

MADISON/DANE CO. RGNL WI

Latitude = 43.13 N

WMO No. 726410

Longitude = 89.33 W

Elevation = 866 feet

Period of Record = 1973 to 1996

Average Pressure = 29.05 inches Hg

Design Criteria Data

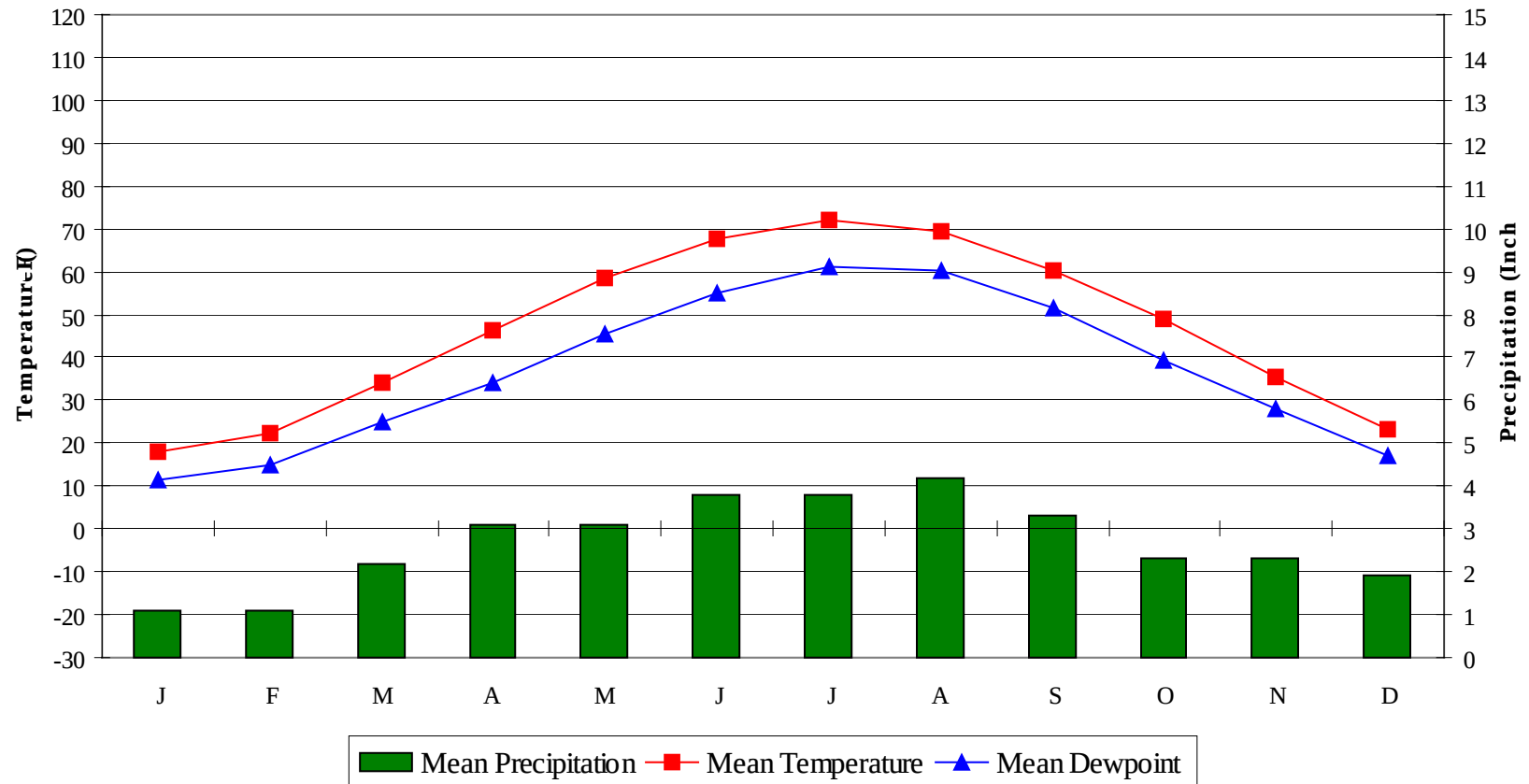
	Design Value	Mean Coincident (Average) Values			
		Wet Bulb Temperature (°F)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Dry Bulb Temperature (T)	(°F)				
Median of Extreme Highs	94	75	102	12.3	SW
0.4% Occurrence	90	74	103	11.6	S
1.0% Occurrence	87	72	98	11.2	S
2.0% Occurrence	85	71	96	11.0	S
Mean Daily Range	20	-	-	-	-
97.5% Occurrence	1	0	4	8.4	WNW
99.0% Occurrence	-5	-6	3	8.6	WNW
99.6% Occurrence	-11	-11	2	8.0	WNW
Median of Extreme Lows	-18	-18	1	8.9	WNW
	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	80	90	143	11.4	SSW
0.4% Occurrence	77	87	129	11.5	S
1.0% Occurrence	74	84	114	10.7	S
2.0% Occurrence	73	82	111	10.3	S
	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	145	85	0.94	11.9	S
0.4% Occurrence	128	83	0.82	13.3	S
1.0% Occurrence	119	80	0.77	11.1	S
2.0% Occurrence	113	76	0.74	7.5	S
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		16	446	188	836

