

KOLTSOVO, RS

Latitude = 56.74 N

Longitude = 60.80 E

Period of Record = 1988 To 2017

Station ID = ICAO_USSS

Elevation = 764 Feet

Average Pressure = 29.07 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	91	68	70	7.4	VRB
0.4% Occurrence	86	67	73	7.6	S
1.0% Occurrence	82	66	72	8.4	W
2.0% Occurrence	79	64	69	7.9	W
Mean Daily Range	17	-	-	-	E
97.5% Occurrence	-11	-12	2	4.9	E
99.0% Occurrence	-18	-18	1	3.8	E
99.6% Occurrence	-24	-24	1	4.6	N
Median of Extreme Lows	-29	-29	1	2.7	NNW

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	72	82	103	7.6	W
0.4% Occurrence	70	80	95	6.9	VRB
1.0% Occurrence	68	78	89	6.7	W
2.0% Occurrence	66	75	83	6.7	W

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	109	73	0.69	7.6	SE
0.4% Occurrence	101	74	0.65	8.2	W
1.0% Occurrence	94	73	0.61	6.4	W
2.0% Occurrence	88	70	0.57	6.1	W

Air Conditioning/ Humid Area Criteria	Threshold	T ≥ 93 °F	T ≥ 80 °F	Twb ≥ 73 °F	Twb ≥ 67 °F
	# of Hours	7	157	15	172

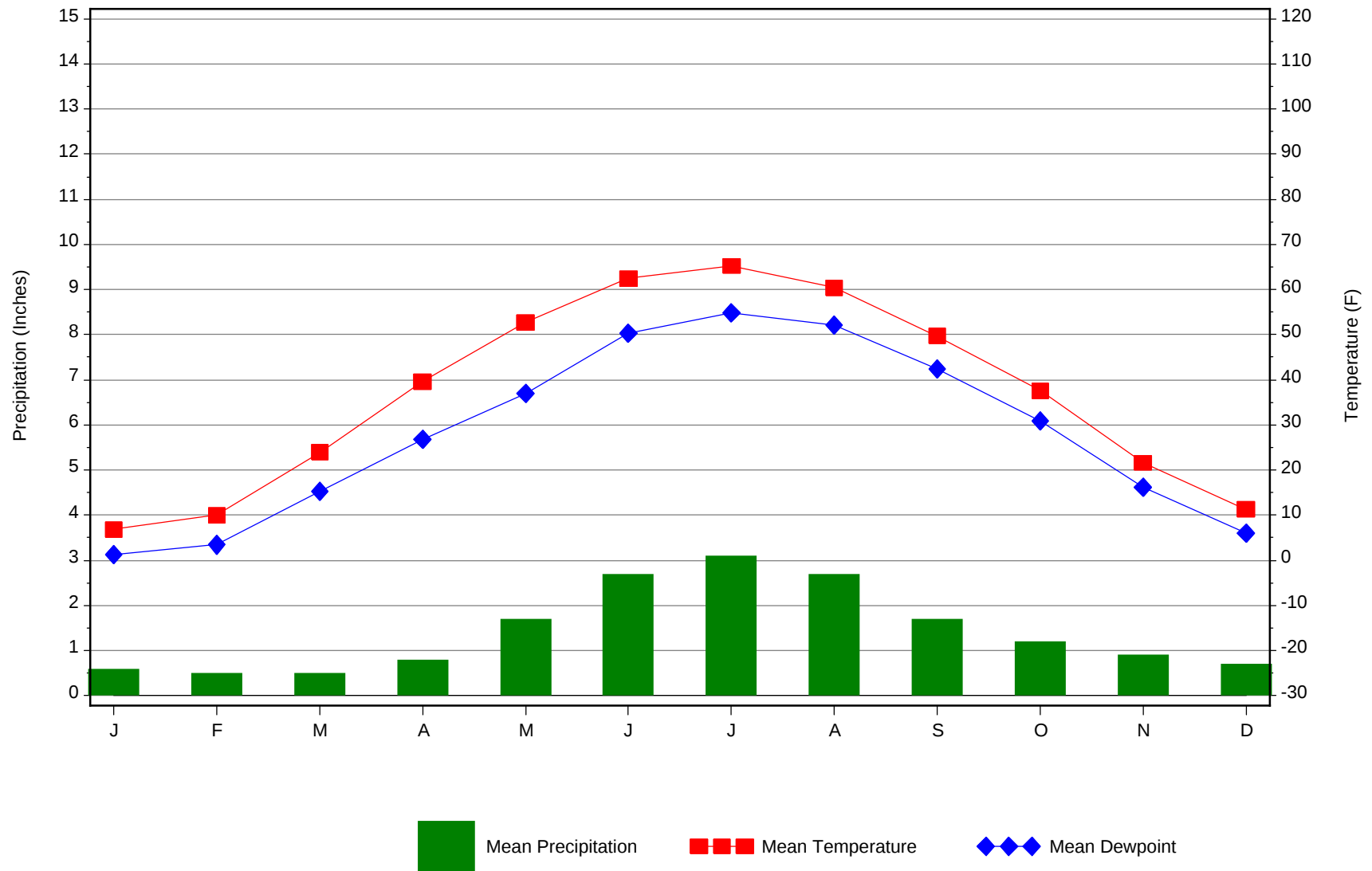
Other Site Data

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
4	N/A	N/A	0.2 + 0.2
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 (#)
39.4	N/A	N/A	67

