	7.6	S
0.4% Occurrence	67	71	92	7.1	S
1.0% Occurrence	65	68	86	7.1	S
2.0% Occurrence	63	65	81	7.4	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	102	71	0.68	6	S
0.4% Occurrence	93	68	0.62	6.3	S
1.0% Occurrence	88	67	0.58	6.7	S
2.0% Occurrence	83	65	0.55	7.2	S

Air Conditioning/ Humid Area Criteria	Threshold	$T \geq 93^{\circ}\text{F}$	$T \geq 80^{\circ}\text{F}$	$T_{wb} \geq 73^{\circ}\text{F}$	$T_{wb} \geq 67^{\circ}\text{F}$
	# of Hours	1	3	2	13

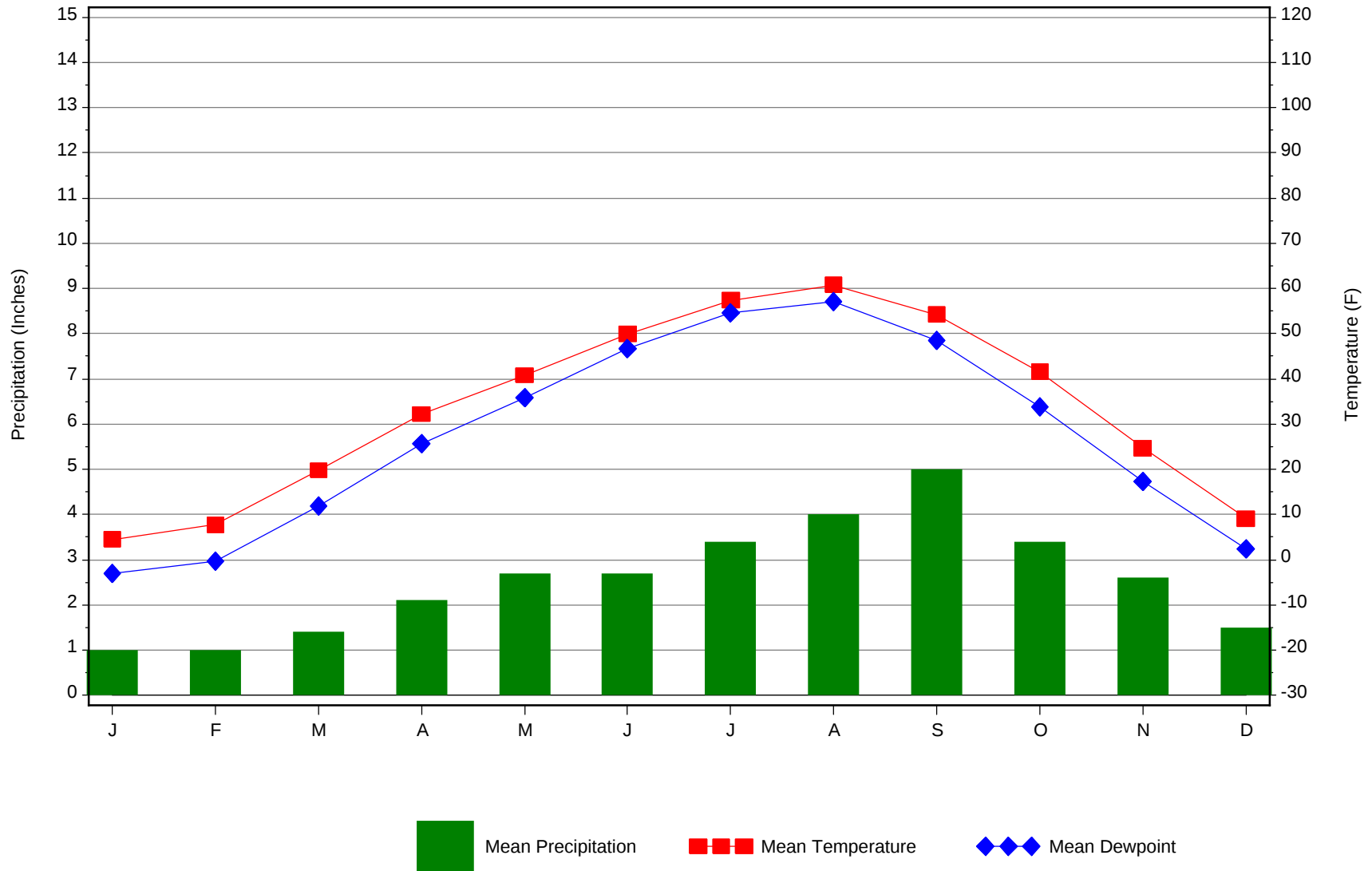
Other Site Data

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
3	N/A	N/A	0.0 + 0.0
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 (#)
36.1	N/A	N/A	48

