

IMPERIAL CO, CA	
Latitude = 32.83 N	Station ID = ICAO_KIPL
Longitude = 115.58 W	Elevation = -54 Feet
Period of Record = 1988 To 2017	Average Pressure = 29.94 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	117	73	52	7	VRB
0.4% Occurrence	111	73	60	7.6	E
1.0% Occurrence	109	72	62	7.8	ESE
2.0% Occurrence	108	72	63	7.8	ESE
Mean Daily Range	28	-	-	-	W
97.5% Occurrence	42	36	23	4.5	W
99.0% Occurrence	38	33	19	4.5	W
99.6% Occurrence	36	31	18	4.6	W
Median of Extreme Lows	31	27	15	4.7	W

	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	83	98	141	9.5	ESE
0.4% Occurrence	81	97	130	9.1	ESE
1.0% Occurrence	80	97	125	8.9	ESE
2.0% Occurrence	78	96	114	8.5	SE

	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	156	93	1.03	8.3	ESE
0.4% Occurrence	141	88	0.94	8.4	ESE
1.0% Occurrence	132	89	0.88	8.1	ESE
2.0% Occurrence	123	89	0.82	7.6	SE

Air Conditioning/ Humid Area Criteria	Threshold	T ≥ 93 °F	T ≥ 80 °F	Twb ≥ 73 °F	Twb ≥ 67 °F
	# of Hours	1470	3423	947	1881

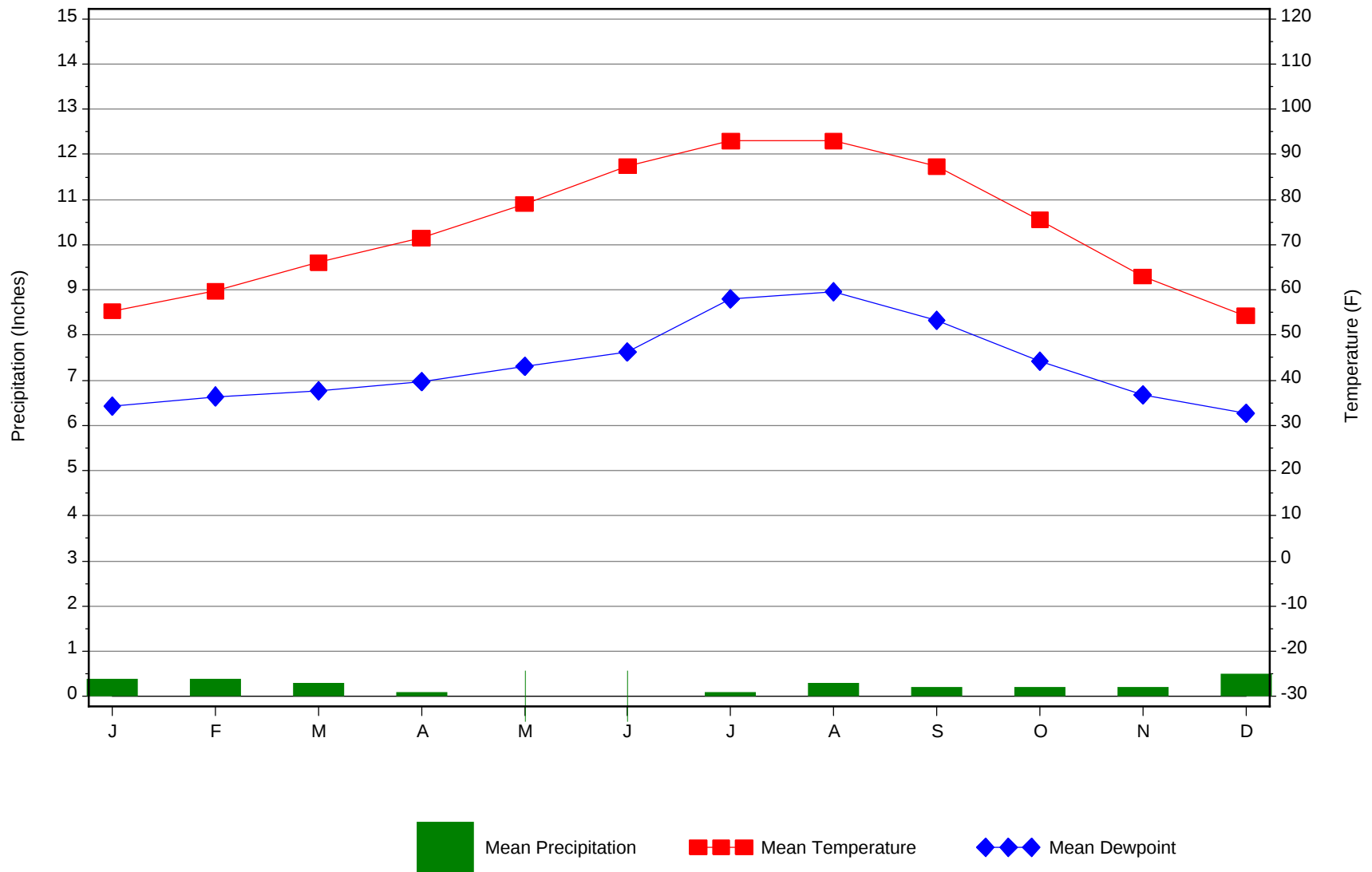
Other Site Data

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	1.5	85	1.6 + 5.4
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 (#)
76.3	N/A	N/A	2

