BANGOR INTL, ME

Latitude = 44.81 N	Station ID = ICAO_KBGR
Longitude = 68.83 W	Elevation = 192 Feet
Period of Record = 1988 To 2017	Average Pressure = 29.76 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	93	73	93	9.4	W
0.4% Occurrence	88	71	86	9.7	W
1.0% Occurrence	84	69	83	9	S
2.0% Occurrence	81	67	78	9.1	S
Mean Daily Range	19	-	-	-	WNW
97.5% Occurrence	4	3	4	6.4	WNW
99.0% Occurrence	-2	-3	3	5.9	NW
99.6% Occurrence	-8	-9	2	4.4	W
Median of Extreme Lows	-17	-17	2	1	W

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	76	86	117	9.3	S
0.4% Occurrence	73	83	105	8.7	S
1.0% Occurrence	71	80	98	8.3	S
2.0% Occurrence	70	78	96	8.1	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	125	83	0.83	9	S
0.4% Occurrence	111	77	0.74	8	S
1.0% Occurrence	104	76	0.69	7.4	S
2.0% Occurrence	97	74	0.65	7.5	S

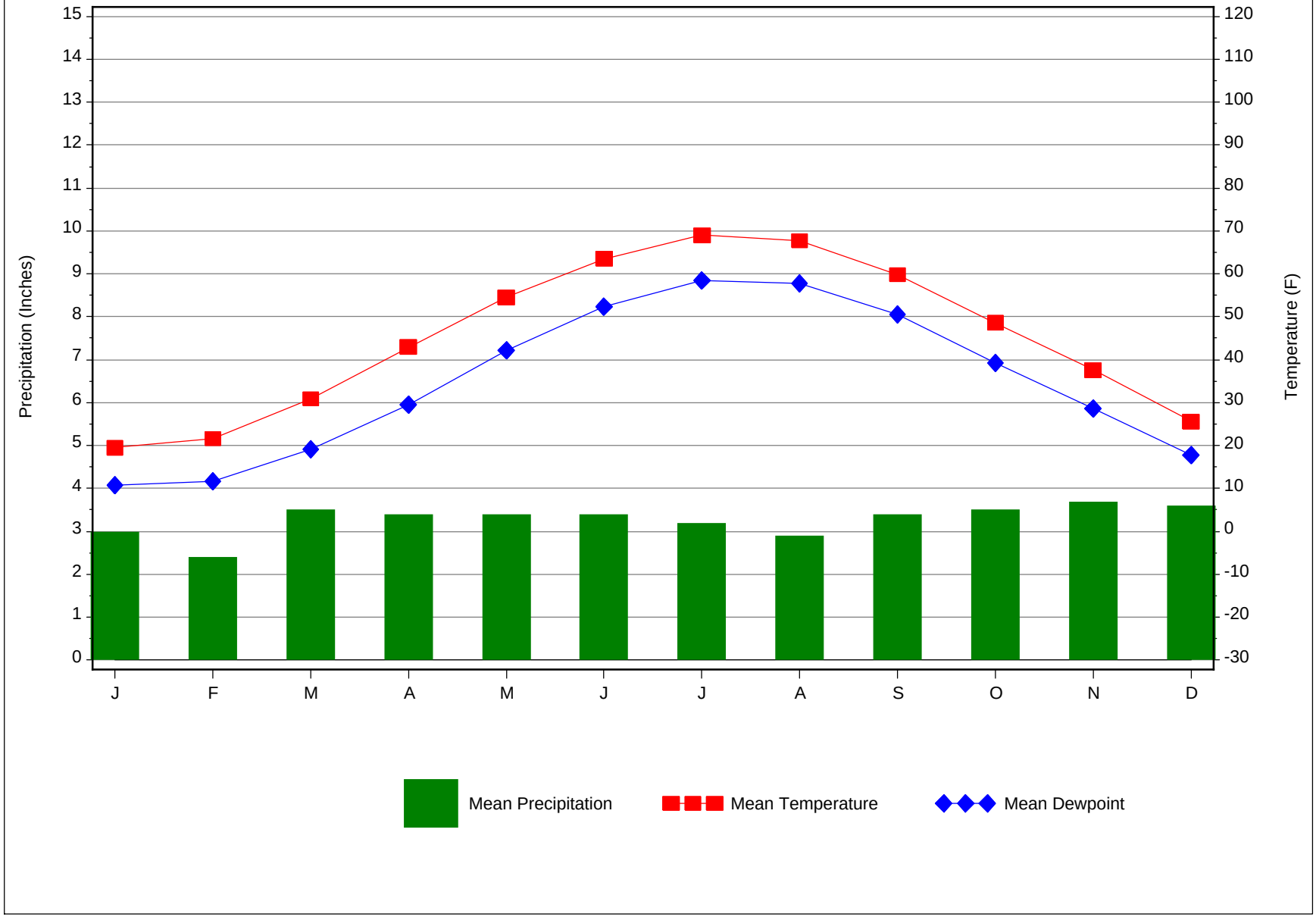
Air Conditioning/ Humid Area Criteria	**Threshold**	**T ≥ 93°F**	**T ≥ 80°F**	**Twb ≥ 73°F**	**Twb ≥ 67°F**
	# of Hours	8	241	50	439

