

THUNDER BAY CN

Latitude = 48.37 N

Longitude = 89.32 W

Period of Record = 1973 to 1996

WMO No. 717490

Elevation = 653 feet

Average Pressure = 29.24 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	91	71	83	11.1	W
0.4% Occurrence	84	68	79	11.2	W
1.0% Occurrence	81	66	76	10.4	W
2.0% Occurrence	77	64	73	9.6	S
Mean Daily Range	20	-	-	-	-
97.5% Occurrence	-11	-12	2	7.4	W
99.0% Occurrence	-18	-18	1	6.7	W
99.6% Occurrence	-22	-22	1	7.0	WSW
Median of Extreme Lows	-30	-30	1	5.7	W
	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	76	88	117	10.1	SW
0.4% Occurrence	71	80	100	8.3	SSW
1.0% Occurrence	68	76	91	7.9	W
2.0% Occurrence	66	73	85	7.5	W
	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	120	83	0.78	8.4	WSW
0.4% Occurrence	102	74	0.66	6.3	WSW
1.0% Occurrence	94	72	0.61	6.9	W
2.0% Occurrence	88	69	0.57	6.2	E
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		2	97	16	145

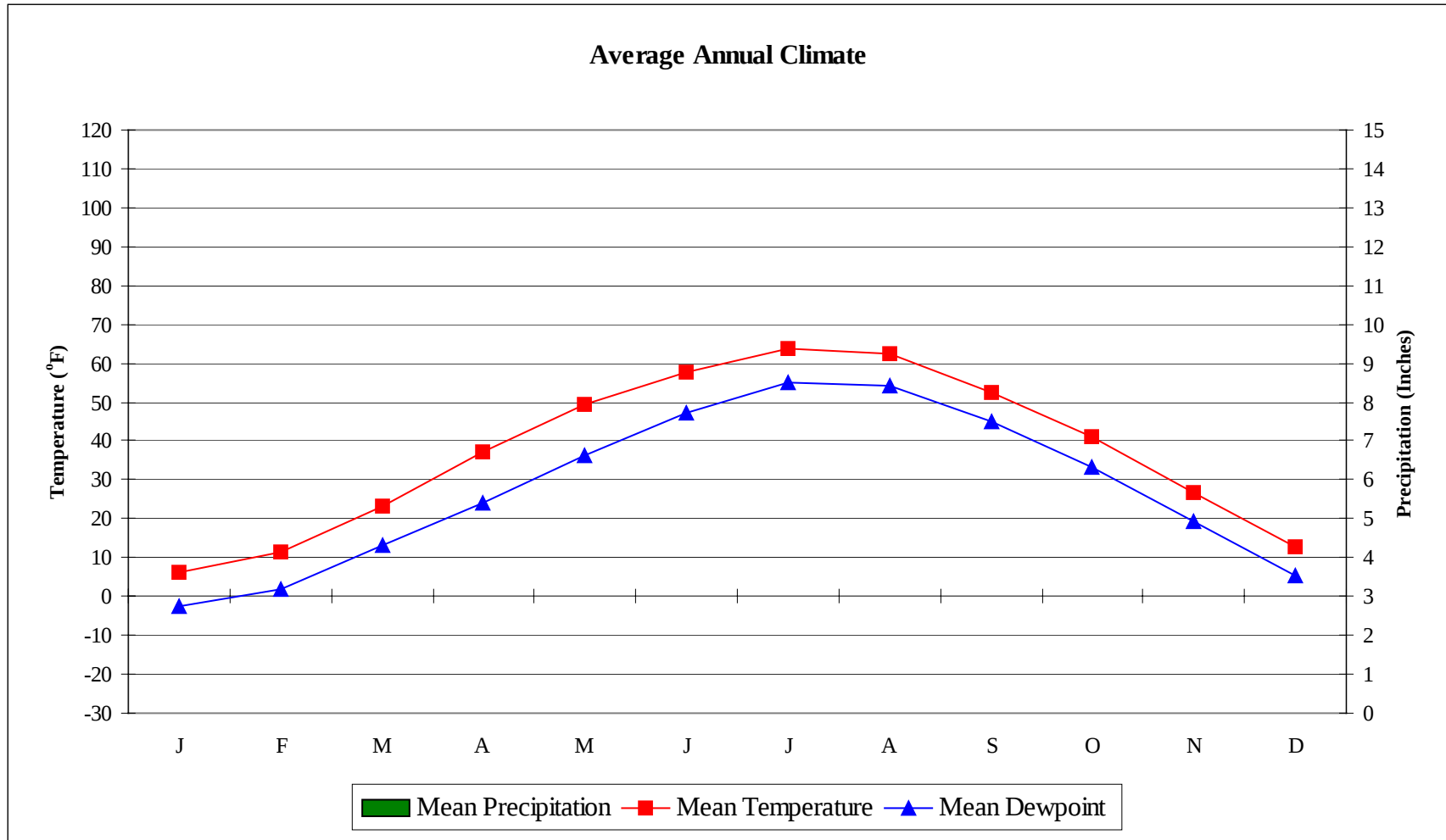
Other Site Data

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	0.2 + 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 (#)
39.6	N/A	N/A	75