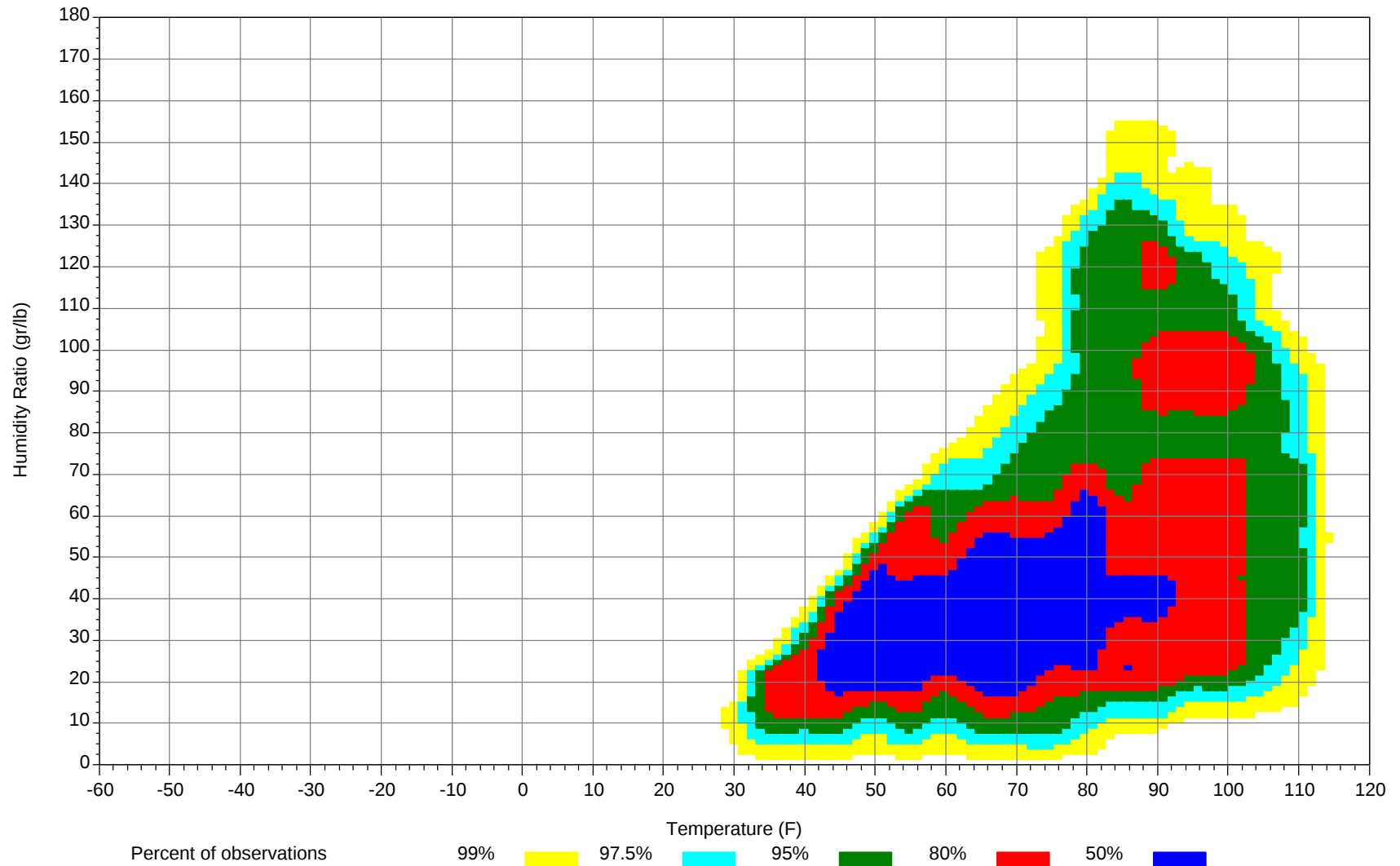
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.



