

ZURICH, SZ	
Latitude = 47.46 N	Station ID = ICAO_LSZH
Longitude = 8.55 E	Elevation = 1416 Feet
Period of Record = 1988 To 2017	Average Pressure = 28.54 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	91	69	77	5.1	VRB
0.4% Occurrence	88	69	78	5.4	VRB
1.0% Occurrence	84	68	77	5.2	VRB
2.0% Occurrence	81	66	76	5.3	VRB
Mean Daily Range	16	-	-	-	VRB
97.5% Occurrence	25	24	17	3.8	VRB
99.0% Occurrence	21	20	14	3.5	VRB
99.6% Occurrence	16	15	11	4.1	NNE
Median of Extreme Lows	10	9	8	3.3	VRB

	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	73	87	100	4.9	VRB
0.4% Occurrence	70	83	92	4.7	VRB
1.0% Occurrence	68	80	87	4.8	VRB
2.0% Occurrence	67	78	85	4.8	VRB

	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	109	78	0.69	4.1	VRB
0.4% Occurrence	96	74	0.61	4.4	VRB
1.0% Occurrence	95	74	0.61	4.1	VRB
2.0% Occurrence	89	71	0.57	3.9	VRB

Air Conditioning/ Humid Area Criteria	Threshold	T ≥ 93 °F	T ≥ 80 °F	Twb ≥ 73 °F	Twb ≥ 67 °F
	# of Hours	14	197	7	202

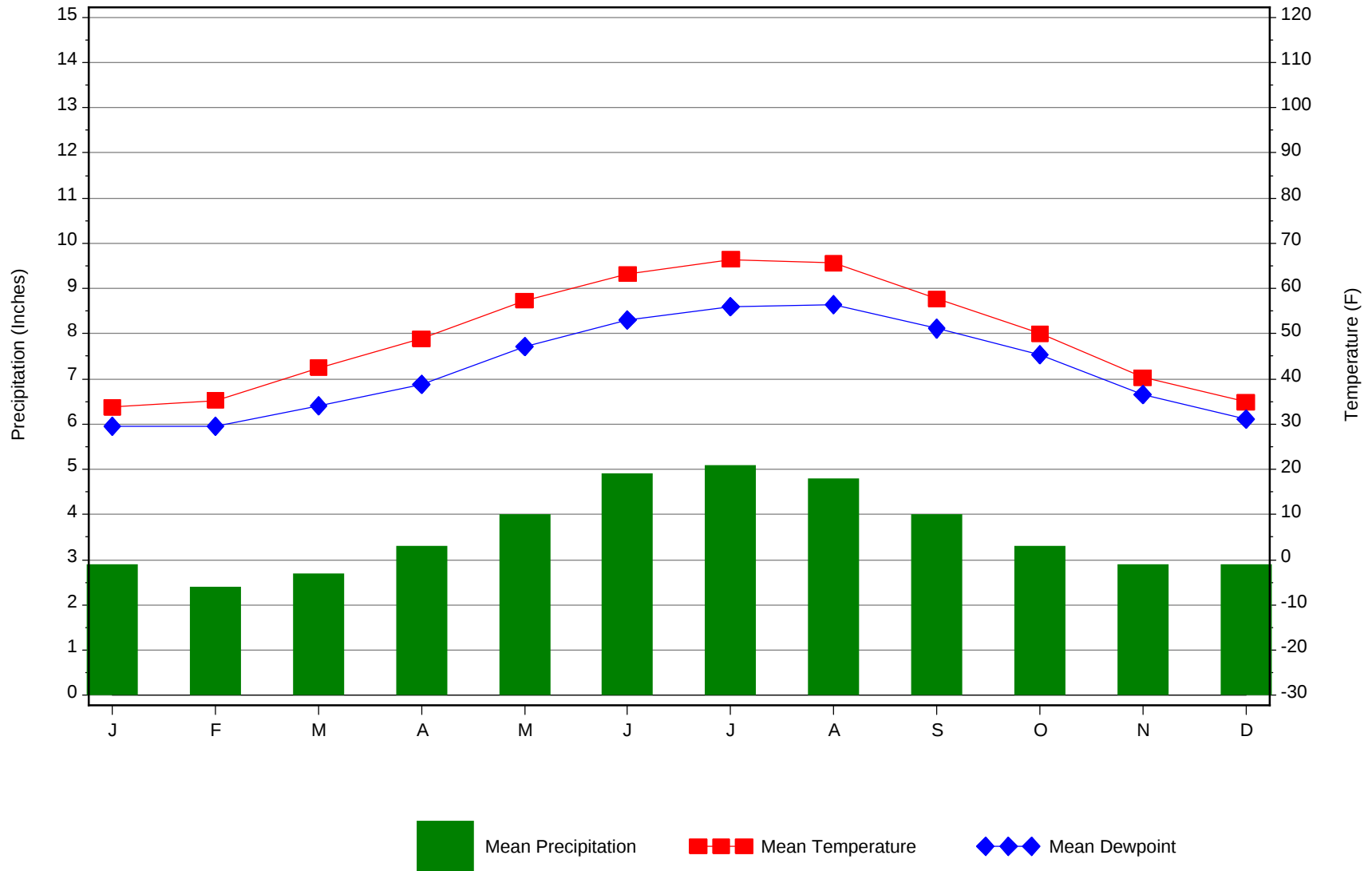
Other Site Data

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
6	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 (#)
52.2	N/A	N/A	48

