

CHIAYI, TAIWAN

Latitude = 23.47 N

Longitude = 120.38 E

Period of Record = 1973 to 1996

WMO No. 467460

Elevation = 82 feet

Average Pressure = 29.77 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	97	81	135	10.9	SSW
0.4% Occurrence	93	82	146	10.0	W
1.0% Occurrence	91	81	144	9.0	W
2.0% Occurrence	91	81	144	9.0	W
Mean Daily Range	15	-	-	-	-
97.5% Occurrence	53	51	52	6.3	N
99.0% Occurrence	50	48	47	6.3	N
99.6% Occurrence	46	44	40	5.3	N
Median of Extreme Lows	41	40	34	7.8	N
	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	86	91	174	9.8	W
0.4% Occurrence	84	90	164	9.4	W
1.0% Occurrence	83	89	157	9.0	W
2.0% Occurrence	82	88	154	8.5	W
	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	193	91	1.26	11.0	SSW
0.4% Occurrence	167	88	1.09	8.3	NNW
1.0% Occurrence	161	87	1.06	8.1	W
2.0% Occurrence	160	87	1.05	8.0	W
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		58	2491	3937	5392

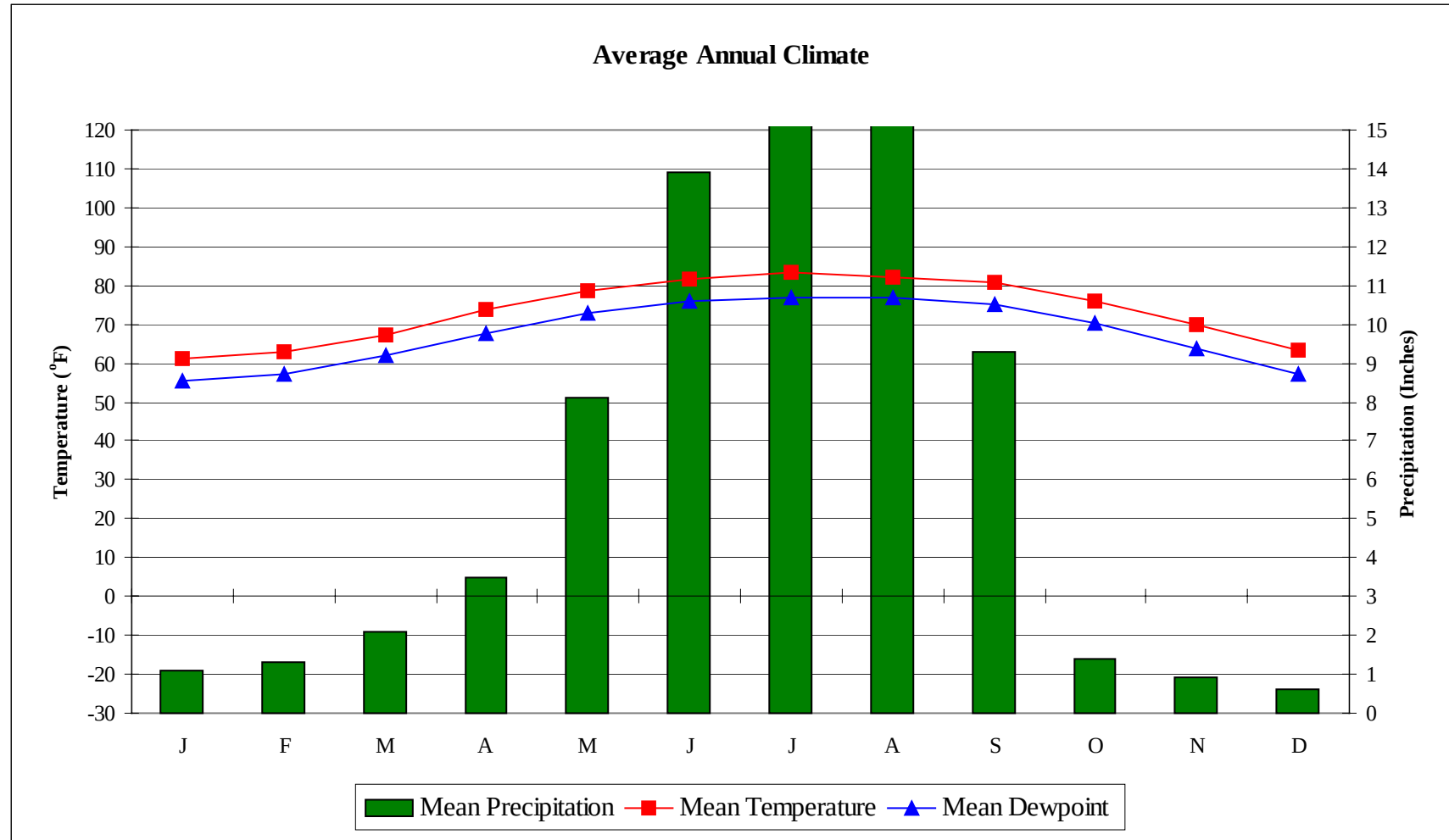
Other Site Data

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
10	N/A	N/A	13.0 + 2.6
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 (#)
75.9	N/A	N/A	0

