SASKATOON CN	
Latitude = 52.17 N	WMO No. 718660
Longitude =106.60 W	Elevation = 1654 feet
Period of Record = 1973 to 1996	Average Pressure = 28.16 inches Hg

Design Criteria Data

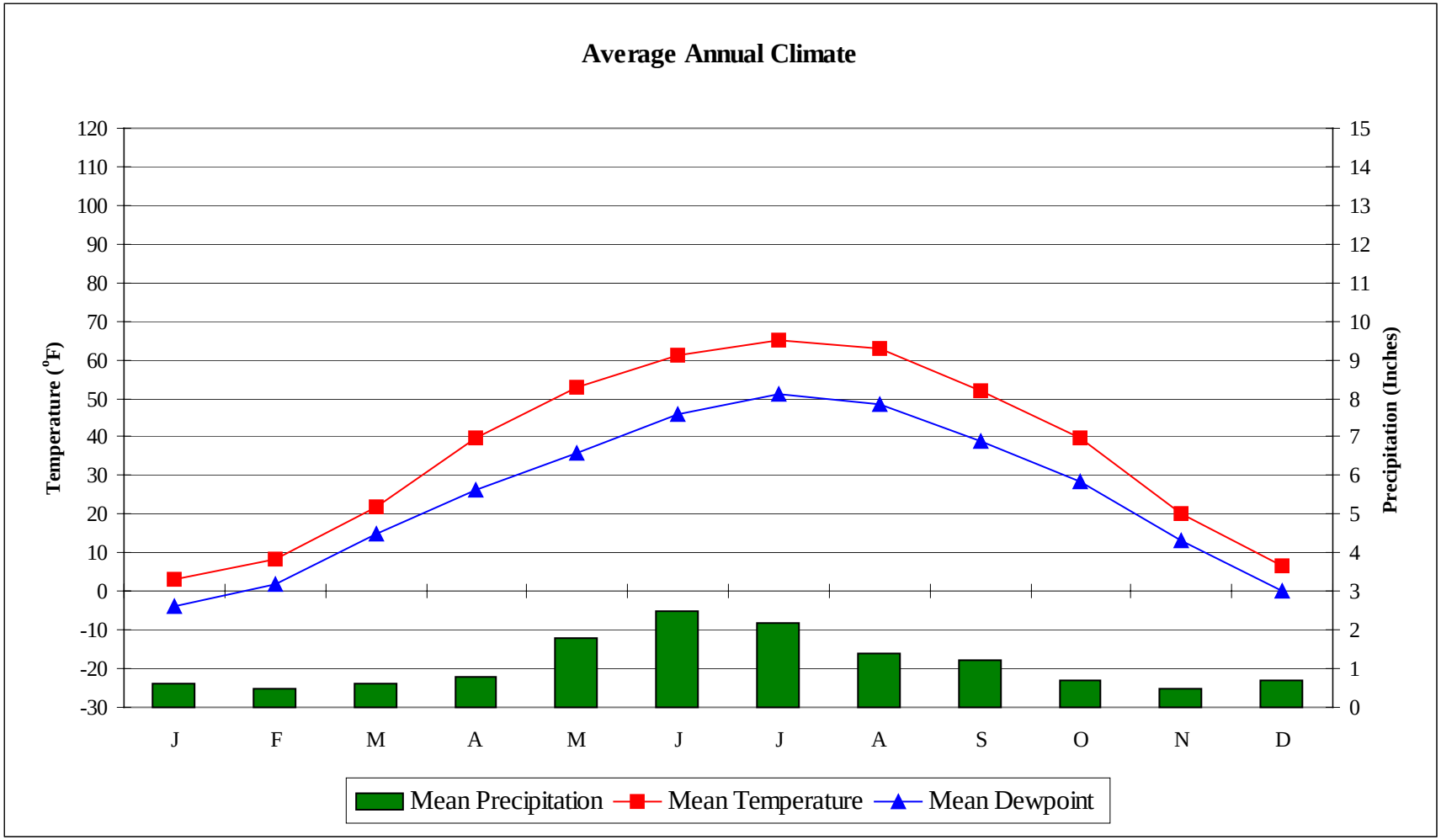
		Mean Coincident (Average) Values			
Dry Bulb Temperature (T)	**Design Value (^oF)**	Wet Bulb Temperature (^oF)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	93	66	59	14.9	S
0.4% Occurrence	86	64	60	11.8	S
1.0% Occurrence	82	62	59	11.5	S
2.0% Occurrence	79	61	58	11.4	S
Mean Daily Range	20	-	-	-	-
97.5% Occurrence	-18	-18	1	7.8	WNW
99.0% Occurrence	-26	-27	1	6.9	WNW
99.6% Occurrence	-31	-31	1	6.3	SW
Median of Extreme Lows	-37	-37	1	6.9	WSW
		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	71	85	95	10.6	S
0.4% Occurrence	67	80	82	10.8	S
1.0% Occurrence	65	78	75	10.6	S
2.0% Occurrence	63	75	70	10.4	S
		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	103	78	0.65	8.8	ESE
0.4% Occurrence	90	73	0.57	9.6	ESE
1.0% Occurrence	85	71	0.54	8.8	S
2.0% Occurrence	78	69	0.50	8.5	ESE
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	7	171	1	50

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 + 0.2
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 (#)**
38.7	N/A	N/A	64

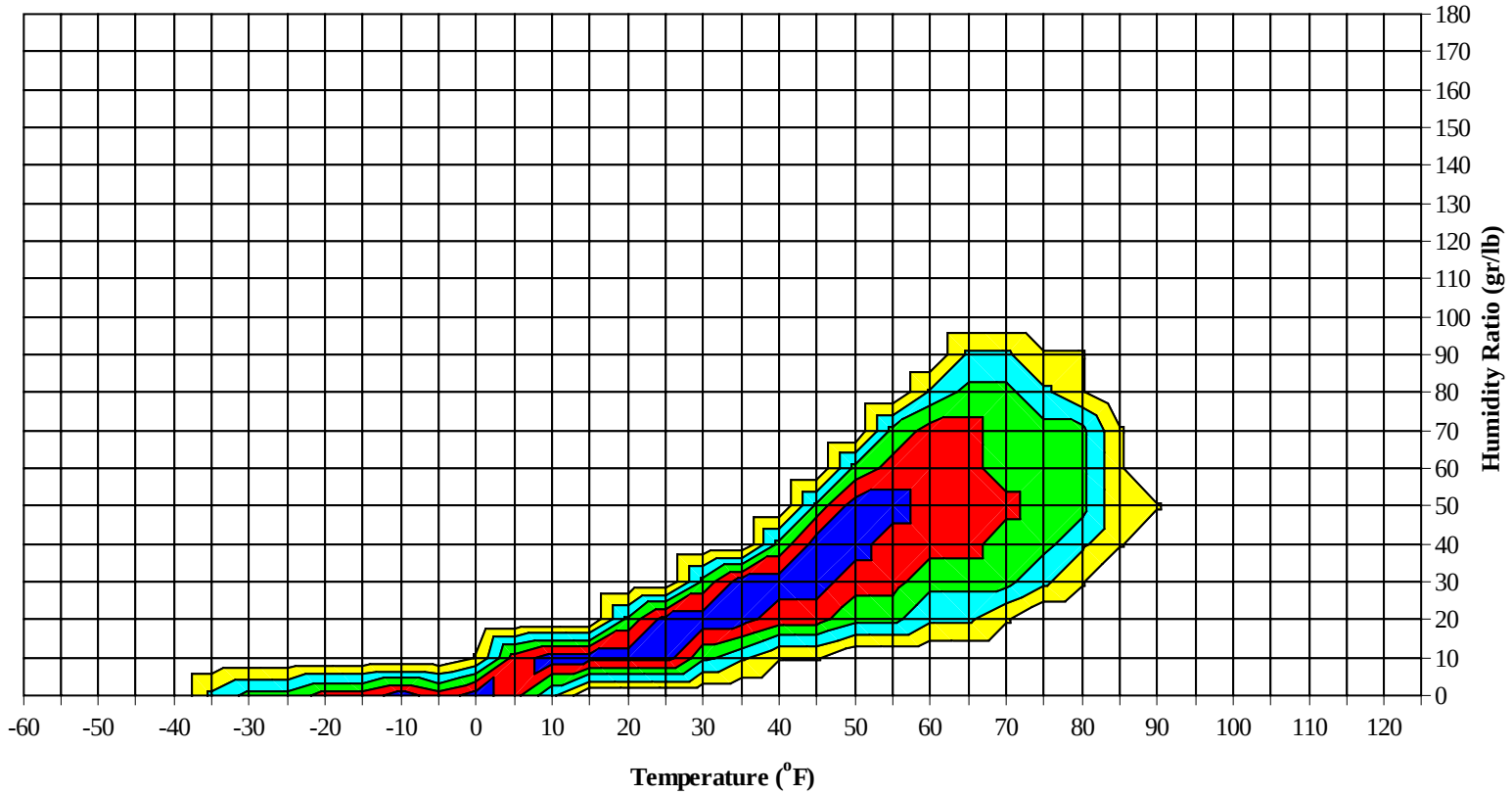
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