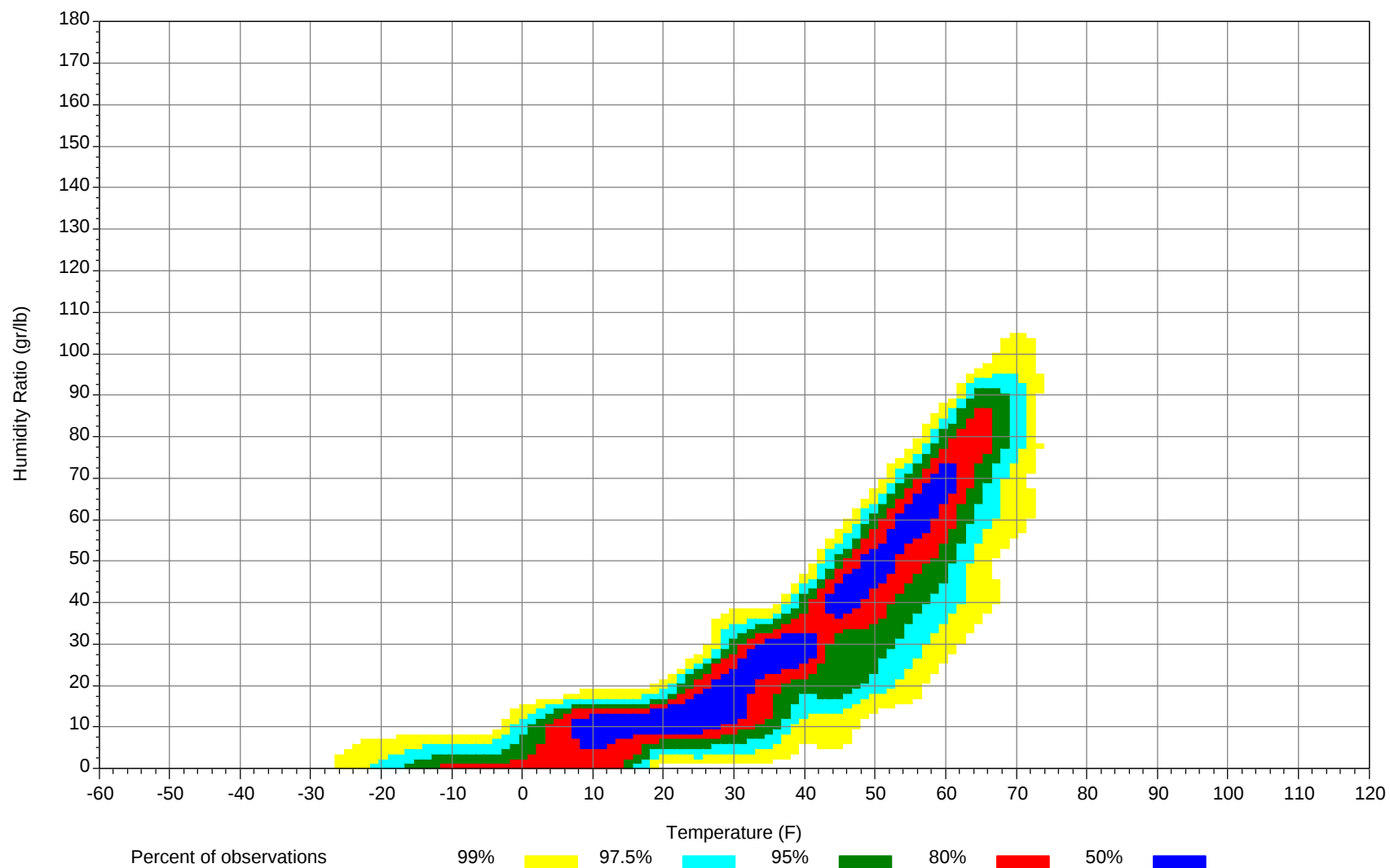
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.