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

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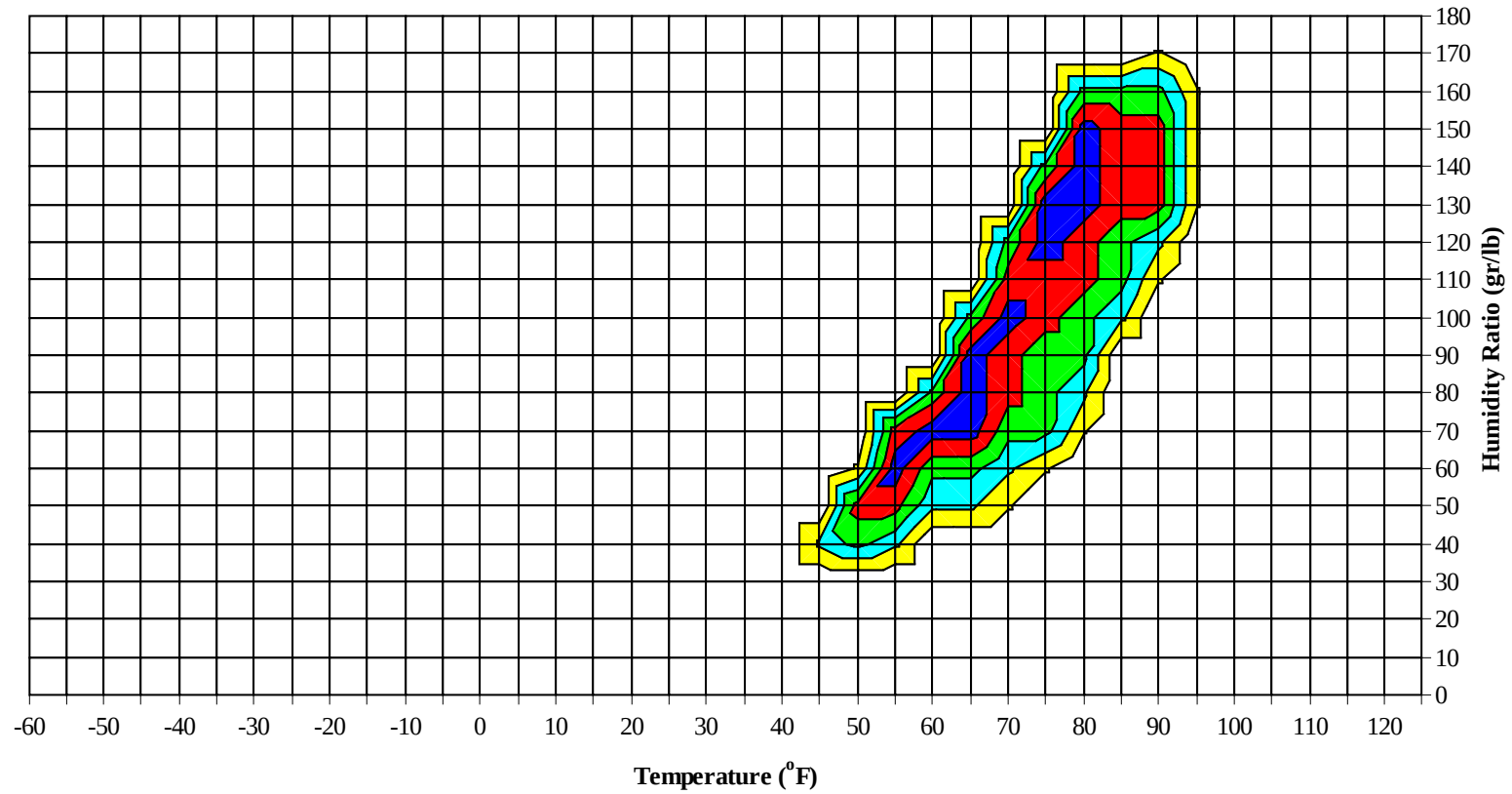
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Long Term Psychrometric Summary

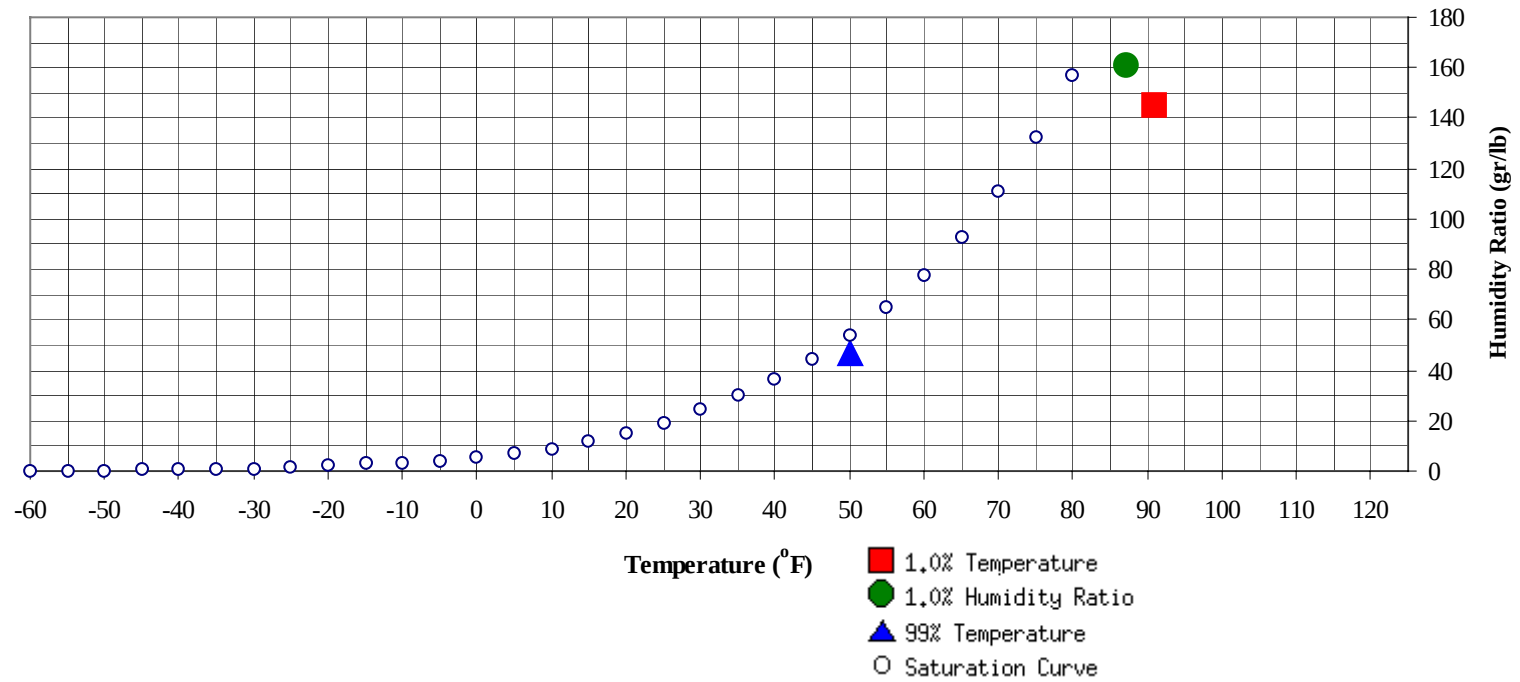


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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Psychrometric Summary of Peak Design Values



