SIOUX CITY IA	
Latitude = 42.40 N	WMO No. 725570
Longitude = 96.38 W	Elevation = 1102 feet
Period of Record = 1973 to 1996	Average Pressure = 28.80 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	98	76	103	15.0	S
0.4% Occurrence	94	75	106	14.2	S
1.0% Occurrence	91	74	106	13.6	S
2.0% Occurrence	88	73	102	13.0	S
Mean Daily Range	20	-	-	-	-
97.5% Occurrence	1	0	4	12.1	NW
99.0% Occurrence	-6	-7	3	11.1	NW
99.6% Occurrence	-11	-11	2	10.8	NW
Median of Extreme Lows	-18	-18	1	12.4	NW
		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	81	91	145	12.1	S
0.4% Occurrence	78	89	130	12.1	S
1.0% Occurrence	76	87	122	12.1	S
2.0% Occurrence	75	85	118	11.7	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	152	86	0.97	10.2	SE
0.4% Occurrence	134	85	0.85	11.4	SSE
1.0% Occurrence	128	84	0.82	10.8	S
2.0% Occurrence	120	82	0.77	11.0	S
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	54	706	354	1138

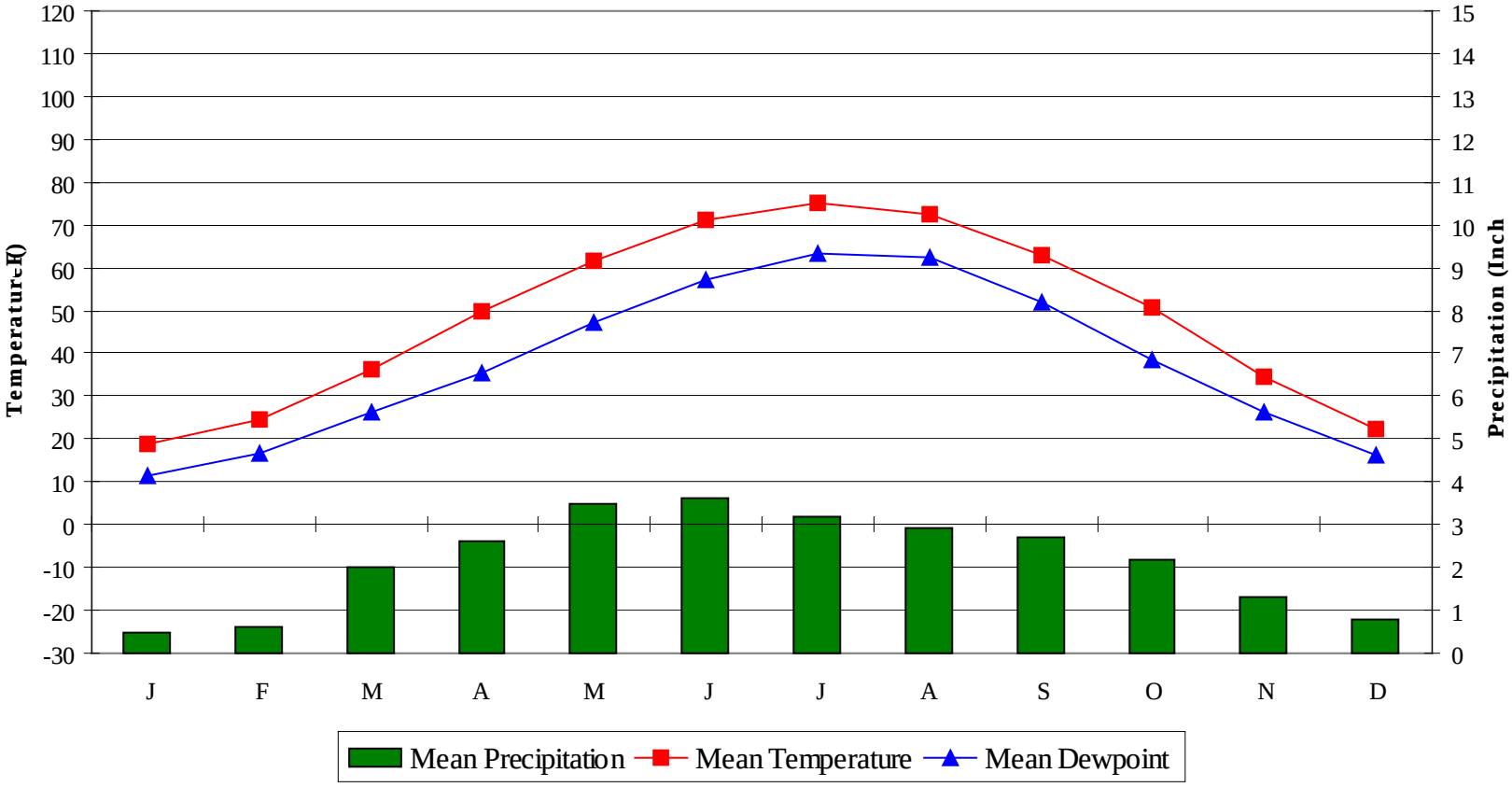
Other Site Data

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^oF-RH 60% Latent + Sensible
5	3.8	90	1.6 + 0.7
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 (#)**
50.9	85	28	73

