

CAPE ROMANZOFF AK

Latitude = 61.78 N

Longitude = 166.00 W

Period of Record = 1967 to 1996

WMO No. 702120

Elevation = 479 feet

Average Pressure = 29.21 inches Hg

Design Criteria Data

	Design Value	Mean Coincident (Average) Values			
		Wet Bulb Temperature (°F)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Dry Bulb Temperature (T)	(°F)				
Median of Extreme Highs	68	59	64	9.9	N
0.4% Occurrence	64	57	58	9.6	NE
1.0% Occurrence	60	54	54	9.1	NNE
2.0% Occurrence	57	52	53	9.6	NNE
Mean Daily Range	8	-	-	-	-
97.5% Occurrence	-7	-7	3	20.5	NNE
99.0% Occurrence	-12	-12	2	20.0	NNE
99.6% Occurrence	-16	-16	1	20.1	NNE
Median of Extreme Lows	-17	-17	1	19.7	NNE
	Design Value	Mean Coincident (Average) Values			
		Dry Bulb Temperature (°F)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Wet Bulb Temperature (T_{wb})	(°F)				
Median of Extreme Highs	61	67	71	10.5	ENE
0.4% Occurrence	58	63	65	9.7	N
1.0% Occurrence	55	58	59	9.6	NNE
2.0% Occurrence	53	56	55	9.7	NNE
	Design Value	Mean Coincident (Average) Values			
		Dry Bulb Temperature (°F)	Vapor Pressure (in. Hg)	Wind Speed (mph)	Prevailing Direction (NSEW)
Humidity Ratio (HR)	(gr/lb)				
Median of Extreme Highs	74	63	0.48	11.0	N
0.4% Occurrence	67	61	0.44	10.2	S
1.0% Occurrence	62	57	0.41	10.2	NNE
2.0% Occurrence	57	55	0.38	9.9	S
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		0	0	0	1

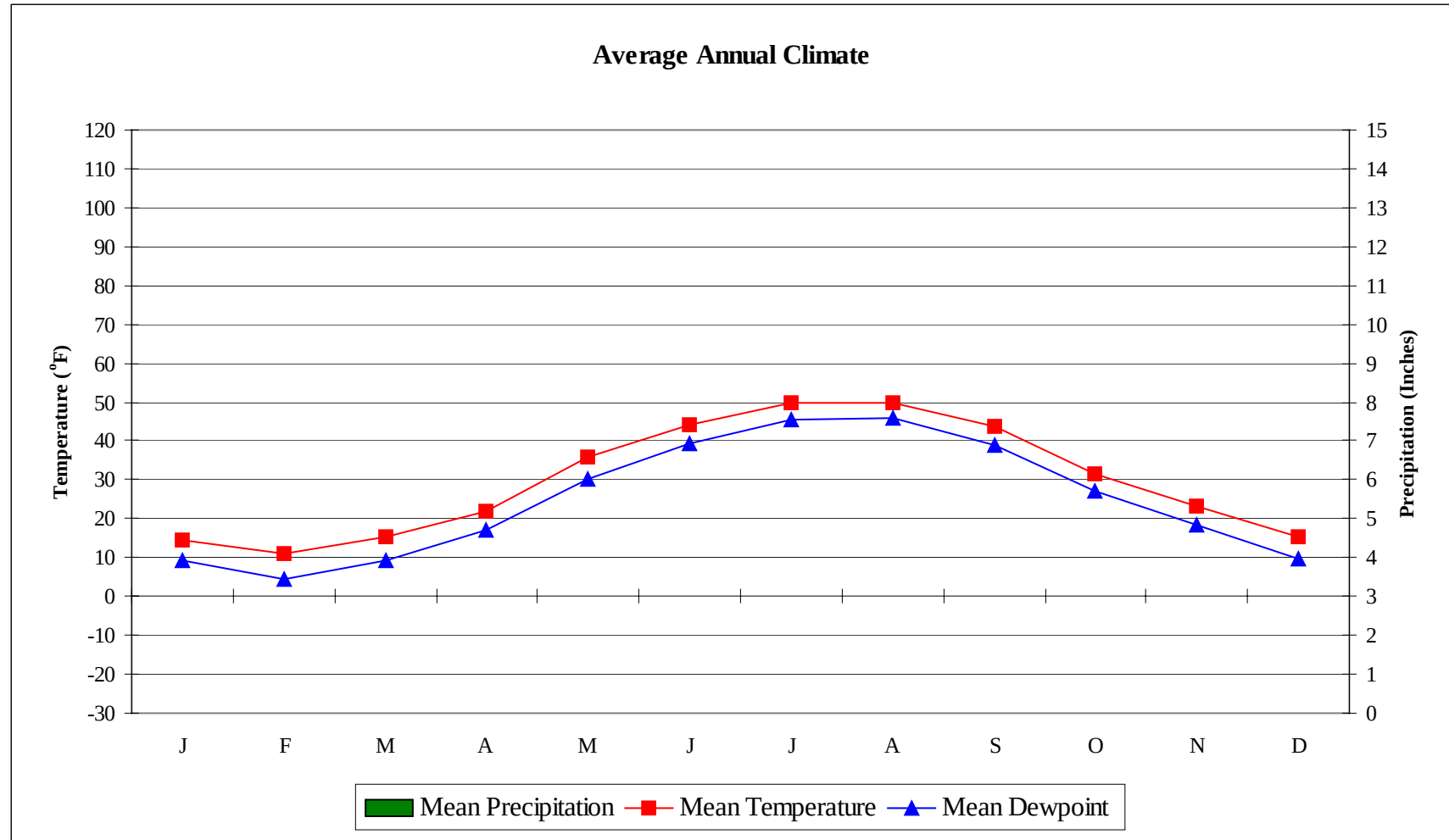
Other Site Data

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	0.7	130	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 (#)
32.6	N/A	N/A	41