Other Site Data

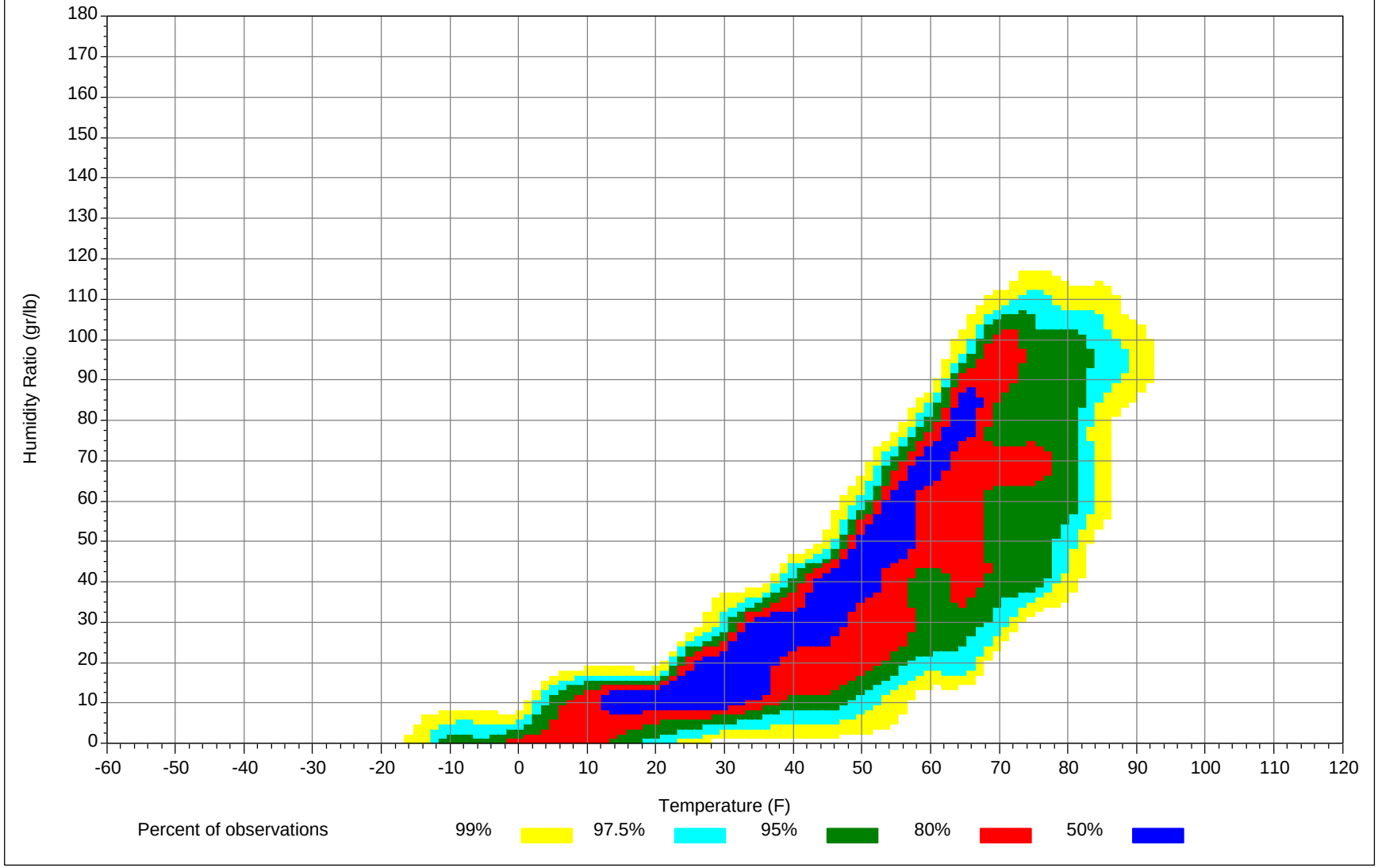
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
5	2.3	100	0.6 + 0.2
Ground Water Temperature (°F) 50 Foot Depth*	Frost Depth 50 Year Recurrence (in)	Ground Snow Load 50 Year Recurrence (lb/ft^2)	Average Annual Freeze-Thaw Cycles (#)
47.9	98	80	75

