CALGARY CN	
Latitude = 51.12 N	WMO No. 718770
Longitude =114.00 W	Elevation = 3557 feet
Period of Record = 1973 to 1996	Average Pressure = 26.23 inches Hg

Design Criteria Data

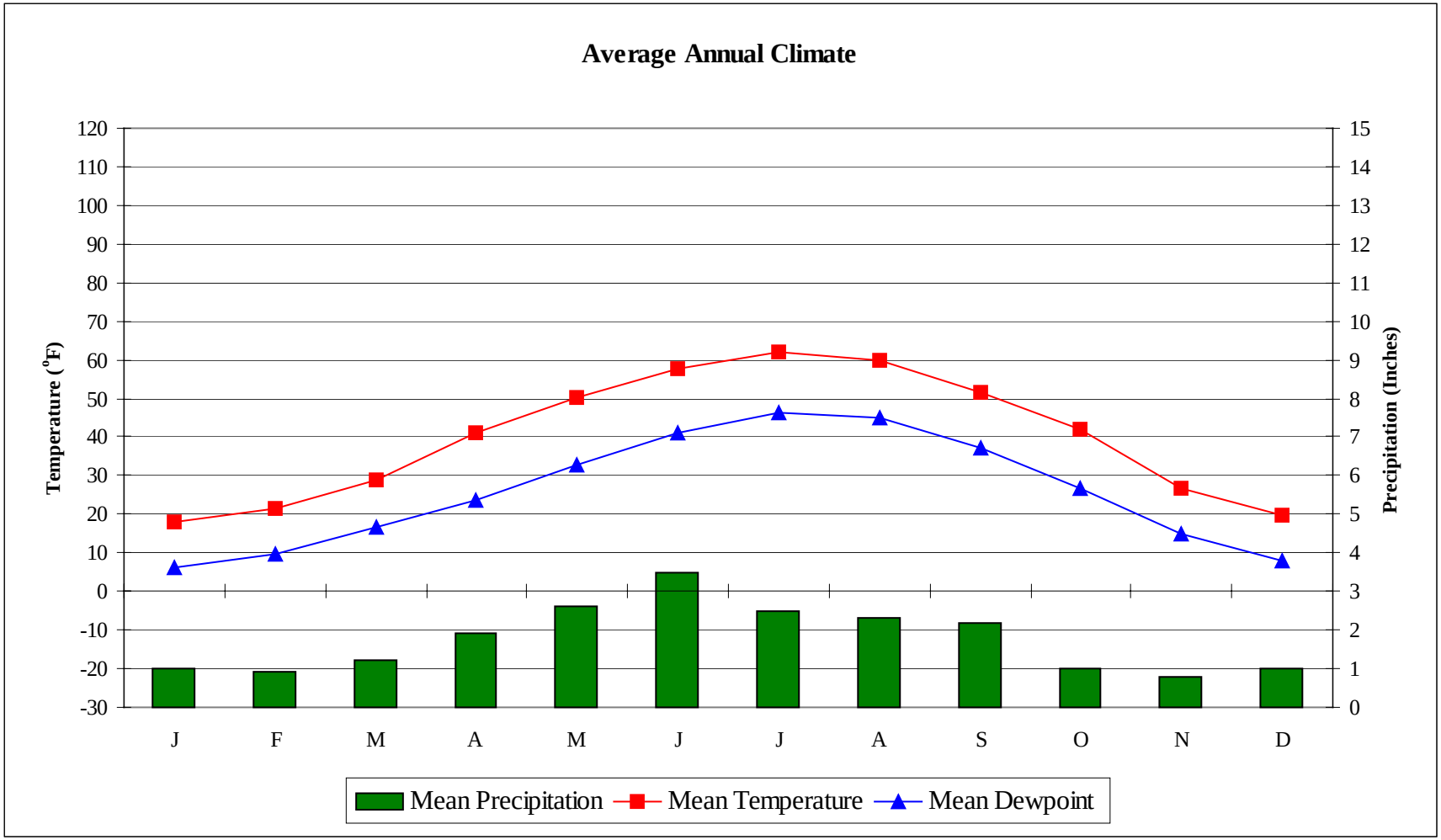
		Mean Coincident (Average) Values			
Dry Bulb Temperature (T)	**Design Value (^oF)**	Wet Bulb Temperature (^oF)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	90	61	43	10.8	W
0.4% Occurrence	82	60	51	10.4	SSE
1.0% Occurrence	79	59	51	11.1	SSE
2.0% Occurrence	77	58	51	10.6	SSE
Mean Daily Range	21	-	-	-	-
97.5% Occurrence	-8	-9	2	8.5	N
99.0% Occurrence	-15	-15	2	7.2	N
99.6% Occurrence	-20	-21	1	6.5	N
Median of Extreme Lows	-27	-27	1	5.6	NNW
		Mean Coincident (Average) Values			
Wet Bulb Temperature (T_{wb})	**Design Value (^oF)**	Dry Bulb Temperature (^oF)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	65	80	78	10.7	SE
0.4% Occurrence	63	78	72	9.8	SSE
1.0% Occurrence	61	75	66	9.1	SSE
2.0% Occurrence	59	73	61	9.2	SSE
		Mean Coincident (Average) Values			
Humidity Ratio (HR)	**Design Value (gr/lb)**	Dry Bulb Temperature (^oF)	Vapor Pressure (in. Hg)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	90	71	0.54	7.9	SSE
0.4% Occurrence	79	68	0.47	8.4	N
1.0% Occurrence	74	66	0.44	8.0	NNW
2.0% Occurrence	69	65	0.41	8.2	NNW
Air Conditioning/		$T \geq 93^oF$	$T \geq 80^oF$	$T_{wb} \geq 73^oF$	$T_{wb} \geq 67^oF$
Humid Area Criteria	# of Hours	0	85	0	3

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 (^oF) 50 Foot Depth *	**Frost Depth 50 Year Recurrence (in.)**	**Ground Snow Load 50 Year Recurrence (lb/ft^2)**	**Average Annual Freeze-Thaw Cycles (#)**
42.4	N/A	N/A	111

