

ADAK NAS/MITCHELL AK

Latitude = 51.88 N

WMO No. 704540

Longitude = 176.60 W

Elevation = 13 feet

Period of Record = 1967 to 1996

Average Pressure = 29.66 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	66	60	66	13.3	S
0.4% Occurrence	59	55	58	11.0	S
1.0% Occurrence	57	53	54	11.9	W
2.0% Occurrence	55	51	51	12.0	W
Mean Daily Range	8	-	-	-	-
97.5% Occurrence	26	24	15	9.0	N
99.0% Occurrence	23	21	13	6.8	N
99.6% Occurrence	20	19	11	4.0	SSW
Median of Extreme Lows	12	11	8	0.5	S
	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	62	64	77	12.5	W
0.4% Occurrence	56	58	62	12.5	S
1.0% Occurrence	54	56	58	12.6	W
2.0% Occurrence	52	54	53	11.7	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	62	0.51	11.1	WSW
0.4% Occurrence	64	58	0.44	13.3	S
1.0% Occurrence	59	55	0.40	12.7	WSW
2.0% Occurrence	55	53	0.37	11.9	W
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
5	0.8	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 (#)
42.8	52	20	74

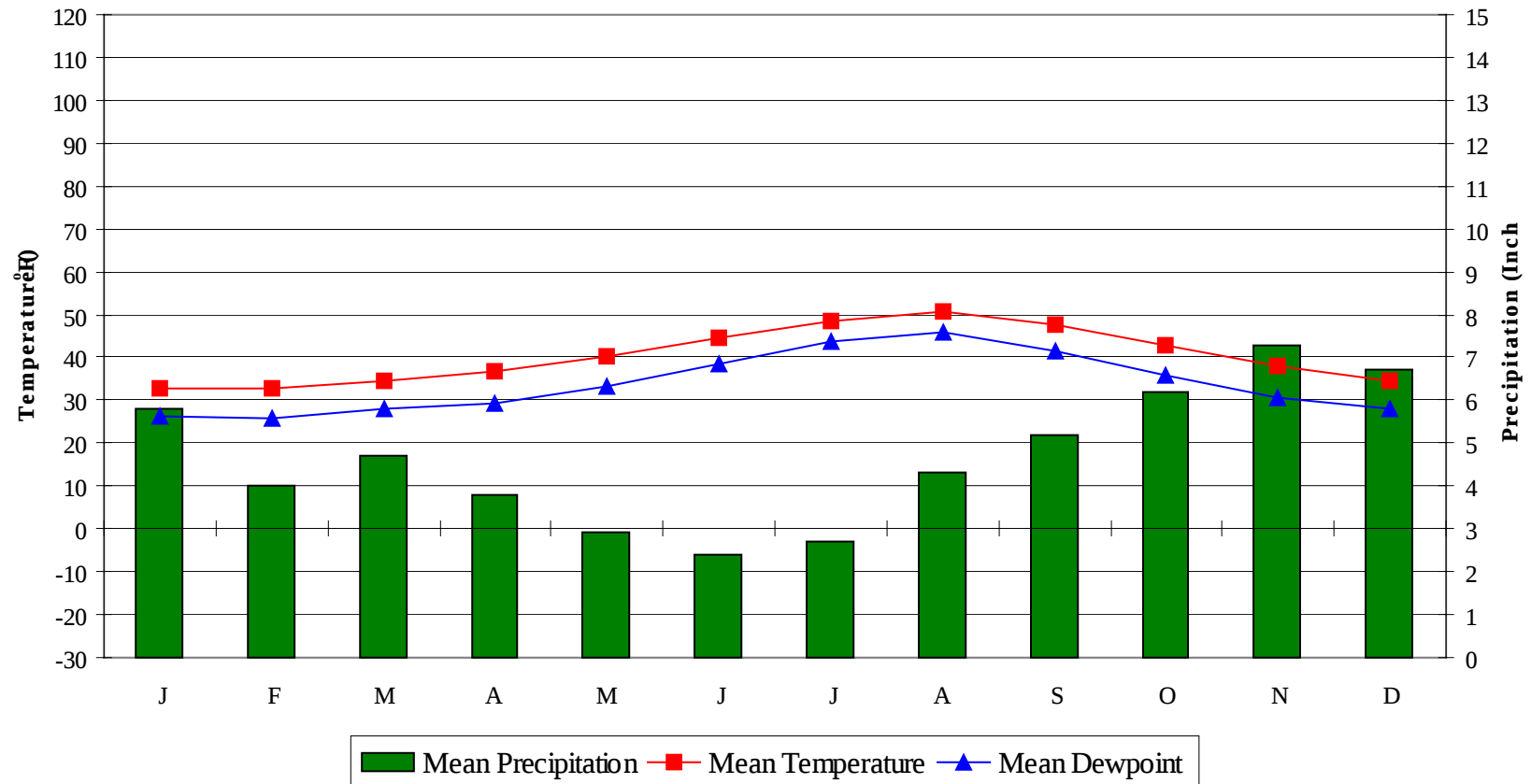
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