SASKATOON **CN** WMO No. 718660



SASKATOON CN WMO No. 718660

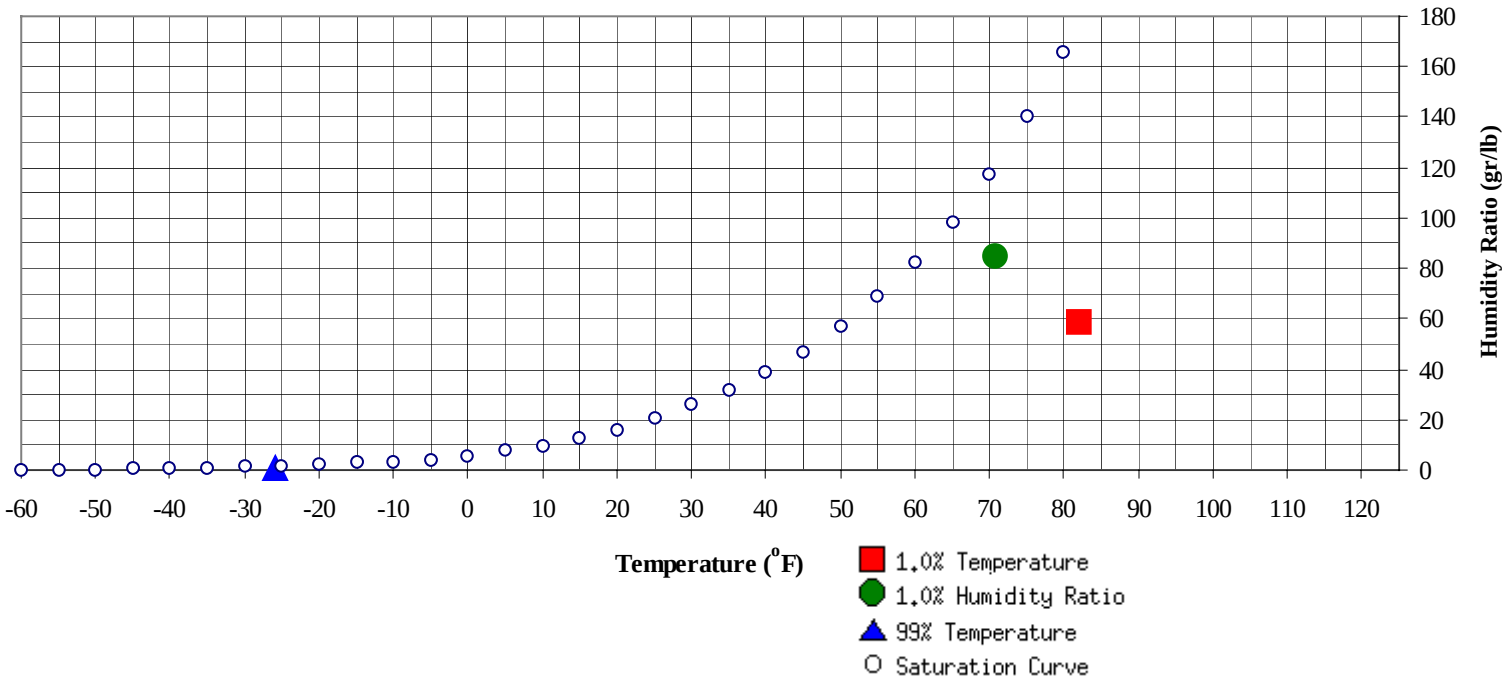
Long Term Psychrometric Summary



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

SASKATOON **CN** WMO No. 718660

Psychrometric Summary of Peak Design Values



	(°F)	MCHR (gr/lb)	Enthalpy (btu/lb)
99% Dry Bulb	-26	0.7	-6.1

		MCDB (°F)	MCWB (°F)	MC Dewpt (°F)	Enthalpy (btu/lb)
1.0% Humidity Ratio	(gr/lb)				
	84.7	70.8	64.2	60.8	30.2

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	82	58.7	62.6	28.9

SASKATOON CN WMO No. 718660

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)
105 / 109															
100 / 104															
95 / 99															
90 / 94															
85 / 89															
80 / 84															
75 / 79															
70 / 74															
65 / 69															
60 / 64												0	0	0	50.5
55 / 59												2	1	3	45.8
50 / 54												4	3	7	43.1
45 / 49							0	0	0	39.3	0	8	6	14	39.7
40 / 44	0	1	0	1	36.1	0	2	1	3	36.5	1	13	10	24	36.8
35 / 39	2	6	5	13	33.5	4	12	11	27	33.6	12	36	32	80	33.7
30 / 34	8	12	10	30	29.3	9	18	20	47	29.6	43	42	54	139	29.8
25 / 29	13	15	18	46	24.5	19	22	24	65	24.8	45	37	36	118	24.7
20 / 24	14	14	17	45	20.5	15	16	16	47	20.7	26	23	26	75	20.4
15 / 19	25	26	23	74	16.2	24	23	25	73	16.3	31	26	24	81	16.1
10 / 14	30	30	30	90	11.1	27	24	23	75	11.1	24	19	19	62	10.9
5 / 9	27	26	26	79	5.9	26	23	23	73	5.9	20	15	15	50	5.7
0 / 4	22	23	22	67	0.6	22	21	20	63	0.5	16	9	11	36	0.5
-5 / -1	16	17	16	49	-3.9	11	15	14	40	-3.9	8	5	4	17	-3.8
-10 / -6	21	20	20	61	-8.2	19	16	18	53	-8.3	7	5	5	17	-8.0
-15 / -11	13	14	14	41	-12.7	14	10	11	35	-12.7	4	2	2	8	-12.5
-20 / -16	16	18	20	54	-17.0	11	8	8	27	-16.8	5	2	1	8	-17.2
-25 / -21	15	13	14	42	-22.2	8	6	5	19	-22.2	3	1	0	4	-21.9
-30 / -26	13	7	10	30	-27.3	8	4	3	15	-27.4	1	0		1	-26.5
-35 / -31	8	3	2	13	-31.9	3	1	1	5	-31.8					
-40 / -36	4	2	1	7	-35.9	2	1	0	3	-36.4					
-45 / -41	0	0	0	0	-40.2	0	0		0	-41.4					

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.