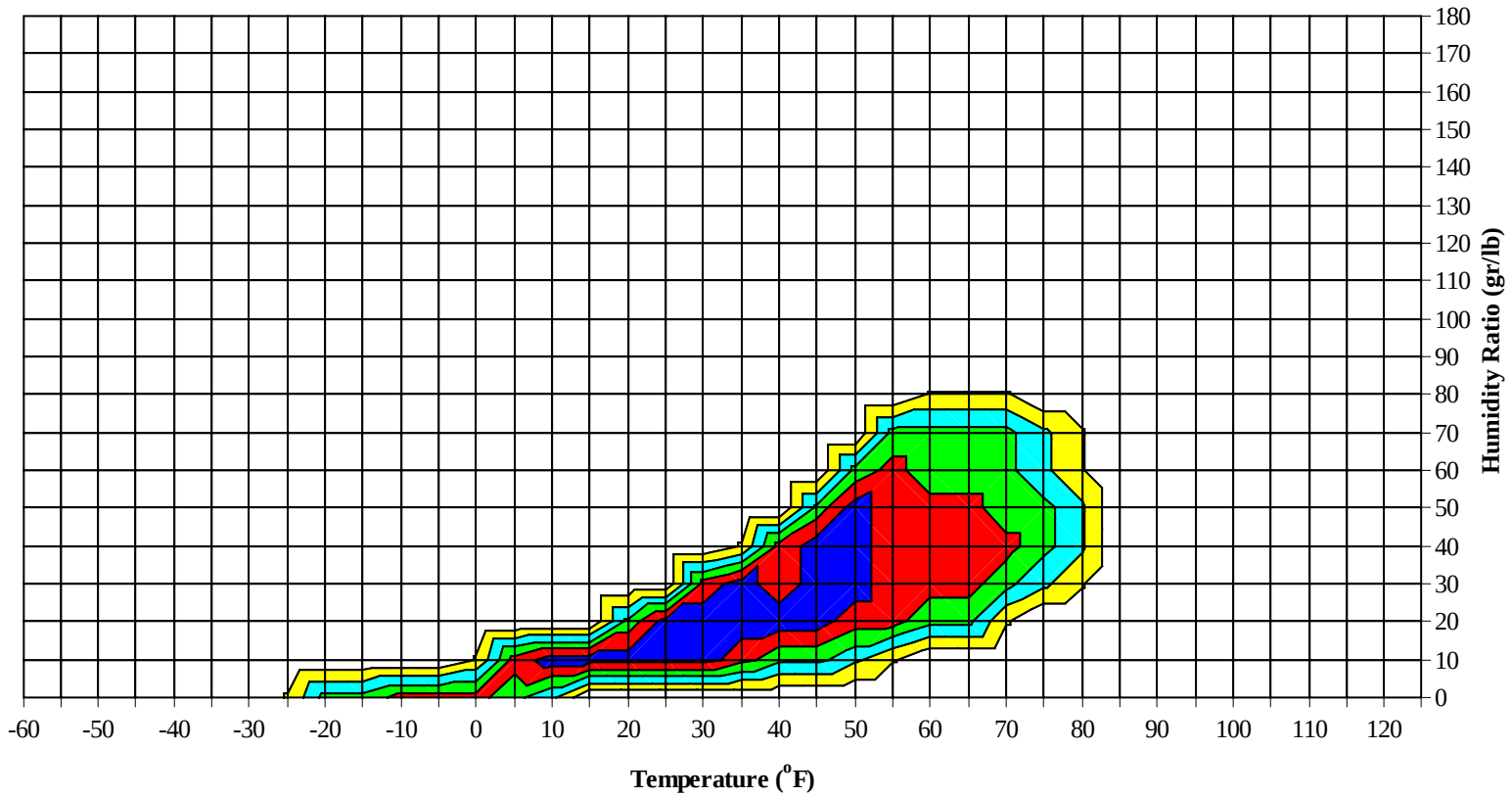
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

CALGARY CN WMO No. 718770



CALGARY CN WMO No. 718770

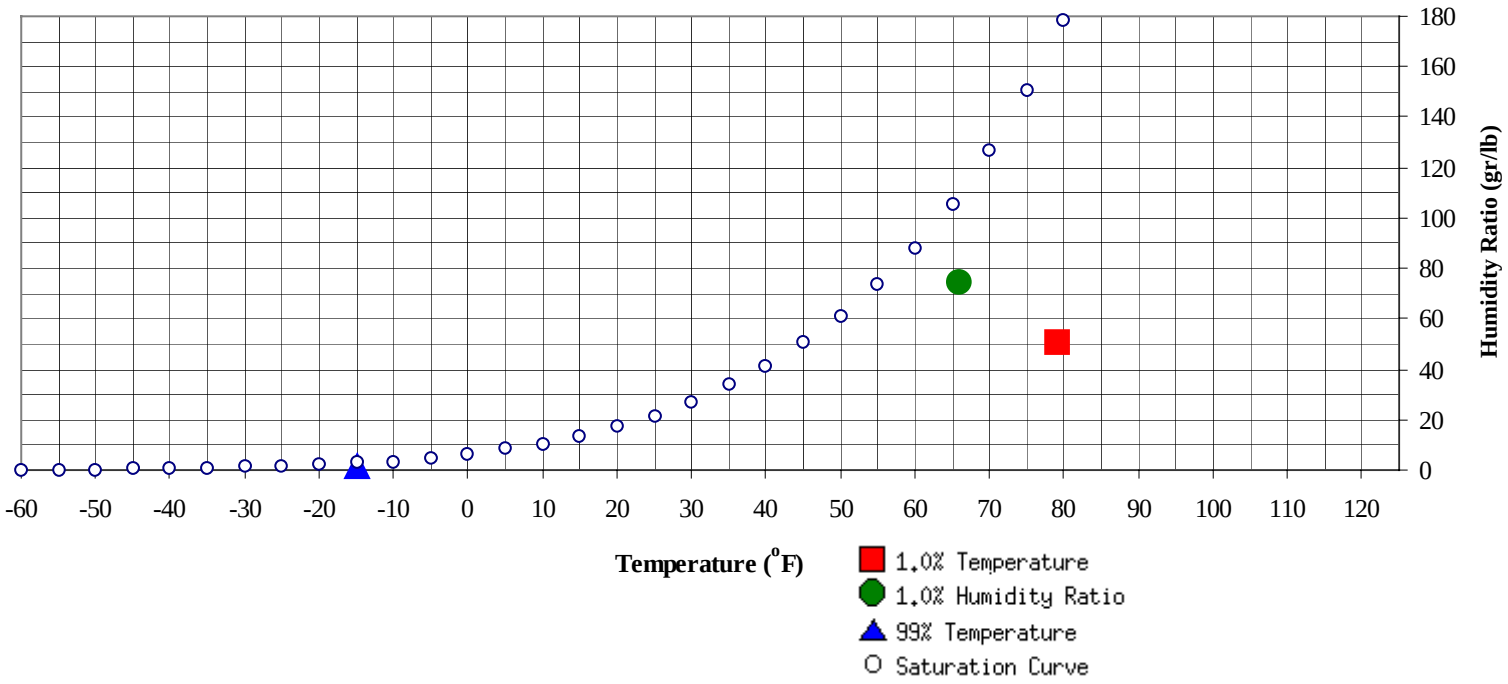
Long Term Psychrometric Summary



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

CALGARY CN WMO No. 718770

Psychrometric Summary of Peak Design Values



	(°F)	MCHR (gr/lb)	Enthalpy (btu/lb)
99% Dry Bulb	-15	1.5	-3.4

	(gr/lb)	MCDB (°F)	MCWB (°F)	MC Dewpt (°F)	Enthalpy (btu/lb)
1.0% Humidity Ratio	74.2	66	59.2	55.4	27.4

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	79	51.1	58.6	27.0

CALGARY CN WMO No. 718770

Dry-Bulb Temperature Hours For An Average Year (Sheet 1 of 5)

Period of Record = 1973 to 1996

Temperature Range (°F)	January Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)	February Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)	March Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)
90 / 94															
85 / 89															
80 / 84															
75 / 79															
70 / 74							0		0	46.8					
65 / 69							0	0	0	45.8		0	0	0	46.5
60 / 64		0		0	46.0		2	0	2	43.3		2	1	3	44.5
55 / 59	0	2	1	3	41.9	0	3	1	4	41.6	0	9	3	12	41.8
50 / 54	2	6	2	10	39.0	2	11	4	17	38.8	1	18	9	28	39.3
45 / 49	7	15	10	32	36.0	7	18	12	37	36.0	5	32	18	54	36.2
40 / 44	8	16	12	36	33.2	9	19	15	43	33.5	8	28	21	57	33.8
35 / 39	21	29	21	71	30.2	19	27	27	73	30.6	27	40	39	105	31.2
30 / 34	23	28	27	78	26.8	22	26	31	79	27.5	48	39	52	138	28.1
25 / 29	28	27	31	86	23.1	34	24	28	86	23.8	56	24	37	117	24.4
20 / 24	20	17	23	60	19.5	22	13	15	50	19.9	30	15	20	65	20.3
15 / 19	30	22	27	79	15.6	23	15	17	55	15.9	26	16	18	60	16.1
10 / 14	23	16	18	57	10.9	18	12	15	45	10.7	16	9	11	36	11.0
5 / 9	18	14	16	48	5.6	14	13	14	41	5.7	10	6	8	24	5.7
0 / 4	17	13	15	45	0.5	15	12	14	41	0.4	10	6	6	22	0.5
-5 / -1	10	11	10	31	-3.9	9	8	8	25	-3.9	4	1	3	8	-3.7
-10 / -6	14	14	14	42	-8.2	11	10	12	33	-8.3	3	2	2	7	-8.1
-15 / -11	9	5	7	21	-12.9	9	4	5	18	-12.6	2	0	1	3	-12.5
-20 / -16	10	8	10	28	-16.9	5	2	3	10	-16.5	2	0	1	3	-16.9
-25 / -21	5	3	5	13	-21.9	3	1	1	5	-22.0	1		0	1	-21.4
-30 / -26	1	0	0	1	-27.3	1	1	1	3	-27.4					
-35 / -31	0	0	0	0	-30.7	1	0	0	1	-31.3					
-40 / -36															

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.

