

EDMONTON/NAMAO CN

Latitude = 53.67 N

Longitude = 113.40 W

Period of Record = 1967 to 1996

WMO No. 711210

Elevation = 2257 feet

Average Pressure = 27.52 inches Hg

Design Criteria Data

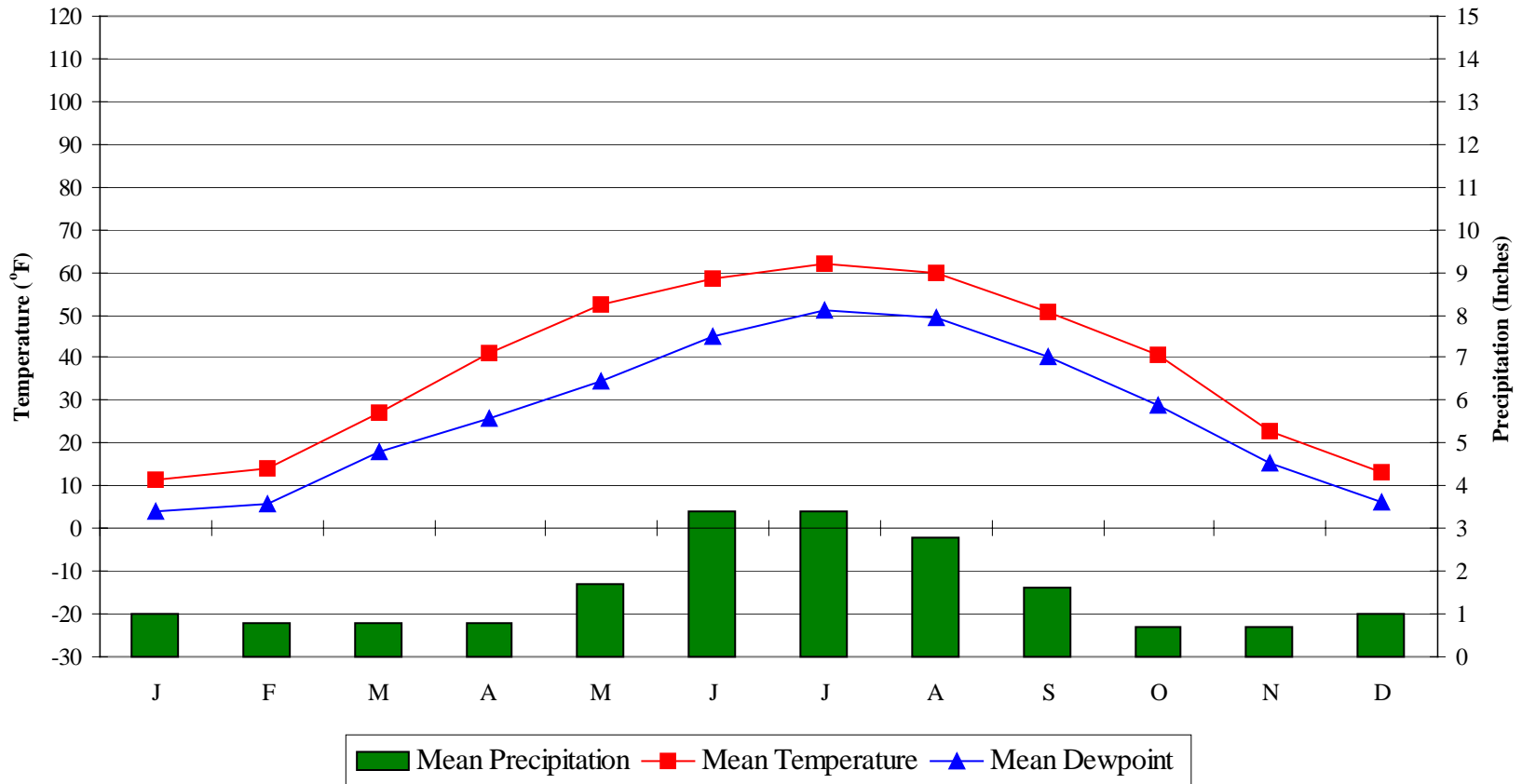
		Mean Coincident (Average) Values			
	Design Value	Wet Bulb Temperature	Humidity Ratio	Wind Speed	Prevailing Direction
	(°F)	(°F)	(gr/lb)	(mph)	(NSEW)
Dry Bulb Temperature (T)					
Median of Extreme Highs	87	65	64	9.8	SE
0.4% Occurrence	81	63	66	8.7	SSE
1.0% Occurrence	77	61	62	8.3	SSE
2.0% Occurrence	75	60	60	8.6	W
Mean Daily Range	17	-	-	-	-
97.5% Occurrence	-13	-14	2	7.3	W
99.0% Occurrence	-20	-21	1	6.5	W
99.6% Occurrence	-24	-24	1	5.9	W
Median of Extreme Lows	-31	-31	1	5.0	W
		Mean Coincident (Average) Values			
	Design Value	Dry Bulb Temperature	Humidity Ratio	Wind Speed	Prevailing Direction
	(°F)	(°F)	(gr/lb)	(mph)	(NSEW)
Wet Bulb Temperature (T_{wb})					
Median of Extreme Highs	69	81	94	7.7	ESE
0.4% Occurrence	66	77	83	7.7	ESE
1.0% Occurrence	64	75	77	7.5	SSE
2.0% Occurrence	62	72	72	7.2	SSE
		Mean Coincident (Average) Values			
	Design Value	Dry Bulb Temperature	Vapor Pressure	Wind Speed	Prevailing Direction
	(gr/lb)	(°F)	(in. Hg)	(mph)	(NSEW)
Humidity Ratio (HR)					
Median of Extreme Highs	98	77	0.61	6.6	SSE
0.4% Occurrence	87	71	0.54	6.7	E
1.0% Occurrence	81	69	0.50	7.0	E
2.0% Occurrence	76	66	0.47	6.8	W
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		0	54	0	22