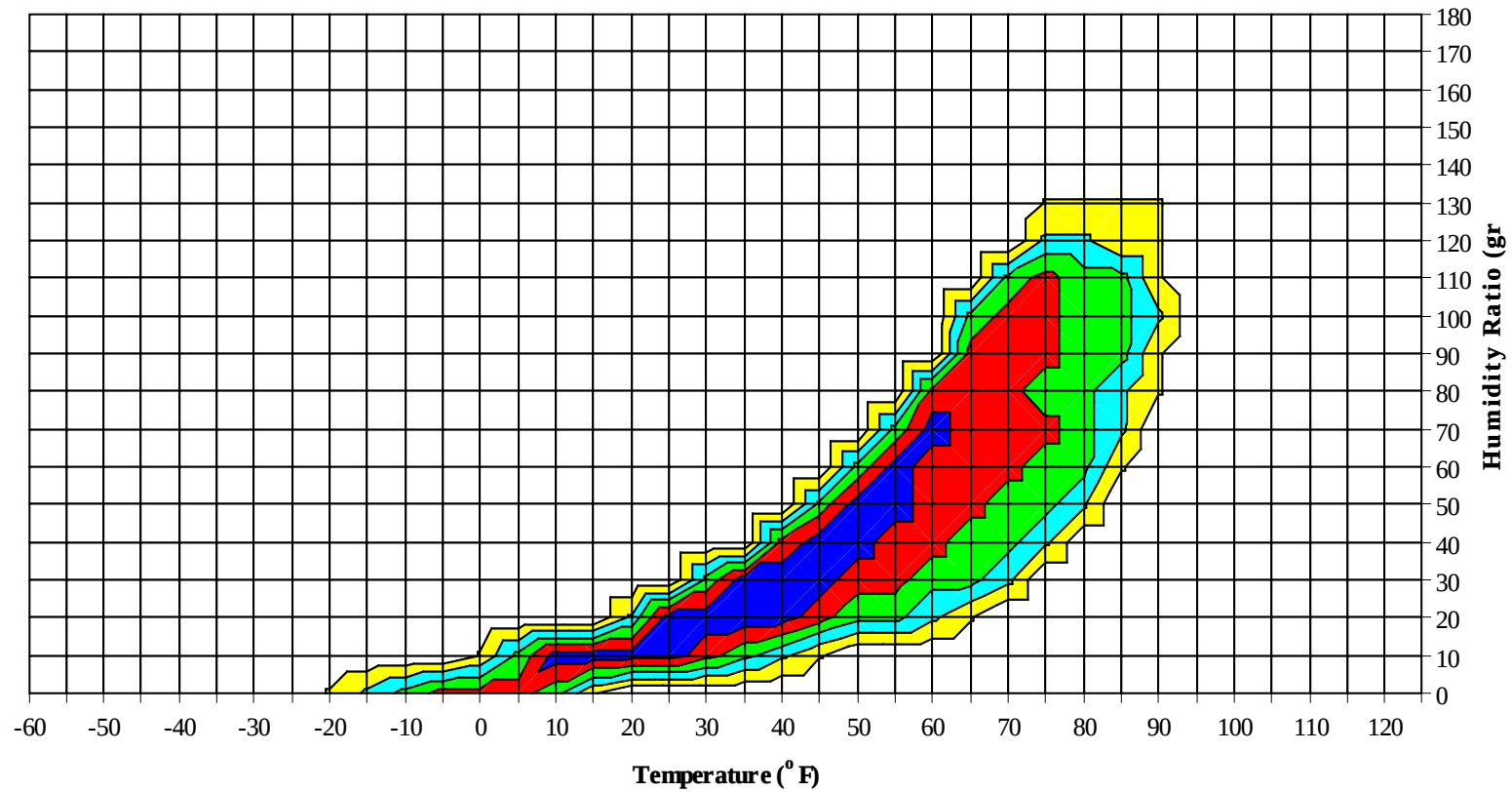
Other Site Data

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
5	3.3	90	1.1 + 0.4
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 (#)
48.9	75	35	71

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

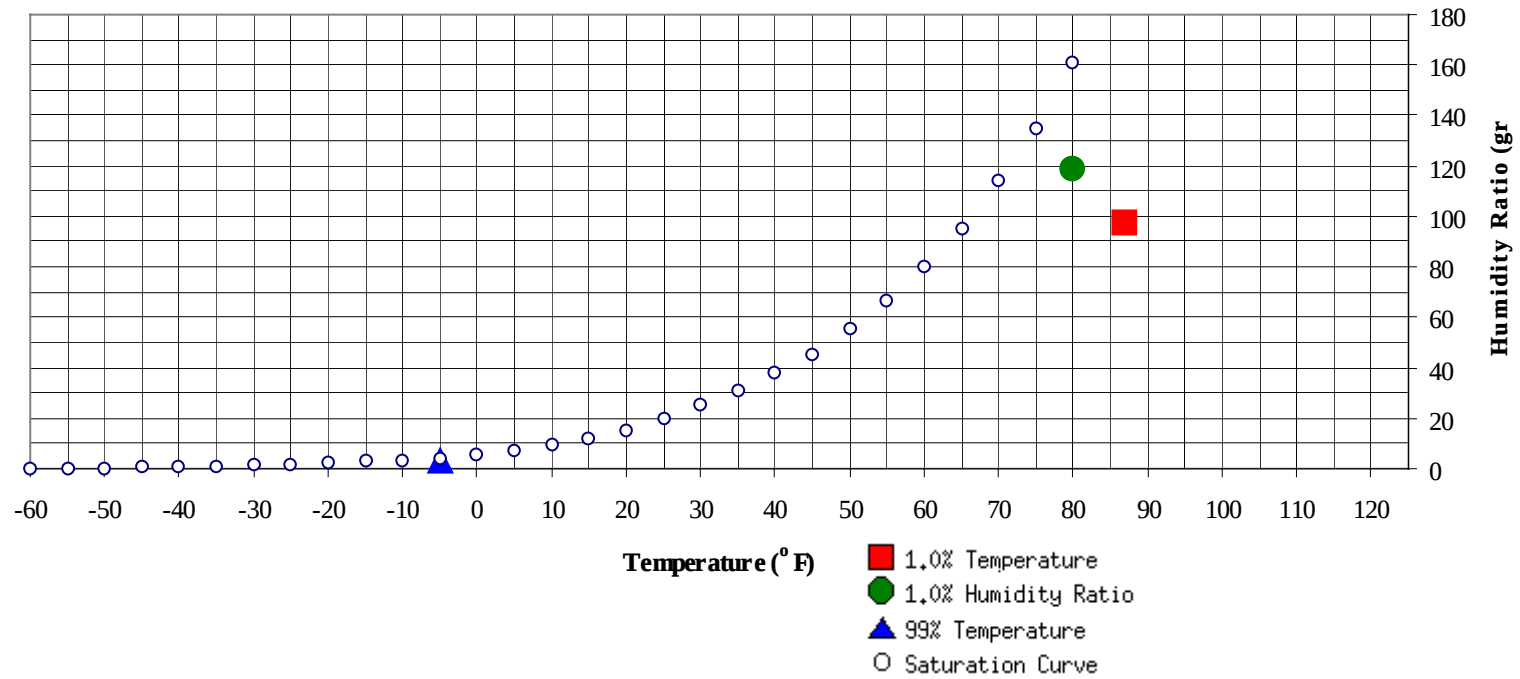
Average Annual Climate



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	-5	2.8	-0.8		119	79.8	73.6	71.1	37.8