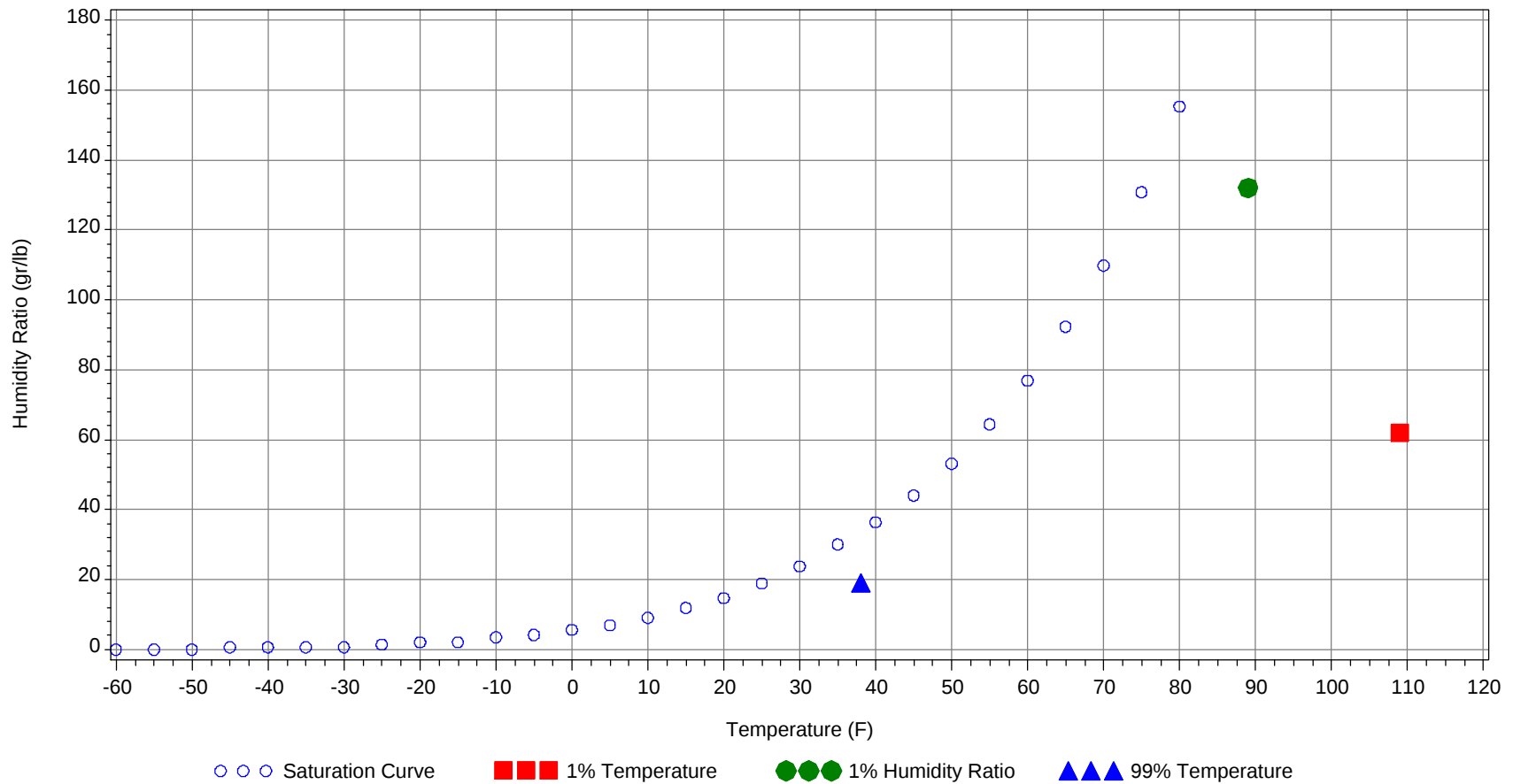
Average Annual Climate



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	109.0		72		62.0	36.0
99.0% Dry Bulb	38.0				19.0	12.2
1.0% Humidity Ratio	132.0	89.0	78.8	75.0		42.0

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)
120/124															
115/119															
110/114															
105/109															
100/104												0		0	62.7
95/ 99												2	0	2	62.8
90/ 94							0	0	0	62.9		15	3	18	61
85/ 89		0		0	62.9		4	1	5	59.3		24	6	30	60
80/ 84		3	0	3	56.8		20	3	23	57.7	0	45	15	60	58.2
75/ 79		23	1	24	55.2	0	35	9	44	56.1	1	49	23	73	56.3
70/ 74	0	53	9	62	53.5	0	48	19	67	54.3	6	56	42	104	54.4
65/ 69	0	46	16	62	52	2	42	27	71	52.8	18	29	40	87	52.9
60/ 64	6	61	42	109	50.2	12	47	54	113	50.6	49	20	56	125	50.9
55/ 59	20	36	57	113	48.2	42	19	55	116	48.5	69	6	39	114	48.2
50/ 54	45	18	62	125	45.1	70	6	36	112	45.2	61	1	19	81	45.1
45/ 49	80	5	44	129	40.6	60	1	16	77	40.8	33	0	4	37	40.9
40/ 44	52	1	12	65	36.9	22	0	4	26	36.4	7		0	7	37
35/ 39	35	0	4	39	32.7	14	0	1	15	32.1	2		0	2	32.3
30/ 34	7		0	7	28.3	2		0	2	27.2	0			0	27.9
25/ 29	1		0	1	22.8	0		0	0	24.3					
20/ 24	0			0	19.7										

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)
120/124												0	0	0	71.7
115/119												2	1	3	70.9
110/114							0	0	0	67.8		10	2	12	70.4
105/109		0		0	70.7		6	1	7	67.6		39	13	52	69.2
100/104		3	1	4	65.6		23	6	29	66.6	0	56	21	77	67.9
95/ 99		13	3	16	64.5	0	44	14	58	65.3	2	54	27	83	66.9
90/ 94		33	8	41	62.2	1	57	25	83	63.5	9	43	39	91	65.2
85/ 89	0	38	13	51	60.5	3	39	24	66	62.2	19	19	36	74	64.1
80/ 84	2	55	25	82	58.7	15	41	42	98	60.4	48	12	51	111	62.2
75/ 79	8	45	34	87	57.1	32	23	48	103	58.8	68	4	30	102	60.2
70/ 74	24	34	49	107	55.3	68	11	44	123	56.9	63	1	15	79	58
65/ 69	39	11	38	88	53.7	53	2	22	77	54.9	21	0	3	24	55.4
60/ 64	73	7	43	123	51.5	50	0	17	67	51.9	9		2	11	52.2
55/ 59	56	1	20	77	48.4	21	0	4	25	49	2		0	2	49.2
50/ 54	30	0	6	36	45	4		0	4	45.7					
45/ 49	8		1	9	41.3	0			0	41.7					
40/ 44	1			1	36.8										
35/ 39	0			0	33										
30/ 34															
25/ 29															
20/ 24															