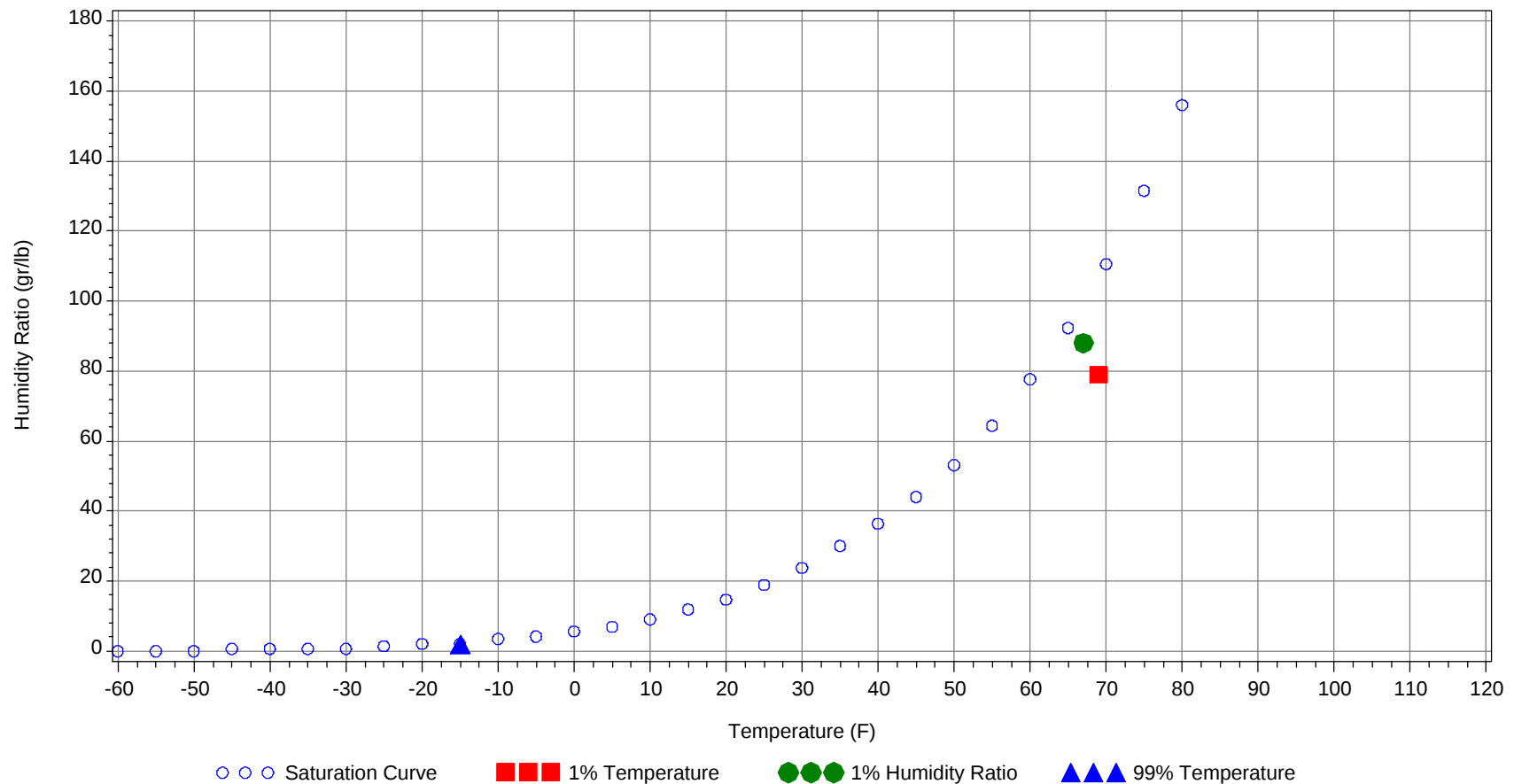
Average Annual Climate



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	69.0		63		79.0	29.1
99.0% Dry Bulb	-15.0				2.0	-3.3
1.0% Humidity Ratio	88.0	67.0	64.4	63.2		29.6

Dry-Bulb Temperature Hours For An Average Year

Temperature Range (°F)	January					February					March				
	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															
75/ 79															
70/ 74															
65/ 69															
60/ 64															
55/ 59															
50/ 54															
45/ 49											0	0	0	0	37.4
40/ 44											0	1	1	2	34.4
35/ 39		0	0	0	31.3	0	0	1	1	30.6	1	6	8	15	31.5
30/ 34	4	4	5	13	29.1	2	3	5	10	28.7	17	36	49	102	28.9
25/ 29	13	12	15	40	24.9	7	11	16	34	24.5	41	49	67	157	24.7
20/ 24	14	17	19	50	19.8	15	20	28	63	19.5	40	47	48	135	19.9
15/ 19	17	23	28	68	14.9	19	32	43	94	14.6	39	38	36	113	15.1
10/ 14	23	32	36	91	10.1	24	36	45	105	10.3	39	27	23	89	10.6
5/ 9	23	35	41	99	5.5	29	36	36	101	5.5	30	20	11	61	6
0/ 4	32	32	41	105	1	36	26	25	87	0.9	21	11	4	36	1.3
-5/ -1	26	20	25	71	-3.3	29	17	13	59	-3.2	12	7	1	20	-3
-10/ -6	38	27	21	86	-7.5	26	18	8	52	-7.4	6	4	0	10	-7.4
-15/-11	28	24	11	63	-12.2	21	13	3	37	-12.2	1	2		3	-11.8
-20/-16	19	13	4	36	-17	10	6	1	17	-17.1	0	1		1	-16.5
-25/-21	7	7	1	15	-21.9	4	3		7	-21.9					
-30/-26	3	2	0	5	-26.6	1	1		2	-26.9					
-35/-31	1	0		1	-31.6	0	0		0	-31.8					
-40/-36	0	0		0	-36		0		0	-36					

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													0	0	67
85/ 89												0	0	0	63.8
80/ 84								0	0	61		0	1	1	63.1
75/ 79								0	0	58.5		0	2	2	61.4
70/ 74						0	0	0	0	54.6	0	1	3	4	61.4
65/ 69						0	1	2	3	51.8	1	4	4	9	59.6
60/ 64		0	0	0	46.3	0	2	4	6	49.4	2	14	12	28	57.3
55/ 59		0	0	0	43.9	0	6	7	13	48.6	12	38	37	87	53.7
50/ 54		1	1	2	40.6	5	19	20	44	46.2	55	79	79	213	50
45/ 49	0	4	6	10	39.1	14	44	41	99	43.4	94	67	74	235	46
40/ 44	4	18	21	43	37	54	73	77	204	39.9	56	29	23	108	41.7
35/ 39	25	56	63	144	33.6	102	73	78	253	35.9	18	5	4	27	37.1
30/ 34	107	100	112	319	30.2	65	29	18	112	31.9	2	0		2	32.6
25/ 29	69	41	29	139	25.8	7	2	0	9	27.5	0			0	28.5
20/ 24	23	12	5	40	20.9	0			0	23					
15/ 19	7	5	1	13	16.1										
10/ 14	3	2	0	5	10.6										
5/ 9	1	0	0	1	6.4										
0/ 4	0	0		0	1.3										
-5/ -1		0		0											
-10/ -6		0		0	-6										
-15/-11															
-20/-16															
-25/-21															
-30/-26															
-35/-31															
-40/-36															

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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)
90/ 94			0	0	69			0	0	76					
85/ 89			0	0	69.4		0	0	0	71					
80/ 84	0	0	1	1	67.5		1	2	3	67.3		0	0	0	65.3
75/ 79	0	1	1	2	66.2	0	4	4	8	66.2		1	2	3	62.6
70/ 74	1	5	4	10	64.9	1	14	14	29	65.5		3	4	7	59.8
65/ 69	2	19	21	42	62.8	17	54	54	125	63.3	1	18	17	36	59.9
60/ 64	34	66	64	164	59.6	75	85	103	263	59.9	19	48	53	120	57.5
55/ 59	93	97	102	292	55.6	96	66	63	225	55.9	52	67	81	200	54
50/ 54	91	53	51	195	51.5	40	18	8	66	51.7	64	53	54	171	49.8
45/ 49	22	8	4	34	47.2	13	5	0	18	46.8	47	24	18	89	45.7
40/ 44	4	0		4	42.2	3	1		4	42.7	36	14	8	58	41
35/ 39	1			1	37.4	1	0		1	37.6	18	9	3	30	36.3
30/ 34											4	3	0	7	32.3
25/ 29												0		0	28.7
20/ 24															
15/ 19															
10/ 14															
5/ 9															
0/ 4															
-5/ -1															
-10/ -6															
-15/-11															
-20/-16															
-25/-21															
-30/-26															
-35/-31															
-40/-36															

