

HOMER AK

Latitude = 59.63 N

Longitude = 151.50 W

Period of Record = 1973 to 1996

WMO No. 703410

Elevation = 72 feet

Average Pressure = 29.64 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	70	58	54	10.4	WSW
0.4% Occurrence	64	56	54	10.1	WSW
1.0% Occurrence	62	55	53	10.1	WSW
2.0% Occurrence	61	54	53	10.0	WSW
Mean Daily Range	12	-	-	-	-
97.5% Occurrence	8	7	6	8.2	NE
99.0% Occurrence	3	2	4	8.1	NE
99.6% Occurrence	-1	-2	3	7.8	NNE
Median of Extreme Lows	-4	-5	3	7.1	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	67	8.8	WSW
0.4% Occurrence	57	62	60	9.2	W
1.0% Occurrence	56	60	58	9.0	WSW
2.0% Occurrence	55	59	56	8.9	WSW
	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	61	0.50	8.4	WSW
0.4% Occurrence	64	60	0.44	7.8	W
1.0% Occurrence	61	58	0.41	7.4	WSW
2.0% Occurrence	58	57	0.39	7.6	WSW
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		0	0	0	0

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	1.0	120	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 (#)
41.3	N/A	N/A	87

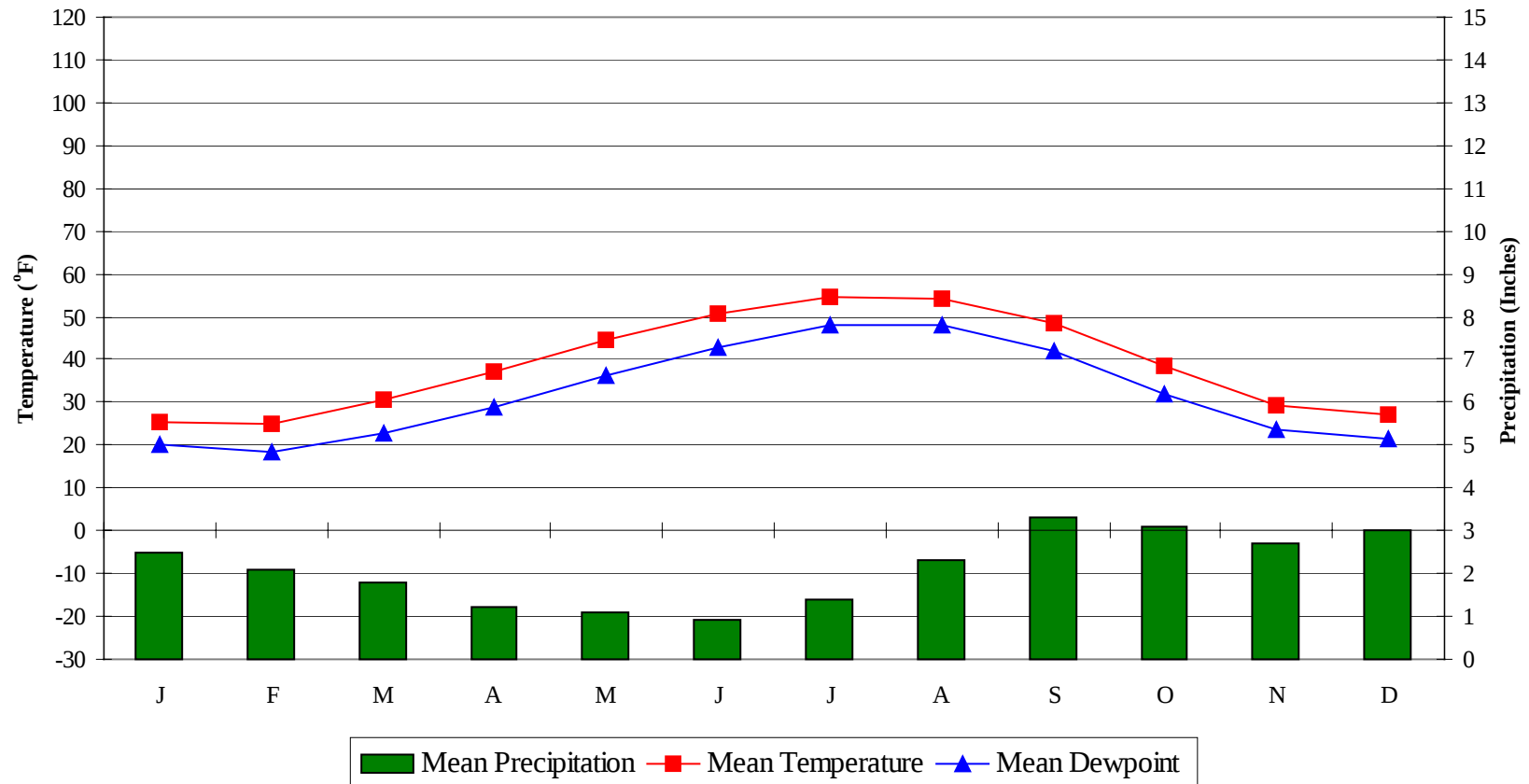
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