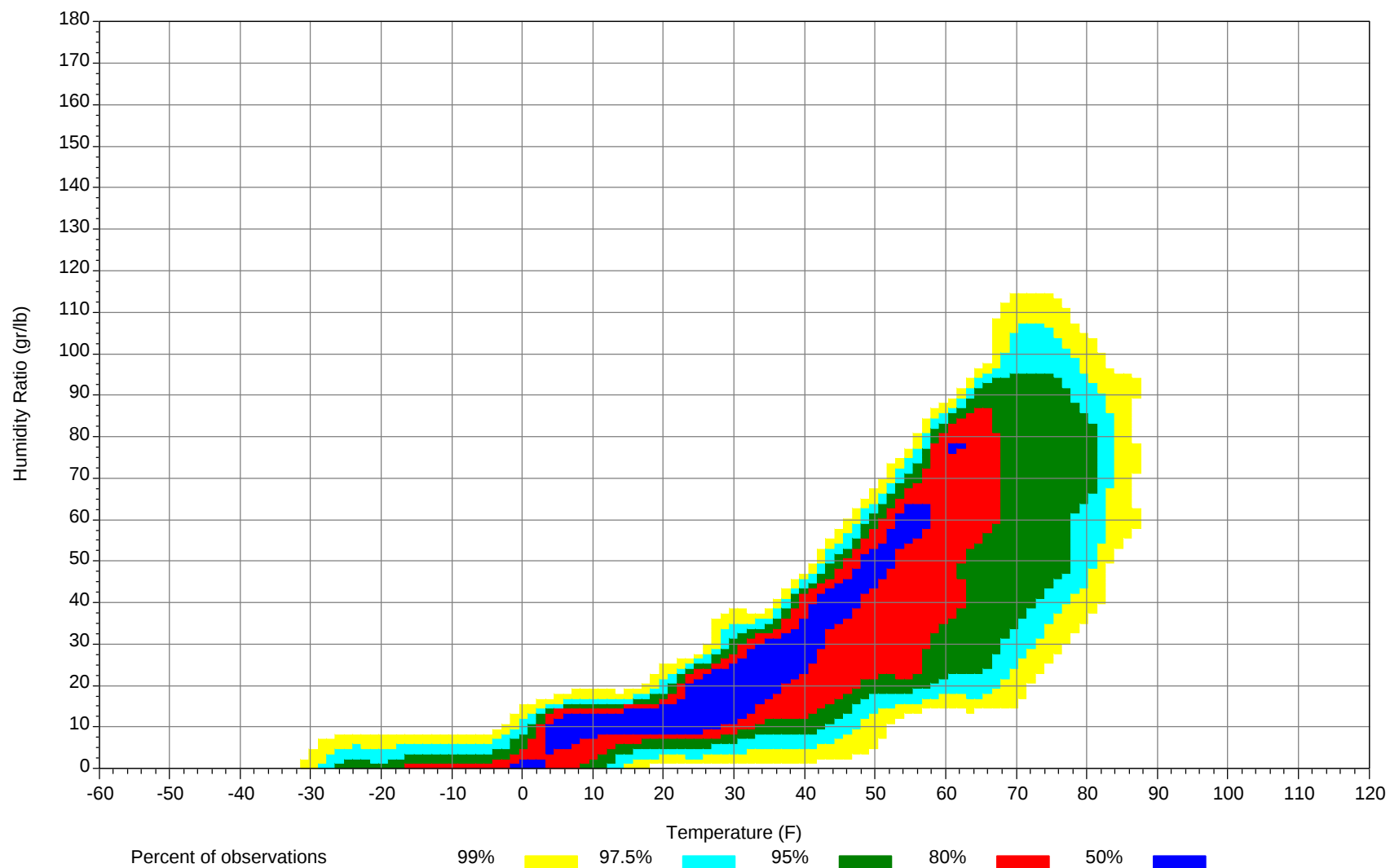
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.



