

BEIJING/PEKING CI

Latitude = 39.93 N

Longitude = 116.28 E

Period of Record = 1973 to 1996

WMO No. 545110

Elevation = 180 feet

Average Pressure = 29.81 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	99	71	73	6.9	VARIABLE
0.4% Occurrence	93	72	90	7.6	S
1.0% Occurrence	91	72	94	7.1	VARIABLE
2.0% Occurrence	89	72	97	6.8	VARIABLE
Mean Daily Range	18	-	-	-	-
97.5% Occurrence	19	15	6	5.4	N
99.0% Occurrence	16	13	6	4.9	N
99.6% Occurrence	12	10	5	4.3	NNE
Median of Extreme Lows	7	5	4	4.6	NNE
	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	82	88	155	5.1	VARIABLE
0.4% Occurrence	80	86	145	4.8	VARIABLE
1.0% Occurrence	79	85	140	4.5	VARIABLE
2.0% Occurrence	77	83	131	4.3	VARIABLE
	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	162	85	1.06	4.1	VARIABLE
0.4% Occurrence	152	84	0.99	4.0	VARIABLE
1.0% Occurrence	143	83	0.94	4.2	VARIABLE
2.0% Occurrence	134	81	0.88	3.9	VARIABLE
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		57	1044	751	1843

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
7	N/A	N/A	1.7 + 0.9
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 (#)
57.6	N/A	N/A	89

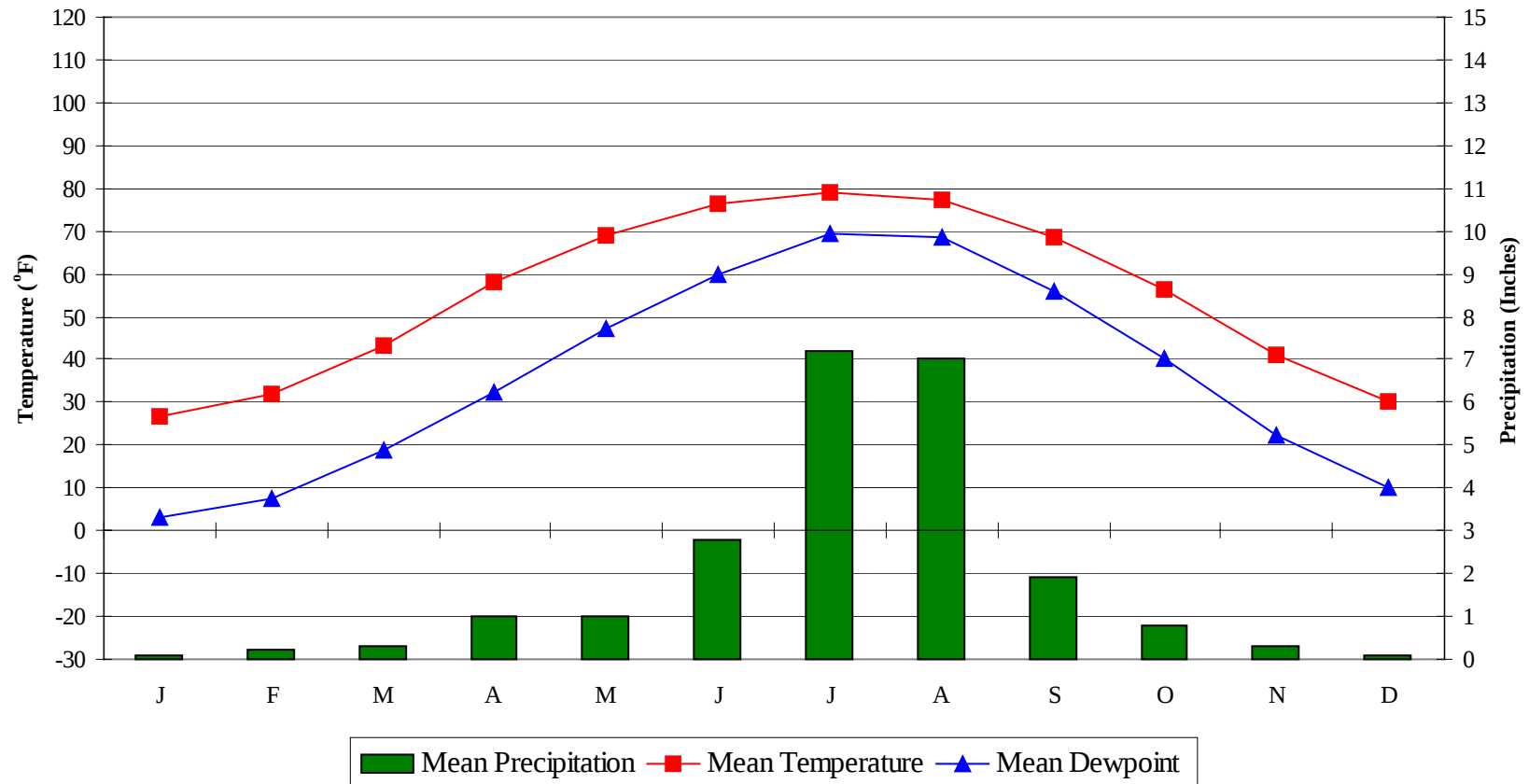
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