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WMO No. 703410

Average Annual Climate

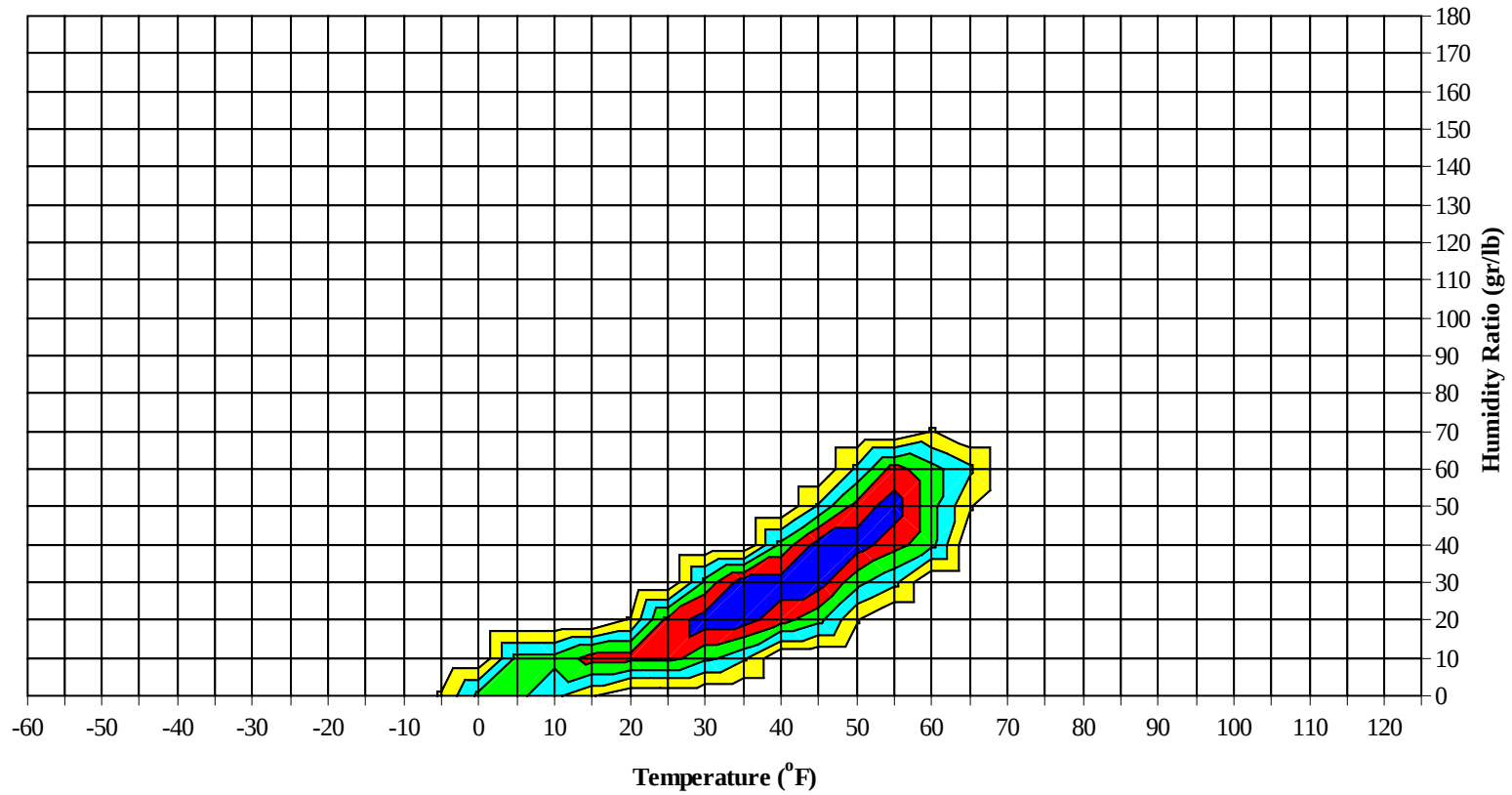


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WMO No. 703410

Long Term Psychrometric Summary



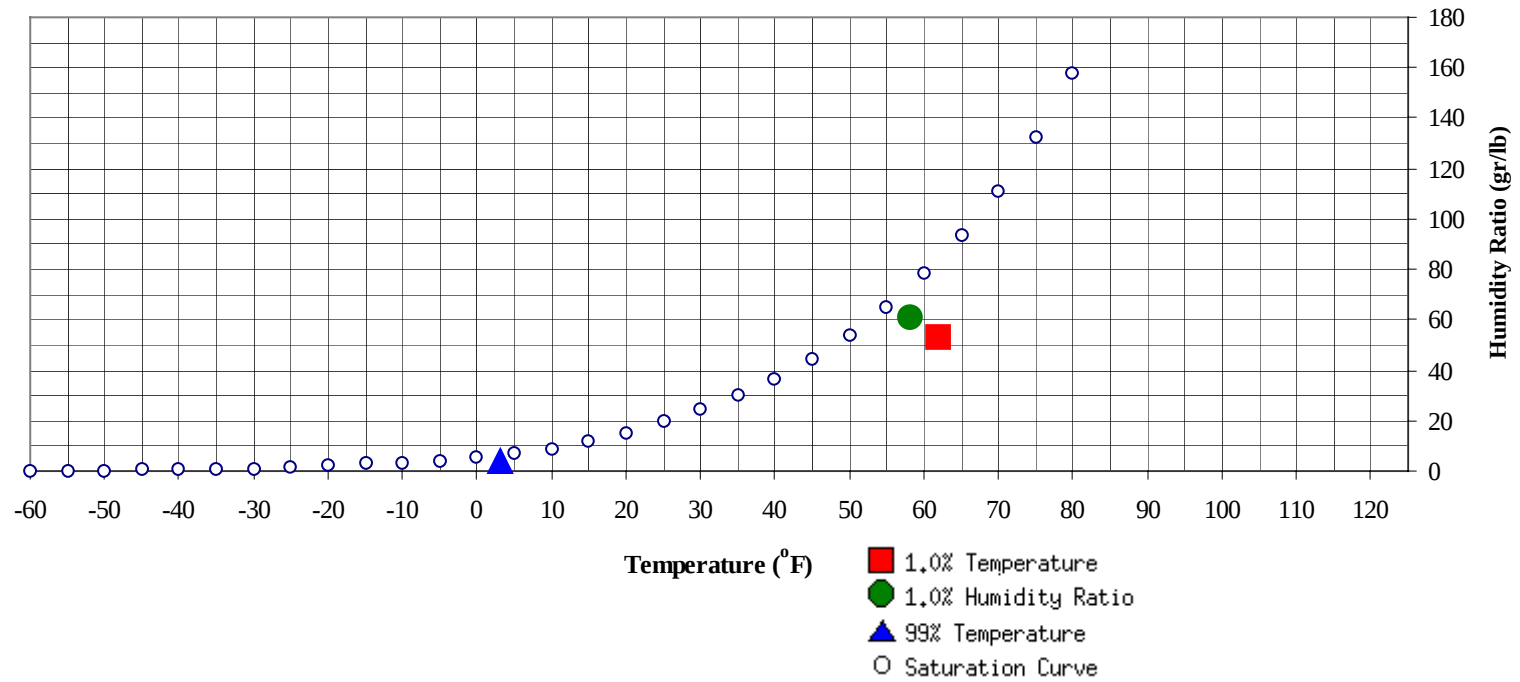
- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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WMO No. 703410