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Dry-Bulb Temperature Hours For An Average Year

Temperature Range (°F)	October					November					December				
	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															
75/ 79															
70/ 74		0	0	0	55										
65/ 69		0	1	1	52.2										
60/ 64	0	2	3	5	50.8		0		0	51					
55/ 59	2	14	14	30	50.2		0	0	0	46.1					
50/ 54	18	38	44	100	47.6	1	1	1	3	44.5					
45/ 49	34	50	58	142	43.5	2	5	5	12	42.3					
40/ 44	48	53	53	154	38.6	10	16	17	43	38.7					
35/ 39	52	41	41	134	34.2	17	28	30	75	33.6	1	2	2	5	33.7
30/ 34	57	29	26	112	30.1	38	42	44	124	29.1	10	11	11	32	30
25/ 29	29	13	8	50	25.8	37	44	45	126	24.5	14	17	18	49	24.7
20/ 24	7	6	2	15	21.3	38	33	37	108	20	22	27	28	77	19.7
15/ 19	1	1	0	2	17.1	29	27	30	86	15.5	21	31	33	85	15
10/ 14	0			0	13	29	21	18	68	11	24	33	47	104	10.3
5/ 9						20	11	8	39	6.5	34	36	41	111	5.8
0/ 4						12	6	3	21	1.8	36	30	32	98	1.2
-5/ -1						4	3	1	8	-2.6	30	22	17	69	-3
-10/ -6						2	2	0	4	-7.5	31	21	12	64	-7.2
-15/ -11						1	0	0	1	-11.6	15	12	5	32	-12
-20/ -16						0	0		0	-16	7	5	1	13	-16.7
-25/ -21											2	2	0	4	-21.8
-30/ -26											0	0		0	-25.8
-35/ -31															
-40/ -36															

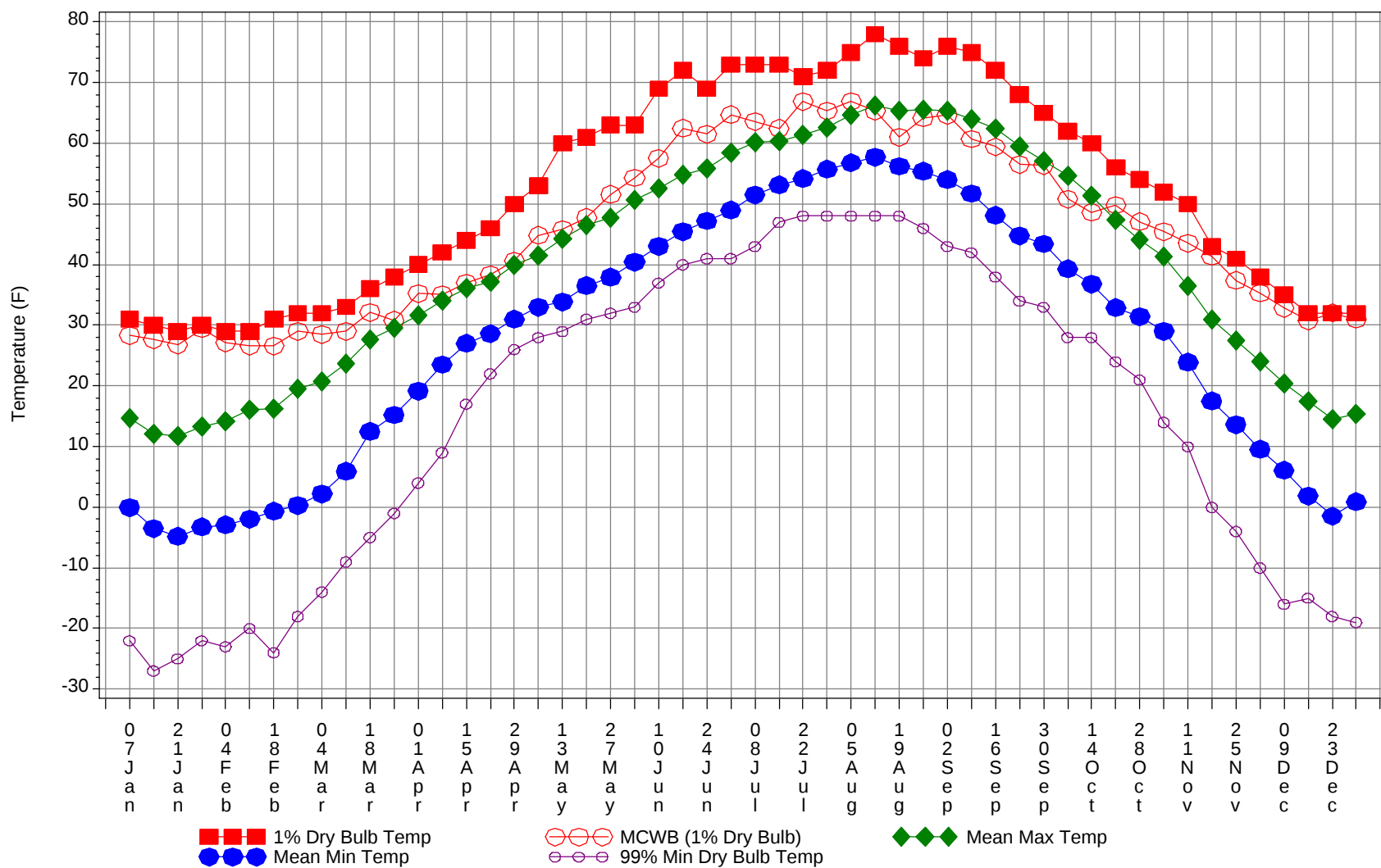
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Dry-Bulb Temperature Hours For An Average Year