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Average Annual Climate

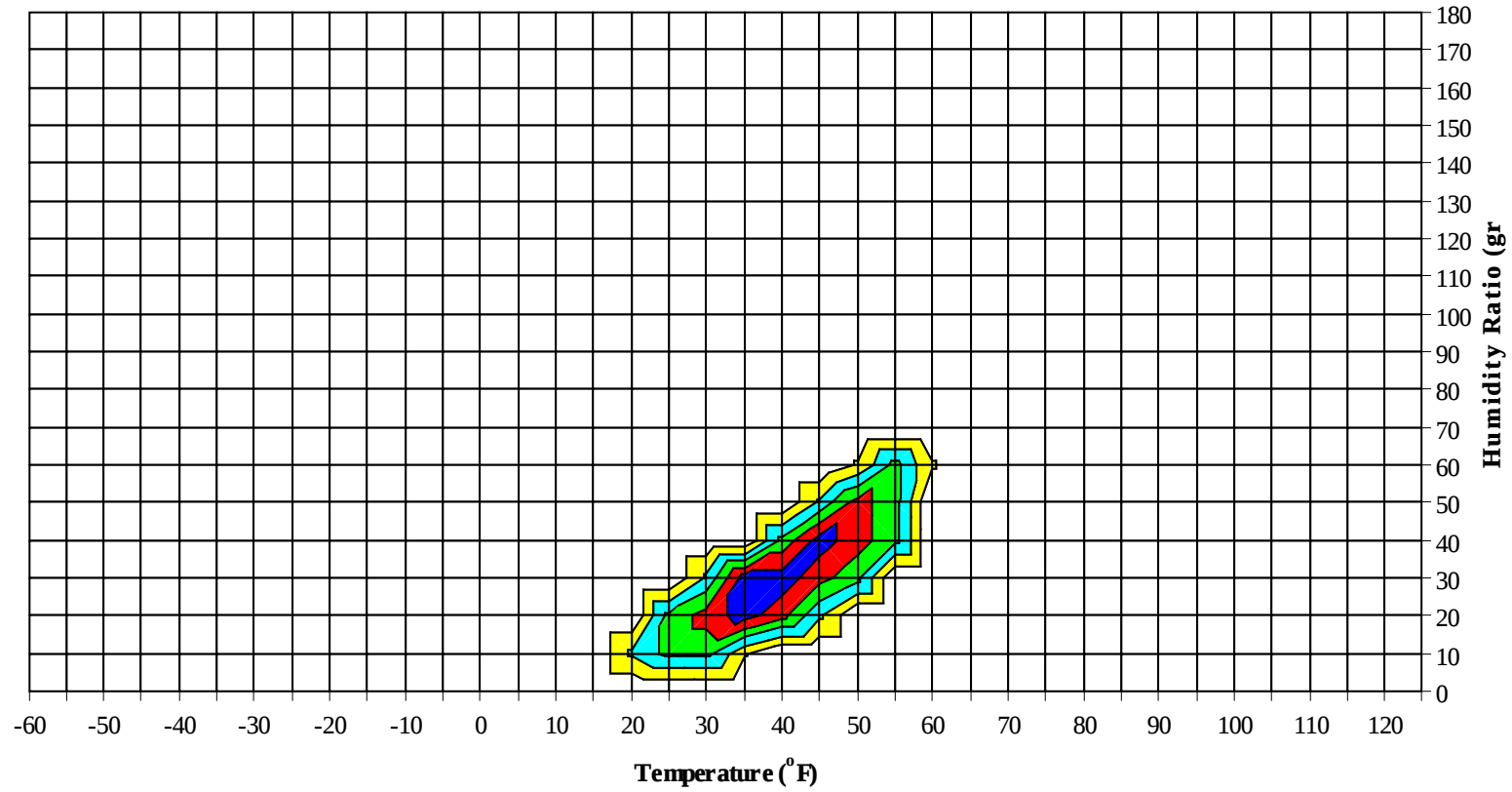


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Long Term Psychrometric Summary



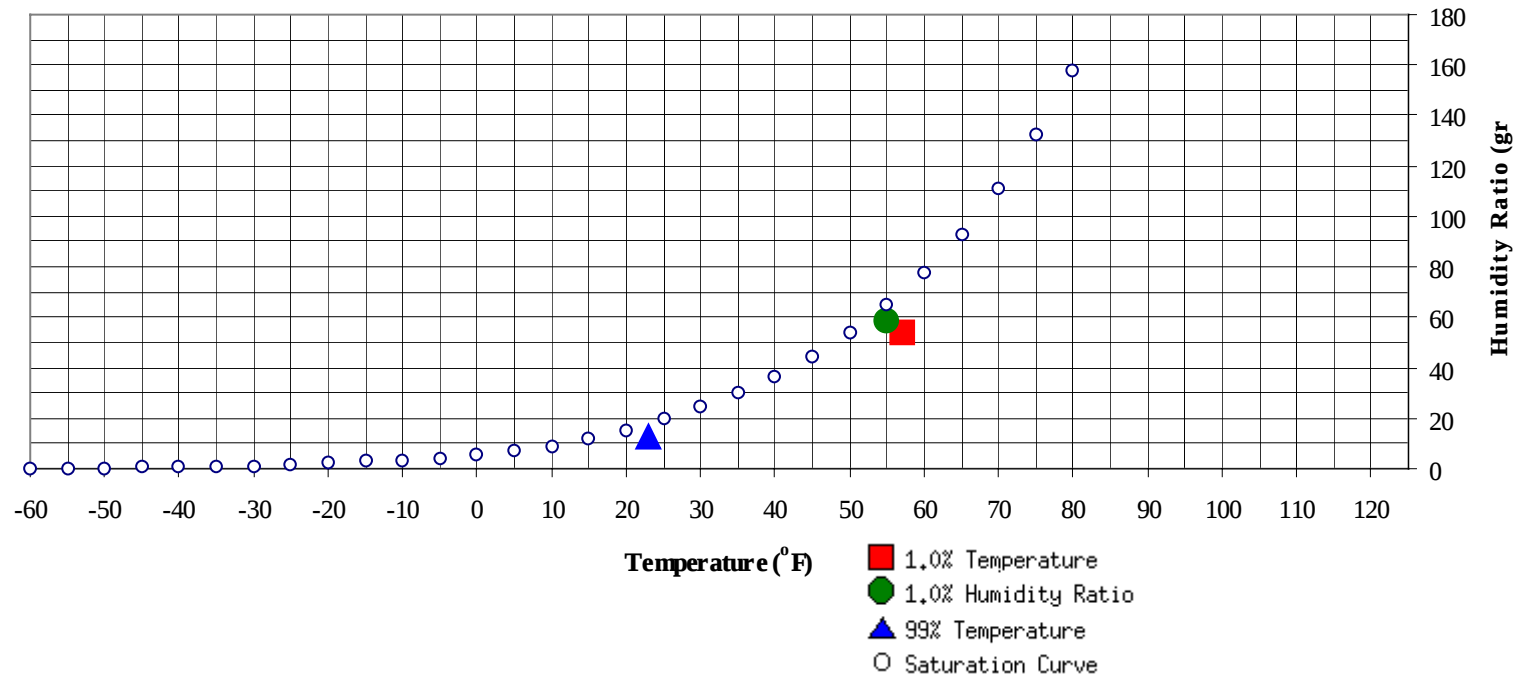
- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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Psychrometric Summary of Peak Design Values