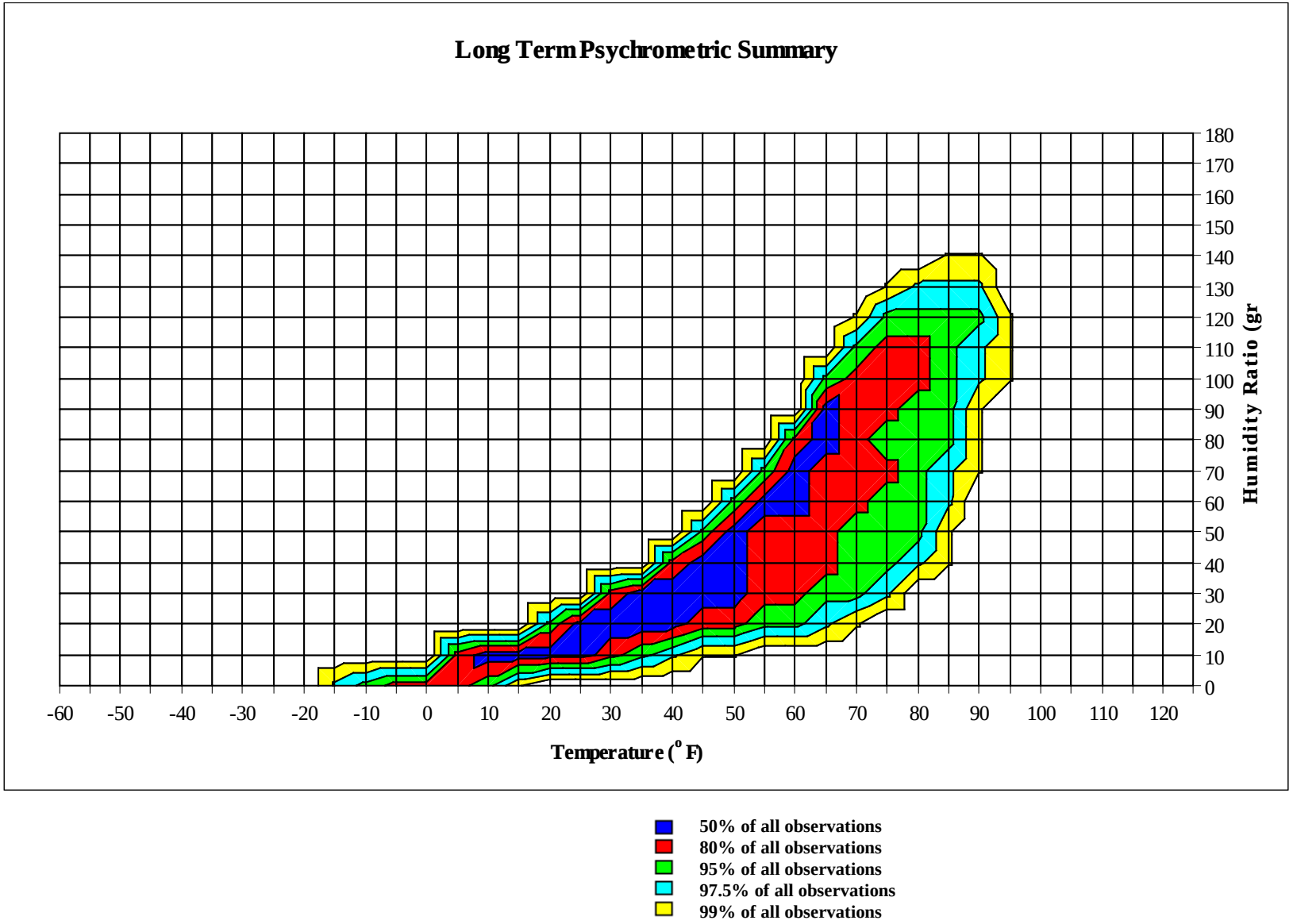
*Note: Temperatures at greater depths can be estimated by adding 1.5^oF per 100 feet additional depth.

SIOUX CITY **IA** WMO No. 725570

Average Annual Climate

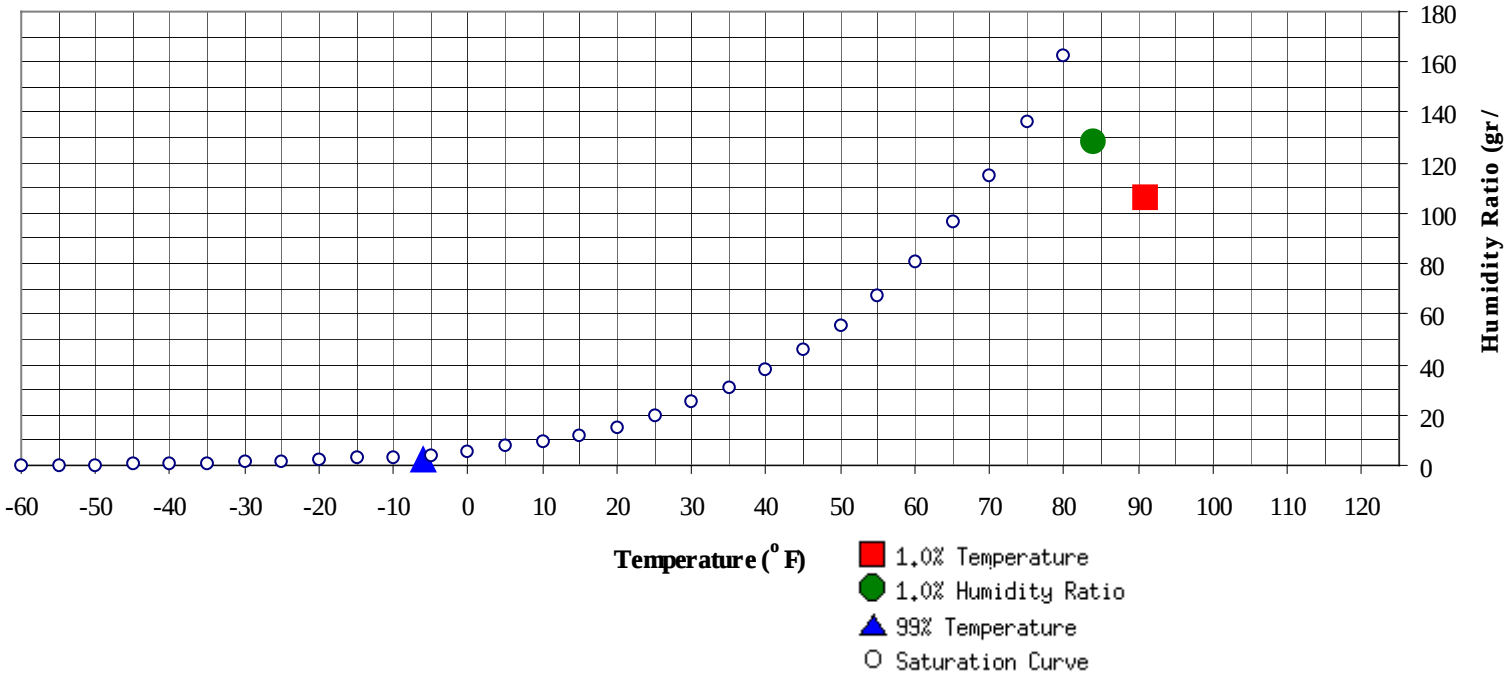


SIOUX CITY IA WMO No. 725570



SIOUX CITY **IA** WMO No. 725570

Psychrometric Summary of Peak Design Values



	(°F)	MCHR (gr/lb)	Enthalpy (btu/lb)
99% Dry Bulb	-6	2.7	-1.0

		MCDB	MCWB	MC Dewpt	Enthalpy
1.0% Humidity	(gr/lb)	(°F)	(°F)	(°F)	(btu/lb)
Ratio	128.1	84	76	73.1	40.3

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	91	106.3	74.3	38.6

SIOUX CITY IA WMO No. 725570

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												0		0	59.6
80 / 84												1	0	1	60.6
75 / 79												2	1	2	56.7
70 / 74							0		0	55.0		3	1	4	55.1
65 / 69		0		0	49.0		1	0	1	50.3	0	6	3	9	53.1
60 / 64		0	0	0	47.1		2	1	3	47.7	1	12	7	19	50.0
55 / 59		1	0	2	44.7		5	2	7	46.0	2	16	11	29	47.5
50 / 54		4	1	4	41.7	1	9	4	14	43.2	5	25	18	48	44.7
45 / 49	0	7	3	11	39.2	1	12	7	20	40.0	13	28	27	68	41.3
40 / 44	2	14	9	25	36.4	5	18	16	40	37.2	24	33	37	93	37.6
35 / 39	12	22	23	58	33.2	16	30	28	74	33.6	44	42	42	128	33.9
30 / 34	28	33	36	97	29.6	43	34	46	122	30.1	56	34	47	137	29.9
25 / 29	33	31	31	94	25.2	35	26	27	88	25.1	40	18	24	82	25.1
20 / 24	32	28	32	92	20.5	29	23	25	76	20.3	26	13	15	54	20.2
15 / 19	31	29	25	85	15.7	24	20	19	64	15.6	14	7	8	29	15.7
10 / 14	26	24	25	74	10.7	18	16	18	52	10.8	8	4	6	18	11.0
5 / 9	23	18	21	63	6.0	18	12	12	42	6.0	6	2	3	12	6.2
0 / 4	21	16	18	55	1.1	13	7	8	28	1.2	4	1	1	6	1.5
-5 / -1	14	9	12	35	-3.3	7	4	4	15	-3.2	1	0	0	2	-2.9
-10 / -6	15	7	9	30	-7.6	7	3	4	15	-7.4	1	0	0	1	-7.3
-15 / -11	10	3	3	15	-12.1	4	1	2	7	-12.3	0			0	-11.0
-20 / -16	2	0	1	3	-16.4	3	1	0	4	-16.7					
-25 / -21	1	0		1	-21.2	1	0	0	1	-21.2					

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.

