

KOTZEBUE/RALPH WIEN AK

Latitude = 66.87 N

WMO No. 701330

Longitude = 162.60 W

Elevation = 16 feet

Period of Record = 1973 to 1996

Average Pressure = 29.82 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	74	60	57	13.7	E
0.4% Occurrence	68	59	63	11.3	E
1.0% Occurrence	64	57	60	11.5	WNW
2.0% Occurrence	61	56	57	11.8	WNW
Mean Daily Range	11	-	-	-	-
97.5% Occurrence	-25	-25	1	8.1	ENE
99.0% Occurrence	-31	-31	1	6.6	E
99.6% Occurrence	-36	-36	1	6.3	E
Median of Extreme Lows	-38	-38	0	6.2	E
	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	64	70	77	10.3	WNW
0.4% Occurrence	60	65	68	10.8	WNW
1.0% Occurrence	58	62	64	11.6	WNW
2.0% Occurrence	57	61	62	11.9	WNW
	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	81	67	0.54	10.2	WNW
0.4% Occurrence	71	64	0.48	9.8	WNW
1.0% Occurrence	67	61	0.45	11.3	WNW
2.0% Occurrence	62	59	0.42	11.9	WNW
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		0	1	0	1

Other Site Data

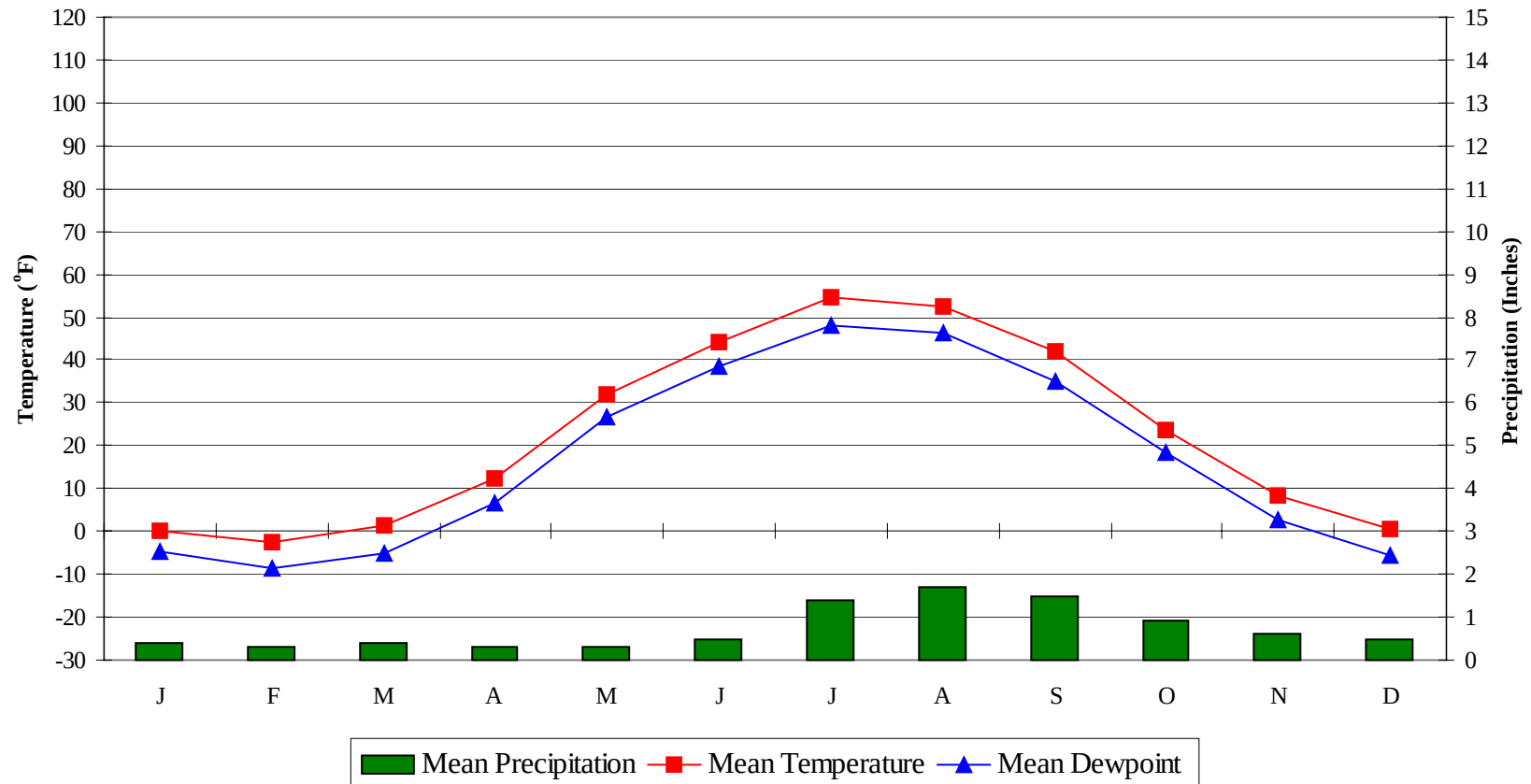
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
1	0.5	120	0.0 + 0.0
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
24.7	N/A	N/A	32