CALGARY CN WMO No. 718770

Dry-Bulb Temperature Hours For An Average Year (Sheet 2 of 5)

Period of Record = 1973 to 1996

Temperature Range (°F)	April Hour Group (LST) 01 To 08	April 09 To 16	April 17 To 00	April Total Obs	April MCWB (°F)	May Hour Group (LST) 01 To 08	May 09 To 16	May 17 To 00	May Total Obs	May MCWB (°F)	June Hour Group (LST) 01 To 08	June 09 To 16	June 17 To 00	June Total Obs	June MCWB (°F)
90 / 94												0	0	0	63.8
85 / 89							1	0	1	60.7		1	1	2	60.0
80 / 84		0	0	0	52.7		2	1	3	57.1		6	4	10	58.8
75 / 79		2	1	3	51.6		7	4	11	53.6	0	21	12	33	57.3
70 / 74		5	2	7	50.1	0	17	10	27	52.0	1	34	22	57	55.2
65 / 69	0	8	4	12	48.0	1	19	13	33	49.8	4	37	26	67	53.0
60 / 64	0	19	11	30	45.5	4	38	28	70	47.9	17	55	44	117	51.0
55 / 59	2	29	19	50	42.8	15	49	39	103	45.5	45	45	52	142	49.1
50 / 54	9	39	28	76	40.0	34	47	45	126	43.2	76	27	44	148	46.5
45 / 49	21	43	37	101	37.1	56	31	45	132	40.7	64	10	29	103	43.2
40 / 44	22	28	31	81	34.9	49	17	30	96	37.8	22	2	5	29	39.0
35 / 39	54	30	47	131	32.5	57	14	24	95	34.6	10	0	1	11	35.7
30 / 34	66	17	36	119	29.2	26	5	8	39	30.7	1			1	31.1
25 / 29	39	8	13	60	24.8	5	1	1	7	25.7					
20 / 24	12	4	6	22	20.5	1	0	0	1	21.7					
15 / 19	8	4	4	16	16.4	0			0	17.8					
10 / 14	3	2	2	7	11.1										
5 / 9	2	1	1	4	6.2										
0 / 4	1	0		1	1.7										
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															
-30 / -26															
-35 / -31															
-40 / -36															

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.

CALGARY CN WMO No. 718770

Dry-Bulb Temperature Hours For An Average Year (Sheet 3 of 5)

Period of Record = 1973 to 1996

Temperature Range (°F)	July Hour Group (LST) 01 To 08	July 09 To 16	July 17 To 00	July Total Obs	July MCWB (°F)	August Hour Group (LST) 01 To 08	August 09 To 16	August 17 To 00	August Total Obs	August MCWB (°F)	September Hour Group (LST) 01 To 08	September 09 To 16	September 17 To 00	September Total Obs	September MCWB (°F)
90 / 94		1	0	1	60.9		1	0	1	60.9		0		0	58.0
85 / 89		4	3	7	61.2		4	2	6	61.1		1	0	1	58.5
80 / 84		16	9	25	60.8		15	7	22	60.4		6	2	8	56.9
75 / 79	0	32	20	52	59.1	0	30	17	47	59.0		14	5	19	55.7
70 / 74	2	55	35	92	56.9	2	44	29	75	56.9	0	25	12	37	53.8
65 / 69	6	43	34	83	55.2	5	38	29	72	55.0	1	22	14	37	52.1
60 / 64	32	50	56	138	53.7	22	47	49	118	53.4	7	37	27	71	49.9
55 / 59	78	31	54	163	51.6	60	35	54	149	51.3	18	40	39	97	47.6
50 / 54	87	12	32	131	48.6	83	21	39	143	48.2	43	34	44	121	45.4
45 / 49	36	2	6	44	44.2	57	9	19	85	44.2	60	30	44	134	42.5
40 / 44	6	0	0	6	40.0	14	2	3	19	40.1	42	15	26	83	39.0
35 / 39	0			0	37.3	5	1	1	7	35.8	41	11	20	72	35.2
30 / 34						1		0	1	31.3	20	4	7	31	30.4
25 / 29						0			0	27.0	5	0	1	6	25.5
20 / 24											1	0	0	1	20.7
15 / 19											1		0	1	17.1
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															
-30 / -26															
-35 / -31															
-40 / -36															

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.

CALGARY CN WMO No. 718770

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)				MCWB	Hour Group (LST)				MCWB	Hour Group (LST)				MCWB
	01 To 08	09 To 16	17 To 00	Total Obs	(°F)	01 To 08	09 To 16	17 To 00	Total Obs	(°F)	01 To 08	09 To 16	17 To 00	Total Obs	(°F)
90 / 94															
85 / 89															
80 / 84		1	0	1	55.4										
75 / 79		3	1	4	54.1										
70 / 74	0	8	2	10	51.9										
65 / 69	1	10	4	15	49.9		1	0	1	47.5					
60 / 64	3	23	11	37	47.4	0	3	0	3	45.2		0		0	45.1
55 / 59	9	31	18	58	44.4	1	6	2	9	42.8	0	1	0	1	41.7
50 / 54	16	39	29	84	41.5	4	11	6	21	39.8	2	5	2	9	39.4
45 / 49	27	43	39	109	38.4	7	21	11	39	36.7	6	15	8	29	36.2
40 / 44	31	25	35	91	35.9	10	22	14	46	33.8	8	14	12	34	33.5
35 / 39	55	27	47	129	33.0	24	43	32	98	30.9	18	30	24	72	30.2
30 / 34	51	18	33	102	29.3	37	34	43	114	27.8	31	34	30	95	26.9
25 / 29	32	9	15	56	24.7	44	28	42	114	24.0	34	37	35	106	23.1
20 / 24	10	3	5	18	20.6	27	17	21	65	20.3	24	20	25	69	19.7
15 / 19	8	3	5	16	16.5	29	14	22	65	16.1	27	20	26	73	15.8
10 / 14	3	1	2	6	11.5	21	12	15	48	11.2	26	15	21	62	11.0
5 / 9	0	1	0	1	6.1	12	9	10	31	5.7	20	12	16	48	5.8
0 / 4	0	1	1	2	1.1	11	8	9	28	0.6	13	11	12	36	0.4
-5 / -1	1	0	1	2	-3.9	4	4	5	13	-3.8	8	8	7	23	-4.0
-10 / -6	1	0	0	1	-8.0	5	3	5	13	-7.9	10	9	12	31	-8.3
-15 / -11	0		0	0	-11.5	2	1	2	5	-12.8	7	6	6	19	-12.8
-20 / -16						1	1	1	3	-16.4	7	5	5	17	-16.9
-25 / -21						1	0	1	2	-22.2	6	3	4	13	-22.0
-30 / -26						0	0		0	-26.0	2	1	2	5	-27.2
-35 / -31											0	0	0	0	-31.6
-40 / -36											0		0	0	-35.0

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.