SIOUX CITY IA WMO No. 725570

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	0	75.5
100 / 104												1	0	1	75.0
95 / 99		0		0	63.0		0		0	71.5		4	2	6	73.7
90 / 94		1	0	1	63.5		2	1	3	68.5		14	7	21	72.6
85 / 89		3	1	5	63.4		8	4	11	67.7	0	31	18	49	70.9
80 / 84		6	3	9	62.2		22	11	33	65.2	4	46	33	83	68.5
75 / 79	0	10	5	15	60.2	1	35	21	56	62.3	15	50	41	106	65.8
70 / 74	1	18	12	31	56.6	7	42	33	82	59.8	35	45	49	129	63.7
65 / 69	4	21	16	41	54.1	22	42	40	104	58.1	56	29	44	130	61.2
60 / 64	10	28	23	61	51.4	41	40	45	126	55.1	63	14	28	105	57.6
55 / 59	13	33	31	77	48.1	49	29	40	118	51.4	39	5	12	56	53.2
50 / 54	28	36	36	100	45.3	51	19	31	102	47.5	20	1	4	26	49.1
45 / 49	38	32	38	109	41.8	41	8	15	65	43.6	6	0	1	7	44.8
40 / 44	47	23	32	102	38.3	22	2	6	30	39.0	1			1	41.0
35 / 39	42	18	23	83	34.1	9	0	1	11	34.2					
30 / 34	34	7	14	55	29.9	3		0	3	29.7					
25 / 29	15	3	4	22	25.1	0		0	0	25.9					
20 / 24	5	1	1	7	20.4										
15 / 19	2	0	0	2	16.1										
10 / 14	0	0	0	0	12.0										
5 / 9	0			0	6.3										
0 / 4	0			0	3.5										
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															

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.

SIOUX CITY IA WMO No. 725570

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		0		0	76.5										
100 / 104		2	1	2	75.0		1	0	1	76.9		0		0	71.5
95 / 99		8	3	12	76.1		5	1	6	76.5		1	0	1	73.6
90 / 94	0	26	12	38	75.4		16	6	22	75.8		5	1	6	72.1
85 / 89	1	45	25	71	73.4	0	34	17	51	74.2		13	5	18	70.5
80 / 84	8	62	47	117	70.8	4	54	35	94	71.2	1	28	12	40	68.4
75 / 79	29	53	52	135	68.6	18	57	50	125	68.7	3	31	22	55	65.8
70 / 74	63	35	52	151	66.6	49	46	59	154	66.5	14	41	34	89	63.1
65 / 69	70	13	38	121	63.5	73	24	47	143	63.4	33	43	38	113	60.3
60 / 64	52	3	14	69	59.6	55	9	23	86	59.3	41	37	45	123	56.8
55 / 59	20	0	2	23	55.3	33	2	10	45	54.8	44	23	38	105	52.7
50 / 54	5		0	5	51.5	13		1	15	50.7	43	12	24	79	48.8
45 / 49	0			0	46.4	2		0	2	46.5	32	5	13	50	44.2
40 / 44						0			0	42.8	18	1	6	25	40.2
35 / 39											9	0	2	12	35.7
30 / 34											3		0	3	30.4
25 / 29											1			1	26.2
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															

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.

SIOUX CITY IA WMO No. 725570

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)
105 / 109															
100 / 104															
95 / 99															
90 / 94		0		0	67.3										
85 / 89		2	0	2	63.8										
80 / 84		6	1	7	62.2										
75 / 79		11	4	15	60.5		0		0	57.9					
70 / 74	1	19	8	27	57.2		1		1	56.0					
65 / 69	2	27	15	45	55.3	0	4	1	5	54.7		0		0	46.0
60 / 64	11	37	28	77	53.3	0	9	3	13	52.2		0		0	49.9
55 / 59	22	39	37	98	50.2	3	15	8	26	49.2	0	1	0	2	48.6
50 / 54	33	42	45	121	46.5	7	22	14	43	45.3	0	4	0	4	43.2
45 / 49	49	30	45	124	42.6	12	25	23	60	41.7	1	8	2	11	40.4
40 / 44	48	18	29	96	38.5	20	32	28	81	37.8	3	17	8	28	37.2
35 / 39	34	9	21	64	34.2	38	38	45	120	33.9	10	30	24	65	33.7
30 / 34	30	4	11	45	30.1	53	37	46	136	29.9	37	44	52	134	30.0
25 / 29	13	2	3	18	25.6	43	25	33	100	25.2	48	41	44	133	25.4
20 / 24	5	0	1	6	21.5	30	12	20	62	20.6	42	29	33	105	20.8
15 / 19	1		0	1	16.4	16	7	9	32	15.9	31	21	27	79	15.9
10 / 14	0			0	13.0	10	6	6	21	11.1	23	17	18	58	10.9
5 / 9						4	3	3	10	6.2	18	12	11	40	6.1
0 / 4						3	0	3	6	1.6	14	11	12	36	1.0
-5 / -1						2	0	0	2	-2.4	7	4	6	18	-3.1
-10 / -6						1			1	-6.9	6	4	5	16	-7.6
-15 / -11											5	2	3	10	-12.4
-20 / -16											2	1	1	3	-16.6
-25 / -21											1	0	0	1	-21.6

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.