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

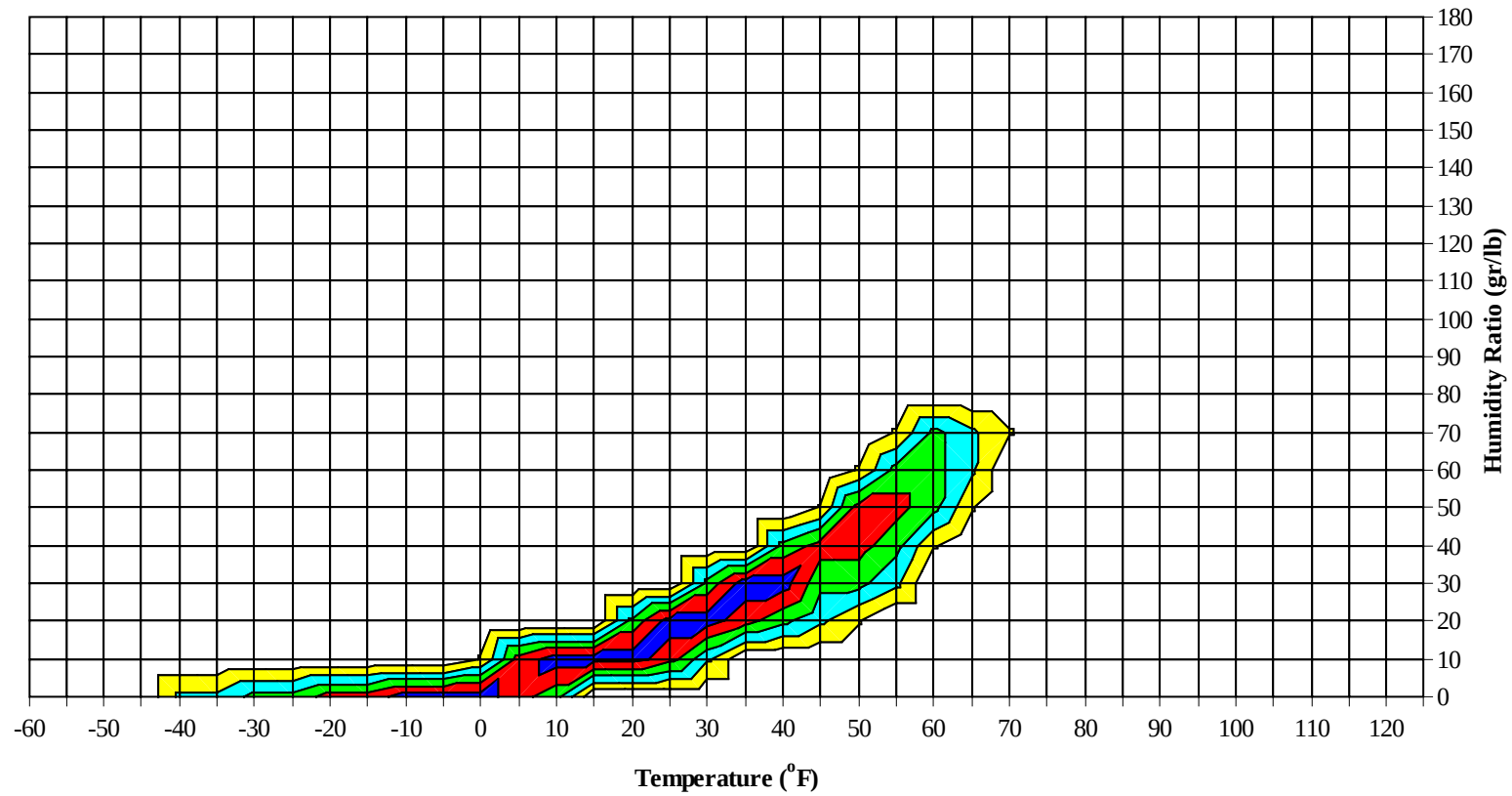
KOTZEBUE/RALPH WIEN AK

WMO No. 701330

Average Annual Climate

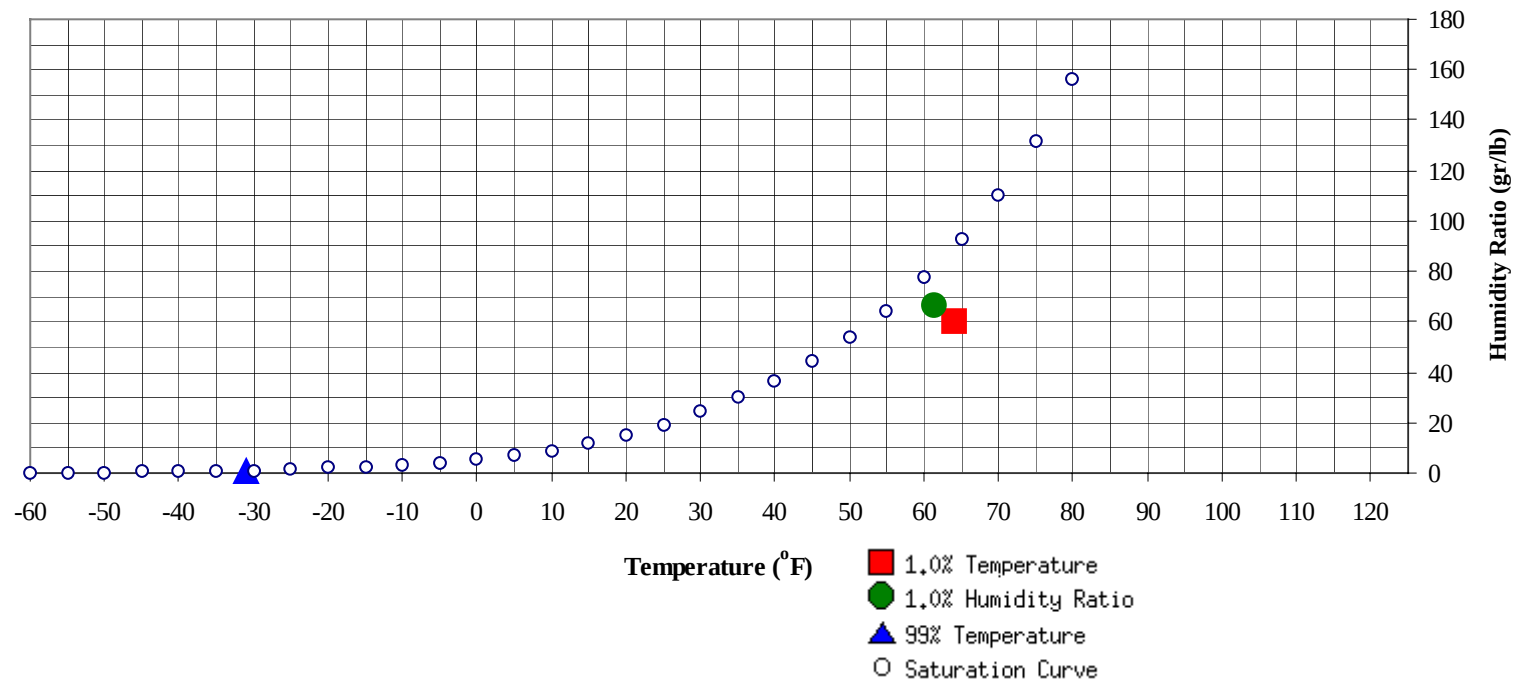


Long Term Psychrometric Summary



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

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)
	-31	0.7	-7.3		66.5	61.4	58	55.8	25.1