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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)
120/124		0	0	0	75.5										
115/119		4	1	5	73.8		3	0	3	74		0		0	73.4
110/114		16	5	21	73.3		16	4	20	74.2		3	0	3	72.5
105/109		68	25	93	73		65	23	88	74.2		32	6	38	71.6
100/104	1	71	35	107	72.7	0	73	36	109	73.4		63	17	80	71.3
95/ 99	4	54	43	101	72.3	4	52	46	102	73.1	1	60	29	90	70
90/ 94	30	28	63	121	71.2	33	29	65	127	72.3	9	47	50	106	68.7
85/ 89	61	5	43	109	70.3	68	7	41	116	71.4	27	20	43	90	68.3
80/ 84	96	1	27	124	68.2	93	2	27	122	68.9	69	12	49	130	66.4
75/ 79	42	0	5	47	63.3	36	1	5	42	63.8	57	3	27	87	62.5
70/ 74	12		0	12	58.9	12	0	1	13	58.9	46	0	14	60	58.5
65/ 69	1		0	1	56.1	2			2	54.7	20	0	4	24	55
60/ 64	0			0	53.3	0			0	55.5	11	0	1	12	52.3
55/ 59											2		0	2	47.6
50/ 54															
45/ 49															
40/ 44															
35/ 39															
30/ 34															
25/ 29															
20/ 24															

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)
120/124															
115/119															
110/114															
105/109		1	0	1	67.7										
100/104		10	1	11	68.2										
95/ 99		32	4	36	66.3		0		0	64.5					
90/ 94		58	12	70	64.1		5	0	5	61.4					
85/ 89	1	42	18	61	63	0	16	0	16	60.4		0		0	57
80/ 84	6	49	38	93	61.6	0	41	5	46	58.9		2		2	57.7
75/ 79	21	33	49	103	59.9	1	52	12	65	56.8		18	0	18	55.7
70/ 74	50	17	56	123	57.9	3	60	30	93	54.7		46	4	50	53.1
65/ 69	53	4	32	89	55.3	10	31	34	75	53	1	47	12	60	51.5
60/ 64	65	1	28	94	51.8	37	25	62	124	50.9	6	68	36	110	49.5
55/ 59	34	0	9	43	47.6	59	7	47	113	47.6	20	40	56	116	47.4
50/ 54	14		2	16	44.1	61	2	32	95	44.2	41	20	62	123	44.6
45/ 49	3		0	3	40.2	46	1	14	61	39.9	68	6	51	125	40.4
40/ 44	0			0	36.8	15		3	18	35.8	56	1	18	75	36.3
35/ 39						8		1	9	31.9	45	0	9	54	32.2
30/ 34						1			1	28.5	10		1	11	28.4
25/ 29											1			1	24.6
20/ 24											0			0	19.5

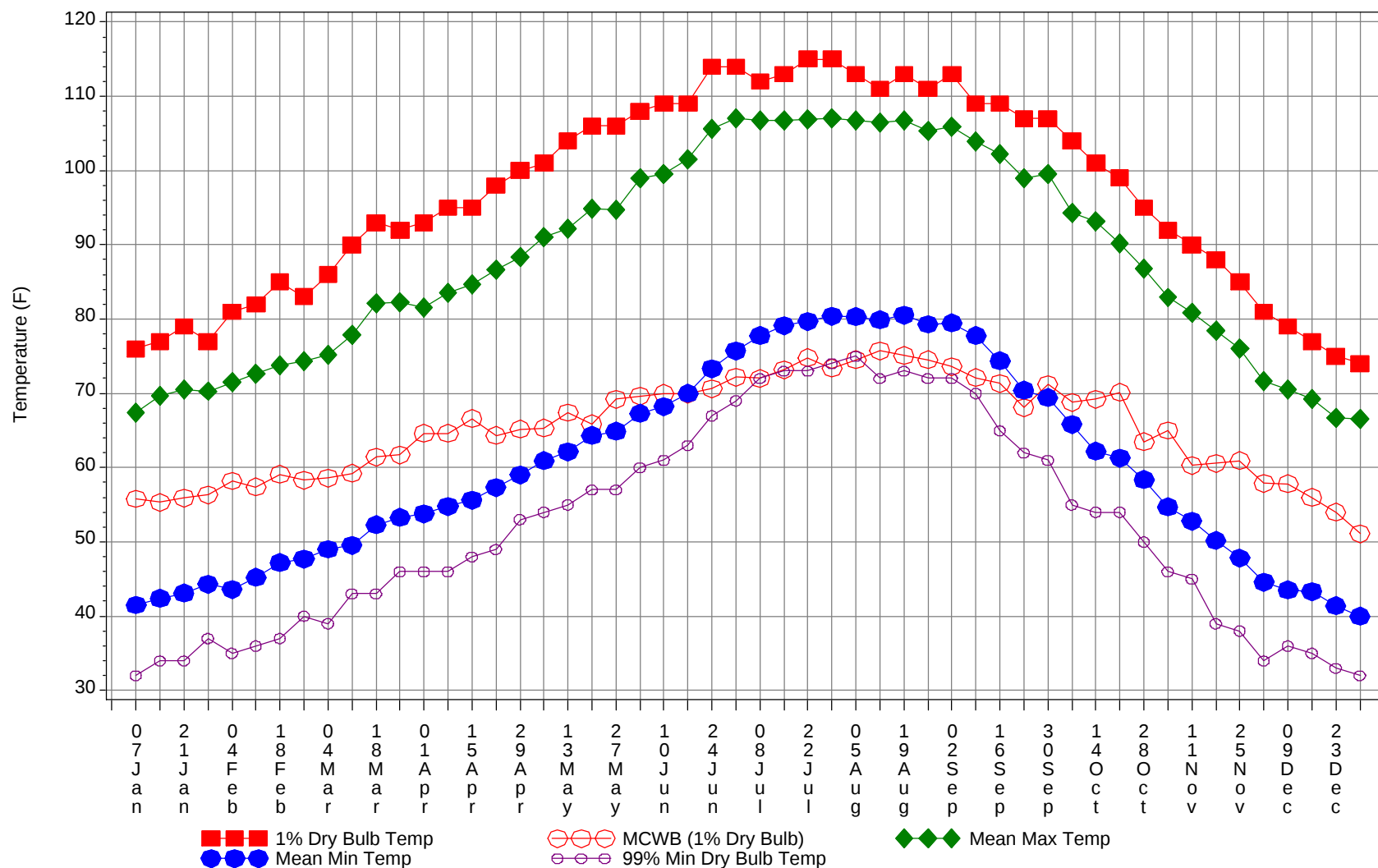
Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary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