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

THUNDER BAY CN

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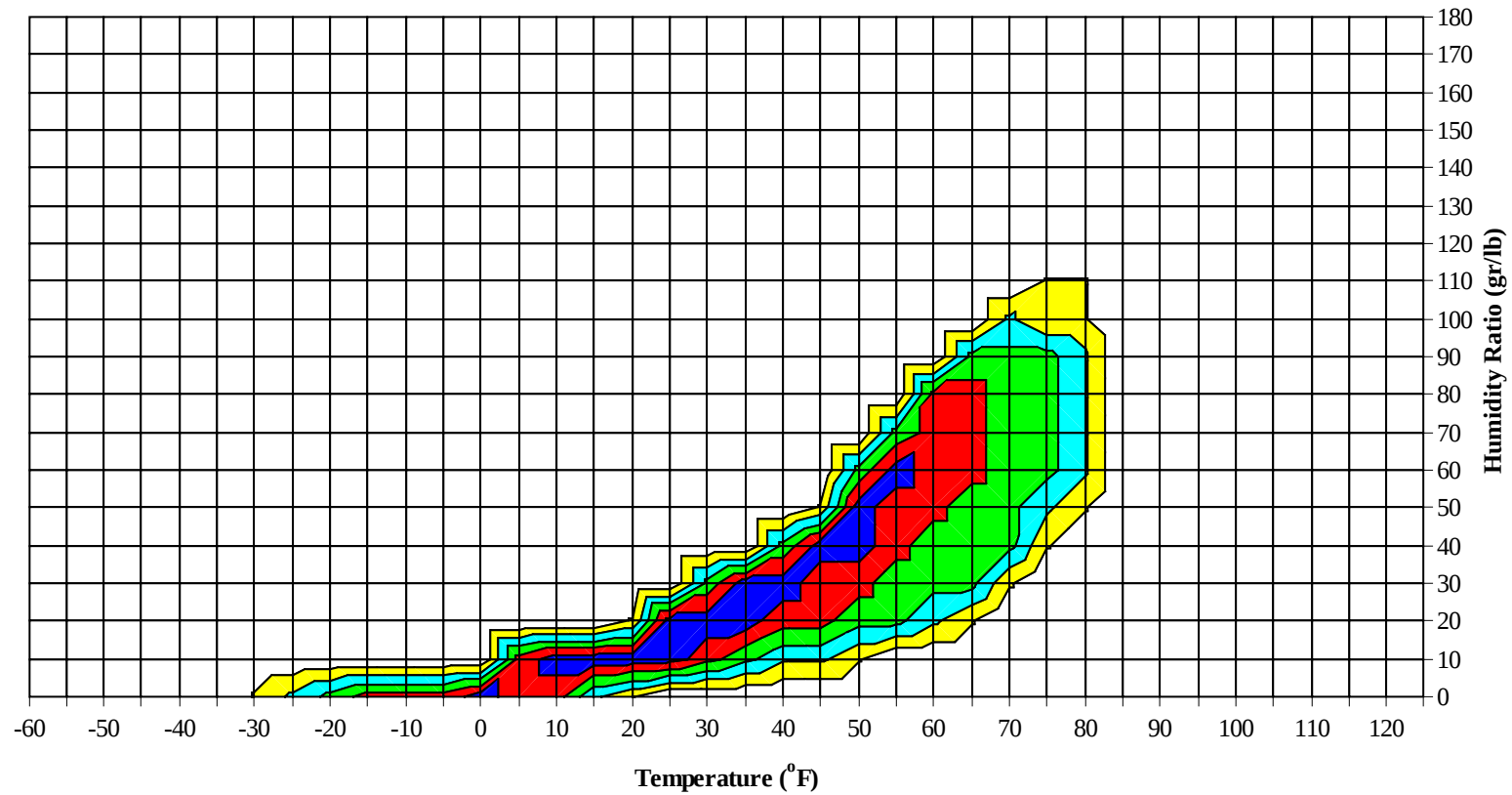


No Precipitation Data Available

THUNDER BAY CN

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Long Term Psychrometric Summary

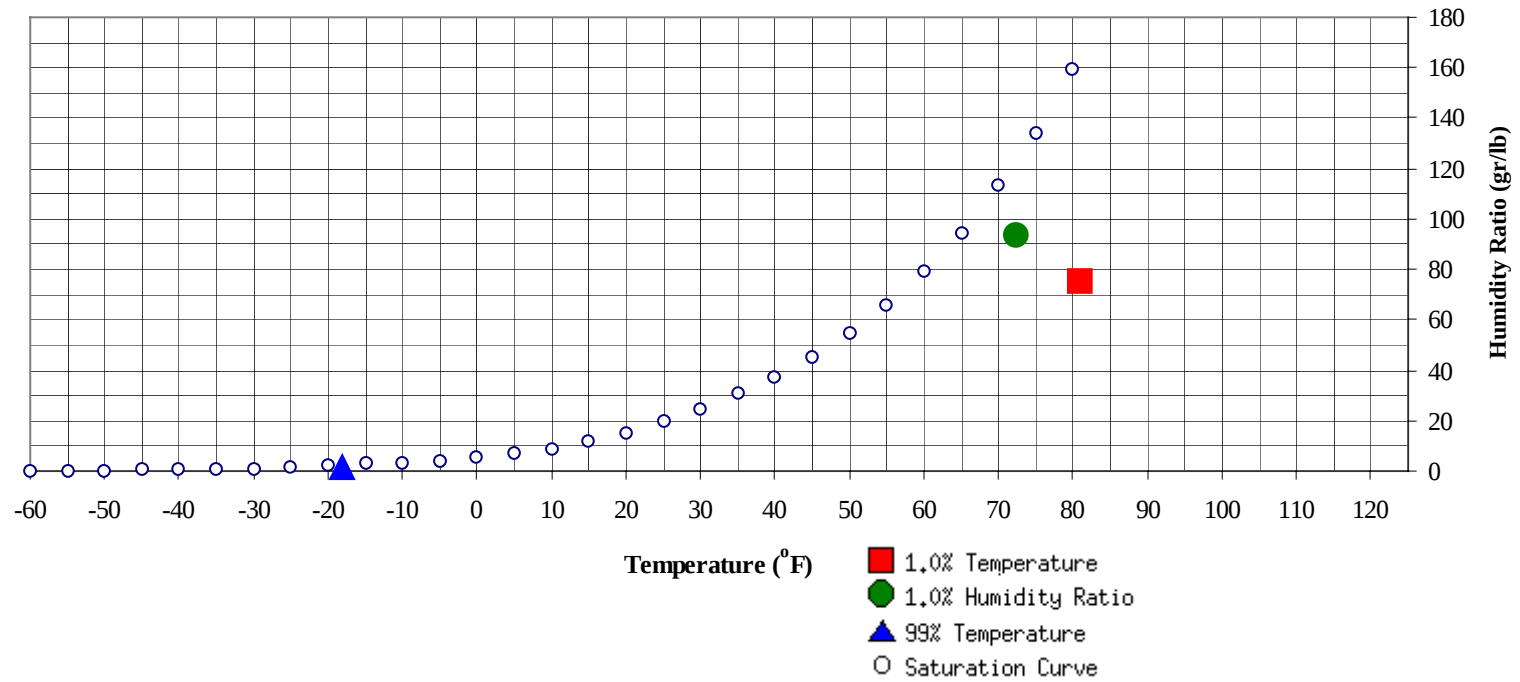


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

THUNDER BAY CN

WMO No. 717490

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	-18	1.2	-4.1		93.8	72.4	67.1	64.4	32.0