CALGARY CN WMO No. 718770

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

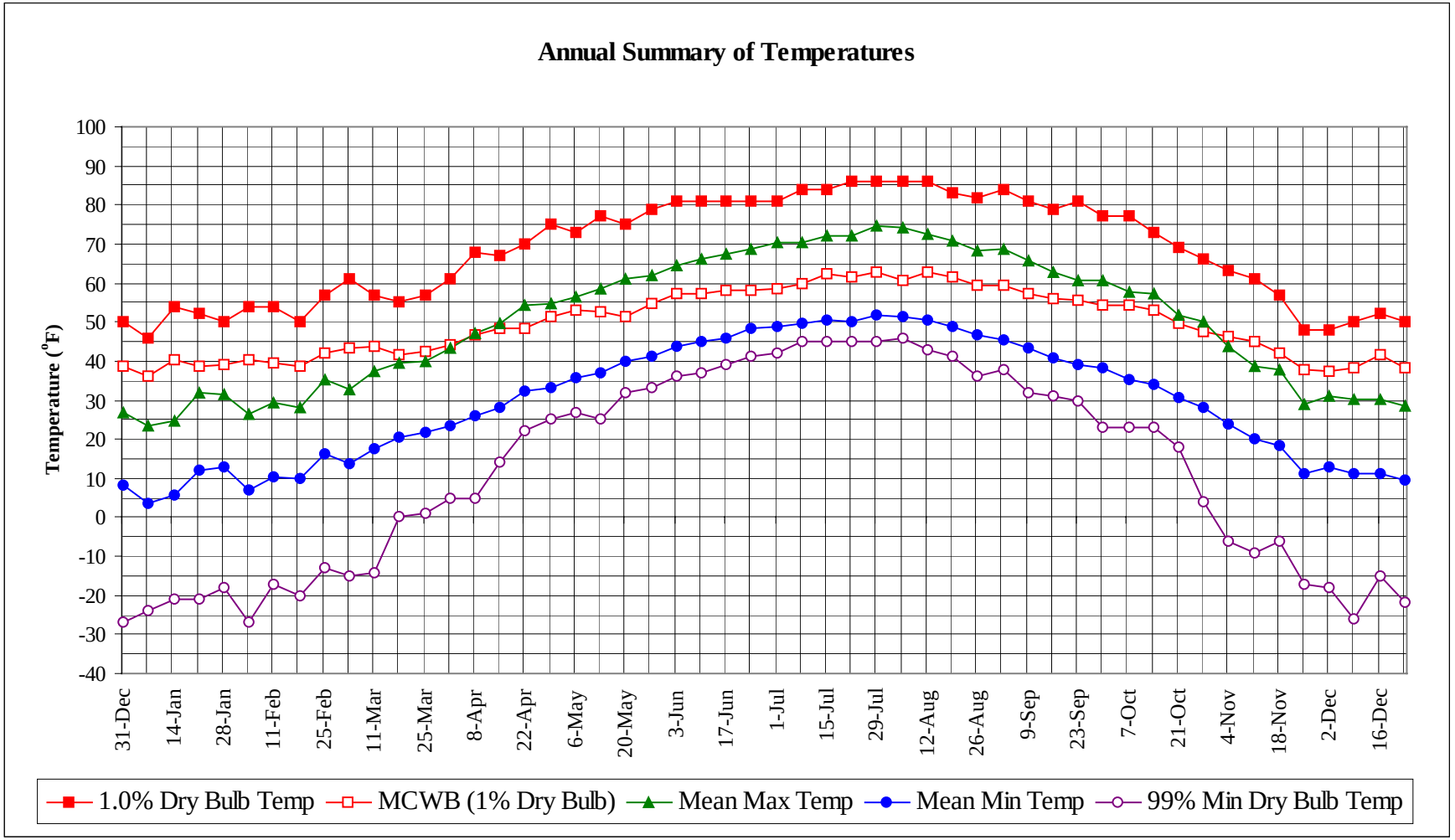
Period of Record = 1973 to 1996

Annual Totals

Temperature Range (°F)	Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)
90 / 94		2	0	2	61.0
85 / 89		10	5	15	60.9
80 / 84		45	23	68	59.7
75 / 79	0	108	58	165	57.7
70 / 74	5	188	109	303	55.4
65 / 69	18	177	122	318	53.2
60 / 64	83	276	223	582	51.0
55 / 59	226	280	279	784	48.3
50 / 54	355	270	283	907	44.8
45 / 49	352	270	277	898	40.1
40 / 44	229	191	204	624	36.0
35 / 39	333	253	284	869	32.2
30 / 34	329	207	270	806	28.3
25 / 29	280	162	204	646	23.9
20 / 24	148	91	116	355	20.0
15 / 19	153	96	119	368	15.9
10 / 14	111	68	85	264	11.0
5 / 9	77	57	66	200	5.7
0 / 4	67	53	58	178	0.5
-5 / -1	36	33	35	104	-3.9
-10 / -6	44	38	46	128	-8.2
-15 / -11	30	17	21	68	-12.8
-20 / -16	25	16	20	61	-16.8
-25 / -21	16	7	11	34	-22.0
-30 / -26	5	2	4	11	-27.3
-35 / -31	1	0	0	1	-31.3
-40 / -36	0		0	0	-35.0

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.