	(°F)	MCHR (gr/lb)	Enthalpy (btu/lb)	1.0% Humidity Ratio	(gr/lb)	MCDB (°F)	MCWB (°F)	MC Dewpt (°F)	Enthalpy (btu/lb)
99% Dry Bulb	23	12.8	7.5		58.8	54.9	53.5	52.3	22.3

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	57	54.3	53.3	22.1

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WMO No. 704540

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		
70 / 74															
65 / 69															
60 / 64															
55 / 59											0	0	0	0	54.0
50 / 54						0	0		0	45.8	0	0	0	0	50.8
45 / 49	1	1	1	3	43.8	0	1	0	2	42.7	0	2	1	4	43.6
40 / 44	14	21	15	50	39.5	8	19	12	39	38.2	10	43	19	72	38.3
35 / 39	74	91	78	243	34.1	67	89	72	228	34.1	92	118	110	320	34.2
30 / 34	97	97	95	289	29.8	85	79	84	248	29.7	99	69	83	251	30.0
25 / 29	44	32	41	118	25.0	47	31	39	116	24.9	36	15	25	76	25.2
20 / 24	14	6	10	30	20.6	16	6	10	32	20.5	9	2	5	16	20.9
15 / 19	5	1	3	8	15.9	3	1	2	6	16.2	3	0	0	4	16.4
10 / 14	2	1	0	3	11.1	1	0	0	2	11.4	0	0		0	11.4
5 / 9	0	0		0	7.4	0			0	8.5					

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.

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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		
70 / 74															
65 / 69												0		0	63.0
60 / 64												1	0	1	54.0
55 / 59												0	4	2	51.4
50 / 54		1	0	1	44.9	0	5	1	6	45.7	3	32	15	50	47.0
45 / 49	1	9	3	13	42.8	4	48	21	72	42.1	39	131	94	264	43.5
40 / 44	21	80	46	148	38.3	78	147	126	351	38.8	172	74	113	359	40.3
35 / 39	119	119	128	366	34.1	146	47	88	280	35.1	28	2	8	38	36.4
30 / 34	86	31	53	170	30.0	22	2	8	32	30.6	2		0	2	31.9
25 / 29	14	1	5	20	25.5	1		0	1	26.0	0			0	28.3
20 / 24	1		0	1	21.2										
15 / 19	0			0											
10 / 14	0			0											
5 / 9															

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 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		
70 / 74		0		0	65.0		0		0	64.4		0		0	64.0
65 / 69		1	0	1	60.2	0	2	1	3	60.5		0		0	59.8
60 / 64	0	6	2	9	56.6	1	11	4	16	57.8	0	1	0	2	57.1
55 / 59	5	29	15	49	52.7	14	50	27	90	53.0	3	14	4	21	52.0
50 / 54	36	104	72	212	48.6	76	132	111	319	49.1	35	104	56	195	47.9
45 / 49	147	101	127	375	44.9	141	55	92	288	45.7	139	112	135	386	44.4
40 / 44	61	10	22	93	41.6	19	2	5	26	41.8	55	12	32	98	40.3
35 / 39	3	0	0	4	37.6	2		0	2	36.1	11	1	3	15	35.2
30 / 34	0	0		0	33.0						2		0	2	30.5
25 / 29															
20 / 24															
15 / 19															
10 / 14															
5 / 9															

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 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		
70 / 74															
65 / 69															
60 / 64															
55 / 59	0	1	0	2	52.9										
50 / 54	6	22	8	36	47.5	2	2	2	6	48.2					
45 / 49	54	106	70	230	43.2	11	16	12	39	43.6	4	4	3	10	43.9
40 / 44	118	97	116	330	39.1	52	89	62	203	38.6	27	40	29	96	38.9
35 / 39	62	22	40	124	34.9	115	102	107	325	34.2	96	107	95	298	34.2
30 / 34	12	2	6	21	30.7	51	29	42	122	30.0	85	81	84	249	29.9
25 / 29	1	0	0	1	27.0	10	4	8	22	25.7	29	16	25	71	25.3
20 / 24						2	0	2	4	20.9	8	3	4	16	20.7
15 / 19						0		0	0	17.7	3	1	1	5	16.6
10 / 14											0	0	0	1	12.4
5 / 9												0		0	8.0