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

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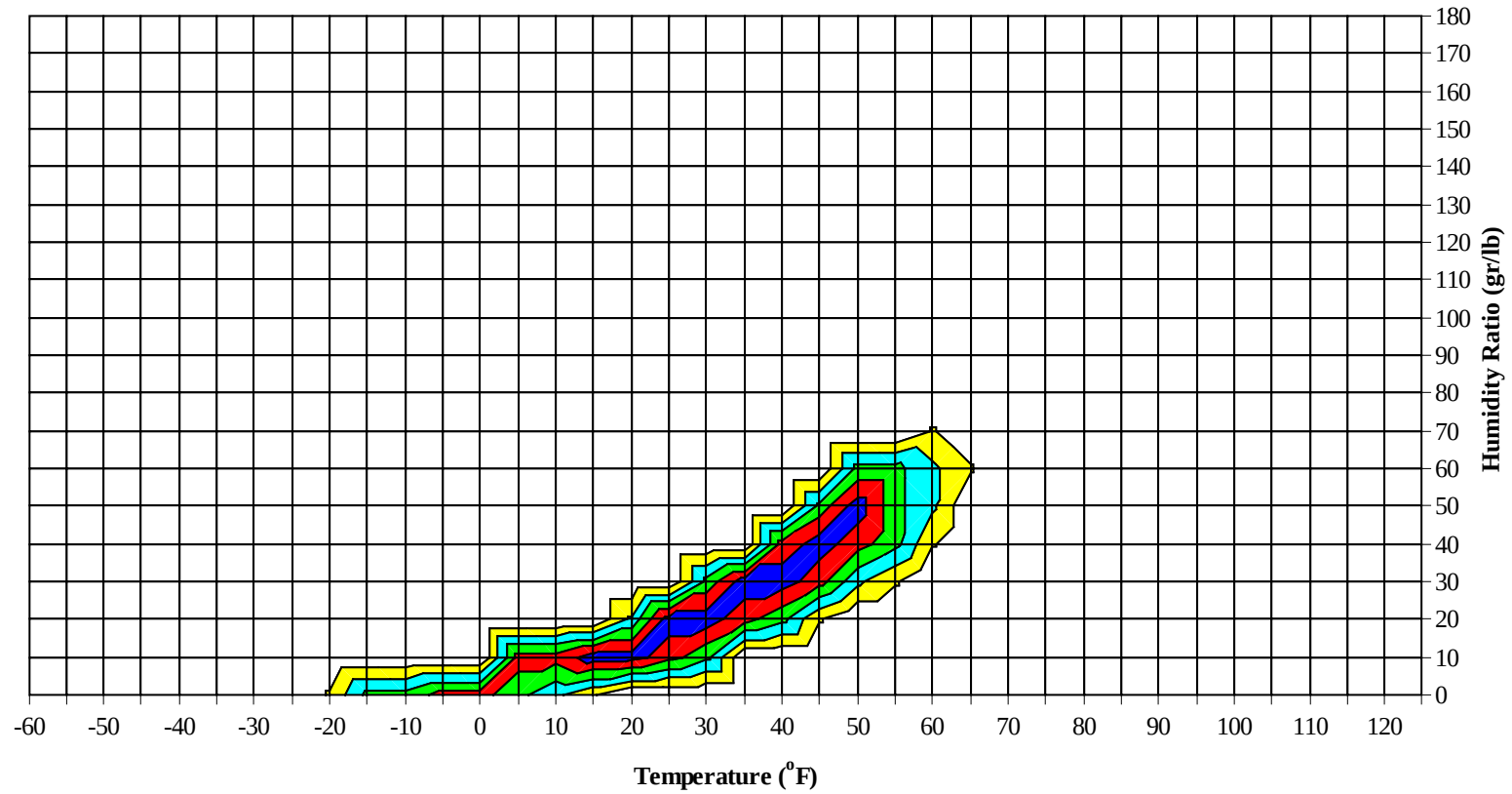


No Precipitation Data Available

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Long Term Psychrometric Summary

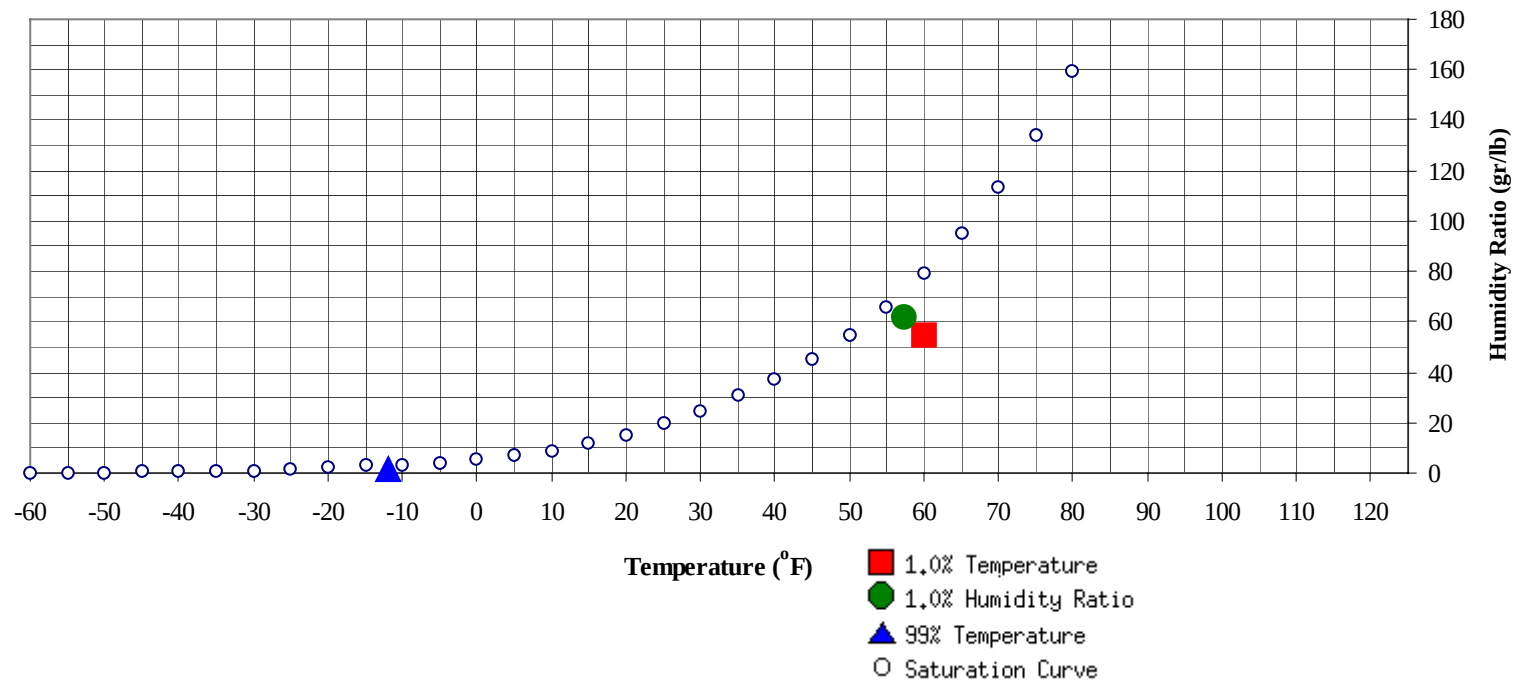


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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Psychrometric Summary of Peak Design Values