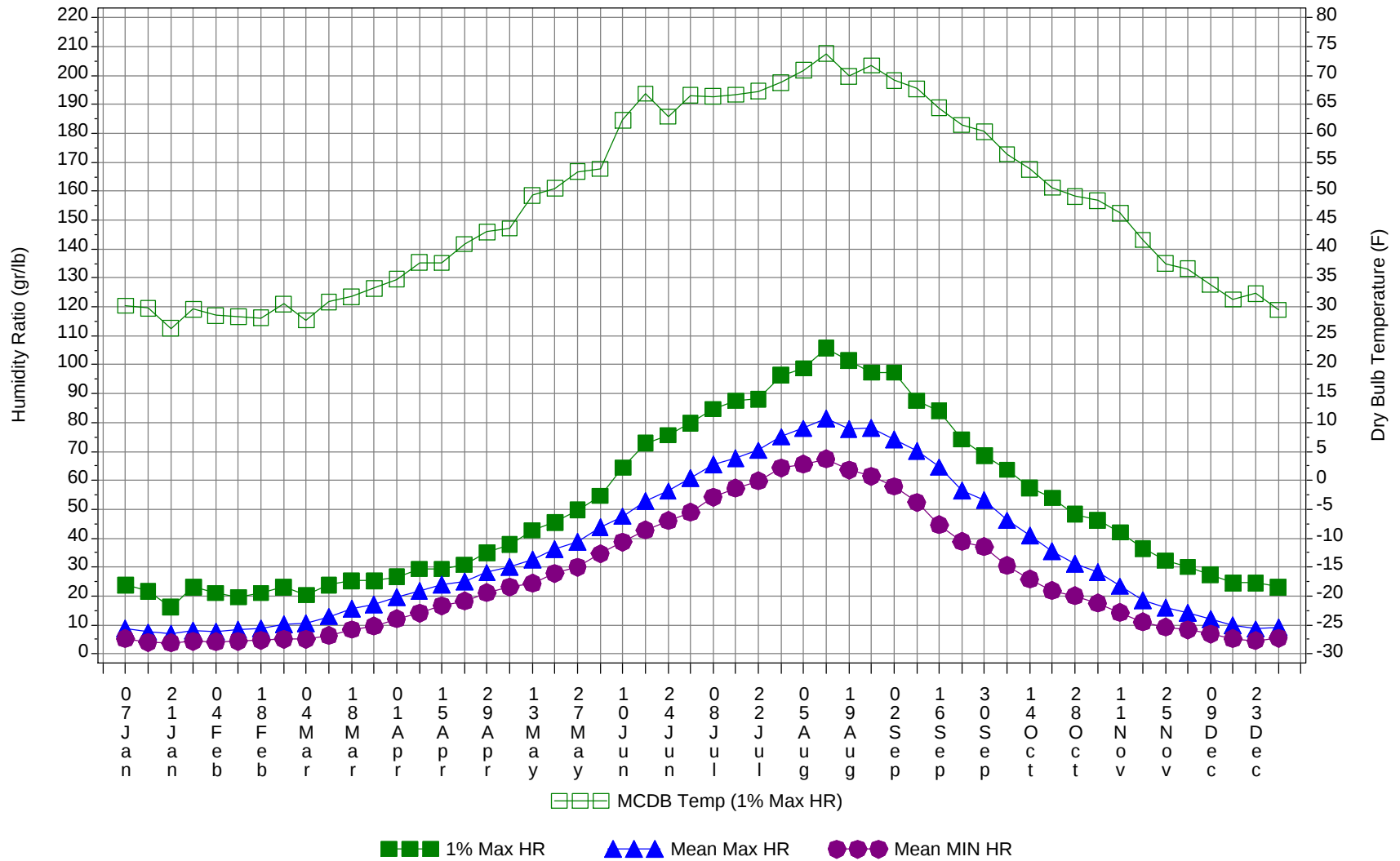
	Annual				
Temperature Range (° F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (° F)
90/ 94			0	0	70.7
85/ 89		0	1	1	67.8
80/ 84	0	2	3	5	66.1
75/ 79	0	5	8	13	64.8
70/ 74	2	23	24	49	64.1
65/ 69	21	95	97	213	62.3
60/ 64	130	216	236	582	58.9
55/ 59	257	286	301	844	54.7
50/ 54	274	261	257	792	49.8
45/ 49	227	207	205	639	44.8
40/ 44	215	204	202	621	39.7
35/ 39	236	221	230	687	34.7
30/ 34	306	260	271	837	30
25/ 29	217	191	199	607	25
20/ 24	159	161	167	487	19.9
15/ 19	132	158	173	463	15.1
10/ 14	142	151	172	465	10.4
5/ 9	136	139	140	415	5.7
0/ 4	137	106	107	350	1.1
-5/ -1	101	69	57	227	-3.2
-10/ -6	104	71	42	217	-7.4
-15/-11	66	52	20	138	-12.1
-20/-16	36	26	7	69	-16.9
-25/-21	14	12	1	27	-21.9
-30/-26	4	4	0	8	-26.6
-35/-31	1	1		2	-31.7
-40/-36	0	0		0	-36

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Annual Summary of Temperatures