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	81	75.3	66.3	31.2

THUNDER BAY CN

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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		
95 / 99															
90 / 94															
85 / 89															
80 / 84															
75 / 79															
70 / 74															
65 / 69															
60 / 64												0	0	0	48.0
55 / 59												1	0	1	47.3
50 / 54							0	0	0	38.5		2	2	4	41.6
45 / 49						0	2	1	3	39.2	0	7	4	11	38.5
40 / 44	0	0	0	0	36.7	0	2	2	4	36.0	1	14	9	24	36.1
35 / 39	2	5	4	11	33.3	3	11	9	23	33.3	14	42	35	91	33.3
30 / 34	13	15	17	45	29.9	14	21	21	56	29.6	40	47	55	142	29.2
25 / 29	17	20	21	58	24.7	21	24	28	73	24.5	45	41	49	135	24.2
20 / 24	13	15	16	44	20.4	16	20	19	55	20.0	25	24	26	75	19.5
15 / 19	20	26	25	71	15.8	21	29	31	81	15.6	32	26	28	86	15.3
10 / 14	27	33	31	90	10.6	23	30	30	83	10.4	25	19	18	62	10.2
5 / 9	26	30	34	90	5.5	23	26	25	74	5.4	23	12	12	47	5.4
0 / 4	26	32	28	85	0.3	25	21	23	69	0.2	17	7	6	30	0.6
-5 / -1	17	17	18	52	-4.0	16	10	13	39	-4.0	10	2	2	14	-4.0
-10 / -6	27	22	25	74	-8.4	21	13	13	47	-8.3	10	2	1	13	-8.2
-15 / -11	19	12	13	44	-12.8	15	6	5	26	-12.8	4	1	0	5	-12.5
-20 / -16	22	10	10	42	-17.0	15	5	4	24	-16.9	2	0	0	2	-16.3
-25 / -21	12	6	5	23	-22.2	7	2	1	10	-22.2	1	0	0	1	-22.0
-30 / -26	7	2	2	11	-27.2	3	1	0	4	-27.0	0			0	-26.0
-35 / -31	2	1	0	3	-31.5	1	0	0	1	-31.8					
-40 / -36	1	0	0	1	-36.0	0	0		0	-35.9					
-45 / -41	0	0		0	-41.5										

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.

THUNDER BAY CN

WMO No. 717490

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		
95 / 99						0			0	67.5		0	0	0	72.5
90 / 94						1	0		1	65.2		1	1	2	69.2
85 / 89						1	1		2	63.5		1	1	2	68.8
80 / 84		0		0	66.0	3	2		5	61.7	0	8	5	13	64.9
75 / 79		1	0	1	57.1	6	4		10	59.4	0	18	10	28	62.2
70 / 74		1	1	2	52.8	0	14	7	21	56.9	1	34	19	54	59.6
65 / 69		2	1	3	50.1	1	17	8	26	54.3	5	35	20	60	57.6
60 / 64	0	7	3	10	47.9	4	37	20	61	51.7	16	54	44	114	55.5
55 / 59	1	16	7	24	45.8	12	46	37	95	49.0	43	52	62	157	52.5
50 / 54	2	28	17	47	42.4	29	51	52	133	46.0	76	26	52	154	49.2
45 / 49	9	44	32	85	39.7	53	40	56	149	42.3	58	9	20	87	44.7
40 / 44	15	39	35	89	36.5	45	17	28	90	38.6	23	1	4	28	40.4
35 / 39	51	48	61	160	33.1	49	9	22	80	34.6	16	0	1	17	36.6
30 / 34	63	30	47	140	29.0	40	3	8	51	30.1	3		0	3	31.8
25 / 29	52	14	25	91	24.1	14	1	2	17	25.3	0			0	26.7
20 / 24	21	5	5	31	19.9	2	0	0	2	21.4					
15 / 19	15	3	3	21	15.7										
10 / 14	6	1	1	8	10.6										
5 / 9	5	1	1	7	5.8										
0 / 4	1	0	0	1	1.0										
-5 / -1	0			0	-3.5										
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															
-30 / -26															
-35 / -31															
-40 / -36															
-45 / -41															

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THUNDER BAY CN

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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		
95 / 99		0	0	0	75.5		0	0	0	76.8					
90 / 94		2	1	3	73.0		1	1	2	72.8					
85 / 89	0	4	3	7	71.2		3	2	5	71.0		1	0	1	66.5
80 / 84	0	20	11	31	67.2		15	7	22	68.3		2	1	3	68.2
75 / 79	0	43	22	65	64.9	1	34	18	53	65.5	0	8	3	11	65.6
70 / 74	4	57	38	99	62.7	4	58	33	95	63.0	1	17	8	26	61.9
65 / 69	12	43	40	95	60.8	14	47	37	98	61.5	2	21	12	35	59.6
60 / 64	52	52	69	173	58.7	55	55	72	181	58.9	13	44	32	89	56.7
55 / 59	92	21	46	159	55.0	65	27	48	140	54.7	34	60	49	142	52.8
50 / 54	60	4	16	80	50.8	58	7	23	87	50.5	52	47	60	159	48.9
45 / 49	24	0	2	26	45.9	35	1	7	43	45.6	46	26	38	109	44.1
40 / 44	4		0	4	41.8	13		1	14	41.0	31	9	19	59	39.7
35 / 39	0			0	38.2	4		0	4	37.3	36	4	14	54	36.0
30 / 34											21	1	4	26	31.3
25 / 29											5		1	6	26.4
20 / 24											1			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 = 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		
95 / 99															
90 / 94															
85 / 89															
80 / 84															
75 / 79		0	0	0	58.7										
70 / 74		2	0	2	59.2										
65 / 69	0	3	1	4	56.0										
60 / 64	1	11	3	15	53.1	0	1	0	1	48.6					
55 / 59	4	25	11	40	50.0	1	2	1	4	49.2					
50 / 54	13	41	31	85	47.1	1	6	3	10	46.1	0		0	0	49.5
45 / 49	35	54	54	144	43.1	6	16	10	32	42.1	0	0	0	0	43.7
40 / 44	32	37	42	111	38.7	10	17	14	41	38.7	0	2	0	2	37.7
35 / 39	50	45	53	149	34.4	26	36	36	98	34.1	7	14	8	29	34.1
30 / 34	59	22	34	115	30.0	41	45	49	135	29.5	23	29	34	86	30.2
25 / 29	36	5	16	57	25.4	45	43	44	132	24.5	32	30	29	91	24.9
20 / 24	12	1	2	15	21.2	26	23	25	74	20.2	20	23	25	68	20.4
15 / 19	4	0	1	5	17.1	30	23	25	78	15.9	26	29	27	82	16.1
10 / 14	1	0	0	1	11.8	25	13	16	54	10.9	22	25	29	76	10.8
5 / 9						13	7	10	30	5.9	26	27	25	78	5.6
0 / 4						10	4	6	20	0.7	27	24	26	77	0.4
-5 / -1						4	1	1	6	-3.6	16	14	15	45	-4.0
-10 / -6						2	1	1	4	-7.6	20	14	17	51	-8.2
-15 / -11						1	0	0	1	-12.9	12	7	8	27	-12.7
-20 / -16						0		0	0	-15.7	11	6	5	22	-16.8
-25 / -21											6	2	1	9	-21.8
-30 / -26											2	0	0	2	-27.0
-35 / -31											0	0		0	-32.3
-40 / -36															
-45 / -41															