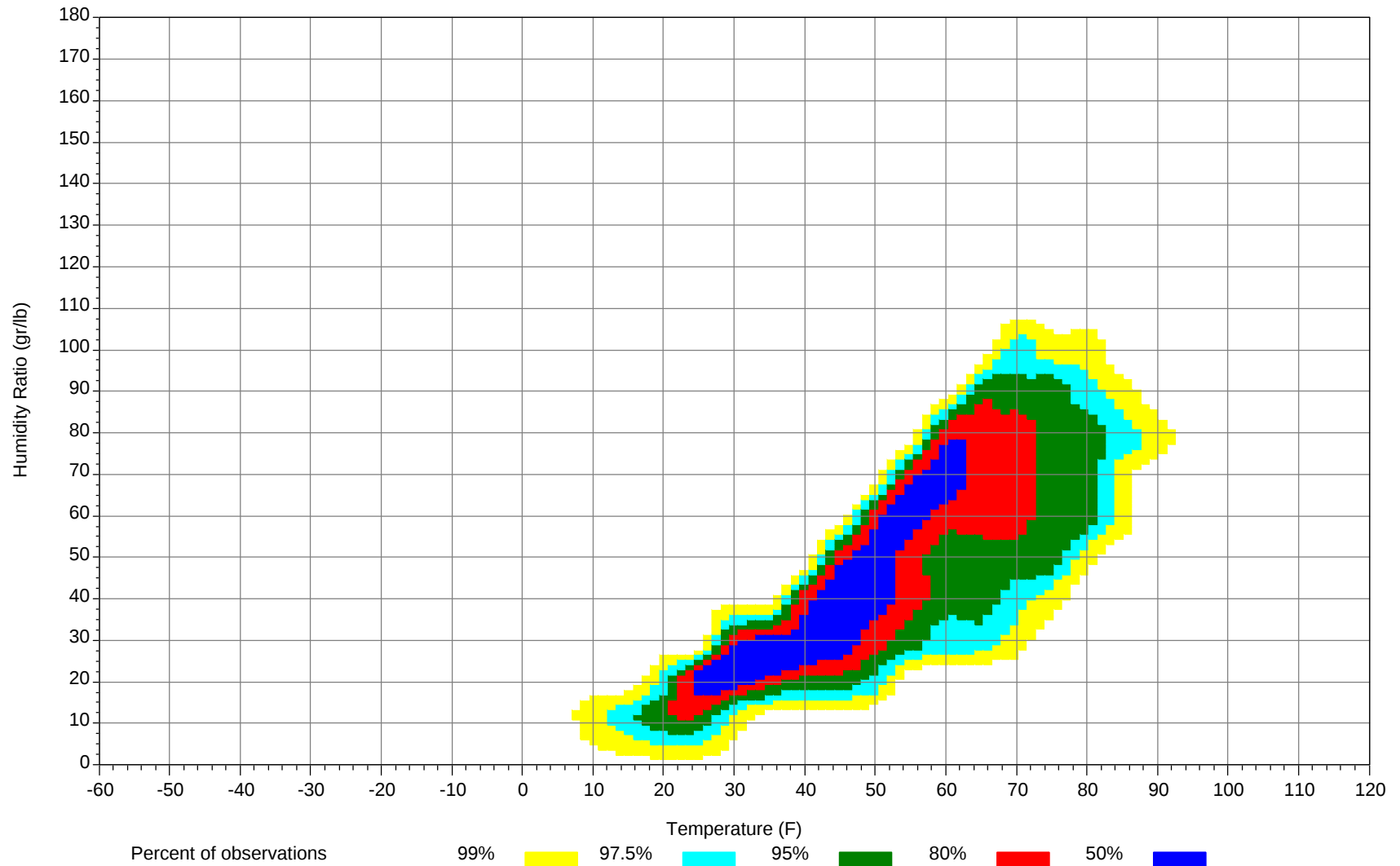
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.