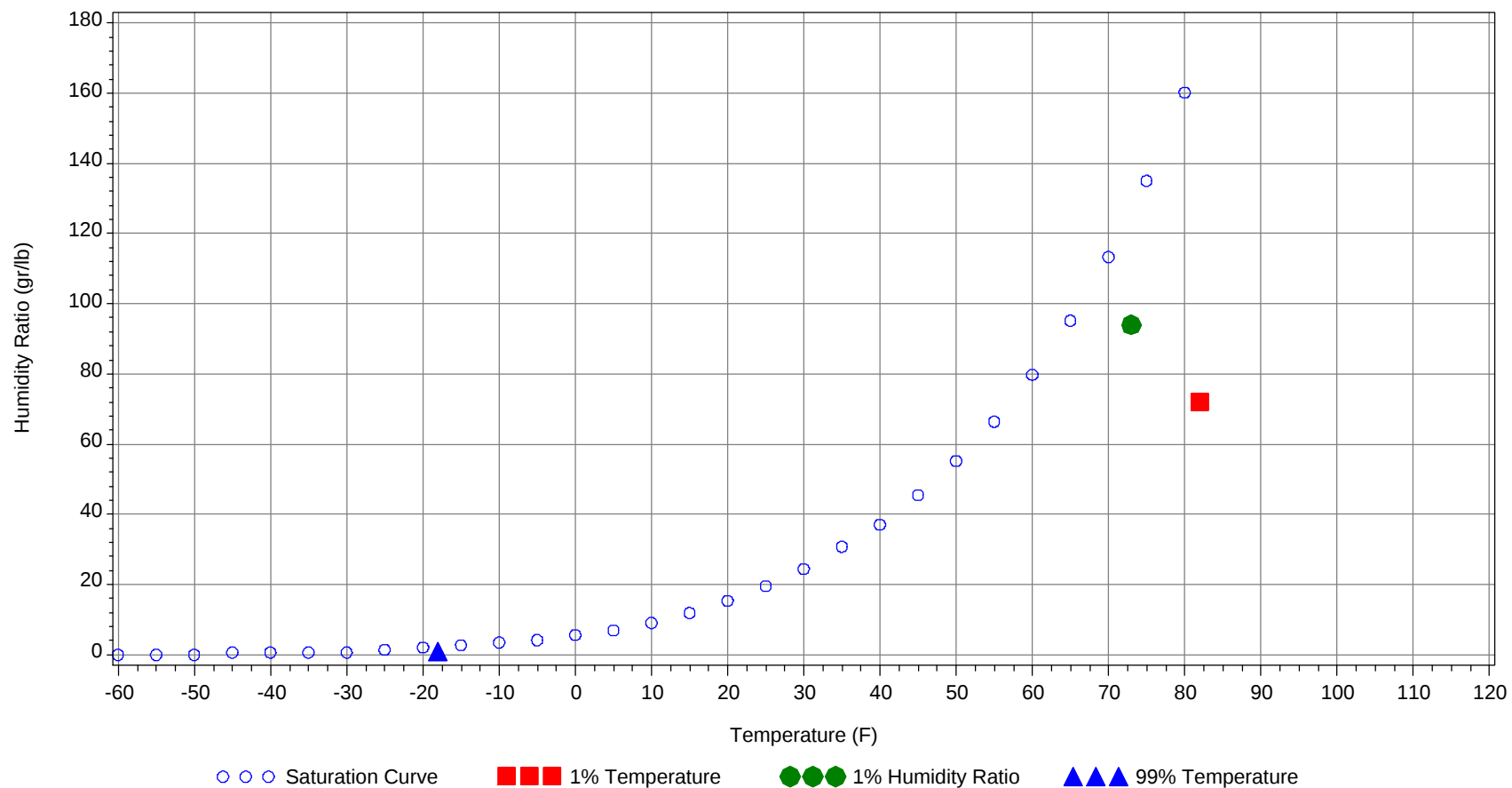
Average Annual Climate



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		66		72.0	31.1
99.0% Dry Bulb	-18.0				1.0	-4.1
1.0% Humidity Ratio	94.0	73.0	67.1	64.4		32.1

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)
100/104															
95/ 99															
90/ 94															
85/ 89															
80/ 84															
75/ 79															
70/ 74															
65/ 69															
60/ 64												0	0	0	45.8
55/ 59												0	0	0	44.3
50/ 54												2	1	3	40.8
45/ 49						0	0	0	0	36.4	0	6	4	10	38
40/ 44			0	0	35	0	0	0	0	36.1	1	10	9	20	34.8
35/ 39	1	1	2	4	33.6	1	5	4	10	32.5	11	35	31	77	32.4
30/ 34	7	8	7	22	29.4	8	16	14	38	28.8	31	55	53	139	28.7
25/ 29	16	21	19	56	24.9	17	26	25	68	24.4	44	51	56	151	24.2
20/ 24	19	23	24	66	20.3	19	25	25	69	20.1	41	35	37	113	20
15/ 19	28	32	28	88	15.8	25	33	32	90	15.6	43	24	27	94	15.8
10/ 14	31	38	37	106	10.8	26	29	32	87	10.6	28	15	15	58	11.1
5/ 9	33	31	35	99	6	31	27	29	87	5.9	19	8	8	35	6.1
0/ 4	29	28	29	86	1.1	27	23	24	74	0.9	13	5	4	22	1.1
-5/ -1	21	18	17	56	-3.5	17	13	12	42	-3.5	6	2	1	9	-3.1
-10/ -6	22	19	21	62	-7.6	18	13	13	44	-7.7	7	1	1	9	-7.3
-15/-11	14	11	12	37	-12.5	14	7	6	27	-12.5	2	0	0	2	-11.9
-20/-16	12	8	9	29	-16.9	10	5	5	20	-16.8	1	0	0	1	-16.5
-25/-21	7	5	5	17	-22	6	2	1	9	-21.9	0	0		0	-21.5
-30/-26	4	3	3	10	-27.1	2	1	1	4	-27.2					
-35/-31	2	1	1	4	-31.7	1	0	0	1	-31.8					
-40/-36	1	0	1	2	-36.8	1	0	0	1	-36.6					
-45/-41	0	0		0	-40.6	0			0	-40					

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)
100/104															
95/ 99															
90/ 94												2	0	2	68.3
85/ 89							1	0	1	62		6	4	10	67.4
80/ 84		0	0	0	54.9		7	4	11	60	0	20	13	33	65.1
75/ 79		1	1	2	55.7		16	10	26	58	1	33	25	59	63.5
70/ 74		3	2	5	53.6	0	25	19	44	55.6	6	42	36	84	60.9
65/ 69	0	5	4	9	50.7	3	26	22	51	53.3	20	39	41	100	58.6
60/ 64	1	11	9	21	48.5	12	35	34	81	51.7	49	40	46	135	56.8
55/ 59	2	21	17	40	46.1	29	33	39	101	49.2	62	31	36	129	53.1
50/ 54	7	30	25	62	43.3	43	36	38	117	45.7	52	17	24	93	49.2
45/ 49	18	37	35	90	40.3	45	32	34	111	42	29	6	9	44	44.4
40/ 44	28	36	37	101	37.1	39	21	22	82	38.1	12	3	3	18	39.7
35/ 39	52	42	44	138	33.6	39	13	18	70	34.5	7	1	2	10	35.6
30/ 34	59	30	37	126	29.5	28	3	7	38	30.4	3	0	0	3	30.9
25/ 29	34	14	18	66	24.5	8	0	1	9	25.8	0			0	26
20/ 24	19	5	7	31	20.1	1		0	1	20.8					
15/ 19	12	2	3	17	15.8	0			0	18.8					
10/ 14	5	1	1	7	10.9										
5/ 9	2	0	0	2	6.4										
0/ 4	1			1	1.1										
-5/ -1	0			0	-4.4										
-10/ -6															
-15/-11															
-20/-16															
-25/-21															
-30/-26															
-35/-31															
-40/-36															
-45/-41															