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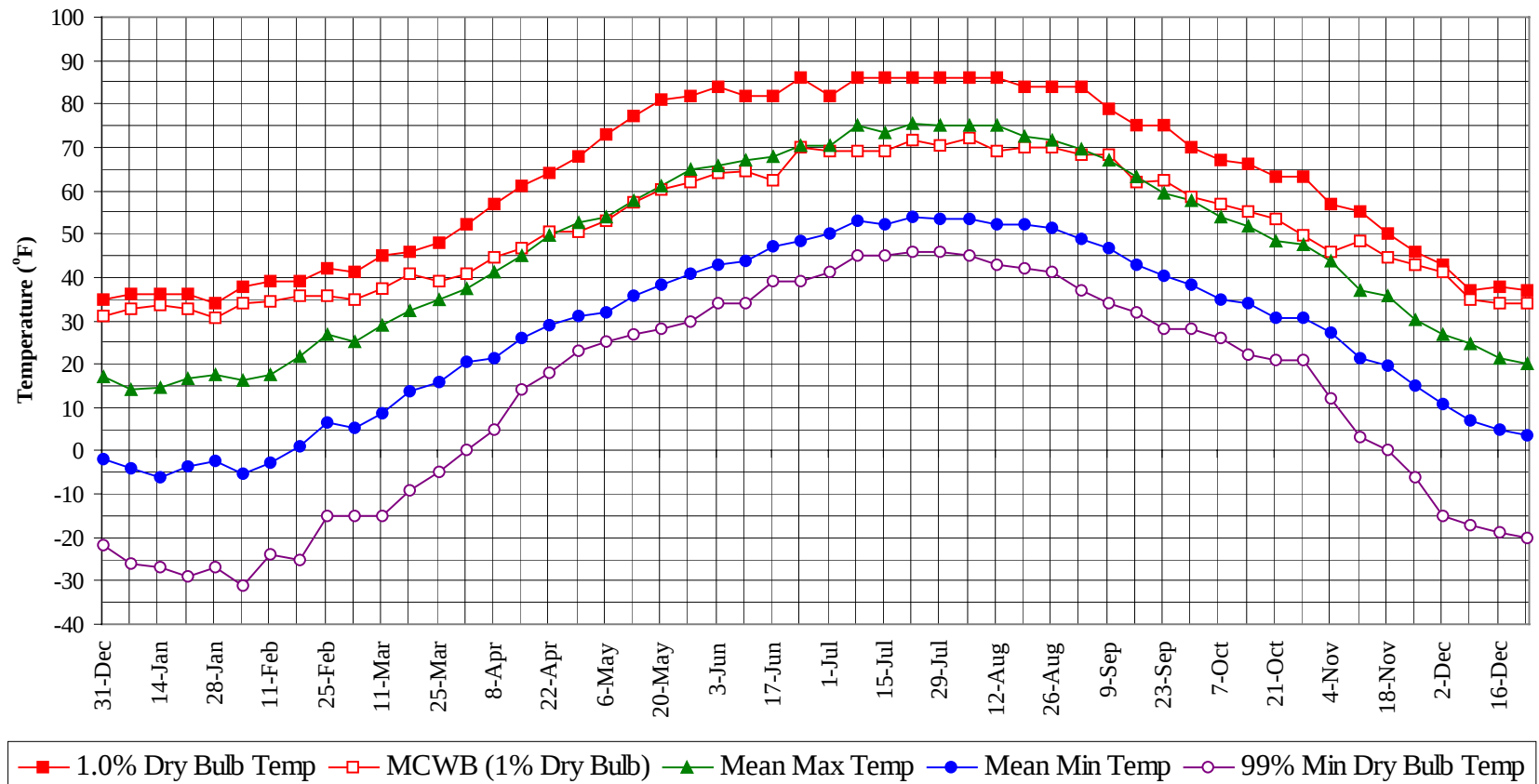
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)