Dry-Bulb Temperature Hours For An Average Year

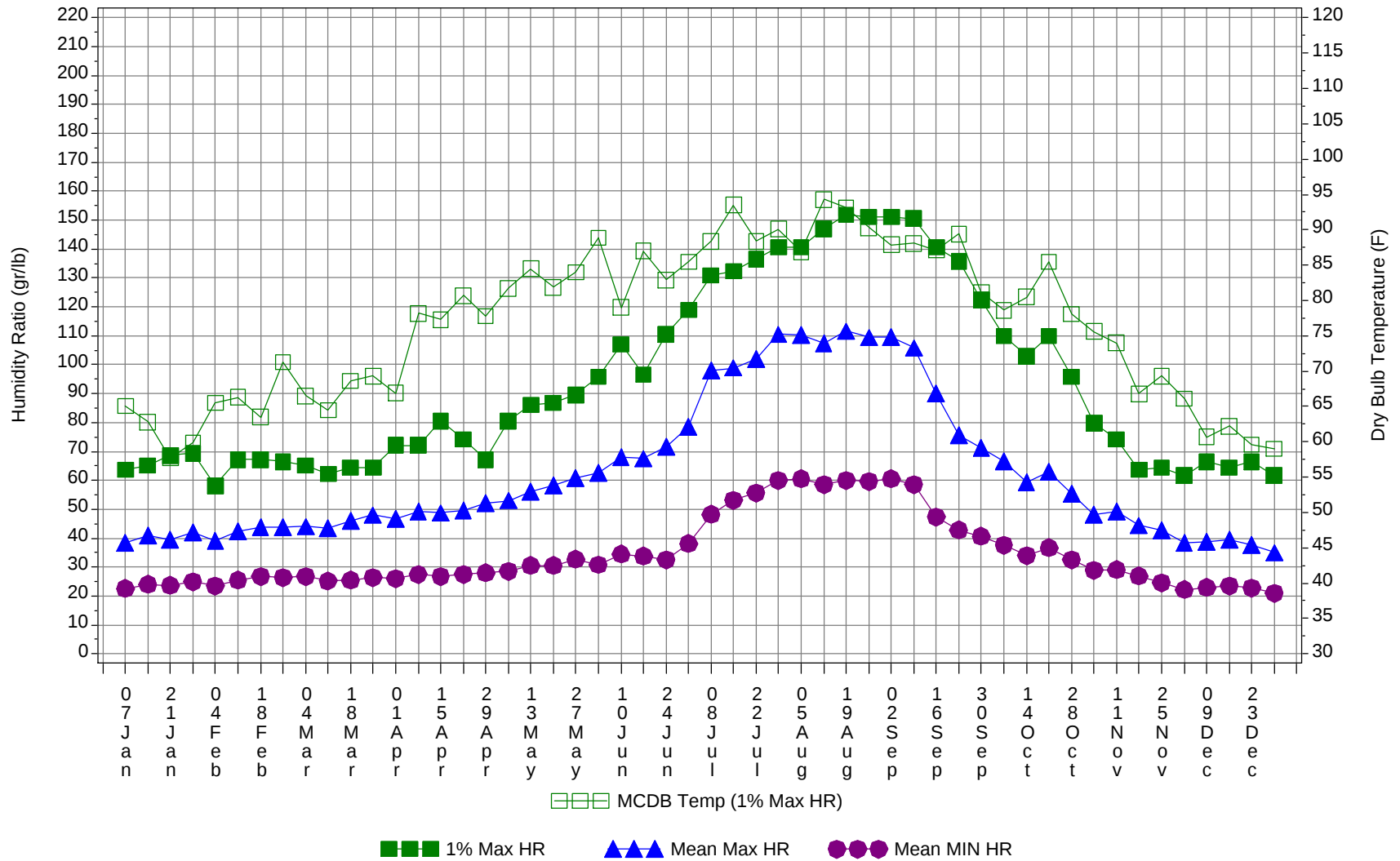
	Annual				
Temperature Range (°F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (°F)
120/124		0	0	0	73.6
115/119		9	2	11	73.2
110/114		45	12	57	72.9
105/109		211	69	280	72.3
100/104	1	299	116	416	71.1
95/ 99	11	312	167	490	69.6
90/ 94	83	316	264	663	67.6
85/ 89	179	214	223	616	66.2
80/ 84	329	284	282	895	63.4
75/ 79	265	286	245	796	59.1
70/ 74	284	327	283	894	55.9
65/ 69	219	213	227	659	53.5
60/ 64	318	230	341	889	50.9
55/ 59	325	111	287	723	48
50/ 54	326	47	220	593	44.9
45/ 49	298	14	129	441	40.5
40/ 44	153	2	37	192	36.5
35/ 39	105	0	15	120	32.3
30/ 34	21		1	22	28.2
25/ 29	2		0	2	23.6
20/ 24	0			0	19.6