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	87	97.6	72	36.2

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		
100 / 104															
95 / 99															
90 / 94															
85 / 89															
80 / 84												0		0	61.0
75 / 79												1	0	1	59.9
70 / 74												2	1	2	58.7
65 / 69												5	2	7	55.3
60 / 64											1	8	4	13	52.6
55 / 59							2	0	2	46.8	3	11	6	20	49.3
50 / 54	1	1	0	2	46.4	0	2	1	3	44.2	6	16	10	33	45.4
45 / 49	1	2	1	5	43.0	1	6	3	10	41.2	9	29	18	55	41.3
40 / 44	1	8	3	12	37.6	2	18	8	28	37.3	15	37	27	79	37.5
35 / 39	9	21	17	47	34.0	15	33	29	77	33.7	40	50	52	142	33.8
30 / 34	32	35	36	102	30.2	37	38	40	116	30.0	61	41	54	156	29.8
25 / 29	34	41	35	110	25.3	32	30	33	96	24.9	36	20	32	88	24.8
20 / 24	33	34	35	103	20.4	29	29	30	88	20.1	30	15	21	66	20.2
15 / 19	28	30	30	88	15.6	24	25	24	73	15.4	20	7	11	39	15.6
10 / 14	24	24	24	72	10.7	19	17	20	55	10.6	13	4	7	23	10.6
5 / 9	22	21	21	65	6.0	20	12	16	49	5.9	9	1	3	13	6.1
0 / 4	19	12	20	50	1.0	18	6	10	34	1.2	5	0	1	6	1.3
-5 / -1	16	7	10	33	-3.2	11	3	6	19	-3.1	2		0	2	-2.7
-10 / -6	14	6	9	28	-7.5	8	1	4	12	-7.4	0			0	-6.1
-15 / -11	8	3	3	14	-12.0	4	1	1	6	-12.0					
-20 / -16	4	1	2	7	-17.0	1	0	0	2	-17.0					
-25 / -21	2	0	1	3	-21.5	1	0	0	1	-21.6					
-30 / -26	1			1	-25.7	0			0	-26.8					

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 = 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		
100 / 104															
95 / 99												1	0	1	73.5
90 / 94		0	0	0	63.7		1	0	1	72.8		8	1	9	72.5
85 / 89		1	0	1	63.5		7	1	9	68.1	0	23	8	31	70.6
80 / 84		4	1	5	63.3	0	17	5	23	66.7	2	41	17	60	67.8
75 / 79		7	2	9	61.9	1	29	12	42	63.1	9	53	30	92	65.4
70 / 74	0	11	6	17	58.3	6	35	22	62	60.2	27	48	44	119	63.2
65 / 69	4	19	11	33	55.8	19	42	35	96	57.8	47	35	48	129	60.7
60 / 64	10	26	15	51	52.2	30	43	38	111	54.5	51	19	44	114	57.4
55 / 59	10	33	22	65	48.2	37	34	42	112	51.2	47	8	28	83	53.5
50 / 54	17	38	32	88	45.1	46	24	39	108	47.5	32	3	15	50	49.4
45 / 49	34	31	38	103	42.0	44	12	30	87	43.6	17	0	4	21	45.2
40 / 44	45	32	40	117	38.2	34	4	16	53	39.3	6		1	7	40.9
35 / 39	47	25	37	110	34.0	20	0	6	26	34.9	2		0	2	36.9
30 / 34	38	10	22	70	30.0	9	0	2	11	30.9					
25 / 29	22	3	9	34	25.2	2			2	26.8					
20 / 24	10	1	3	13	20.9	0			0	19.5					
15 / 19	2	0	1	3	16.0										
10 / 14	1		0	1	11.8										
5 / 9	0		0	0	6.8										
0 / 4	0			0	2.0										
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															
-30 / -26															

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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		
100 / 104		0		0	78.5		0		0	76.6					
95 / 99		3	0	3	76.0		1	0	1	76.3		0		0	73.0
90 / 94	0	15	4	19	74.7		8	2	9	75.0		1	0	1	74.3
85 / 89	0	36	13	50	72.7	0	24	7	31	73.3		6	1	7	71.4
80 / 84	5	62	31	98	70.0	3	46	20	68	70.5	0	19	5	24	69.3
75 / 79	23	64	47	134	67.7	11	64	37	112	67.5	1	30	12	43	66.5
70 / 74	48	43	57	147	65.8	37	54	54	146	65.8	13	43	25	81	64.1
65 / 69	64	18	52	134	63.0	59	33	55	148	63.0	25	44	33	103	60.9
60 / 64	54	6	31	91	59.1	57	12	41	110	59.2	36	42	42	120	57.2
55 / 59	34	1	11	46	55.1	43	3	21	67	55.2	43	33	45	120	53.4
50 / 54	16		2	18	51.0	24		9	32	51.0	48	15	40	103	49.3
45 / 49	4			4	46.9	12		2	14	46.5	33	5	22	61	45.0
40 / 44	0			0	43.3	3		0	3	42.3	23	0	10	33	41.0
35 / 39						0			0	38.7	12	0	4	17	36.3
30 / 34											5	0	1	6	31.4
25 / 29											1		0	1	27.3
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															
-30 / -26															

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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		
100 / 104															
95 / 99															
90 / 94		0		0	65.3										
85 / 89		0	0	0	64.7										
80 / 84		2	0	2	65.5										
75 / 79		7	1	8	63.1										
70 / 74	0	13	4	18	60.2		1		1	59.2					
65 / 69	4	24	10	38	57.9	0	3	0	3	57.2					
60 / 64	11	36	22	69	55.1	1	7	3	10	56.1		0	0	0	59.3
55 / 59	20	42	29	90	51.2	6	12	8	26	52.9	1	1	1	3	54.6
50 / 54	30	47	40	118	46.9	11	22	11	44	47.7	1	3	1	4	48.1
45 / 49	45	40	48	133	43.1	14	29	21	65	42.8	2	6	2	11	43.0
40 / 44	43	23	41	107	39.0	23	34	31	87	38.4	4	11	7	22	38.8
35 / 39	43	10	31	85	34.8	37	46	45	128	34.1	16	31	23	70	34.3
30 / 34	31	3	16	49	30.7	49	41	48	138	29.7	43	57	52	152	30.3
25 / 29	15	0	5	20	26.1	41	25	33	99	25.1	42	43	43	128	25.3
20 / 24	5		1	6	21.6	29	12	20	61	20.6	40	33	38	110	20.6
15 / 19	1		0	1	17.5	15	5	13	33	16.1	27	22	26	75	15.7
10 / 14						8	3	4	15	11.2	23	16	20	59	10.9
5 / 9						4	1	2	6	6.5	15	11	15	41	6.1
0 / 4						2	0	1	3	1.4	13	7	11	32	1.1
-5 / -1						1	0	0	1	-3.2	7	4	5	17	-3.1
-10 / -6						0			0	-6.0	7	2	4	13	-7.4
-15 / -11											4	1	1	7	-11.9
-20 / -16											1	0	1	2	-16.3
-25 / -21											1	0	0	1	-21.5
-30 / -26															