CALGARY CN WMO No. 718770



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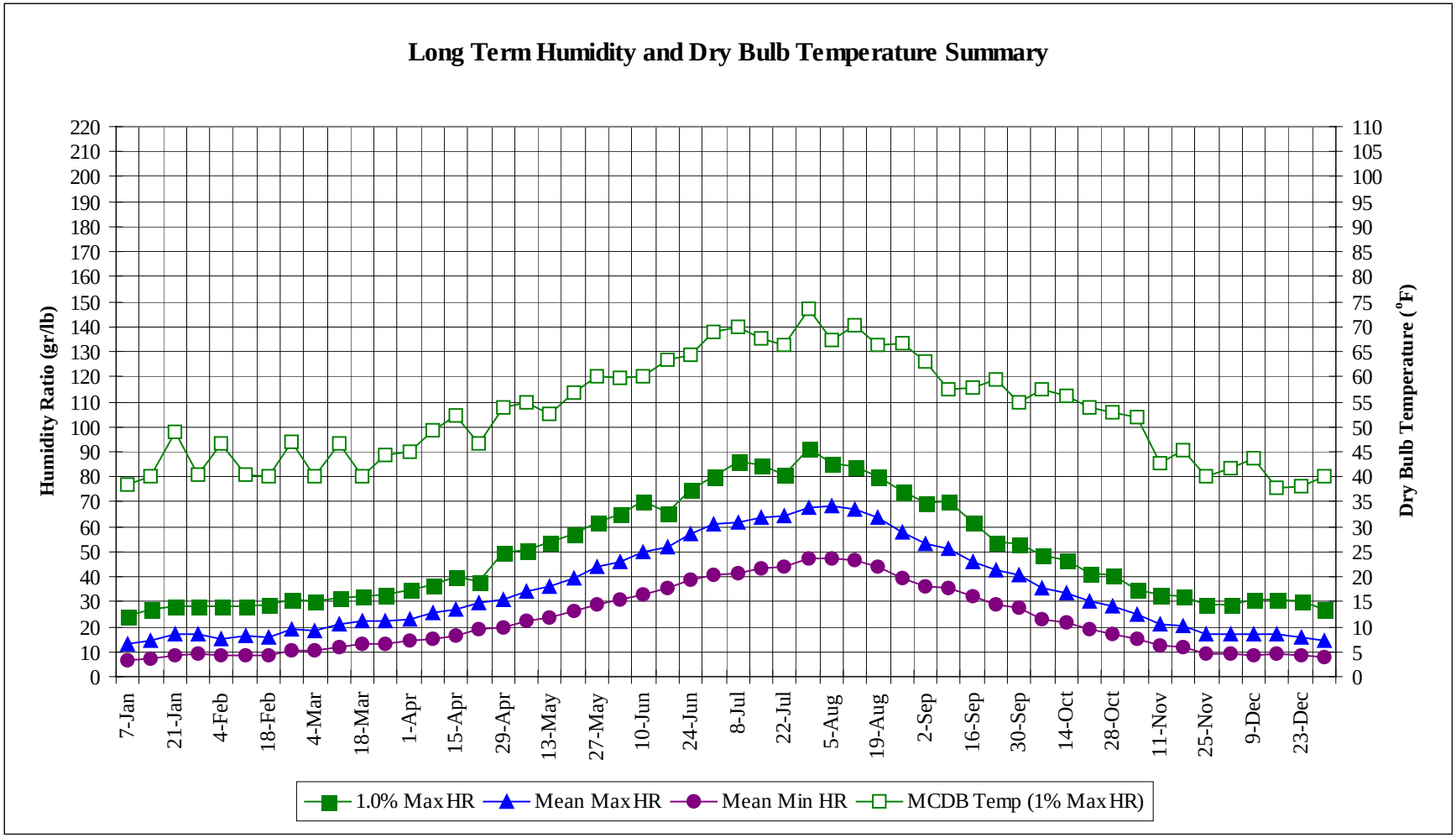
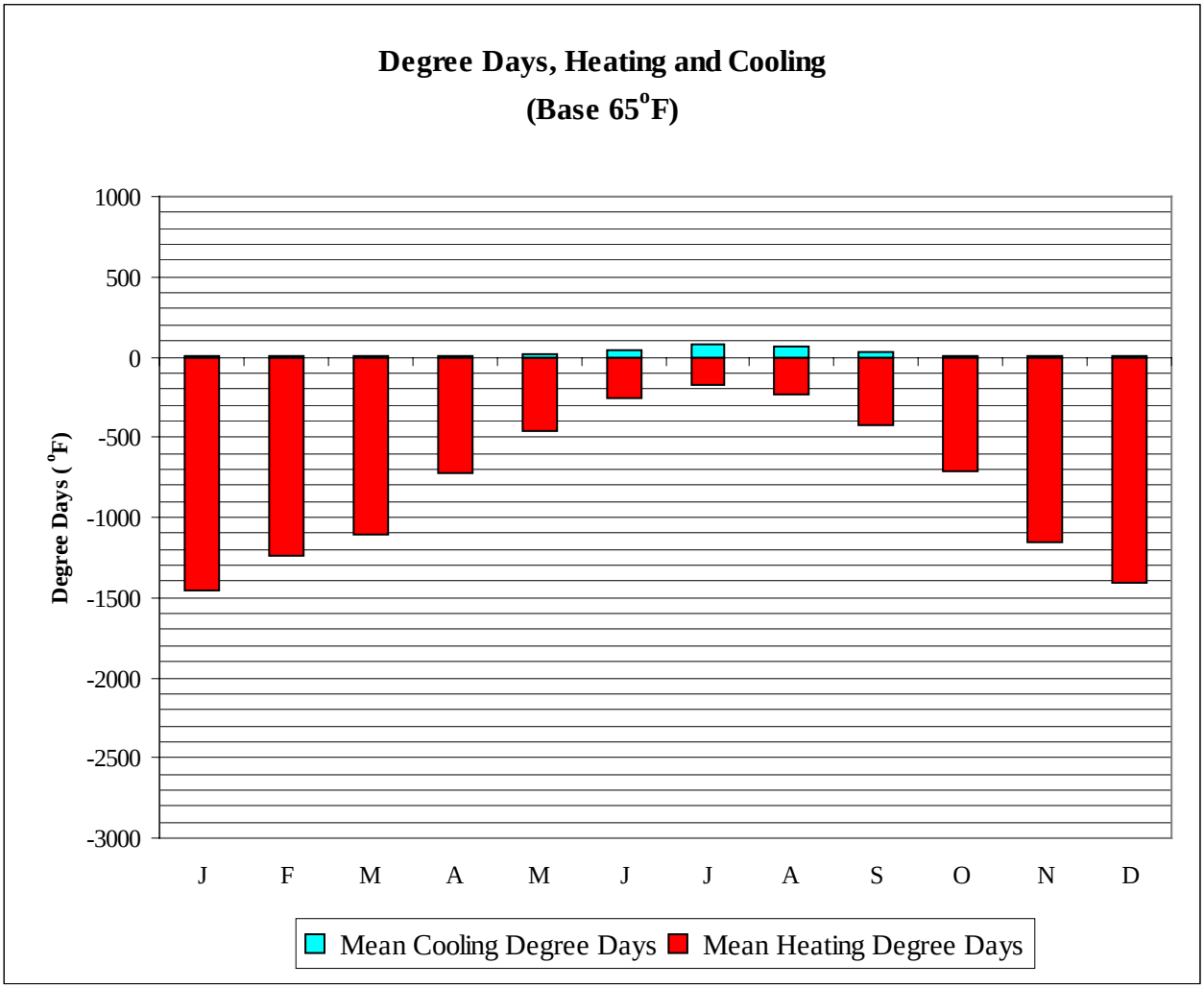


