

SUNGSHAN/TAIPEI TW

Latitude = 25.07 N

WMO No. 466960

Longitude = 121.55 E

Elevation = 20 feet

Period of Record = 1973 to 1996

Average Pressure = 29.88 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	131	13.2	W
0.4% Occurrence	94	80	136	11.5	W
1.0% Occurrence	93	80	136	10.9	W
2.0% Occurrence	91	80	136	9.6	WNW
Mean Daily Range	11	-	-	-	-
97.5% Occurrence	52	49	46	6.7	E
99.0% Occurrence	50	47	43	5.6	E
99.6% Occurrence	48	45	40	4.7	E
Median of Extreme Lows	43	41	34	2.3	E
	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	84	92	160	8.5	NW
0.4% Occurrence	82	90	150	8.1	E
1.0% Occurrence	82	90	150	8.1	E
2.0% Occurrence	81	89	146	7.8	E
	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	171	89	1.12	6.6	WNW
0.4% Occurrence	160	87	1.05	5.9	E
1.0% Occurrence	152	86	1.00	7.0	E
2.0% Occurrence	151	86	0.99	5.7	E
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		103	2358	3376	4907

Other Site Data

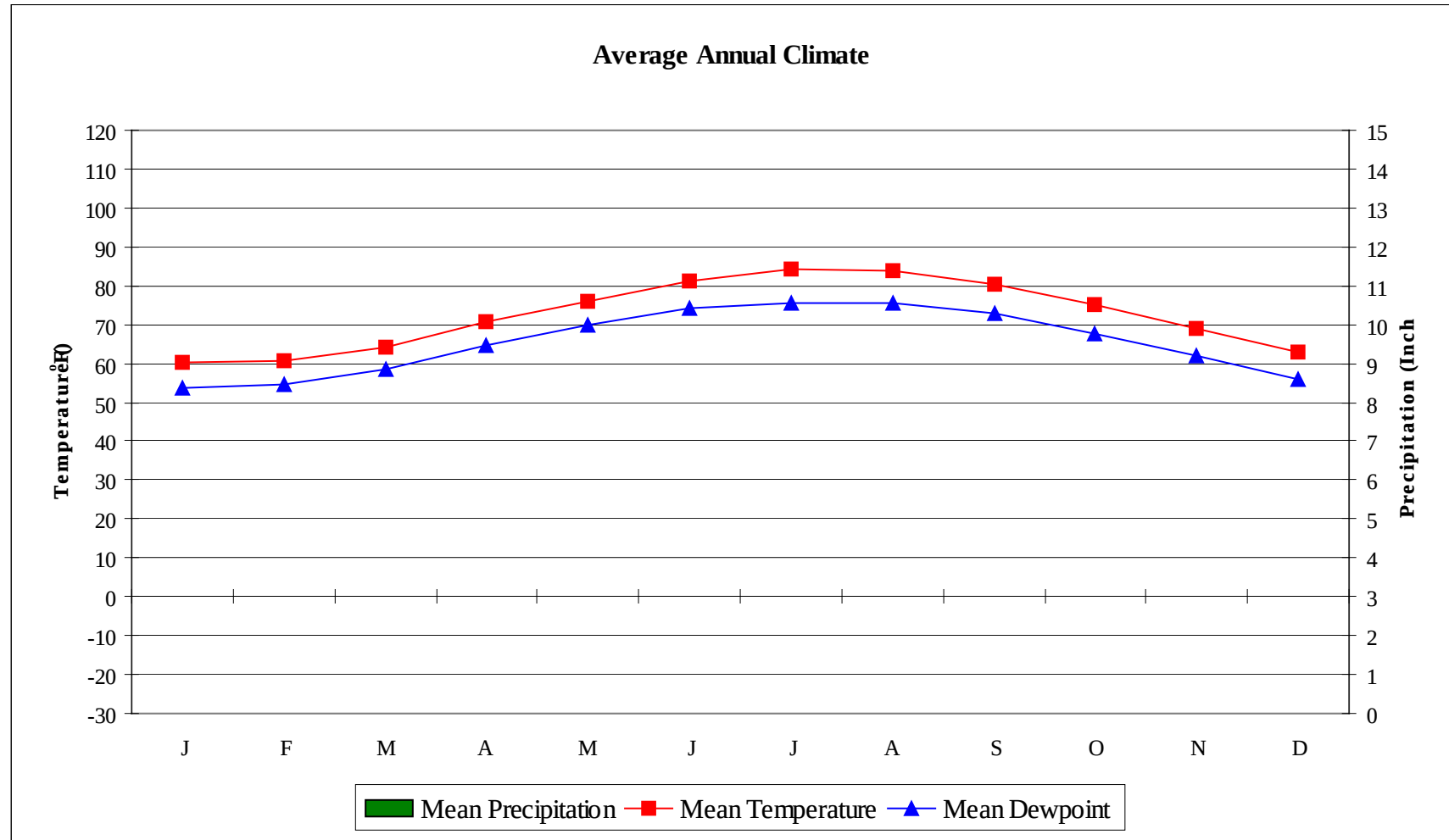
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
10	N/A	N/A	11.1 + 2.5
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
74.9	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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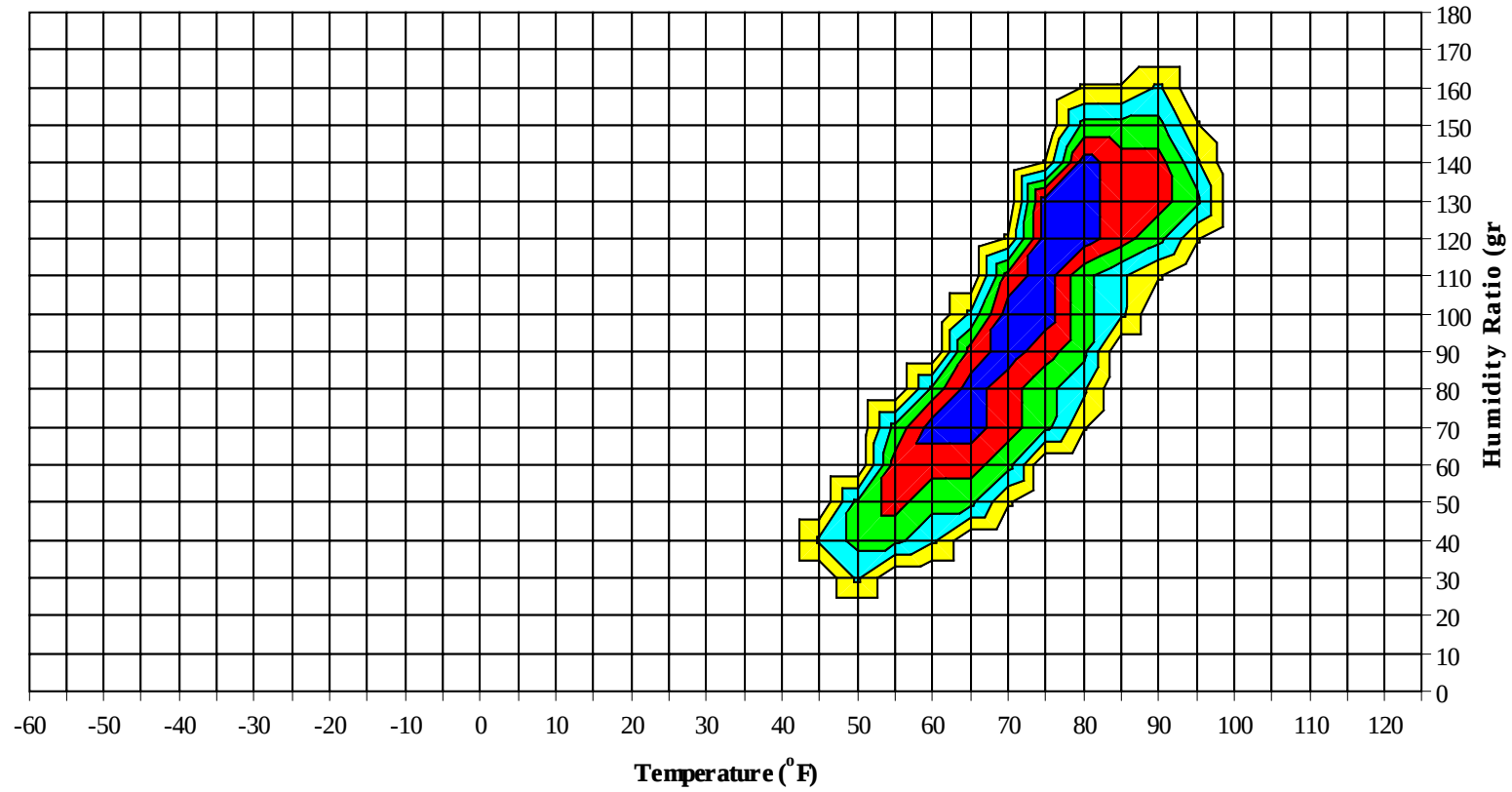
No Precipitation Data Available