99% Dry Bulb	(°F)	MCHR (gr/lb)	Enthalpy (btu/lb)	1.0% Humidity Ratio	(gr/lb)	MCDB (°F)	MCWB (°F)	MC Dewpt (°F)	Enthalpy (btu/lb)
	-12	1.9	-2.6		61.6	57.4	54.8	53.1	23.3

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	60	54.8	54.3	22.9

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Dry-Bulb Temperature Hours For An Average Year (Sheet 1 of 5)

Period of Record = 1967 to 1996

Temperature Range (°F)	January					February					March				
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00		
80 / 84															
75 / 79															
70 / 74															
65 / 69															
60 / 64															
55 / 59															
50 / 54															
45 / 49	0			0	38.8						0			0	36.0
40 / 44	1	1	0	2	36.9	1	1	0	2	37.4	1	1	1	3	35.9
35 / 39	6	6	5	17	33.5	5	7	9	22	34.1	6	10	9	25	32.9
30 / 34	38	36	40	114	30.6	26	26	25	77	30.4	33	40	43	116	30.0
25 / 29	40	40	40	121	25.8	25	27	25	77	25.5	39	40	39	117	25.6
20 / 24	27	28	29	84	20.7	18	21	21	61	20.4	28	25	22	75	20.4
15 / 19	25	24	22	70	16.1	18	17	21	56	15.4	27	25	27	78	15.7
10 / 14	19	20	21	60	10.9	16	19	17	52	10.6	23	23	27	73	10.6
5 / 9	20	21	23	65	6.0	20	18	24	61	5.8	22	26	23	71	6.0
0 / 4	19	20	19	59	1.2	21	21	22	64	1.2	25	22	26	73	1.2
-5 / -1	19	17	17	53	-3.2	22	22	20	64	-3.2	18	13	16	47	-3.1
-10 / -6	18	20	18	57	-7.6	24	24	25	73	-7.4	13	11	9	33	-7.2
-15 / -11	11	11	9	32	-11.7	16	15	9	41	-11.8	7	7	5	20	-12.1
-20 / -16	3	3	3	8	-17.2	8	5	5	19	-16.6	5	4	1	10	-16.9
-25 / -21	1	1	1	3	-21.4	2	1	1	4	-21.4	1	1	1	3	-22.3
-30 / -26			0	0	-25.0	0	0	0	0	-25.4	1	0	0	1	-25.3

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.

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Dry-Bulb Temperature Hours For An Average Year (Sheet 2 of 5)

Period of Record = 1967 to 1996

Temperature Range (°F)	April					May					June				
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00		
80 / 84											0			0	78.0
75 / 79											0			0	74.0
70 / 74							0		0	61.0	0	0	0	0	63.1
65 / 69							1	0	1	59.1	0	1	1	2	58.2
60 / 64						0	1	0	1	52.3	1	7	5	13	53.7
55 / 59						1	4	2	7	48.6	8	22	18	48	50.6
50 / 54						4	10	8	22	45.4	22	39	41	102	47.8
45 / 49	0	1	1	2	38.0	14	29	27	70	42.1	53	56	53	162	44.2
40 / 44	2	6	6	13	36.2	43	50	55	148	38.7	71	63	67	201	40.5
35 / 39	15	24	19	59	33.4	50	57	55	161	34.8	56	40	43	139	36.2
30 / 34	47	53	56	156	30.5	66	54	55	174	30.9	27	11	11	49	32.0
25 / 29	45	40	43	128	25.8	45	28	32	105	26.2	3	1	0	4	27.6
20 / 24	33	32	30	94	20.6	17	9	9	36	21.3					
15 / 19	25	27	28	81	15.9	4	2	2	8	16.1					
10 / 14	26	23	26	76	10.9	2	2	2	6	11.0					
5 / 9	20	17	17	55	6.4	3	1	0	4	6.9					
0 / 4	18	11	9	37	1.6	0			0	2.6					
-5 / -1	7	4	3	15	-2.5										
-10 / -6	2	1	1	4	-6.5										
-15 / -11	1	0	0	1	-10.7										
-20 / -16															
-25 / -21															
-30 / -26															

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Dry-Bulb Temperature Hours For An Average Year (Sheet 3 of 5)

Period of Record = 1967 to 1996

Temperature Range (°F)	July					August					September				
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00		
80 / 84															
75 / 79		0	0	0	63.5		0	0	0	67.8					
70 / 74	0	1	1	2	60.4	1	1	1	3	63.0					
65 / 69	1	6	4	10	57.9	1	4	2	7	59.6					
60 / 64	5	15	15	35	55.5	4	9	8	21	56.3			2	1	3
55 / 59	19	37	35	91	52.5	18	36	30	85	53.4			7	6	14
50 / 54	57	71	71	200	49.3	69	80	80	229	49.9	19	33	31	84	48.5
45 / 49	108	90	93	291	45.8	115	98	104	317	45.8	76	87	85	248	44.8
40 / 44	53	27	27	107	41.9	36	18	21	75	41.0	78	70	70	218	40.5
35 / 39	5	1	2	8	37.0	5	1	1	7	35.8	45	29	34	107	35.0
30 / 34						0			0	33.0	16	11	12	40	30.5
25 / 29											3	1	1	5	25.6
20 / 24											1	0	0	1	20.8
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															
-30 / -26															

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Dry-Bulb Temperature Hours For An Average Year (Sheet 4 of 5)