SIOUX CITY IA WMO No. 725570

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

Period of Record = 1973 to 1996

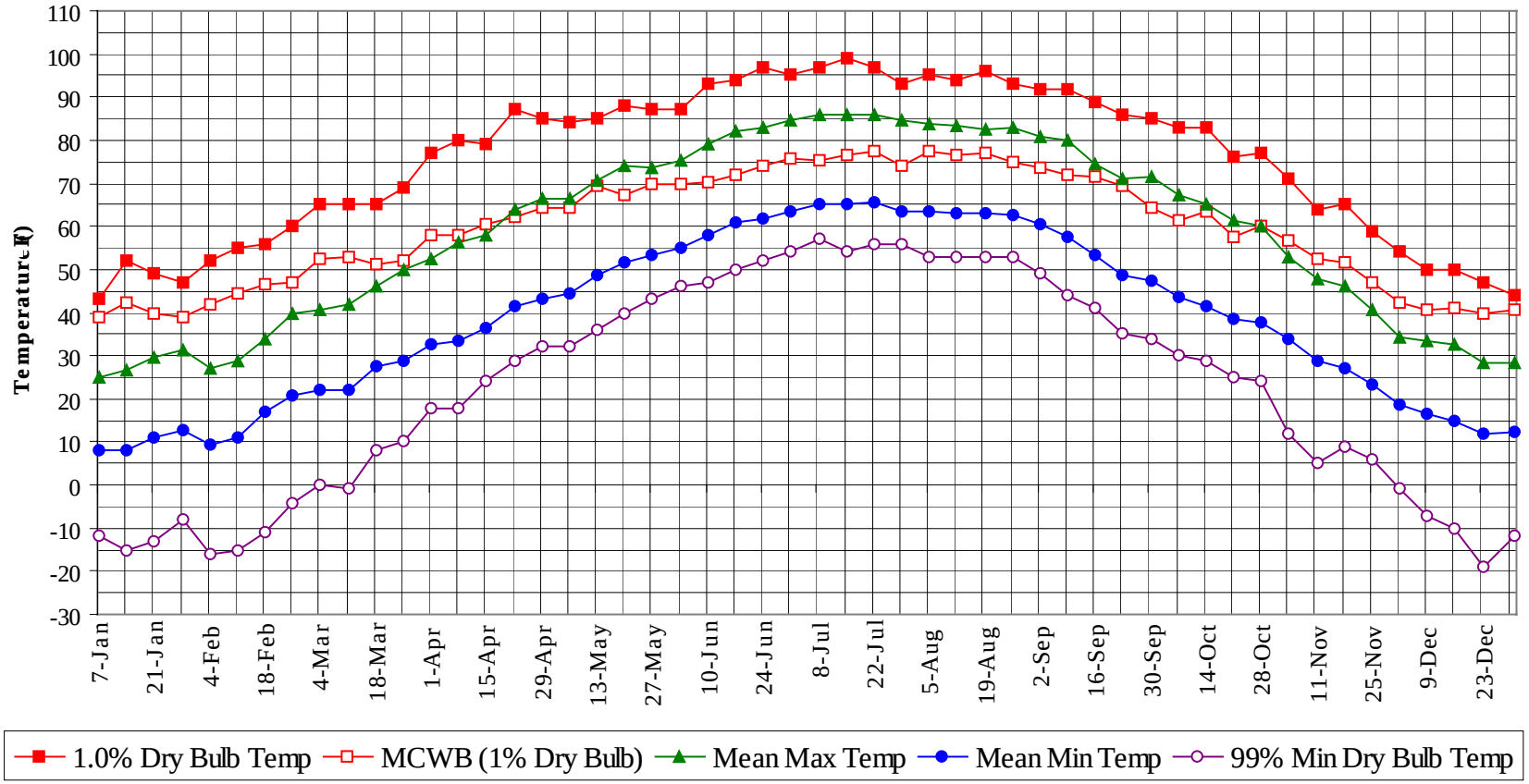
Annual Totals

Temperature Range (°F)	Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)
105 / 109		0	0	0	76.3
100 / 104		3	1	4	75.2
95 / 99		18	6	24	75.5
90 / 94	0	63	27	90	74.3
85 / 89	1	135	71	207	72.1
80 / 84	16	224	142	382	69.3
75 / 79	66	247	195	507	66.5
70 / 74	168	249	249	665	63.8
65 / 69	259	209	241	709	60.5
60 / 64	272	192	217	681	56.0
55 / 59	226	169	192	587	51.2
50 / 54	207	174	180	561	46.7
45 / 49	196	156	176	528	42.3
40 / 44	192	158	172	522	38.1
35 / 39	215	191	209	615	33.9
30 / 34	288	194	253	735	29.9
25 / 29	228	146	168	542	25.2
20 / 24	168	107	127	402	20.5
15 / 19	119	85	89	294	15.8
10 / 14	85	67	72	225	10.8
5 / 9	69	47	50	167	6.0
0 / 4	56	34	42	132	1.1
-5 / -1	30	19	24	72	-3.2
-10 / -6	30	15	18	62	-7.5
-15 / -11	19	5	8	32	-12.3
-20 / -16	7	2	2	11	-16.6
-25 / -21	2	0	0	3	-21.4

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.