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	64	60.3	57.5	24.7

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WMO No. 701330

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		
85 / 89															
80 / 84															
75 / 79															
70 / 74															
65 / 69															
60 / 64															
55 / 59															
50 / 54															
45 / 49															
40 / 44															
35 / 39	1	0	0	1	33.8	1	2	2	5	33.9	0	0	0	0	32.8
30 / 34	5	4	5	14	30.6	5	6	6	17	30.4	2	7	5	14	29.7
25 / 29	16	15	14	45	25.3	9	11	11	31	25.7	9	13	13	35	25.2
20 / 24	21	24	22	67	20.9	15	13	15	43	20.8	16	21	18	55	20.5
15 / 19	23	21	24	68	16.1	17	20	16	53	15.9	17	21	23	61	15.6
10 / 14	19	22	21	62	11.0	18	16	18	52	11.3	22	25	25	71	10.8
5 / 9	24	25	24	73	6.2	15	15	14	44	6.2	27	26	26	78	6.1
0 / 4	23	23	22	68	1.3	17	19	20	56	1.1	25	30	33	87	1.1
-5 / -1	19	17	16	52	-3.2	17	17	18	52	-3.2	22	24	23	68	-3.1
-10 / -6	19	22	21	62	-7.4	21	24	21	66	-7.6	30	29	29	87	-7.6
-15 / -11	18	17	19	54	-12.4	18	18	17	53	-12.3	28	21	22	70	-12.2
-20 / -16	19	19	18	56	-17.1	20	21	22	63	-17.2	20	16	16	52	-16.9
-25 / -21	16	16	15	47	-21.9	20	19	19	58	-21.9	14	9	9	32	-21.7
-30 / -26	9	10	11	30	-26.9	14	11	12	37	-26.8	9	6	5	20	-26.7
-35 / -31	7	7	7	21	-31.7	11	8	8	27	-31.8	5	2	2	9	-31.5
-40 / -36	5	5	4	14	-37.0	4	4	4	12	-36.0	2	0	1	3	-36.0
-45 / -41	3	3	3	9		3	2	2	7	-41.0	0	0		0	
-50 / -46	1	1	1	3		0	0	0	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.

KOTZEBUE/RALPH WIEN AK

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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		
85 / 89												0		0	65.0
80 / 84												0	0	0	62.7
75 / 79												1	0	1	60.5
70 / 74											0	1	1	2	60.1
65 / 69							0	0	0	51.0	1	3	4	8	57.4
60 / 64							1	0	1	48.1	2	9	11	22	54.3
55 / 59						0	2	2	4	46.1	10	18	22	50	51.3
50 / 54						1	8	5	14	43.8	29	35	41	105	47.9
45 / 49						3	14	12	29	41.0	44	46	43	132	44.0
40 / 44	0	1	1	2	36.0	16	30	29	75	37.9	50	47	49	145	39.8
35 / 39	4	16	14	34	33.6	46	63	67	176	34.5	58	59	51	167	35.7
30 / 34	18	27	27	72	30.5	64	63	68	195	31.0	41	22	19	81	32.1
25 / 29	17	23	24	64	25.4	53	37	37	127	26.2	5	1	1	7	27.7
20 / 24	22	26	24	72	20.7	36	17	17	69	21.5	0			0	23.0
15 / 19	25	27	30	81	15.7	11	7	5	23	16.6					
10 / 14	23	31	31	86	10.8	7	3	2	12	11.4					
5 / 9	27	30	29	86	6.0	4	3	2	9	6.2					
0 / 4	25	25	26	75	1.4	2	1	1	4	1.5					
-5 / -1	21	14	13	48	-3.0	2	0	1	3	-2.7					
-10 / -6	26	11	12	48	-7.2	2	0	0	2	-6.5					
-15 / -11	16	8	6	30	-11.9										
-20 / -16	11	3	3	17	-16.9										
-25 / -21	4	0	0	4	-21.2										
-30 / -26	0			0	-26.2										
-35 / -31															
-40 / -36															
-45 / -41															
-50 / -46															

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KOTZEBUE/RALPH WIEN AK

WMO No. 701330

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		
85 / 89															
80 / 84		0	0	0	61.9										
75 / 79		1	1	2	61.8										
70 / 74	0	5	5	10	60.3		2	2	4	60.0					
65 / 69	3	16	21	40	59.4	0	8	7	15	58.9		0	0	0	53.4
60 / 64	21	37	45	104	56.3	6	28	30	64	56.6		2	2	4	50.8
55 / 59	61	67	71	199	53.2	43	60	61	164	53.3	1	10	9	20	50.0
50 / 54	89	71	61	222	49.5	97	87	89	273	49.4	14	31	32	76	47.6
45 / 49	50	35	29	114	45.3	64	47	43	154	44.8	50	60	59	169	44.0
40 / 44	19	14	13	46	40.9	30	15	13	58	39.7	68	58	64	190	39.4
35 / 39	3	2	1	6	36.2	7	2	2	11	34.9	59	45	46	150	34.6
30 / 34	1	0	0	1	33.0	1	0	0	1	30.3	27	23	20	70	29.8
25 / 29						0	0	0	0	27.0	15	8	7	30	25.3
20 / 24											5	2	1	8	20.4
15 / 19											2	1	0	3	16.2
10 / 14											0			0	13.0
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															
-30 / -26															
-35 / -31															
-40 / -36															
-45 / -41															
-50 / -46															

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KOTZEBUE/RALPH WIEN AK

WMO No. 701330

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		
85 / 89															
80 / 84															
75 / 79															
70 / 74															
65 / 69															
60 / 64															
55 / 59															
50 / 54		0		0	41.0										
45 / 49	0	1	1	2	41.5										
40 / 44	6	10	8	24	38.5			0	0	37.0					
35 / 39	25	32	30	87	34.4	1	1	1	3	33.6	0	0	0	0	33.5
30 / 34	47	47	47	141	30.6	9	11	11	31	31.0	4	5	4	13	30.4
25 / 29	39	45	42	126	25.2	16	16	15	47	25.3	13	13	13	39	25.6
20 / 24	40	40	43	123	20.7	25	26	25	76	20.8	18	18	19	55	21.0
15 / 19	35	31	29	95	15.8	30	29	26	85	15.9	18	18	16	52	16.0
10 / 14	25	20	21	66	10.9	30	35	32	97	11.0	21	23	23	67	10.8
5 / 9	15	13	14	42	6.1	33	31	30	94	6.2	23	24	23	70	6.1
0 / 4	12	7	7	26	1.6	27	28	30	85	1.3	28	27	26	81	1.2
-5 / -1	2	2	2	6	-3.0	21	21	21	63	-3.1	23	22	23	68	-3.2
-10 / -6	1	1	1	3	-7.5	24	23	23	70	-7.4	29	32	31	92	-7.5
-15 / -11	1	0	1	2	-11.7	13	13	13	39	-11.8	27	25	24	76	-12.1
-20 / -16						6	4	6	16	-16.8	18	17	21	56	-17.0
-25 / -21						3	2	3	8	-21.6	13	15	13	41	-21.7
-30 / -26						1	1	1	3	-26.0	8	6	7	21	-26.8
-35 / -31											4	3	3	10	-31.4
-40 / -36											0	0	0	0	-38.3
-45 / -41												0	0	0	
-50 / -46															

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.