Period of Record = 1967 to 1996

Temperature Range (°F)	October					November					December				
	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00			01 To 08	09 To 16	17 To 00		
80 / 84															
75 / 79															
70 / 74															
65 / 69															
60 / 64															
55 / 59															
50 / 54		0	0	0	47.1										
45 / 49	2	5	5	11	43.7		0		0	44.0					
40 / 44	26	29	30	85	39.8	2	2	1	5	38.5	1	1	1	3	36.5
35 / 39	54	59	51	164	35.4	21	21	22	64	34.9	8	9	9	26	33.8
30 / 34	71	74	71	216	30.4	44	46	48	138	30.7	32	32	32	96	30.7
25 / 29	55	49	55	158	25.5	46	48	45	138	25.4	32	33	33	97	25.8
20 / 24	26	22	23	72	20.7	48	48	51	146	20.6	29	24	30	84	20.5
15 / 19	10	8	9	27	16.2	38	36	37	110	16.0	28	29	30	87	15.7
10 / 14	4	3	3	10	11.2	20	20	18	59	11.1	29	28	29	86	10.9
5 / 9	1	0	0	1	6.6	13	11	11	36	6.1	30	28	32	90	5.8
0 / 4						6	7	6	19	1.6	29	29	23	81	1.1
-5 / -1						2	1	1	4	-2.8	14	19	17	50	-3.0
-10 / -6						1	1	0	2	-6.7	12	10	10	32	-7.0
-15 / -11											4	4	2	10	-12.3
-20 / -16											1	1	0	2	-17.1
-25 / -21											0	0		0	-21.2
-30 / -26															

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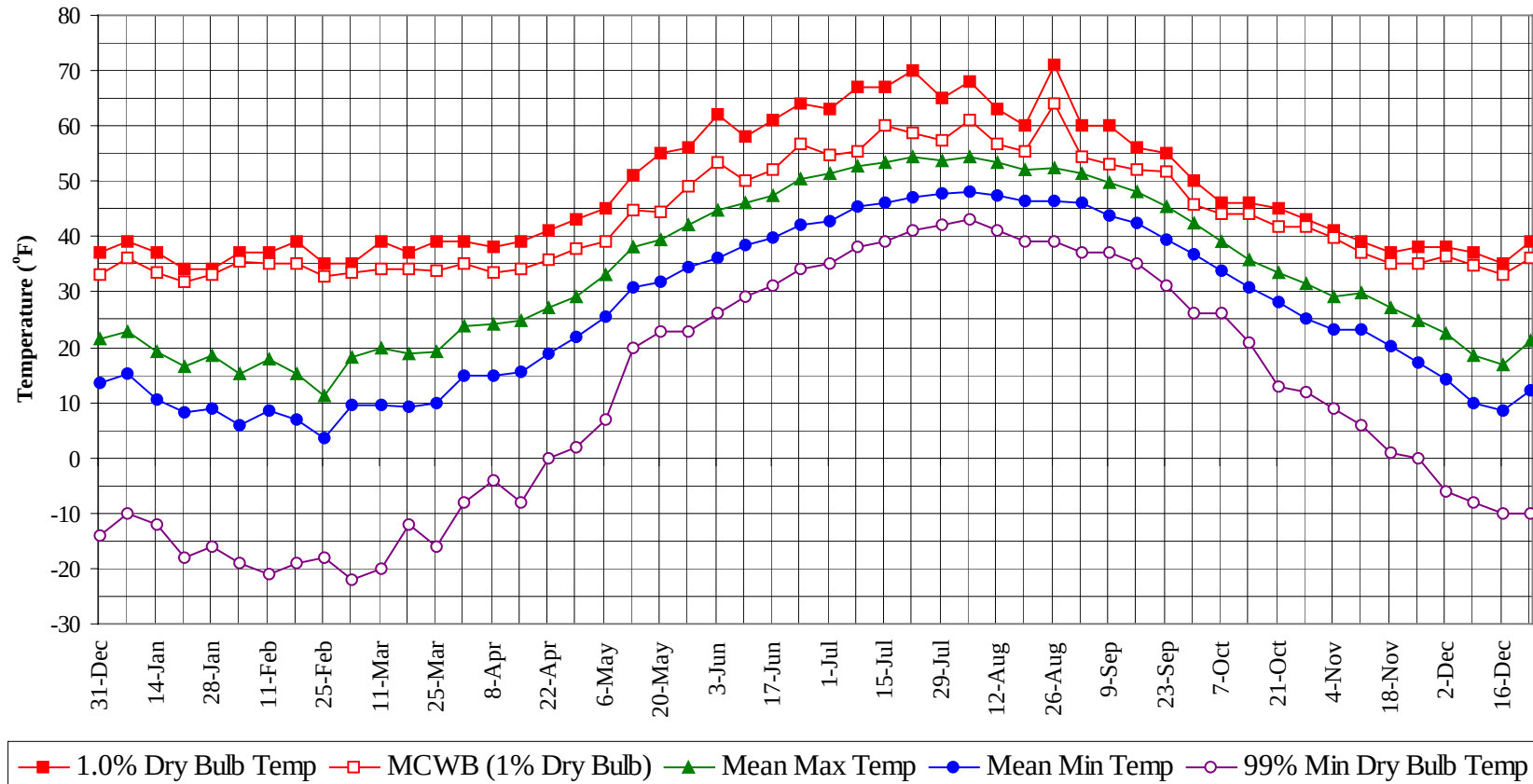
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)