	(°F)	MCHR	Enthalpy	1.0% Humidity Ratio	(gr/lb)	MCDB	MCWB	MC Dewpt	Enthalpy
		(gr/lb)	(btu/lb)			(°F)	(°F)	(°F)	(btu/lb)
99% Dry Bulb	50	47	19.3	Ratio	161	87.2	82.3	80.6	46.2

1.0% Dry Bulb	(°F)	MCHR	MCWB	Enthalpy
		(gr/lb)	(°F)	(btu/lb)
91	145.4	81.1	44.7	

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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		
95 / 99															
90 / 94						0			0	74.0		1	0	1	75.7
85 / 89		0		0	70.8	2			2	74.0		10	0	10	74.9
80 / 84		6	0	6	69.6	0	15	2	17	71.7	0	45	6	51	73.0
75 / 79		26	2	28	66.6	0	32	8	40	68.2	2	55	27	84	70.2
70 / 74	1	65	14	80	63.9	8	51	26	84	65.6	31	56	62	150	67.6
65 / 69	5	51	31	87	62.0	11	35	30	76	62.9	50	29	53	132	64.7
60 / 64	59	64	95	218	59.6	62	54	80	196	59.9	92	33	62	187	60.8
55 / 59	99	28	75	202	55.1	89	26	57	173	55.5	52	14	32	98	55.6
50 / 54	64	7	27	98	50.7	40	7	18	65	50.7	15	3	6	24	50.8
45 / 49	18	1	4	23	45.8	12	1	4	17	45.4	4	0	1	5	45.7
40 / 44	2	0	0	2	41.3	1	0	0	1	40.8	1		0	1	42.1
35 / 39	1	0	0	1	37.3	0		0	0	39.0					

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.

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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 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		
95 / 99	0	0		0	80.0		1		1	80.3		3		3	81.7
90 / 94	0	15	0	15	77.9		36	1	37	79.9	0	84	7	91	80.9
85 / 89	0	38	3	41	76.7	0	73	13	86	78.5	5	74	25	104	79.6
80 / 84	3	76	27	106	74.5	16	87	64	168	76.7	53	54	105	212	78.0
75 / 79	31	51	73	154	72.6	116	37	114	267	74.5	157	23	94	275	75.6
70 / 74	94	35	79	208	69.4	98	12	48	158	70.8	24	2	8	34	71.7
65 / 69	58	12	31	102	65.6	14	1	6	21	66.0	1	0		1	67.1
60 / 64	40	10	21	71	61.3	4	1	2	7	62.6	0			0	64.0
55 / 59	12	2	6	20	56.3	0			0	59.0					
50 / 54	2	0	1	3	51.7										
45 / 49															
40 / 44															
35 / 39															

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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		
95 / 99	0	3	0	3	82.0		1		1	82.5		0		0	81.0
90 / 94	0	128	12	140	81.1		94	5	99	81.6	0	59	1	60	80.9
85 / 89	6	71	36	113	79.8	2	83	26	111	80.3	1	93	16	110	79.4
80 / 84	98	36	130	265	78.4	73	57	125	256	78.7	29	70	90	189	77.7
75 / 79	141	10	69	220	76.0	165	13	90	267	76.1	160	17	116	293	75.2
70 / 74	3	0	1	4	72.2	8	0	2	10	71.8	47	1	17	65	70.7
65 / 69						0			0	66.0	3		1	4	66.9
60 / 64															
55 / 59															
50 / 54															
45 / 49															
40 / 44															
35 / 39															

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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		
95 / 99		0		0	83.0										
90 / 94		11		11	79.3	0	0		0	77.6					
85 / 89	0	59	2	61	77.7	0	10	0	10	75.9		1		1	74.2
80 / 84	2	111	28	141	75.4	0	64	3	67	73.1	0	14	0	14	70.6
75 / 79	50	47	98	195	73.6	2	78	29	109	70.4	0	55	5	60	67.6
70 / 74	124	17	96	237	69.7	50	57	87	195	68.1	3	75	28	106	65.0
65 / 69	55	2	18	75	65.6	64	19	57	139	64.7	18	39	51	108	63.2
60 / 64	15	1	5	21	61.3	82	10	49	140	60.7	80	44	92	216	60.0
55 / 59	2	0	1	3	55.9	32	2	13	47	55.2	82	13	49	144	55.0
50 / 54						8	0	3	11	50.1	47	5	18	70	50.4
45 / 49						2		0	2	46.4	15	1	5	21	45.3
40 / 44											2	0	1	3	40.8
35 / 39											1	0		1	37.5