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

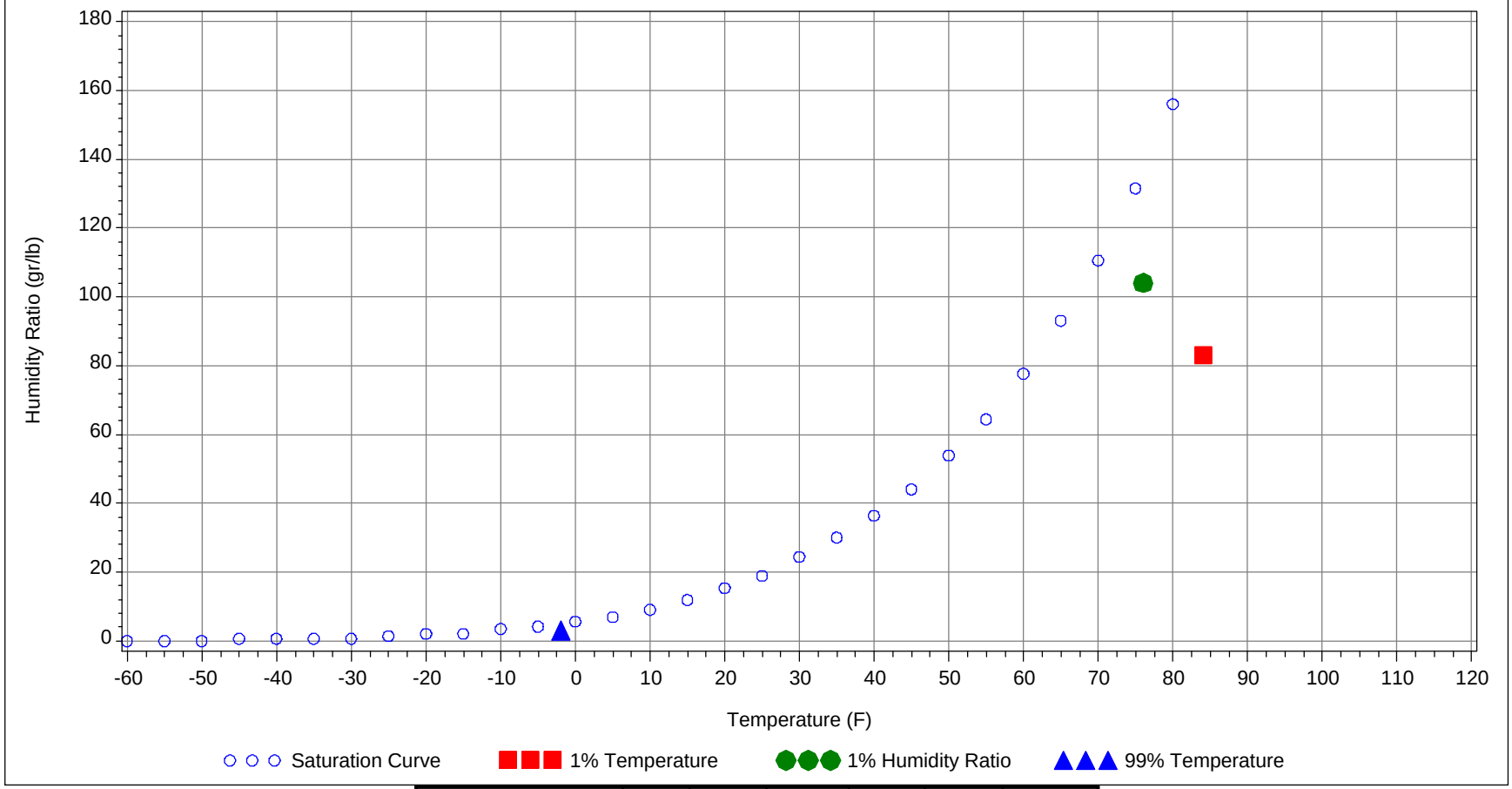
Average Annual Climate



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		69		83.0	33.2
99.0% Dry Bulb	-2.0				3.0	0.0
1.0% Humidity Ratio	104.0	76.0	70.4	68.0		34.3

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**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
95/ 99															
90/ 94															
85/ 89															
80/ 84												0	0	0	63
75/ 79												0	0	0	60.5
70/ 74												1	0	1	57.2
65/ 69											0	1	0	1	53.5
60/ 64											0	2	0	2	48.9
55/ 59		0	0	0	53.9		0		0	47	1	4	1	6	46.7
50/ 54	1	2	1	4	49.9	0	2	0	2	46.7	1	11	4	16	43.5
45/ 49	4	5	4	13	43.8	1	7	2	10	42.2	4	27	12	43	40.3
40/ 44	4	10	4	18	38.7	3	11	6	20	37.8	10	30	18	58	37
35/ 39	12	25	17	54	34.2	16	33	24	73	33.7	35	61	57	153	33.4
30/ 34	26	38	34	98	29.6	25	38	35	98	29	55	47	60	162	29.1
25/ 29	34	41	41	116	24.3	25	39	39	103	23.8	50	31	45	126	23.7
20/ 24	21	26	24	71	19.7	20	25	26	71	19.3	26	14	19	59	19.2
15/ 19	34	37	36	107	15.3	34	29	34	97	15.2	29	11	16	56	15.1
10/ 14	28	26	30	84	10.1	32	20	24	76	10.1	16	4	9	29	10
5/ 9	24	18	23	65	5.6	25	10	17	52	5.7	10	2	3	15	5.5
0/ 4	27	10	20	57	0.6	21	5	10	36	0.8	7	1	2	10	0.5
-5/ -1	12	3	5	20	-3.5	9	2	3	14	-3.4	2	0	1	3	-3.7
-10/ -6	13	3	5	21	-7.9	8	1	2	11	-7.7	2	0	0	2	-7.5
-15/-11	4	1	2	7	-12.4	3	0	0	3	-12.3	0			0	-12.1
-20/-16	3	0	0	3	-16.6	1		0	1	-16.7	0			0	-15
-25/-21	1			1	-21.7	0			0	-21.5					
-30/-26						0			0	-26.5					

Caution: This summary reflects the typical distribtion of temperature in a typical year. It does not reflect the typical mositure 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**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
95/ 99							0		0	65		0	0	0	74.8
90/ 94		0	0	0	69.2		1	0	1	66.2		4	0	4	71.8
85/ 89		0	0	0	65.8		2	0	2	65.8		9	1	10	69.2
80/ 84		0	0	0	59.4	0	7	1	8	63.5	1	24	5	30	66.9
75/ 79		1	0	1	58.2	1	13	3	17	60.5	2	42	12	56	63.7
70/ 74		4	1	5	54.5	2	29	9	40	57.6	10	56	32	98	61.4
65/ 69	0	5	1	6	52.5	2	30	12	44	54.9	19	35	35	89	59.7
60/ 64	0	20	5	25	48.7	10	54	31	95	52.9	57	41	64	162	57.6
55/ 59	2	30	12	44	46	30	49	49	128	50.7	68	21	54	143	53.8
50/ 54	9	46	27	82	43.9	60	37	64	161	47.8	54	7	27	88	49.7
45/ 49	32	59	52	143	40.9	79	21	56	156	43.9	22	2	7	31	45
40/ 44	39	33	47	119	37.8	37	5	17	59	39.6	5	0	0	5	40.8
35/ 39	69	28	59	156	34.1	22	1	6	29	35.5	1		0	1	37.7
30/ 34	53	9	27	89	29.4	5		0	5	30.9					
25/ 29	26	2	9	37	24.5	0			0	26.5					
20/ 24	6	0	1	7	19.8										
15/ 19	2	0	0	2	14.9										
10/ 14	0	0		0	10.5										
5/ 9	0			0	7										
0/ 4															
-5/ -1															
-10/ -6															
-15/-11															
-20/-16															
-25/-21															
-30/-26															