Period of Record = 1967 to 1996

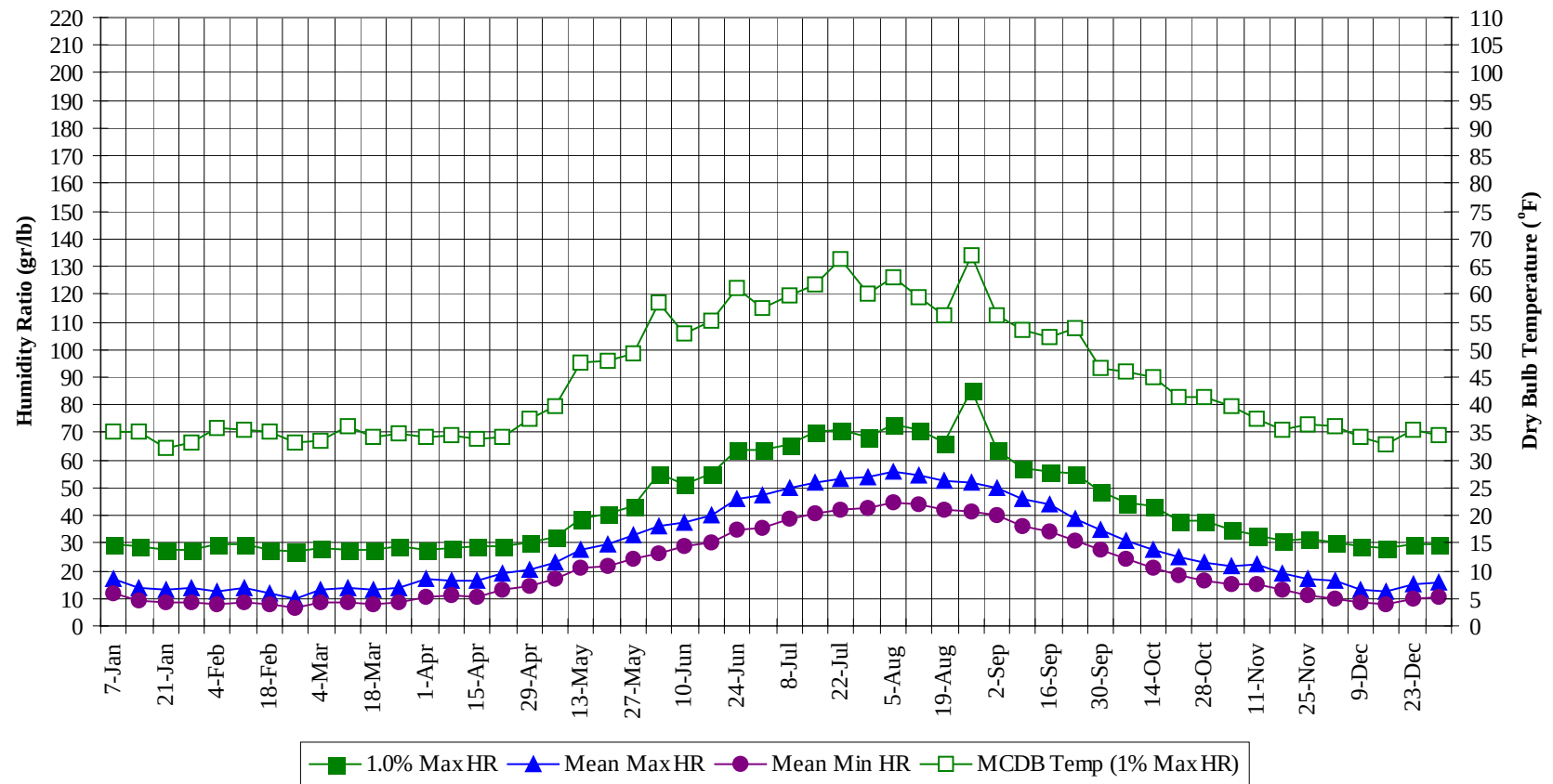
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
80 / 84	0			0	78.0
75 / 79	0	1	1	2	66.5
70 / 74	1	3	2	6	61.9
65 / 69	2	11	7	20	58.6
60 / 64	10	35	30	75	55.2
55 / 59	48	106	91	245	52.3
50 / 54	173	236	234	643	49.0
45 / 49	373	371	377	1122	45.1
40 / 44	318	271	286	876	40.2
35 / 39	280	266	265	811	35.0
30 / 34	402	384	397	1183	30.6
25 / 29	331	305	315	951	25.7
20 / 24	226	209	216	650	20.6
15 / 19	173	166	174	513	15.8
10 / 14	138	136	141	416	10.8
5 / 9	126	121	126	373	6.0
0 / 4	115	107	101	322	1.2
-5 / -1	80	74	67	221	-3.1
-10 / -6	66	66	56	187	-7.3
-15 / -11	37	37	23	97	-11.9
-20 / -16	15	12	8	36	-16.8
-25 / -21	4	3	2	9	-21.7
-30 / -26	1	1	0	2	-25.3