Other Site Data

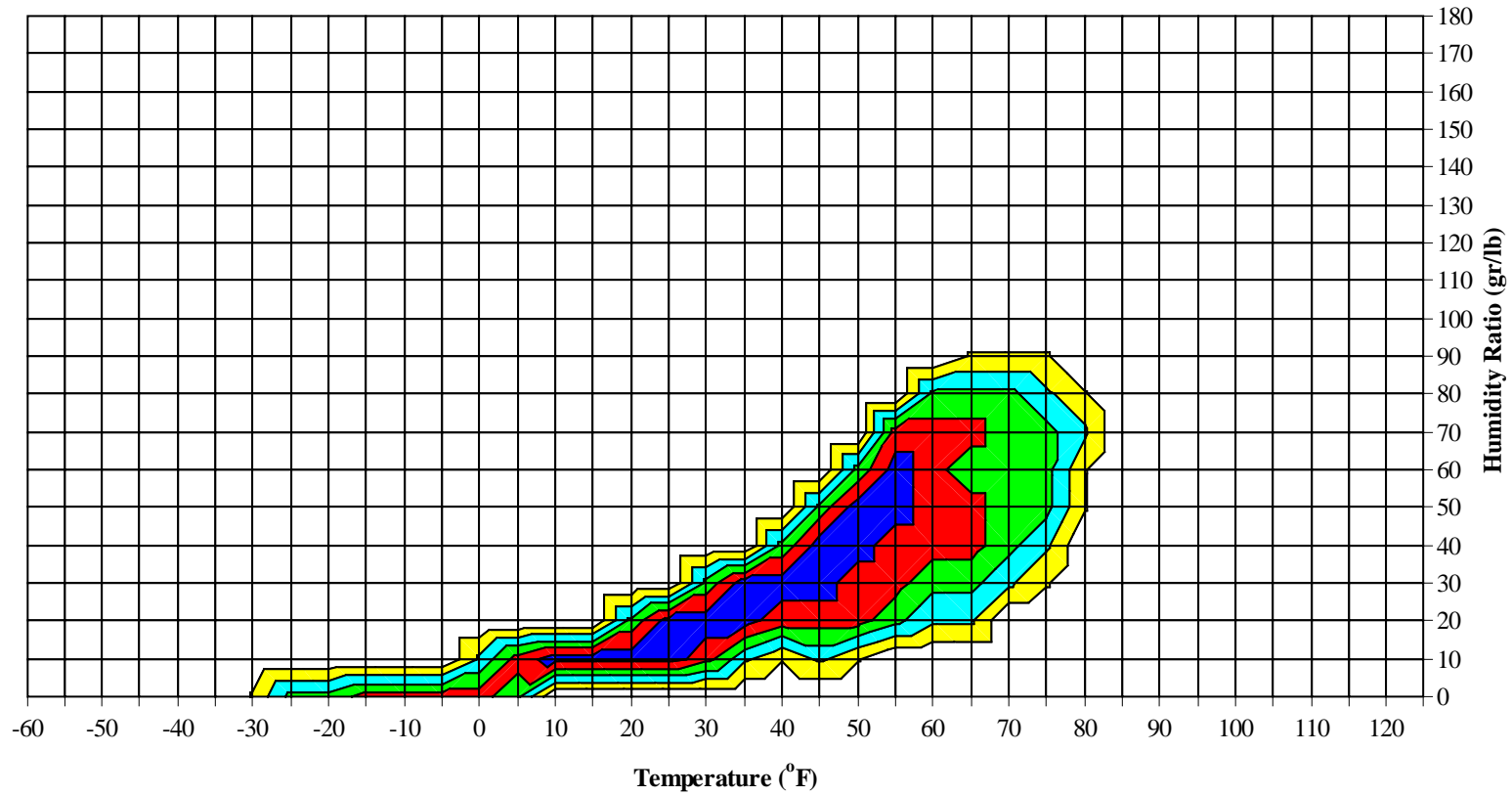
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
4	N/A	N/A	0.0 + 0.1
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
40.3	N/A	N/A	67

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

Average Annual Climate

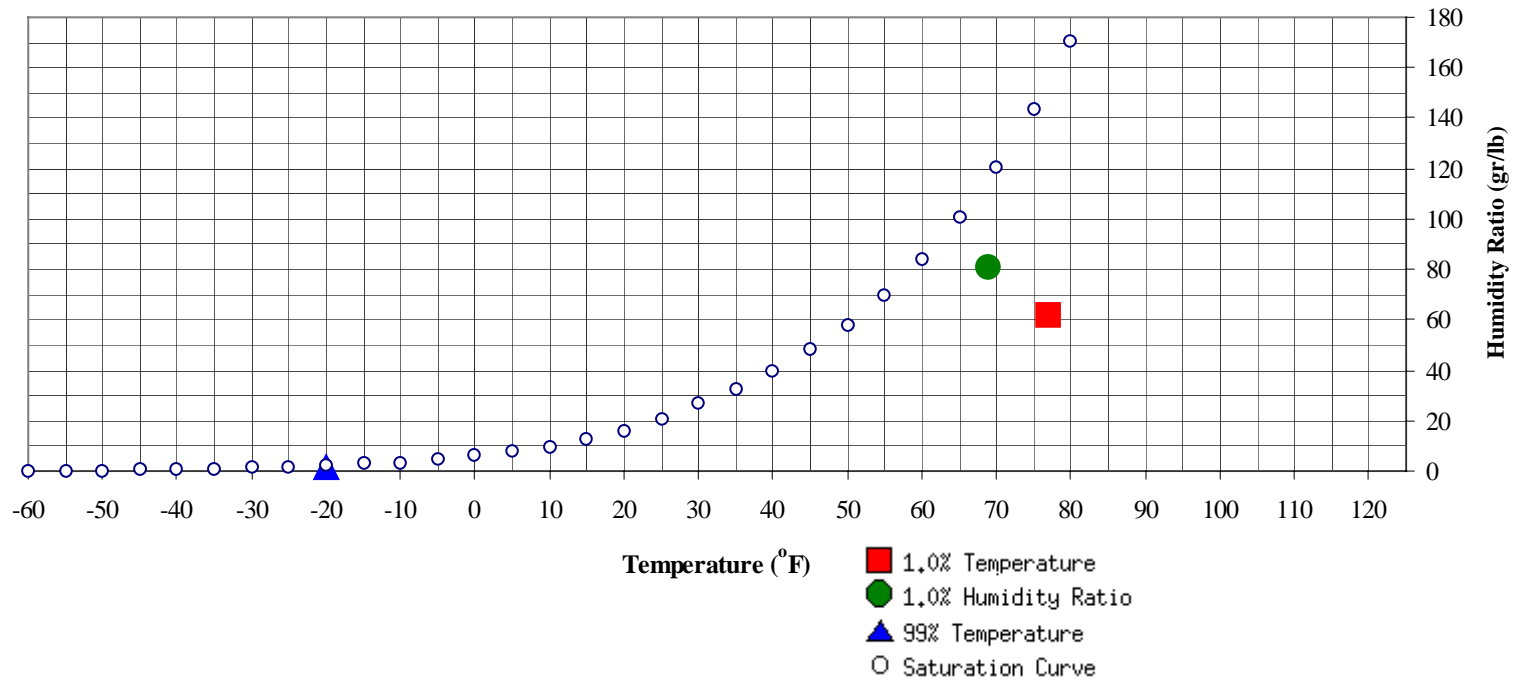


Long Term Psychrometric Summary



- 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



	(°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	-20	1.3	-4.6	81.2	69	62.5	59	29.2	