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)
	3	4.3	1.4		60.9	58.2	55.3	53.3	23.4

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	62	53.5	55.1	23.2

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WMO No. 703410

Dry-Bulb Temperature Hours For An Average Year (Sheet 1 of 5)**Period of Record = 1973 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		0		0	43.5							0		0	44.0
45 / 49	0	2	1	3	41.1	1	1	1	3	41.1	0	6	2	8	40.1
40 / 44	15	20	17	52	37.9	9	19	12	40	37.8	5	44	24	73	37.2
35 / 39	46	54	49	149	34.9	35	48	43	126	34.7	46	80	75	201	34.0
30 / 34	47	47	47	141	30.9	39	39	42	120	30.4	70	55	68	193	29.9
25 / 29	37	36	36	109	26.1	26	30	30	87	25.2	49	31	37	117	25.0
20 / 24	26	27	28	80	21.0	25	28	27	81	20.2	32	16	22	69	20.2
15 / 19	23	23	21	66	16.0	25	24	28	77	15.3	20	10	12	42	15.1
10 / 14	18	15	16	49	10.8	27	19	22	68	10.6	15	5	6	26	10.4
5 / 9	14	13	14	41	6.0	21	11	13	45	6.1	6	2	2	10	5.9
0 / 4	11	8	10	29	1.3	9	4	6	19	1.5	3	0	1	4	1.5
-5 / -1	5	2	5	12	-3.1	4	1	1	6	-2.7	1		0	1	-2.5
-10 / -6	4	2	3	9	-7.1	1	0	0	1	-6.3	0			0	-5.0
-15 / -11	1	1	1	3	-11.6										
-20 / -16	0	0	0	0	-16.6										
-25 / -21	0	0	0	0	-21.2										

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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WMO No. 703410

Dry-Bulb Temperature Hours For An Average Year (Sheet 2 of 5)**Period of Record = 1973 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															
75 / 79															
70 / 74							0		0	54.0		0	0	0	54.9
65 / 69							1	0	1	52.8		2	1	3	55.8
60 / 64						0	1	1	2	50.4	0	18	9	27	53.2
55 / 59		0	0	0	44.8	0	15	7	22	48.1	8	79	49	136	50.2
50 / 54		8	2	10	42.6	8	64	38	110	45.3	59	111	107	277	47.5
45 / 49	1	51	24	76	40.5	45	117	96	258	42.4	107	30	65	202	44.6
40 / 44	28	88	75	192	37.8	98	45	79	222	39.3	50	1	8	59	41.1
35 / 39	74	59	78	211	34.3	68	6	22	96	35.6	14		1	15	37.0
30 / 34	81	22	42	146	30.3	26	0	4	30	31.5	1			1	32.9
25 / 29	41	7	11	58	25.5	3		0	3	27.4					
20 / 24	9	3	4	16	20.0	0			0						
15 / 19	4	2	2	8	14.8										
10 / 14	1	0	1	2	11.0										
5 / 9	1			1	6.1										
0 / 4	0			0	3.0										
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															

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WMO No. 703410

Dry-Bulb Temperature Hours For An Average Year (Sheet 3 of 5)**Period of Record = 1973 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			0	0	59.0										
75 / 79		0	0	0	57.5										
70 / 74		1	1	2	58.7		1	1	2	60.6					
65 / 69	0	8	5	13	57.2		10	4	14	57.5		0	0	0	55.6
60 / 64	2	63	32	97	54.8	3	61	30	93	55.3	0	8	3	11	53.6
55 / 59	33	126	105	264	52.5	35	120	99	255	52.8	10	54	27	91	51.3
50 / 54	130	48	90	268	49.9	109	54	90	253	50.0	47	105	91	243	48.2
45 / 49	68	2	14	84	46.4	73	3	21	96	46.4	83	54	79	216	44.8
40 / 44	14		1	15	42.2	24		3	27	41.8	55	14	25	94	40.5
35 / 39	1			1	38.2	4		0	4	37.0	28	4	13	45	35.6
30 / 34						0			0	32.5	13	1	3	17	30.9
25 / 29											3		0	3	25.9
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															

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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WMO No. 703410