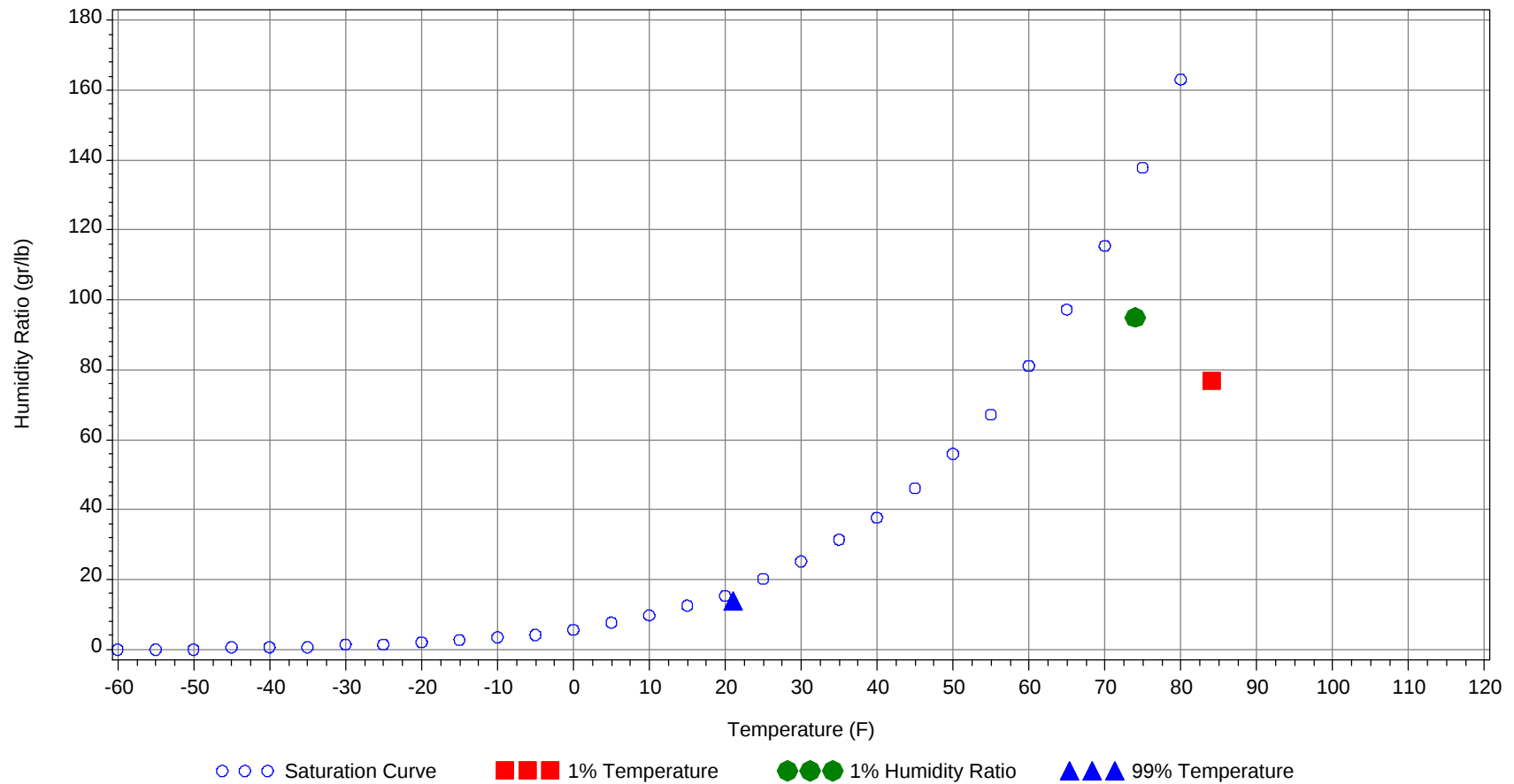
Average Annual Climate



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	84.0		68		77.0	32.3
99.0% Dry Bulb	21.0				14.0	7.2
1.0% Humidity Ratio	95.0	74.0	67.5	64.4		32.5

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)
100/104															
95/ 99															
90/ 94															
85/ 89															
80/ 84															
75/ 79												0		0	58.5
70/ 74												2	1	3	55.3
65/ 69							0		0	49.3		4	2	6	52.6
60/ 64		0		0	54		1	0	1	49.7		15	9	24	50.3
55/ 59	0	2	1	3	49.2	0	6	3	9	47.3	1	30	18	49	48.3
50/ 54	4	11	8	23	46.1	3	18	11	32	45	11	44	37	92	45.7
45/ 49	13	27	17	57	42.5	12	31	24	67	41.9	36	51	57	144	42.5
40/ 44	19	32	28	79	39.4	18	32	34	84	38.9	37	39	42	118	38.9
35/ 39	48	58	60	166	35.5	43	52	56	151	35.2	65	40	47	152	35.2
30/ 34	67	58	65	190	30.8	64	46	52	162	30.7	62	18	28	108	30.6
25/ 29	57	41	45	143	25.8	49	25	29	103	25.8	28	4	7	39	25.7
20/ 24	24	15	16	55	21.3	18	6	9	33	21.2	6	1	1	8	21
15/ 19	12	6	7	25	17.3	10	4	4	18	16.5	2	0	0	2	17.1
10/ 14	4	1	1	6	12.3	4	1	2	7	11.7	0	0	0	0	11.2
5/ 9	1	0	0	1	7.2	2	0	0	2	5.9	0			0	6.9
0/ 4						0		0	0	1	0			0	3
-5/ -1						0			0	-3					

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												0	0	0	65.2
90/ 94							0		0	66		2	1	3	68.9
85/ 89							1	0	1	66.3		7	4	11	68.1
80/ 84		0	0	0	58		6	3	9	63.4	0	21	11	32	66.4
75/ 79	0	3	2	5	57		18	9	27	61.1	1	36	23	60	63.9
70/ 74	0	12	6	18	55.1	1	36	21	58	58.7	5	48	32	85	61.3
65/ 69	0	16	10	26	53.6	2	35	22	59	56.8	14	35	34	83	59.8
60/ 64	1	34	20	55	51.5	13	55	46	114	55	52	43	53	148	57.7
55/ 59	5	42	33	80	49.2	50	48	62	160	52.7	76	36	52	164	54.2
50/ 54	29	50	53	132	46.8	82	33	52	167	49.3	68	11	25	104	50.4
45/ 49	64	44	57	165	43.2	66	13	25	104	44.8	20	1	4	25	45.9
40/ 44	54	24	30	108	39.6	23	2	5	30	40.8	3	0	0	3	41.5
35/ 39	56	13	23	92	35.9	10	0	1	11	37.2	1		0	1	38
30/ 34	26	1	4	31	31.3	1			1	32.8					
25/ 29	4		0	4	26.4										
20/ 24															
15/ 19															
10/ 14															
5/ 9															
0/ 4															
-5/ -1															