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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)
100/104		0		0	66										
95/ 99		0	0	0	67.3		0	0	0	67.2					
90/ 94		3	1	4	68		2	1	3	68.3					
85/ 89		10	6	16	67.8		5	3	8	67.8		0	0	0	66.3
80/ 84	0	26	18	44	67		12	9	21	67		2	1	3	61.2
75/ 79	1	44	34	79	64.9	0	22	16	38	64.9		5	3	8	59.3
70/ 74	10	48	43	101	63	4	34	27	65	62.7	0	9	6	15	58.8
65/ 69	31	39	42	112	61	12	36	34	82	60.4	1	15	10	26	56.5
60/ 64	68	40	48	156	58.6	40	53	54	147	57.7	6	28	22	56	54.7
55/ 59	69	25	36	130	54.7	65	47	52	164	54.2	21	42	37	100	52.1
50/ 54	47	11	16	74	50.4	65	27	37	129	50.1	44	50	51	145	48.7
45/ 49	19	2	3	24	45.6	42	8	14	64	45.6	58	47	51	156	44.5
40/ 44	3	0	0	3	41.5	14	1	3	18	41.4	49	25	32	106	40.2
35/ 39	1		0	1	38.1	4	0	1	5	37.3	38	14	21	73	35.7
30/ 34			0	0	33	1	0	0	1	32.2	19	3	5	27	31.3
25/ 29											5	0	1	6	26.6
20/ 24											1		0	1	22.3
15/ 19											0			0	19
10/ 14															
5/ 9															
0/ 4															
-5/ -1															
-10/ -6															
-15/-11															
-20/-16															
-25/-21															
-30/-26															
-35/-31															
-40/-36															
-45/-41															

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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)
100/104															
95/ 99															
90/ 94															
85/ 89															
80/ 84															
75/ 79															
70/ 74		0	0	0	55.8										
65/ 69		3	1	4	53.8										
60/ 64	0	7	3	10	50.9										
55/ 59	1	13	10	24	48.5		0		0	47.8					
50/ 54	10	20	17	47	46.3		1	0	1	45.3		0		0	36
45/ 49	25	35	33	93	43	1	3	2	6	42.5		0		0	34.5
40/ 44	35	38	35	108	39.1	4	7	5	16	39.2		0	0	0	35.1
35/ 39	57	53	56	166	35	18	27	19	64	34.5	2	3	3	8	34.1
30/ 34	61	46	48	155	30.2	45	48	49	142	30.1	14	17	16	47	29.8
25/ 29	33	22	29	84	25.3	40	42	43	125	25.2	27	29	26	82	25
20/ 24	15	7	11	33	21.1	32	29	31	92	20.6	30	32	30	92	20.6
15/ 19	7	3	4	14	16.6	29	26	26	81	16.1	36	38	40	114	16.1
10/ 14	3	1	2	6	11.6	21	19	21	61	11	27	30	30	87	11
5/ 9	1	0	0	1	6.8	17	15	17	49	6	28	30	31	89	5.9
0/ 4	0		0	0	1.7	13	10	10	33	1.1	27	25	24	76	1.1
-5/ -1						6	5	6	17	-3.3	16	14	18	48	-3.4
-10/ -6						6	4	5	15	-7.7	17	13	14	44	-7.7
-15/-11						3	2	2	7	-12.3	9	6	8	23	-12.5
-20/-16						2	1	2	5	-16.6	7	5	5	17	-16.8
-25/-21						1	1	1	3	-21.6	4	3	3	10	-22.1
-30/-26						1	0	0	1	-26.6	2	1	1	4	-27.2
-35/-31											0	0	0	0	-31.8
-40/-36											0		0	0	-36.4
-45/-41											0			0	-40

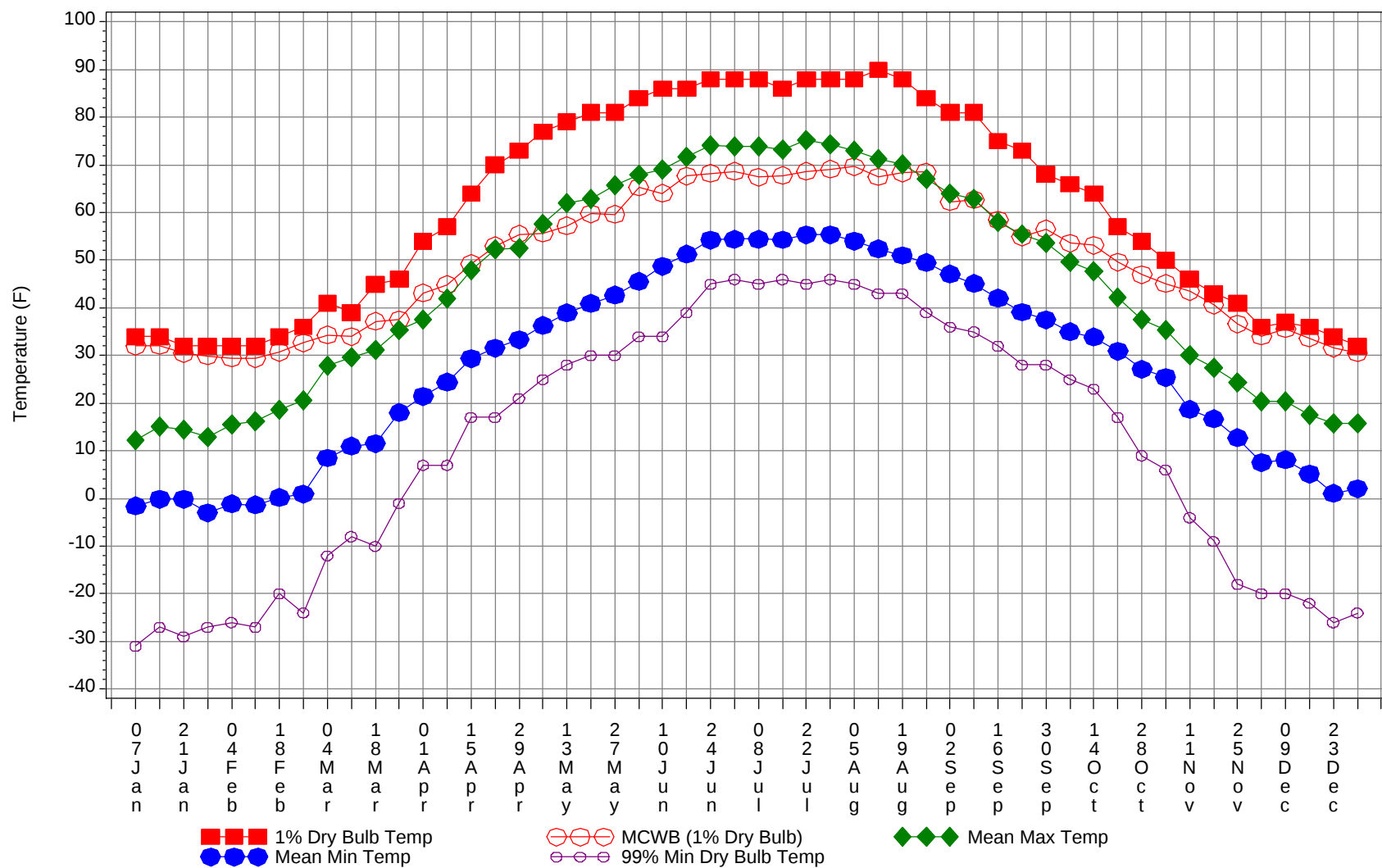
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Dry-Bulb Temperature Hours For An Average Year