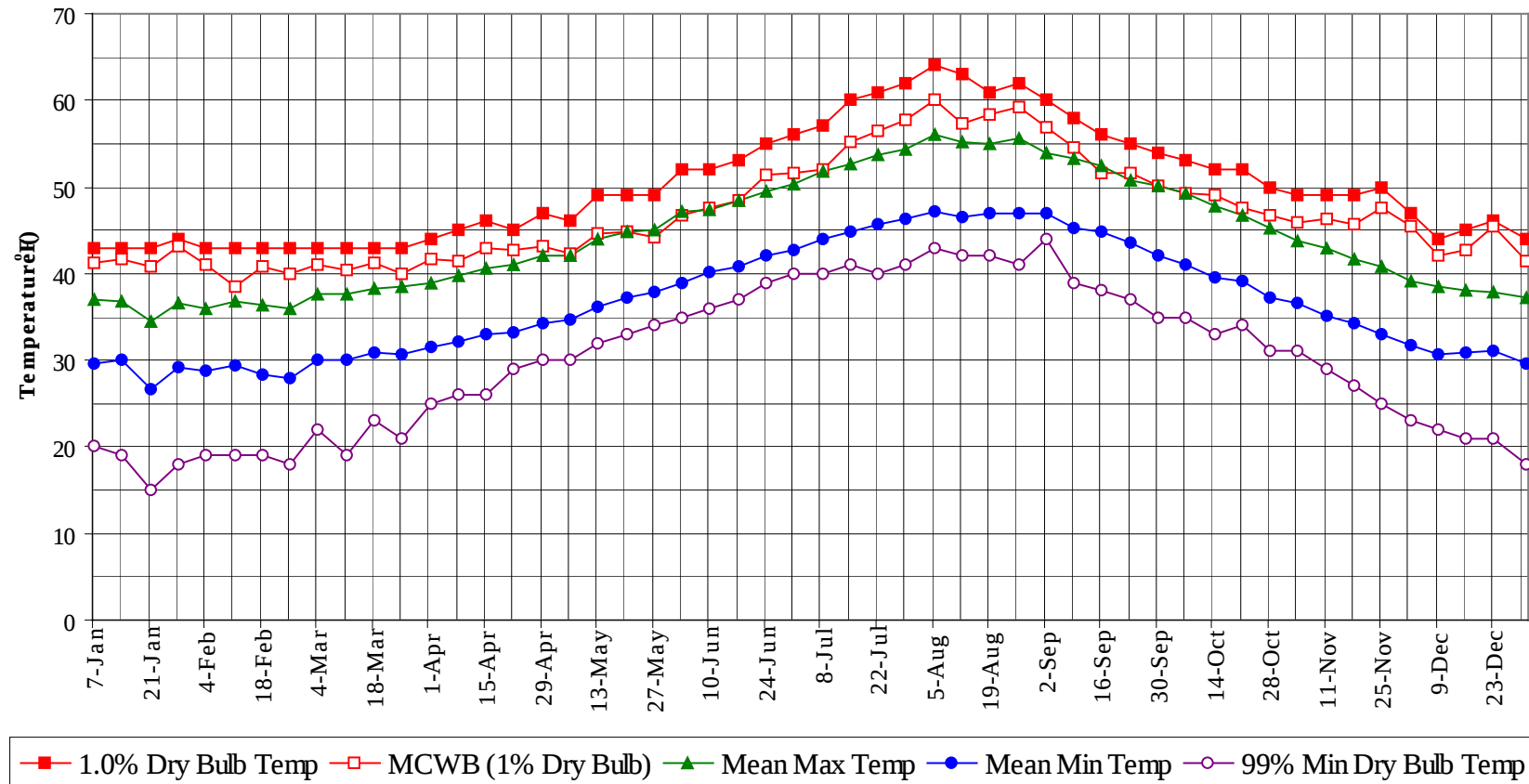
Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary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

ADAK NAS/MITCHELL AK WMO No. 704540
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)
Period of Record = 1967 to 1996