SASKATOON CN WMO No. 718660

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)
105 / 109													0	0	71.0
100 / 104												0	0	0	69.8
95 / 99												0	1	1	67.8
90 / 94							1	0	1	63.1		1	1	2	65.7
85 / 89							2	1	3	61.2		4	3	7	63.8
80 / 84		1	0	1	55.2		6	4	10	58.6	0	14	10	24	62.4
75 / 79		2	1	3	53.7	0	14	11	25	56.9	1	27	19	47	59.7
70 / 74		6	4	10	51.9	1	23	18	42	54.5	3	45	33	81	57.5
65 / 69		7	6	13	50.5	3	24	19	46	52.4	9	40	35	84	55.6
60 / 64	0	14	12	26	48.3	11	38	33	82	50.6	34	49	53	136	54.2
55 / 59	2	22	19	43	45.1	24	43	43	110	47.9	56	35	44	136	51.5
50 / 54	8	31	25	64	42.3	40	41	43	124	45.1	69	17	30	116	48.2
45 / 49	17	36	35	88	39.2	55	30	37	122	41.8	47	5	9	61	44.1
40 / 44	23	30	30	83	36.8	43	13	19	75	38.4	15	1	2	18	39.7
35 / 39	45	37	42	124	33.7	40	9	14	63	34.4	5	0	0	5	36.3
30 / 34	61	27	36	124	29.6	23	3	5	31	29.9	1			1	31.8
25 / 29	49	12	16	77	25.0	8	1	1	10	25.2					
20 / 24	14	5	6	25	20.3	1		0	1	21.0					
15 / 19	10	5	5	20	16.0	0			0	16.5					
10 / 14	4	2	2	8	11.0	0			0	14.0					
5 / 9	2	1	1	4	5.7										
0 / 4	2	1	1	4	0.6										
-5 / -1	1	0	0	1	-3.9										
-10 / -6	1	0	0	1	-7.8										
-15 / -11	0			0	-12.4										
-20 / -16															
-25 / -21															
-30 / -26															
-35 / -31															
-40 / -36															
-45 / -41															

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.

SASKATOON CN WMO No. 718660

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)
105 / 109															
100 / 104															
95 / 99		1	0	1	66.5		1	0	1	67.2					
90 / 94		3	2	5	66.8		4	3	7	65.5		1	1	2	62.7
85 / 89		6	5	11	65.6		7	5	12	64.5		1	1	2	60.5
80 / 84	0	23	16	39	64.2	0	19	14	33	63.3		6	3	9	60.5
75 / 79	1	45	34	80	62.0	0	36	27	63	61.4	0	12	7	19	58.1
70 / 74	7	64	52	123	59.8	5	46	37	88	59.2	0	20	14	34	55.7
65 / 69	16	42	38	96	58.5	11	36	32	79	57.5	1	19	14	34	53.7
60 / 64	54	44	54	152	56.5	40	48	51	139	55.3	4	36	31	71	51.7
55 / 59	80	17	36	133	53.4	69	34	44	147	52.4	19	41	39	99	49.5
50 / 54	66	3	10	79	49.7	65	15	25	105	48.8	44	44	50	139	46.4
45 / 49	22	0	1	23	45.2	37	2	8	47	44.2	65	33	41	140	42.8
40 / 44	2		0	2	41.2	13	0	1	14	40.2	39	12	20	71	39.0
35 / 39	0			0	39.0	7	0	0	7	36.1	39	9	13	61	35.0
30 / 34											20	4	6	30	30.3
25 / 29											7	1	1	9	25.5
20 / 24											1		0	1	21.5
15 / 19											0			0	16.0
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															
-30 / -26															
-35 / -31															
-40 / -36															
-45 / -41															

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.

SASKATOON CN WMO No. 718660

Dry-Bulb Temperature Hours For An Average Year (Sheet 4 of 5)

Period of Record = 1973 to 1996

Temperature Range (°F)	October Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)	November Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)	December Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)
105 / 109															
100 / 104															
95 / 99															
90 / 94															
85 / 89															
80 / 84		0	0	0	58.1										
75 / 79		2	1	3	56.0										
70 / 74		4	2	6	54.5										
65 / 69		6	3	9	52.1										
60 / 64	0	15	9	24	49.8		0	0	0	49.6					
55 / 59	2	27	17	46	46.4		1	1	2	46.9					
50 / 54	8	32	29	69	43.7	0	3	2	5	43.0					
45 / 49	25	40	39	104	40.7	1	8	4	13	38.9		0		0	38.0
40 / 44	29	30	34	93	37.5	2	10	7	19	36.2		1	0	1	35.7
35 / 39	53	40	46	139	33.9	12	25	21	58	33.2	3	7	5	15	33.4
30 / 34	58	27	38	123	29.6	30	36	37	103	29.3	7	10	11	28	29.3
25 / 29	39	15	17	71	24.7	38	37	40	116	24.8	17	23	19	59	24.6
20 / 24	17	4	6	27	20.4	30	22	26	78	20.6	22	22	23	67	20.7
15 / 19	9	3	4	16	16.4	39	28	29	96	16.4	33	31	32	97	16.4
10 / 14	3	2	2	7	11.2	27	20	22	69	11.3	31	30	31	92	11.1
5 / 9	2	1	1	4	6.3	19	20	17	56	6.0	28	31	28	87	6.0
0 / 4	1	0	1	2	0.5	15	13	14	42	0.7	26	23	24	73	0.8
-5 / -1	1	0	0	1	-3.6	8	5	7	20	-3.7	15	12	15	42	-3.8
-10 / -6	0	0	0	0	-7.3	7	5	7	19	-8.0	16	15	17	48	-8.2
-15 / -11						4	2	4	10	-12.7	11	12	9	32	-12.8
-20 / -16						5	2	3	10	-17.0	11	10	12	33	-16.9
-25 / -21						2	1	1	4	-22.1	11	9	10	30	-22.2
-30 / -26						0		0	0	-25.9	8	5	6	19	-27.4
-35 / -31											4	2	3	9	-31.9
-40 / -36											3	2	2	7	-36.2
-45 / -41											1	1	0	2	-41.1

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.