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



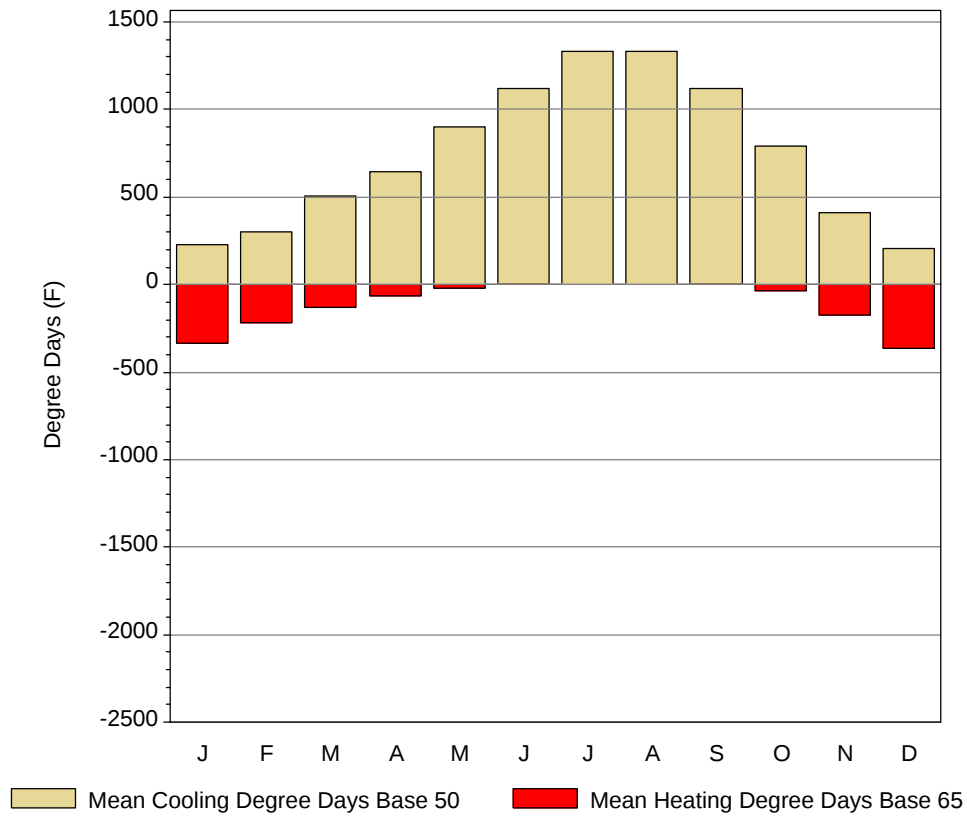
Long Term Humidity and Dry Bulb Temperature Summary