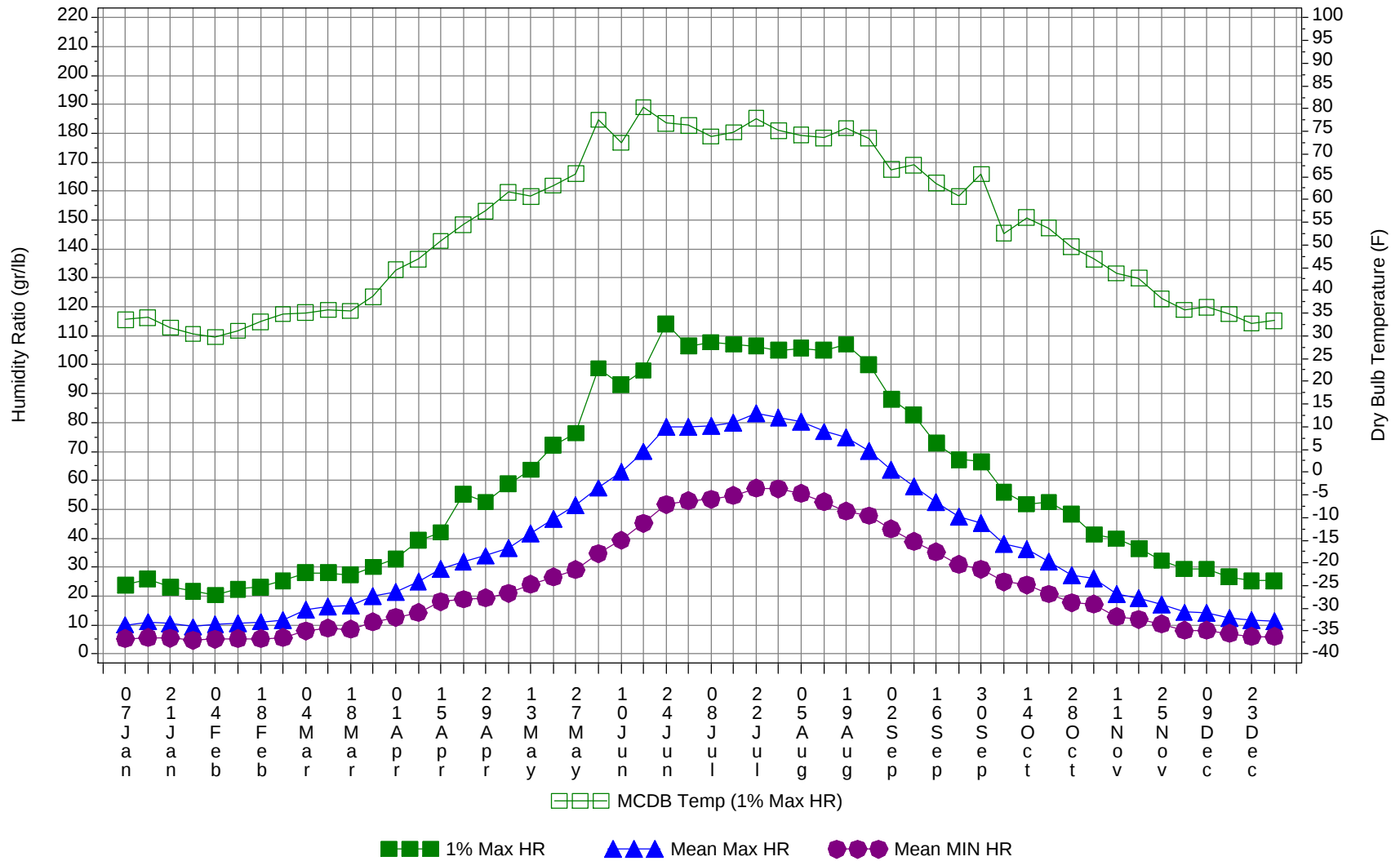
	Annual				
Temperature Range (° F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (° F)
100/104		0		0	66
95/ 99		0	0	0	67.2
90/ 94		6	3	9	68.2
85/ 89		22	13	35	67.5
80/ 84	0	67	45	112	65.6
75/ 79	2	122	87	211	63.4
70/ 74	21	161	133	315	61
65/ 69	67	162	153	382	58.6
60/ 64	175	215	215	605	56.2
55/ 59	249	212	226	687	52.4
50/ 54	268	193	209	670	48
45/ 49	237	175	187	599	43.2
40/ 44	184	142	148	474	38.7
35/ 39	231	194	199	624	34.3
30/ 34	276	226	237	739	29.7
25/ 29	224	206	217	647	24.8
20/ 24	176	155	165	496	20.4
15/ 19	180	159	159	498	15.9
10/ 14	140	132	137	409	10.9
5/ 9	133	113	120	366	6
0/ 4	111	90	92	293	1.1
-5/ -1	68	51	55	174	-3.4
-10/ -6	70	51	54	175	-7.7
-15/-11	43	26	28	97	-12.5
-20/-16	32	20	21	73	-16.8
-25/-21	19	11	11	41	-22
-30/-26	9	5	4	18	-27.1
-35/-31	3	2	1	6	-31.8
-40/-36	2	1	1	4	-36.7
-45/-41	0	0		0	-40.5