Dry-Bulb Temperature Hours For An Average Year (Sheet 4 of 5)**Period of Record = 1973 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	1	1	0	2	50.5										
50 / 54	4	18	7	29	46.5	0	1	0	1	45.4					
45 / 49	27	65	48	141	43.1	5	8	6	19	42.7	2	2	2	6	40.8
40 / 44	55	72	63	190	39.1	23	29	22	75	38.9	15	21	16	52	38.1
35 / 39	57	51	61	168	34.7	42	55	48	144	34.8	44	51	48	143	34.7
30 / 34	55	26	42	123	30.3	49	52	50	151	30.4	51	51	51	153	30.8
25 / 29	30	8	19	57	25.3	38	41	45	124	25.4	42	41	40	123	25.9
20 / 24	14	4	5	23	20.4	36	29	31	96	20.5	33	31	29	93	20.8
15 / 19	3	2	2	7	15.7	24	15	21	60	15.8	21	22	24	66	15.8
10 / 14	1	1	1	3	10.8	13	6	11	30	10.7	16	16	17	49	10.8
5 / 9	0	0	1	1	5.4	7	3	5	15	5.6	13	8	13	34	6.1
0 / 4	0	0		0	2.5	3	1	2	6	1.5	6	4	6	16	1.4
-5 / -1						0	0	0	0	-3.4	2	1	2	5	-3.1
-10 / -6						0			0	-7.0	1	0	1	2	-7.0
-15 / -11											0		0	0	-10.5
-20 / -16															
-25 / -21															

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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WMO No. 703410

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

Period of Record = 1973 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	59.0
75 / 79		0	0	0	56.7
70 / 74		2	2	4	58.8
65 / 69	0	20	9	29	57.0
60 / 64	6	145	73	224	54.7
55 / 59	85	385	282	752	51.9
50 / 54	352	406	421	1179	48.4
45 / 49	411	342	358	1111	43.8
40 / 44	396	355	347	1098	38.9
35 / 39	459	409	443	1311	34.7
30 / 34	432	295	351	1077	30.5
25 / 29	271	197	220	687	25.5
20 / 24	174	140	147	461	20.5
15 / 19	121	97	110	328	15.6
10 / 14	94	63	74	231	10.7
5 / 9	66	36	48	151	6.0
0 / 4	34	18	25	76	1.4
-5 / -1	12	5	9	26	-3.0
-10 / -6	6	3	3	12	-7.0
-15 / -11	1	1	1	3	-11.5
-20 / -16	0	0	0	0	-16.6
-25 / -21	0	0	0	0	-21.2
		</			

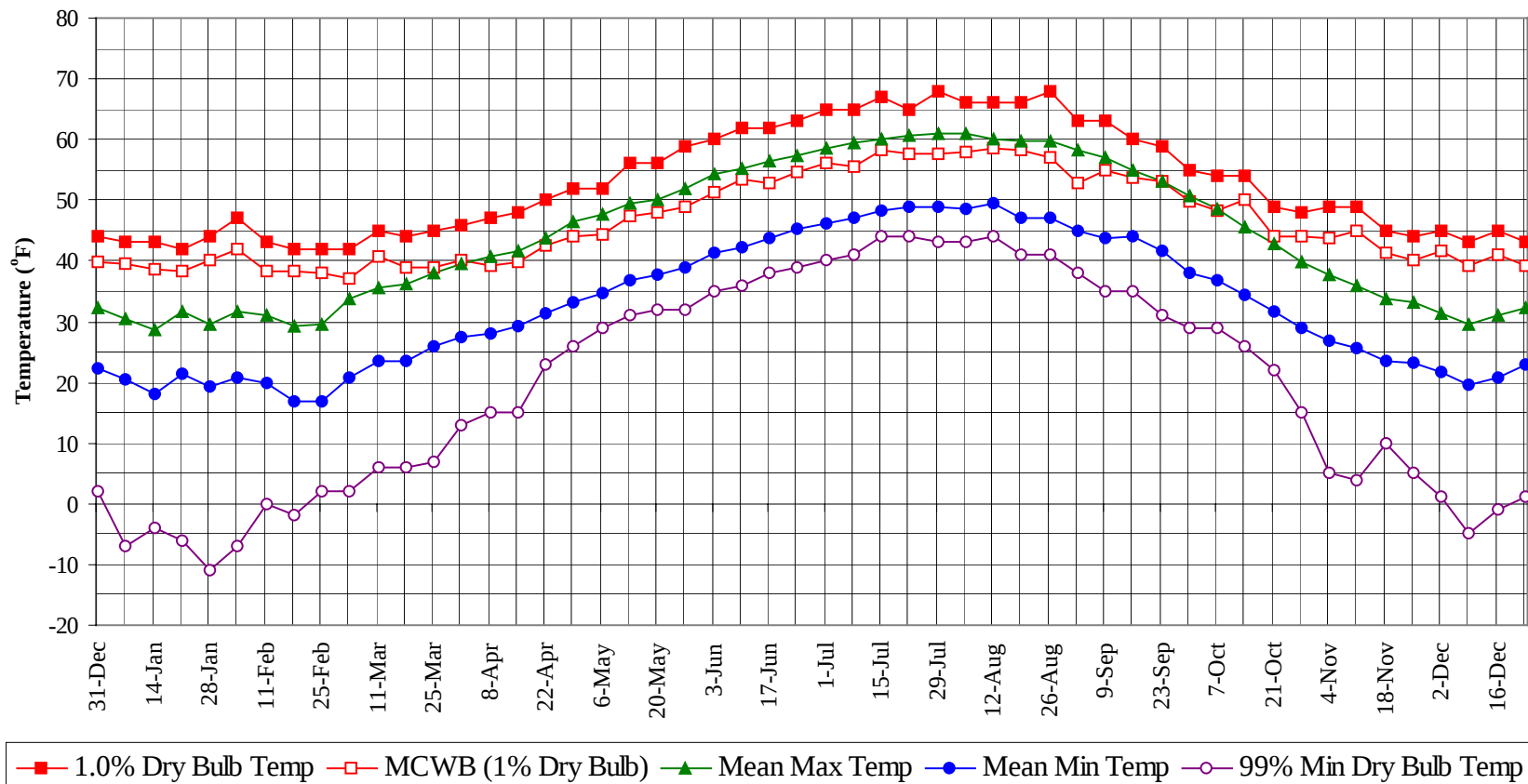
Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary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