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	77	61.6	60.9	28.1

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		
90 / 94															
85 / 89															
80 / 84															
75 / 79															
70 / 74															
65 / 69															
60 / 64												0	0	0	45.0
55 / 59												2	1	3	44.0
50 / 54		0	0	0	40.5		2	0	2	41.2		9	4	13	41.2
45 / 49	0	1	1	2	38.0	0	6	4	10	37.8	0	25	12	37	38.0
40 / 44	3	6	4	13	35.6	2	11	7	20	35.5	3	25	21	49	35.6
35 / 39	8	15	12	35	32.8	10	25	21	56	32.6	22	44	46	113	32.8
30 / 34	17	25	23	65	28.5	23	24	25	72	28.5	62	44	55	162	29.3
25 / 29	27	31	33	91	24.0	27	22	24	73	24.3	51	26	32	110	24.8
20 / 24	23	21	23	67	20.1	15	12	14	41	20.2	23	16	17	56	20.4
15 / 19	30	27	28	85	16.0	26	20	20	66	16.0	27	20	22	68	16.1
10 / 14	30	24	26	80	11.3	20	22	20	62	11.0	18	15	15	48	11.0
5 / 9	26	23	19	68	6.0	18	20	20	58	5.8	15	10	10	35	5.9
0 / 4	18	18	19	55	0.7	18	19	21	58	0.6	11	8	8	27	0.4
-5 / -1	11	9	13	33	-4.1	14	9	11	34	-3.9	5	3	3	11	-3.9
-10 / -6	16	19	16	51	-8.2	17	16	15	48	-8.4	6	2	1	9	-8.0
-15 / -11	10	10	11	31	-12.8	9	8	10	27	-12.8	2	1	0	3	-13.0
-20 / -16	14	11	12	37	-16.9	12	7	9	28	-16.6	1	0	0	1	-15.5
-25 / -21	8	7	6	21	-22.1	8	4	1	13	-22.4					
-30 / -26	4	2	2	8	-27.2	2	1	1	4	-27.2					
-35 / -31	1	1	0	2	-31.7	1	0	0	1	-31.9					
-40 / -36	1	0		1	-36.9	0	0		0	-35.0					
-45 / -41	0			0	-40.0										

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.

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				
90 / 94								0		0	62.0						
85 / 89								1	1	2	61.6		0	0	0	61.9	
80 / 84		0	0	0	54.3			3	1	4	58.7		4	2	6	60.7	
75 / 79		1	1	2	53.5		0	10	6	16	55.6	0	18	11	29	59.0	
70 / 74		4	2	6	51.7		0	22	14	37	53.5	1	38	24	63	56.8	
65 / 69	0	6	4	10	49.7		1	22	16	40	51.2	2	41	28	72	54.9	
60 / 64	0	16	10	26	47.0		7	43	33	82	49.1	21	60	51	132	53.4	
55 / 59	2	27	19	49	44.4		24	49	44	118	46.5	60	45	60	165	51.4	
50 / 54	7	41	31	79	41.3		43	44	50	137	44.3	87	26	46	158	48.5	
45 / 49	22	45	37	104	38.5		65	29	42	136	41.5	52	7	15	74	44.2	
40 / 44	28	30	34	92	36.0		45	13	20	78	38.2	13	1	2	16	40.1	
35 / 39	51	34	47	133	33.3		40	8	14	62	34.4	4		0	4	36.5	
30 / 34	74	19	34	126	29.5		17	4	5	26	30.0	0			0	31.5	
25 / 29	35	8	10	53	25.0		4	1	0	5	25.6						
20 / 24	7	3	3	13	20.0		1			1	21.3						
15 / 19	4	3	4	11	15.5												
10 / 14	4	3	2	9	10.8												
5 / 9	3	1	1	5	6.1												
0 / 4	1	0	1	2	0.8												
-5 / -1	0	0	0	0	-4.2												
-10 / -6	1	0		1	-7.3												
-15 / -11																	
-20 / -16																	
-25 / -21																	
-30 / -26																	
-35 / -31																	
-40 / -36																	
-45 / -41																	

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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)				
	To 01 08	To 09 16	To 17 00			To 01 08	To 09 16	To 17 00			To 01 08	To 09 16	To 17 00						
90 / 94						0	0	0	69.1						0	0	0	63.1	
85 / 89		1	0	1	67.4	2	1	3	65.8						0	0	0	62.4	
80 / 84		11	6	17	65.0	11	6	17	64.6						2	1	3	61.3	
75 / 79		30	16	47	62.6	0	27	15	42	62.8						6	2	8	59.3
70 / 74	1	54	37	92	60.0	2	44	29	75	60.0						18	7	25	56.9
65 / 69	7	47	35	89	58.0	5	39	30	73	57.9	0	18	10	28	55.1				
60 / 64	40	58	61	159	56.1	32	52	52	136	55.8	2	38	23	63	52.3				
55 / 59	90	36	62	189	53.6	70	41	55	166	53.1	16	48	46	110	49.8				
50 / 54	87	10	27	124	50.2	76	25	41	142	49.6	49	46	51	146	47.0				
45 / 49	21	1	4	26	45.7	48	7	17	72	44.9	69	35	48	152	43.5				
40 / 44	1		0	1	42.1	10	1	2	13	40.7	45	17	26	88	39.7				
35 / 39						4	0	0	4	36.4	37	11	16	64	35.8				
30 / 34						1	0		1	31.5	16	2	7	25	30.7				
25 / 29											5		1	6	25.7				
20 / 24											1		0	1	21.4				
15 / 19																			
10 / 14																			
5 / 9																			
0 / 4																			
-5 / -1																			
-10 / -6																			
-15 / -11																			
-20 / -16																			
-25 / -21																			
-30 / -26																			
-35 / -31																			
-40 / -36																			
-45 / -41																			