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MADISON/DANE CO. RGNL WI

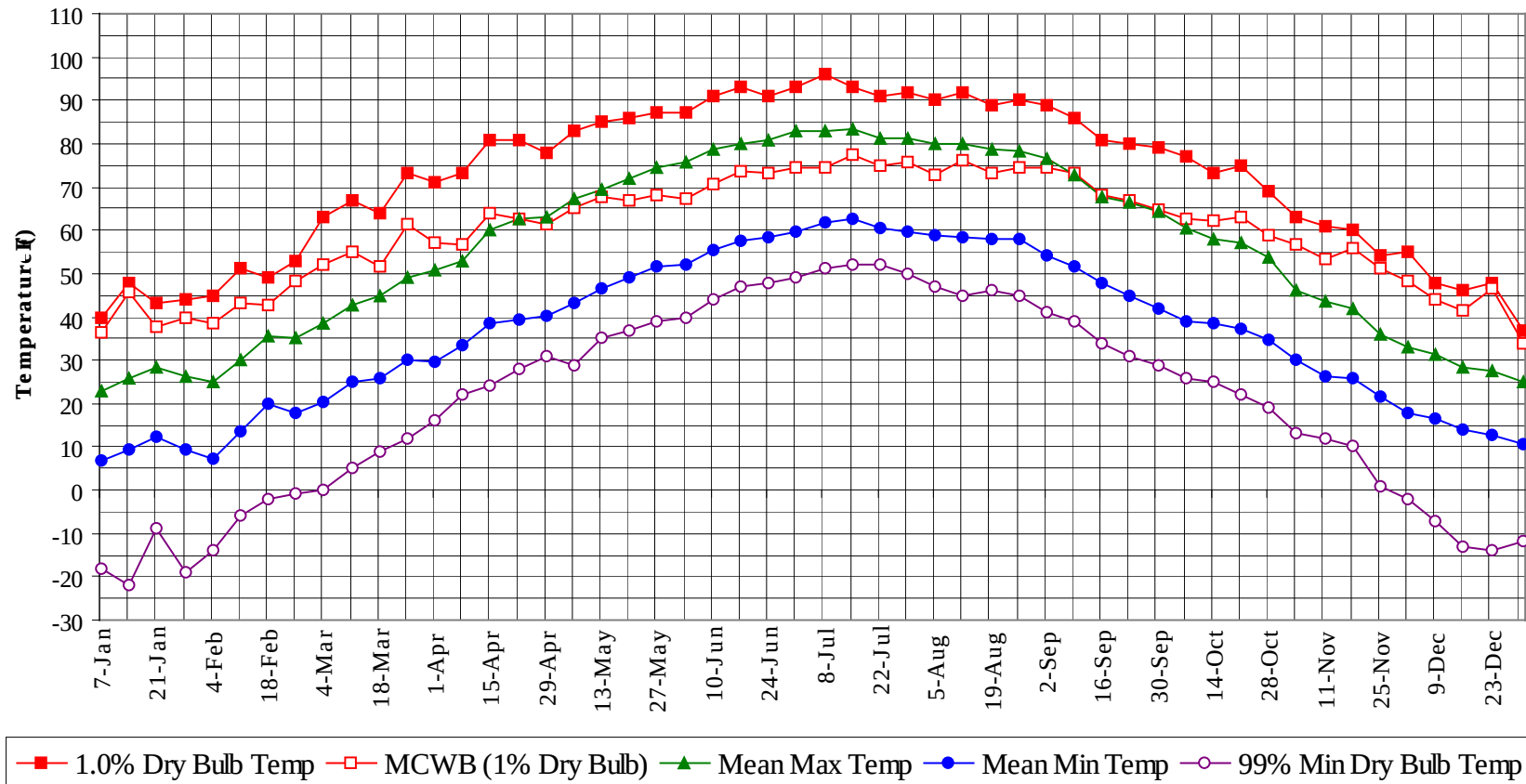
WMO No. 726410

Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)
Period of Record = 1973 to 1996