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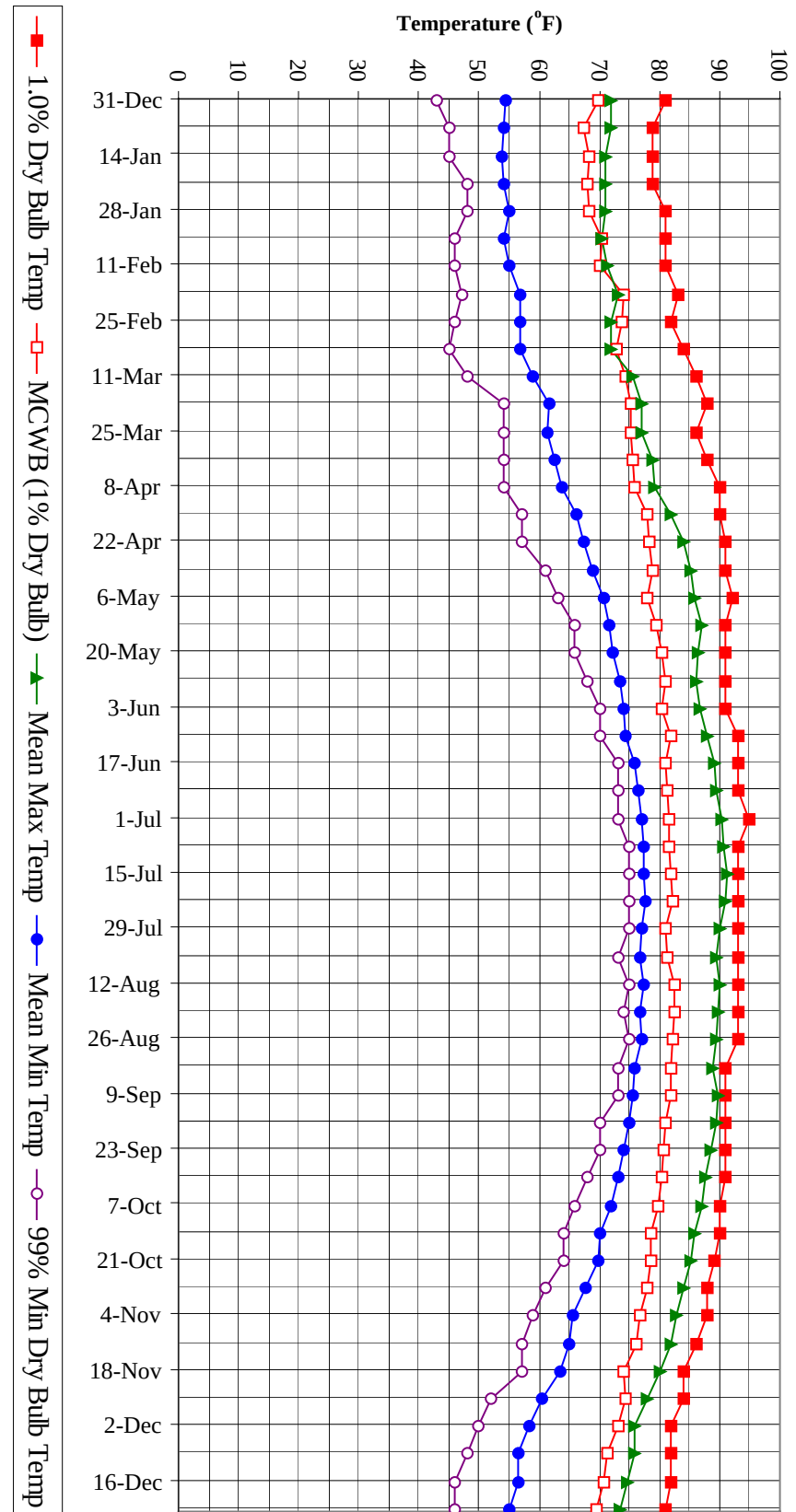
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)

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		
95 / 99	0	9	0	9	81.7
90 / 94	0	424	26	450	80.9
85 / 89	14	514	121	649	79.0
80 / 84	276	638	580	1494	76.9
75 / 79	829	447	725	2002	74.1
70 / 74	491	375	470	1336	68.5
65 / 69	277	188	277	743	64.3
60 / 64	434	216	405	1054	60.3
55 / 59	367	85	230	681	55.3
50 / 54	174	21	71	267	50.6
45 / 49	50	3	14	67	45.6
40 / 44	5	0	2	7	41.1
35 / 39	2	0	0	2	37.5

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.