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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		
90 / 94															
85 / 89															
80 / 84		0		0	57.8										
75 / 79		1	0	1	57.2										
70 / 74		5	1	6	55.2										
65 / 69	0	4	2	6	53.0										
60 / 64	0	15	7	22	50.1		0		0	46.5					
55 / 59	2	28	16	47	46.8	0	1	0	1	44.9					
50 / 54	12	41	26	80	43.3	0	3	1	4	42.0					
45 / 49	28	46	46	120	40.1	1	9	5	15	38.4	0	1	0	1	38.8
40 / 44	31	30	37	98	37.2	5	14	8	27	36.1	3	6	4	13	36.1
35 / 39	61	35	52	148	33.8	17	37	27	82	32.8	9	16	12	37	32.6
30 / 34	61	22	36	118	29.6	36	42	47	125	28.8	19	27	26	72	28.2
25 / 29	32	10	12	54	25.1	51	38	50	139	24.7	32	32	34	98	24.0
20 / 24	8	4	5	17	20.7	30	19	24	73	20.7	26	24	24	74	20.3
15 / 19	6	3	4	13	16.6	29	22	19	70	16.5	33	31	32	96	16.2
10 / 14	3	1	1	5	11.6	21	18	17	56	11.5	27	29	28	84	11.3
5 / 9	1	2	1	4	5.5	14	13	13	40	6.0	25	18	19	62	6.2
0 / 4	2	1	2	5	1.1	14	12	11	37	0.6	18	15	16	49	0.7
-5 / -1	1	0	0	1	-3.8	7	7	7	21	-3.8	11	11	10	32	-3.9
-10 / -6	0	0	0	0	-8.2	6	5	5	16	-8.1	14	15	13	42	-8.2
-15 / -11						5	1	2	8	-12.4	8	8	9	25	-12.6
-20 / -16						1	0	1	2	-16.6	10	9	9	28	-17.0
-25 / -21						1	1	1	3	-21.9	7	5	6	18	-22.1
-30 / -26						0	0	0	0	-27.1	5	3	3	11	-27.4
-35 / -31							0		0	-31.0	1	1	1	3	-31.8
-40 / -36											0	0		0	-35.0
-45 / -41															