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Average Annual Climate

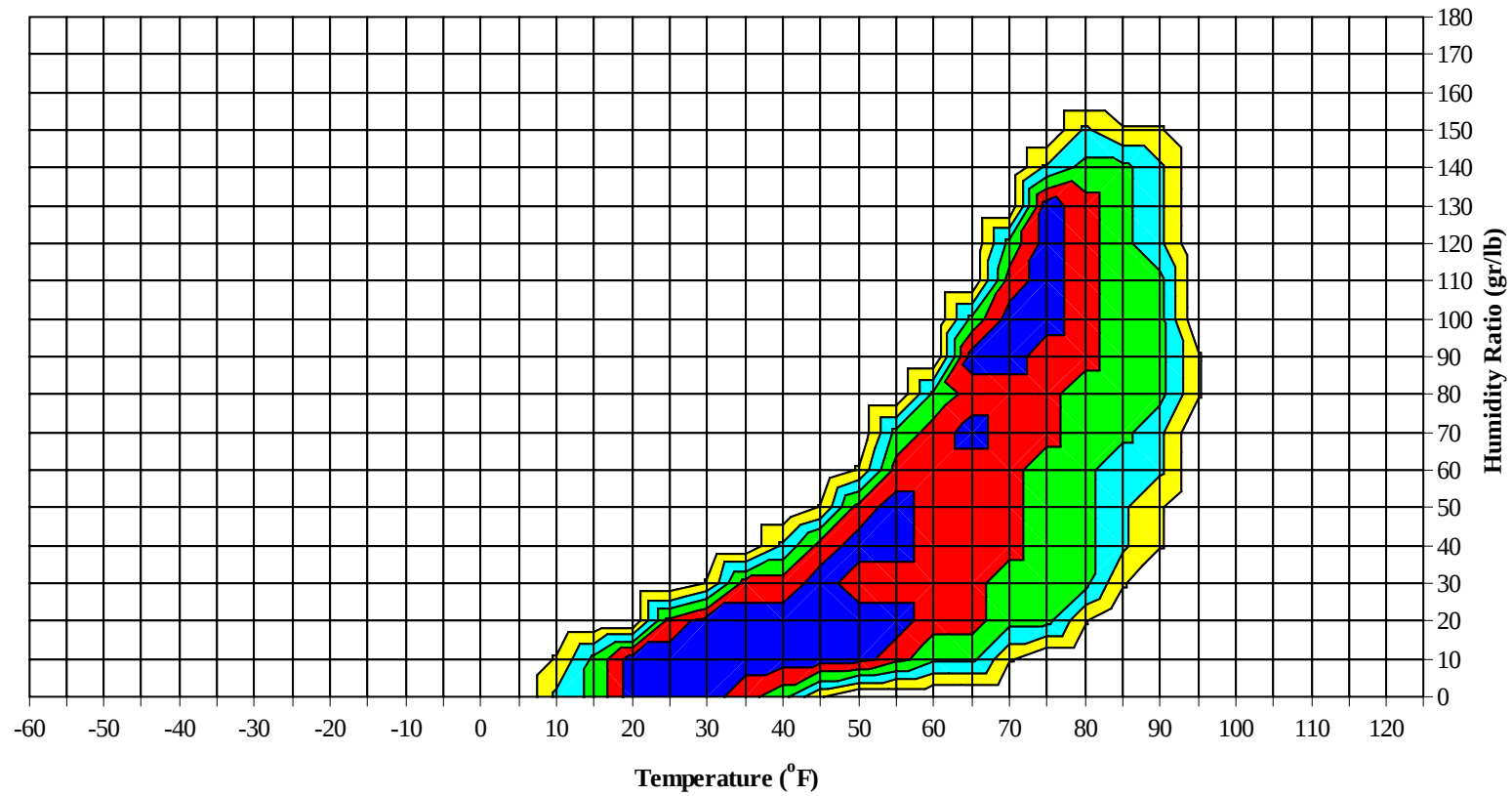


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Long Term Psychrometric Summary



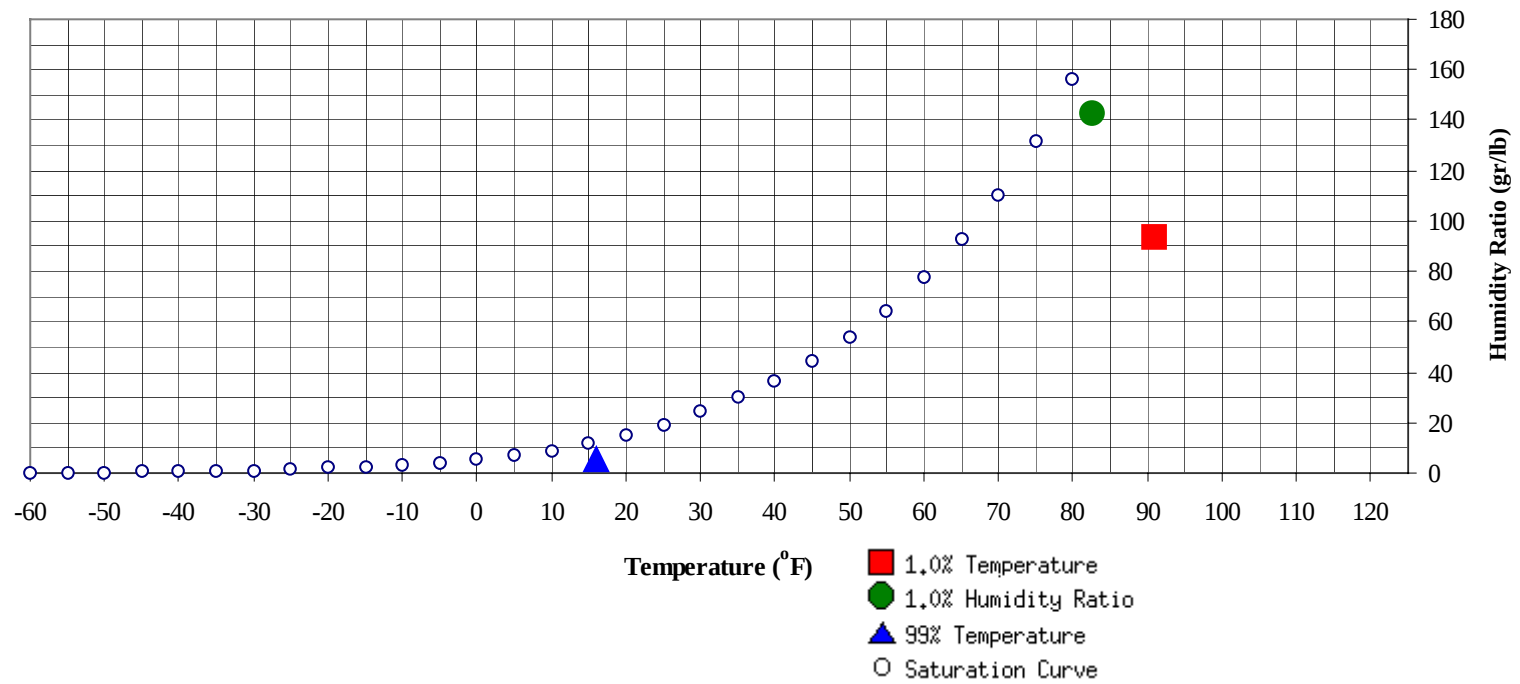
- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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Psychrometric Summary of Peak Design Values