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

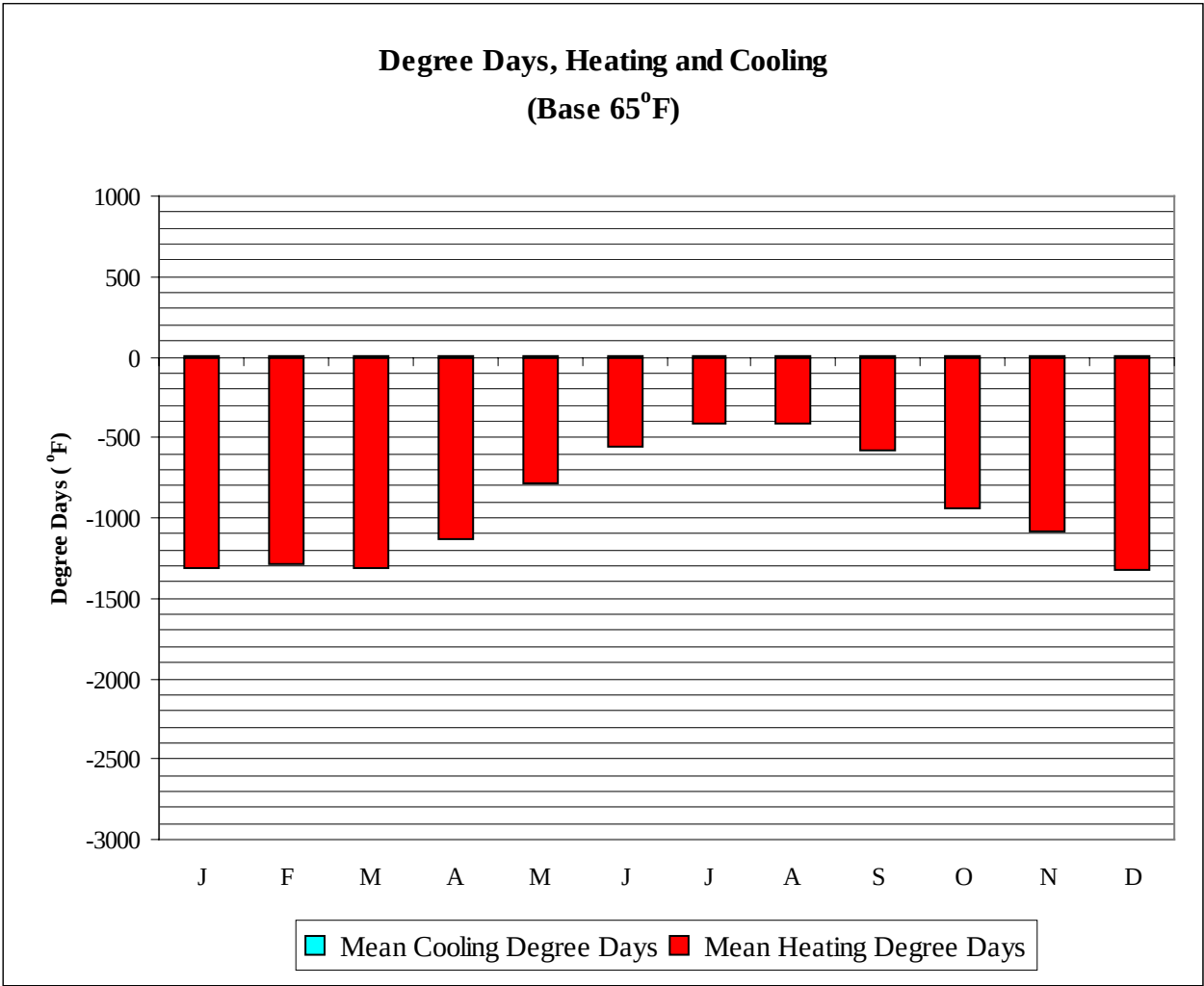


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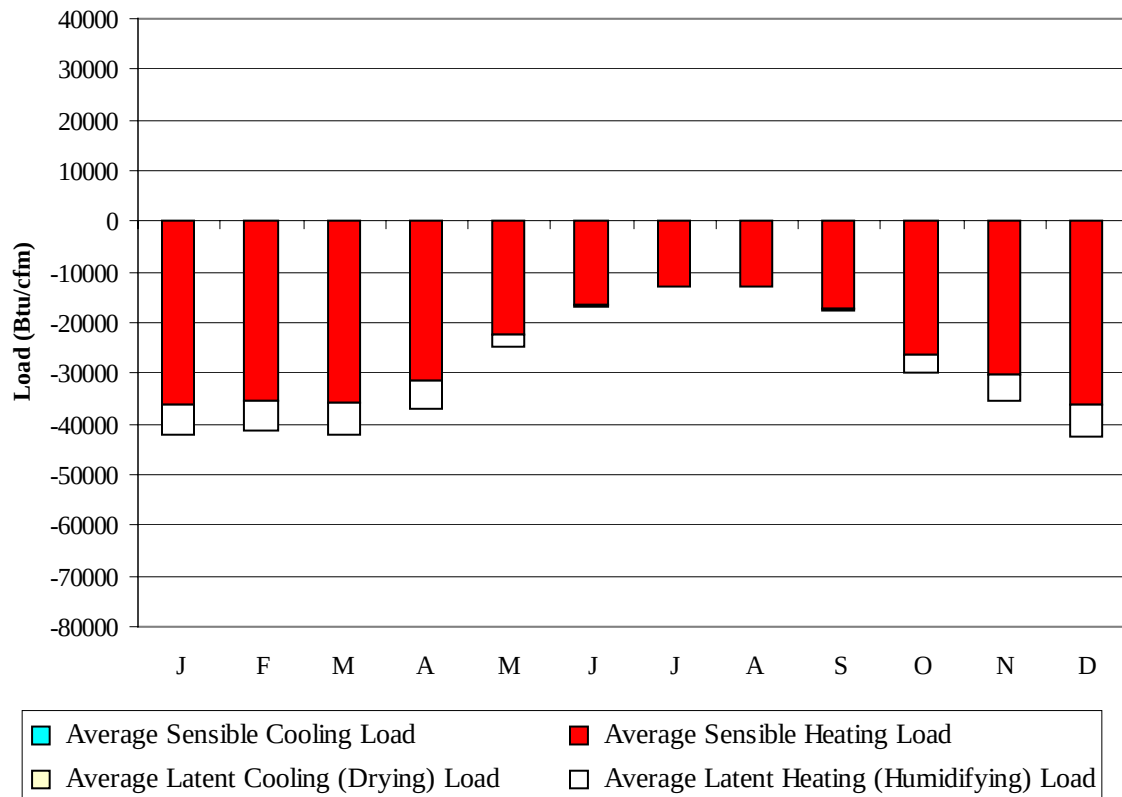
Long Term Dry Bulb Temperature and Humidity Summary