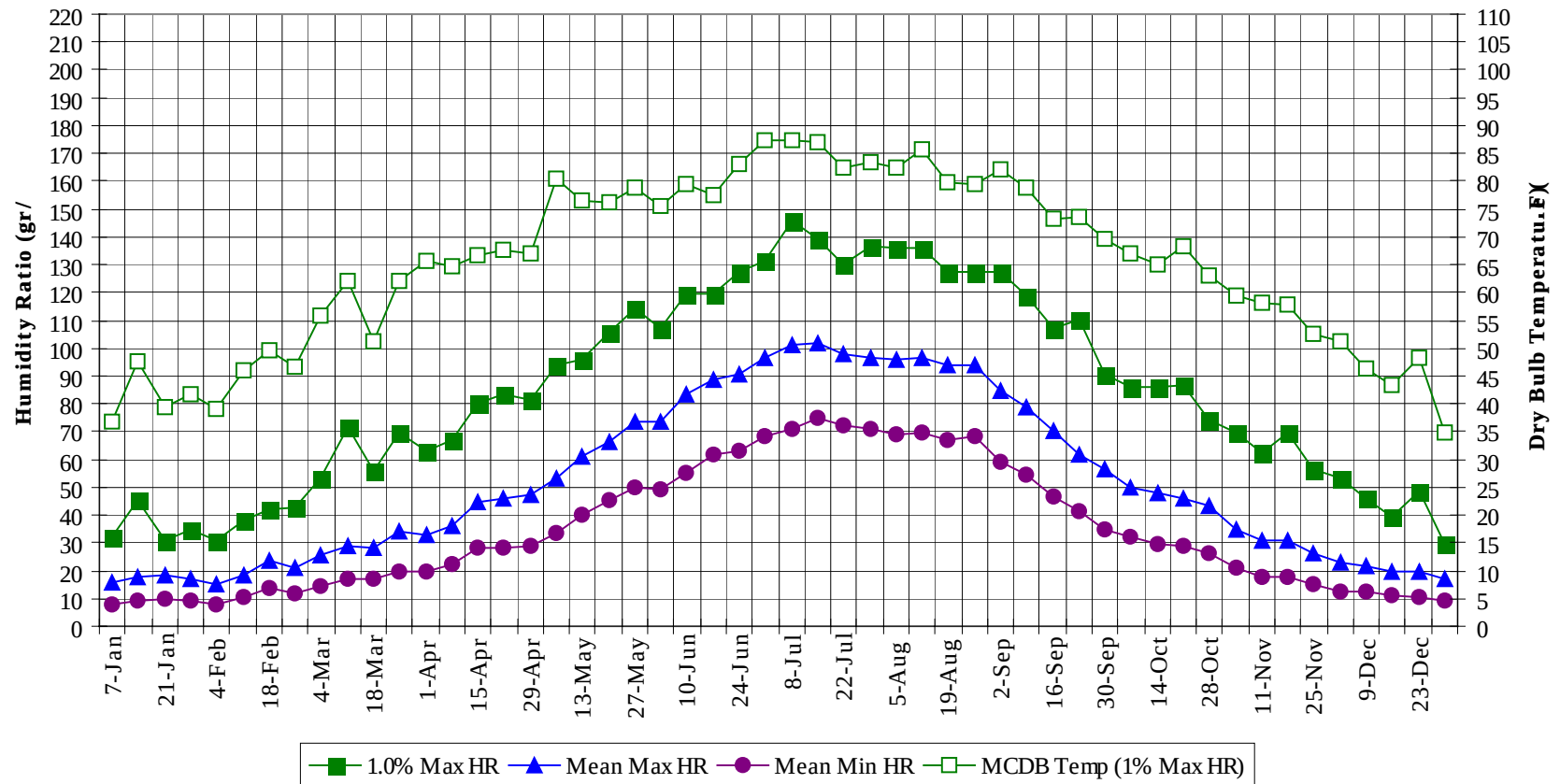
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
100 / 104		1		1	77.7
95 / 99		5	1	6	75.5
90 / 94	0	33	7	40	74.2
85 / 89	1	98	30	129	71.9
80 / 84	10	190	79	279	69.1
75 / 79	46	254	140	440	66.4
70 / 74	131	248	211	590	64.0
65 / 69	222	222	245	689	60.8
60 / 64	249	199	238	687	56.7
55 / 59	241	179	212	633	52.3
50 / 54	231	171	200	603	47.7
45 / 49	217	162	190	569	43.1
40 / 44	199	166	184	550	38.6
35 / 39	242	217	245	705	34.2
30 / 34	306	225	272	803	30.0
25 / 29	225	162	192	579	25.1
20 / 24	177	125	148	450	20.4
15 / 19	119	90	104	312	15.6
10 / 14	87	63	75	225	10.7
5 / 9	70	47	58	175	6.0
0 / 4	57	26	43	126	1.1
-5 / -1	36	14	21	72	-3.1
-10 / -6	29	9	16	54	-7.4
-15 / -11	17	5	5	27	-12.0
-20 / -16	6	2	3	12	-16.9
-25 / -21	4	0	1	5	-21.5
-30 / -26	1			1	-26.0

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Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary