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Long Term Psychrometric Summary



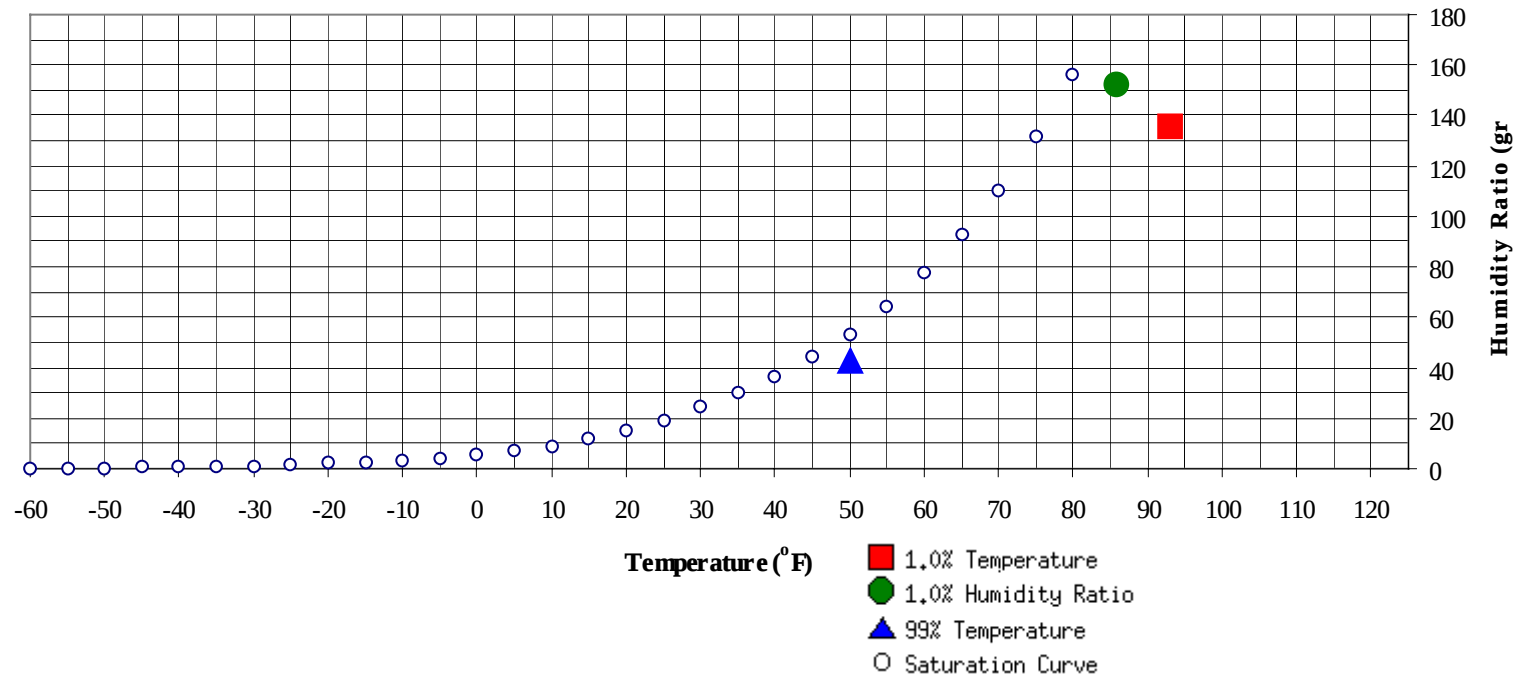
- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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Psychrometric Summary of Peak Design Values