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WMO No. 703410

Annual Summary of Temperatures

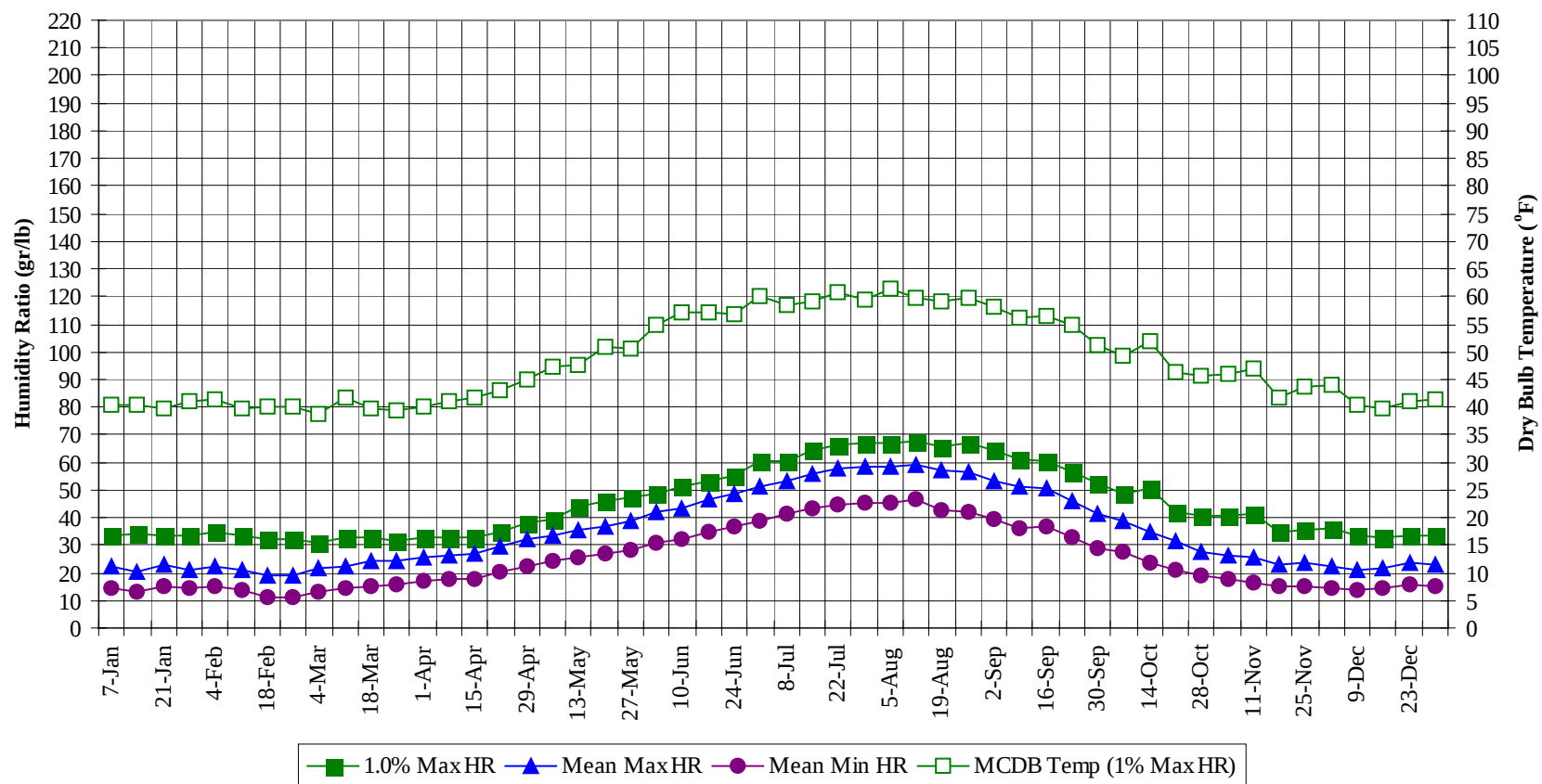


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Long Term Humidity and Dry Bulb Temperature Summary