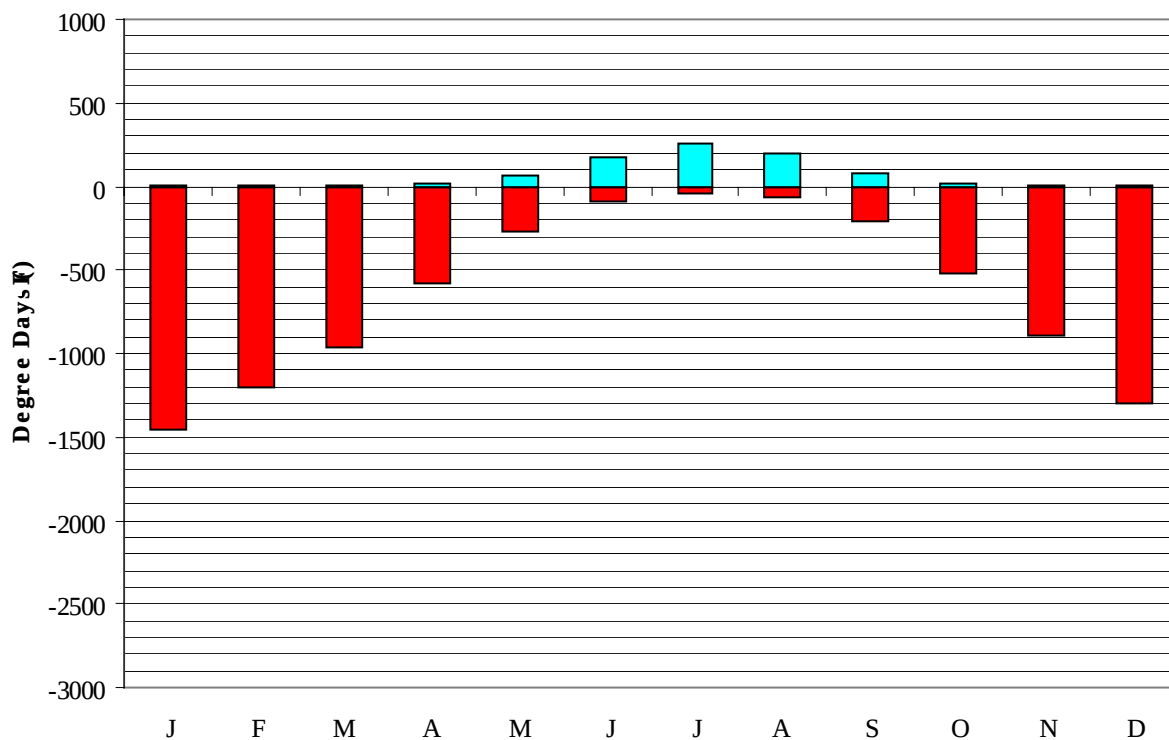
MADISON/DANE CO. RGNL WI

WMO No. 726410

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	40.0	36.2	23.0	6.7	-18.0	32.2	36.7	15.6	7.9
14-Jan	48.0	45.7	25.9	9.2	-22.0	45.5	47.5	17.8	9.4
21-Jan	43.0	37.7	28.2	12.3	-9.0	30.8	39.5	18.2	9.7
28-Jan	44.0	39.8	26.1	9.3	-19.0	35.0	41.8	17.0	8.9
4-Feb	45.0	38.7	24.9	7.1	-14.0	30.8	39.1	15.0	7.9
11-Feb	51.0	43.0	30.0	13.5	-6.0	37.8	45.9	18.4	10.3
18-Feb	49.0	42.8	35.7	20.0	-2.0	42.0	49.5	24.0	14.1
25-Feb	53.0	48.3	35.1	17.8	-1.0	42.7	46.6	21.2	12.0
4-Mar	63.0	52.2	38.6	20.5	0.0	53.2	55.7	25.5	14.4
11-Mar	67.0	55.0	42.6	25.2	5.0	71.4	62.2	28.7	17.0
18-Mar	64.0	51.7	44.9	25.7	9.0	56.0	51.3	28.4	16.8
25-Mar	73.0	61.4	49.1	30.0	12.0	69.3	62.1	34.2	19.8
1-Apr	71.0	57.2	50.7	29.8	16.0	63.0	65.8	32.8	19.4
8-Apr	73.0	56.7	52.8	33.6	22.0	67.2	64.5	36.4	22.2
15-Apr	81.0	63.7	60.3	38.4	24.0	79.8	66.6	44.8	28.0
22-Apr	81.0	62.6	62.5	39.5	28.0	83.3	67.6	46.0	28.4
29-Apr	78.0	61.5	63.0	40.4	31.0	81.2	67.0	47.0	28.8
6-May	83.0	65.3	67.5	43.3	29.0	93.8	80.4	53.5	33.4
13-May	85.0	67.8	69.2	46.4	35.0	95.9	76.6	61.4	40.1
20-May	86.0	67.0	71.9	49.0	37.0	105.7	76.0	66.6	45.1
27-May	87.0	68.3	74.4	51.6	39.0	114.1	78.8	73.3	49.8
3-Jun	87.0	67.2	75.9	52.0	40.0	107.1	75.6	73.8	49.4
10-Jun	91.0	70.9	78.5	55.6	44.0	119.7	79.4	83.2	55.2
17-Jun	93.0	73.8	79.9	57.7	47.0	119.7	77.4	88.8	61.8
24-Jun	91.0	73.2	80.7	58.5	48.0	127.4	83.2	90.9	63.0
1-Jul	93.0	74.3	82.9	59.8	49.0	131.6	87.3	96.4	68.3
8-Jul	96.0	74.3	83.1	61.6	51.0	145.6	87.5	101.4	71.2
15-Jul	93.0	77.5	83.5	62.6	52.0	139.3	86.9	102.1	75.1
22-Jul	91.0	74.7	81.4	60.7	52.0	130.2	82.3	97.8	72.2
29-Jul	92.0	75.6	81.1	59.6	50.0	136.5	83.4	96.5	70.7
5-Aug	90.0	72.8	80.1	58.9	47.0	135.8	82.4	95.8	69.2
12-Aug	92.0	76.2	80.1	58.5	45.0	135.8	85.7	96.3	69.5
19-Aug	89.0	73.2	78.9	57.8	46.0	127.4	79.6	93.7	66.8
26-Aug	90.0	74.4	78.3	58.0	45.0	127.4	79.6	94.1	68.2
2-Sep	89.0	74.7	76.6	54.2	41.0	127.4	82.2	84.8	59.4
9-Sep	86.0	73.1	72.8	51.8	39.0	119.0	78.7	79.1	54.2
16-Sep	81.0	68.3	67.5	47.6	34.0	107.1	73.3	70.1	46.6
23-Sep	80.0	66.8	66.6	44.8	31.0	110.6	73.4	61.6	41.3
30-Sep	79.0	64.8	64.4	41.8	29.0	90.3	69.6	56.5	34.9
7-Oct	77.0	62.8	60.6	39.1	26.0	86.1	67.1	50.1	32.3
14-Oct	73.0	62.0	58.2	38.4	25.0	86.1	65.1	47.9	29.6
21-Oct	75.0	63.2	56.9	37.0	22.0	86.8	68.2	45.7	29.2
28-Oct	69.0	58.8	53.8	34.9	19.0	74.2	63.1	43.3	26.3
4-Nov	63.0	56.7	46.2	30.1	13.0	69.3	59.5	34.7	21.1
11-Nov	61.0	53.5	43.6	26.2	12.0	62.3	58.2	31.1	17.6
18-Nov	60.0	56.0	41.7	25.9	10.0	69.3	57.9	31.1	17.7
25-Nov	54.0	51.3	35.9	21.8	1.0	56.7	52.4	26.5	15.0
2-Dec	55.0	48.3	32.9	17.8	-2.0	53.2	51.2	23.0	12.8
9-Dec	48.0	44.2	31.3	16.6	-7.0	46.2	46.3	21.9	12.2
16-Dec	46.0	41.5	28.4	14.1	-13.0	39.2	43.3	19.7	11.0
23-Dec	48.0	46.7	27.6	12.9	-14.0	48.3	48.1	19.7	10.7
31-Dec	37.0	33.9	25.1	10.6	-12.0	29.4	35.0	16.9	9.5

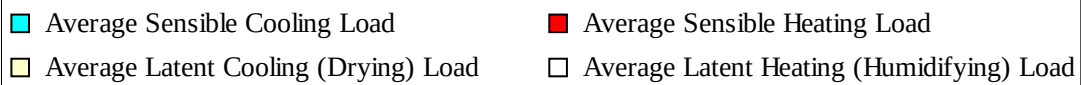
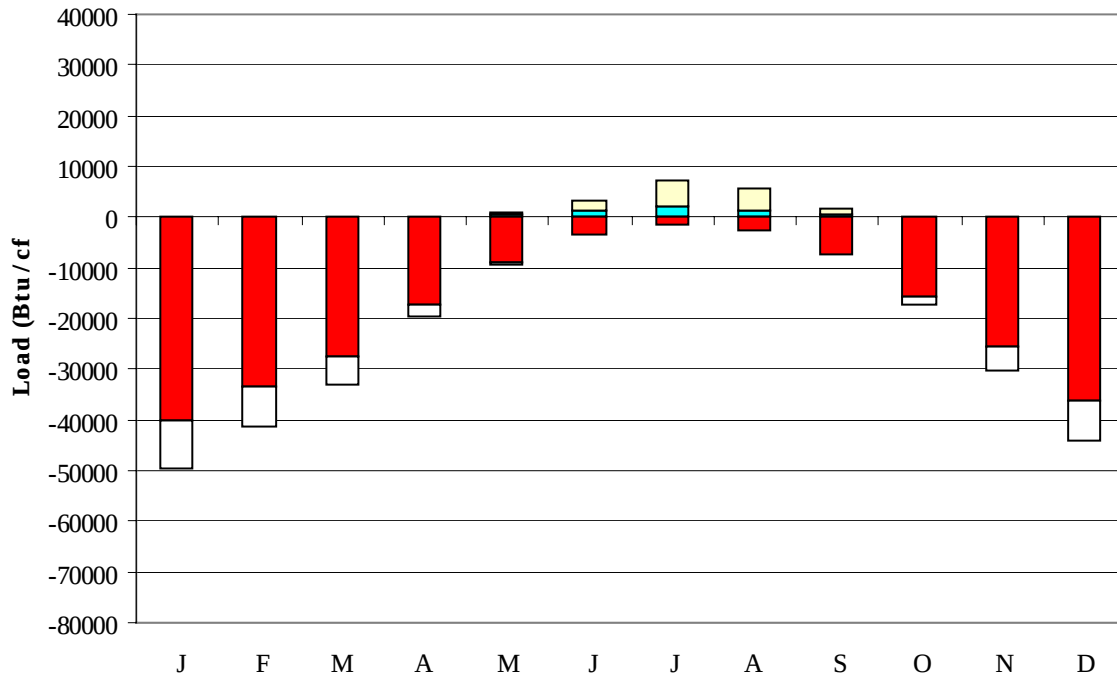
Degree Days, Heating and Cooling (Base 65°F)