	(°F)	MCHR (gr/lb)	Enthalpy (btu/lb)	1.0% Humidity Ratio	(gr/lb)	MCDB (°F)	MCWB (°F)	MC Dewpt (°F)	Enthalpy (btu/lb)
99% Dry Bulb	50	42.6	18.6		151.9	85.8	80.6	78.8	44.4

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	93	135.5	80.2	43.7

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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															
85 / 89							0		0	72.0		0		0	71.5
80 / 84	0	1		1	68.6	0	5	0	5	70.6	0	14	1	15	71.9
75 / 79	0	9	0	10	66.4	0	18	4	21	67.7	1	35	11	47	69.4
70 / 74	0	41	6	48	64.2	2	32	13	48	65.1	17	45	35	97	67.0
65 / 69	12	44	30	86	62.5	17	30	29	77	62.9	47	40	48	135	64.1
60 / 64	79	75	90	244	59.2	70	62	71	203	59.5	100	67	86	253	59.9
55 / 59	95	55	81	231	54.1	84	51	72	207	54.5	59	34	51	143	55.0
50 / 54	47	20	35	102	49.3	37	19	29	84	49.6	19	10	15	44	49.7
45 / 49	10	2	7	19	44.9	13	4	8	25	44.2	4	0	2	6	45.0
40 / 44	2	0	0	3	40.6	1	0	1	2	40.0	1		0	1	41.2
35 / 39	1			1	38.0						0		0	0	35.6

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.

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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						1	0	1	78.5		4	0	4	80.8	
90 / 94	0	2	0	2	76.6	15	1	15	78.6		0	73	7	80	80.1
85 / 89	0	15	1	16	75.4	1	45	6	52	77.2	7	67	32	106	78.7
80 / 84	1	56	12	70	73.6	13	70	38	121	75.5	66	52	94	212	77.2
75 / 79	19	52	51	123	71.6	88	61	101	250	73.2	130	31	82	244	74.6
70 / 74	83	48	73	204	68.3	108	40	70	217	69.3	34	11	23	67	70.2
65 / 69	60	32	45	137	64.4	30	11	25	66	65.2	4	1	2	7	65.8
60 / 64	55	25	45	125	60.2	9	4	7	21	61.3	1		0	1	61.6
55 / 59	19	7	14	40	54.9	0	0	0	1	57.7					
50 / 54	2	0	1	4	50.4										
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		15	1	15	80.7	0	8	0	8	80.4		1		1	79.8
90 / 94	1	136	16	153	80.0	0	111	9	120	79.8	0	54	1	55	79.2
85 / 89	19	59	59	136	78.9	12	78	47	137	78.8	3	66	16	85	78.1
80 / 84	128	25	134	287	77.5	134	39	156	329	77.4	60	75	97	232	76.3
75 / 79	101	9	38	148	75.5	98	9	38	145	75.5	136	38	104	278	74.0
70 / 74	2	1	2	4	71.5	3	0	1	5	70.3	34	4	22	60	69.2
65 / 69						0	0		0	65.1	6	0	1	7	65.5
60 / 64											0			0	64.0
55 / 59															
50 / 54															
45 / 49															
40 / 44															
35 / 39															

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 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	80.0										
90 / 94		7		7	78.3		0		0	77.0		0		0	73.0
85 / 89	0	29	2	30	77.2		5	0	5	75.4		0		0	72.7
80 / 84	8	62	21	92	74.4	1	25	3	29	73.1		5	0	5	71.2
75 / 79	85	96	98	279	71.9	16	53	28	97	70.8	0	28	2	30	68.1
70 / 74	110	45	101	256	67.9	71	72	77	221	67.3	12	55	24	91	65.5
65 / 69	30	6	22	58	63.8	71	47	69	187	63.4	39	51	55	145	62.8
60 / 64	12	1	6	20	59.9	58	27	50	135	59.3	101	62	92	256	59.0
55 / 59	1	0	1	2	55.5	18	6	14	38	53.5	58	32	52	142	53.7
50 / 54						5	1	3	8	48.7	29	11	20	60	48.7
45 / 49						1		0	1	45.4	6	2	4	12	44.3
40 / 44											1		1	2	40.4
35 / 39											0			0	37.4