SASKATOON CN WMO No. 718660

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

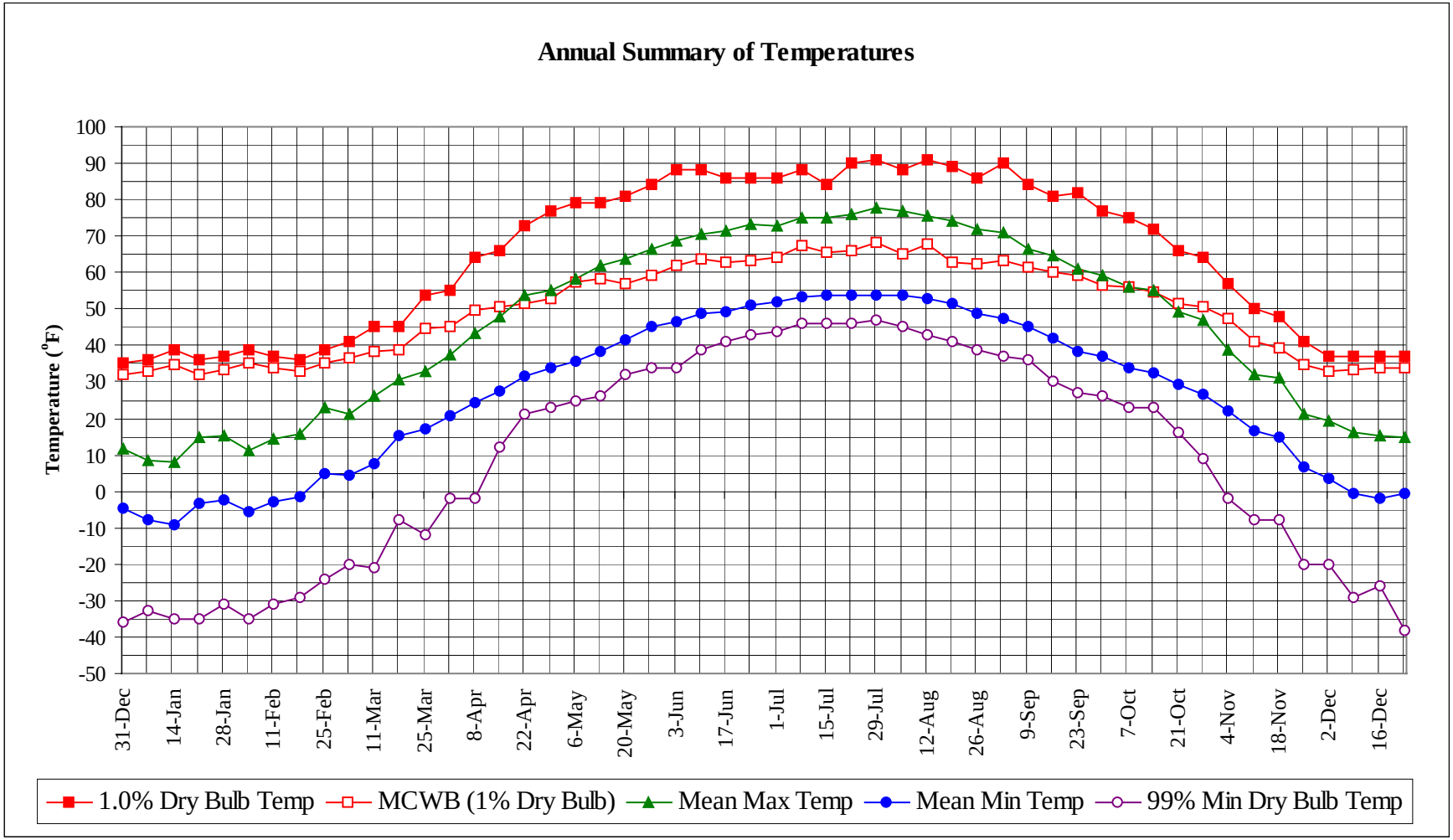
Period of Record = 1973 to 1996

Annual Totals

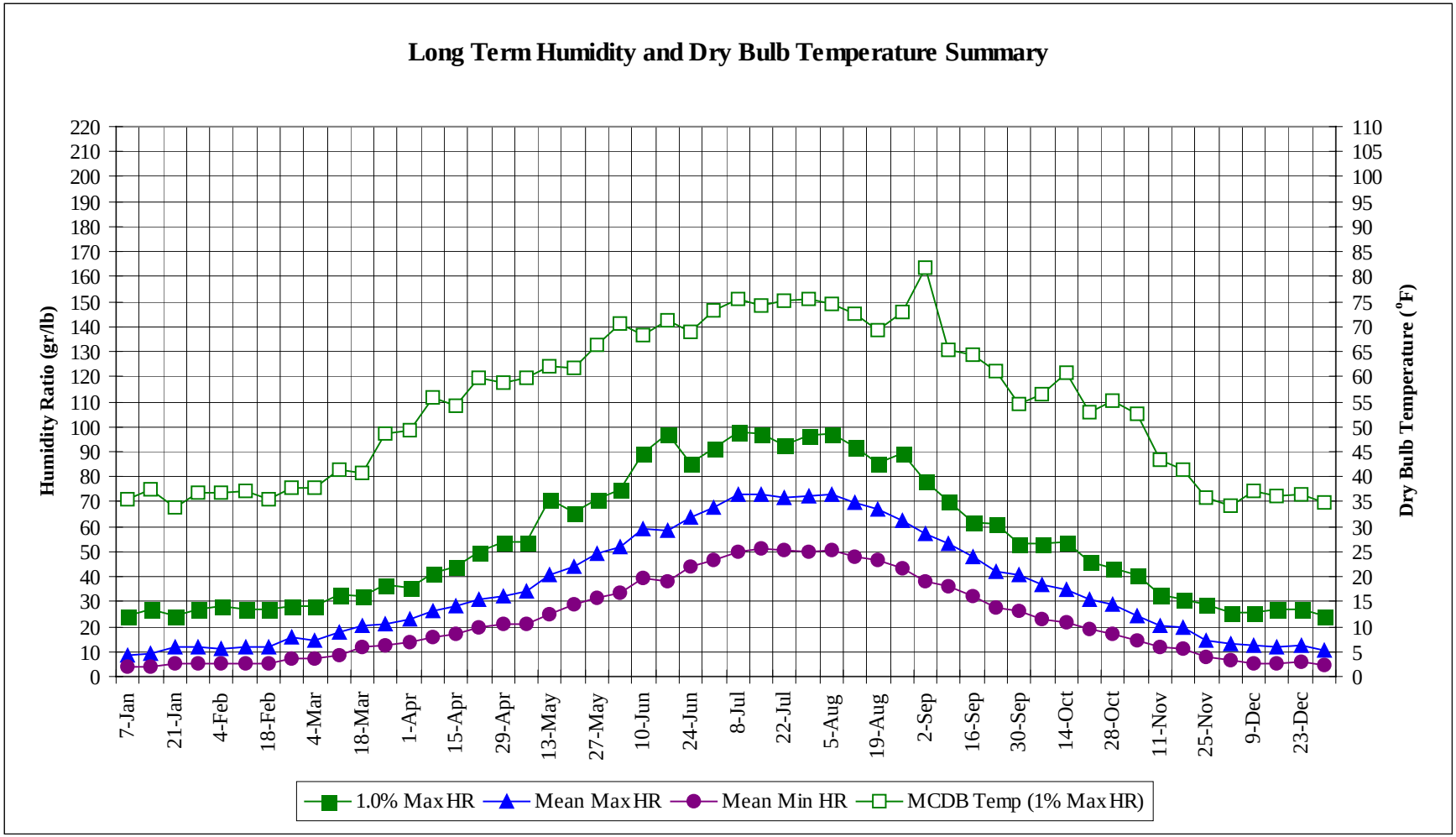
Temperature Range (°F)	Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)
105 / 109			0	0	71.0
100 / 104		0	0	0	69.8
95 / 99		2	1	3	67.2
90 / 94		9	7	16	65.5
85 / 89		20	15	35	64.2
80 / 84	0	67	48	115	62.7
75 / 79	3	136	99	238	60.4
70 / 74	15	208	158	380	58.0
65 / 69	39	174	147	359	56.0
60 / 64	143	245	241	629	53.8
55 / 59	252	222	242	716	50.4
50 / 54	300	191	215	706	46.5
45 / 49	269	165	182	615	41.9
40 / 44	166	113	123	402	37.9
35 / 39	223	182	190	595	33.9
30 / 34	261	181	217	659	29.6
25 / 29	236	163	173	571	24.8
20 / 24	141	106	121	368	20.6
15 / 19	170	143	144	457	16.3
10 / 14	147	128	129	404	11.1
5 / 9	125	119	111	355	5.9
0 / 4	104	91	93	288	0.6
-5 / -1	60	54	56	170	-3.8
-10 / -6	73	60	68	201	-8.2
-15 / -11	47	40	40	127	-12.7
-20 / -16	49	41	44	134	-16.9
-25 / -21	40	30	30	100	-22.2
-30 / -26	30	17	20	67	-27.3
-35 / -31	15	7	6	28	-31.8
-40 / -36	9	4	3	16	-36.1
-45 / -41	2	1	0	3	-41.0

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.