99% Dry Bulb	(°F)	MCHR (gr/lb)	Enthalpy (btu/lb)	1.0% Humidity Ratio	(gr/lb)	MCDB (°F)	MCWB (°F)	MC Dewpt (°F)	Enthalpy (btu/lb)
	16	5.6	4.7		142.8	82.7	78.5	77	42.2

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	91	93.7	72.7	36.6

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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		
105 / 109															
100 / 104															
95 / 99															
90 / 94															
85 / 89															
80 / 84															
75 / 79												0	0	0	51.1
70 / 74												2	1	3	50.5
65 / 69							0		0	46.3		0	4	3	7 48.0
60 / 64							1	0	1	43.4		0	17	9	26 45.6
55 / 59						0	3	2	5	40.6		1	36	25	62 42.7
50 / 54	0	2	0	2	36.7	0	8	4	12	37.7	5	49	41	95	39.9
45 / 49	0	7	2	9	34.0	1	27	11	40	34.7	25	56	57	139	37.1
40 / 44	1	18	6	25	31.1	2	36	25	63	31.9	45	38	47	130	34.2
35 / 39	2	49	24	75	28.2	11	60	53	123	29.4	65	30	42	137	31.3
30 / 34	17	73	61	151	25.1	46	52	67	165	26.4	70	13	19	102	27.9
25 / 29	53	59	85	198	21.8	73	25	42	139	22.3	31	2	5	38	23.2
20 / 24	61	25	43	129	18.1	46	8	13	68	17.9	4	0	0	4	18.0
15 / 19	77	12	24	113	14.3	32	3	6	40	14.0	1			1	14.5
10 / 14	29	2	4	35	10.0	13	0	2	15	9.9					
5 / 9	7	0	1	8	5.4	1	0		1	5.6					
0 / 4	0			0	1.3										

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.

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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	09	17			01	09	17			01	09	17		
	To 08	To 16	To 00			To 08	To 16	To 00			To 08	To 16	To 00		
105 / 109											1 0 1 69.7				
100 / 104											7 2 9 69.4				
95 / 99						2 1 3 68.7					33 16 49 68.8				
90 / 94	0 0 59.0					10 3 13 66.1					0 44 30 74 68.4				
85 / 89	1 0 1 57.6					16 8 24 64.8					5 65 52 123 67.8				
80 / 84	0 6 3 9 58.1					0 46 25 71 62.3					35 50 58 143 66.8				
75 / 79	0 21 10 31 56.6					4 57 45 106 60.5					89 28 49 166 65.5				
70 / 74	1 38 27 66 53.6					19 54 54 128 58.7					66 10 24 100 63.5				
65 / 69	3 38 33 75 51.2					78 23 42 143 54.7					8 0 1 9 54.8				
60 / 64	18 54 51 124 49.3					66 9 22 97 51.4					1 0 1 2 52.2				
55 / 59	50 43 50 143 46.5					7 0 1 8 42.9					0 0 0				
50 / 54	64 25 38 127 43.9					1 0 1 39.1									
45 / 49	55 11 19 86 40.2					0 0 0 38.5									
40 / 44	29 2 6 36 36.6														
35 / 39	16 0 2 18 32.7														
30 / 34	3 3 29.1														
25 / 29															
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															

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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		
105 / 109							0		0	74.0					
100 / 104		0		0	69.3		0	0	0	75.0					
95 / 99		7	2	9	75.2		4	0	4	77.5					
90 / 94	0	36	16	52	75.6	0	23	6	29	76.4		1	0	1	69.4
85 / 89	0	51	36	87	74.9	0	50	27	77	74.8		9	2	11	69.3
80 / 84	17	77	73	167	74.4	8	86	62	157	73.6	0	40	15	55	67.6
75 / 79	96	51	72	219	72.5	71	56	83	211	72.3	3	74	39	116	64.5
70 / 74	107	22	41	171	69.5	107	21	51	179	69.2	24	64	61	149	63.3
65 / 69	26	4	7	37	65.7	45	5	16	66	65.6	52	30	55	137	61.4
60 / 64	2	0	0	2	62.3	16	2	3	21	61.6	83	18	48	149	58.5
55 / 59						1		0	1	56.5	52	4	16	72	53.6
50 / 54											21	0	4	25	48.9
45 / 49											5		0	5	45.0
40 / 44											0			0	42.0
35 / 39															
30 / 34															
25 / 29															
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															