KOTZEBUE/RALPH WIEN AK

WMO No. 701330

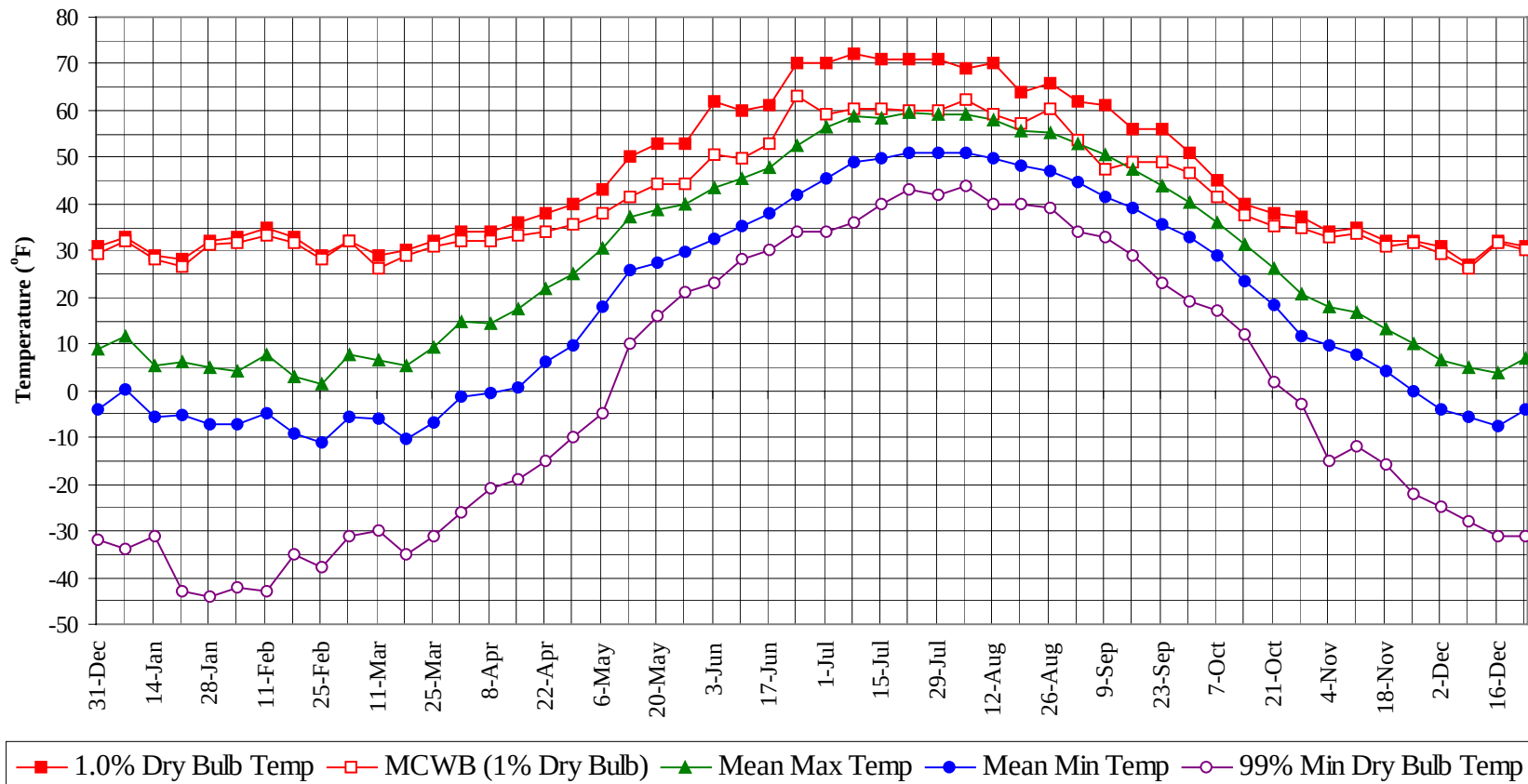
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)

Period of Record = 1973 to 1996

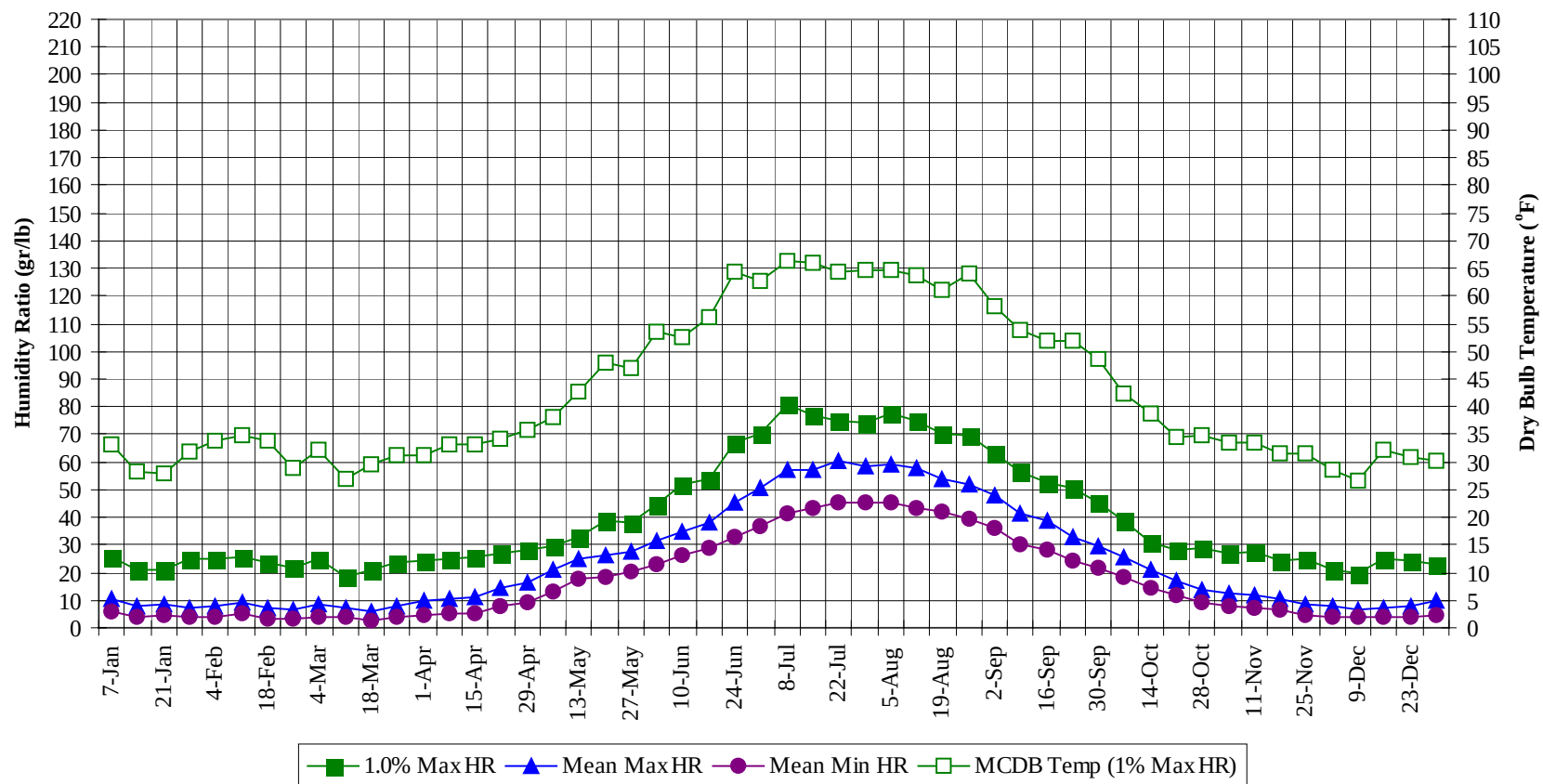
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
85 / 89	0			0	65.0
80 / 84	1			0	1 62.5
75 / 79	1			1	2 61.4
70 / 74	0	8	8	16	60.2
65 / 69	4	27	31	62	58.9
60 / 64	29	75	86	191	56.0
55 / 59	112	153	162	427	52.8
50 / 54	226	228	222	675	48.9
45 / 49	207	199	185	590	44.3
40 / 44	188	173	175	535	39.4
35 / 39	203	222	213	637	34.8
30 / 34	225	215	214	654	30.8
25 / 29	192	181	178	550	25.6
20 / 24	200	186	185	570	20.9
15 / 19	179	175	170	524	15.9
10 / 14	167	176	177	520	10.9
5 / 9	166	167	166	499	6.1
0 / 4	161	160	170	491	1.2
-5 / -1	130	117	118	365	-3.1
-10 / -6	152	142	140	433	-7.5
-15 / -11	122	103	103	328	-12.1
-20 / -16	97	80	86	263	-17.0
-25 / -21	73	61	60	194	-21.8
-30 / -26	42	34	36	112	-26.8
-35 / -31	27	21	20	68	-31.7
-40 / -36	11	9	9	29	-36.4
-45 / -41	6	5	5	16	-41.0
-50 / -46	1	1	1	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