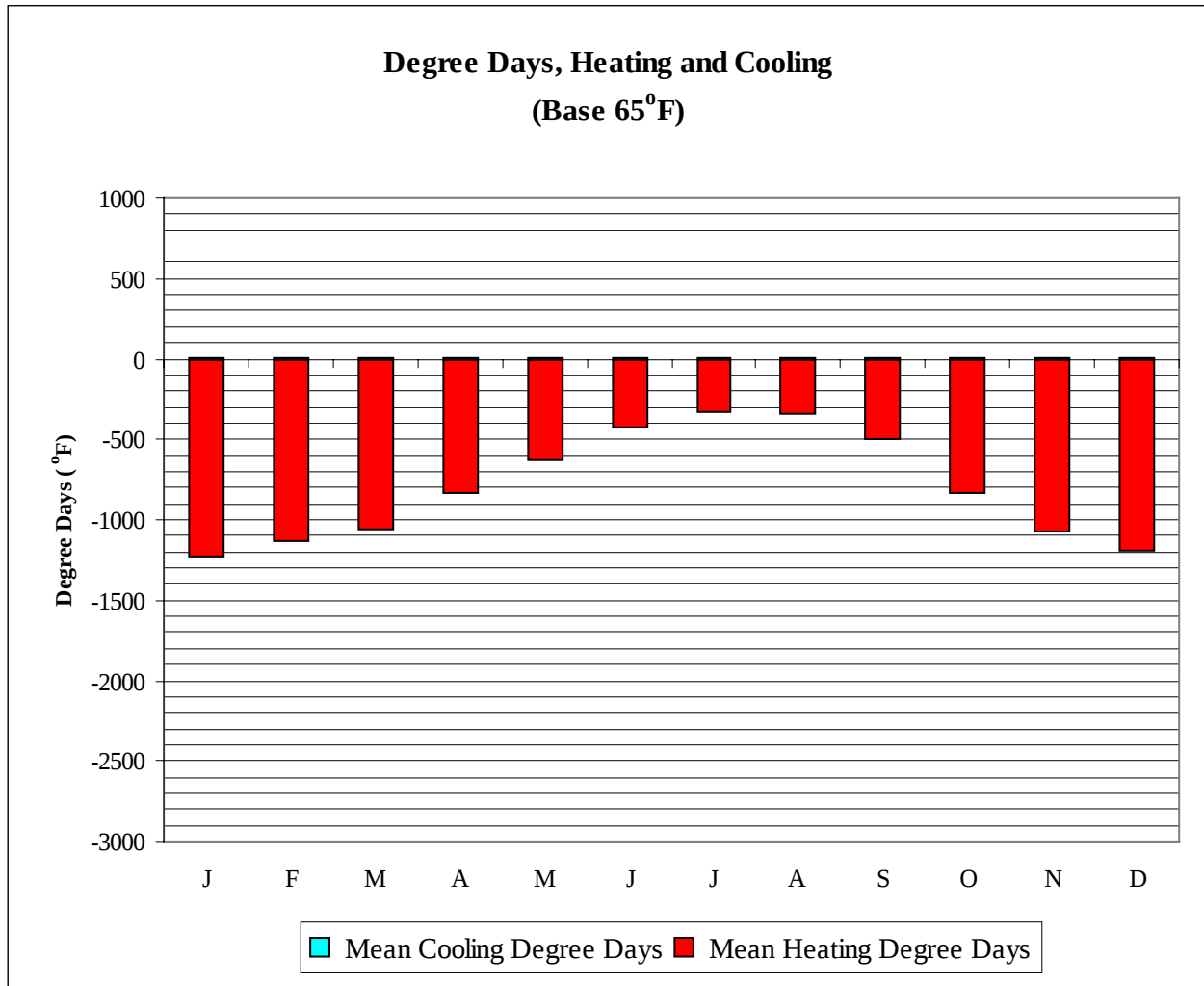
HOMER**AK****WMO No. 703410****Long Term Dry Bulb Temperature and Humidity Summary**

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	43.0	39.4	30.5	20.4	-7.0	33.6	40.3	22.1	14.5
14-Jan	43.0	38.7	28.6	18.1	-4.0	34.3	40.4	20.5	13.1
21-Jan	42.0	38.2	31.5	21.5	-6.0	33.6	39.6	23.1	15.2
28-Jan	44.0	40.1	29.6	19.2	-11.0	33.6	41.0	21.2	14.2
4-Feb	47.0	42.1	31.6	20.9	-7.0	35.0	41.3	22.6	14.9
11-Feb	43.0	38.2	31.1	19.9	0.0	33.6	39.7	21.1	13.9
18-Feb	42.0	38.5	29.3	16.8	-2.0	32.2	40.0	18.8	11.5
25-Feb	42.0	38.1	29.5	16.8	2.0	32.2	40.2	19.2	11.2
4-Mar	42.0	37.1	33.6	20.9	2.0	30.8	38.9	21.5	13.4
11-Mar	45.0	40.6	35.5	23.4	6.0	32.9	41.8	22.4	14.4
18-Mar	44.0	38.9	36.2	23.6	6.0	32.9	39.7	24.0	15.0
25-Mar	45.0	38.9	38.1	25.8	7.0	31.5	39.3	24.6	16.0
1-Apr	46.0	40.3	39.4	27.6	13.0	32.9	40.2	25.8	17.1
8-Apr	47.0	39.3	40.9	28.1	15.0	32.9	41.2	26.5	17.6
15-Apr	48.0	39.9	41.6	29.2	15.0	32.9	41.7	26.7	17.8
22-Apr	50.0	42.6	43.8	31.5	23.0	35.0	43.0	29.6	20.1
29-Apr	52.0	44.0	46.5	33.3	26.0	37.8	45.0	32.0	22.6
6-May	52.0	44.4	47.8	34.8	29.0	39.2	47.3	33.7	24.2
13-May	56.0	47.4	49.5	36.8	31.0	44.1	47.6	35.8	25.3
20-May	56.0	48.0	50.2	37.7	32.0	46.2	51.0	37.0	26.7
27-May	59.0	49.0	51.9	39.0	32.0	47.6	50.5	38.9	28.5
3-Jun	60.0	51.2	54.2	41.3	35.0	48.3	54.7	42.4	31.1
10-Jun	62.0	53.6	55.1	42.2	36.0	51.1	57.2	43.5	32.1
17-Jun	62.0	52.8	56.5	43.7	38.0	53.2	57.1	46.4	34.8
24-Jun	63.0	54.5	57.3	45.2	39.0	55.3	56.8	48.3	37.1
1-Jul	65.0	56.1	58.6	46.1	40.0	60.2	60.1	51.3	38.6
8-Jul	65.0	55.5	59.4	47.0	41.0	60.2	58.6	53.0	41.3
15-Jul	67.0	58.3	60.0	48.2	44.0	64.4	59.2	55.8	43.3
22-Jul	65.0	57.5	60.7	49.0	44.0	66.5	60.8	57.7	44.9
29-Jul	68.0	57.7	61.1	48.8	43.0	67.2	59.6	58.2	45.1
5-Aug	66.0	58.0	60.9	48.7	43.0	67.2	61.5	58.7	45.4
12-Aug	66.0	58.5	60.2	49.5	44.0	67.9	59.7	59.2	46.3
19-Aug	66.0	58.4	59.7	47.2	41.0	65.8	59.2	56.9	42.9
26-Aug	68.0	57.2	59.9	47.1	41.0	67.2	59.7	56.8	42.1
2-Sep	63.0	53.0	58.2	44.9	38.0	64.4	58.1	53.1	39.2
9-Sep	63.0	55.0	57.1	43.6	35.0	60.9	56.3	51.0	36.4
16-Sep	60.0	53.8	54.8	44.0	35.0	60.2	56.4	50.7	37.1
23-Sep	59.0	53.2	53.0	41.7	31.0	56.7	54.7	45.8	32.7
30-Sep	55.0	49.7	50.8	38.1	29.0	52.5	51.3	41.3	29.2
7-Oct	54.0	48.3	48.5	36.9	29.0	48.3	49.2	38.7	27.3
14-Oct	54.0	50.0	45.6	34.3	26.0	50.4	51.8	34.9	24.0
21-Oct	49.0	44.2	42.9	31.6	22.0	42.0	46.1	31.3	21.1
28-Oct	48.0	43.9	39.8	29.1	15.0	40.6	45.7	27.9	19.1
4-Nov	49.0	43.7	37.6	26.7	5.0	40.6	46.1	26.6	18.0
11-Nov	49.0	44.9	35.8	25.5	4.0	41.3	47.0	25.5	16.6
18-Nov	45.0	41.3	33.7	23.4	10.0	35.0	41.6	23.3	15.1
25-Nov	44.0	40.1	33.1	23.1	5.0	35.7	43.8	23.8	15.3
2-Dec	45.0	41.6	31.5	21.6	1.0	36.4	43.9	22.3	14.4
9-Dec	43.0	39.3	29.5	19.6	-5.0	33.6	40.4	21.0	13.6
16-Dec	45.0	41.0	31.0	20.8	-1.0	32.9	39.7	22.0	14.2
23-Dec	43.0	39.2	32.3	22.8	1.0	33.6	41.0	23.4	15.5
31-Dec	44.0	39.9	32.3	22.4	2.0	33.6	41.4	23.3	14.9