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	39.0	36.0	22.9	15.1	-10.0	29.4	35.2	17.2	12.0
14-Jan	37.0	33.3	19.1	10.5	-12.0	28.7	35.1	13.8	9.0
21-Jan	34.0	32.0	16.4	8.2	-18.0	27.3	32.3	12.9	8.5
28-Jan	34.0	33.0	18.4	9.0	-16.0	27.3	33.1	14.0	8.8
4-Feb	37.0	35.3	15.2	5.9	-19.0	29.4	35.8	12.6	8.0
11-Feb	37.0	35.2	17.9	8.5	-21.0	29.4	35.6	14.0	8.7
18-Feb	39.0	35.2	15.1	6.9	-19.0	27.3	35.3	12.0	8.1
25-Feb	35.0	32.9	11.3	3.4	-18.0	26.6	33.1	10.0	6.4
4-Mar	35.0	33.4	18.3	9.6	-22.0	28.0	33.6	13.2	8.7
11-Mar	39.0	34.3	19.7	9.6	-20.0	27.3	36.1	14.0	8.6
18-Mar	37.0	34.1	19.0	9.2	-12.0	27.3	34.1	13.2	8.1
25-Mar	39.0	33.8	19.3	9.8	-16.0	28.7	34.9	13.7	8.7
1-Apr	39.0	35.1	24.0	14.7	-8.0	27.3	34.0	16.8	10.7
8-Apr	38.0	33.5	24.1	15.0	-4.0	28.0	34.4	16.7	11.0
15-Apr	39.0	34.3	24.7	15.4	-8.0	28.7	33.9	16.7	10.7
22-Apr	41.0	35.7	27.3	18.9	0.0	28.7	34.0	19.0	13.2
29-Apr	43.0	37.7	29.3	21.9	2.0	30.1	37.5	20.2	14.4
6-May	45.0	39.1	33.2	25.5	7.0	32.2	39.7	23.3	16.9
13-May	51.0	44.9	38.1	30.9	20.0	38.5	47.7	27.4	20.7
20-May	55.0	44.4	39.5	31.9	23.0	40.6	47.9	29.6	21.9
27-May	56.0	49.1	42.1	34.4	23.0	43.4	49.4	32.6	24.3
3-Jun	62.0	53.4	44.8	36.2	26.0	55.3	58.3	36.1	26.2
10-Jun	58.0	50.1	45.9	38.3	29.0	51.1	53.0	37.5	28.8
17-Jun	61.0	52.1	47.5	39.7	31.0	55.3	55.2	40.4	30.4
24-Jun	64.0	56.8	50.5	42.3	34.0	63.7	61.0	46.1	34.9
1-Jul	63.0	54.8	51.4	42.9	35.0	63.7	57.4	47.4	35.7
8-Jul	67.0	55.4	52.9	45.6	38.0	65.8	59.8	50.0	38.9
15-Jul	67.0	59.9	53.6	46.2	39.0	70.0	61.7	52.1	40.6
22-Jul	70.0	58.8	54.3	47.2	41.0	70.7	66.2	53.5	41.9
29-Jul	65.0	57.6	53.8	47.6	42.0	68.6	60.1	53.8	43.0
5-Aug	68.0	61.0	54.3	48.0	43.0	72.8	63.1	56.0	44.5
12-Aug	63.0	56.8	53.3	47.5	41.0	70.7	59.5	54.3	43.9
19-Aug	60.0	55.3	52.2	46.5	39.0	66.5	56.1	52.5	42.3
26-Aug	71.0	64.1	52.4	46.3	39.0	85.4	67.1	51.9	41.2
2-Sep	60.0	54.6	51.5	46.0	37.0	63.7	56.2	50.2	40.3
9-Sep	60.0	53.0	49.9	43.9	37.0	57.4	53.4	45.8	35.9
16-Sep	56.0	52.2	48.0	42.3	35.0	56.0	52.1	44.2	34.1
23-Sep	55.0	51.8	45.3	39.5	31.0	55.3	53.9	39.0	30.6
30-Sep	50.0	45.8	42.3	36.9	26.0	48.3	46.7	35.1	27.3
7-Oct	46.0	44.2	39.0	34.0	26.0	44.8	45.9	31.1	24.1
14-Oct	46.0	44.1	35.7	30.7	21.0	43.4	44.8	27.8	21.0
21-Oct	45.0	41.8	33.5	28.3	13.0	37.8	41.3	25.2	18.7
28-Oct	43.0	41.9	31.4	25.2	12.0	37.8	41.4	23.1	16.4
4-Nov	41.0	39.8	29.1	23.2	9.0	35.0	39.9	21.5	15.4
11-Nov	39.0	37.2	29.9	23.1	6.0	32.9	37.5	22.2	15.1
18-Nov	37.0	35.2	27.1	20.3	1.0	30.8	35.5	19.3	12.9
25-Nov	38.0	35.1	24.8	17.1	0.0	31.5	36.3	17.1	11.1
2-Dec	38.0	36.5	22.4	14.2	-6.0	30.1	36.2	16.6	10.2
9-Dec	37.0	34.7	18.6	10.0	-8.0	28.7	34.3	13.4	8.5
16-Dec	35.0	33.1	17.0	8.6	-10.0	28.0	32.9	12.7	8.2
23-Dec	39.0	36.0	21.3	12.4	-10.0	29.4	35.4	15.2	10.0
31-Dec	37.0	33.1	21.5	13.5	-14.0	29.4	34.5	15.9	10.6



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	1316
FEB	0	1287
MAR	0	1307
APR	0	1137
MAY	0	786
JUN	0	555
JUL	2	415
AUG	1	417
SEP	0	579
OCT	0	937
NOV	0	1087
DEC	0	1321
ANN	3	11144

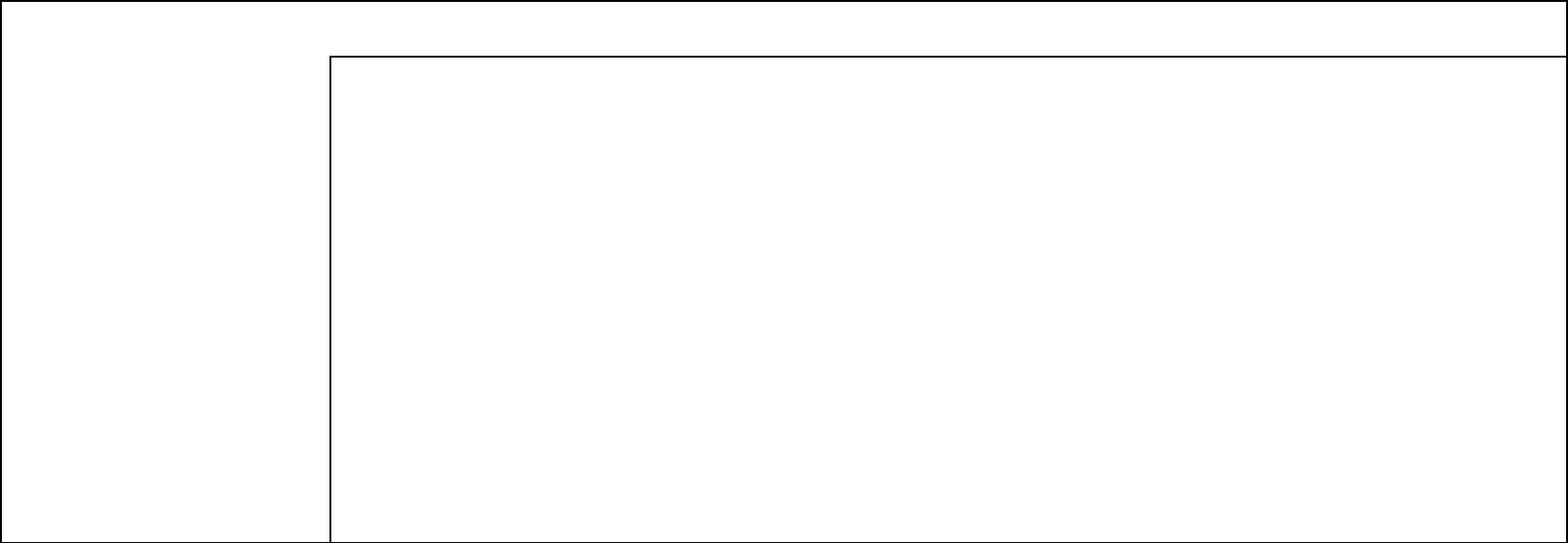
Average Ventilation and Infiltration Loads
(Outside Air vs. 75°F, 60% RH summer; 68°F, 30% RH winter)