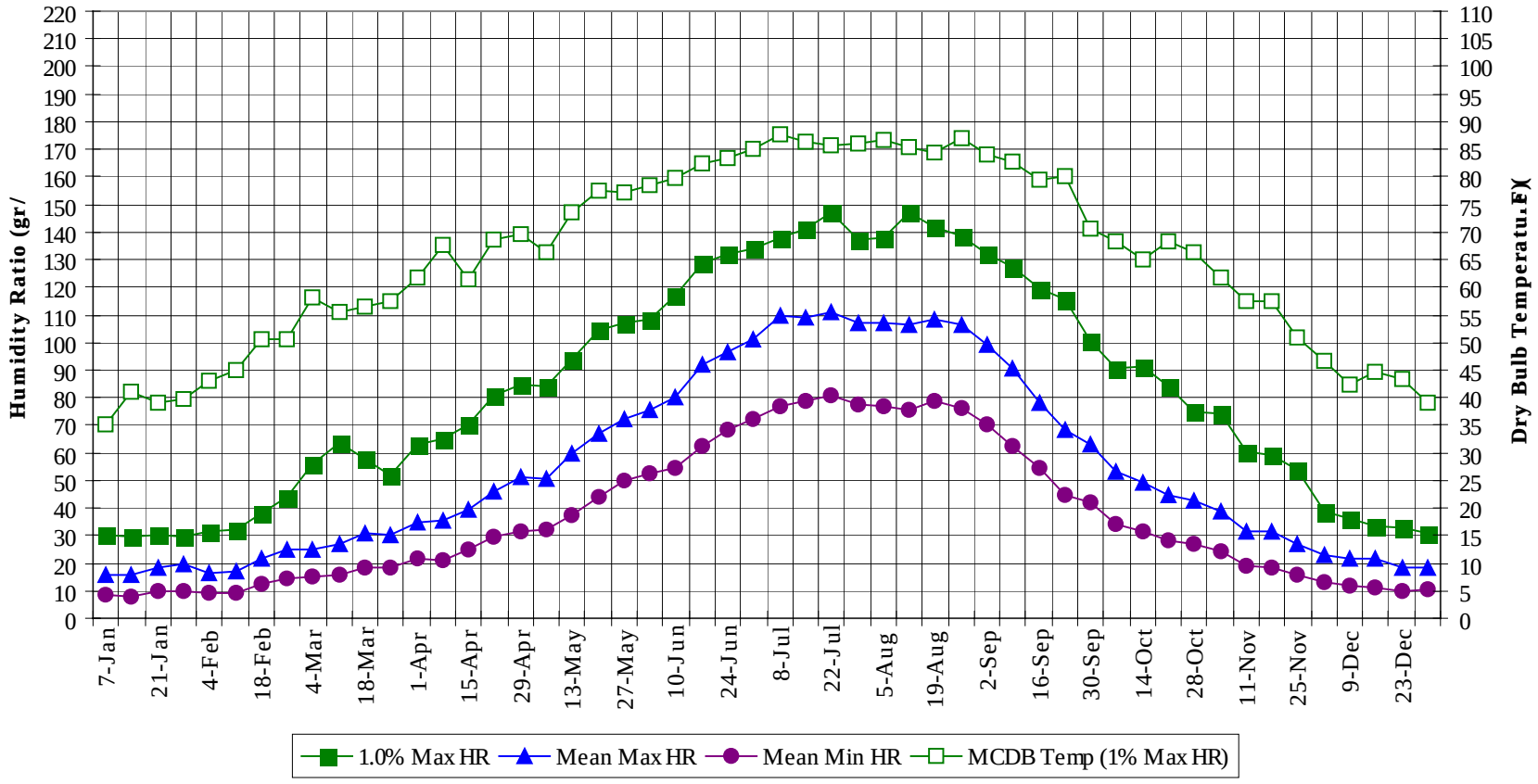
SIOUX CITY IA WMO No. 725570

Annual Summary of Temperatures



SIOUX CITY IA WMO No. 725570

Long Term Humidity and Dry Bulb Temperature Summary



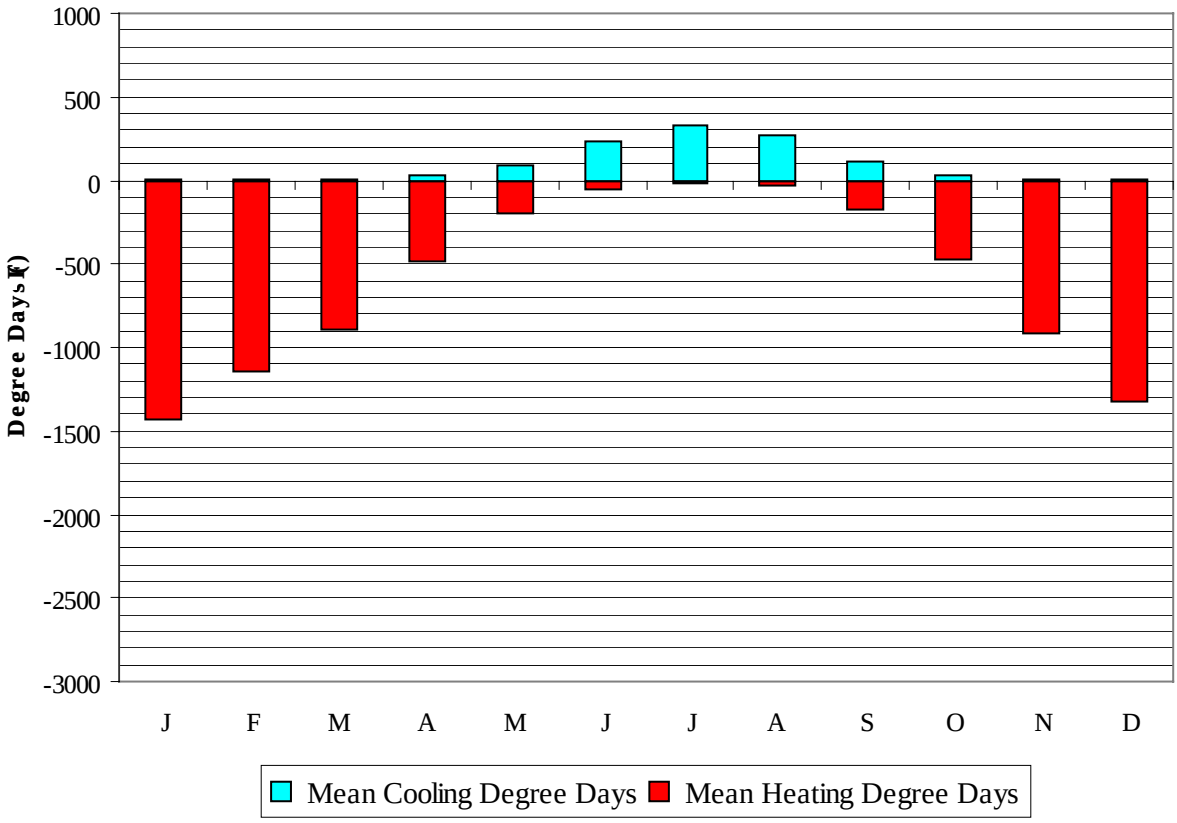
SIOUX CITY IA WMO No. 725570

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	43.0	38.9	25.1	8.1	-12.0	30.1	35.3	15.8	8.4
14-Jan	52.0	42.3	26.9	8.1	-15.0	29.4	41.0	15.9	8.0
21-Jan	49.0	39.8	29.5	10.9	-13.0	30.1	39.0	18.2	9.6
28-Jan	47.0	39.1	31.4	12.7	-8.0	29.4	39.6	19.5	9.5
4-Feb	52.0	42.0	27.3	9.4	-16.0	31.5	43.1	16.7	9.2
11-Feb	55.0	44.3	28.7	10.9	-15.0	32.2	45.1	16.8	9.5
18-Feb	56.0	46.4	33.8	16.8	-11.0	37.8	50.7	21.5	12.6
25-Feb	60.0	46.8	39.7	20.9	-4.0	44.1	50.5	25.3	14.3
4-Mar	65.0	52.7	40.5	22.0	0.0	56.0	58.2	25.2	14.9
11-Mar	65.0	53.1	42.0	22.2	-1.0	63.7	55.4	26.8	15.7
18-Mar	65.0	51.1	46.0	27.5	8.0	58.1	56.6	30.8	18.6
25-Mar	69.0	52.2	49.9	28.9	10.0	51.8	57.5	30.5	18.7
1-Apr	77.0	57.8	52.4	32.7	18.0	63.0	61.9	35.0	21.6
8-Apr	80.0	58.0	56.3	33.5	18.0	65.1	67.7	35.2	21.3
15-Apr	79.0	60.6	58.0	36.5	24.0	70.0	61.5	39.3	24.6
22-Apr	87.0	62.3	63.8	41.6	29.0	80.5	68.5	45.9	29.6
29-Apr	85.0	64.3	66.6	43.1	32.0	84.7	69.7	51.2	31.8
6-May	84.0	64.2	66.5	44.7	32.0	84.0	66.2	50.7	32.0
13-May	85.0	69.3	70.6	48.5	36.0	93.8	73.4	59.6	37.5
20-May	88.0	67.2	74.2	51.4	40.0	104.3	77.6	66.8	44.3
27-May	87.0	69.8	73.8	53.3	43.0	107.1	77.0	72.4	50.1
3-Jun	87.0	69.9	75.5	55.0	46.0	108.5	78.4	75.7	52.4
10-Jun	93.0	70.4	79.2	57.9	47.0	116.9	79.9	79.9	54.5
17-Jun	94.0	72.1	82.2	60.9	50.0	128.8	82.3	91.7	62.7
24-Jun	97.0	74.0	82.7	61.9	52.0	132.3	83.3	96.5	68.2
1-Jul	95.0	75.7	84.6	63.3	54.0	133.7	85.0	101.4	72.1
8-Jul	97.0	75.4	85.9	65.0	57.0	137.9	87.6	109.6	76.6
15-Jul	99.0	76.8	86.0	65.0	54.0	141.4	86.3	108.7	78.8
22-Jul	97.0	77.3	86.0	65.4	56.0	147.0	85.8	111.3	80.6
29-Jul	93.0	74.1	84.4	63.6	56.0	137.2	86.2	107.0	77.7
5-Aug	95.0	77.6	83.7	63.3	53.0	137.9	86.6	107.3	76.6