SASKATOON CN WMO No. 718660



SASKATOON CN WMO No. 718660

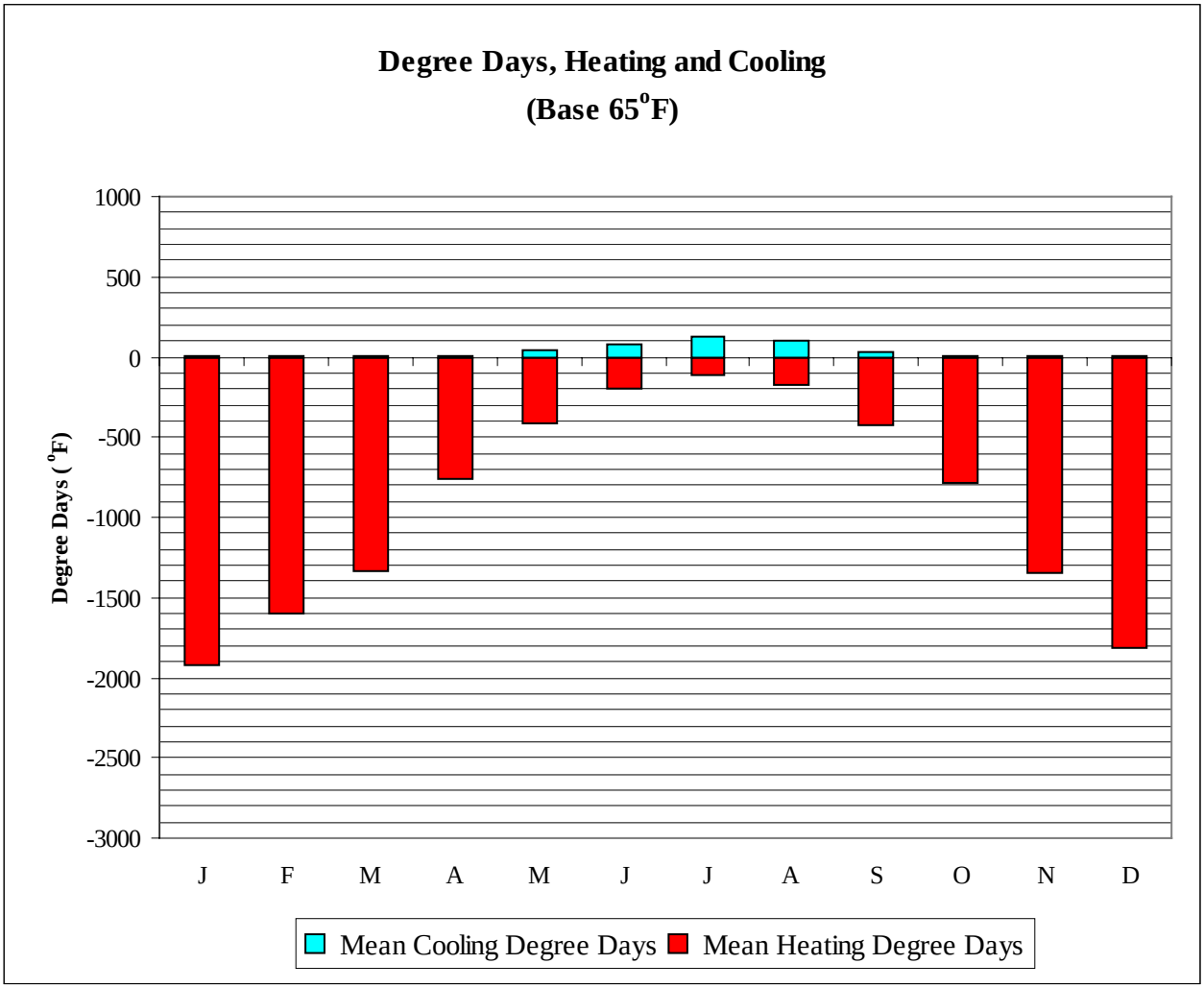


SASKATOON CN WMO No. 718660

Long Term Dry Bulb Temperature and Humidity Summary

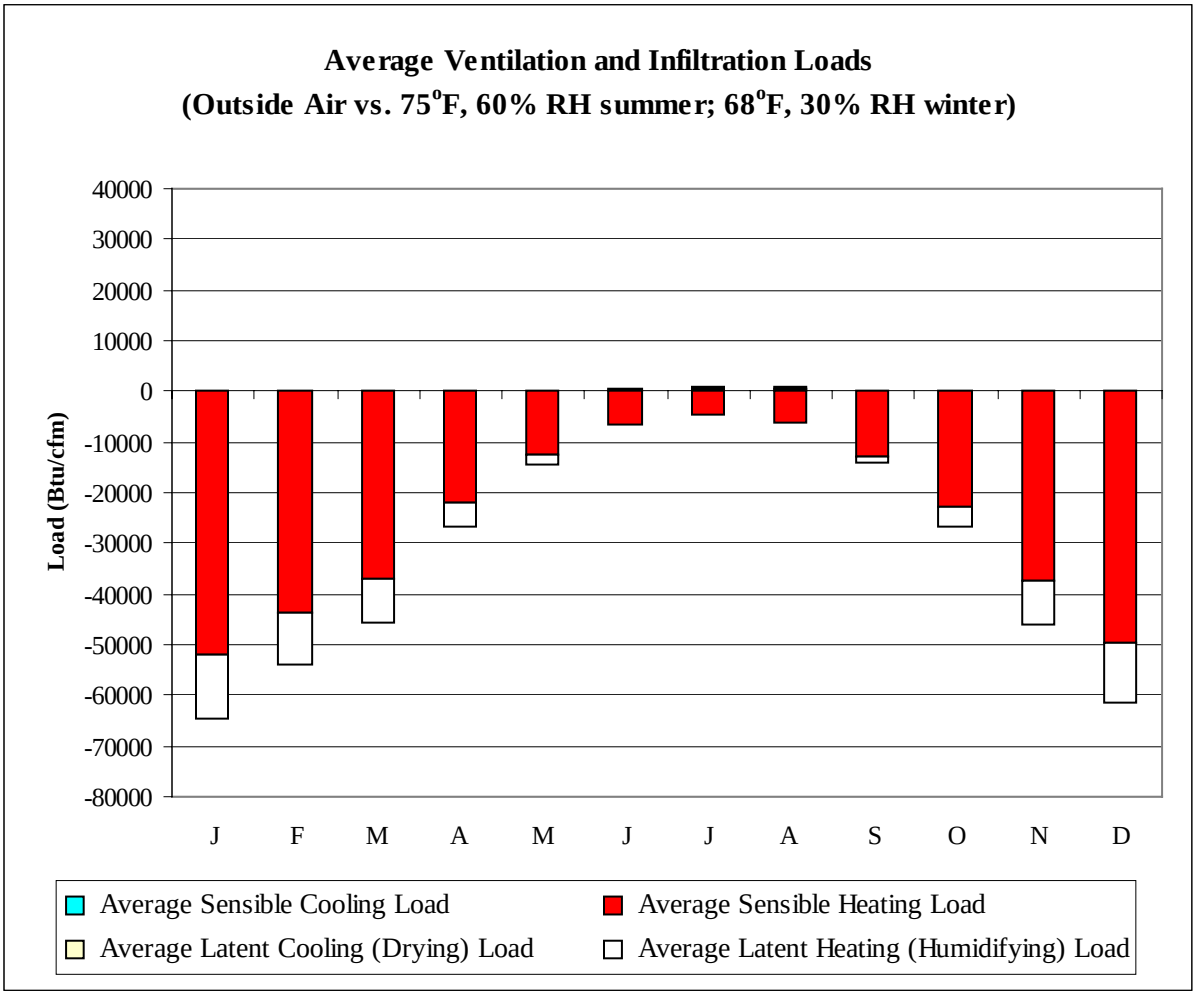
Week Ending	1.0% Temp (°F)	MCWB @ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB @ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	36.0	32.7	8.4	-7.9	-33.0	24.5	35.6	8.9	3.9
14-Jan	39.0	34.6	7.9	-9.1	-35.0	26.6	37.5	9.1	4.0
21-Jan	36.0	32.2	14.7	-3.3	-35.0	24.5	34.0	11.7	5.0
28-Jan	37.0	33.4	15.4	-2.6	-31.0	26.6	36.8	12.1	4.9
4-Feb	39.0	35.3	11.0	-5.7	-35.0	28.0	36.8	11.0	5.2
11-Feb	37.0	33.8	14.3	-2.8	-31.0	26.6	37.2	11.5	5.2
18-Feb	36.0	32.8	15.7	-1.5	-29.0	26.6	35.6	12.0	5.5
25-Feb	39.0	35.3	23.1	4.9	-24.0	28.0	37.6	15.9	7.2
4-Mar	41.0	36.4	21.1	4.4	-20.0	28.0	37.6	14.4	7.3
11-Mar	45.0	38.4	26.4	7.7	-21.0	32.9	41.3	17.8	8.7
18-Mar	45.0	38.9	30.9	15.3	-8.0	32.2	40.7	20.3	11.7
25-Mar	54.0	44.9	33.2	17.2	-12.0	37.1	48.6	21.2	12.5
1-Apr	55.0	44.9	37.3	20.8	-2.0	35.7	49.4	23.2	14.0
8-Apr	64.0	49.8	43.6	24.3	-2.0	41.3	55.8	26.5	16.0
15-Apr	66.0	50.4	47.8	27.6	12.0	44.1	54.3	28.0	17.2
22-Apr	73.0	51.4	53.6	31.6	21.0	49.7	59.6	31.1	19.4
29-Apr	77.0	52.7	55.4	33.9	23.0	53.9	58.8	32.3	20.7
6-May	79.0	57.4	58.5	35.6	25.0	53.9	59.8	34.2	21.3
13-May	79.0	58.1	61.8	38.6	26.0	70.7	62.0	40.8	25.1
20-May	81.0	57.2	63.7	41.7	32.0	65.8	61.7	44.3	29.1
27-May	84.0	59.2	66.5	44.9	34.0	70.7	66.4	49.5	31.7
3-Jun	88.0	62.1	68.8	46.3	34.0	74.9	70.6	51.8	33.3
10-Jun	88.0	63.7	70.6	48.8	39.0	89.6	68.4	59.0	39.7
17-Jun	86.0	63.0	71.7	49.2	41.0	97.3	71.2	58.6	38.0
24-Jun	86.0	63.4	73.5	50.9	43.0	85.4	68.9	63.8	44.3
1-Jul	86.0	64.4	72.7	52.1	44.0	91.0	73.2	67.4	46.7
8-Jul	88.0	67.4	75.0	53.5	46.0	98.0	75.7	72.6	50.2
15-Jul	84.0	65.6	75.0	53.8	46.0	97.3	74.4	73.0	51.0