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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		
105 / 109															
100 / 104															
95 / 99															
90 / 94															
85 / 89															
80 / 84		2	0	2	61.2										
75 / 79	0	14	4	18	59.1										
70 / 74	0	39	11	49	56.7		0		0	50.2					
65 / 69	2	43	22	67	55.0		5	0	5	48.6			0	0	47.0
60 / 64	15	62	50	126	53.0	0	13	2	15	46.8		0	0	0	45.0
55 / 59	47	49	64	160	50.2	1	26	10	38	45.5		1	0	1	40.7
50 / 54	75	27	56	157	46.6	6	47	27	80	42.4		4	0	4	38.3
45 / 49	59	10	30	98	42.0	23	53	50	127	39.5	0	20	5	25	35.2
40 / 44	29	2	9	40	38.0	39	36	43	118	35.6	2	33	14	49	32.6
35 / 39	18	1	3	22	33.5	58	35	55	148	32.1	15	63	41	119	29.8
30 / 34	3	0	1	4	29.8	59	16	35	110	27.8	46	62	77	185	26.5
25 / 29	0			0	27.0	38	8	11	57	23.3	78	45	71	194	22.7
20 / 24						11	1	5	16	18.6	55	14	26	95	18.8
15 / 19						4	0	1	5	15.1	40	5	12	57	14.8
10 / 14						0			0	11.2	10	1	2	13	10.5
5 / 9											1			1	7.1
0 / 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.

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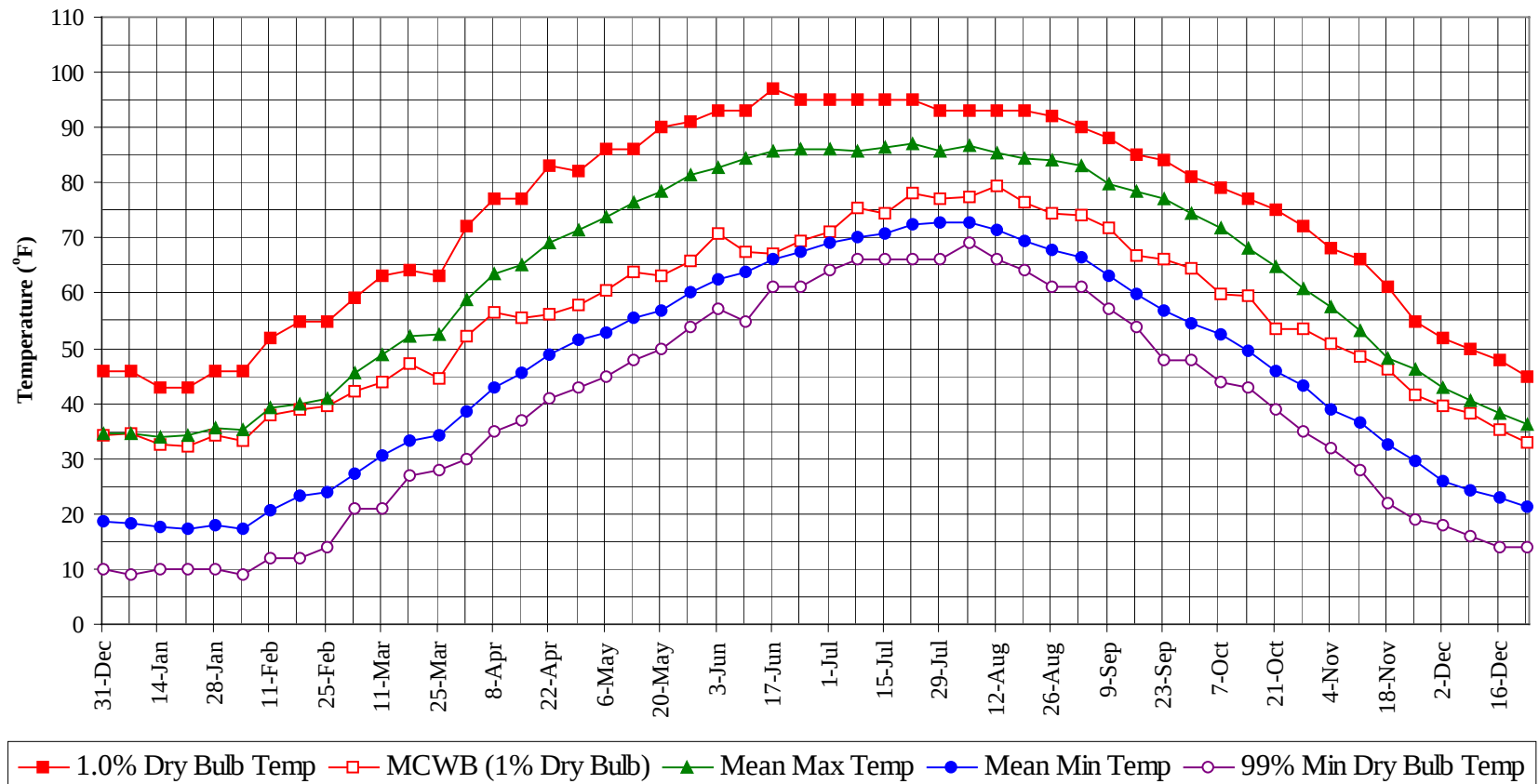
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)