12-Aug	94.0	76.6	83.4	62.9	53.0	147.0	85.2	106.5	75.8
19-Aug	96.0	77.1	82.5	63.0	53.0	142.1	84.6	108.4	79.1
26-Aug	93.0	74.8	82.9	62.7	53.0	138.6	87.1	106.3	76.4
2-Sep	92.0	73.6	81.0	60.6	49.0	132.3	84.0	99.0	70.3
9-Sep	92.0	72.1	80.2	57.8	44.0	127.4	82.6	90.8	62.7
16-Sep	89.0	71.4	74.5	53.2	41.0	119.7	79.5	78.4	54.6
23-Sep	86.0	69.5	70.9	48.5	35.0	115.5	80.2	68.3	44.7
30-Sep	85.0	64.5	71.6	47.3	34.0	100.8	70.6	62.8	42.0
7-Oct	83.0	61.3	67.3	43.4	30.0	90.3	68.3	53.3	34.4
14-Oct	83.0	63.5	65.1	41.3	29.0	91.0	65.2	49.1	31.5
21-Oct	76.0	57.4	61.4	38.3	25.0	84.0	68.4	44.5	28.5
28-Oct	77.0	60.1	60.0	37.5	24.0	74.9	66.5	43.0	26.9
4-Nov	71.0	56.5	53.0	33.8	12.0	74.2	61.7	38.5	24.3
11-Nov	64.0	52.6	47.9	28.9	5.0	60.2	57.6	31.6	19.1
18-Nov	65.0	51.6	46.2	27.2	9.0	58.8	57.6	31.8	18.7
25-Nov	59.0	46.8	40.8	23.5	6.0	53.9	51.0	27.1	15.7
2-Dec	54.0	42.5	34.3	18.5	-1.0	38.5	46.6	23.0	12.9
9-Dec	50.0	40.7	33.6	16.6	-7.0	36.4	42.4	21.6	12.1
16-Dec	50.0	41.1	32.6	14.8	-10.0	33.6	44.7	21.4	11.4
23-Dec	47.0	39.9	28.4	12.0	-19.0	32.9	43.3	18.5	10.2
31-Dec	44.0	40.6	28.2	12.4	-12.0	30.8	39.0	18.5	10.2

SIOUX CITY IA WMO No. 725570

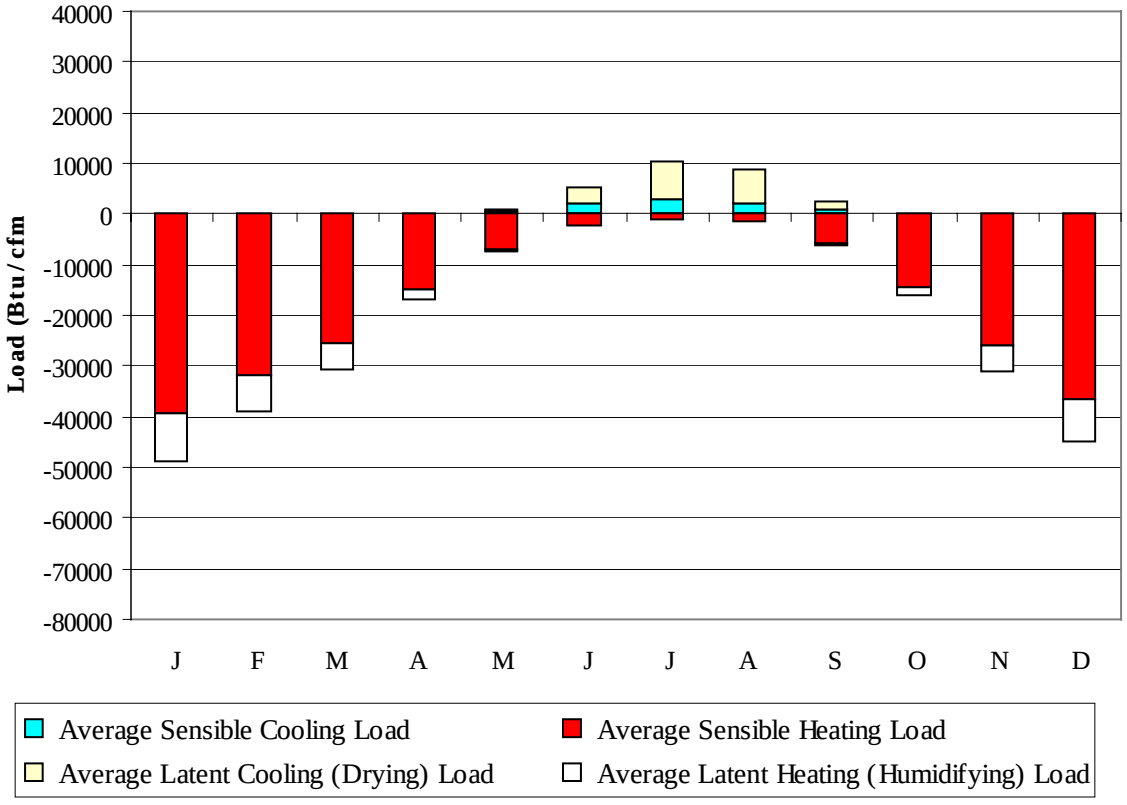
Degree Days, Heating and Cooling
(Base 65°F)



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	1429
FEB	0	1146
MAR	4	893
APR	31	491
MAY	94	203
JUN	232	49
JUL	330	17
AUG	265	33
SEP	113	171
OCT	25	468
NOV	1	913
DEC	0	1321
ANN	1094	7134

SIOUX CITY IA WMO No. 725570

Average Ventilation and Infiltration Loads
(Outside Air vs. 75°F, 60% RH summer; 68°F, 30% RH winter)



	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	-39462	0	-9426
FEB	0	-31896	0	-7204
MAR	13	-25526	0	-4988
APR	175	-14793	12	-2161
MAY	520	-6896	486	-447
JUN	1934	-2083	3134	-1
JUL	3060	-894	7242	0
AUG	2125	-1496	6680	0
SEP	748	-5870	1747	-154
OCT	103	-14303	48	-1621
NOV	0	-25982	0	-4917
DEC	0	-36641	0	-8227
ANN	8678	-205842	19349	-39146