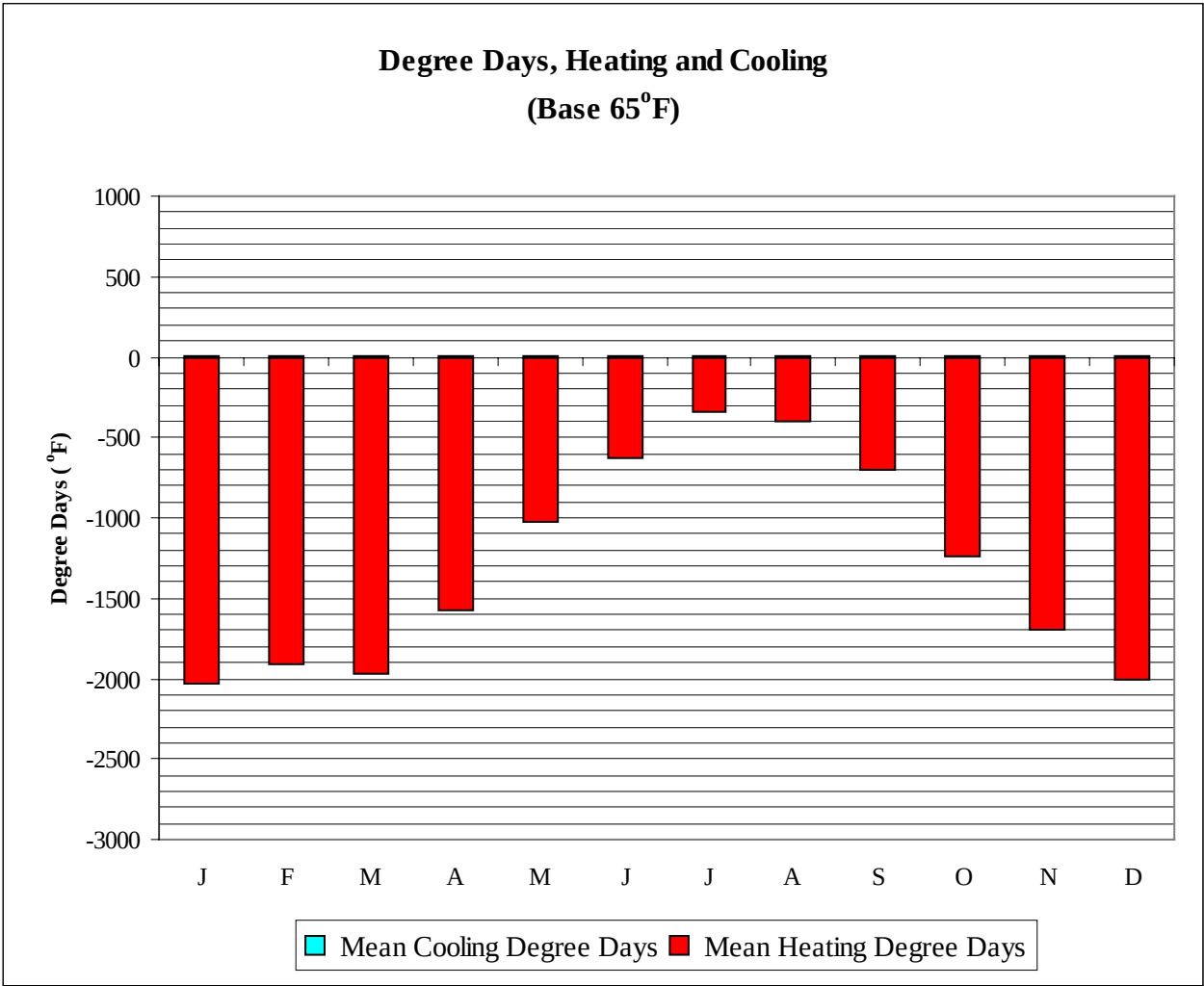


Long Term Humidity and Dry Bulb Temperature Summary



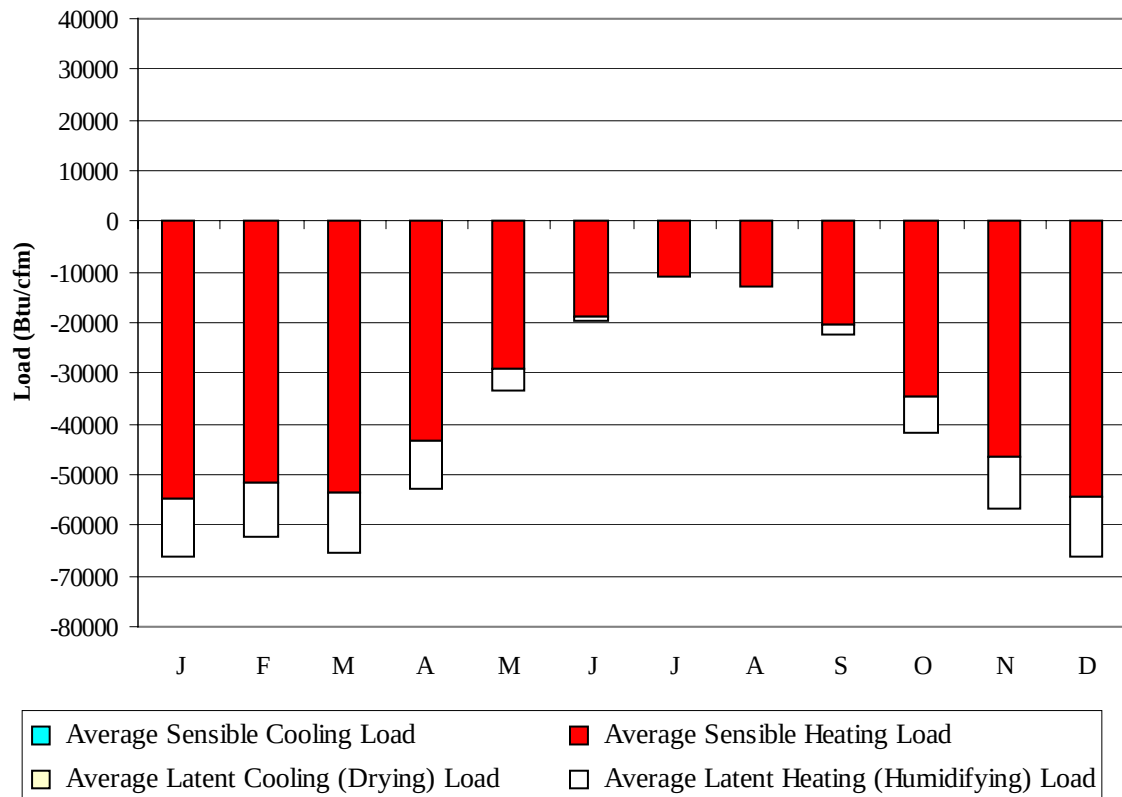
KOTZEBUE/RALPH WIEN AK**WMO No. 701330****Long Term Dry Bulb Temperature and Humidity Summary**

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	33.0	32.0	11.5	0.2	-34.0	25.9	33.3	10.7	6.0
14-Jan	29.0	28.0	5.5	-5.7	-31.0	21.0	28.3	7.7	4.3
21-Jan	28.0	26.7	6.2	-5.2	-43.0	21.0	28.0	8.3	4.3
28-Jan	32.0	31.2	4.8	-7.0	-44.0	25.2	31.8	7.4	3.8
4-Feb	33.0	31.8	4.3	-7.3	-42.0	25.2	34.0	7.7	4.2
11-Feb	35.0	33.3	7.8	-4.7	-43.0	25.9	34.8	9.1	5.1
18-Feb	33.0	31.8	3.1	-9.1	-35.0	23.8	33.9	7.0	3.6
25-Feb	29.0	28.0	1.4	-11.3	-38.0	21.7	28.9	6.3	3.0
4-Mar	32.0	32.0	7.8	-5.8	-31.0	25.2	32.1	8.5	4.0
11-Mar	29.0	26.2	6.5	-6.1	-30.0	18.2	26.8	7.5	3.8
18-Mar	30.0	29.0	5.3	-10.5	-35.0	21.0	29.4	6.2	2.7
25-Mar	32.0	31.0	9.3	-6.9	-31.0	23.8	31.0	8.1	3.9
1-Apr	34.0	32.2	14.7	-1.4	-26.0	24.5	31.2	10.0	4.7
8-Apr	34.0	32.1	14.4	-0.7	-21.0	25.2	33.2	10.3	5.2
15-Apr	36.0	33.2	17.7	0.8	-19.0	25.9	33.1	11.5	5.3
22-Apr	38.0	34.1	21.7	6.0	-15.0	26.6	34.2	14.5	7.6
29-Apr	40.0	35.4	25.0	9.8	-10.0	28.0	35.8	16.6	9.2
6-May	43.0	38.1	30.7	18.1	-5.0	29.4	38.0	21.1	13.3
13-May	50.0	41.5	37.2	26.0	10.0	32.9	42.6	25.3	17.5
20-May	53.0	44.4	38.9	27.5	16.0	38.5	48.1	26.4	18.5
27-May	53.0	44.2	39.9	29.8	21.0	37.8	47.1	27.4	20.0
3-Jun	62.0	50.6	43.5	32.5	23.0	44.8	53.4	31.5	23.2
10-Jun	60.0	49.8	45.4	35.4	28.0	51.8	52.5	34.9	26.2