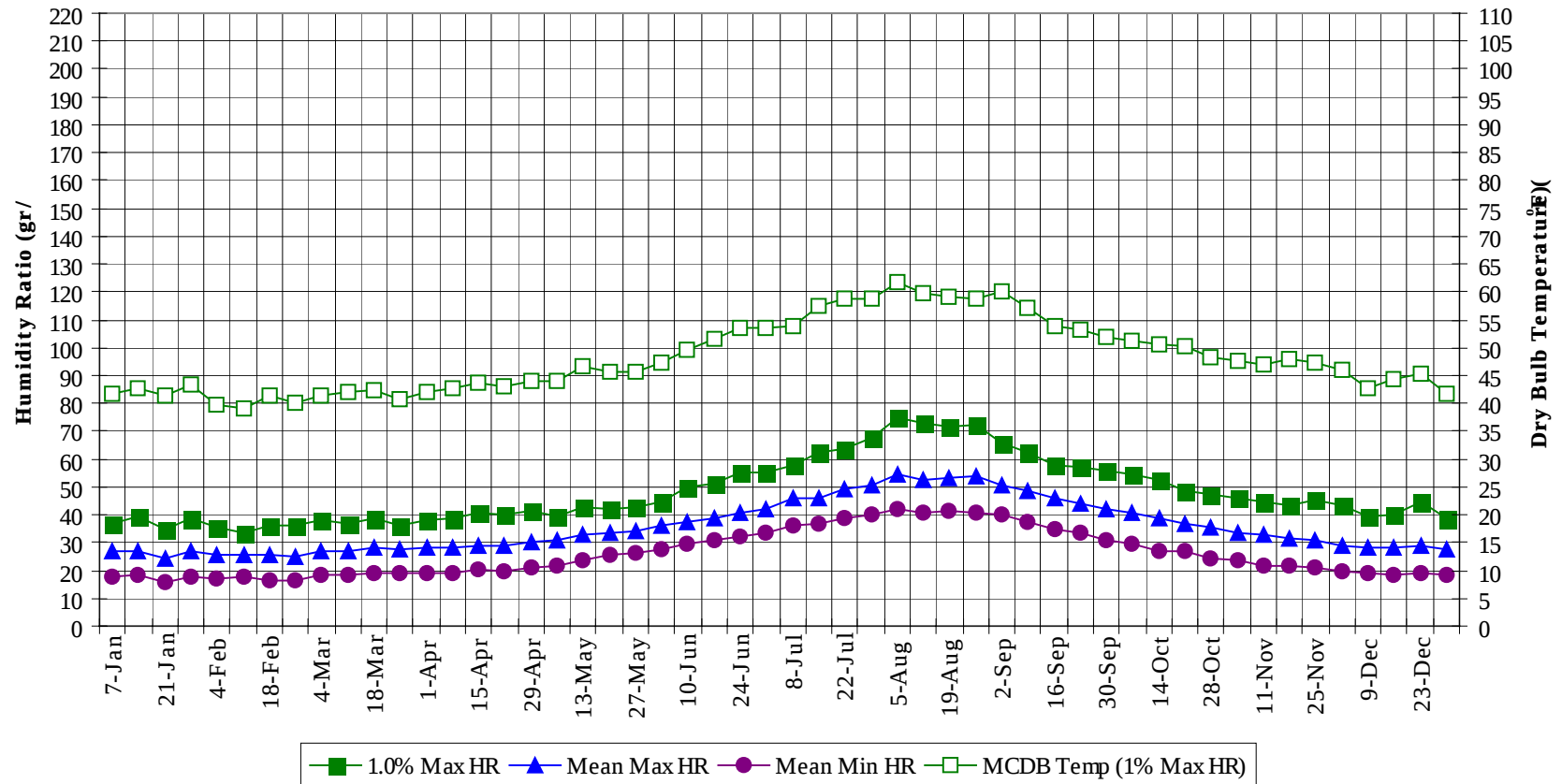
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
70 / 74		1		1	64.5
65 / 69	0	3	1	5	60.4
60 / 64	2	19	7	28	57.2
55 / 59	22	96	49	167	52.7
50 / 54	157	398	263	818	48.5
45 / 49	536	583	554	1673	44.3
40 / 44	632	635	595	1862	39.3
35 / 39	816	702	734	2252	34.3
30 / 34	544	393	458	1396	29.9
25 / 29	184	100	145	429	25.1
20 / 24	50	18	32	100	20.7
15 / 19	14	3	6	24	16.2
10 / 14	4	1	1	6	11.4
5 / 9	0	0		0	7.8