	Average Sensible Cooling Load	Average Sensible Heating Load	Average Latent Cooling Load	Average Latent Heating Load
	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)
JAN	0	-36119	0	-5886
FEB	0	-35212	0	-5924
MAR	0	-35926	0	-6312
APR	0	-31524	0	-5397
MAY	0	-22422	0	-2207
JUN	1	-16441	8	-359
JUL	0	-12836	1	-12
AUG	0	-12920	10	-33
SEP	0	-17116	0	-529
OCT	0	-26463	0	-3256
NOV	0	-30199	0	-5053
DEC	0	-36313	0	-6239
ANN	1	-313491	19	-41207

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

No Solar Radiation
Data Available

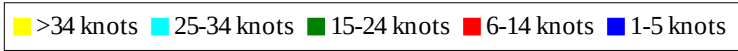
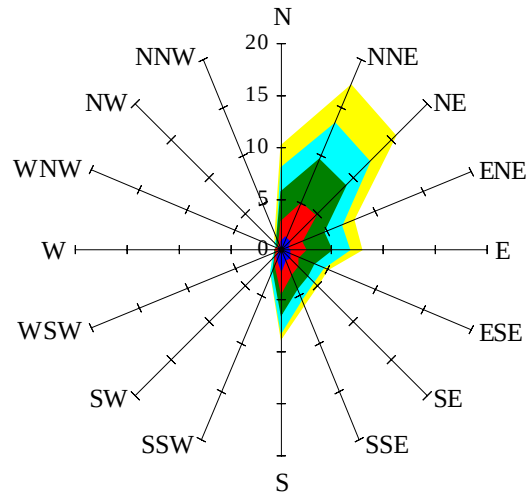


Average Annual Solar Heat and Illumination – Nearest Available Site

(Source: National Renewable Energy Laboratory, Golden CO, 1995)

Wind Summary - December, January, and February

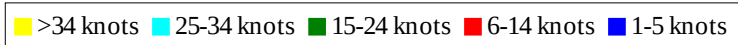
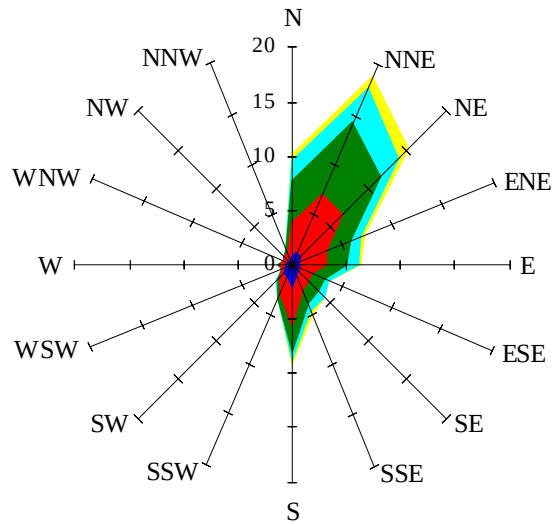
Labels of Percent Frequency on North Axis



Percent Calm = 10.49

Wind Summary - March, April, and May

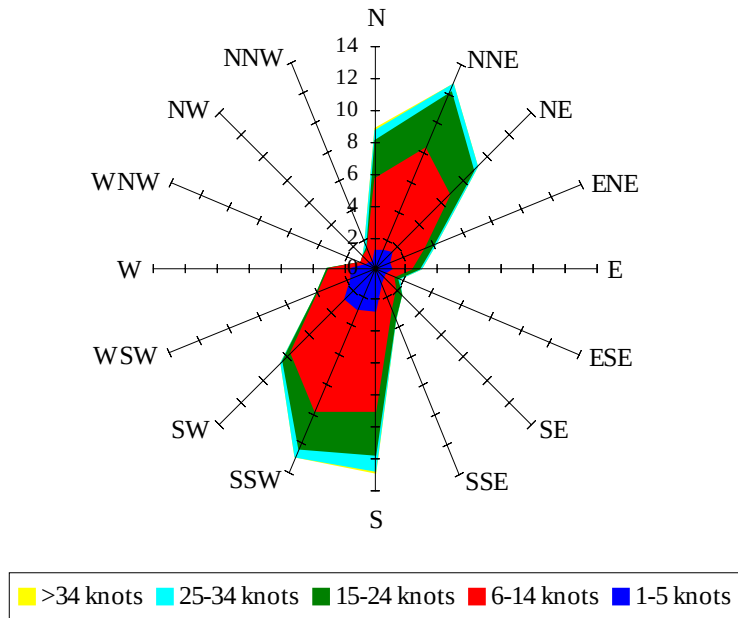
Labels of Percent Frequency on North Axis



Percent Calm = 10.00

Wind Summary - June, July, and August

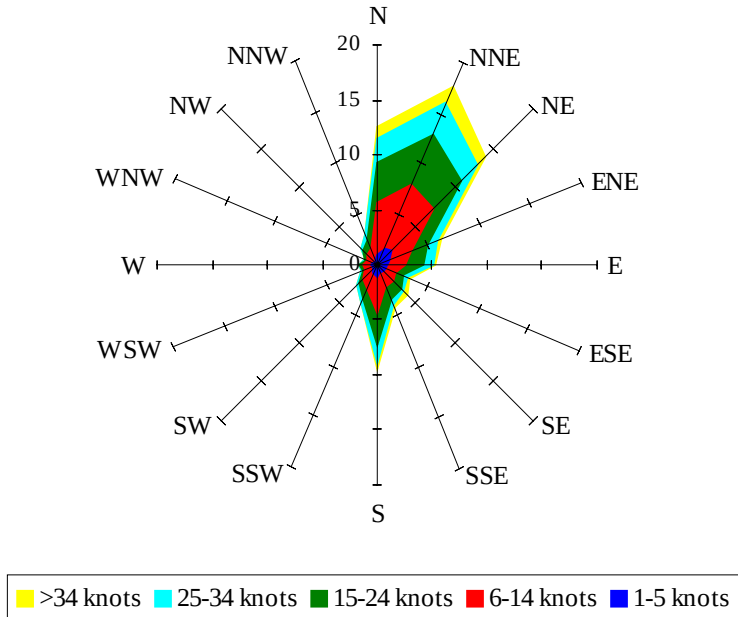
Labels of Percent Frequency on North Axis



Percent Calm = 9.91

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 7.82