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WMO No. 703410



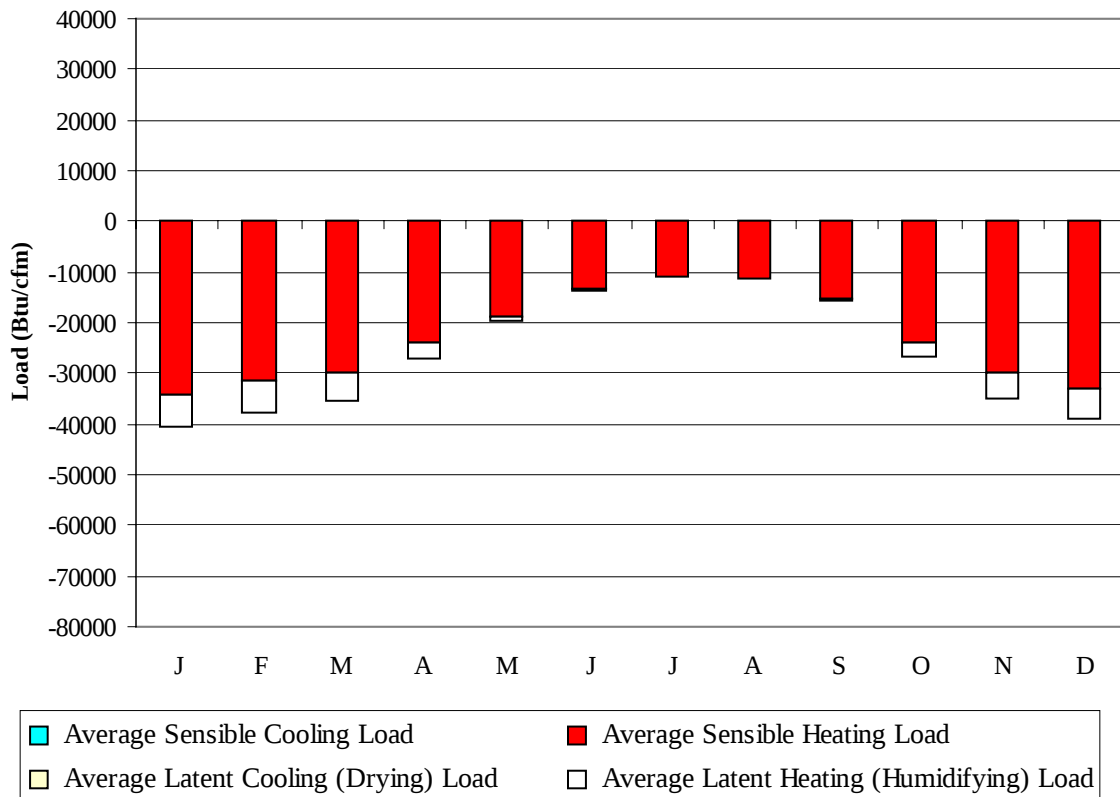
	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	1232
FEB	0	1130
MAR	0	1064
APR	0	835
MAY	0	634
JUN	0	427
JUL	1	328
AUG	1	344
SEP	0	501
OCT	0	833
NOV	0	1066
DEC	0	1188
ANN	2	9582