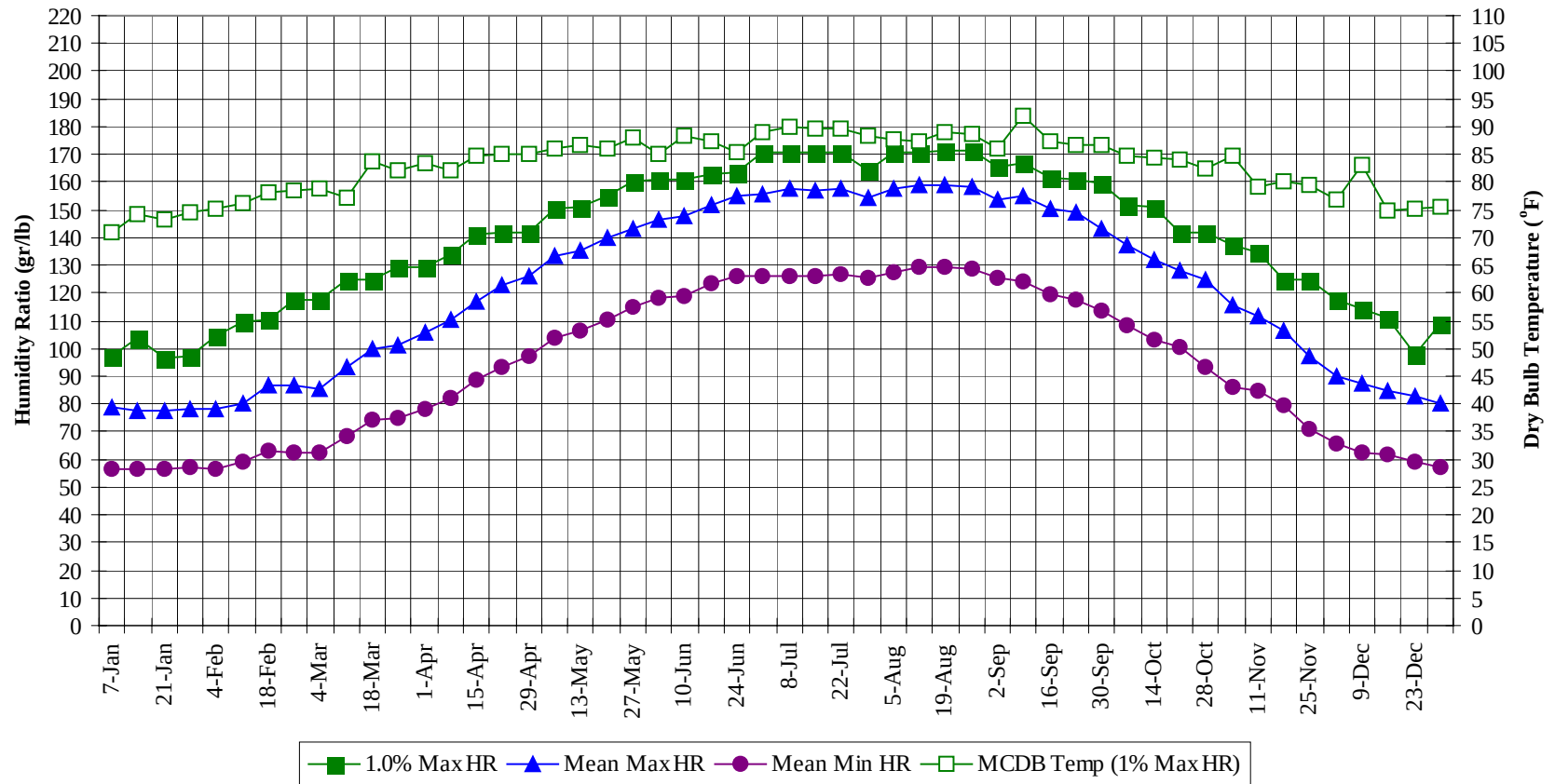
Annual Summary of Temperatures



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Long Term Humidity and Dry Bulb Temperature Summary

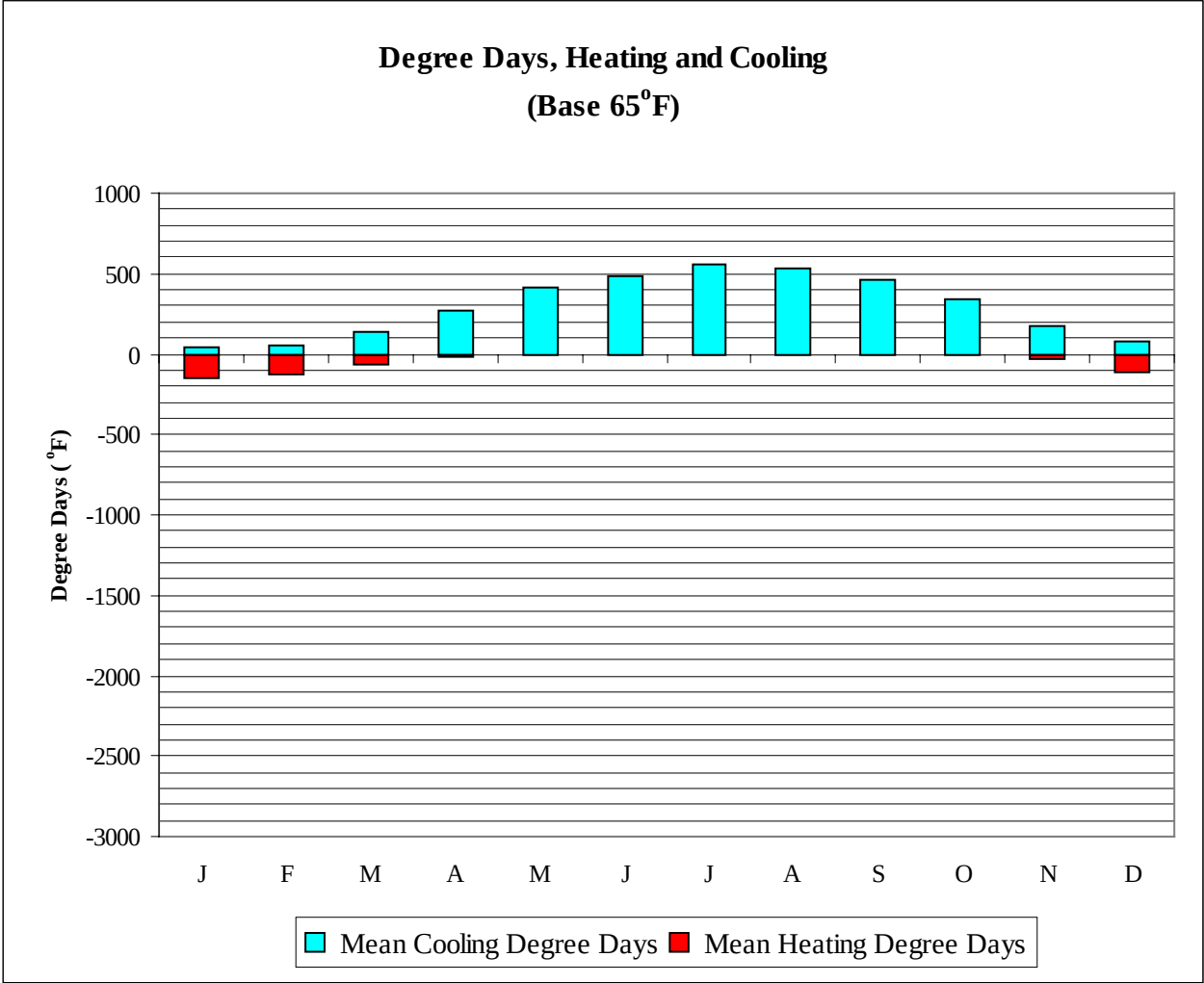


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Long Term Dry Bulb Temperature and Humidity Summary