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Annual Summary of Temperatures



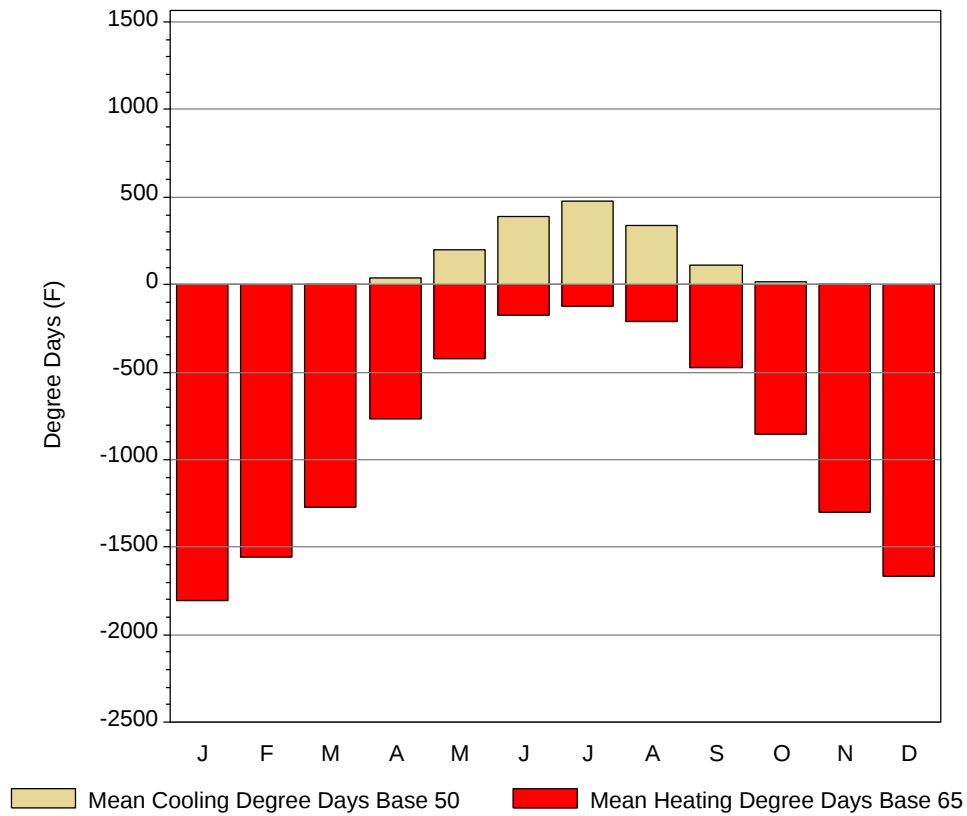
Long Term Humidity and Dry Bulb Temperature Summary