Caution: This summary reflects the typical distribtion of temperature in a typical year. It does not reflect the typical mositure 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**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
95/ 99		1		1	74.1		0		0	70.9		0		0	73
90/ 94		6	1	7	73.4		5	0	5	72.1		1	0	1	72.5
85/ 89	0	20	3	23	70.5		14	2	16	71		3	0	3	71
80/ 84	1	55	13	69	68.1	0	42	8	50	68.3	0	10	1	11	68.3
75/ 79	6	66	27	99	65.5	3	70	21	94	65.4	0	23	4	27	65.1
70/ 74	28	57	61	146	64.5	20	69	56	145	64.1	4	51	16	71	62.3
65/ 69	52	25	57	134	62.7	52	30	61	143	62.8	15	45	29	89	60.4
60/ 64	95	16	64	175	59.6	89	16	66	171	59.5	47	63	62	172	57.6
55/ 59	45	2	18	65	54.7	49	1	26	76	54.6	56	32	58	146	53.2
50/ 54	17	0	4	21	50.7	25	0	7	32	50.4	48	10	39	97	49.1
45/ 49	3		0	3	46.1	9		1	10	45.7	38	2	23	63	44.6
40/ 44	0			0	41	1			1	41.2	17	0	7	24	40.1
35/ 39						0			0	38	11		2	13	36.2
30/ 34											3		0	3	31.6
25/ 29											0			0	26
20/ 24															
15/ 19															
10/ 14															
5/ 9															
0/ 4															
-5/ -1															
-10/ -6															
-15/-11															
-20/-16															
-25/-21															
-30/-26															

Caution: This summary reflects the typical distribtion of temperature in a typical year. It does not reflect the typical mositure 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**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
95/ 99															
90/ 94															
85/ 89															
80/ 84		0		0	62.7										
75/ 79		3	0	3	62.7										
70/ 74	0	9	1	10	60.1		0		0	58.3					
65/ 69	2	16	4	22	58.7	0	1	0	1	56.7					
60/ 64	10	36	16	62	56.2	2	7	2	11	56.2		0	0	0	55.7
55/ 59	19	54	34	107	51.8	6	15	8	29	52.7	0	1	1	2	53.4
50/ 54	40	56	51	147	47.5	13	27	15	55	47.9	2	4	2	8	48.8
45/ 49	51	45	58	154	42.6	21	44	32	97	42.6	5	14	8	27	43.3
40/ 44	40	19	33	92	38.4	26	39	29	94	38.1	8	17	9	34	39
35/ 39	48	9	35	92	34.6	43	53	51	147	33.7	24	41	28	93	34.1
30/ 34	25	1	13	39	30.4	52	32	49	133	29.1	42	48	48	138	29.9
25/ 29	12		3	15	25.9	42	15	34	91	24.5	42	42	46	130	24.6
20/ 24	1		0	1	21.5	17	4	12	33	19.9	24	27	28	79	19.8
15/ 19	0			0	18.7	13	2	7	22	16.1	33	28	33	94	15.6
10/ 14						3	0	2	5	11.3	27	15	21	63	10.5
5/ 9						2	0	0	2	7.5	18	6	12	36	6
0/ 4						0			0	2.8	12	3	7	22	1
-5/ -1											4	1	2	7	-3.1
-10/ -6											3	0	1	4	-7.6
-15/-11											1	0	0	1	-11.8
-20/-16											0	0	0	0	-16.2
-25/-21											0		0	0	-21.2
-30/-26															

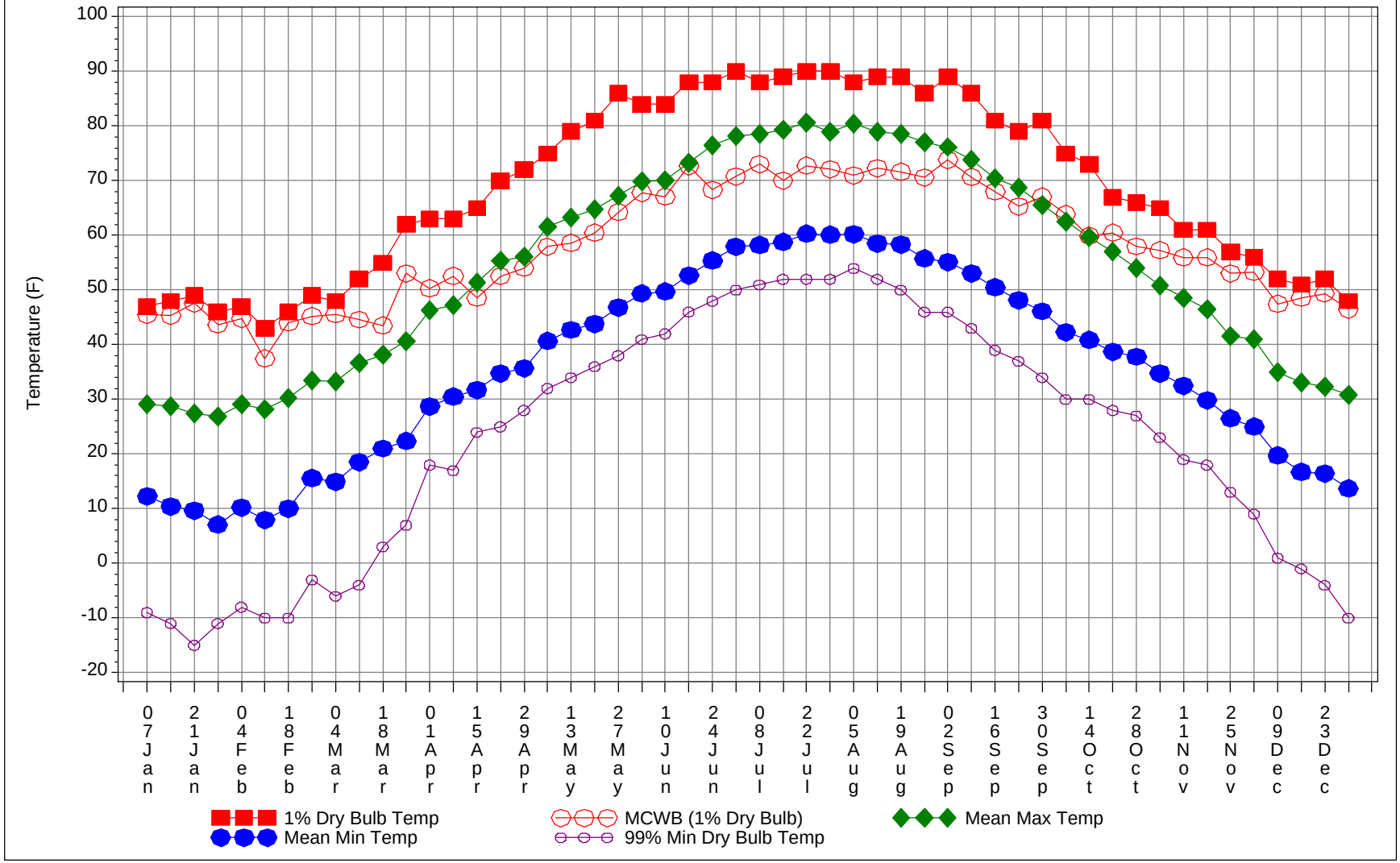
Caution: This summary reflects the typical distribtion of temperature in a typical year. It does not reflect the typical mositure distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary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