Period of Record = 1973 to 1996

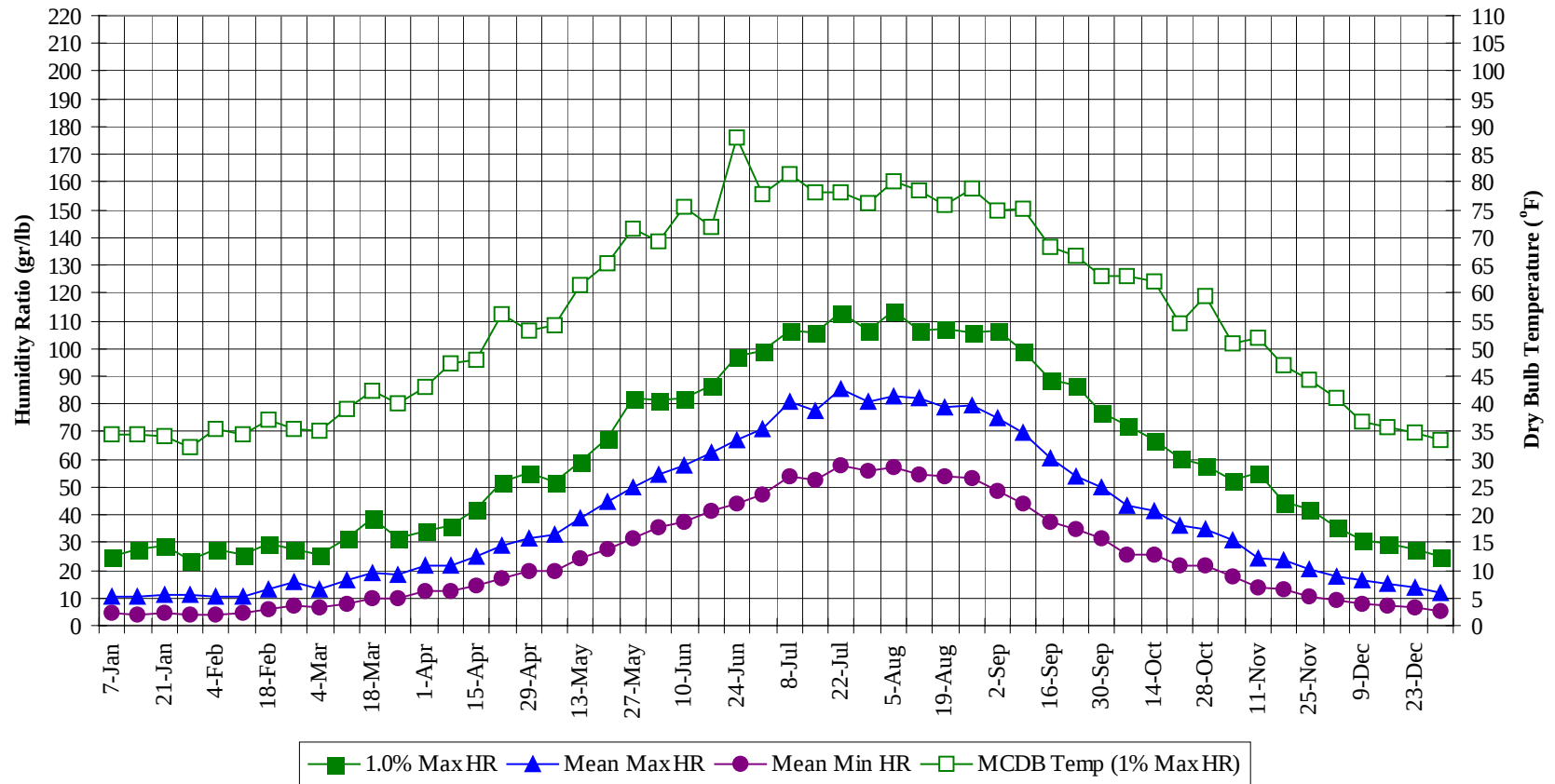
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
95 / 99		1	0	1	74.4
90 / 94		5	2	7	70.7
85 / 89	0	11	6	17	69.7
80 / 84	0	47	25	72	66.8
75 / 79	1	111	56	168	64.3
70 / 74	11	182	106	299	61.7
65 / 69	34	169	119	322	59.6
60 / 64	139	260	243	643	56.9
55 / 59	251	249	262	762	52.7
50 / 54	290	213	255	758	48.2
45 / 49	266	200	224	690	43.0
40 / 44	173	140	155	468	38.4
35 / 39	258	216	243	717	34.1
30 / 34	316	214	269	799	29.6
25 / 29	266	179	215	660	24.6
20 / 24	134	113	119	366	20.1
15 / 19	146	138	140	424	15.8
10 / 14	127	122	125	374	10.6
5 / 9	115	105	107	327	5.5
0 / 4	107	87	89	283	0.3
-5 / -1	64	44	50	158	-4.0
-10 / -6	80	52	56	188	-8.3
-15 / -11	51	26	27	104	-12.7
-20 / -16	50	21	18	89	-16.9
-25 / -21	26	10	7	43	-22.1
-30 / -26	12	4	3	19	-27.1
-35 / -31	3	1	0	4	-31.6
-40 / -36	1	0	0	1	-36.0
-45 / -41	0	0		0	-41.5

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Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary