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

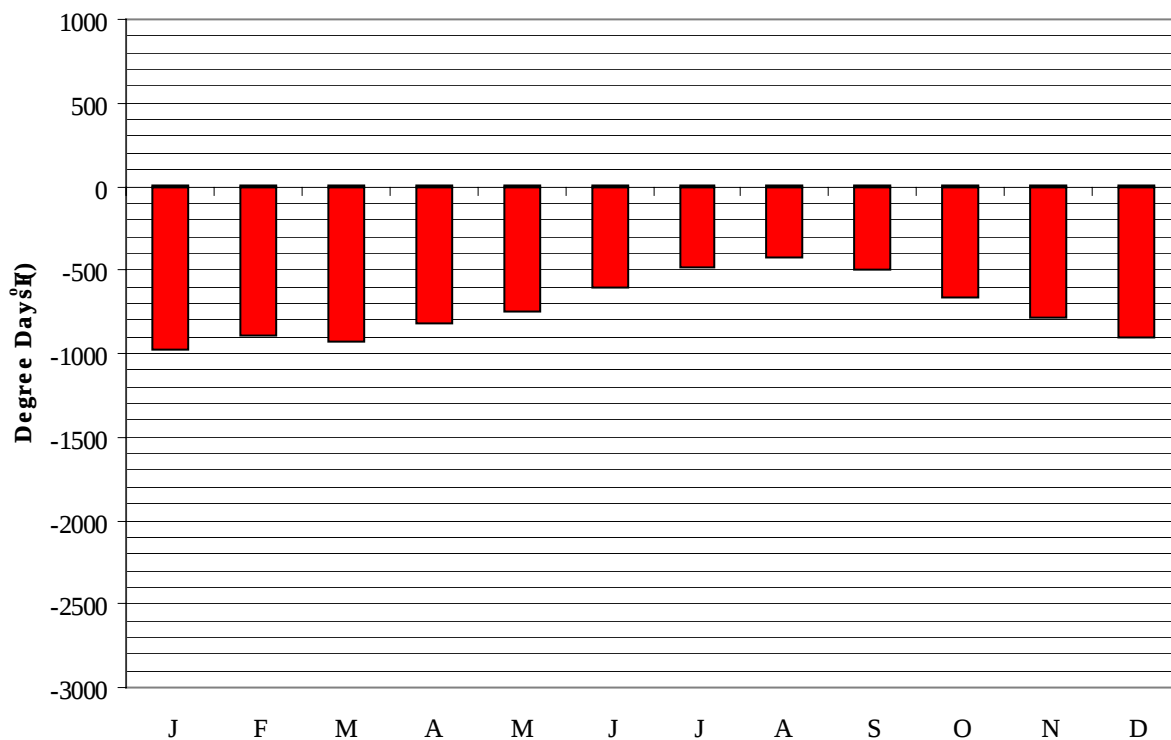
Week Ending	1.0% Temp (°F)	MCWB @ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB @ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	43.0	41.2	36.9	29.6	20.0	37.1	41.7	27.1	18.0
14-Jan	43.0	41.8	36.8	30.0	19.0	39.2	42.7	26.7	18.3
21-Jan	43.0	40.9	34.5	26.8	15.0	35.0	41.4	24.3	15.5
28-Jan	44.0	43.1	36.6	29.2	18.0	38.5	43.3	26.8	17.7
4-Feb	43.0	41.1	35.9	28.7	19.0	35.7	39.8	25.7	17.4
11-Feb	43.0	38.5	36.9	29.3	19.0	33.6	39.2	25.9	17.5
18-Feb	43.0	40.9	36.3	28.3	19.0	36.4	41.4	25.5	16.5
25-Feb	43.0	40.0	35.9	27.8	18.0	36.4	40.1	25.1	16.4
4-Mar	43.0	41.0	37.6	30.0	22.0	37.8	41.5	26.9	18.2
11-Mar	43.0	40.3	37.7	30.0	19.0	37.1	42.0	27.1	18.3
18-Mar	43.0	41.2	38.2	30.8	23.0	38.5	42.4	28.2	19.2
25-Mar	43.0	40.0	38.4	30.7	21.0	36.4	40.8	27.7	18.7
1-Apr	44.0	41.7	39.0	31.5	25.0	37.8	42.1	28.4	19.0
8-Apr	45.0	41.4	39.8	32.1	26.0	38.5	42.8	27.9	19.2
15-Apr	46.0	43.0	40.6	32.9	26.0	40.6	43.6	29.2	20.1
22-Apr	45.0	42.7	41.0	33.3	29.0	39.9	43.0	29.1	20.0
29-Apr	47.0	43.2	42.1	34.3	30.0	41.3	43.9	30.4	21.2
6-May	46.0	42.2	42.1	34.7	30.0	39.2	43.9	30.6	22.0
13-May	49.0	44.6	43.9	36.2	32.0	42.7	46.6	32.6	23.7
20-May	49.0	44.8	44.9	37.2	33.0	42.0	45.8	33.6	25.3
27-May	49.0	44.2	45.1	37.9	34.0	42.7	45.6	34.0	26.1
3-Jun	52.0	46.7	47.2	38.9	35.0	44.8	47.3	35.8	27.4
10-Jun	52.0	47.7	47.4	40.1	36.0	49.7	49.6	37.2	29.4
17-Jun	53.0	48.4	48.5	40.8	37.0	51.1	51.4	39.1	30.7
24-Jun	55.0	51.4	49.5	42.0	39.0	55.3	53.7	41.0	32.5
1-Jul	56.0	51.6	50.4	42.8	40.0	55.3	53.5	41.9	33.6
8-Jul	57.0	51.9	51.9	44.0	40.0	58.1	54.0	46.2	36.4
15-Jul	60.0	55.1	52.6	44.8	41.0	62.3	57.6	46.3	36.8
22-Jul	61.0	56.5	53.8	45.6	40.0	63.7	58.8	49.6	39.0
29-Jul	62.0	57.8	54.4	46.2	41.0	67.9	58.7	50.7	40.2
5-Aug	64.0	60.0	56.1	47.2	43.0	74.9	61.7	54.2	41.8
12-Aug	63.0	57.4	55.2	46.6	42.0	72.8	59.7	52.4	40.7
19-Aug	61.0	58.3	55.0	47.0	42.0	71.4	59.1	52.9	41.5
26-Aug	62.0	59.2	55.6	46.9	41.0	72.1	58.9	53.7	41.0
2-Sep	60.0	56.9	54.0	46.9	44.0	65.8	60.2	50.4	39.8
9-Sep	58.0	54.5	53.2	45.2	39.0	62.3	57.1	48.6	37.2
16-Sep	56.0	51.7	52.4	44.7	38.0	58.1	53.9	46.1	34.7
23-Sep	55.0	51.5	50.8	43.5	37.0	57.4	53.3	43.9	33.2
30-Sep	54.0	50.1	50.1	42.1	35.0	56.0	52.0	42.3	31.0
7-Oct	53.0	49.4	49.2	40.9	35.0	54.6	51.3	40.7	29.3
14-Oct	52.0	49.2	47.9	39.5	33.0	52.5	50.7	38.5	26.9
21-Oct	52.0	47.6	46.7	39.2	34.0	48.3	50.1	37.0	26.6
28-Oct	50.0	46.8	45.2	37.2	31.0	47.6	48.3	35.2	24.3
4-Nov	49.0	45.9	43.7	36.6	31.0	46.2	47.7	33.7	23.5
11-Nov	49.0	46.3	42.8	35.2	29.0	44.8	46.9	32.9	21.9
18-Nov	49.0	45.6	41.7	34.2	27.0	43.4	47.9	31.5	21.9
25-Nov	50.0	47.5	40.8	33.0	25.0	45.5	47.2	31.2	20.7
2-Dec	47.0	45.5	39.2	31.7	23.0	43.4	46.0	29.0	19.4
9-Dec	44.0	42.1	38.5	30.7	22.0	39.2	42.7	28.5	18.9
16-Dec	45.0	42.8	38.1	31.0	21.0	39.9	44.4	28.4	18.6
23-Dec	46.0	45.4	37.9	31.1	21.0	44.8	45.3	28.6	19.3
31-Dec	44.0	41.4	37.1	29.6	18.0	38.5	41.8	27.7	18.2

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Degree Days, Heating and Cooling (Base 65°F)