17-Jun	61.0	52.9	47.7	38.2	30.0	53.9	56.2	38.2	29.1
24-Jun	70.0	63.0	52.6	42.1	34.0	67.2	64.3	45.3	33.0
1-Jul	70.0	59.0	56.4	45.5	34.0	70.0	62.8	50.8	36.9
8-Jul	72.0	60.5	58.8	49.0	36.0	80.5	66.5	57.1	41.6
15-Jul	71.0	60.2	58.4	49.6	40.0	77.0	66.0	57.2	43.1
22-Jul	71.0	60.0	59.6	51.0	43.0	74.9	64.4	60.4	45.6
29-Jul	71.0	59.9	59.3	50.8	42.0	74.2	64.8	58.7	45.2
5-Aug	69.0	62.2	59.0	50.9	44.0	77.7	64.5	59.0	45.6
12-Aug	70.0	59.3	58.0	49.6	40.0	74.9	63.6	57.5	43.6
19-Aug	64.0	57.3	55.5	48.0	40.0	70.0	61.0	53.6	41.9
26-Aug	66.0	60.3	55.2	46.9	39.0	69.3	64.1	51.6	39.4
2-Sep	62.0	53.9	53.0	44.6	34.0	63.0	58.0	47.7	35.9
9-Sep	61.0	47.3	50.6	41.7	33.0	56.7	53.7	41.1	30.4
16-Sep	56.0	49.1	47.6	39.1	29.0	52.5	51.8	38.7	28.3
23-Sep	56.0	48.9	43.7	35.5	23.0	50.4	51.8	32.8	24.5
30-Sep	51.0	46.8	40.3	32.8	19.0	45.5	48.6	29.7	21.9
7-Oct	45.0	41.6	36.2	29.1	17.0	38.5	42.5	25.5	18.5
14-Oct	40.0	37.5	31.1	23.5	12.0	30.8	38.6	21.0	14.6
21-Oct	38.0	35.4	26.4	18.5	2.0	28.0	34.4	17.2	12.1
28-Oct	37.0	34.8	20.7	11.8	-3.0	28.7	34.9	13.5	8.9
4-Nov	34.0	32.9	18.0	9.6	-15.0	26.6	33.5	12.4	7.8
11-Nov	35.0	33.7	16.7	7.7	-12.0	27.3	33.6	11.9	7.4
18-Nov	32.0	30.8	13.2	4.1	-16.0	24.5	31.6	10.6	6.5
25-Nov	32.0	31.9	10.2	-0.2	-22.0	25.2	31.6	8.6	4.8
2-Dec	31.0	29.4	6.6	-4.2	-25.0	21.0	28.6	7.8	4.1
9-Dec	27.0	26.0	5.1	-5.7	-28.0	19.6	26.5	6.9	3.8
16-Dec	32.0	31.6	3.9	-7.4	-31.0	25.2	32.1	7.0	3.8
23-Dec	31.0	30.3	7.0	-4.2	-31.0	24.5	30.9	8.1	4.3
31-Dec	31.0	29.4	8.8	-3.9	-32.0	23.1	30.3	9.5	4.9