Period of Record = 1973 to 1996

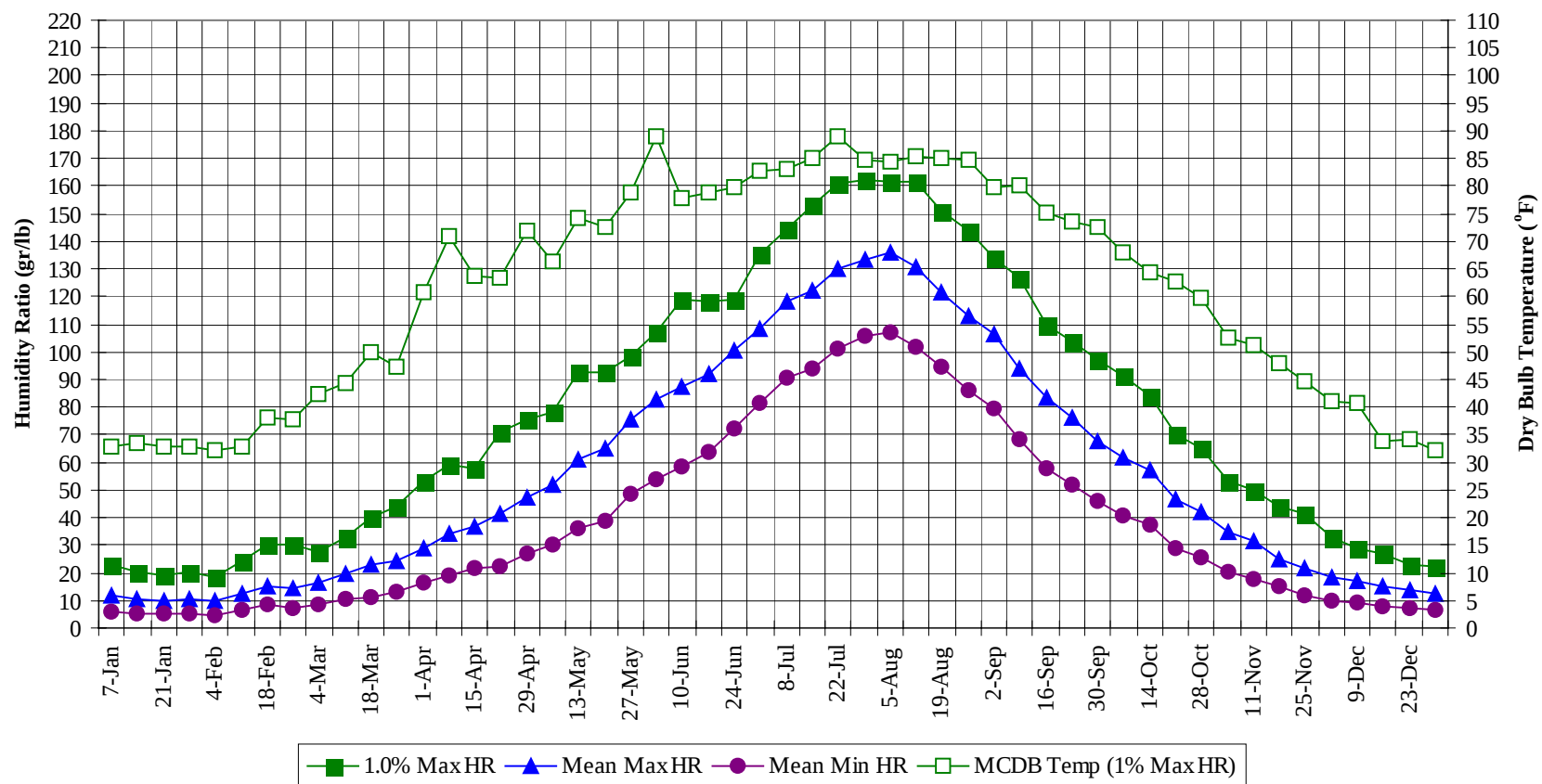
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
105 / 109		0		0	74.0
100 / 104		1	0	1	70.2
95 / 99		20	5	25	72.9
90 / 94	0	104	42	146	72.5
85 / 89	0	173	104	277	71.9
80 / 84	31	325	233	590	70.4
75 / 79	211	327	313	850	68.0
70 / 74	350	270	295	914	64.2
65 / 69	239	167	204	610	59.4
60 / 64	249	190	213	652	54.3
55 / 59	227	168	189	585	48.8
50 / 54	203	165	176	544	44.0
45 / 49	175	185	175	535	38.9
40 / 44	149	166	148	463	34.4
35 / 39	184	236	219	639	30.6
30 / 34	243	214	258	715	26.6
25 / 29	271	137	212	620	22.4
20 / 24	175	47	86	308	18.3
15 / 19	152	20	42	214	14.4
10 / 14	51	3	8	62	10.1
5 / 9	9	0	1	10	5.6
0 / 4	0			0	1.3

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.

Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary



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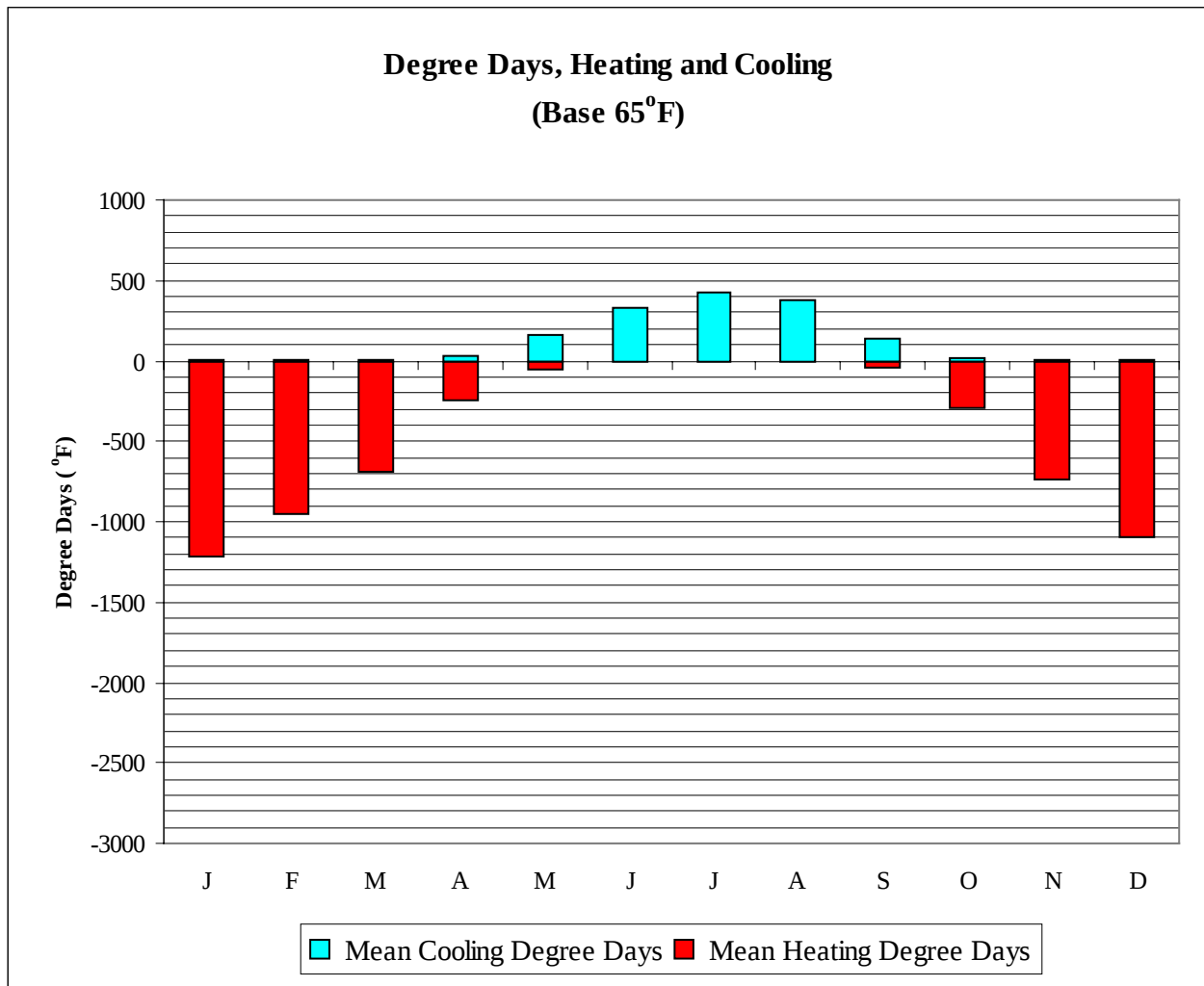
Long Term Dry Bulb Temperature and Humidity Summary