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

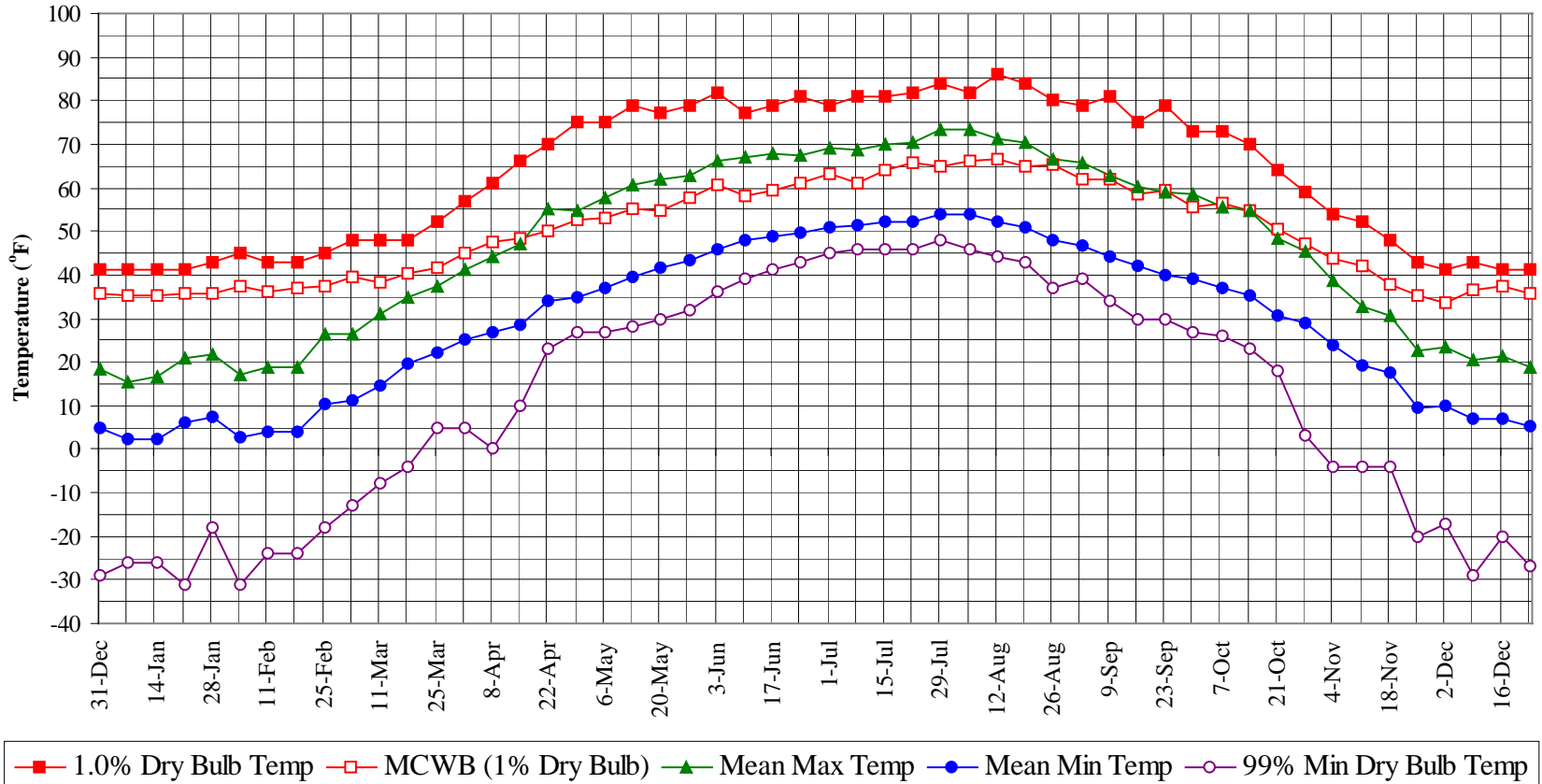
Period of Record = 1967 to 1996

Annual Totals

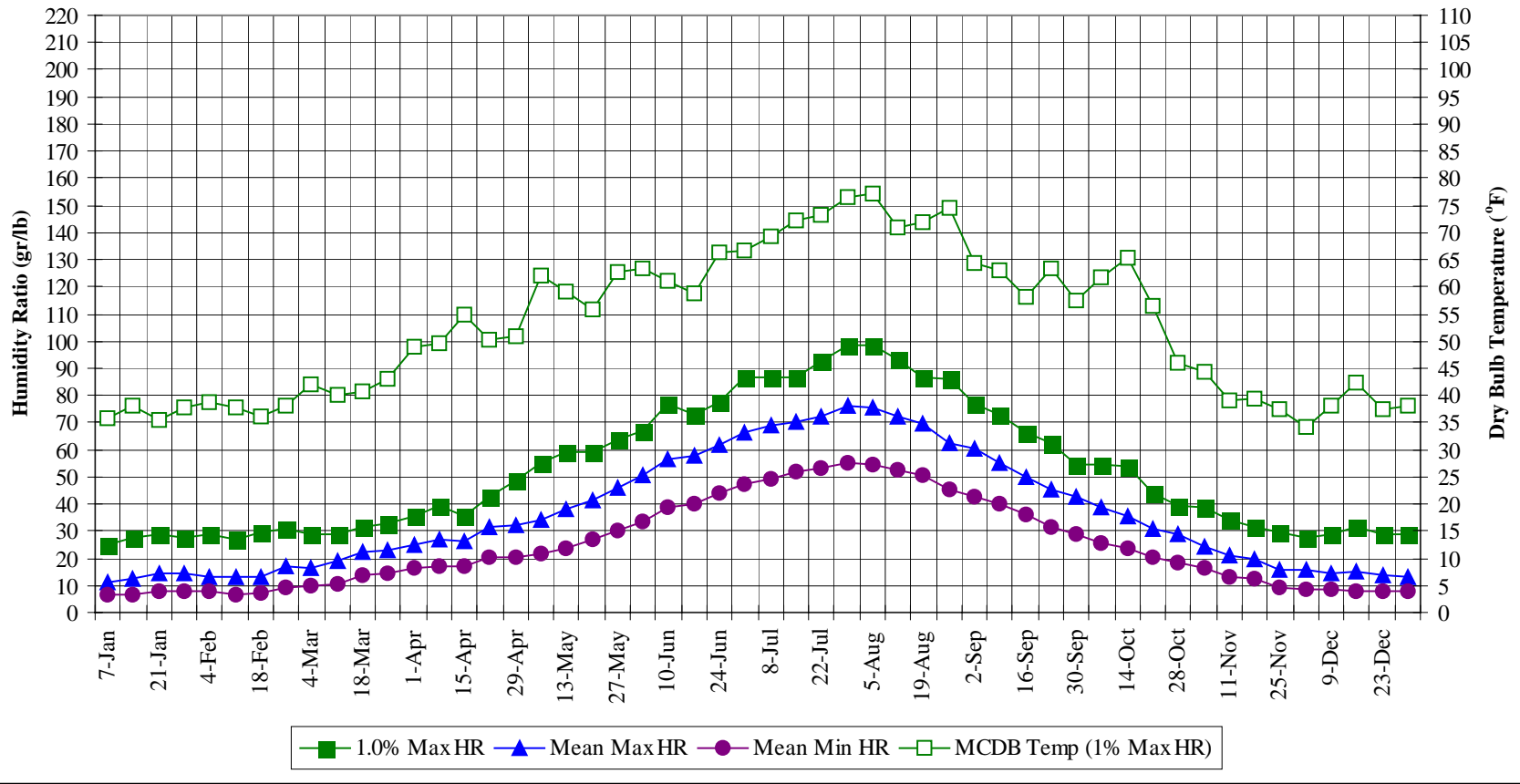
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
90 / 94		1	0	1	66.5
85 / 89		4	2	6	64.6
80 / 84		31	16	48	63.5
75 / 79	0	92	52	144	60.8
70 / 74	4	185	113	302	58.1
65 / 69	14	176	124	314	55.8
60 / 64	102	280	235	617	53.6
55 / 59	265	275	301	841	50.7
50 / 54	361	244	273	878	46.8
45 / 49	307	211	230	748	41.7
40 / 44	189	153	166	509	37.4
35 / 39	265	225	249	739	33.5
30 / 34	326	207	259	793	29.1
25 / 29	266	168	199	633	24.5
20 / 24	135	97	112	345	20.4
15 / 19	157	124	131	411	16.2
10 / 14	125	111	112	348	11.2
5 / 9	104	86	85	275	6.0
0 / 4	82	72	78	231	0.6
-5 / -1	49	38	45	132	-3.9
-10 / -6	59	58	51	168	-8.3
-15 / -11	33	27	33	93	-12.7
-20 / -16	37	28	31	96	-16.8
-25 / -21	24	17	15	56	-22.2
-30 / -26	11	7	6	24	-27.3
-35 / -31	3	2	1	6	-31.8
-40 / -36	1	1		2	-36.1
-45 / -41	0			0	-40.0

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Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary