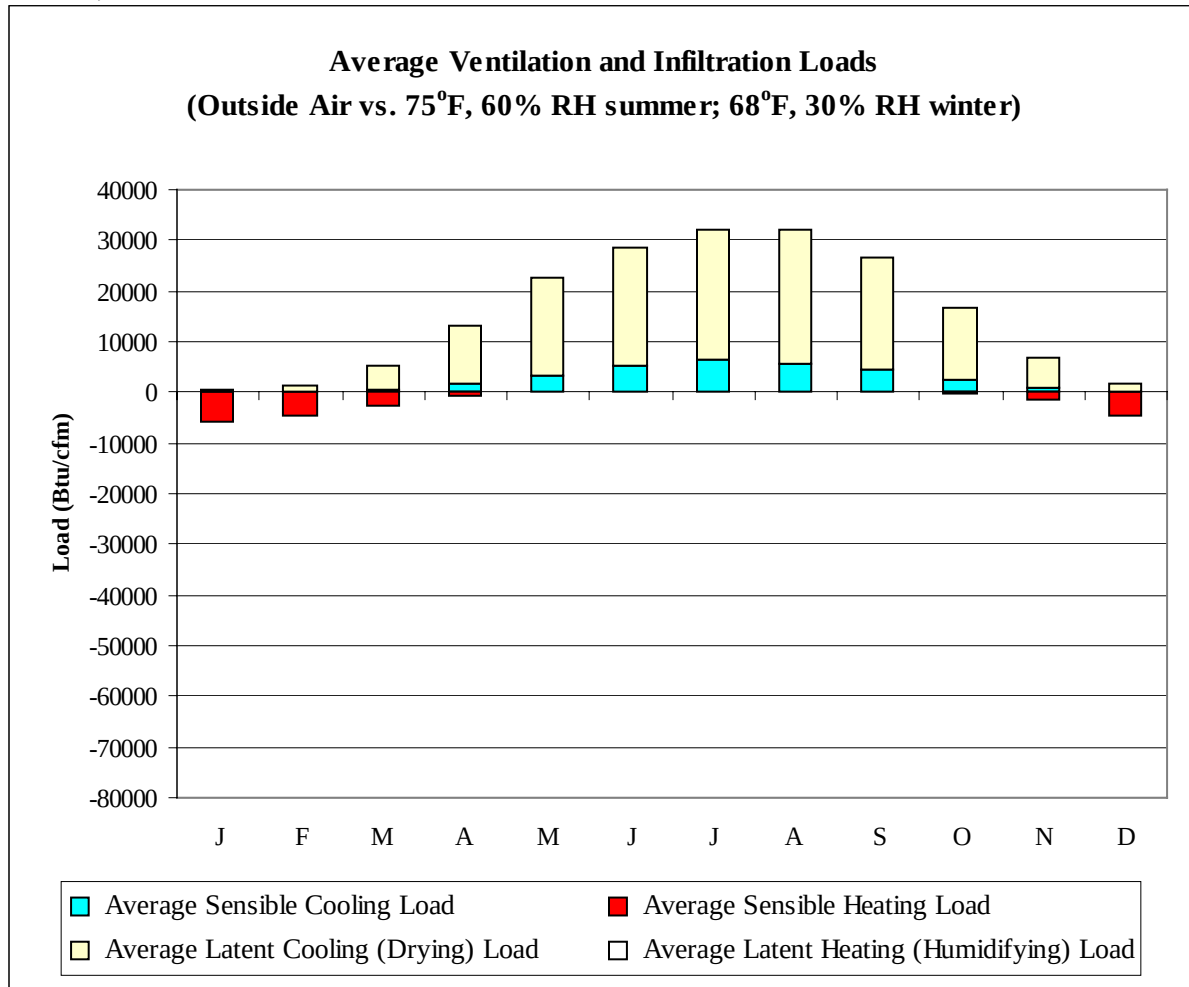
Week Ending	1.0% Temp (°F)	MCWB @ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB @ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	79.0	67.4	71.8	54.0	45.0	97.3	71.1	78.7	56.5
14-Jan	79.0	68.3	71.1	53.9	45.0	103.6	74.1	77.2	56.3
21-Jan	79.0	67.9	71.1	54.2	48.0	96.6	73.2	77.8	56.4
28-Jan	81.0	68.4	71.0	54.9	48.0	97.3	74.5	78.2	57.3
4-Feb	81.0	70.5	70.4	54.0	46.0	104.3	75.1	78.0	56.5
11-Feb	81.0	70.1	71.3	55.0	46.0	109.9	76.3	79.9	59.3
18-Feb	83.0	74.0	73.3	56.9	47.0	110.6	78.1	86.5	62.8
25-Feb	82.0	73.7	72.0	56.9	46.0	117.6	78.4	86.5	62.1
4-Mar	84.0	72.9	71.8	56.7	45.0	117.6	78.8	85.4	62.2
11-Mar	86.0	74.3	75.5	59.0	48.0	124.6	77.1	93.1	68.1
18-Mar	88.0	75.4	77.1	61.5	54.0	124.6	83.8	99.9	74.0
25-Mar	86.0	75.2	77.1	61.4	54.0	129.5	82.0	101.3	75.1
1-Apr	88.0	75.6	79.0	62.6	54.0	129.5	83.3	105.8	78.1
8-Apr	90.0	75.9	79.3	63.7	54.0	133.7	82.2	110.6	82.4
15-Apr	90.0	77.8	81.9	66.1	57.0	141.4	84.6	117.1	88.5
22-Apr	91.0	78.2	83.9	67.4	57.0	142.1	84.9	122.9	92.9
29-Apr	91.0	78.8	85.3	69.0	61.0	142.1	85.0	126.2	97.4
6-May	92.0	78.0	85.7	70.7	63.0	150.5	86.1	133.6	103.9
13-May	91.0	79.6	87.0	71.6	66.0	151.2	86.8	135.6	106.6
20-May	91.0	80.3	86.4	72.2	66.0	154.7	86.0	140.2	110.4
27-May	91.0	81.1	86.2	73.4	68.0	160.3	88.1	143.1	114.7
3-Jun	91.0	80.4	86.7	74.0	70.0	161.0	85.2	146.2	118.2
10-Jun	93.0	81.9	87.9	74.4	70.0	161.0	88.2	148.0	118.9
17-Jun	93.0	81.0	89.1	75.8	73.0	163.1	87.3	152.0	123.6
24-Jun	93.0	81.2	89.3	76.4	73.0	163.8	85.4	155.1	126.4
1-Jul	95.0	81.7	90.4	77.0	73.0	170.8	89.1	155.9	126.4
8-Jul	93.0	81.6	90.7	77.4	75.0	170.8	89.9	157.6	125.9
15-Jul	93.0	82.0	91.2	77.3	75.0	170.8	89.8	156.8	126.2
22-Jul	93.0	82.2	91.0	77.6	75.0	170.8	89.5	157.9	126.5
29-Jul	93.0	81.0	89.9	77.1	75.0	164.5	88.3	154.2	125.5
5-Aug	93.0	81.3	89.6	76.7	73.0	170.8	87.8	157.4	127.4
12-Aug	93.0	82.4	89.9	77.2	75.0	170.8	87.4	159.1	129.4
19-Aug	93.0	82.6	89.9	76.7	74.0	171.5	89.1	159.2	129.3
26-Aug	93.0	82.2	89.4	76.9	75.0	171.5	88.8	158.4	128.8
2-Sep	91.0	81.8	88.8	75.9	73.0	165.2	85.9	153.9	125.2
9-Sep	91.0	82.0	89.6	75.6	73.0	166.6	92.0	154.7	123.9
16-Sep	91.0	81.0	89.4	74.9	70.0	161.7	87.2	150.2	119.8
23-Sep	91.0	80.6	88.4	74.1	70.0	161.0	86.8	149.3	117.3
30-Sep	91.0	80.3	87.5	73.1	68.0	159.6	86.6	143.0	113.9
7-Oct	90.0	79.9	87.0	71.8	66.0	151.9	84.9	137.2	108.3
14-Oct	90.0	78.7	85.7	70.1	64.0	151.2	84.4	131.7	103.1
21-Oct	89.0	78.5	85.2	69.7	64.0	142.1	84.0	128.3	100.7
28-Oct	88.0	77.8	84.0	67.7	61.0	142.1	82.5	124.6	93.6
4-Nov	88.0	76.9	82.7	65.6	59.0	137.2	84.8	115.4	86.3
11-Nov	86.0	76.3	82.0	65.1	57.0	134.4	79.2	111.9	84.7
18-Nov	84.0	74.1	80.0	63.6	57.0	124.6	80.0	106.7	79.5
25-Nov	84.0	74.2	78.0	60.5	52.0	124.6	79.3	97.3	71.2
2-Dec	82.0	73.1	75.9	58.3	50.0	117.6	76.8	90.2	66.0
9-Dec	82.0	71.2	76.0	56.6	48.0	114.1	83.0	87.4	62.7
16-Dec	82.0	70.8	74.7	56.5	46.0	111.3	75.0	84.6	61.6
23-Dec	81.0	69.5	73.5	55.1	46.0	98.0	75.1	83.0	58.8
31-Dec	81.0	69.8	71.8	54.4	43.0	109.2	75.6	79.9	57.2