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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	69					
95/ 99		0	0	0	70.8		1	0	1	67.4					
90/ 94		5	3	8	69.1		5	2	7	69.2					
85/ 89		10	5	15	68.3		9	5	14	68.3		0		0	65.3
80/ 84		31	17	48	66.8		27	15	42	67.1		4	2	6	65.6
75/ 79	1	49	32	82	64.6	0	45	25	70	65.1		14	6	20	64.1
70/ 74	8	56	44	108	62.4	6	54	40	100	62.9	0	32	15	47	61.8
65/ 69	26	38	42	106	61.1	20	43	43	106	61.6	2	34	20	56	59.6
60/ 64	86	40	59	185	59.1	83	43	66	192	59.5	21	62	54	137	57.5
55/ 59	86	16	36	138	55.1	89	18	39	146	55.5	66	57	68	191	54.2
50/ 54	36	2	8	46	51.1	40	3	11	54	51.2	76	30	54	160	50.3
45/ 49	5	0	0	5	46.3	8	0	1	9	46.3	55	7	19	81	45.8
40/ 44	0			0	43.5	1		0	1	41.7	15	1	2	18	41.7
35/ 39						0			0	38	6	0	1	7	38
30/ 34											0			0	33.2
25/ 29															
20/ 24															
15/ 19															
10/ 14															
5/ 9															
0/ 4															
-5/ -1															

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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)
100/104															
95/ 99															
90/ 94															
85/ 89															
80/ 84															
75/ 79		1	0	1	62.8										
70/ 74		6	1	7	60.9										
65/ 69	0	14	3	17	59		0		0	58.2					
60/ 64	3	34	17	54	56.7		4	1	5	54.3		0		0	53.2
55/ 59	24	58	45	127	53.5	2	11	4	17	51.3	0	2	0	2	49.8
50/ 54	61	61	71	193	49.8	12	34	20	66	48.2	5	13	8	26	46.8
45/ 49	73	47	61	181	45	40	58	55	153	44.2	17	29	23	69	43.4
40/ 44	45	18	28	91	40.8	44	43	46	133	40.4	25	34	28	87	39.7
35/ 39	29	7	15	51	36.9	68	54	59	181	36.3	54	60	62	176	35.8
30/ 34	10	2	5	17	31.5	48	26	39	113	31.3	72	68	74	214	30.8
25/ 29	3	0	1	4	26.6	19	9	14	42	26.2	55	33	40	128	26.2
20/ 24	1	0	0	1	22.2	6	1	2	9	21.5	13	6	8	27	21.4
15/ 19						3	0	1	4	17.5	5	2	3	10	17
10/ 14						0		0	0	13.2	2	1	2	5	11.9
5/ 9											1	0	0	1	7.1
0/ 4											0			0	3
-5/ -1															

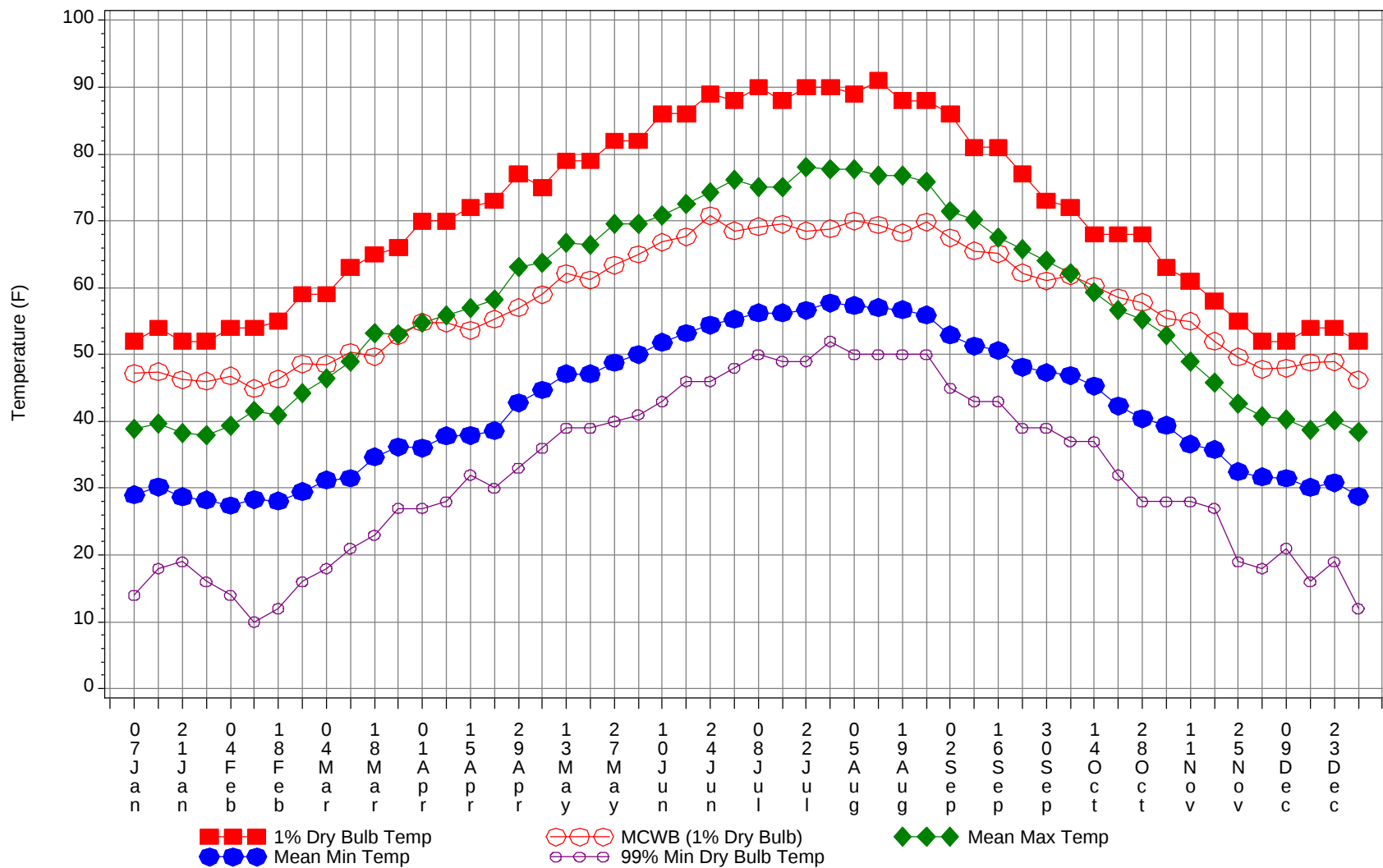
Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary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