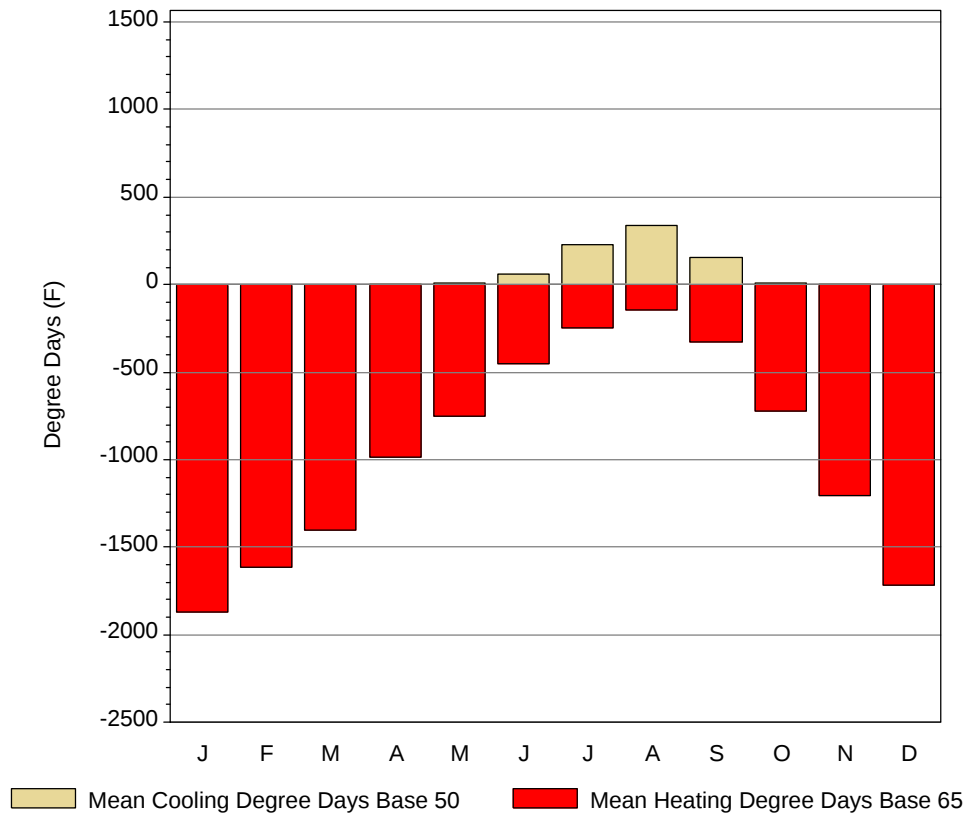
Long Term Humidity and Dry Bulb Temperature Summary



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	31	28.3	14.6	-0.1	-22	23.8	30.2	8.9	5.2
14-Jan	30	27.6	12.1	-3.5	-27	21.7	29.8	7.5	4
21-Jan	29	26.7	11.8	-4.8	-25	16.1	26.3	6.9	3.8
28-Jan	30	29.4	13.3	-3.3	-22	23.1	29.6	8	4.3
4-Feb	29	27.1	14.2	-2.9	-23	21	28.5	7.8	4.1
11-Feb	29	26.6	16	-2	-20	19.6	28.3	8.3	4.3
18-Feb	31	26.6	16.2	-0.7	-24	21	28.1	8.7	4.7
25-Feb	32	29	19.6	0.3	-18	23.1	30.5	10.2	5
4-Mar	32	28.5	20.8	2.2	-14	20.3	27.7	10.6	5.1
11-Mar	33	29	23.7	5.9	-9	23.8	30.9	12.9	6.4
18-Mar	36	32.1	27.7	12.5	-5	25.2	31.8	15.7	8.4
25-Mar	38	30.8	29.5	15.2	-1	25.2	33.2	17	9.6
1-Apr	40	35.2	31.6	19.1	4	26.6	34.8	19.7	12.1
8-Apr	42	35.1	34.1	23.5	9	29.4	37.7	21.7	14.1
15-Apr	44	37	36.1	27	17	29.4	37.6	23.9	16.6
22-Apr	46	38.3	37.2	28.6	22	30.8	40.9	25.1	18.2
29-Apr	50	40.6	40	31	26	35	43	28.1	21.1
6-May	53	44.8	41.5	33	28	37.8	43.6	30.2	23.1
13-May	60	45.8	44.2	33.8	29	42.7	49.3	32.5	24.4
20-May	61	47.8	46.5	36.5	31	45.5	50.5	36.1	27.9
27-May	63	51.6	47.8	37.9	32	49.7	53.4	38.8	30
4-Jun	63	54.3	50.7	40.4	33	54.6	53.9	43.8	34.6
10-Jun	69	57.5	52.5	43	37	64.4	62.3	47.6	38.6
17-Jun	72	62.5	54.8	45.4	40	72.8	66.9	52.9	42.8
24-Jun	69	61.5	55.8	47.2	41	75.6	62.9	56.3	46.1
1-Jul	73	64.7	58.5	49	41	79.8	66.6	60.9	49
8-Jul	73	63.6	60.1	51.5	43	84.7	66.4	65.4	54.2
15-Jul	73	62.5	60.4	53.1	47	87.5	66.7	67.8	57.3
22-Jul	71	66.9	61.4	54.2	48	88.2	67.3	70.4	59.8
29-Jul	72	65.3	62.6	55.7	48	96.3	68.8	75.1	64.3
5-Aug	75	66.9	64.6	56.8	48	98.7	70.9	78	65.6
12-Aug	78	65.3	66.2	57.7	48	105.7	73.8	81.5	67.4
19-Aug	76	61	65.3	56.2	48	101.5	69.9	77.9	63.6
26-Aug	74	64.2	65.6	55.4	46	97.3	71.8	78.2	61.5
2-Sep	76	64.6	65.4	54	43	97.3	69.2	74.1	57.9
9-Sep	75	60.7	64	51.7	42	87.5	67.7	70.1	52.4
16-Sep	72	59.4	62.5	48.1	38	84	64.4	64.6	44.6
23-Sep	68	56.5	59.5	44.7	34	74.2	61.5	56.5	38.9
30-Sep	65	56.3	57.1	43.4	33	68.6	60.3	53.2	37.1
7-Oct	62	50.8	54.6	39.3	28	63.7	56.4	46.2	30.6
14-Oct	60	48.6	51.4	36.8	28	57.4	53.8	41	25.9
21-Oct	56	49.8	47.4	32.9	24	53.9	50.6	35.6	21.8
28-Oct	54	47.1	44.1	31.4	21	48.3	49.1	31.3	20
4-Nov	52	45.4	41.3	29	14	46.2	48.4	28.4	17.6
11-Nov	50	43.5	36.5	23.9	10	42	46.2	23.4	14.3
18-Nov	43	41.4	30.9	17.5	0	36.4	41.6	18.6	11.1
25-Nov	41	37.4	27.4	13.6	-4	32.2	37.5	16	9.2
2-Dec	38	35.3	24	9.5	-10	30.1	36.6	14.3	8.3
9-Dec	35	32.8	20.3	6.1	-16	27.3	33.8	12	6.9
16-Dec	32	30.7	17.4	1.8	-15	24.5	31.3	9.8	5.2
23-Dec	32	32	14.5	-1.5	-18	24.5	32.3	8.6	4.6
31-Dec	32	31	15.3	0.9	-19	23.1	29.5	9.2	5.4