22-Jul	90.0	66.1	75.8	53.7	46.0	92.4	75.1	71.8	50.5
29-Jul	91.0	68.2	77.8	53.6	47.0	96.6	75.7	72.2	49.9
5-Aug	88.0	65.2	76.7	53.8	45.0	97.3	74.7	72.9	50.3
12-Aug	91.0	68.0	75.6	52.7	43.0	91.7	72.4	69.5	48.2
19-Aug	89.0	62.8	74.4	51.7	41.0	85.4	69.4	66.7	46.6
26-Aug	86.0	62.6	71.8	49.0	39.0	89.6	72.8	62.5	43.1
2-Sep	90.0	63.2	70.9	47.4	37.0	78.4	81.7	57.2	38.3
9-Sep	84.0	61.6	66.4	45.0	36.0	70.0	65.4	53.1	36.4
16-Sep	81.0	60.0	64.5	42.0	30.0	61.6	64.5	47.7	32.1
23-Sep	82.0	59.2	61.0	38.4	27.0	60.9	61.1	42.0	27.8
30-Sep	77.0	56.7	59.2	37.2	26.0	53.2	54.4	40.4	26.3
7-Oct	75.0	56.0	56.1	33.9	23.0	53.2	56.5	36.8	23.2
14-Oct	72.0	54.7	55.3	32.7	23.0	53.9	60.7	34.7	21.7
21-Oct	66.0	51.3	49.1	29.2	16.0	46.2	52.9	30.7	19.2
28-Oct	64.0	50.5	46.9	26.4	9.0	43.4	55.2	29.1	17.2
4-Nov	57.0	47.2	38.7	22.1	-2.0	40.6	52.4	24.4	14.7
11-Nov	50.0	41.3	32.2	16.4	-8.0	32.9	43.3	20.2	11.6
18-Nov	48.0	39.2	31.0	14.6	-8.0	30.8	41.2	19.4	11.1
25-Nov	41.0	34.8	21.2	6.7	-20.0	28.7	35.7	14.5	8.0
2-Dec	37.0	32.9	19.5	3.3	-20.0	25.9	34.2	13.4	6.6
9-Dec	37.0	33.3	16.4	-0.8	-29.0	25.9	37.0	12.5	5.5
16-Dec	37.0	33.9	15.2	-1.9	-26.0	26.6	36.3	11.7	5.2
23-Dec	37.0	34.0	14.8	-0.8	-38.0	26.6	36.4	12.2	6.0
31-Dec	35.0	32.0	11.8	-4.8	-36.0	24.5	34.7	10.5	4.8

SASKATOON CN WMO No. 718660



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	1920
FEB	0	1596
MAR	0	1331
APR	6	764
MAY	38	410
JUN	78	192
JUL	123	118
AUG	104	176
SEP	30	421
OCT	4	784
NOV	0	1347
DEC	0	1814
ANN	383	10873

SASKATOON CN WMO No. 718660



	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	-52171	0	-12487
FEB	0	-43563	0	-10487
MAR	0	-36919	0	-8689
APR	12	-22074	0	-4785
MAY	173	-12677	1	-1804
JUN	429	-6607	60	-138
JUL	674	-4430	206	-10
AUG	662	-6150	88	-63
SEP	146	-12977	0	-999
OCT	5	-22691	0	-4160
NOV	0	-37236	0	-8909
DEC	0	-49439	0	-11981
ANN	2101	-306934	355	-64512