CALGARY CN WMO No. 718770

Long Term Dry Bulb Temperature and Humidity Summary

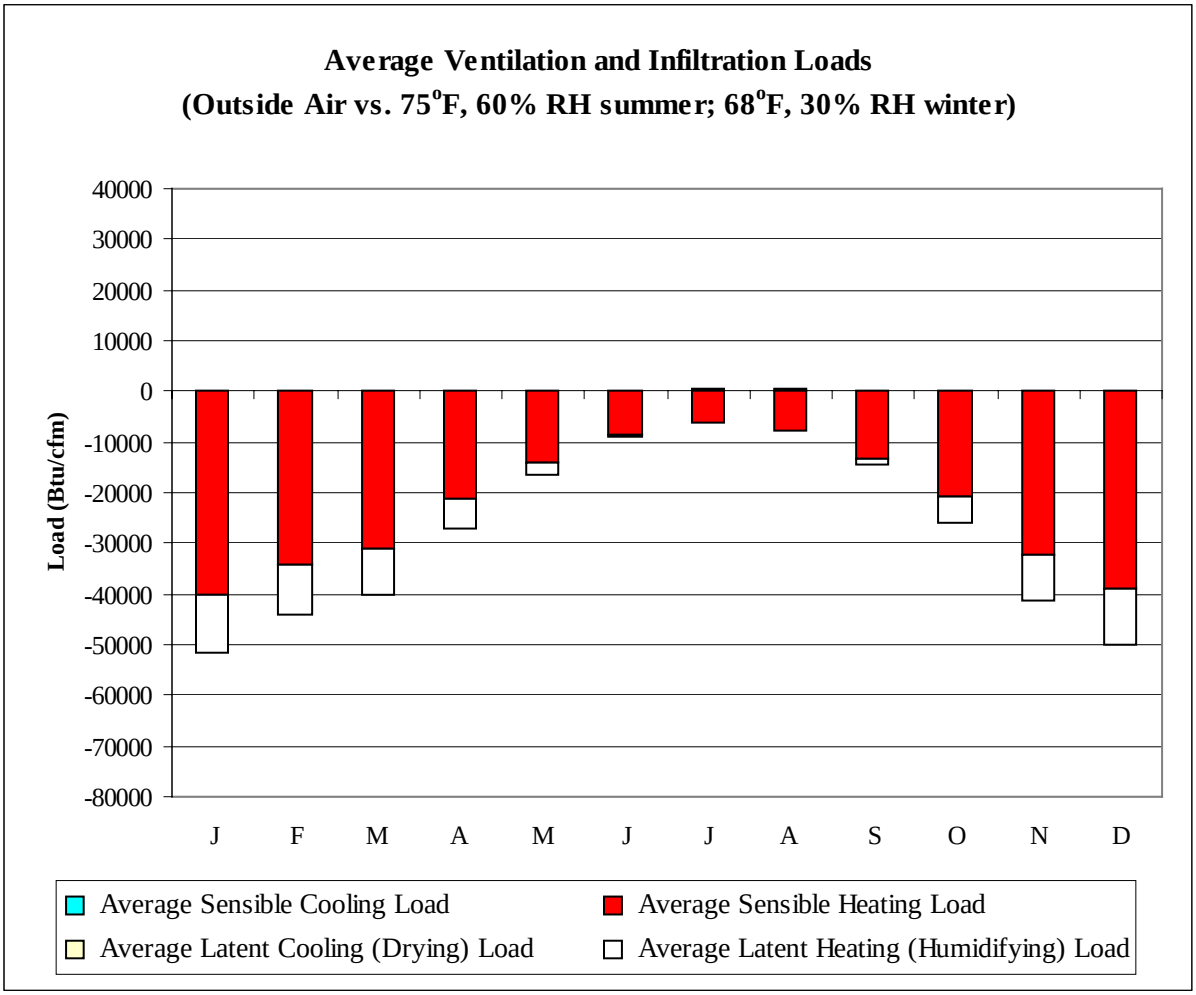
Week Ending	1.0% Temp (°F)	MCWB @ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB @ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	46.0	36.0	23.3	3.6	-24.0	24.5	38.6	13.1	6.5
14-Jan	54.0	40.4	24.9	5.5	-21.0	26.6	40.2	14.2	7.2
21-Jan	52.0	38.8	31.9	11.9	-21.0	28.0	49.0	17.0	8.6
28-Jan	50.0	39.1	31.5	12.8	-18.0	28.0	40.4	17.3	9.2
4-Feb	54.0	40.3	26.5	6.9	-27.0	28.0	46.6	15.0	8.3
11-Feb	54.0	39.5	29.4	10.3	-17.0	28.0	40.3	16.1	8.4
18-Feb	50.0	38.8	28.2	9.8	-20.0	28.7	40.0	15.9	8.8
25-Feb	57.0	42.2	35.3	16.4	-13.0	30.8	46.9	19.1	10.4
4-Mar	61.0	43.3	32.8	13.9	-15.0	30.1	40.1	18.3	10.2
11-Mar	57.0	43.8	37.5	17.5	-14.0	31.5	46.5	20.9	11.7
18-Mar	55.0	41.7	39.6	20.3	0.0	32.2	40.2	22.2	13.1
25-Mar	57.0	42.4	39.9	21.7	1.0	32.9	44.4	22.3	13.3
1-Apr	61.0	44.4	43.1	23.6	5.0	35.0	44.9	23.0	14.3
8-Apr	68.0	46.8	47.1	25.9	5.0	37.1	49.2	25.6	15.2
15-Apr	67.0	48.4	49.7	28.3	14.0	39.9	52.1	26.7	16.4
22-Apr	70.0	48.5	54.3	32.4	22.0	37.8	46.7	29.8	19.2
29-Apr	75.0	51.2	54.8	33.4	25.0	49.7	53.7	31.0	19.5
6-May	73.0	52.9	56.5	35.7	27.0	50.4	54.8	34.4	22.2
13-May	77.0	52.8	58.6	37.0	25.0	53.9	52.5	36.3	23.7
20-May	75.0	51.5	61.0	39.8	32.0	57.4	56.9	39.6	26.3
27-May	79.0	54.8	61.9	41.0	33.0	61.6	60.1	43.9	29.1
3-Jun	81.0	57.2	64.5	43.7	36.0	65.1	59.9	46.1	30.7
10-Jun	81.0	57.2	66.1	45.0	37.0	70.0	60.1	49.7	33.0
17-Jun	81.0	58.3	67.2	46.1	39.0	65.8	63.4	52.2	35.4
24-Jun	81.0	58.1	68.9	48.5	41.0	74.9	64.4	57.1	38.5
1-Jul	81.0	58.7	70.4	48.8	42.0	79.8	68.9	60.8	40.9
8-Jul	84.0	59.9	70.5	49.5	45.0	86.1	70.0	61.9	41.3
15-Jul	84.0	62.3	72.0	50.5	45.0	84.7	67.6	63.9	43.0
22-Jul	86.0	61.4	72.2	50.3	45.0	80.5	66.3	64.4	44.2
29-Jul	86.0	62.8	74.7	51.9	45.0	91.0	73.7	67.9	47.4
5-Aug	86.0	60.6	74.0	51.5	46.0	85.4	67.4	68.5	47.5
12-Aug	86.0	62.7	72.4	50.4	43.0	84.0	70.4	67.1	46.7
19-Aug	83.0	61.7	70.8	48.7	41.0	79.8	66.3	63.8	43.8
26-Aug	82.0	59.4	68.4	46.5	36.0	74.2	66.8	57.6	39.6
2-Sep	84.0	59.3	68.6	45.5	38.0	69.3	62.9	53.4	36.4
9-Sep	81.0	57.3	65.6	43.4	32.0	70.0	57.6	51.2	35.5
16-Sep	79.0	56.2	62.8	40.9	31.0	61.6	57.8	46.0	32.3
23-Sep	81.0	55.5	60.6	39.0	30.0	53.9	59.4	42.5	29.2
30-Sep	77.0	54.2	60.8	38.3	23.0	53.2	54.9	40.4	27.6
7-Oct	77.0	54.1	57.7	35.2	23.0	48.3	57.3	35.7	23.3
14-Oct	73.0	52.9	57.5	34.2	23.0	46.9	56.3	33.7	21.7
21-Oct	69.0	49.5	51.8	30.5	18.0	41.3	54.0	30.2	19.1
28-Oct	66.0	47.7	49.9	28.1	4.0	40.6	52.9	28.2	17.3
4-Nov	63.0	46.3	43.8	24.1	-6.0	35.0	52.0	25.2	15.2
11-Nov	61.0	45.1	38.7	20.0	-9.0	32.9	42.6	21.3	12.3
18-Nov	57.0	42.2	37.7	18.3	-6.0	32.2	45.5	20.4	11.6
25-Nov	48.0	37.9	28.8	11.1	-17.0	28.7	40.1	16.8	9.3
2-Dec	48.0	37.2	30.9	12.9	-18.0	28.7	41.7	17.1	9.4
9-Dec	50.0	38.2	30.4	11.3	-26.0	30.8	43.7	16.9	8.8
16-Dec	52.0	41.6	30.4	11.2	-15.0	30.8	37.7	17.1	8.9
23-Dec	50.0	38.4	28.4	9.5	-22.0	30.1	38.0	15.8	8.5
31-Dec	50.0	38.8	26.7	8.2	-27.0	26.6	40.2	14.8	8.0

CALGARY CN WMO No. 718770



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	1455
FEB	0	1235
MAR	0	1108
APR	4	722
MAY	17	459
JUN	41	254
JUL	77	169
AUG	69	229
SEP	27	427
OCT	6	715
NOV	0	1155
DEC	0	1404
ANN	241	9332

CALGARY CN WMO No. 718770



	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	-40112	0	-11488
FEB	0	-34214	0	-9705
MAR	0	-31121	0	-8945
APR	7	-20989	0	-6023
MAY	53	-14010	0	-2586
JUN	129	-8455	0	-628
JUL	361	-5999	23	-152
AUG	331	-7737	1	-160
SEP	94	-13126	0	-1195
OCT	11	-20861	0	-5066
NOV	0	-32282	0	-9144
DEC	0	-38802	0	-11174
ANN	986	-267708	24	-66266