Dry-Bulb Temperature Hours For An Average Year

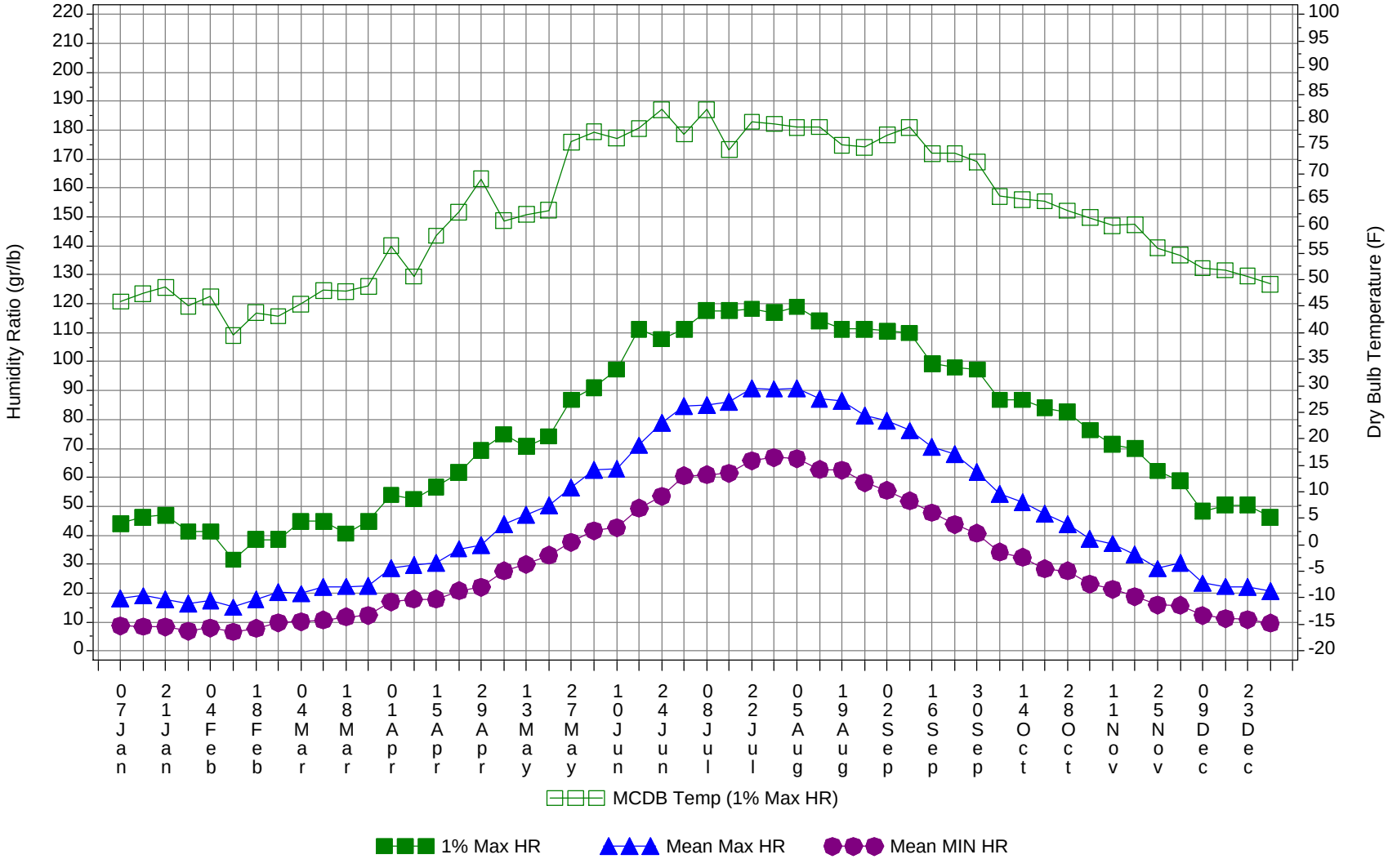
	Annual				
Temperature Range (°F)	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
95/ 99		1	0	1	72.9
90/ 94		18	2	20	72.2
85/ 89	0	48	7	55	70.2
80/ 84	3	141	28	172	67.7
75/ 79	13	222	69	304	64.8
70/ 74	65	279	178	522	62.8
65/ 69	147	190	204	541	60.9
60/ 64	316	255	314	885	57.5
55/ 59	278	209	261	748	52.5
50/ 54	271	202	241	714	47.8
45/ 49	268	225	255	748	42.8
40/ 44	188	162	170	520	38.3
35/ 39	278	249	277	804	34
30/ 34	284	212	264	760	29.4
25/ 29	230	169	214	613	24.2
20/ 24	115	95	109	319	19.6
15/ 19	145	107	126	378	15.4
10/ 14	105	66	85	256	10.2
5/ 9	77	37	55	169	5.7
0/ 4	67	20	39	126	0.7
-5/ -1	27	7	11	45	-3.4
-10/ -6	27	4	9	40	-7.8
-15/-11	9	1	3	13	-12.3
-20/-16	4	0	1	5	-16.5
-25/-21	1		0	1	-21.5
-30/-26	0			0	-26.5