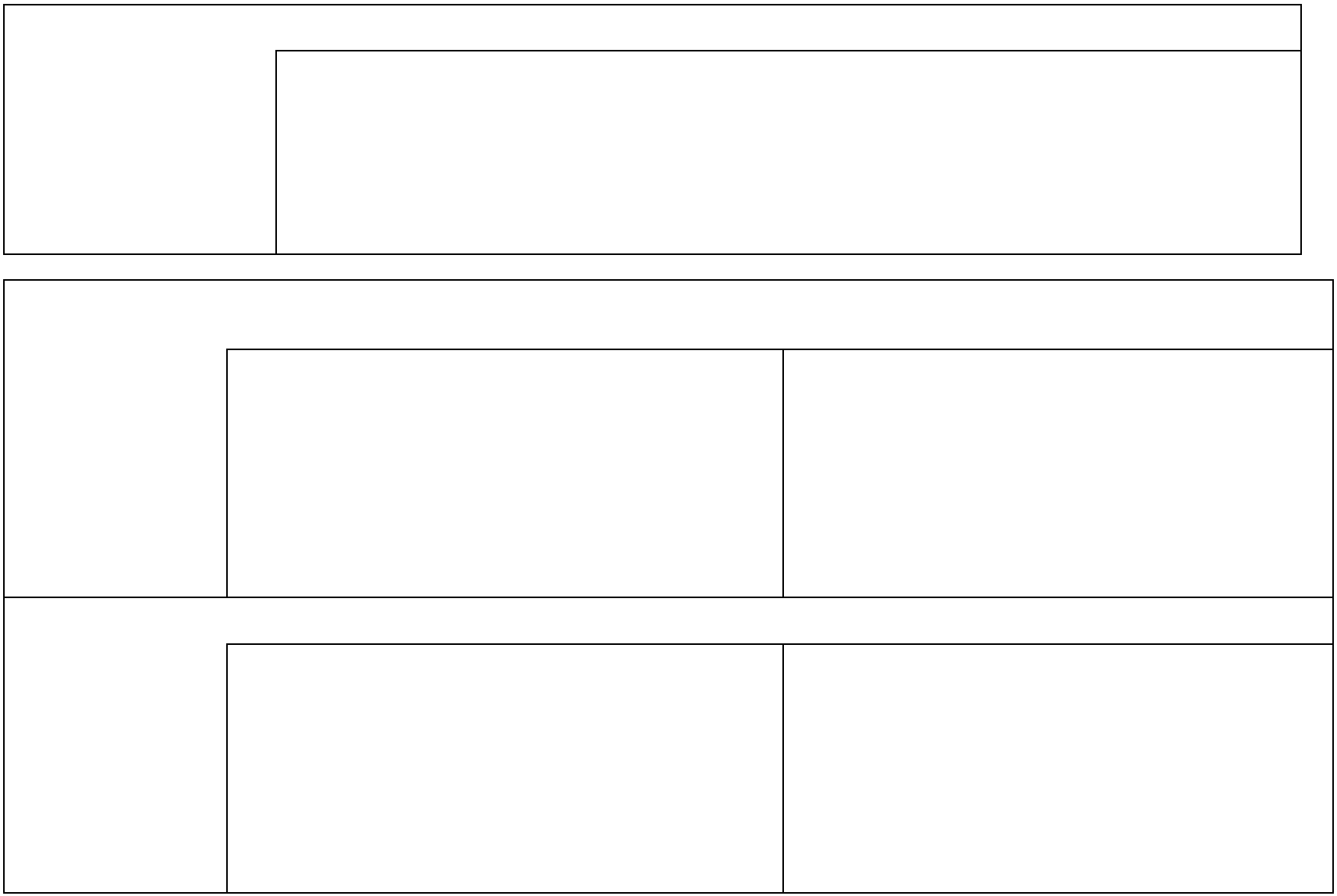
Average Annual Solar Radiation – Nearest Available Site

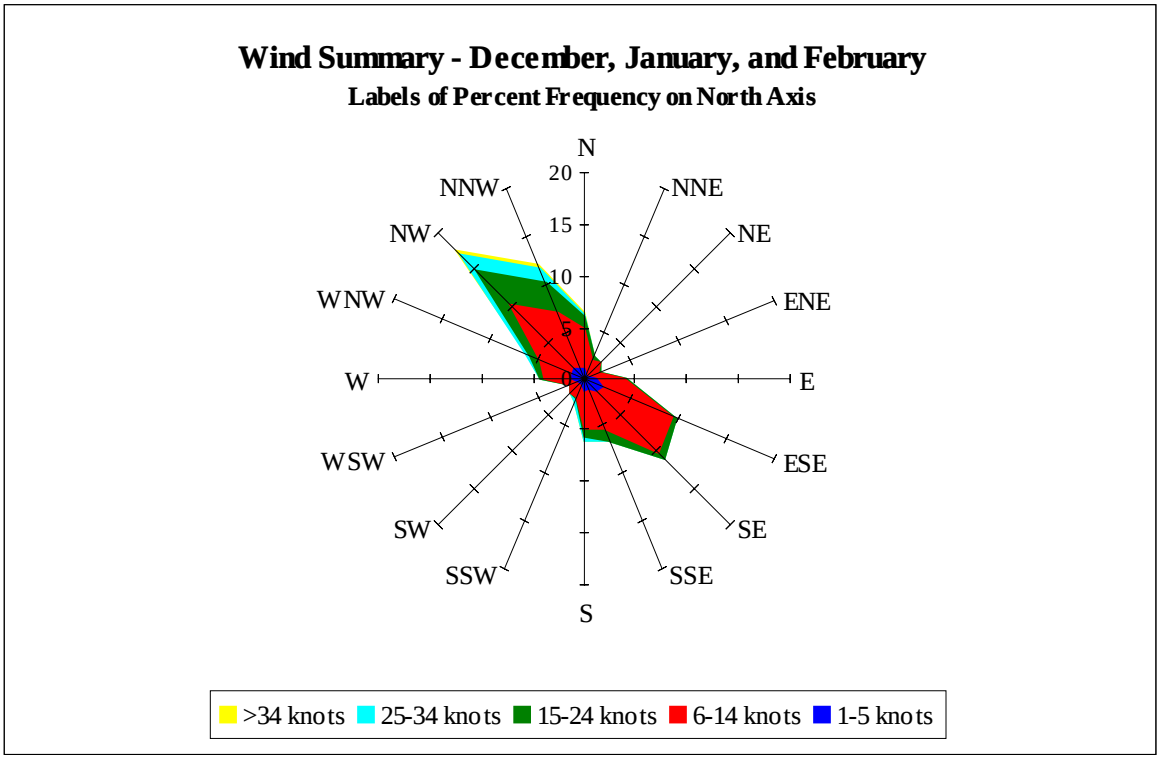
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