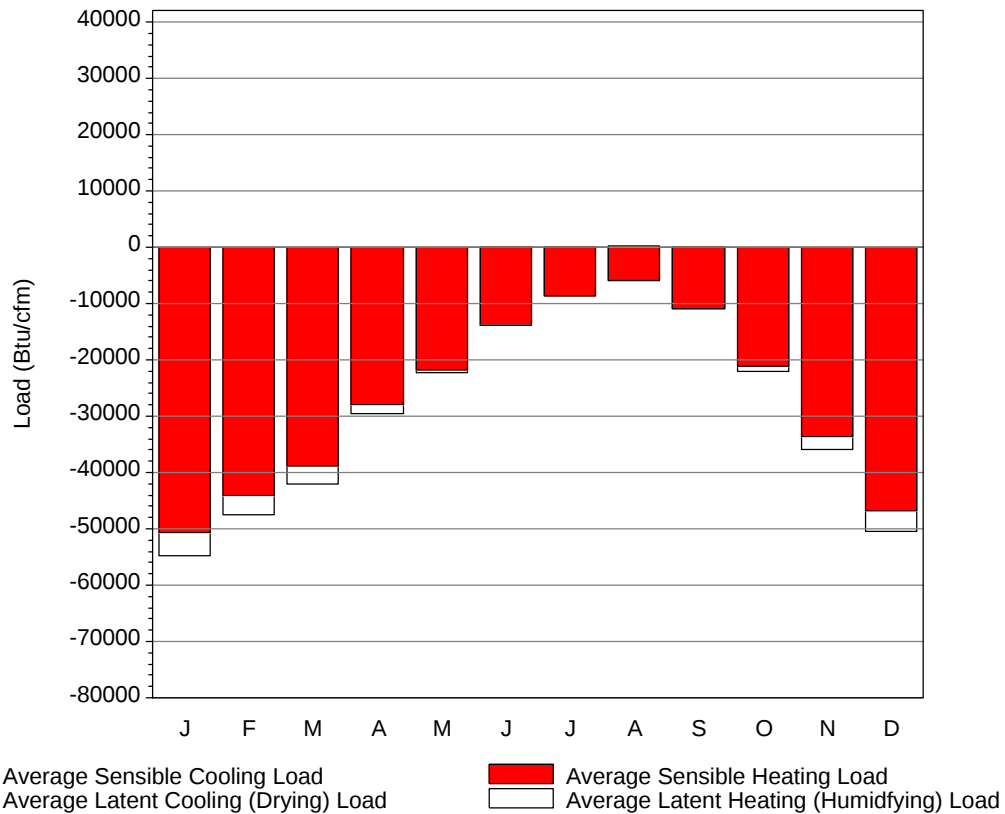
Degree Days, Heating and Cooling (Base 65 F) & Cooling (Base 50F)



Month	Mean Cooling Degree Days (°F) Base 50	Mean Cooling Degree Days (°F) Base 65	Mean Heating Degree Days (°F) Base 65
JAN	0	0	1870.9
FEB	0	0	1617.2
MAR	0	0	1399.5
APR	0.3	0	985.3
MAY	6.6	0.1	754.7
JUN	61	2	449.6
JUL	226.8	4.5	244.3
AUG	334.6	15.1	145.5
SEP	155.4	2.4	326.5
OCT	11.5	0	725.1
NOV	0.2	0	1207.4
DEC	0	0	1718.6
ANN	796.4	24.1	11444.6

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	0	-50669	0	-3976
FEB	0	-43980	0	-3576
MAR	0	-38955	0	-3086
APR	0	-27893	0	-1562
MAY	0	-21830	0	-378
JUN	8	-13826	3	-10
JUL	7	-8603	88	0
AUG	14	-5918	326	0
SEP	2	-10782	22	-37
OCT	0	-21191	0	-823
NOV	0	-33507	0	-2419
DEC	0	-46715	0	-3694
ANN	31	-323869	439	-19561