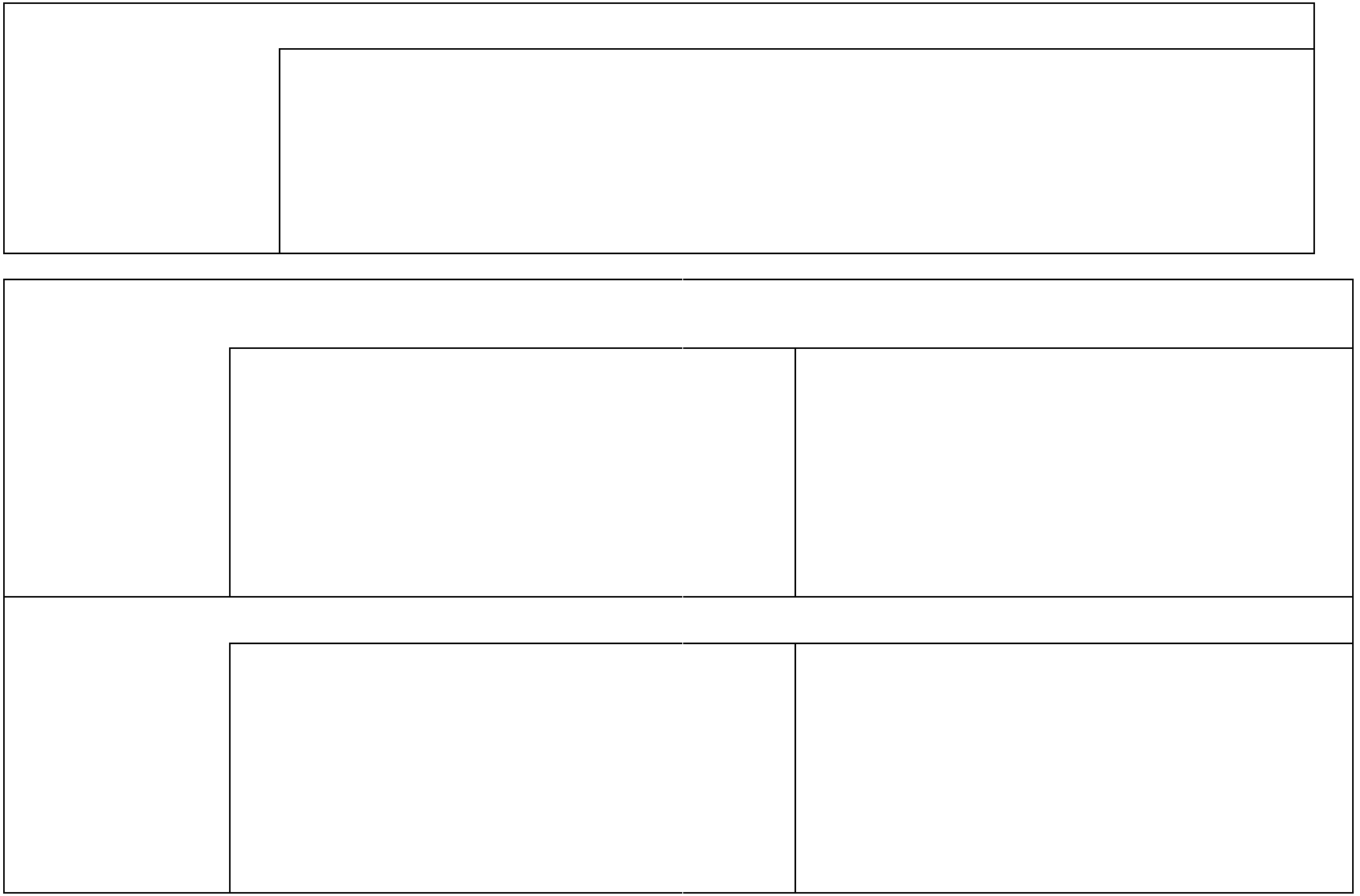
Average Annual Solar Radiation – Nearest Available Site

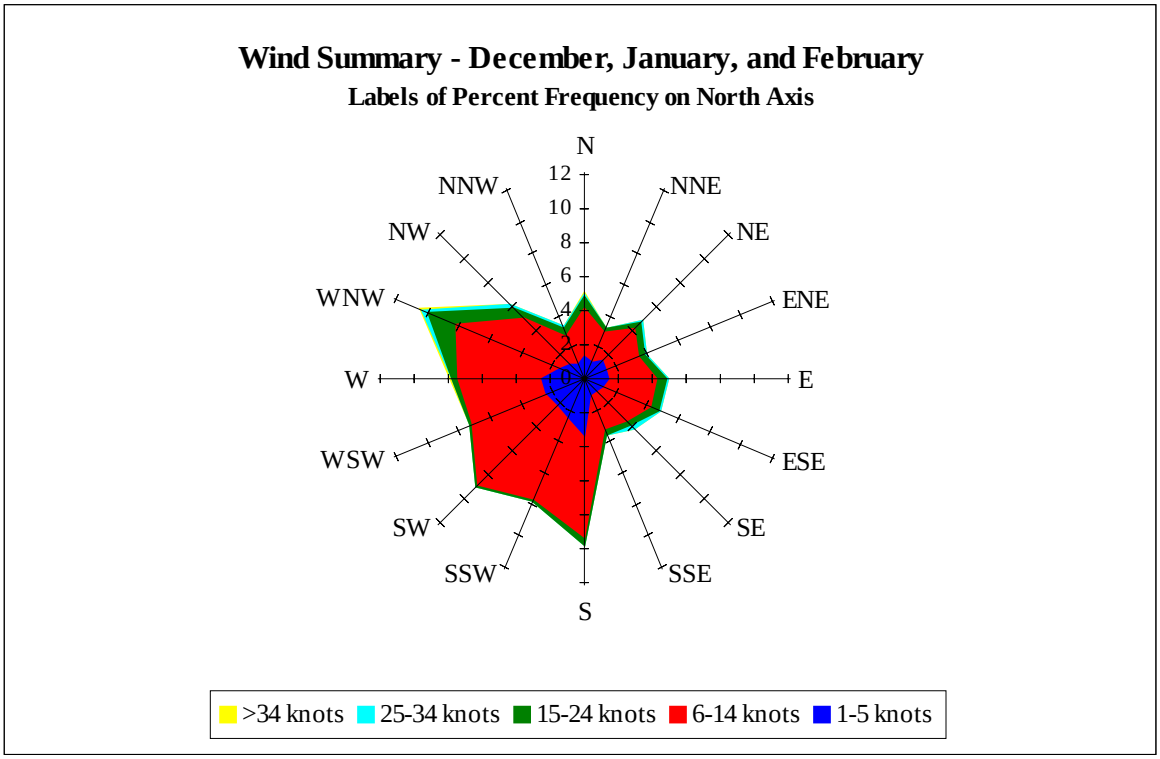
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