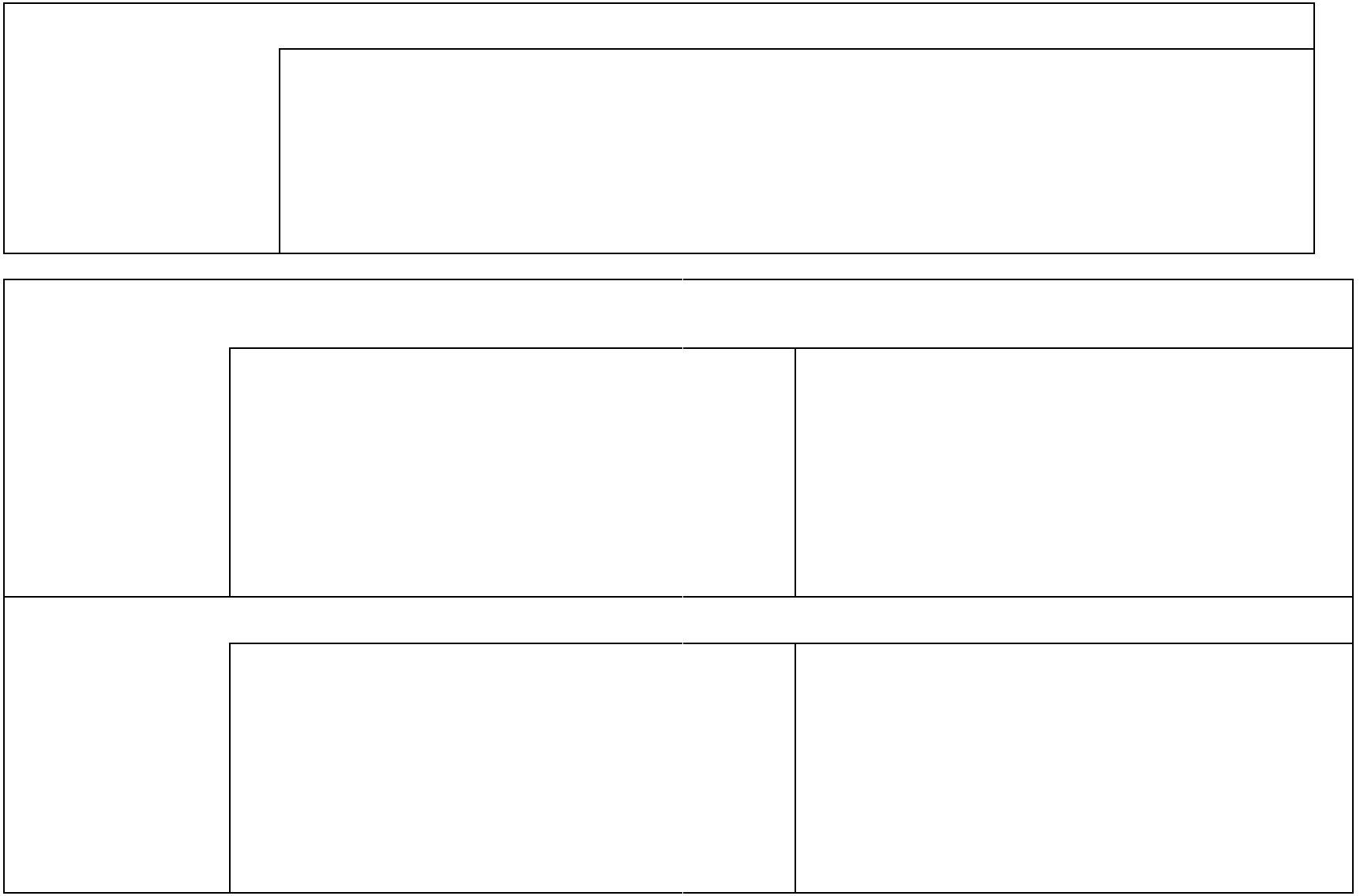
Average Annual Solar Radiation – Nearest Available Site

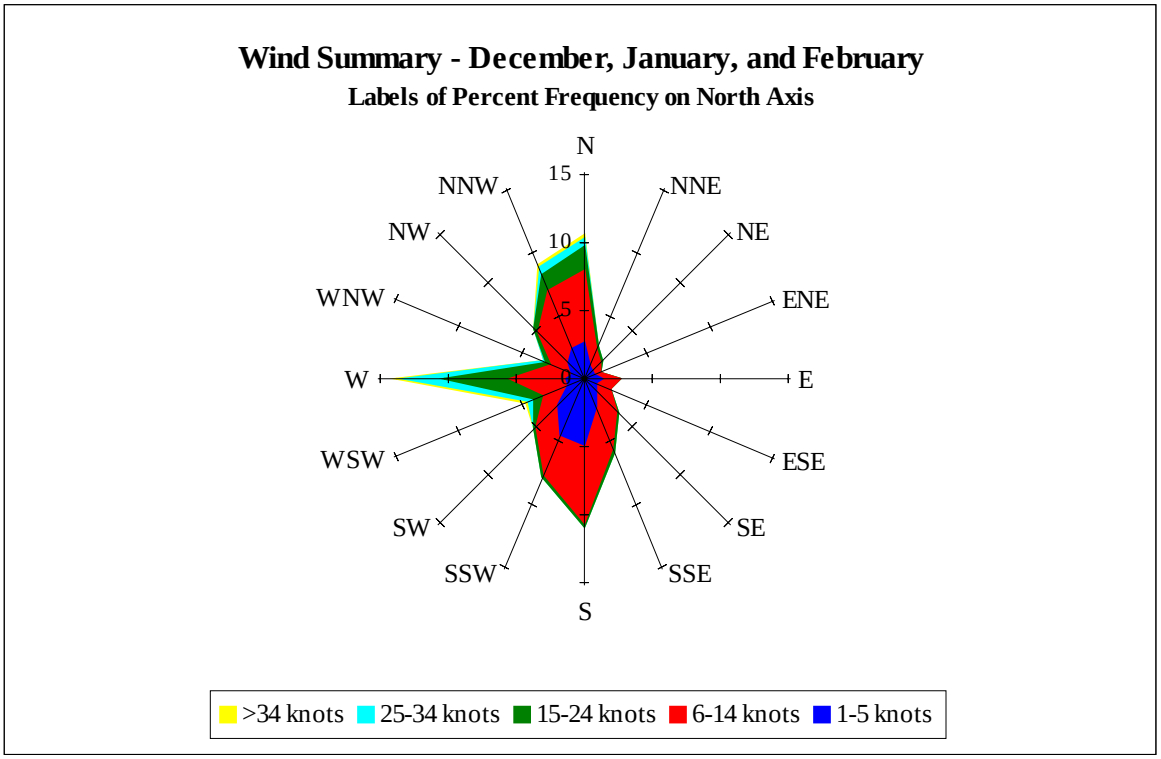
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