Caution: This summary reflects the typical distribtion of temperature in a typical year. It does not reflect the typical mositure 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



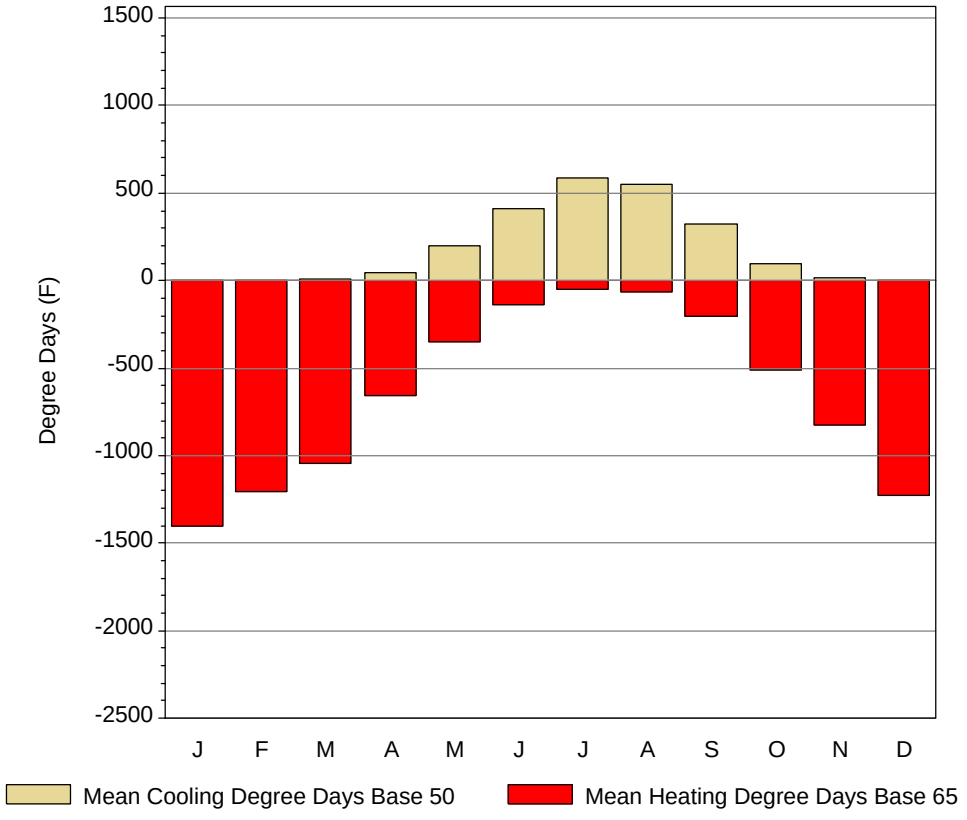
Long Term Humidity and Dry Bulb Temperature Summary