Dry-Bulb Temperature Hours For An Average Year

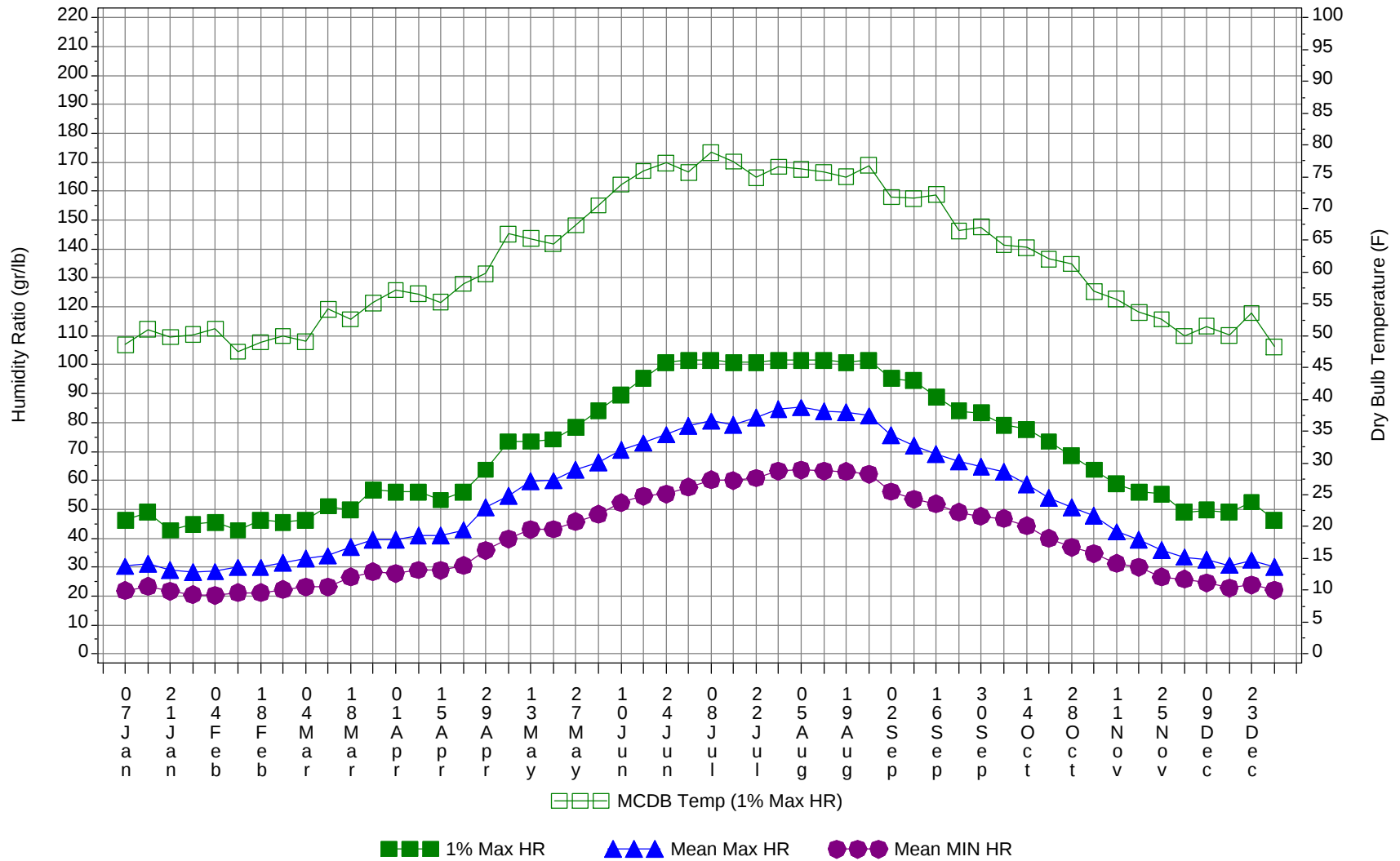
	Annual				
Temperature Range (°F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (°F)
100/104		0		0	69
95/ 99		1	1	2	68
90/ 94		12	6	18	69.1
85/ 89		26	14	40	68.2
80/ 84	0	90	47	137	66.5
75/ 79	3	166	97	266	64
70/ 74	20	247	161	428	61.3
65/ 69	63	220	176	459	59.6
60/ 64	258	330	324	912	57.3
55/ 59	400	324	362	1086	53.4
50/ 54	426	310	356	1092	48.9
45/ 49	409	309	345	1063	43.9
40/ 44	285	225	244	754	39.8
35/ 39	379	284	325	988	35.8
30/ 34	350	220	267	837	30.9
25/ 29	215	112	135	462	25.9
20/ 24	67	29	36	132	21.3
15/ 19	32	12	16	60	17
10/ 14	11	3	5	19	12
5/ 9	3	0	1	4	6.5
0/ 4	1		0	1	1.1
-5/ -1	0			0	-3