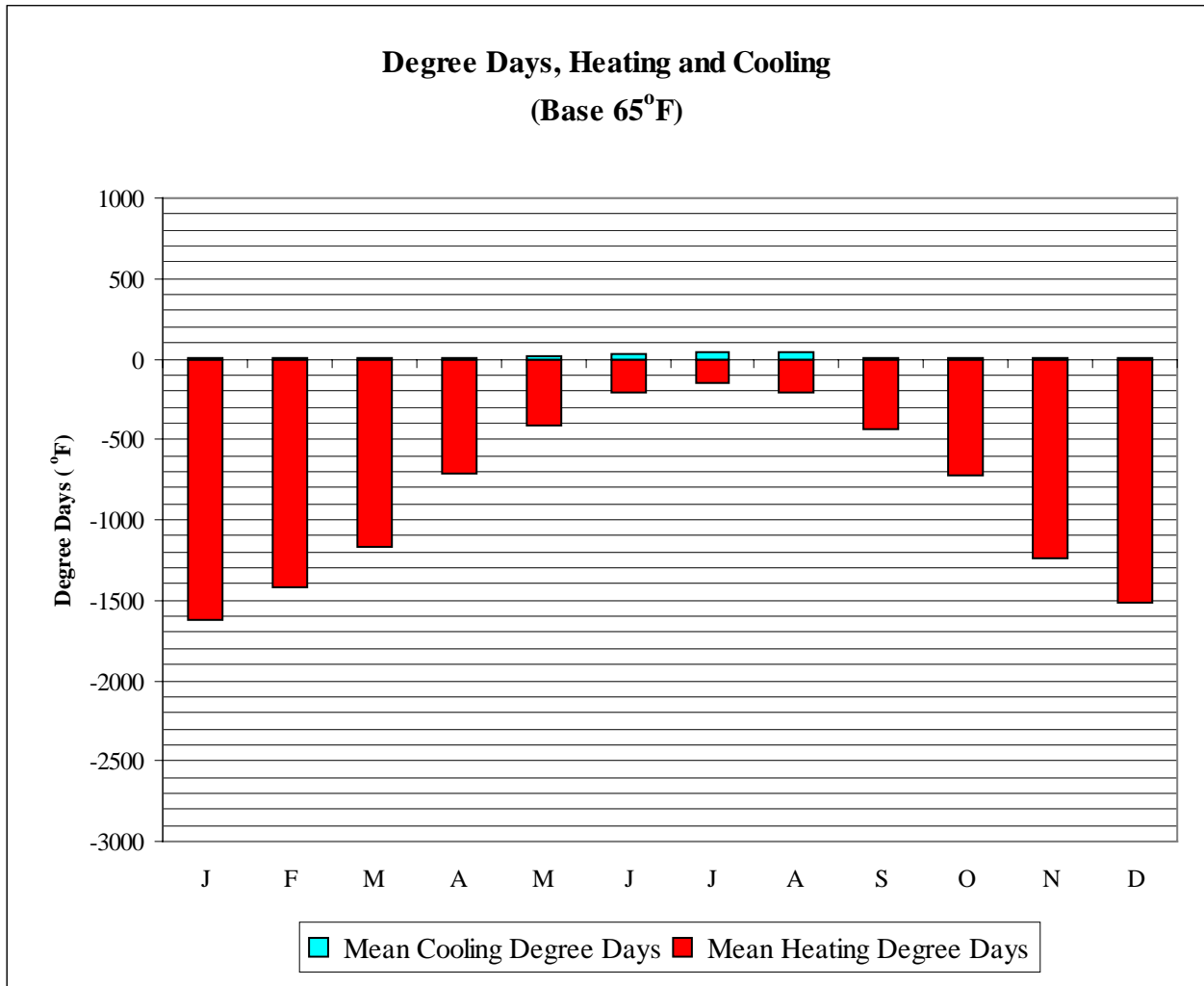


EDMONTON/NAMAO CN

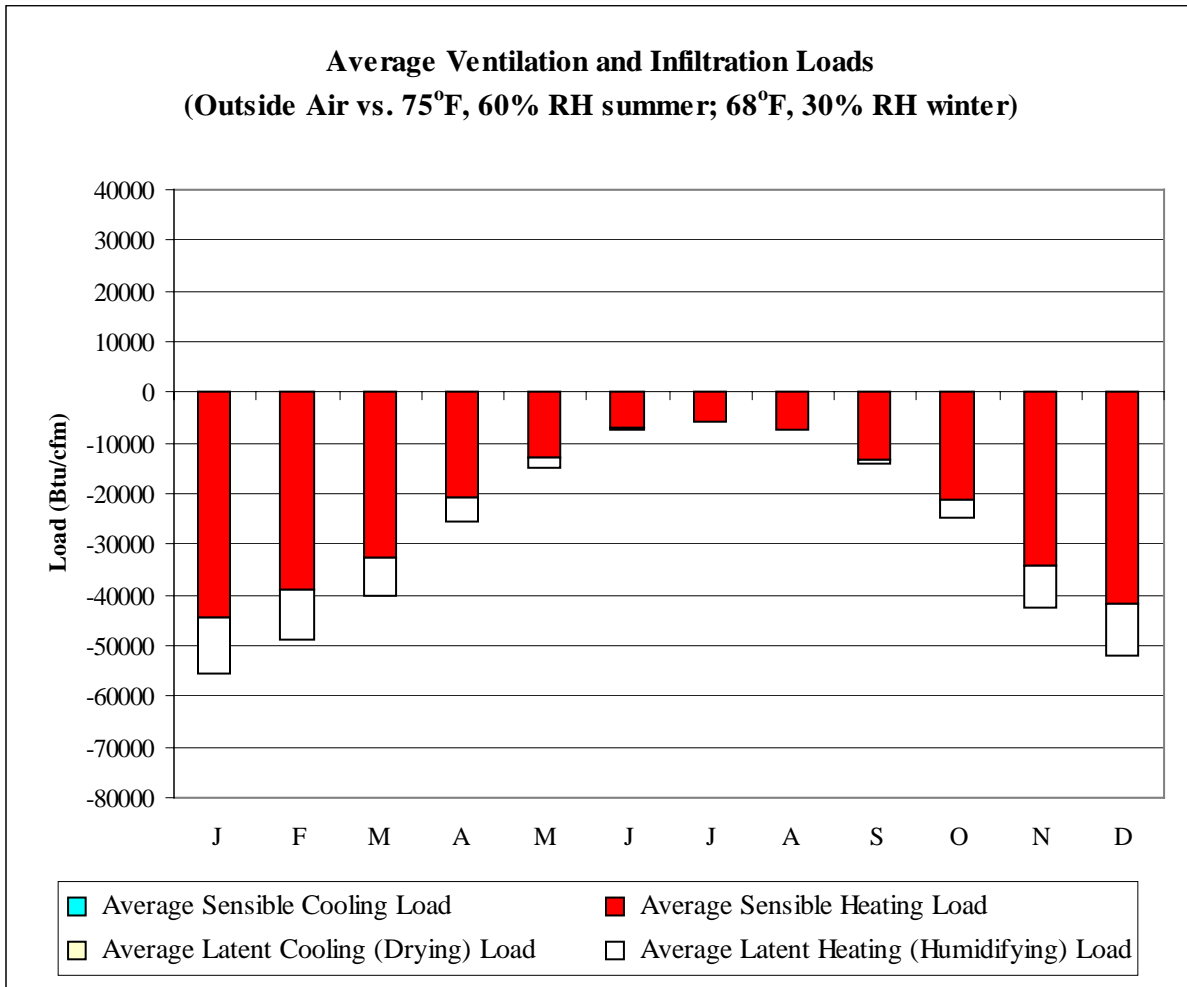
WMO No. 711210

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	41.0	35.4	15.2	2.2	-26.0	25.2	35.9	11.5	6.5
14-Jan	41.0	35.1	16.8	2.4	-26.0	27.3	38.1	12.6	6.7
21-Jan	41.0	35.8	20.9	6.1	-31.0	28.7	35.6	14.1	7.6
28-Jan	43.0	35.8	21.8	7.5	-18.0	27.3	37.8	14.7	8.0
4-Feb	45.0	37.5	17.2	2.7	-31.0	28.7	38.8	13.1	7.6
11-Feb	43.0	36.0	18.8	3.8	-24.0	26.6	37.7	12.9	6.9
18-Feb	43.0	36.9	19.0	3.9	-24.0	29.4	36.0	13.3	7.2
25-Feb	45.0	37.3	26.2	10.5	-18.0	30.8	38.1	17.3	9.1
4-Mar	48.0	39.5	26.5	11.2	-13.0	28.7	42.2	16.5	9.9
11-Mar	48.0	38.4	30.9	14.6	-8.0	28.7	40.0	19.2	10.8
18-Mar	48.0	40.3	34.9	19.8	-4.0	31.5	40.8	22.2	14.1
25-Mar	52.0	41.7	37.5	22.2	5.0	32.9	43.2	22.9	14.5
1-Apr	57.0	44.8	41.1	25.3	5.0	35.7	48.9	24.8	16.2
8-Apr	61.0	47.7	44.2	26.7	0.0	39.2	49.7	26.9	17.0
15-Apr	66.0	48.6	47.1	28.5	10.0	35.7	55.0	26.5	16.9
22-Apr	70.0	49.9	55.1	33.9	23.0	42.7	50.3	31.5	20.1
29-Apr	75.0	52.7	54.7	35.0	27.0	48.3	51.0	32.1	20.3
6-May	75.0	53.2	57.8	36.8	27.0	55.3	61.9	34.2	21.7
13-May	79.0	55.3	60.8	39.6	28.0	58.8	59.1	38.1	23.5
20-May	77.0	54.8	62.1	41.8	30.0	58.8	55.8	41.7	27.1
27-May	79.0	57.6	62.7	43.4	32.0	63.7	62.6	45.9	30.4
3-Jun	82.0	60.6	66.1	46.0	36.0	67.2	63.4	50.6	33.3
10-Jun	77.0	58.0	67.1	48.0	39.0	77.0	61.0	56.2	38.6
17-Jun	79.0	59.4	67.7	49.0	41.0	72.8	58.9	57.6	40.0
24-Jun	81.0	61.3	67.6	49.5	43.0	77.7	66.2	62.0	43.8
1-Jul	79.0	63.0	69.3	51.1	45.0	86.8	66.7	66.6	47.5