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	43	153
FEB	56	121
MAR	138	64
APR	272	14
MAY	410	0
JUN	491	0
JUL	554	0
AUG	530	0
SEP	458	0
OCT	337	2
NOV	172	31
DEC	73	118
ANN	3534	503

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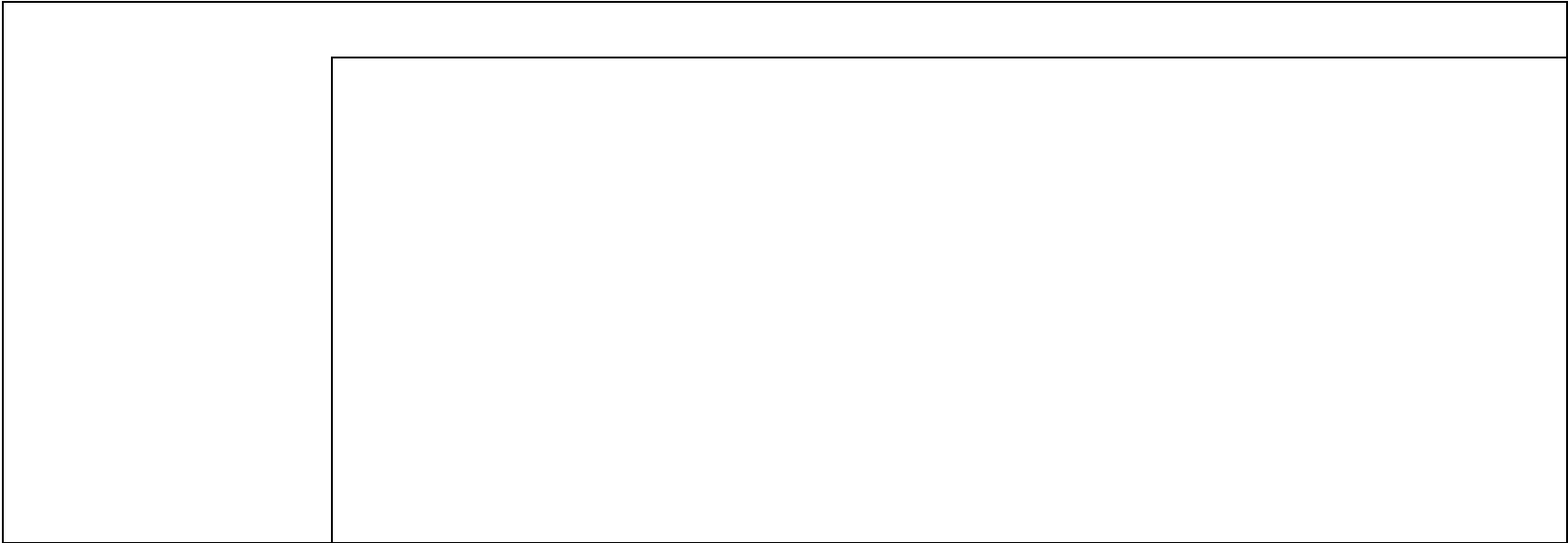
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	Average Sensible Cooling Load	Average Sensible Heating Load	Average Latent Cooling Load	Average Latent Heating Load
	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)
JAN	87	-5804	632	-1
FEB	184	-4647	1291	-2
MAR	643	-2789	4617	0
APR	1818	-742	11167	0
MAY	3465	-48	19037	0
JUN	5174	-1	23435	0
JUL	6508	0	25435	0
AUG	5843	0	26371	0
SEP	4490	-1	22281	0
OCT	2364	-176	14340	0
NOV	762	-1546	6021	0
DEC	193	-4656	1536	-3
ANN	31531	-20410	156163	-6