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	46.0	34.6	34.6	18.3	9.0	23.1	32.8	11.6	6.2
14-Jan	43.0	32.6	34.0	17.6	10.0	20.3	33.6	10.7	5.3
21-Jan	43.0	32.4	34.1	17.2	10.0	18.9	32.9	10.0	5.2
28-Jan	46.0	34.2	35.7	17.9	10.0	20.3	32.9	10.4	5.3
4-Feb	46.0	33.3	35.1	17.4	9.0	18.2	32.3	9.7	4.9
11-Feb	52.0	37.9	39.3	20.8	12.0	24.5	32.7	12.5	6.7
18-Feb	55.0	38.8	39.9	23.1	12.0	30.1	38.0	15.3	8.4
25-Feb	55.0	39.6	40.8	23.9	14.0	30.1	37.7	14.7	7.3
4-Mar	59.0	42.3	45.4	27.1	21.0	27.3	42.4	16.5	8.6
11-Mar	63.0	44.0	48.7	30.7	21.0	32.9	44.4	20.0	10.6
18-Mar	64.0	47.1	52.1	33.1	27.0	39.9	49.9	22.8	11.4
25-Mar	63.0	44.6	52.4	34.3	28.0	44.1	47.1	24.2	12.9
1-Apr	72.0	52.1	58.9	38.7	30.0	53.2	60.8	29.2	16.4
8-Apr	77.0	56.4	63.6	43.0	35.0	58.8	71.0	34.2	19.0
15-Apr	77.0	55.4	65.2	45.7	37.0	58.1	63.7	37.1	21.5
22-Apr	83.0	56.0	69.2	48.7	41.0	70.7	63.3	41.5	22.4
29-Apr	82.0	57.9	71.4	51.4	43.0	75.6	72.1	47.1	26.6
6-May	86.0	60.5	73.7	52.8	45.0	78.4	66.3	52.2	30.0
13-May	86.0	63.9	76.4	55.6	48.0	92.4	74.2	61.3	36.1
20-May	90.0	63.2	78.5	56.7	50.0	92.4	72.6	65.0	38.6
27-May	91.0	66.0	81.5	60.1	54.0	98.7	78.7	75.8	48.5
3-Jun	93.0	70.7	82.7	62.5	57.0	107.1	89.0	82.9	53.9
10-Jun	93.0	67.4	84.4	63.9	55.0	119.0	77.8	87.5	58.6
17-Jun	97.0	67.0	85.8	66.0	61.0	118.3	78.7	92.2	63.5
24-Jun	95.0	69.6	86.1	67.4	61.0	119.0	79.9	100.2	72.2
1-Jul	95.0	71.2	86.1	69.2	64.0	135.1	82.9	108.5	81.2
8-Jul	95.0	75.3	85.8	70.1	66.0	144.2	83.1	118.1	90.5
15-Jul	95.0	74.4	86.3	70.9	66.0	153.3	85.1	122.5	93.8
22-Jul	95.0	78.1	87.2	72.3	66.0	161.0	89.1	129.9	101.3
29-Jul	93.0	77.0	85.8	72.8	66.0	162.4	84.6	133.6	105.6
5-Aug	93.0	77.5	86.9	72.7	69.0	161.7	84.5	136.1	107.2
12-Aug	93.0	79.3	85.6	71.6	66.0	161.7	85.3	130.5	101.6
19-Aug	93.0	76.5	84.3	69.4	64.0	151.2	85.0	121.3	94.3
26-Aug	92.0	74.5	84.1	67.9	61.0	143.5	84.6	112.7	86.1
2-Sep	90.0	74.0	83.2	66.4	61.0	133.7	79.7	106.4	79.8
9-Sep	88.0	71.8	79.8	63.1	57.0	126.7	80.1	93.7	68.2
16-Sep	85.0	66.7	78.3	59.9	54.0	109.9	75.3	83.4	58.0
23-Sep	84.0	66.1	77.1	56.8	48.0	103.6	73.6	76.4	51.7
30-Sep	81.0	64.5	74.5	54.6	48.0	97.3	72.7	68.0	45.7
7-Oct	79.0	59.7	71.9	52.4	44.0	91.0	68.1	61.7	40.6
14-Oct	77.0	59.5	68.1	49.6	43.0	84.0	64.3	56.9	37.1
21-Oct	75.0	53.4	64.8	45.8	39.0	70.0	62.6	46.9	28.9
28-Oct	72.0	53.5	60.8	43.1	35.0	65.1	59.7	41.7	25.9
4-Nov	68.0	50.8	57.6	39.0	32.0	53.2	52.4	34.8	20.4
11-Nov	66.0	48.6	53.2	36.6	28.0	49.7	51.3	31.7	18.0
18-Nov	61.0	46.2	48.3	32.4	22.0	44.1	47.9	25.2	14.9
25-Nov	55.0	41.4	46.2	29.6	19.0	41.7	44.7	21.6	12.0
2-Dec	52.0	39.5	42.8	26.0	18.0	32.9	41.1	18.1	9.7
9-Dec	50.0	38.1	40.7	24.4	16.0	28.7	40.6	17.0	9.3
16-Dec	48.0	35.1	38.2	23.0	14.0	26.6	33.8	15.0	8.0
23-Dec	45.0	32.9	36.4	21.4	14.0	23.1	34.1	13.5	7.1
31-Dec	46.0	34.3	34.7	18.7	10.0	22.4	32.2	12.2	6.4