8-Jul	81.0	60.9	68.7	51.5	46.0	86.8	69.3	68.8	49.4
15-Jul	81.0	64.3	69.8	52.2	46.0	86.8	72.3	70.5	51.8
22-Jul	82.0	65.6	70.5	52.4	46.0	92.4	73.1	72.3	52.9
29-Jul	84.0	64.9	73.4	53.9	48.0	98.7	76.4	76.0	55.5
5-Aug	82.0	66.2	73.3	53.8	46.0	98.7	77.2	75.7	54.8
12-Aug	86.0	66.4	71.4	52.2	44.0	93.1	70.9	72.4	52.8
19-Aug	84.0	64.8	70.2	51.0	43.0	86.8	71.9	69.3	50.3
26-Aug	80.0	65.5	66.4	48.0	37.0	86.1	74.5	62.5	45.3
2-Sep	79.0	62.0	65.6	46.7	39.0	77.0	64.5	60.5	42.7
9-Sep	81.0	62.1	62.7	44.2	34.0	72.8	62.9	54.9	39.9
16-Sep	75.0	58.5	60.1	42.1	30.0	66.5	58.1	50.2	35.8
23-Sep	79.0	59.6	59.1	39.8	30.0	62.3	63.5	45.5	31.8
30-Sep	73.0	55.7	58.6	39.0	27.0	54.6	57.4	42.7	29.2
7-Oct	73.0	56.6	55.6	36.8	26.0	54.6	61.8	38.6	25.9
14-Oct	70.0	54.6	54.7	35.2	23.0	53.9	65.3	35.8	23.5
21-Oct	64.0	50.4	48.6	30.7	18.0	44.1	56.4	30.9	20.6
28-Oct	59.0	47.2	45.6	28.9	3.0	39.2	46.1	28.7	18.7
4-Nov	54.0	43.7	38.6	23.9	-4.0	38.5	44.2	24.6	16.1
11-Nov	52.0	42.2	32.9	19.3	-4.0	34.3	39.2	21.2	13.3
18-Nov	48.0	37.8	30.7	17.6	-4.0	31.5	39.5	19.7	12.2
25-Nov	43.0	35.4	22.8	9.7	-20.0	29.4	37.5	15.5	9.5
2-Dec	41.0	33.6	23.6	10.0	-17.0	27.3	34.3	15.7	8.7
9-Dec	43.0	36.5	20.4	7.0	-29.0	28.7	38.0	14.3	8.2
16-Dec	41.0	37.5	21.4	6.9	-20.0	31.5	42.4	15.0	7.8
23-Dec	41.0	35.6	18.8	5.4	-27.0	28.7	37.3	13.6	7.7
31-Dec	41.0	35.9	18.5	4.9	-29.0	28.7	38.0	13.5	7.9



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	1624
FEB	0	1422
MAR	0	1163
APR	2	717
MAY	15	409
JUN	24	210
JUL	42	154
AUG	38	210
SEP	10	433
OCT	2	723
NOV	0	1234
DEC	0	1518
ANN	132	9817