■ Mean Cooling Degree Days
 ■ Mean Heating Degree Days

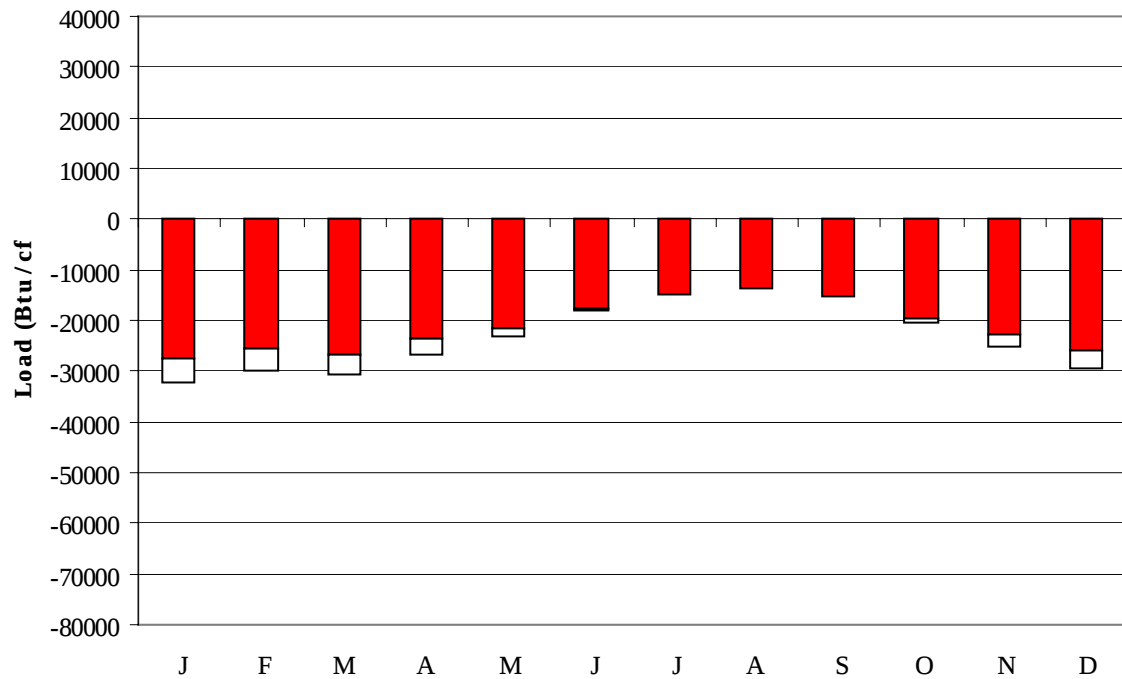
	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	974
FEB	0	895
MAR	0	934
APR	0	821
MAY	0	745
JUN	0	599
JUL	0	489
AUG	0	431
SEP	0	500
OCT	0	659
NOV	0	786
DEC	0	903
ANN	0	8736

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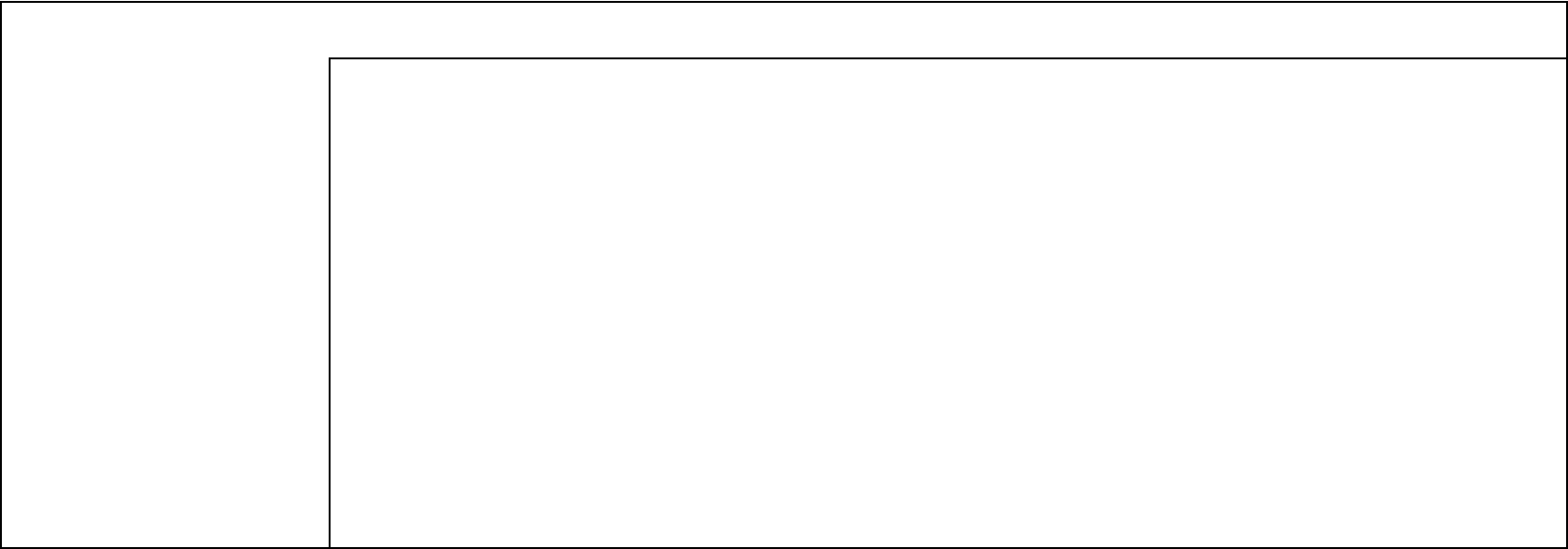
Average Ventilation and Infiltration Loads
(Outside Air vs. 75°F, 60% RH summer; 68°F, 30% RH winter)