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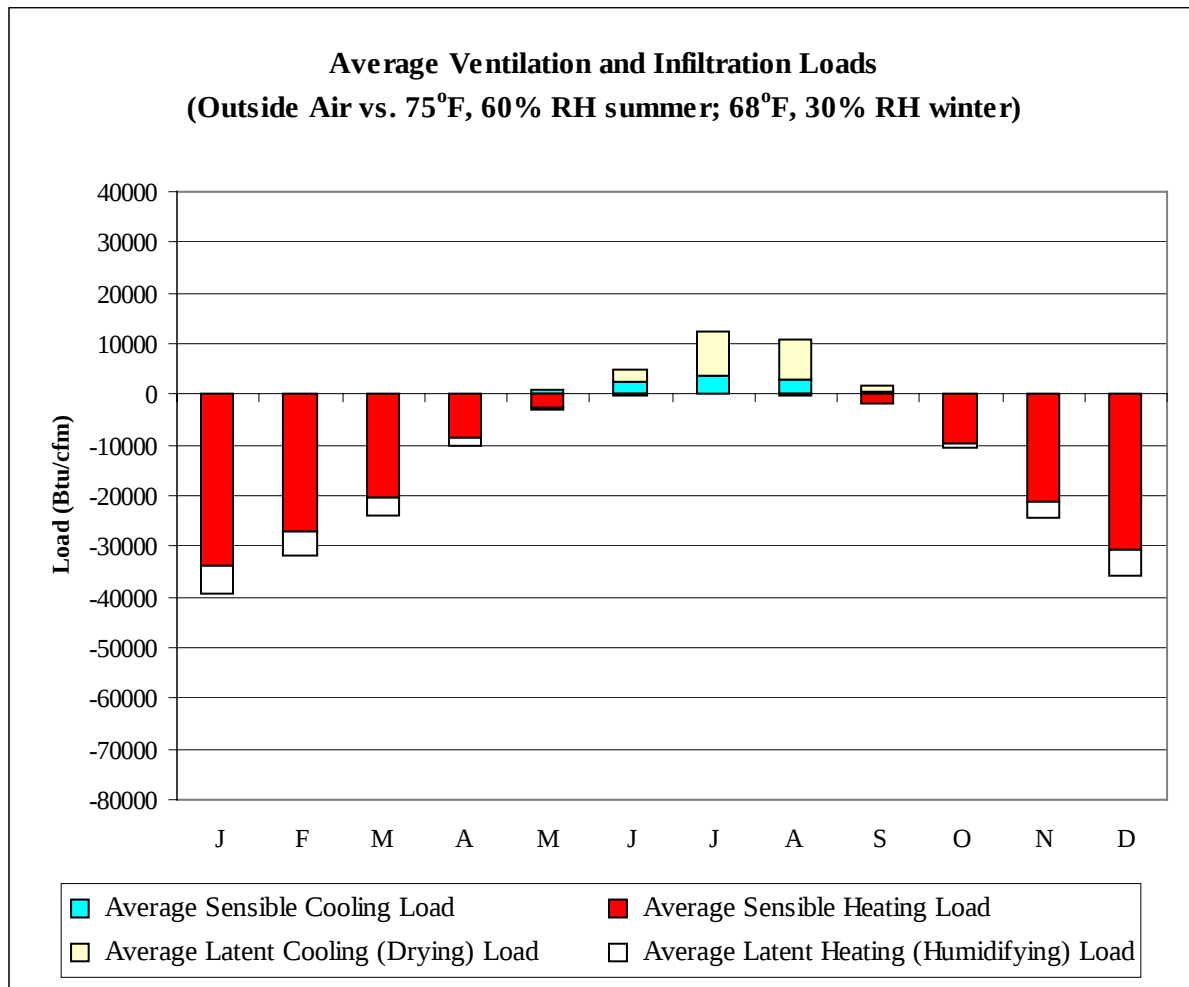


	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	1211
FEB	0	956
MAR	1	688
APR	30	250
MAY	159	56
JUN	335	4
JUL	427	0
AUG	373	1
SEP	140	40
OCT	18	296
NOV	0	732
DEC	0	1100
ANN	1483	5334