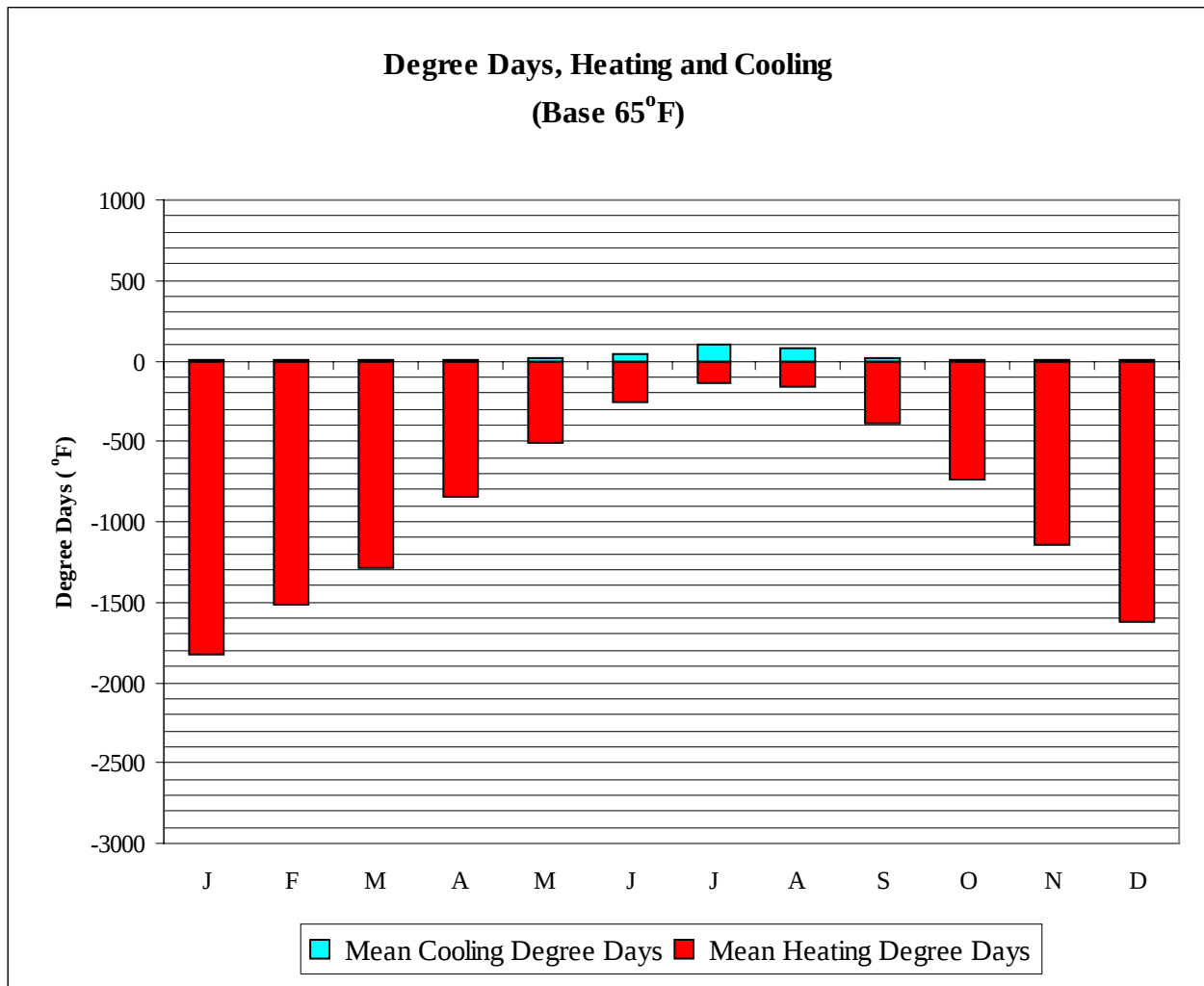


THUNDER BAY CN

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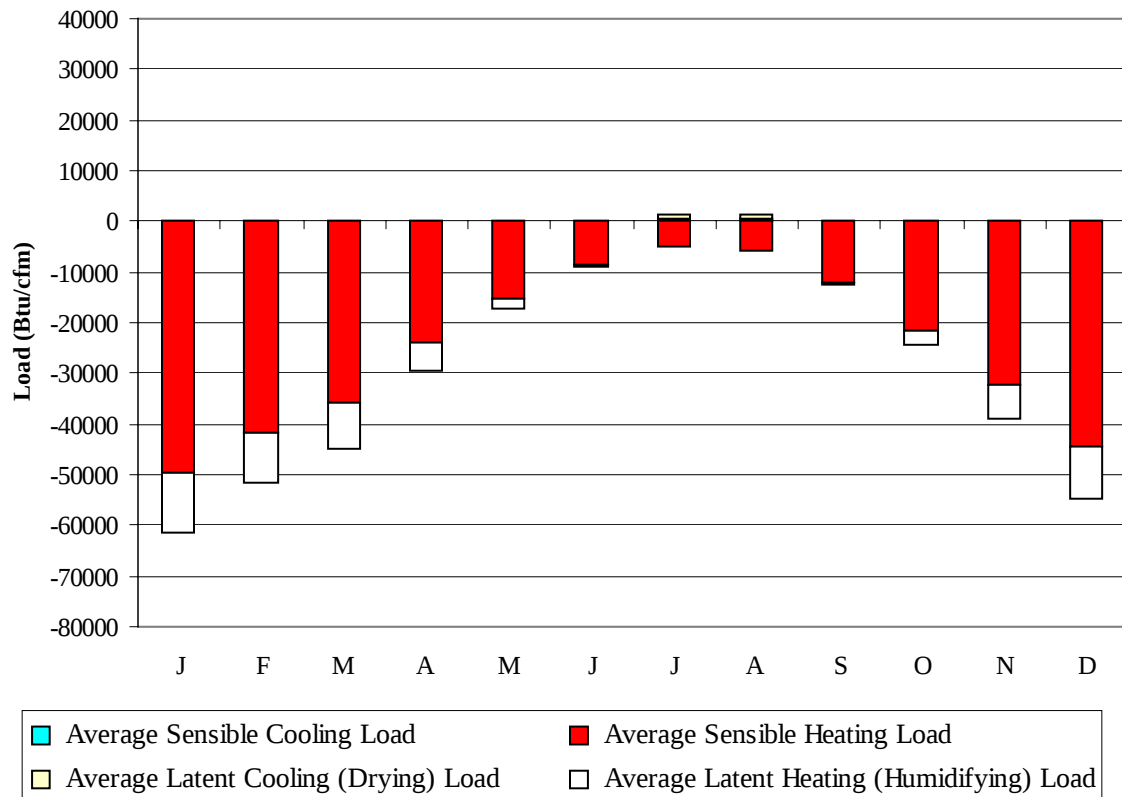
Long Term Dry Bulb Temperature and Humidity Summary

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	36.0	32.8	14.4	-4.1	-26.0	25.2	34.6	10.3	4.4
14-Jan	36.0	33.4	14.4	-6.1	-27.0	27.3	34.5	10.4	4.0
21-Jan	36.0	32.6	16.5	-3.8	-29.0	28.7	34.1	11.2	4.6
28-Jan	34.0	30.6	17.5	-2.6	-27.0	23.8	32.3	10.9	4.1
4-Feb	38.0	34.0	16.1	-5.2	-31.0	27.3	35.6	10.4	4.0
11-Feb	39.0	34.4	17.6	-2.9	-24.0	25.9	34.6	10.4	4.5
18-Feb	39.0	35.5	21.9	1.2	-25.0	29.4	37.3	12.9	6.0
25-Feb	42.0	35.5	26.7	6.6	-15.0	27.3	35.3	16.0	7.4
4-Mar	41.0	34.9	25.2	5.1	-15.0	25.9	35.0	13.4	6.2
11-Mar	45.0	37.6	29.2	8.9	-15.0	31.5	39.0	16.4	8.1
18-Mar	46.0	40.8	32.3	13.8	-9.0	38.5	42.5	18.8	9.9
25-Mar	48.0	39.1	34.8	15.8	-5.0	31.5	40.2	18.5	9.9
1-Apr	52.0	40.9	37.5	20.7	0.0	34.3	42.9	21.7	12.5
8-Apr	57.0	44.6	41.4	21.3	5.0	36.4	47.4	21.4	12.2
15-Apr	61.0	46.8	45.2	26.1	14.0	42.0	48.0	24.9	14.7
22-Apr	64.0	50.3	49.6	28.9	18.0	51.8	56.0	28.7	17.3
29-Apr	68.0	50.6	52.5	31.3	23.0	55.3	53.2	31.7	19.7
6-May	73.0	53.0	54.1	32.0	25.0	51.8	54.3	32.7	20.0
13-May	77.0	57.4	57.7	35.6	27.0	58.8	61.5	38.7	24.2
20-May	81.0	60.1	60.9	38.3	28.0	67.9	65.2	44.6	27.8
27-May	82.0	61.8	64.8	40.7	30.0	81.9	71.7	49.9	31.8
3-Jun	84.0	64.1	65.7	43.1	34.0	81.2	69.3	54.4	35.5
10-Jun	82.0	64.6	66.9	43.7	34.0	81.9	75.6	57.6	37.1
17-Jun	82.0	62.2	67.9	47.1	39.0	86.8	71.8	62.4	41.4
24-Jun	86.0	69.9	70.6	48.3	39.0	97.3	88.0	66.9	43.8
1-Jul	82.0	69.2	70.4	50.2	41.0	99.4	77.8	70.8	47.5
8-Jul	86.0	69.3	74.9	53.0	45.0	106.4	81.5	80.8	54.1
15-Jul	86.0	69.0	73.2	52.2	45.0	105.7	78.0	77.6	52.5
22-Jul	86.0	71.7	75.6	54.0	46.0	112.7	78.2	85.2	57.8
29-Jul	86.0	70.6	75.2	53.5	46.0	106.4	76.1	81.0	55.5
5-Aug	86.0	72.0	74.9	53.6	45.0	113.4	80.0	82.6	56.9
12-Aug	86.0	69.1	75.1	52.4	43.0	106.4	78.4	82.2	54.6
19-Aug	84.0	70.0	72.7	52.0	42.0	107.1	75.8	79.1	53.7
26-Aug	84.0	70.1	71.5	51.5	41.0	105.7	78.9	79.1	53.2
2-Sep	84.0	68.3	69.7	48.9	37.0	106.4	74.9	74.6	48.9
9-Sep	79.0	68.1	67.1	46.8	34.0	99.4	75.2	69.4	43.8
16-Sep	75.0	61.8	63.1	42.9	32.0	88.9	68.2	60.5	37.6
23-Sep	75.0	62.3	59.5	40.4	28.0	86.8	66.6	54.1	34.5
30-Sep	70.0	58.6	57.8	38.4	28.0	77.0	63.2	50.0	31.6
7-Oct	67.0	57.0	53.9	35.1	26.0	72.1	63.1	43.2	25.8
14-Oct	66.0	55.1	51.9	33.9	22.0	67.2	62.1	41.2	25.4
21-Oct	63.0	53.5	48.4	30.8	21.0	60.2	54.4	36.4	21.6
28-Oct	63.0	49.6	47.5	30.7	21.0	58.1	59.3	35.1	21.4
4-Nov	57.0	46.0	44.0	27.3	12.0	52.5	51.1	30.8	17.6
11-Nov	55.0	48.4	37.1	21.2	3.0	55.3	51.8	24.6	13.5
18-Nov	50.0	44.4	35.6	19.5	0.0	44.8	46.9	23.6	12.8
25-Nov	46.0	42.8	30.3	15.1	-6.0	42.0	44.2	20.0	10.6
2-Dec	43.0	41.0	27.0	10.8	-15.0	35.7	41.0	18.0	9.5
9-Dec	37.0	34.8	24.6	7.1	-17.0	30.8	36.8	16.1	7.7
16-Dec	38.0	34.2	21.5	5.0	-19.0	29.4	35.8	14.8	7.3
23-Dec	37.0	34.2	19.9	3.4	-20.0	27.3	34.9	13.7	6.5
31-Dec	35.0	31.0	17.0	-1.7	-22.0	25.2	33.4	11.6	5.0