	Average Sensible Cooling Load (Btu/cfm)	Average Sensible Heating Load (Btu/cfm)	Average Latent Cooling Load (Btu/cfm)	Average Latent Heating Load (Btu/cfm)
JAN	0	-27606	0	-4605
FEB	0	-25360	0	-4423
MAR	0	-26595	0	-3982
APR	0	-23540	0	-3227
MAY	0	-21657	0	-1683
JUN	0	-17781	0	-324
JUL	0	-14997	2	-51
AUG	0	-13511	4	-9
SEP	0	-15209	0	-183
OCT	0	-19417	0	-1087
NOV	0	-22627	0	-2660
DEC	0	-25732	0	-3775
ANN	0	-254032	6	-26009

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

No Solar Radiation
Data Available

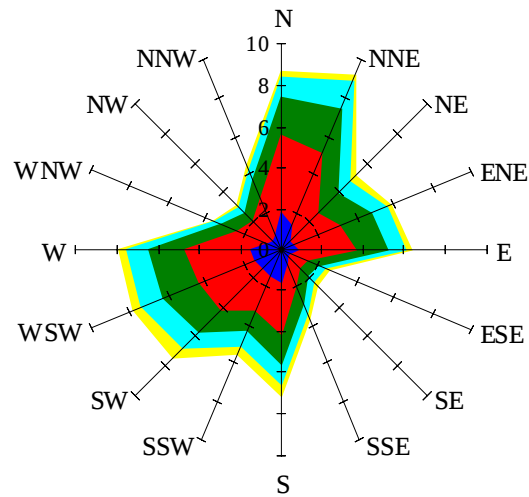


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

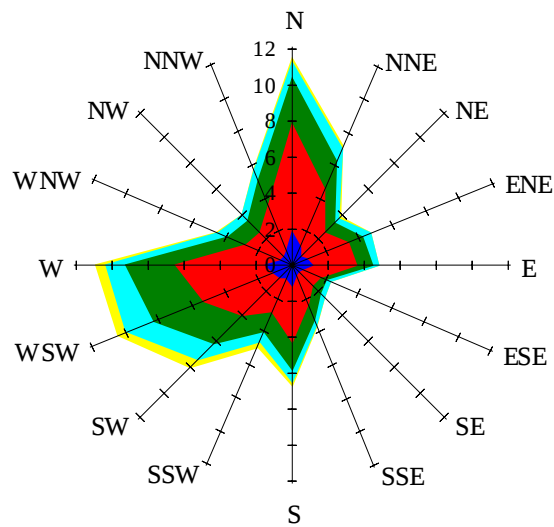
Labels of Percent Frequency on North Axis



Percent Calm = 9.76

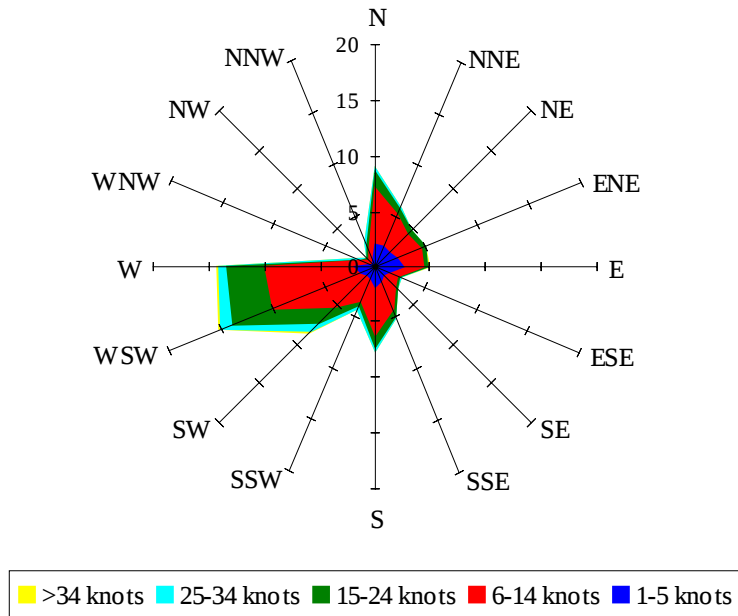
Wind Summary - March, April, and May

Labels of Percent Frequency on North Axis



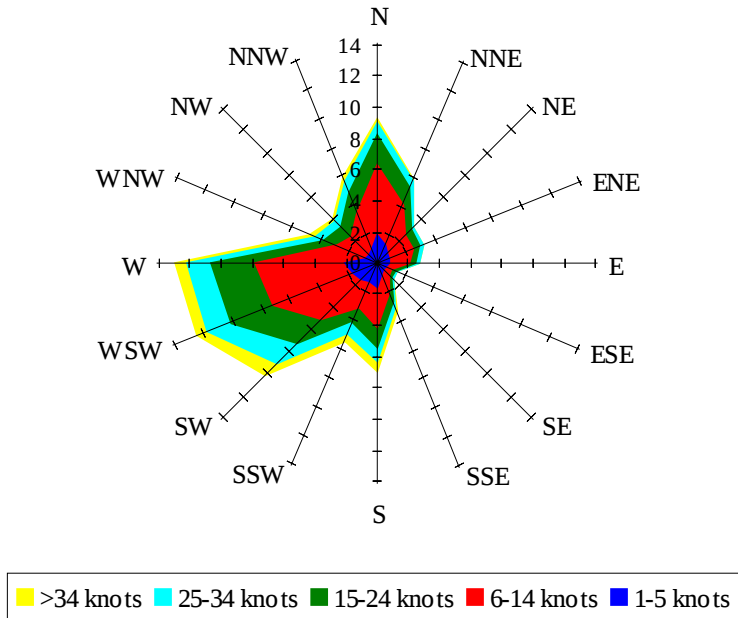
Percent Calm = 5.18

Wind Summary - June, July, and August **Labels of Percent Frequency on North Axis**



Percent Calm = 6.42

Wind Summary - September, October, and November **Labels of Percent Frequency on North Axis**



Percent Calm = 7.74