Long Term Humidity and Dry Bulb Temperature Summary

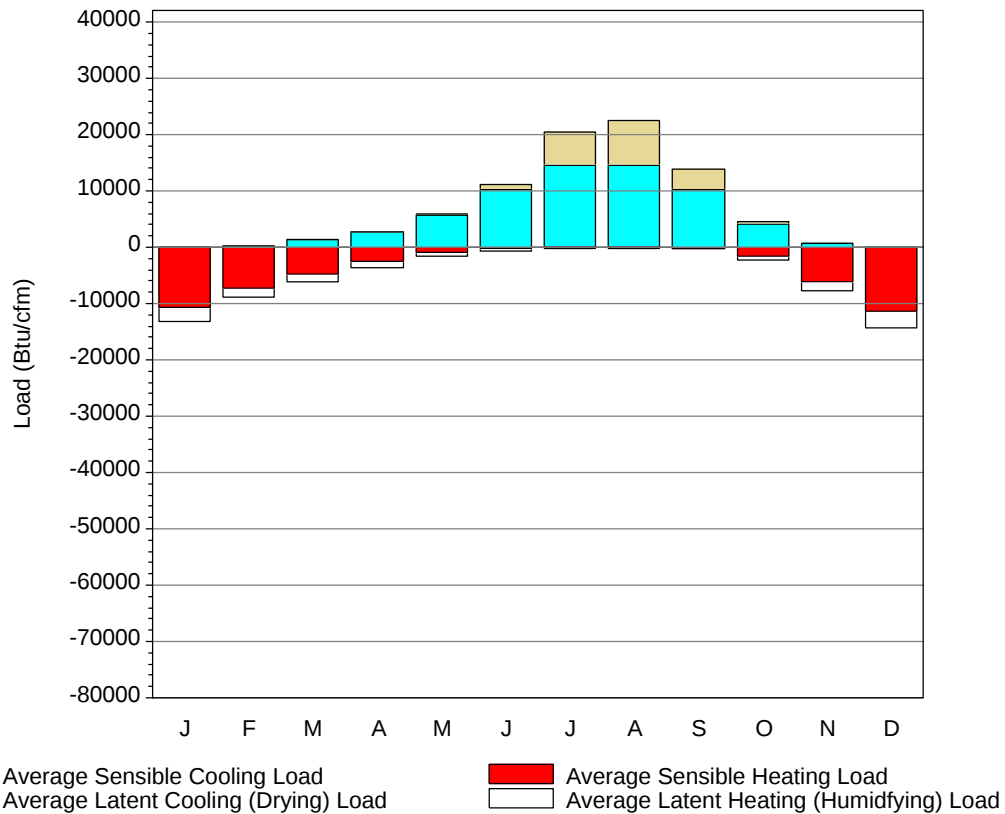
Week Ending	1.0% Temp (° F)	MCWB@ 1% Temp (° F)	Mean Max Temp (° F)	Mean Min Temp (° F)	99% Temp (° F)	1.0% HR (gr/lb)	MCDB@ 1% HR (° F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	76	55.8	67.4	41.5	32	63.7	65.1	38.3	22.6
14-Jan	77	55.3	69.6	42.4	34	65.1	62.8	41	24.1
21-Jan	79	55.9	70.5	43.1	34	68.6	57.7	39.6	23.6
28-Jan	77	56.3	70.3	44.3	37	69.3	59.9	42	24.9
4-Feb	81	58.2	71.5	43.6	35	58.1	65.5	39.1	23.5
11-Feb	82	57.4	72.7	45.2	36	67.2	66.3	42.4	25.5
18-Feb	85	59.1	73.7	47.2	37	67.2	63.5	43.7	26.7
25-Feb	83	58.3	74.3	47.7	40	66.5	71.3	43.7	26.3
4-Mar	86	58.6	75.2	49	39	65.1	66.5	44	26.8
11-Mar	90	59.2	77.9	49.5	43	62.3	64.5	43.5	25.2
18-Mar	93	61.4	82.1	52.3	43	64.4	68.6	45.9	25.5
25-Mar	92	61.7	82.3	53.3	46	64.4	69.3	48	26.4
1-Apr	93	64.6	81.5	53.8	46	72.1	66.9	46.8	26
8-Apr	95	64.6	83.6	54.8	46	72.1	78.2	49.1	27.5
15-Apr	95	66.6	84.7	55.6	48	80.5	77.3	48.7	26.7
22-Apr	98	64.3	86.6	57.3	49	74.2	80.7	49.6	27.4
29-Apr	100	65.2	88.4	59	53	67.2	77.8	52.2	28
6-May	101	65.3	91.1	60.9	54	80.5	81.7	53	28.6
13-May	104	67.4	92.2	62.1	55	86.1	84.5	56	30.6
20-May	106	65.9	94.8	64.3	57	86.8	81.9	58.4	30.5
27-May	106	69.2	94.7	64.9	57	89.6	84	60.9	32.7
4-Jun	108	69.6	98.9	67.3	60	95.9	88.9	62.5	30.8
10-Jun	109	70	99.6	68.2	61	107.1	79	68.1	34.5
17-Jun	109	69.9	101.5	70	63	96.6	87	67.5	33.8
24-Jun	114	70.6	105.6	73.3	67	110.6	82.9	71.6	32.6
1-Jul	114	72.2	107	75.7	69	119	85.5	78.4	38.1
8-Jul	112	72	106.7	77.8	72	130.9	88.4	98.1	48.2
15-Jul	113	73.2	106.7	79.1	73	132.3	93.5	98.9	53.1
22-Jul	115	74.8	106.9	79.7	73	136.5	88.4	102.1	55.7
29-Jul	115	73.4	107	80.4	74	140.7	90.1	110.5	60
5-Aug	113	74.5	106.8	80.3	75	140.7	86.9	110.3	60.5
12-Aug	111	75.7	106.5	79.9	72	147	94.3	107.4	58.5
19-Aug	113	75.1	106.8	80.5	73	151.9	93.1	111.6	60
26-Aug	111	74.5	105.4	79.3	72	151.2	90.3	109.4	59.7
2-Sep	113	73.6	105.9	79.5	72	151.2	87.9	109.5	60.6
9-Sep	109	72.1	103.9	77.8	70	150.5	88.1	105.8	58.6
16-Sep	109	71.3	102.2	74.4	65	140.7	87.1	90	47.3
23-Sep	107	68.1	98.9	70.4	62	135.8	89.4	75.7	42.8
30-Sep	107	71.2	99.5	69.4	61	122.5	81.2	71.3	40.7
7-Oct	104	68.8	94.3	65.8	55	109.9	78.6	66.7	37.6
14-Oct	101	69.2	93.1	62.2	54	102.9	80.5	59.4	33.9
21-Oct	99	70.1	90.2	61.3	54	109.9	85.5	63.1	36.7
28-Oct	95	63.5	86.8	58.4	50	95.9	78.1	55.4	32.6
4-Nov	92	65	82.9	54.7	46	79.8	75.6	48.2	28.9
11-Nov	90	60.3	80.9	52.8	45	74.2	74	49.2	29.1
18-Nov	88	60.6	78.5	50.2	39	63.7	66.8	44.4	26.9
25-Nov	85	60.9	76.1	47.8	38	64.4	69.3	42.6	24.5
2-Dec	81	57.9	71.7	44.6	34	61.6	66.1	38.5	22.2
9-Dec	79	57.8	70.5	43.5	36	66.5	60.7	38.8	22.9
16-Dec	77	56	69.2	43.3	35	64.4	62.2	39.4	23.5
23-Dec	75	54	66.7	41.4	33	66.5	59.6	37.6	22.7
31-Dec	74	51.1	66.6	40	32	61.6	59	35	20.9

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	230.5	35.9	336.3
FEB	301.3	66.8	218.1
MAR	505.3	165.1	133.1
APR	644.3	257.1	64
MAY	898.4	450.8	17.5
JUN	1123.1	674.6	1.5
JUL	1333.1	868.1	0
AUG	1332.2	867.2	0
SEP	1119.8	671.3	1.5
OCT	790.2	359.6	34.8
NOV	408.8	116.4	176.6
DEC	208.9	28.2	361.2
ANN	8895.9	4561.1	1344.6

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	62	-10719	5	-2369
FEB	315	-7258	2	-1659
MAR	1359	-4757	8	-1413
APR	2670	-2560	15	-979
MAY	5799	-863	138	-603
JUN	10293	-102	769	-524
JUL	14514	-1	5930	-139
AUG	14491	-1	8028	-109
SEP	10161	-107	3723	-204
OCT	4172	-1518	453	-681
NOV	767	-6034	6	-1688
DEC	41	-11424	0	-2907
ANN	64644	-45344	19077	-13275