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	2024
FEB	0	1909
MAR	0	1974
APR	0	1580
MAY	0	1023
JUN	2	631
JUL	6	338
AUG	2	401
SEP	0	700
OCT	0	1241
NOV	0	1700
DEC	0	2004
ANN	10	15525

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	-54881	0	-11179
FEB	0	-51679	0	-10506
MAR	0	-53581	0	-11844
APR	0	-43280	0	-9615
MAY	0	-28922	0	-4343
JUN	7	-18664	1	-763
JUL	4	-11083	16	-30
AUG	0	-12778	3	-134
SEP	0	-20480	0	-1704
OCT	0	-34510	0	-7034
NOV	0	-46398	0	-10499
DEC	0	-54369	0	-11831
ANN	11	-430625	20	-79482

Average Annual Solar Radiation – Nearest Available Site

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

City: KOTZEBUE
 State: AK
 WBAN No: 26616
 Lat(N): 66.87
 Long(W): 162.63
 Elev(ft): 16

Stn Type: Secondary
 SHADING GEOMETRY IN DIMENSIONLESS UNITS
 Window: 1
 Overhang: 0.189
 Vert Gap: 0.2

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	14	190	650	1290	1740	1750	1520	1050	620	270	46	0	770
	Std Dev	3	18	53	126	143	151	143	135	88	27	4	0	37
	Minimum	13	160	520	830	1450	1380	1280	760	470	230	38	0	700
	Maximum	19	210	730	1480	2050	2010	1850	1300	760	310	54	0	850
	Diffuse	9	110	320	630	850	810	780	590	350	160	33	0	390
Clear Day	Global	6	190	720	1530	2210	2480	2280	1660	910	310	35	0	1030
NORTH	Global	6	67	200	420	690	800	660	400	210	99	19	0	300
	Diffuse	6	67	200	390	550	570	510	360	210	99	19	0	250
Clear Day	Global	0	57	170	380	800	1120	910	460	200	86	13	0	350
EAST	Global	23	210	590	1010	1220	1140	990	710	490	250	51	0	560
	Diffuse	6	95	280	520	670	640	580	430	270	130	25	0	310
Clear Day	Global	32	280	780	1390	1800	1920	1800	1440	920	400	67	0	910
SOUTH	Global	150	700	1260	1460	1410	1240	1120	950	850	650	240	0	840
	Diffuse	21	200	410	610	700	650	600	480	330	220	64	0	360
Clear Day	Global	270	1080	1830	2060	1980	1840	1840	1890	1820	1300	440	0	1370
WEST	Global	23	210	610	1040	1290	1280	1100	790	510	250	51	0	600
	Diffuse	6	95	280	520	680	660	600	450	270	130	25	0	310
Clear Day	Global	32	280	780	1390	1800	1920	1800	1440	920	400	67	0	910

Average Annual Solar Heat and Illumination – Nearest Available Site

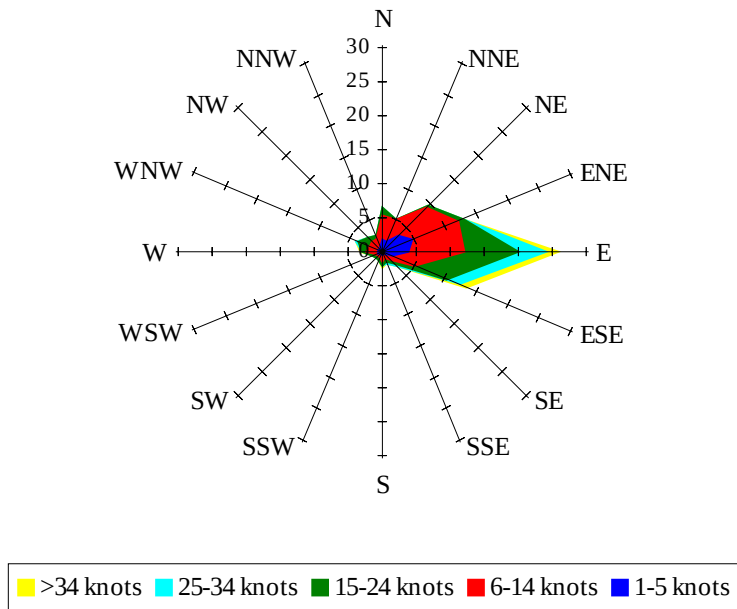
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

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	6	96	390	860	1200	1220	1060	720	400	150	25	0	510
NORTH	Unshaded	3	46	140	280	470	550	450	270	150	68	13	0	200
	Shaded	3	45	130	280	450	530	430	260	140	66	13	0	200
EAST	Unshaded	12	140	420	720	880	820	710	510	350	170	32	0	400
	Shaded	12	140	410	710	850	800	690	490	340	170	31	0	390
SOUTH	Unshaded	120	540	930	1050	990	860	780	680	620	500	180	0	610
	Shaded	120	530	930	1040	970	830	750	660	620	490	180	0	590
WEST	Unshaded	12	140	430	750	930	920	790	570	360	170	31	0	430
	Shaded	12	140	420	730	910	900	770	560	360	170	31	0	420