Long Term Humidity and Dry Bulb Temperature Summary

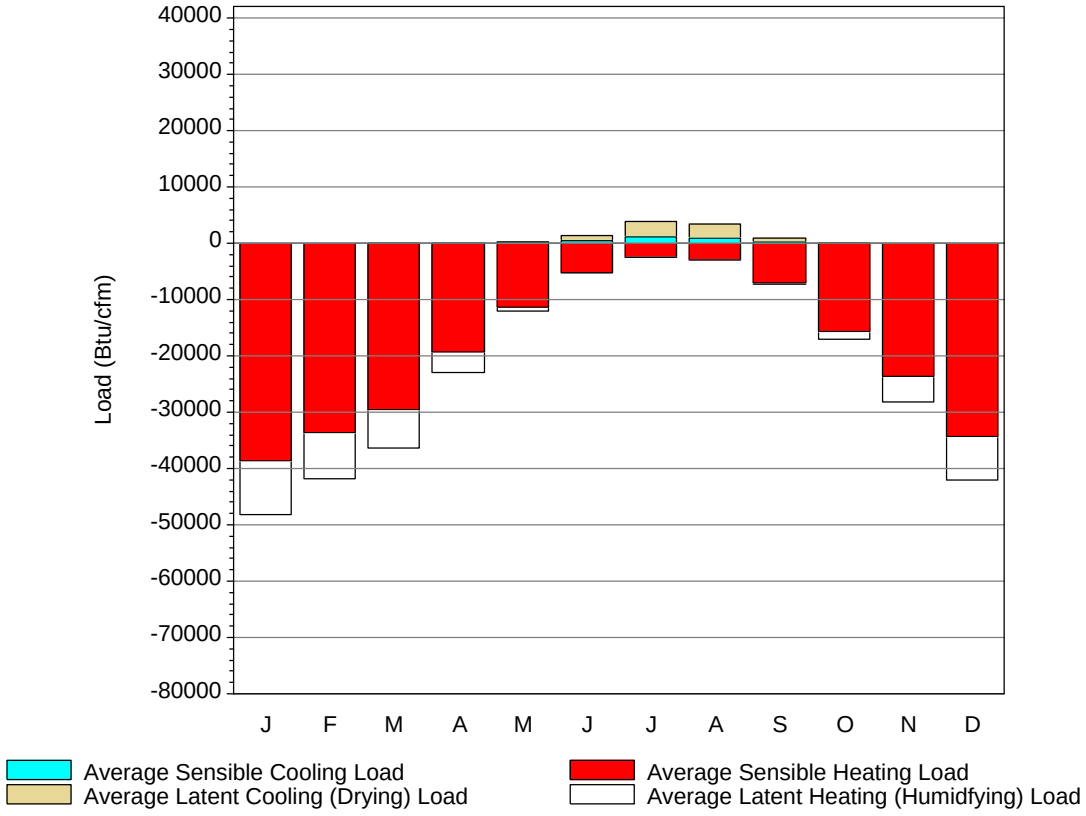
Week Ending	1.0% Temp (°F)	MCWB@ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB@ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	47	45.5	29.1	12.3	-9	44.1	45.9	18.3	8.6
14-Jan	48	45.3	28.8	10.4	-11	46.2	47.4	19.1	8.4
21-Jan	49	47.6	27.4	9.6	-15	46.9	48.6	17.7	8.3
28-Jan	46	43.7	26.9	7.1	-11	41.3	45	16.4	6.8
4-Feb	47	44.7	29.1	10.2	-8	41.3	46.8	17.4	7.9
11-Feb	43	37.5	28.1	7.9	-10	31.5	39.5	15.1	6.6
18-Feb	46	44.1	30.3	10	-10	38.5	43.8	17.7	7.7
25-Feb	49	45.2	33.4	15.6	-3	38.5	43.1	20.4	9.8
4-Mar	48	45.6	33.2	14.9	-6	44.8	45.4	19.8	10.1
11-Mar	52	44.6	36.6	18.5	-4	44.8	48	22	10.7
18-Mar	55	43.5	38.1	21	3	40.6	47.8	22.3	11.8
25-Mar	62	53	40.7	22.4	7	44.8	48.8	22.5	12.3
1-Apr	63	50.3	46.3	28.7	18	53.9	56.4	28.7	17
8-Apr	63	52.6	47.3	30.5	17	52.5	50.6	29.8	17.9
15-Apr	65	48.6	51.4	31.7	24	56.7	58.3	30.4	17.9
22-Apr	70	52.6	55.3	34.7	25	61.6	62.8	35.3	20.8
29-Apr	72	54.1	56.1	35.7	28	69.3	69	36.7	22.1
6-May	75	57.9	61.6	40.7	32	74.9	61.1	43.7	27.7
13-May	79	58.6	63.2	42.7	34	70.7	62.3	47	29.9
20-May	81	60.5	64.7	43.8	36	74.2	63.1	50.3	33
27-May	86	64.3	67.3	46.8	38	86.8	76	56.4	37.6
4-Jun	84	67.8	69.9	49.4	41	91	77.9	62.7	41.5
10-Jun	84	67.1	70	49.7	42	97.3	76.7	62.9	42.6
17-Jun	88	72.7	73.2	52.7	46	111.3	78.5	71.1	49.4
24-Jun	88	68.3	76.4	55.4	48	107.8	82.1	78.9	53.5
1-Jul	90	70.8	78.1	57.9	50	111.3	77.4	84.6	60.5
8-Jul	88	73	78.5	58.2	51	117.6	82.1	85	60.9
15-Jul	89	70	79.3	58.8	52	117.6	74.5	86.1	61.5
22-Jul	90	72.8	80.6	60.3	52	118.3	79.8	90.7	65.7
29-Jul	90	72.1	79	60.1	52	116.9	79.4	90.6	66.9
5-Aug	88	71	80.5	60.2	54	119	78.7	90.8	66.5
12-Aug	89	72.3	79	58.5	52	114.1	78.8	87.1	62.7
19-Aug	89	71.6	78.6	58.3	50	111.3	75.4	86.6	62.5
26-Aug	86	70.6	77	55.8	46	111.3	75	81.4	58.1
2-Sep	89	73.8	76.2	55.1	46	110.6	77.3	79.7	55.5
9-Sep	86	70.7	73.8	53	43	109.9	78.7	76.2	51.8
16-Sep	81	68	70.5	50.5	39	99.4	73.8	70.6	47.8
23-Sep	79	65.3	68.8	48.1	37	98	73.8	67.9	43.8
30-Sep	81	67.1	65.6	46.1	34	97.3	72.2	61.8	40.7
7-Oct	75	63.9	62.6	42.3	30	86.8	65.7	54.4	34.2
14-Oct	73	59.9	59.6	40.9	30	86.8	65.1	51.3	32.4
21-Oct	67	60.5	57.1	38.7	28	84	64.8	47.3	28.3
28-Oct	66	58	54.1	37.8	27	82.6	63	43.7	27.6
4-Nov	65	57.3	50.8	34.7	23	76.3	61.7	38.9	23.2
11-Nov	61	56	48.6	32.5	19	71.4	60.2	37.1	21.3
18-Nov	61	56	46.4	29.8	18	70	60.4	33.4	18.8
25-Nov	57	53	41.6	26.5	13	62.3	56	28.5	15.9
2-Dec	56	53.3	41	25	9	58.8	54.6	30.4	15.8
9-Dec	52	47.5	34.9	19.7	1	48.3	52.2	23.4	12.2
16-Dec	51	48.6	33	16.7	-1	50.4	51.8	22.3	11.2
23-Dec	52	49.4	32.4	16.4	-4	50.4	50.7	22	10.9
31-Dec	48	46.4	30.9	13.7	-10	46.2	49.2	20.7	9.6

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	0.4	0	1399.8
FEB	0.2	0	1208
MAR	6.3	0.8	1044
APR	43.3	3	659.9
MAY	199.2	30.1	352.1
JUN	411.9	96	139.6
JUL	589.5	176.6	52.3
AUG	551	151.8	67.1
SEP	320.9	51.6	204.9
OCT	100.2	5.7	512.6
NOV	17.3	0.1	825.3
DEC	1.2	0	1230.2
ANN	2241.4	515.7	7695.8

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	-38692	0	-9431
FEB	0	-33509	0	-8363
MAR	4	-29464	0	-6846
APR	10	-19403	0	-3582
MAY	136	-11246	48	-694
JUN	526	-5137	855	-28
JUL	1123	-2393	2771	-1
AUG	841	-2877	2534	-2
SEP	194	-7111	774	-122
OCT	8	-15622	62	-1462
NOV	0	-23723	0	-4328
DEC	0	-34298	0	-7766
ANN	2842	-223475	7044	-42625