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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	-34349	0	-6117
FEB	0	-31487	0	-6237
MAR	0	-29997	0	-5585
APR	0	-23981	0	-3247
MAY	0	-18838	0	-851
JUN	0	-13399	1	-89
JUL	1	-10877	0	-2
AUG	0	-11301	0	-27
SEP	0	-15326	0	-400
OCT	0	-24012	0	-2511
NOV	0	-29964	0	-4989
DEC	0	-33205	0	-5715
ANN	1	-276736	1	-35770

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

No Solar Radiation
Data Available

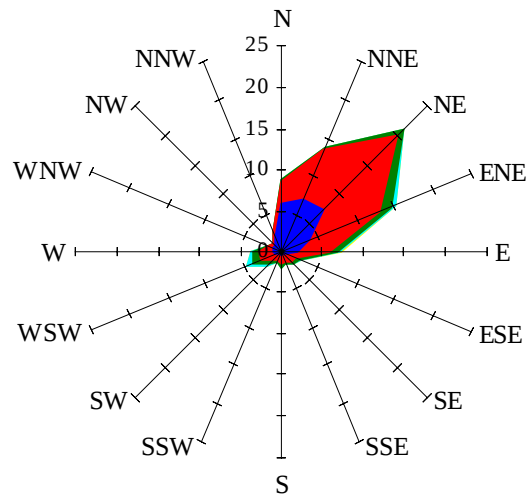


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

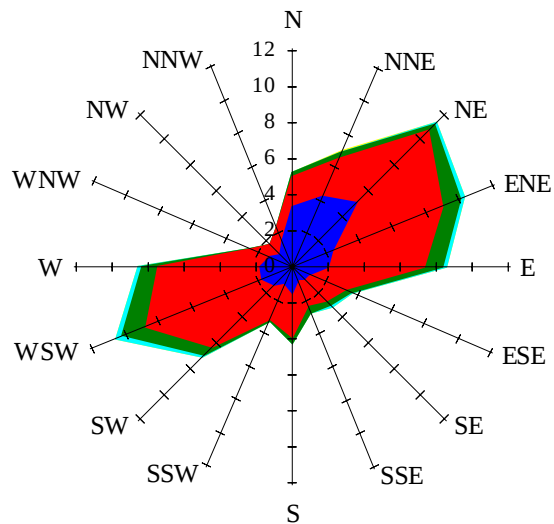
Labels of Percent Frequency on North Axis



Percent Calm = 8.93

Wind Summary - March, April, and May

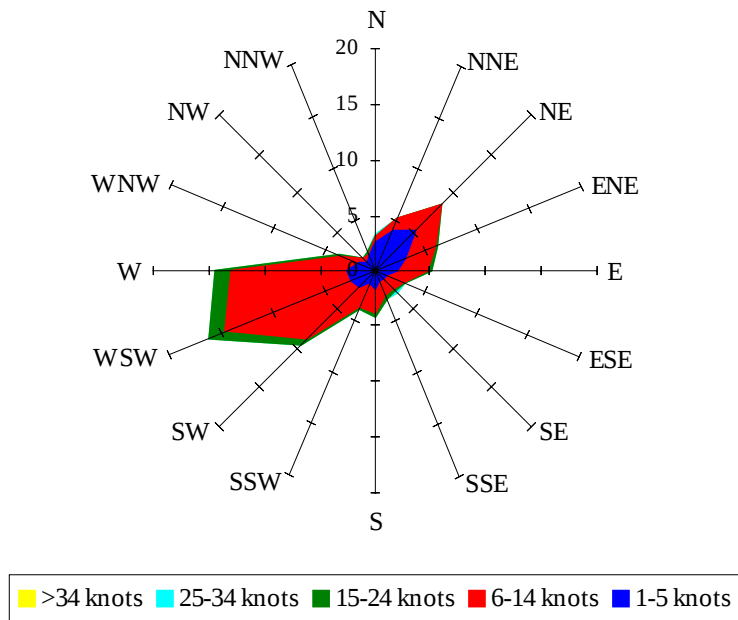
Labels of Percent Frequency on North Axis



Percent Calm = 8.51

Wind Summary - June, July, and August

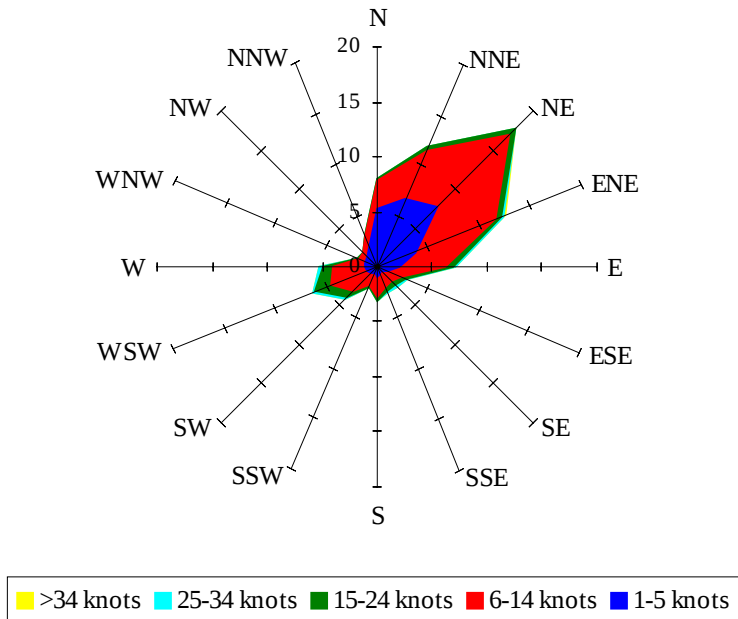
Labels of Percent Frequency on North Axis



Percent Calm = 9.50

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 6.88