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	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	-33685	0	-5849
FEB	0	-26957	0	-4881
MAR	1	-20198	0	-3760
APR	75	-8543	1	-1628
MAY	831	-2584	223	-354
JUN	2572	-305	2272	-14
JUL	3689	-26	8698	0
AUG	2757	-106	8066	0
SEP	483	-1954	1309	-61
OCT	23	-9682	22	-855
NOV	0	-21125	0	-3099
DEC	0	-30739	0	-5246
ANN	10431	-155904	20591	-25747

Average Annual Solar Radiation – Nearest Available Site
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

No Solar Radiation
Data Available

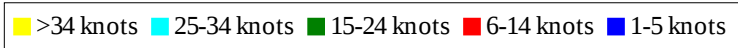
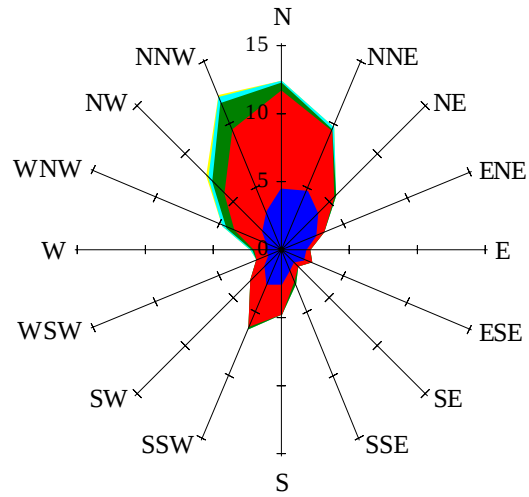


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

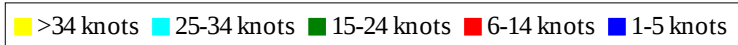
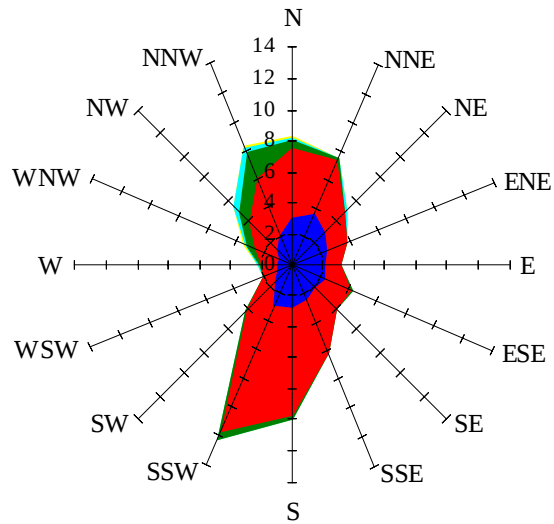
Labels of Percent Frequency on North Axis



Percent Calm = 18.68

Wind Summary - March, April, and May

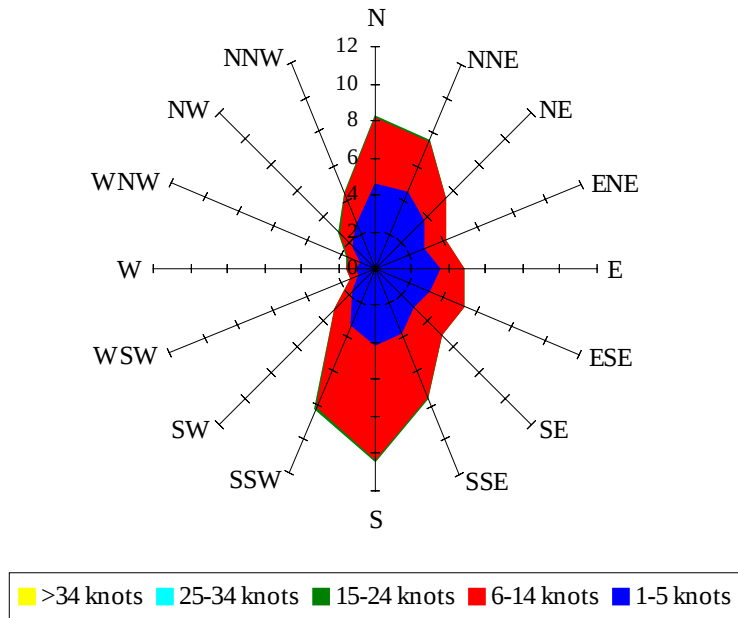
Labels of Percent Frequency on North Axis



Percent Calm = 11.43

Wind Summary - June, July, and August

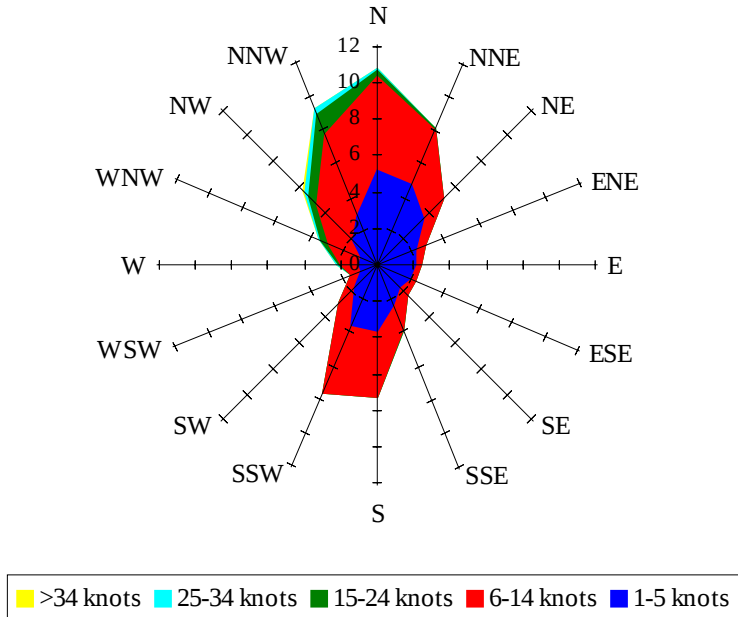
Labels of Percent Frequency on North Axis



Percent Calm = 18.97

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 22.71