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



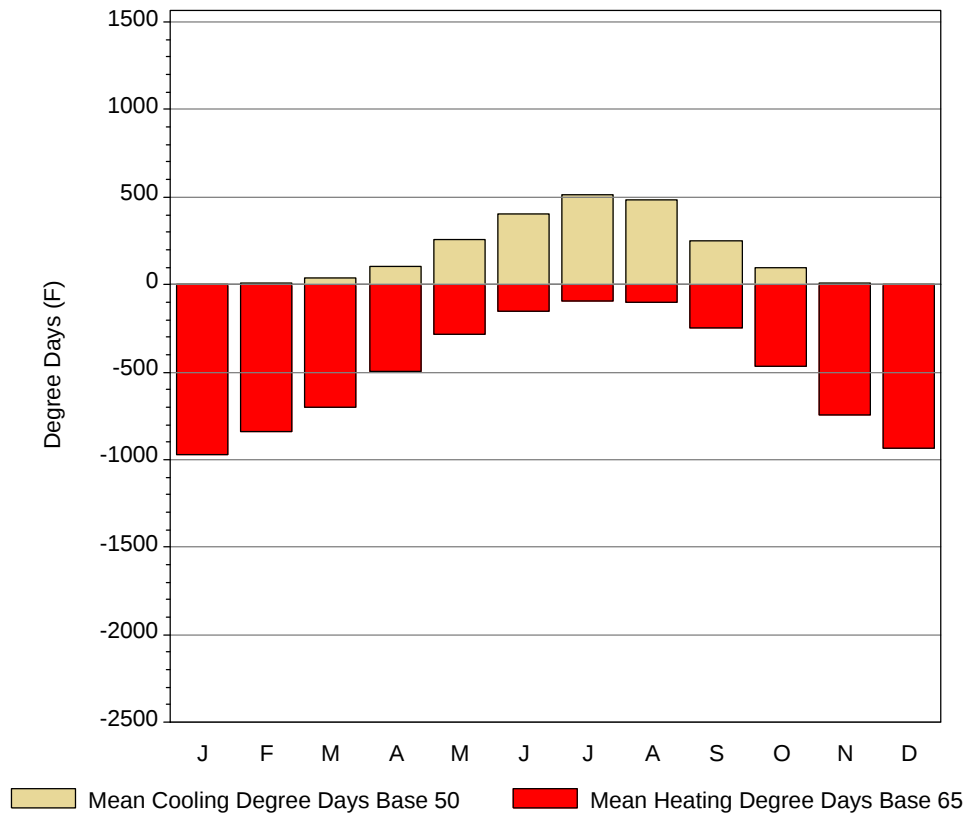
Long Term Humidity and Dry Bulb Temperature Summary



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	52	47.2	38.9	29	14	46.2	48.6	30.3	21.9
14-Jan	54	47.4	39.6	30.2	18	49	51	31.2	23.3
21-Jan	52	46.2	38.3	28.7	19	42.7	49.8	29	21.7
28-Jan	52	46	37.9	28.2	16	44.8	50.2	28.3	20.5
4-Feb	54	46.8	39.3	27.4	14	45.5	51.1	28.5	20.2
11-Feb	54	44.9	41.6	28.3	10	42.7	47.5	29.9	21.1
18-Feb	55	46.3	41	28.1	12	46.2	49	29.9	21.1
25-Feb	59	48.6	44.2	29.5	16	45.5	50	31.5	22.3
4-Mar	59	48.5	46.4	31.2	18	46.2	49.1	33.1	23.2
11-Mar	63	50.3	48.9	31.5	21	51.1	54.2	33.9	23.2
18-Mar	65	49.7	53.2	34.7	23	49.7	52.6	37	26.5
25-Mar	66	52.8	53.1	36.2	27	56.7	55.2	39.6	28.4
1-Apr	70	54.8	54.8	36	27	56	57.2	39.4	27.8
8-Apr	70	54.7	55.9	37.8	28	56	56.6	41	29
15-Apr	72	53.6	56.9	37.9	32	53.2	55.3	40.8	28.9
22-Apr	73	55.3	58.2	38.6	30	56	58.2	42.9	30.6
29-Apr	77	57	63.1	42.8	33	63.7	59.8	50.8	35.7
6-May	75	59	63.8	44.7	36	73.5	66	54.7	39.8
13-May	79	62.1	66.7	47.1	39	73.5	65.3	59.6	43
20-May	79	61.2	66.4	47.1	39	74.2	64.5	59.9	43.1
27-May	82	63.4	69.5	48.8	40	78.4	67.4	63.6	45.7
4-Jun	82	65	69.6	50	41	84	70.5	66.1	48.3
10-Jun	86	66.8	70.8	51.8	43	89.6	73.8	70.7	52.3
17-Jun	86	67.6	72.6	53.2	46	95.2	75.9	72.9	54.5
24-Jun	89	70.8	74.2	54.4	46	100.8	77.2	75.8	55.3
1-Jul	88	68.5	76.1	55.3	48	101.5	75.7	78.8	57.6
8-Jul	90	69.1	75.1	56.2	50	101.5	78.8	80.5	60.2
15-Jul	88	69.5	75	56.2	49	100.8	77.4	79.2	59.9
22-Jul	90	68.5	78.1	56.6	49	100.8	74.9	81.8	60.8
29-Jul	90	68.8	77.7	57.7	52	101.5	76.6	84.7	63.3
5-Aug	89	70	77.8	57.3	50	101.5	76.2	85.2	63.6
12-Aug	91	69.4	76.8	57	50	101.5	75.7	83.8	63.3
19-Aug	88	68.2	76.8	56.7	50	100.8	75	83.5	63.1
26-Aug	88	69.8	75.8	55.9	50	101.5	76.8	82.3	62.2
2-Sep	86	67.5	71.5	52.9	45	95.2	71.8	75.5	56.1
9-Sep	81	65.5	70.2	51.3	43	94.5	71.6	71.9	53.4
16-Sep	81	65.1	67.5	50.6	43	88.9	72.2	69.1	51.8
23-Sep	77	62.2	65.8	48.1	39	84	66.5	66.4	49
30-Sep	73	61	64	47.3	39	83.3	67.1	64.7	47.6
7-Oct	72	61.8	62.2	46.9	37	79.1	64.3	63.1	46.8
14-Oct	68	60.2	59.3	45.3	37	77.7	63.9	58.5	44.2
21-Oct	68	58.5	56.6	42.3	32	73.5	62.1	54	40
28-Oct	68	57.8	55.2	40.4	28	68.6	61.3	50.6	36.8
4-Nov	63	55.4	52.9	39.4	28	63.7	57	47.9	34.7
11-Nov	61	55	49	36.6	28	58.8	55.8	42.2	31.2
18-Nov	58	52	45.8	35.8	27	56	53.7	39.5	30
25-Nov	55	49.6	42.7	32.5	19	55.3	52.6	35.8	26.5
2-Dec	52	47.8	40.7	31.7	18	49	50	33.5	25.9
9-Dec	52	48	40.3	31.5	21	49.7	51.5	32.7	24.5
16-Dec	54	48.8	38.8	30.1	16	49	50.1	30.6	22.8
23-Dec	54	48.9	40.1	30.8	19	52.5	53.6	32.4	23.9
31-Dec	52	46.2	38.4	28.8	12	46.2	48.3	30.2	22.1