AVERAGE INCIDENT ILLUMINANCE (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	2	18	33	36	26	27	48	66	73	70
	M.Cloudy	2	14	24	27	20	17	30	41	48	46
NORTH	M.Clear	1	6	9	9	8	22	11	13	14	14
	M.Cloudy	1	6	10	11	8	11	11	14	15	15
EAST	M.Clear	9	48	38	9	8	64	79	62	22	14
	M.Cloudy	4	20	20	11	8	23	34	32	19	15
SOUTH	M.Clear	2	36	75	83	57	8	27	63	79	71
	M.Cloudy	1	16	33	37	25	7	17	32	43	41
WEST	M.Clear	1	6	9	20	49	8	11	13	14	50
	M.Cloudy	1	6	10	15	22	7	11	14	15	31
M.Clear	(% hrs)	46	46	47	49	49	24	26	27	30	33
		Sept					Dec				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	1	17	34	42	37	0	0	0	0	0
	M.Cloudy	1	10	18	24	21	0	0	0	0	0
NORTH	M.Clear	2	6	9	10	9	0	0	0	0	0
	M.Cloudy	1	4	8	10	9	0	0	0	0	0
EAST	M.Clear	7	51	50	15	9	0	0	0	0	0
	M.Cloudy	2	13	16	11	9	0	0	0	0	0
SOUTH	M.Clear	1	25	63	82	70	0	0	0	0	0
	M.Cloudy	1	8	19	29	24	0	0	0	0	0
WEST	M.Clear	1	6	9	10	42	0	0	0	0	0
	M.Cloudy	1	4	8	10	17	0	0	0	0	0
M.Clear	(% hrs)	24	24	26	24	27	49	43	41	41	43

Wind Summary - December, January, and February

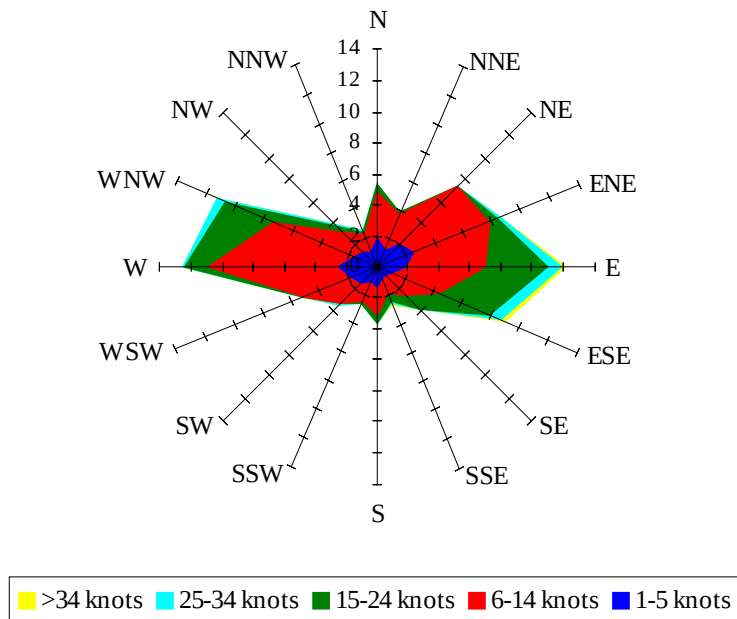
Labels of Percent Frequency on North Axis



Percent Calm = 3.71

Wind Summary - March, April, and May

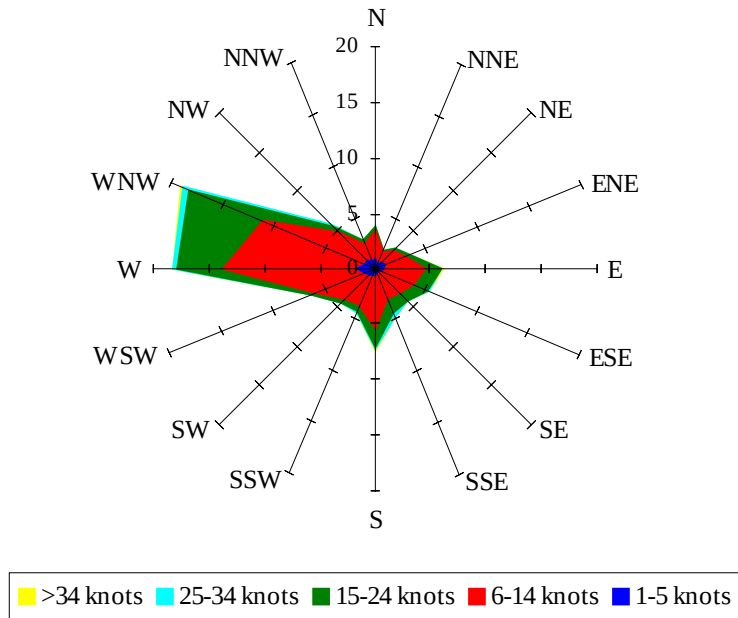
Labels of Percent Frequency on North Axis



Percent Calm = 3.27

Wind Summary - June, July, and August

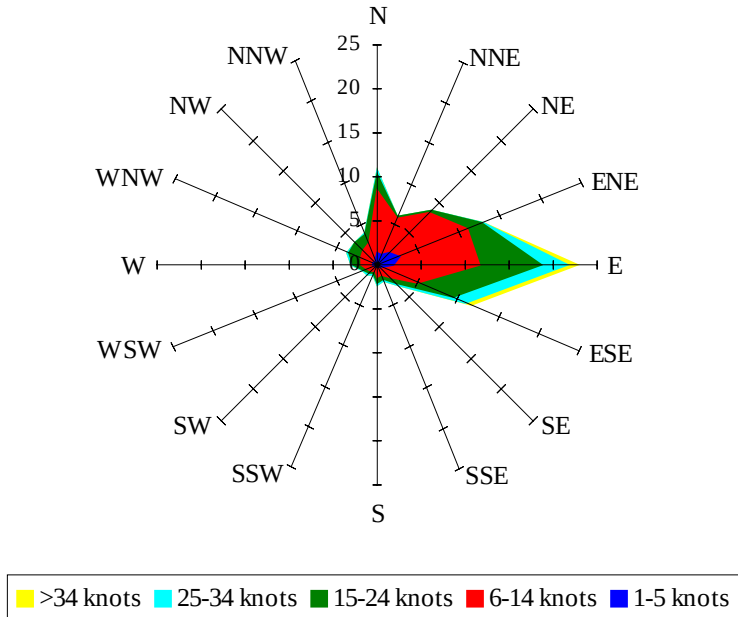
Labels of Percent Frequency on North Axis



Percent Calm = 1.05

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 1.19