Long Term Humidity and Dry Bulb Temperature Summary

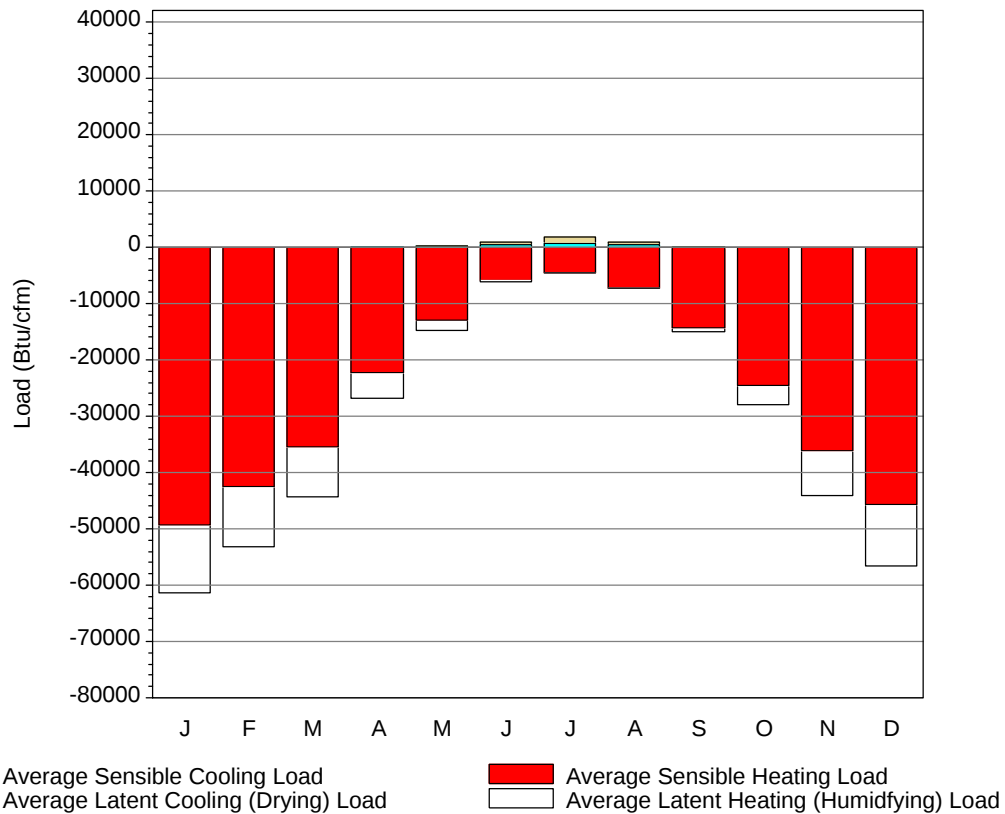
Week Ending	1.0% Temp (°F)	MCWB@ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB@ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	34	32	12.2	-1.6	-31	23.8	33.6	10	5.3
14-Jan	34	32.1	15.2	-0.2	-27	25.9	34	11.1	5.6
21-Jan	32	30.4	14.4	-0.2	-29	23.1	31.8	10.4	5.5
28-Jan	32	29.9	12.9	-3	-27	21.7	30.4	9.3	4.7
4-Feb	32	29.5	15.6	-1.1	-26	20.3	29.7	10.3	5.1
11-Feb	32	29.4	16.3	-1.4	-27	22.4	31.1	10.7	5.2
18-Feb	34	30.7	18.7	0.2	-20	23.1	33.1	11.1	5.3
25-Feb	36	32.7	20.6	0.9	-24	25.2	34.8	11.6	5.6
4-Mar	41	34.3	27.9	8.5	-12	28	35.1	15.2	7.9
11-Mar	39	34	29.6	11	-8	28	35.7	16.3	8.8
18-Mar	45	37.2	31.1	11.5	-10	27.3	35.5	16.7	8.5
25-Mar	46	37.5	35.4	18	-1	30.1	38.6	20.1	11.1
1-Apr	54	43.1	37.6	21.4	7	32.9	44.5	21.4	12.7
8-Apr	57	44.9	42	24.4	7	39.2	46.9	24.9	14.3
15-Apr	64	49.3	48	29.4	17	42	50.9	29.3	18.1
22-Apr	70	53	52.4	31.6	17	55.3	54.5	32	18.9
29-Apr	73	55.5	52.6	33.3	21	52.5	57.5	33.9	19.3
6-May	77	55.7	57.5	36.3	25	58.8	61.6	36.6	21
13-May	79	57.2	61.9	38.9	28	63.7	60.7	41.6	24.1
20-May	81	59.7	62.8	40.9	30	72.1	63.1	46.8	26.6
27-May	81	59.6	65.7	42.7	30	76.3	65.7	51.5	29.1
4-Jun	84	65.3	67.9	45.5	34	98.7	77.6	57.4	34.7
10-Jun	86	64	69	48.7	34	93.1	72.5	63	39.3
17-Jun	86	67.7	71.6	51.3	39	98	80.3	70	45.1
24-Jun	88	68.2	74.1	54.2	45	114.1	76.8	78.4	51.7
1-Jul	88	68.7	73.8	54.4	46	106.4	76.3	78.5	53
8-Jul	88	67.4	73.9	54.4	45	107.8	73.9	78.9	53.4
15-Jul	86	67.8	73.2	54.3	46	107.1	74.8	79.9	54.7
22-Jul	88	68.7	75.1	55.3	45	106.4	77.9	83.2	57.3
29-Jul	88	69.1	74.4	55.3	46	105	75.2	81.9	57.1
5-Aug	88	69.6	73.1	54	45	105.7	74.2	80.4	55.4
12-Aug	90	67.5	71.2	52.4	43	105	73.6	76.9	52.6
19-Aug	88	68.3	70.2	51	43	107.1	75.7	74.9	49.3
26-Aug	84	68.5	67	49.5	39	100.1	73.5	70.1	47.8
2-Sep	81	62.3	64	47.1	36	88.2	66.6	63.7	43.2
9-Sep	81	62.7	62.9	45.1	35	82.6	67.6	58	38.9
16-Sep	75	58.4	58	42	32	72.8	63.6	52.6	35.2
23-Sep	73	54.9	55.5	39.1	28	67.2	60.7	47.3	30.9
30-Sep	68	56.6	53.6	37.5	28	66.5	65.6	45.2	29.2
7-Oct	66	53.6	49.6	35	25	56	52.6	38.1	25
14-Oct	64	53.1	47.6	33.9	23	51.8	56	36.3	23.9
21-Oct	57	49.6	42.1	30.9	17	52.5	53.7	31.9	20.7
28-Oct	54	47	37.6	27.1	9	48.3	49.6	27.2	17.7
4-Nov	50	45.1	35.3	25.4	6	41.3	46.9	26	17.2
11-Nov	46	43.4	30	18.7	-4	39.9	43.8	20.8	12.9
18-Nov	43	40.6	27.5	16.7	-9	36.4	42.7	19.3	12
25-Nov	41	36.6	24.4	12.7	-18	32.2	38.2	17	10.3
2-Dec	36	34.1	20.3	7.6	-20	29.4	35.7	14.4	8.2
9-Dec	37	35.6	20.4	8.1	-20	29.4	36.3	14.3	8.2
16-Dec	36	33.7	17.6	5.1	-22	26.6	34.8	12.5	7.1
23-Dec	34	31.6	15.8	1.1	-26	25.2	32.7	11.6	6
31-Dec	32	30.6	15.8	2.1	-24	25.2	33.3	11.3	5.9

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	1805.1
FEB	0	0	1553.9
MAR	0.4	0	1273.9
APR	39.8	3.2	766.5
MAY	199.5	37.1	420.4
JUN	391.5	95	171.9
JUL	473.8	125.8	121.4
AUG	337.9	69	212.8
SEP	112.2	12.2	470.6
OCT	17.7	0.4	851.5
NOV	0.1	0	1301.9
DEC	0	0	1664.4
ANN	1572.9	342.7	10614.3

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	0	-49198	0	-12077
FEB	0	-42476	0	-10658
MAR	0	-35431	0	-8949
APR	6	-22158	0	-4556
MAY	137	-12943	22	-1850
JUN	518	-5976	516	-163
JUL	751	-4545	1084	-7
AUG	390	-7329	593	-18
SEP	39	-14399	13	-523
OCT	0	-24474	0	-3376
NOV	0	-36078	0	-8006
DEC	0	-45553	0	-11093
ANN	1841	-300560	2228	-61276