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

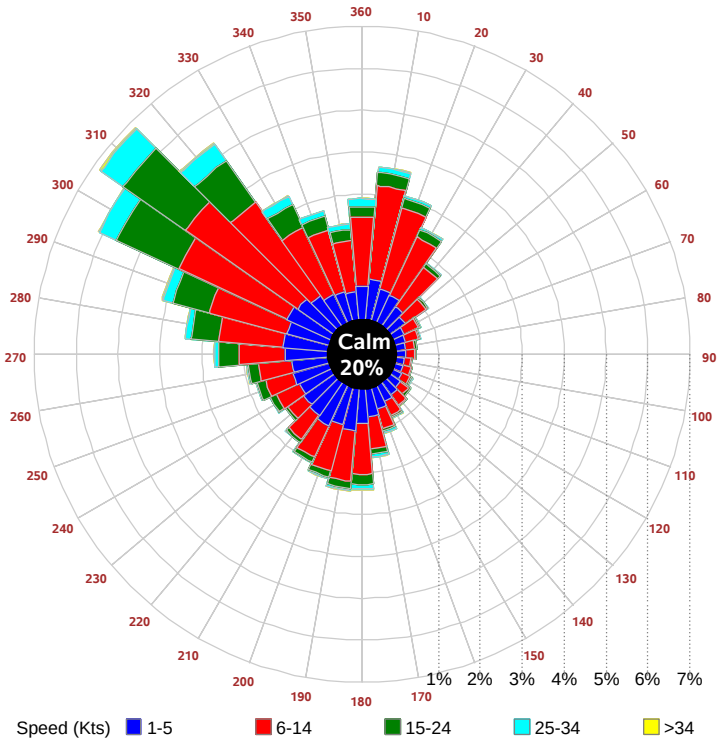
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ.	Global													
	Std.Dev.													
	Minimum													
	Maximum													
	Diffuse													
Clear Day	Global													
NORTH	Global													
	Diffuse													
Clear Day	Global													
EAST	Global													
	Diffuse													
Clear Day	Global													
SOUTH	Global													
	Diffuse													
Clear Day	Global													
WEST	Global													
	Diffuse													
Clear Day	Global													

AVERAGE 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													

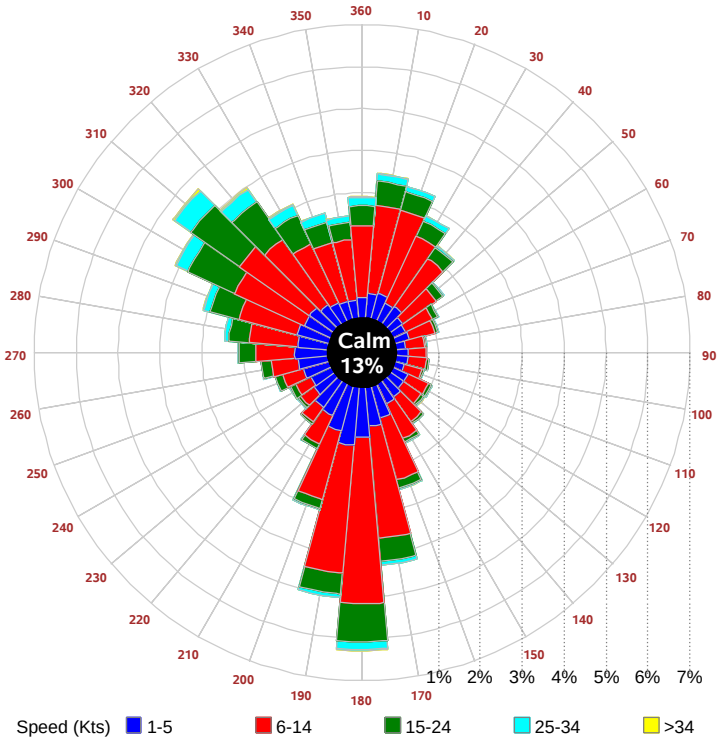
AVERAGE INCIDENT ILLUMINENCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9											
				March					June		
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear										
	M.Cloudy										
NORTH	M.Clear										
	M.Cloudy										
EAST	M.Clear										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

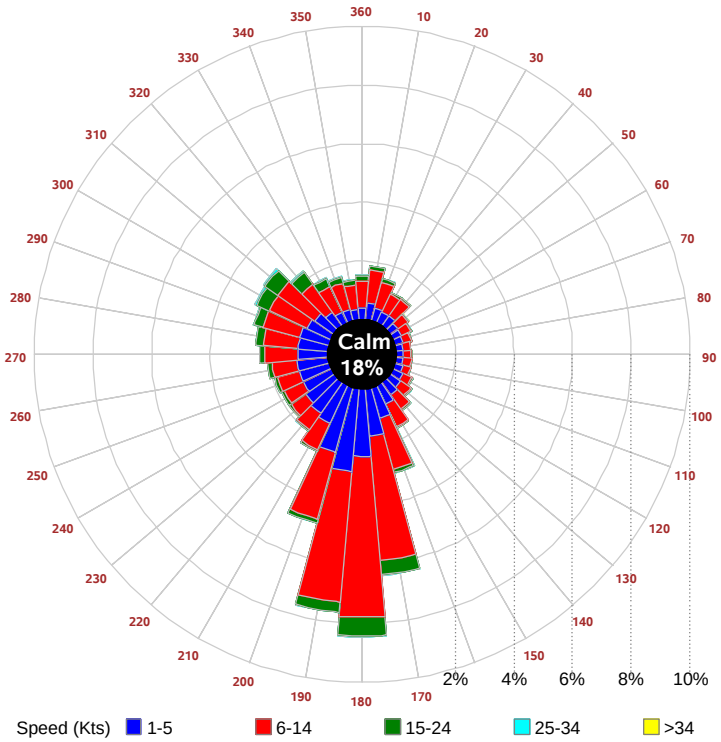
Wind Summary - December, January, and February



Wind Summary - March, April, and May



Wind Summary - June, July, and August



Wind Summary - September, October, and November