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													

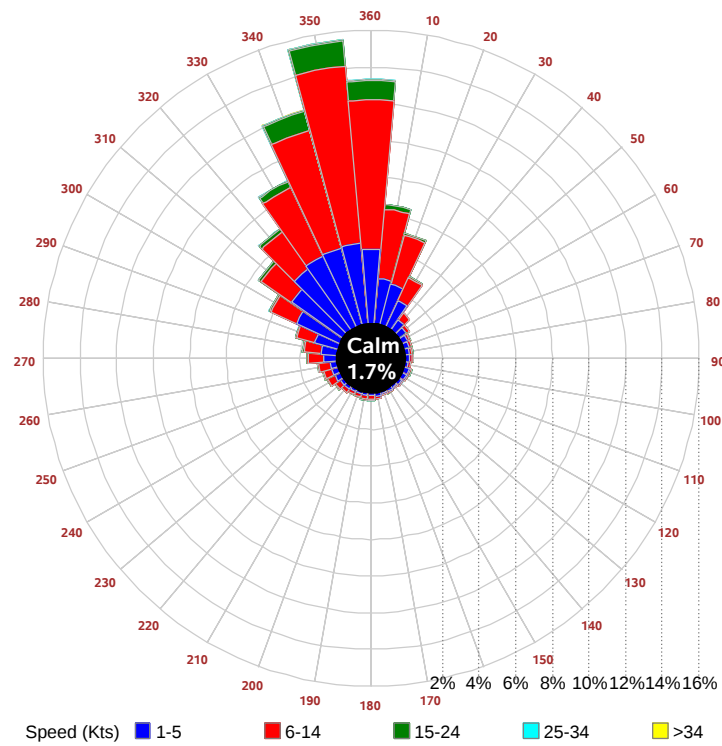
Average Annual Solar Radiation - Nearest Available Site Source: National Renewable Energy Laboratory, Golden CO, 1995

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													

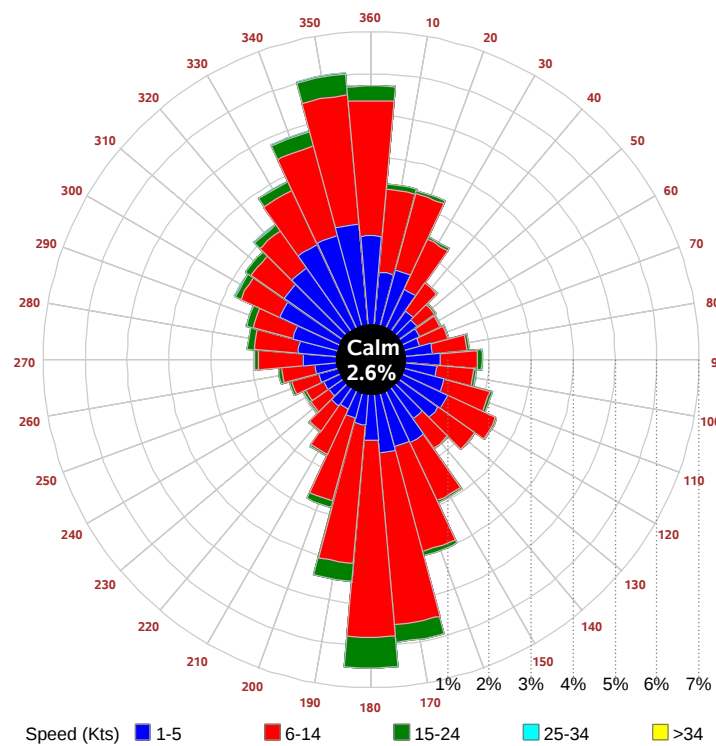
AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9												
		March						June				
		9am	11am	1pm	3pm	5pm		9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear											
	M.Cloudy											
NORTH	M.Clear											
	M.Cloudy											
EAST	M.Clear			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

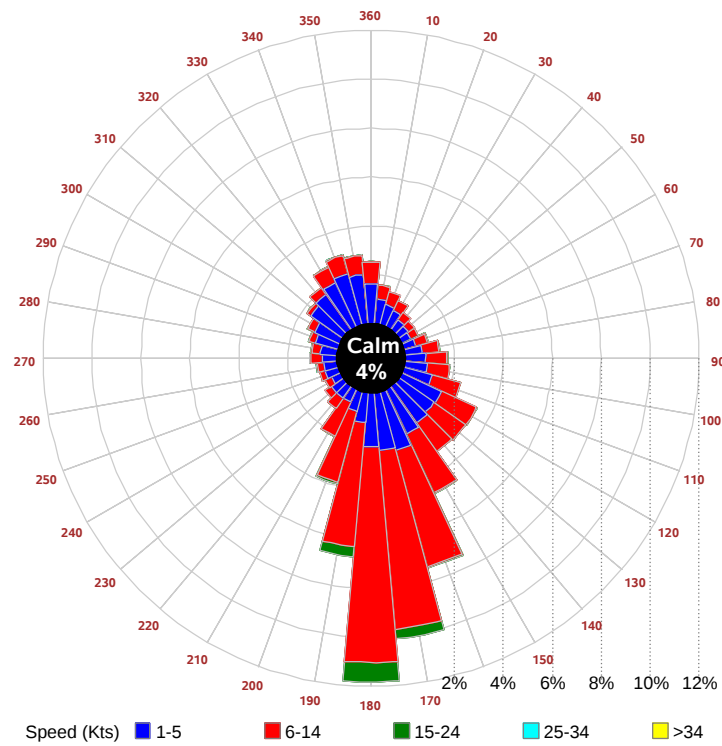
Wind Summary - December, January, and February



Wind Summary - March, April, and May



Wind Summary - June, July, and August



Wind Summary - September, October, and November