No Solar Radiation
Data Available

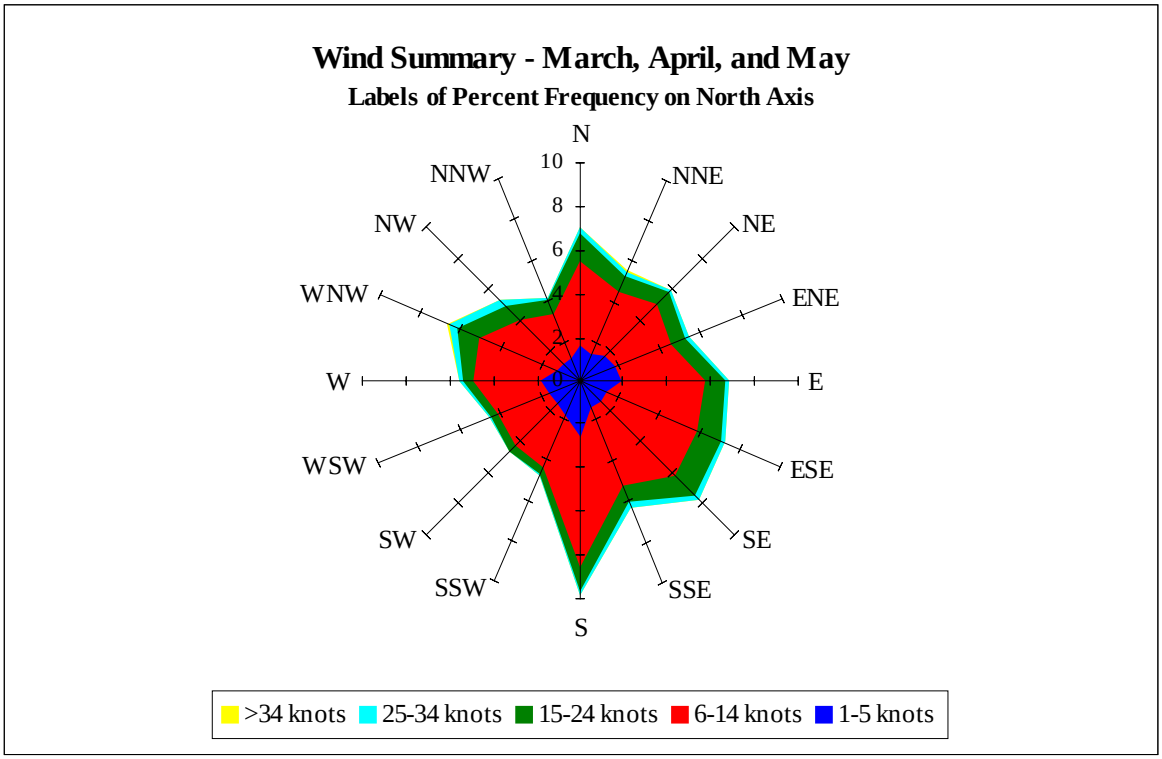
Average Annual Solar Heat and Illumination – Nearest Available Site

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

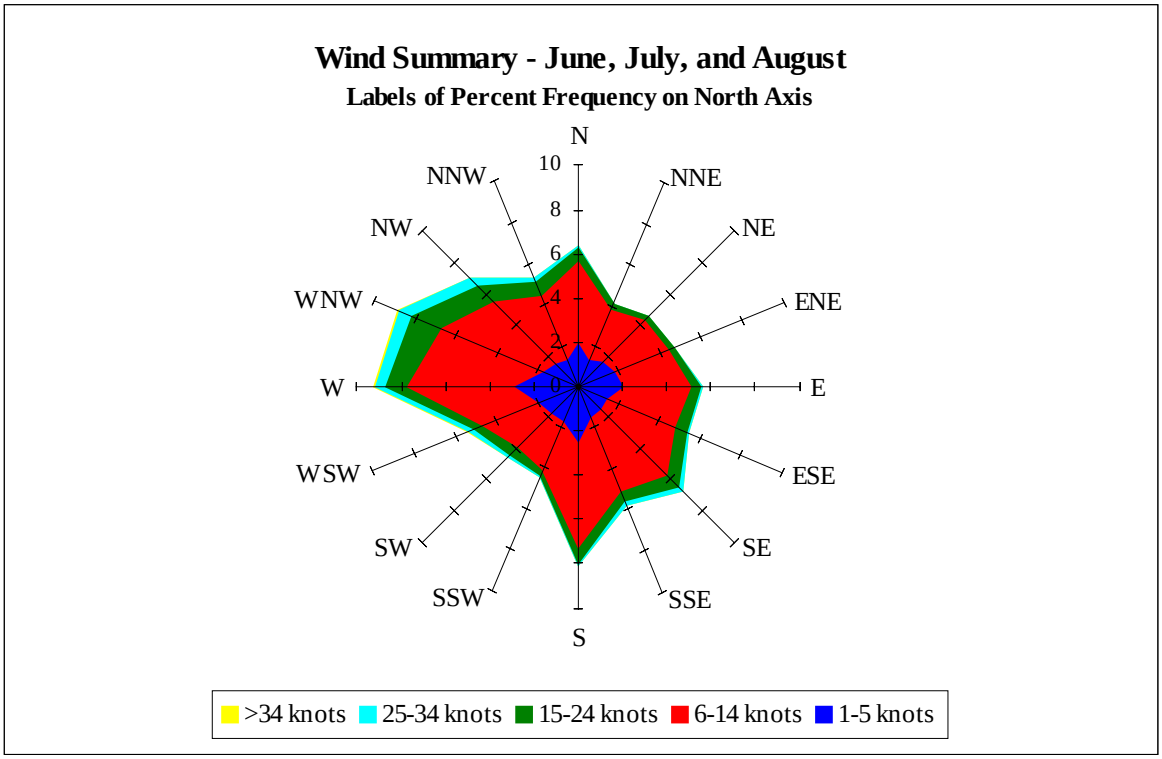




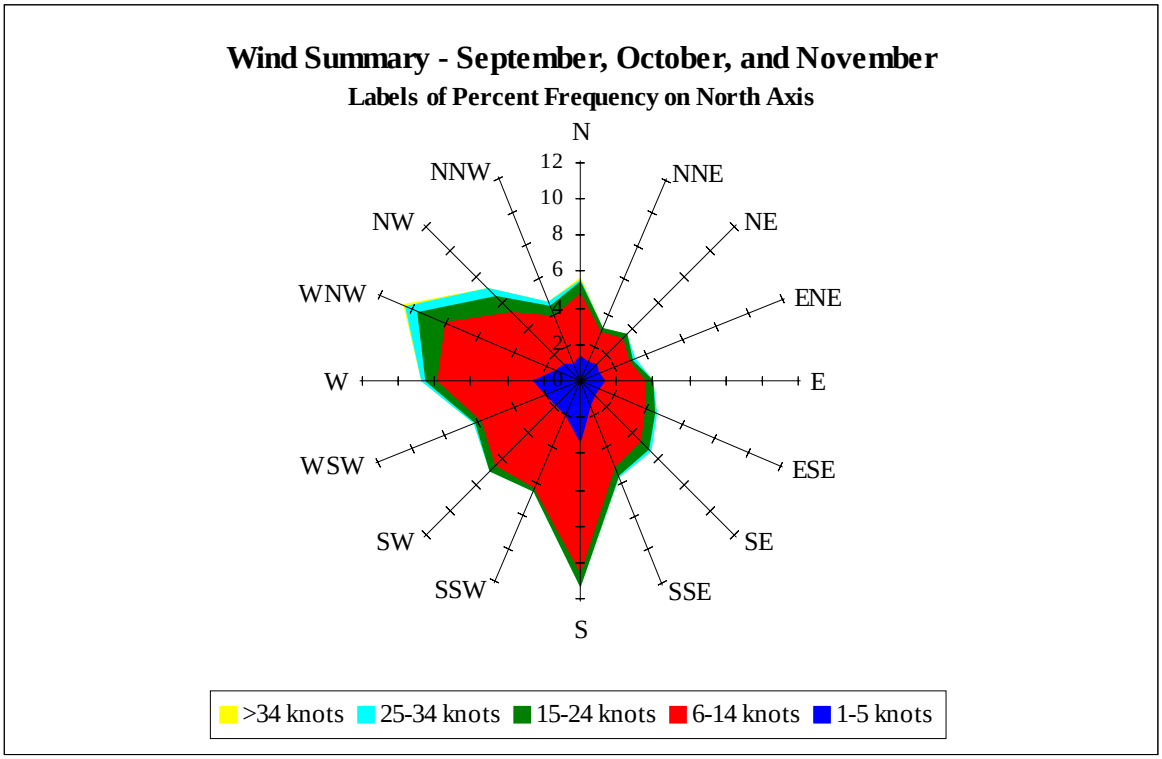
Percent Calm = 4.77



Percent Calm = 3.50



Percent Calm = 4.50



Percent Calm = 3.64