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													

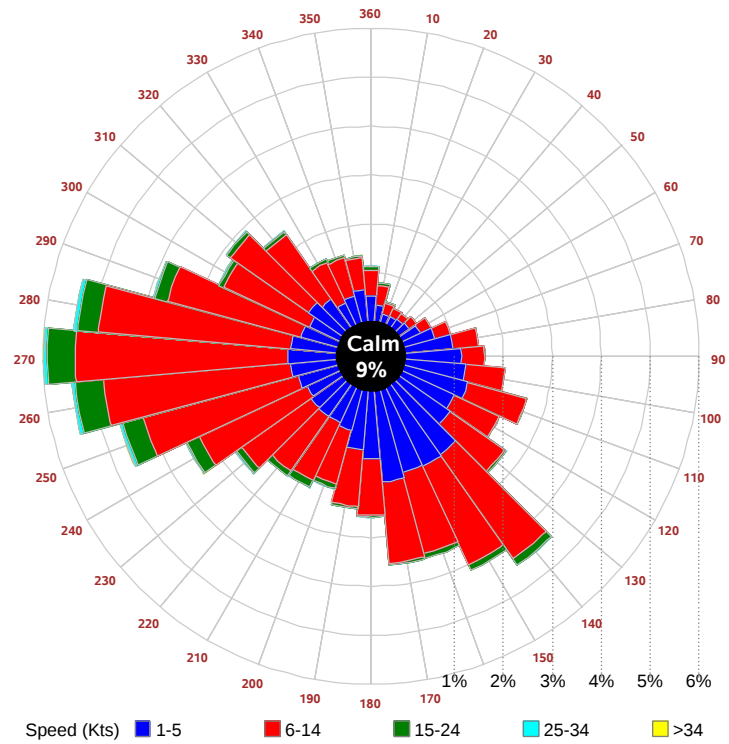
Average Annual Solar Radiation - Nearest Available Site Source: National Renewable Energy Laboratory, Golden CO, 1995

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													

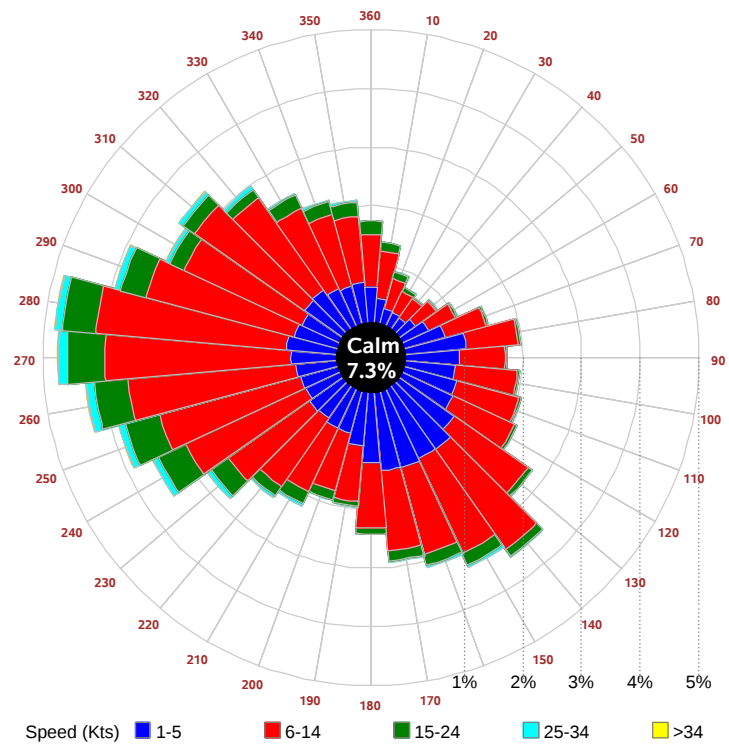
AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9												
		March						June				
		9am	11am	1pm	3pm	5pm		9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear											
	M.Cloudy											
NORTH	M.Clear											
	M.Cloudy											
EAST	M.Clear			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

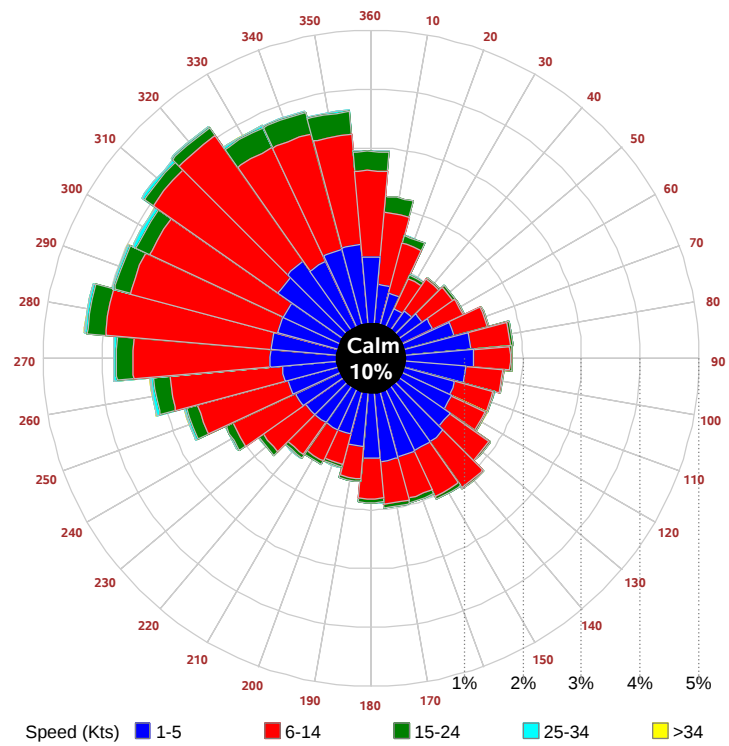
Wind Summary - December, January, and February



Wind Summary - March, April, and May



Wind Summary - June, July, and August



Wind Summary - September, October, and November