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

No Solar Radiation
Data Available

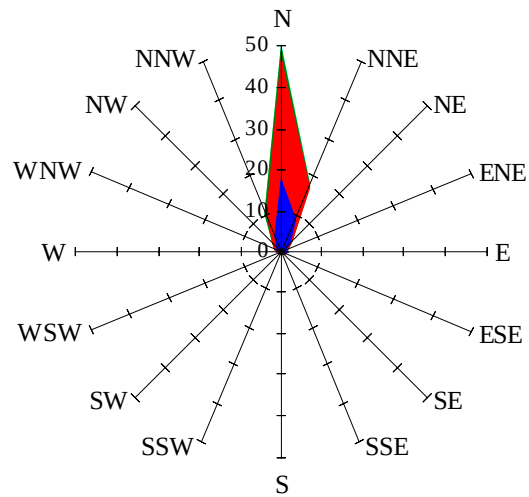


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

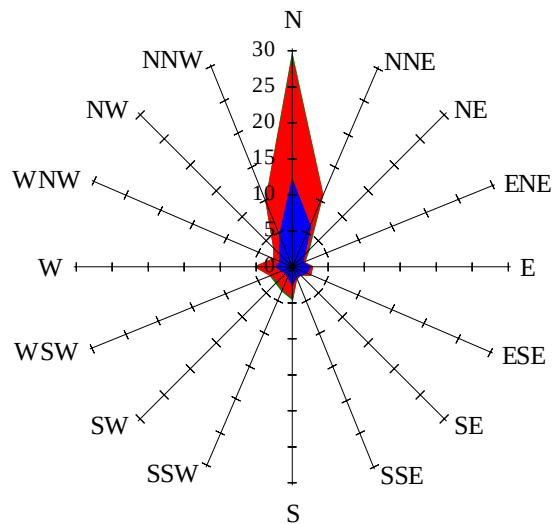
Labels of Percent Frequency on North Axis



Percent Calm = 8.81

Wind Summary - March, April, and May

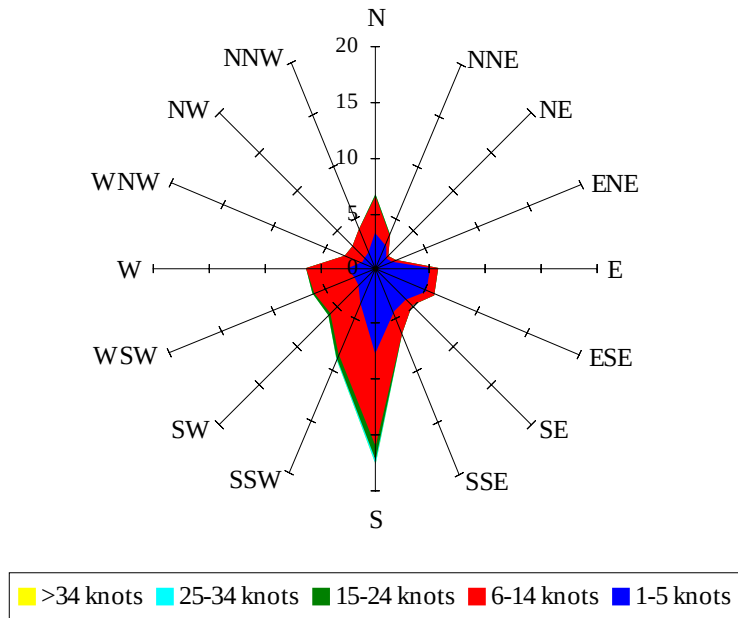
Labels of Percent Frequency on North Axis



Percent Calm = 10.80

Wind Summary - June, July, and August

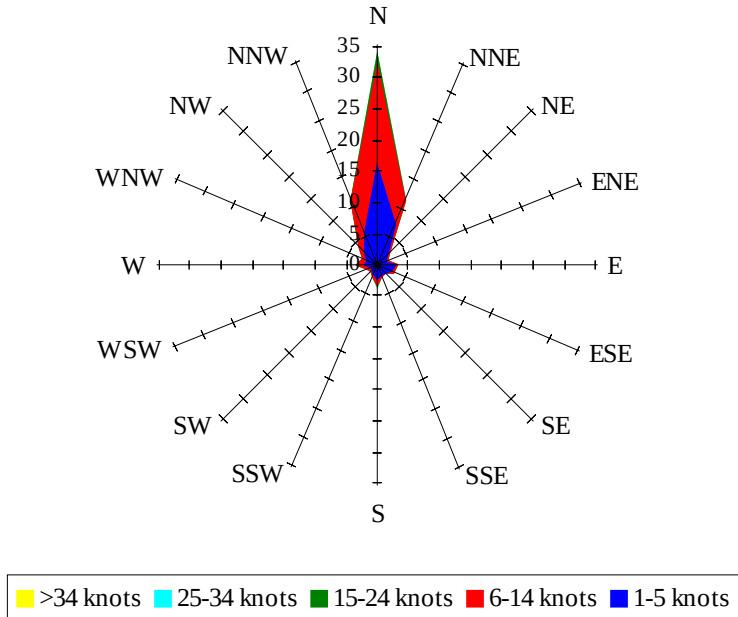
Labels of Percent Frequency on North Axis



Percent Calm = 10.70

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 12.53