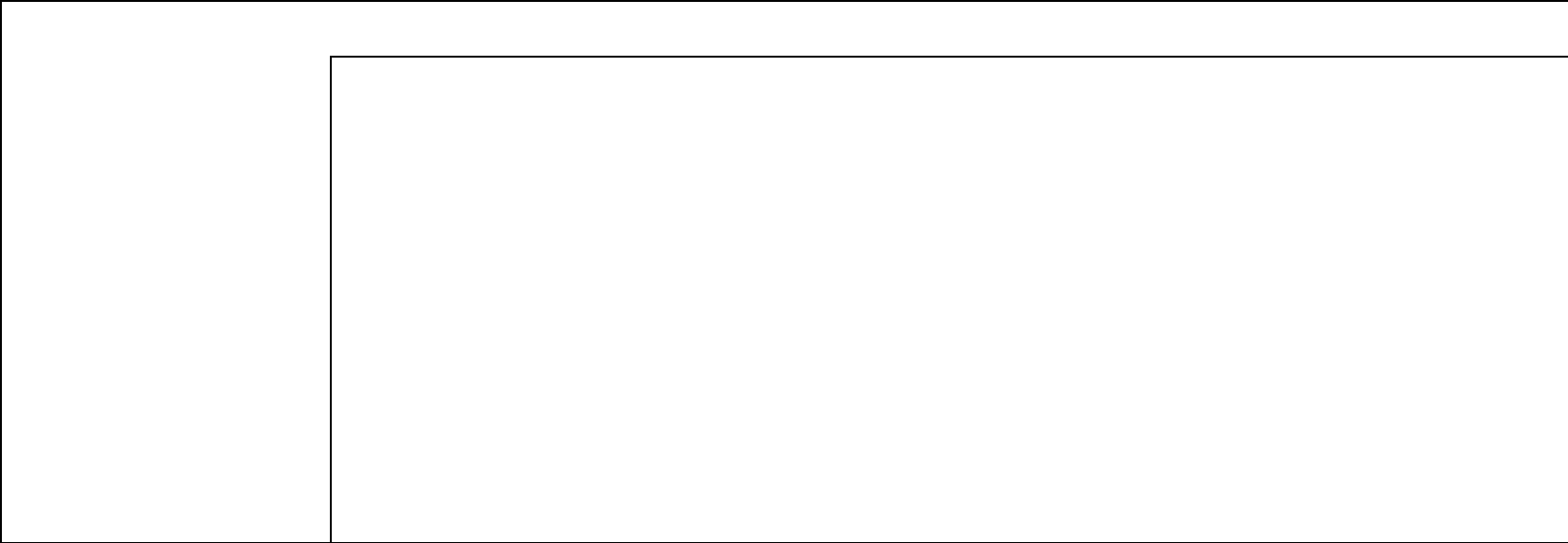


	Average Sensible Cooling Load	Average Sensible Heating Load	Average Latent Cooling Load	Average Latent Heating Load
	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)
JAN	0	-44442	0	-11194
FEB	0	-39011	0	-9780
MAR	0	-32510	0	-7766
APR	6	-20820	0	-4800
MAY	69	-12699	0	-1993
JUN	77	-7165	2	-154
JUL	196	-5663	84	-3
AUG	223	-7198	69	-47
SEP	48	-13343	0	-667
OCT	3	-20995	0	-3774
NOV	0	-34246	0	-8132
DEC	0	-41598	0	-10344
ANN	622	-279690	155	-58654

Average Annual Solar Radiation – Nearest Available Site

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

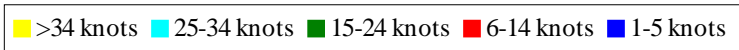
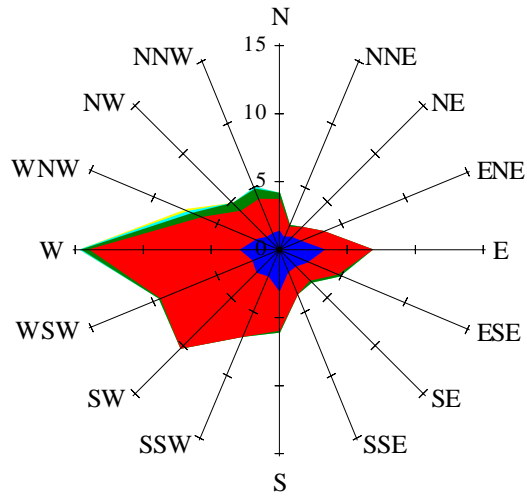
No Solar Radiation
Data Available



Average Annual Solar Heat and Illumination – Nearest Available Site

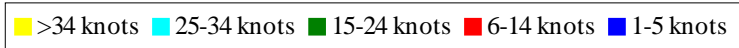
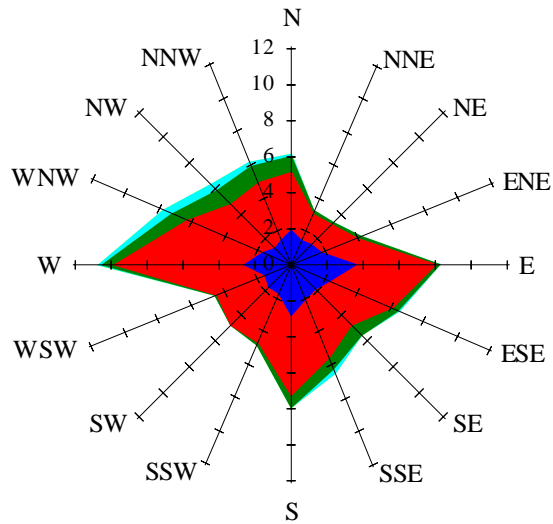
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

Wind Summary - December, January, and February
Labels of Percent Frequency on North Axis



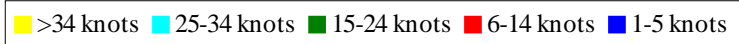
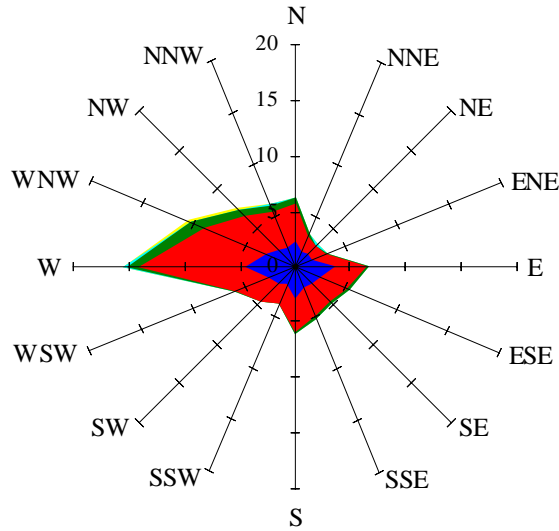
Percent Calm = 6.47

Wind Summary - March, April, and May
Labels of Percent Frequency on North Axis



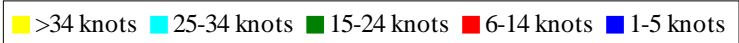
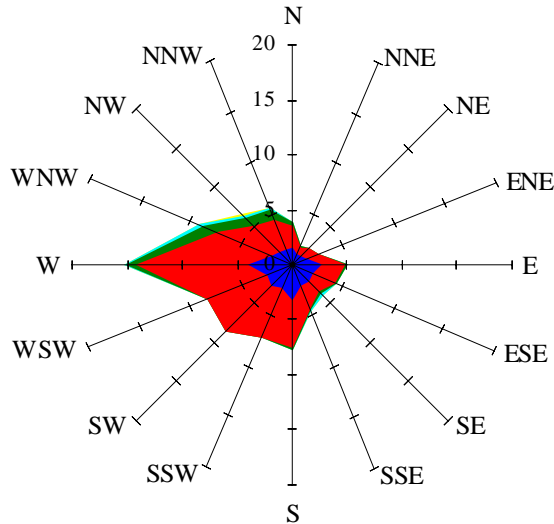
Percent Calm = 4.60

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



Percent Calm = 5.21

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



Percent Calm = 4.87