No Solar Radiation
Data Available

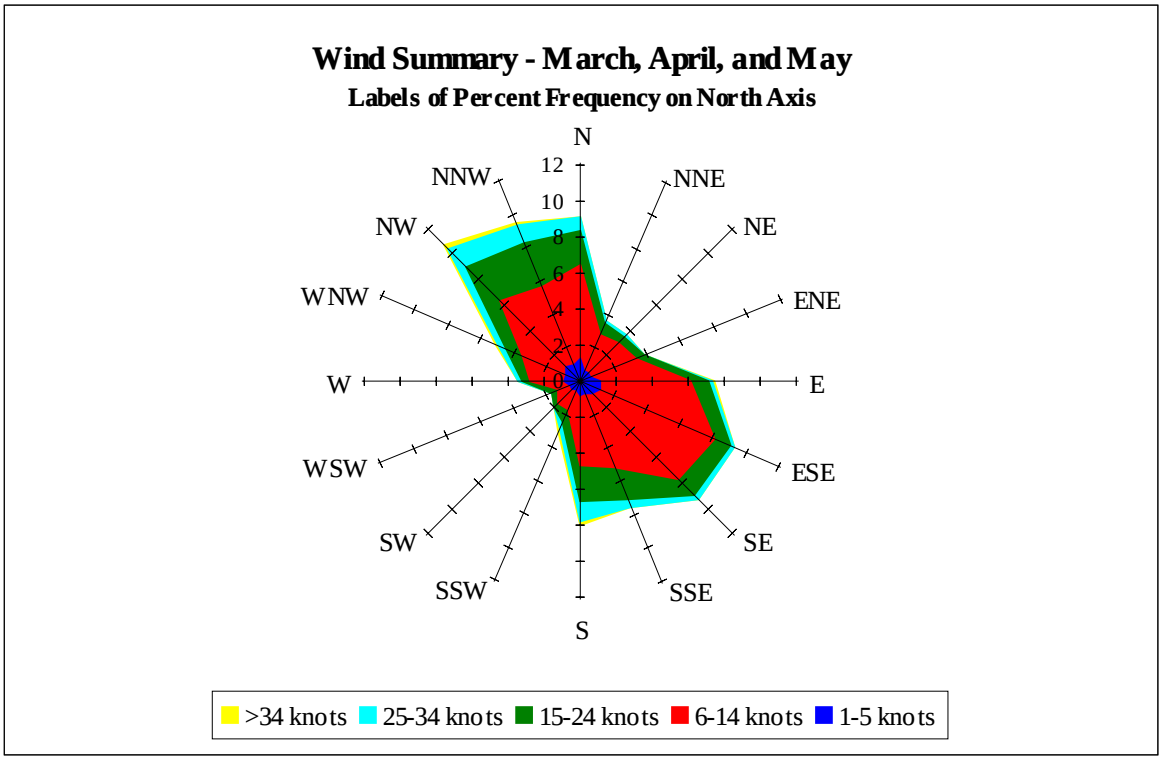
Average Annual Solar Heat and Illumination – Nearest Available Site

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

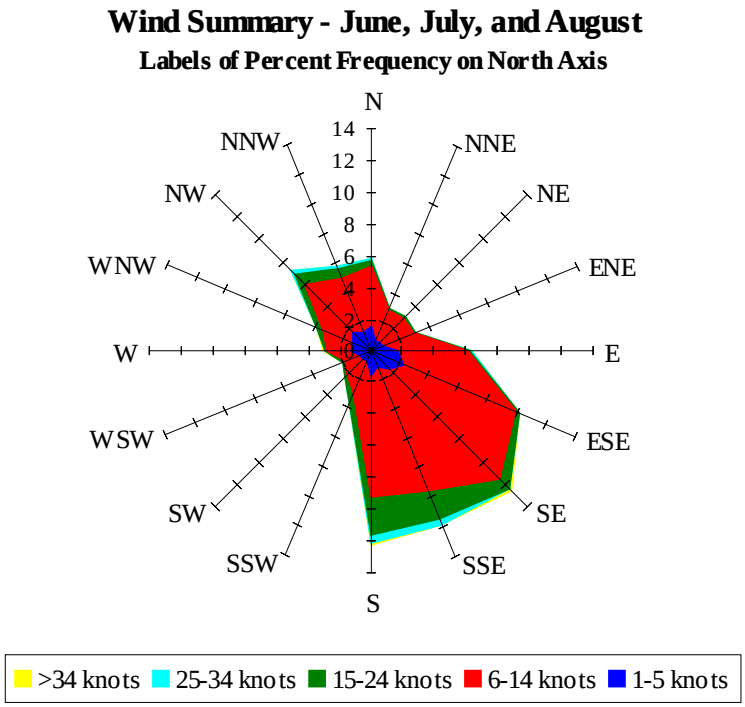




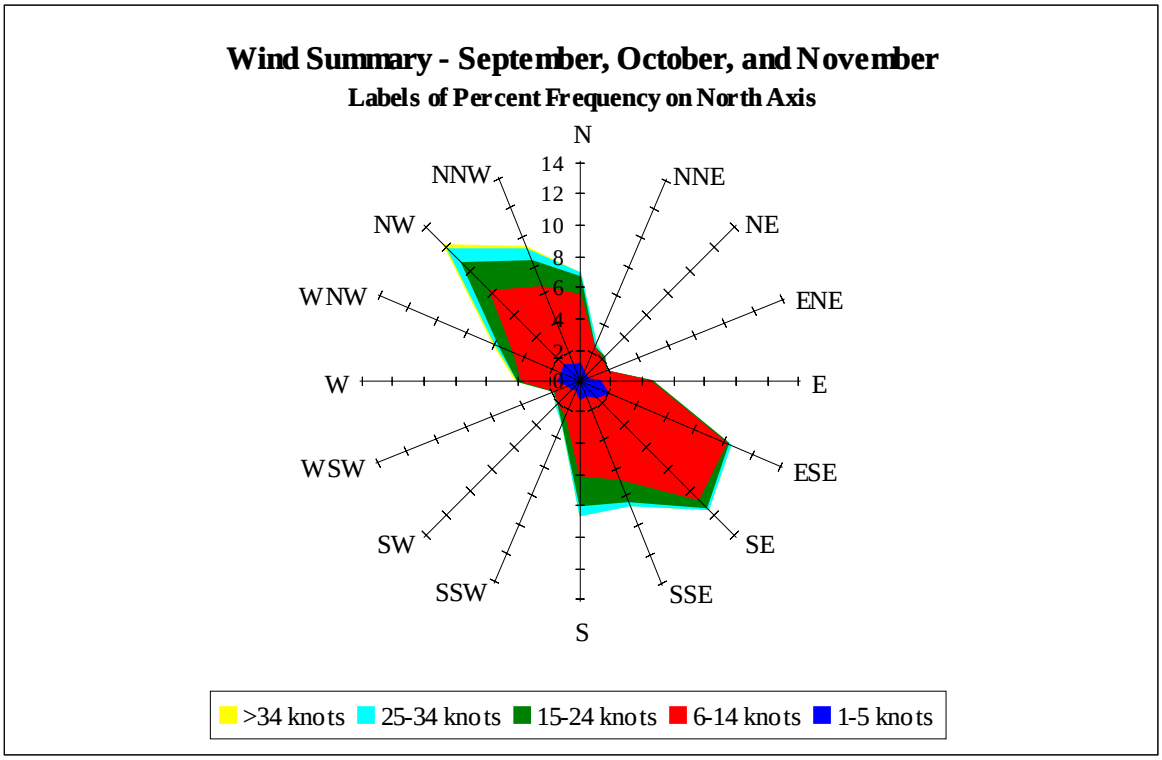
Percent Calm = 4.85



Percent Calm = 3.51



Percent Calm = 5.20



Percent Calm = 5.10