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	1825
FEB	0	1518
MAR	0	1292
APR	1	842
MAY	19	504
JUN	46	263
JUL	97	134
AUG	79	159
SEP	17	390
OCT	1	742
NOV	0	1147
DEC	0	1622
ANN	260	10438

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	-49721	0	-11769
FEB	0	-41539	0	-10119
MAR	0	-35890	0	-8784
APR	1	-24138	0	-5443
MAY	100	-15284	14	-1822
JUN	209	-8701	115	-109
JUL	490	-5033	810	0
AUG	336	-5784	975	-7
SEP	45	-12242	190	-420
OCT	1	-21619	1	-2658
NOV	0	-32051	0	-6986
DEC	0	-44447	0	-10467
ANN	1182	-296449	2105	-58584

Average Annual Solar Radiation – Nearest Available Site

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

City: HOUGHTON
 State: MI
 WBAN No: 94814
 Lat(N): 47.17
 Long(W): 88.5
 Elev(ft): 1079

Stn Type: Secondary
 SHADING GEOMETRY IN DIMENSIONLESS UNITS
 Window: 1
 Overhang: 0.741
 Vert Gap: 0.327

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	420	700	1120	1460	1740	1910	1900	1590	1140	730	420	340	1130
	Std Dev	53	81	106	104	153	144	91	115	98	51	40	46	42
	Minimum	320	550	890	1250	1460	1640	1740	1380	930	640	340	230	1040
	Maximum	490	820	1300	1670	2090	2220	2130	1800	1360	840	500	390	1190
	Diffuse	300	430	630	710	730	770	740	650	530	390	290	260	540
Clear Day	Global	620	990	1540	2110	2490	2650	2550	2180	1650	1090	680	520	1590
NORTH	Global	160	240	350	440	540	620	580	460	330	230	160	140	360
	Diffuse	160	240	350	430	480	520	500	430	330	230	160	140	330
Clear Day	Global	130	200	290	410	580	710	640	460	310	210	140	120	350
EAST	Global	290	470	720	920	1040	1120	1130	970	730	490	280	220	700
	Diffuse	200	300	440	520	560	600	590	520	410	280	190	170	400
Clear Day	Global	550	800	1130	1410	1540	1600	1550	1410	1160	850	580	470	1090
SOUTH	Global	690	940	1120	1050	950	900	950	1030	1020	910	600	530	890
	Diffuse	320	430	540	560	550	570	570	530	460	370	280	280	460
Clear Day	Global	1770	1990	2000	1660	1320	1170	1210	1470	1760	1890	1760	1640	1630
WEST	Global	300	470	730	900	1040	1130	1130	990	750	500	280	230	710
	Diffuse	200	300	450	520	570	610	600	530	410	290	190	170	410
Clear Day	Global	550	800	1130	1410	1540	1600	1550	1410	1160	850	580	470	1090

Average Annual Solar Heat and Illumination – Nearest Available Site

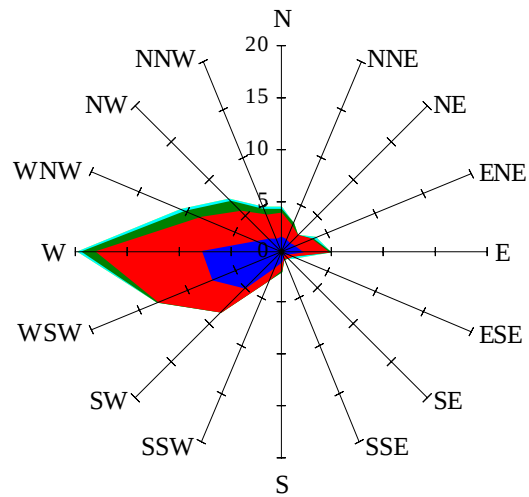
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