■ Mean Cooling Degree Days
 ■ Mean Heating Degree Days

	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	1460
FEB	0	1204
MAR	2	961
APR	16	576
MAY	69	274
JUN	171	91
JUL	260	37
AUG	199	64
SEP	76	215
OCT	12	516
NOV	0	895
DEC	0	1298
ANN	806	7591

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	-40253	0	-9496
FEB	0	-33417	0	-7781
MAR	4	-27305	0	-5545
APR	66	-17089	7	-2643
MAY	360	-8907	458	-557
JUN	1186	-3431	1989	-9
JUL	2035	-1641	5134	0
AUG	1308	-2568	4526	0
SEP	367	-7208	1436	-121
OCT	28	-15646	55	-1406
NOV	0	-25524	0	-4592
DEC	0	-36065	0	-7951
ANN	5354	-219054	13605	-40101

Average Annual Solar Radiation – Nearest Available Site

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

City: MADISON
 State: WI
 WBAN No: 14837
 Lat(N): 43.13
 Long(W): 89.33
 Elev(ft): 860

Stn Type: Primary
 SHADING GEOMETRY IN DIMENSIONLESS UNITS

Window: 1
 Overhang: 0.624
 Vert Gap: 0.33

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	580	870	1170	1490	1820	2010	1970	1710	1300	900	550	460	1240
	Std Dev	56	68	107	127	183	129	117	143	106	88	60	56	57
	Minimum	420	680	940	1240	1370	1780	1760	1410	1080	710	390	320	1110
	Maximum	690	1000	1360	1690	2200	2310	2210	1970	1480	1110	680	580	1350
	Diffuse	310	450	600	730	840	910	910	810	620	440	310	270	600
Clear Day	Global	780	1130	1620	2130	2480	2610	2510	2210	1740	1220	820	670	1660
NORTH	Global	190	270	350	440	550	630	600	500	370	270	190	160	380
	Diffuse	190	270	350	430	510	550	540	480	370	270	190	160	360
Clear Day	Global	160	230	310	420	580	680	620	470	350	250	170	150	370
EAST	Global	400	580	730	890	1050	1130	1110	990	790	590	370	310	750
	Diffuse	230	330	430	520	610	660	660	590	460	330	220	190	440
Clear Day	Global	620	840	1100	1330	1450	1480	1440	1330	1130	870	640	550	1070
SOUTH	Global	1010	1150	1100	990	920	880	920	1010	1060	1050	810	810	980
	Diffuse	350	460	510	550	590	620	620	610	520	430	320	300	490
Clear Day	Global	1840	1960	1860	1520	1200	1060	1100	1340	1660	1840	1790	1740	1570
WEST	Global	400	570	720	860	1010	1100	1080	970	780	570	360	310	730
	Diffuse	230	340	430	530	620	670	670	600	470	340	230	190	440
Clear Day	Global	620	840	1100	1330	1450	1480	1440	1330	1130	870	640	550	1070

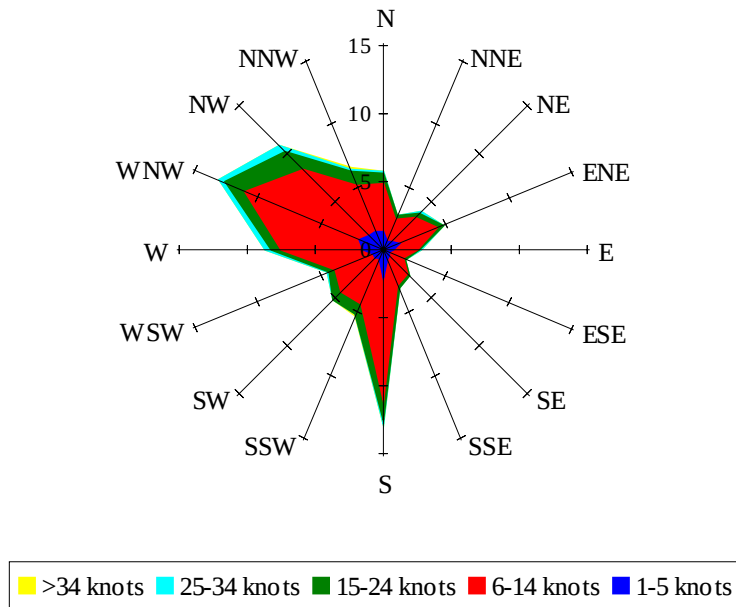
Average Annual Solar Heat and Illumination – Nearest Available Site

(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	370	580	820	1060	1310	1460	1430	1230	920	620	360	290	870
NORTH	Unshaded	130	190	240	300	370	420	400	340	260	190	130	110	260
	Shaded	110	160	210	260	320	360	350	290	220	160	110	90	220
EAST	Unshaded	270	400	520	630	740	800	790	710	560	410	250	210	530
	Shaded	240	350	440	520	610	660	640	580	470	350	220	180	440
SOUTH	Unshaded	760	850	780	660	580	550	570	660	730	760	610	610	680
	Shaded	740	780	590	410	350	370	370	390	510	650	580	590	530
WEST	Unshaded	270	390	500	610	720	780	770	690	550	400	250	210	510
	Shaded	240	340	430	500	590	630	630	570	460	340	210	180	430