No Solar Radiation
Data Available

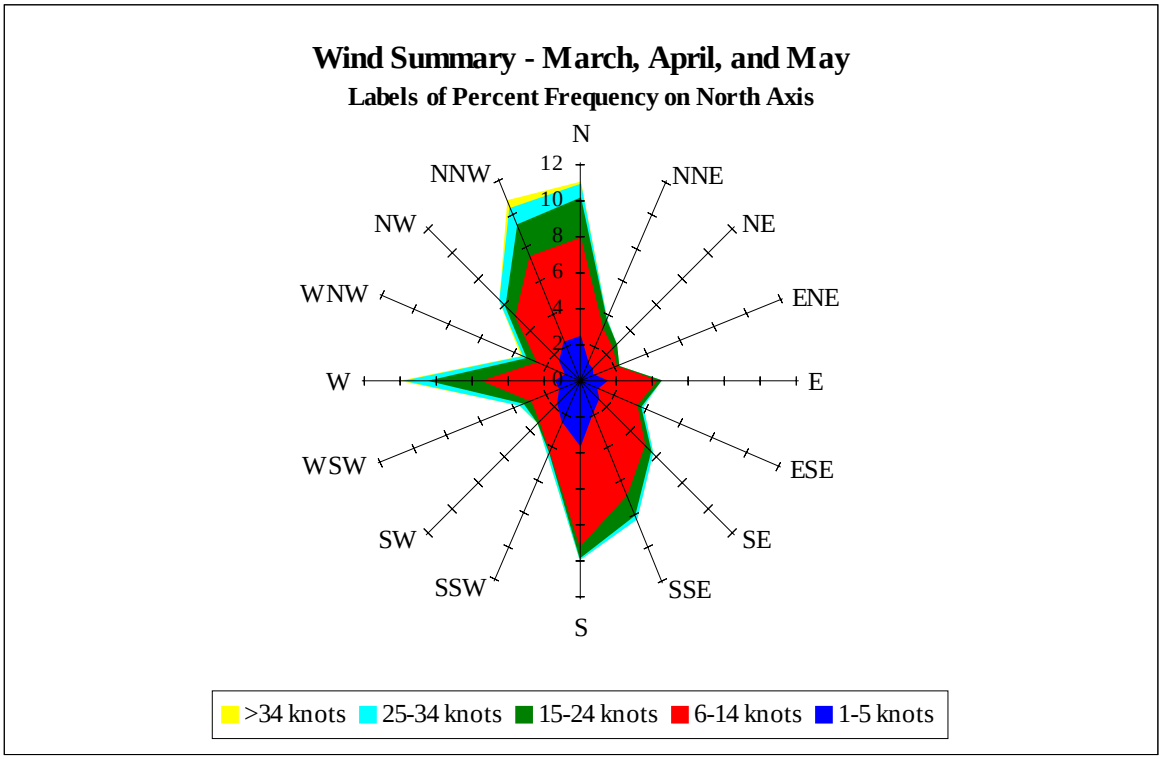
Average Annual Solar Heat and Illumination – Nearest Available Site

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

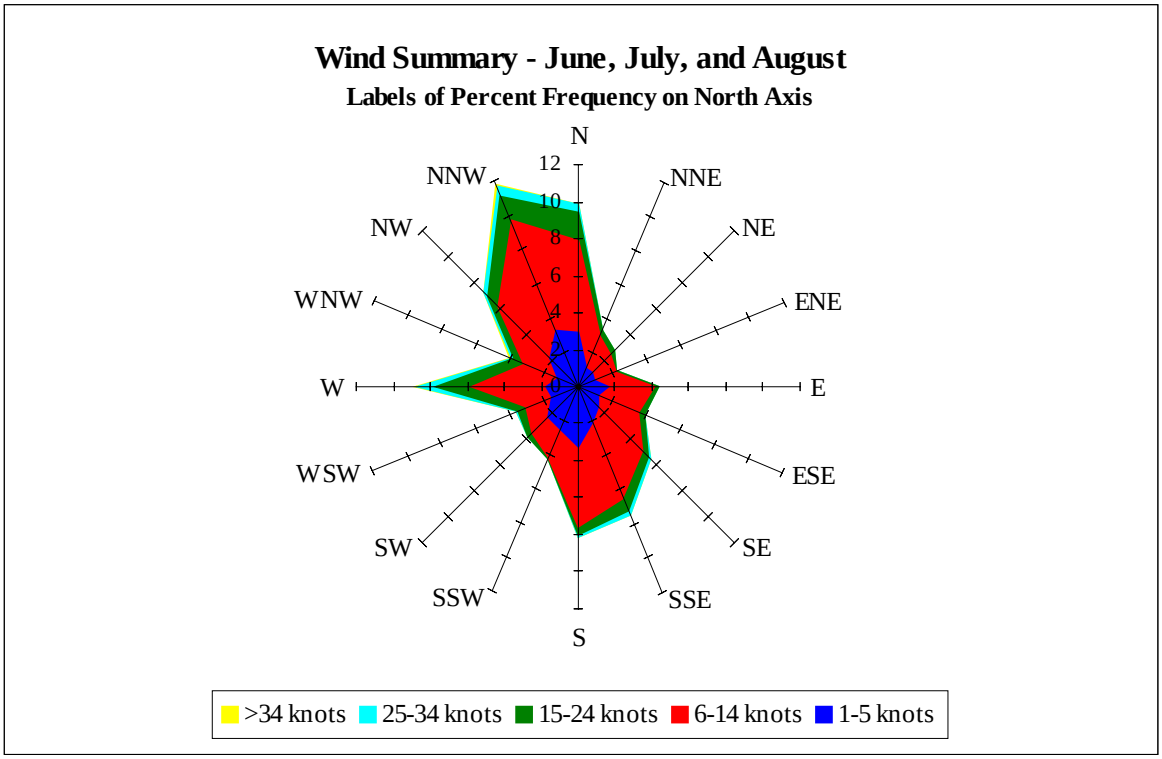




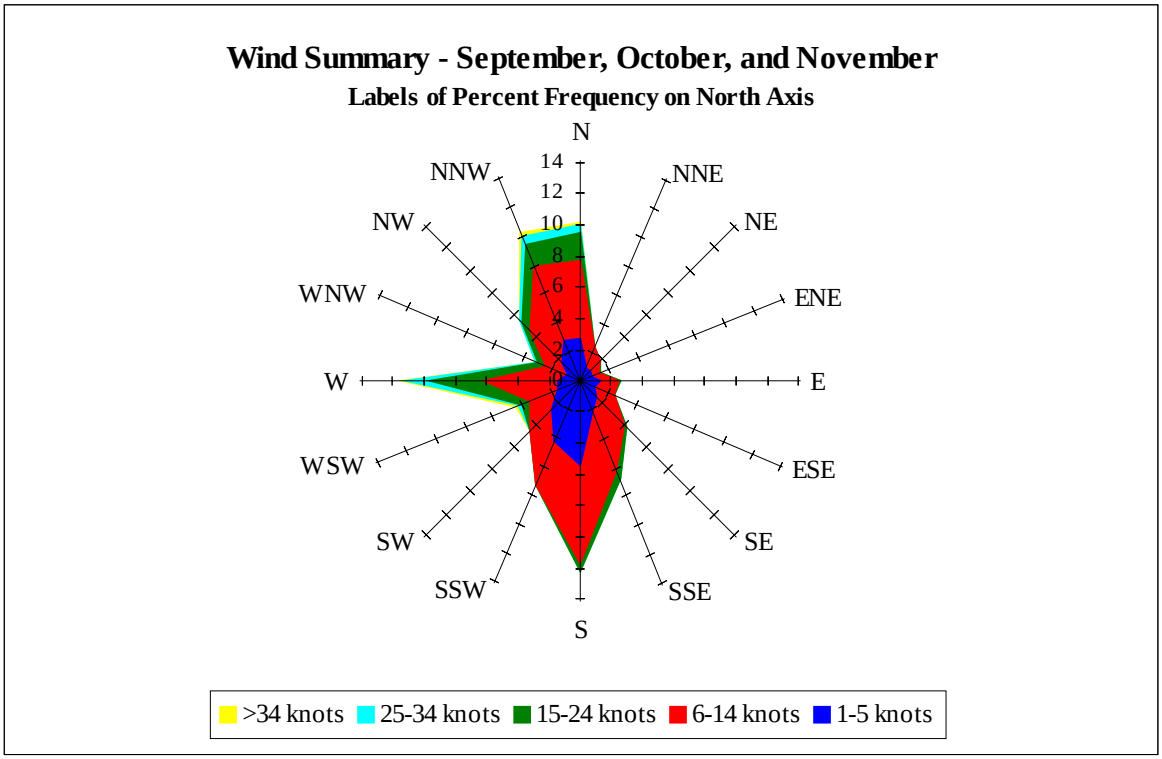
Percent Calm = 10.55



Percent Calm = 7.52



Percent Calm = 9.05



Percent Calm = 10.17