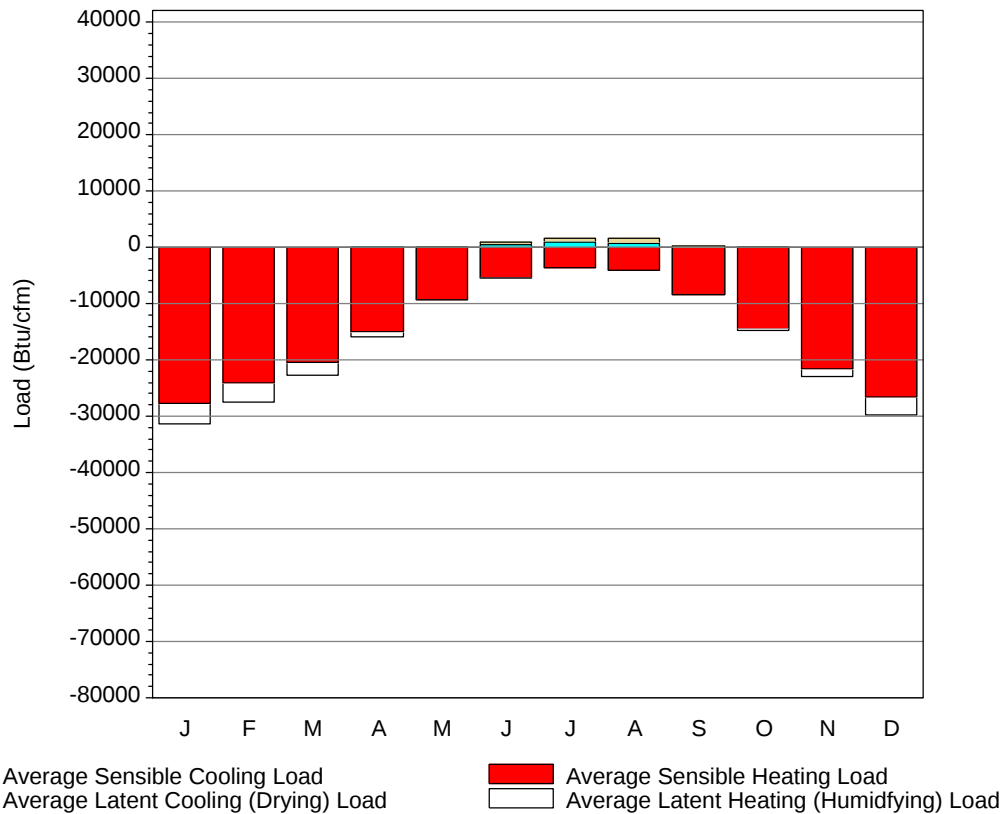
Degree Days, Heating and Cooling (Base 65 F) & Cooling (Base 50F)



Month	Mean Cooling Degree Days (°F) Base 50	Mean Cooling Degree Days (°F) Base 65	Mean Heating Degree Days (°F) Base 65
JAN	2.1	0	971.7
FEB	5.5	0	841.5
MAR	38.6	1.2	698.6
APR	101.8	9.8	492.4
MAY	256.6	40.9	280
JUN	400.8	94.9	148.8
JUL	510.2	136.2	91.6
AUG	485.6	122.1	102.9
SEP	250.7	30.9	249.6
OCT	97.7	3.6	469.3
NOV	10.8	0	741.2
DEC	2	0	933.1
ANN	2162.4	439.6	6020.7

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	-27598	0	-3844
FEB	0	-24009	0	-3385
MAR	0	-20497	0	-2117
APR	10	-14964	0	-828
MAY	124	-9236	6	-54
JUN	546	-5396	355	-4
JUL	877	-3709	734	0
AUG	778	-4089	808	0
SEP	78	-8453	93	-3
OCT	1	-14514	1	-213
NOV	0	-21543	0	-1391
DEC	0	-26596	0	-3185
ANN	2414	-180604	1997	-15024