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	270	460	770	1040	1250	1380	1370	1140	800	490	270	220	790
NORTH	Unshaded	110	170	250	300	350	410	380	300	230	160	110	95	240
	Shaded	87	130	200	250	300	340	320	260	190	130	87	73	200
EAST	Unshaded	200	330	510	660	740	800	800	700	520	340	190	150	490
	Shaded	160	270	410	520	580	620	630	550	420	280	160	130	390
SOUTH	Unshaded	520	700	800	710	620	570	600	680	710	670	450	400	620
	Shaded	490	620	580	400	320	330	330	340	460	560	410	370	430
WEST	Unshaded	200	330	520	640	740	810	800	710	530	350	200	160	500
	Shaded	170	270	420	510	580	630	630	560	430	290	160	130	400

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	19	53	71	66	39	33	69	90	94	79
	M.Cloudy	12	35	47	44	26	20	41	60	64	50
NORTH	M.Clear	6	12	14	13	10	20	14	16	16	15
	M.Cloudy	6	14	17	16	11	11	14	18	18	16
EAST	M.Clear	56	68	28	13	10	72	80	49	16	15
	M.Cloudy	17	31	22	16	11	26	38	34	18	16
SOUTH	M.Clear	22	66	89	83	48	9	28	52	57	40
	M.Cloudy	9	30	41	39	22	8	20	35	39	27
WEST	M.Clear	6	12	14	50	72	9	14	16	30	71
	M.Cloudy	6	14	17	28	29	8	14	18	26	40
M.Clear	(% hrs)	26	26	27	25	27	39	38	34	31	36
		Sept					Dec				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	11	46	69	73	55	0	19	32	25	4
	M.Cloudy	6	25	42	45	32	0	13	20	17	3
NORTH	M.Clear	4	11	14	14	12	0	7	9	8	2
	M.Cloudy	3	10	15	15	12	0	6	9	7	2
EAST	M.Clear	38	73	46	14	12	0	36	15	8	2
	M.Cloudy	9	26	26	15	12	0	11	10	7	2
SOUTH	M.Clear	7	46	75	79	57	0	53	77	63	15
	M.Cloudy	4	19	36	39	26	0	15	23	19	4
WEST	M.Clear	4	11	14	31	68	0	7	9	32	17
	M.Cloudy	3	10	15	22	29	0	6	9	13	4
M.Clear	(% hrs)	33	33	31	29	32	12	13	13	12	15

Wind Summary - December, January, and February

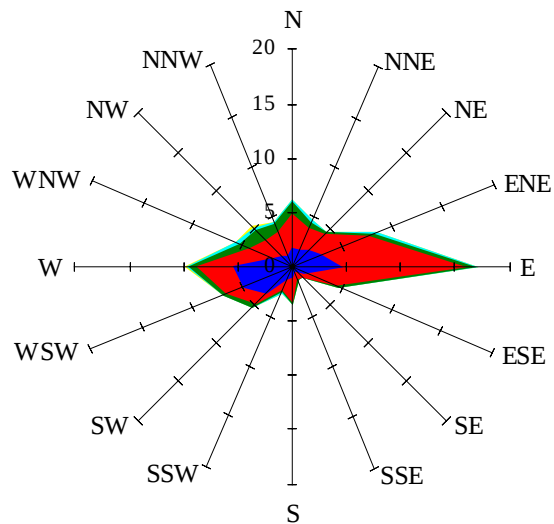
Labels of Percent Frequency on North Axis



Percent Calm = 11.35

Wind Summary - March, April, and May

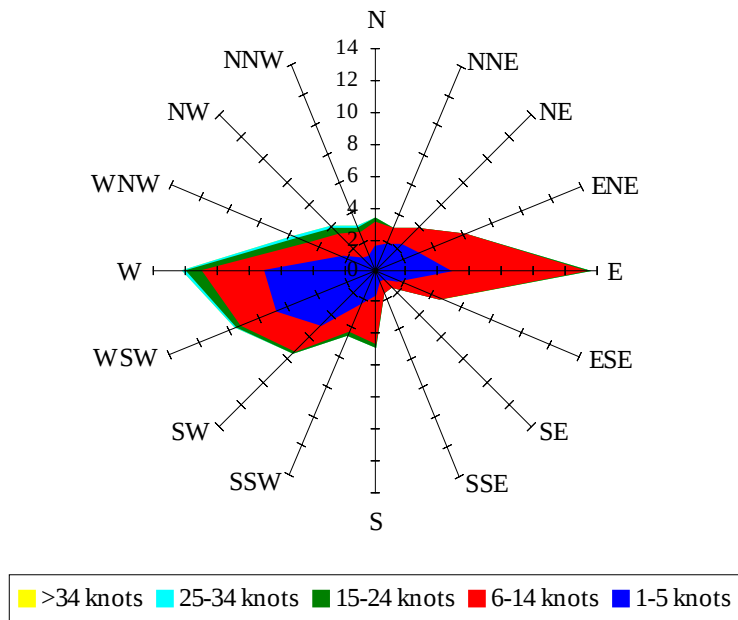
Labels of Percent Frequency on North Axis



Percent Calm = 10.37

Wind Summary - June, July, and August

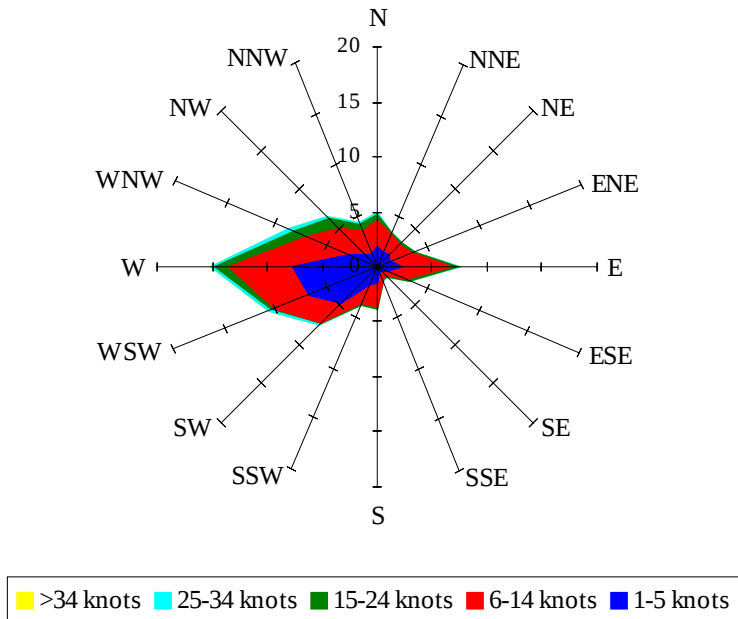
Labels of Percent Frequency on North Axis



Percent Calm = 12.17

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 11.44