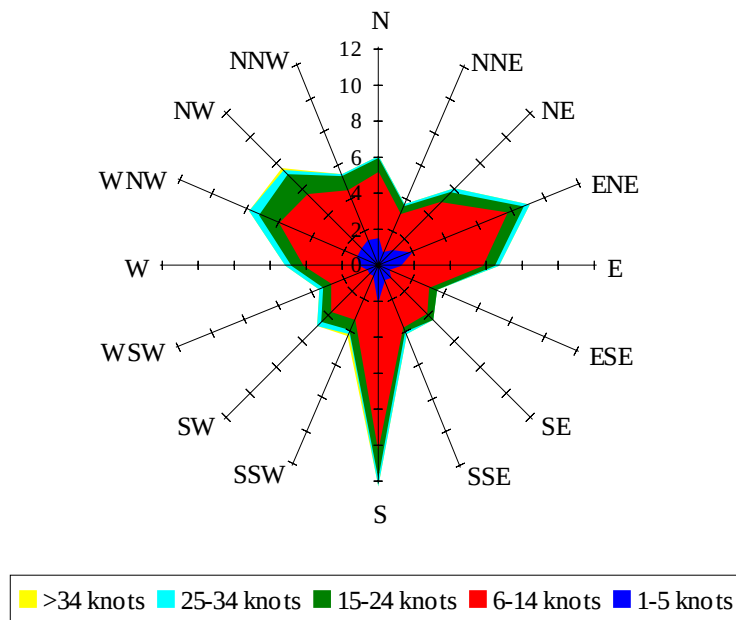
AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9		March					June				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	39	68	77	60	23	50	83	100	93	66
	M.Cloudy	23	45	50	37	14	33	58	71	69	47
NORTH	M.Clear	10	13	15	13	7	15	16	18	18	15
	M.Cloudy	9	16	17	14	6	13	18	20	20	16
EAST	M.Clear	72	53	15	13	7	78	70	29	18	15
	M.Cloudy	27	30	17	14	6	38	44	26	20	16
SOUTH	M.Clear	43	76	87	67	24	12	37	53	47	23
	M.Cloudy	18	39	44	31	10	12	28	39	37	20
WEST	M.Clear	10	13	25	67	59	12	16	18	54	77
	M.Cloudy	9	16	21	31	19	12	18	20	41	46
M.Clear	(% hrs)	30	28	27	28	28	41	38	32	29	36
		Sept					Dec				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	28	64	80	72	41	12	35	40	22	0
	M.Cloudy	16	39	51	47	27	7	21	24	13	0
NORTH	M.Clear	8	14	16	15	12	5	9	10	7	0
	M.Cloudy	7	14	17	16	11	3	9	10	6	0
EAST	M.Clear	61	66	25	15	12	34	34	10	7	0
	M.Cloudy	20	31	21	16	11	8	15	10	6	0
SOUTH	M.Clear	23	60	78	69	35	32	76	84	52	0
	M.Cloudy	10	29	41	37	19	8	26	30	16	0
WEST	M.Clear	8	14	16	53	66	5	9	22	41	0
	M.Cloudy	7	14	17	31	30	3	9	13	14	0
M.Clear	(% hrs)	41	39	35	35	39	27	27	28	28	31

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



Percent Calm = 6.76

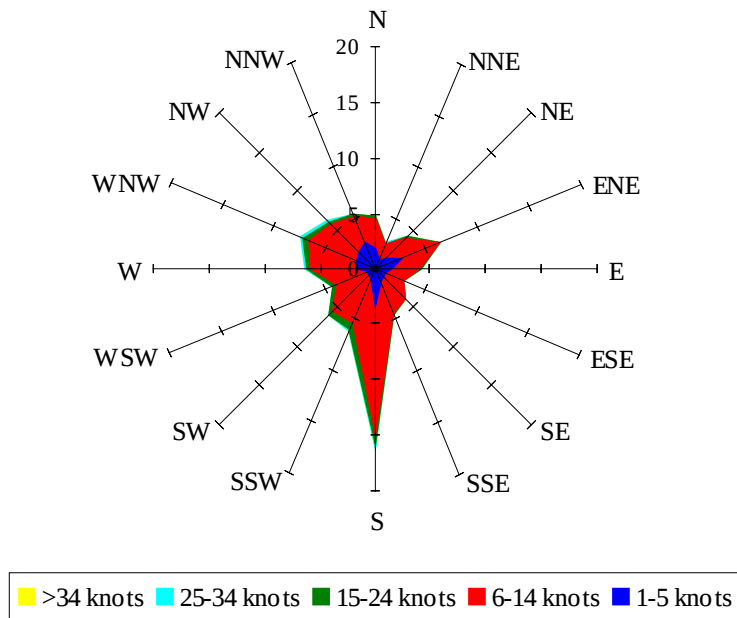
Wind Summary - March, April, and May **Labels of Percent Frequency on North Axis**



Percent Calm = 7.35

Wind Summary - June, July, and August

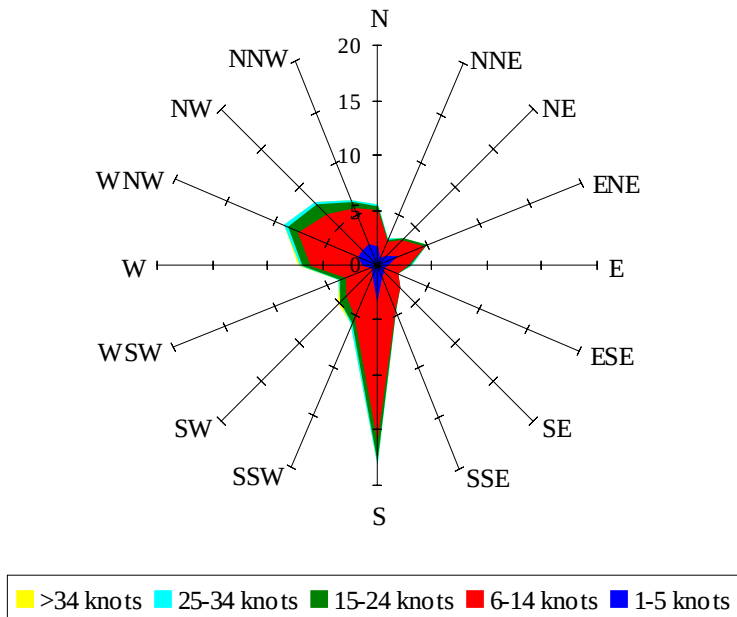
Labels of Percent Frequency on North Axis



Percent Calm = 10.67

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 9.17