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													

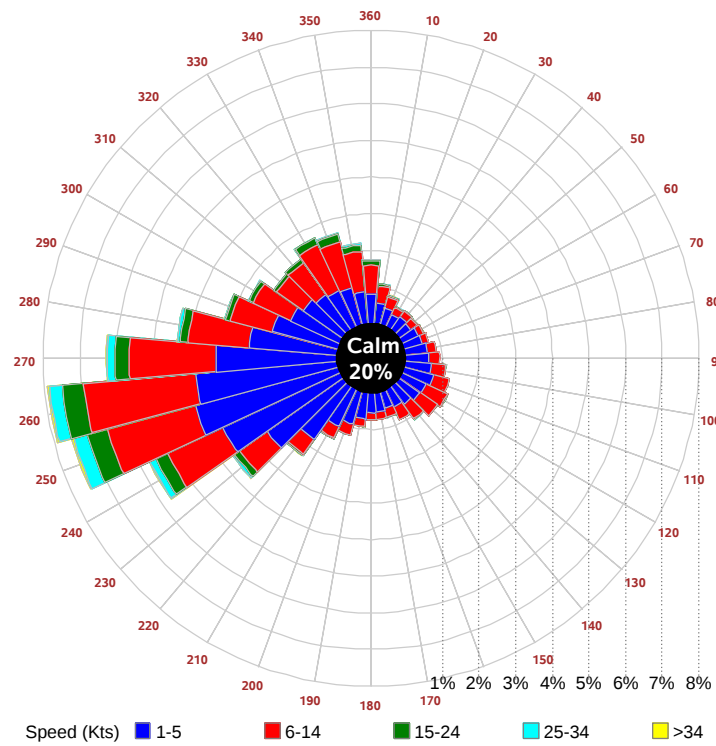
Average Annual Solar Radiation - Nearest Available Site Source: National Renewable Energy Laboratory, Golden CO, 1995

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													

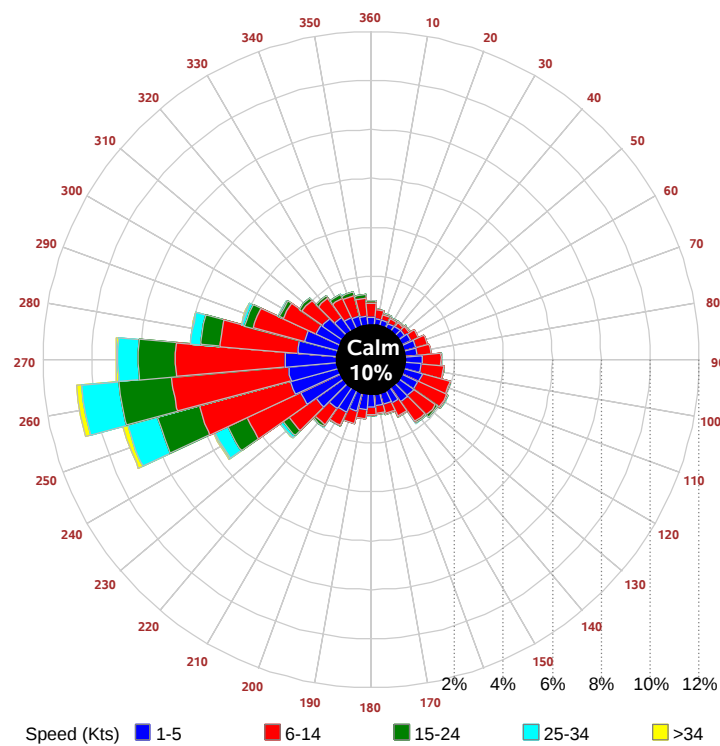
AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9												
		9am		11am		March 1pm		3pm		5pm		
HORIZ.	M.Clear											
	M.Cloudy											
NORTH	M.Clear											
	M.Cloudy											
EAST	M.Clear											
	M.Cloudy											
SOUTH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

		9am		11am		Sept 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)											

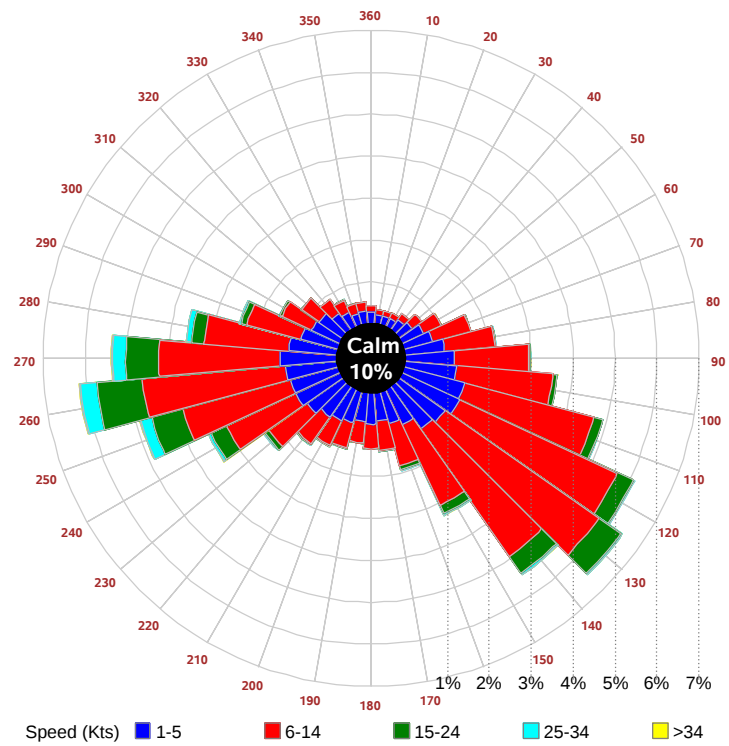
Wind Summary - December, January, and February



Wind Summary - March, April, and May



Wind Summary - June, July, and August



Wind Summary - September, October, and November