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													

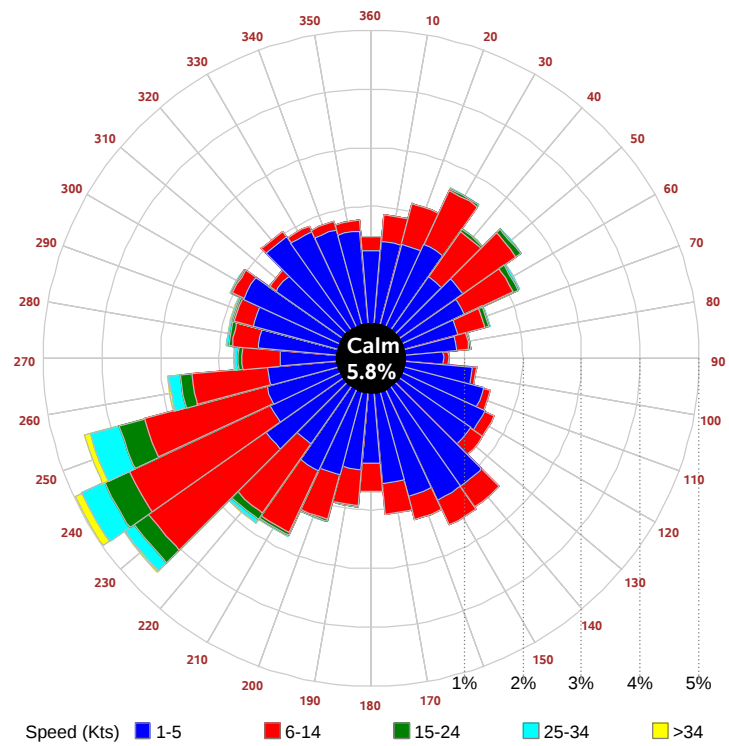
Average Annual Solar Radiation - Nearest Available Site Source: National Renewable Energy Laboratory, Golden CO, 1995

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													

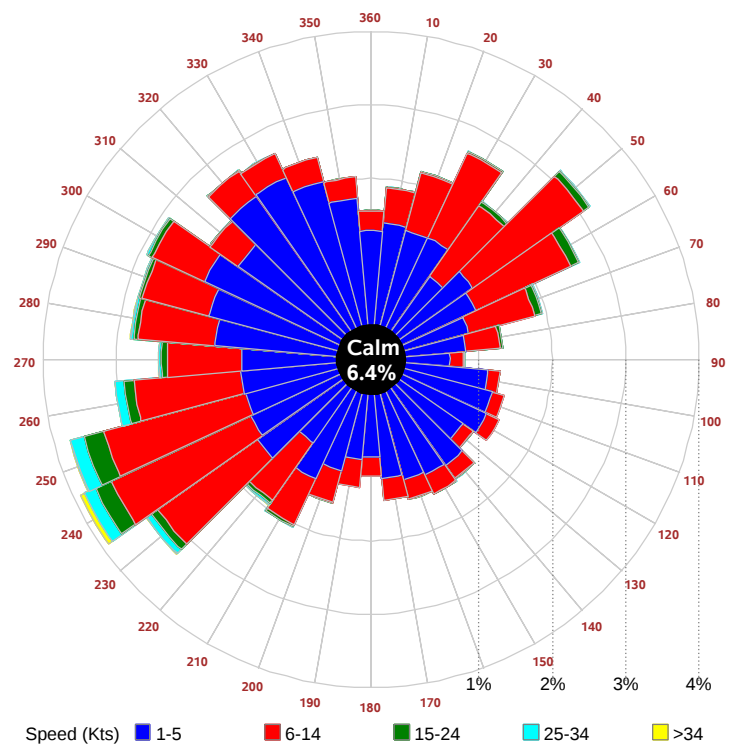
AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9												
		March						June				
		9am	11am	1pm	3pm	5pm		9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear											
	M.Cloudy											
NORTH	M.Clear											
	M.Cloudy											
EAST	M.Clear			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

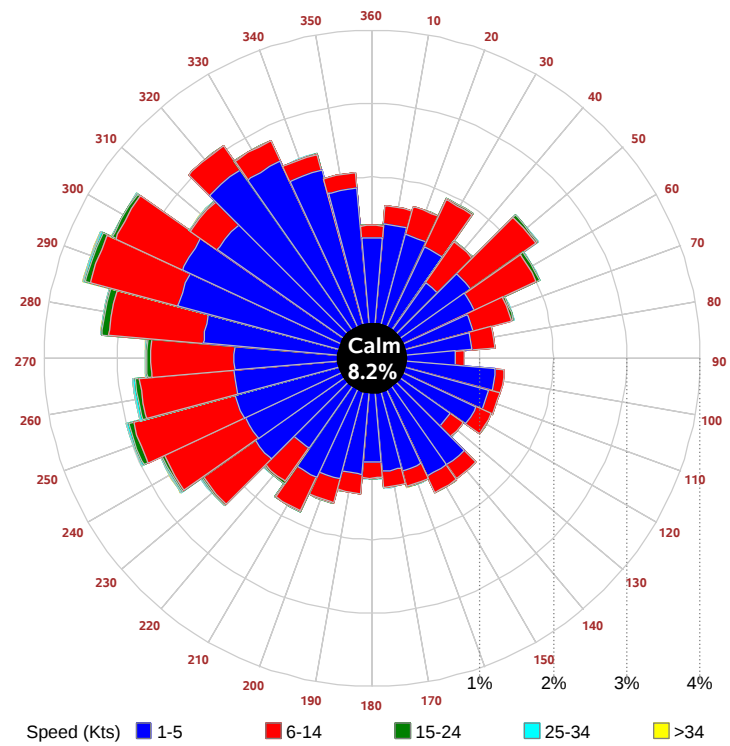
Wind Summary - December, January, and February



Wind Summary - March, April, and May



Wind Summary - June, July, and August



Wind Summary - September, October, and November