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)

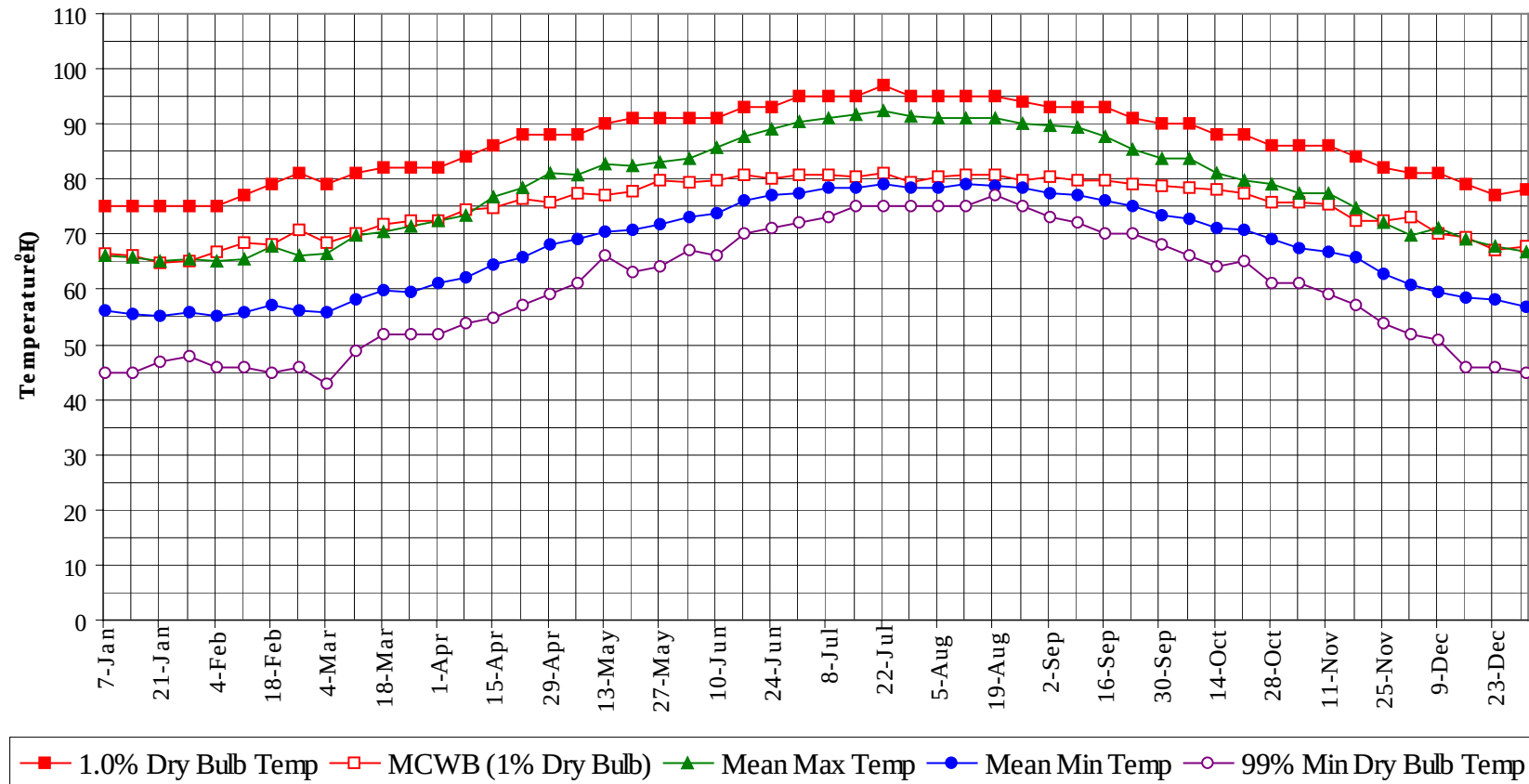
Period of Record = 1973 to 1996

Annual Totals

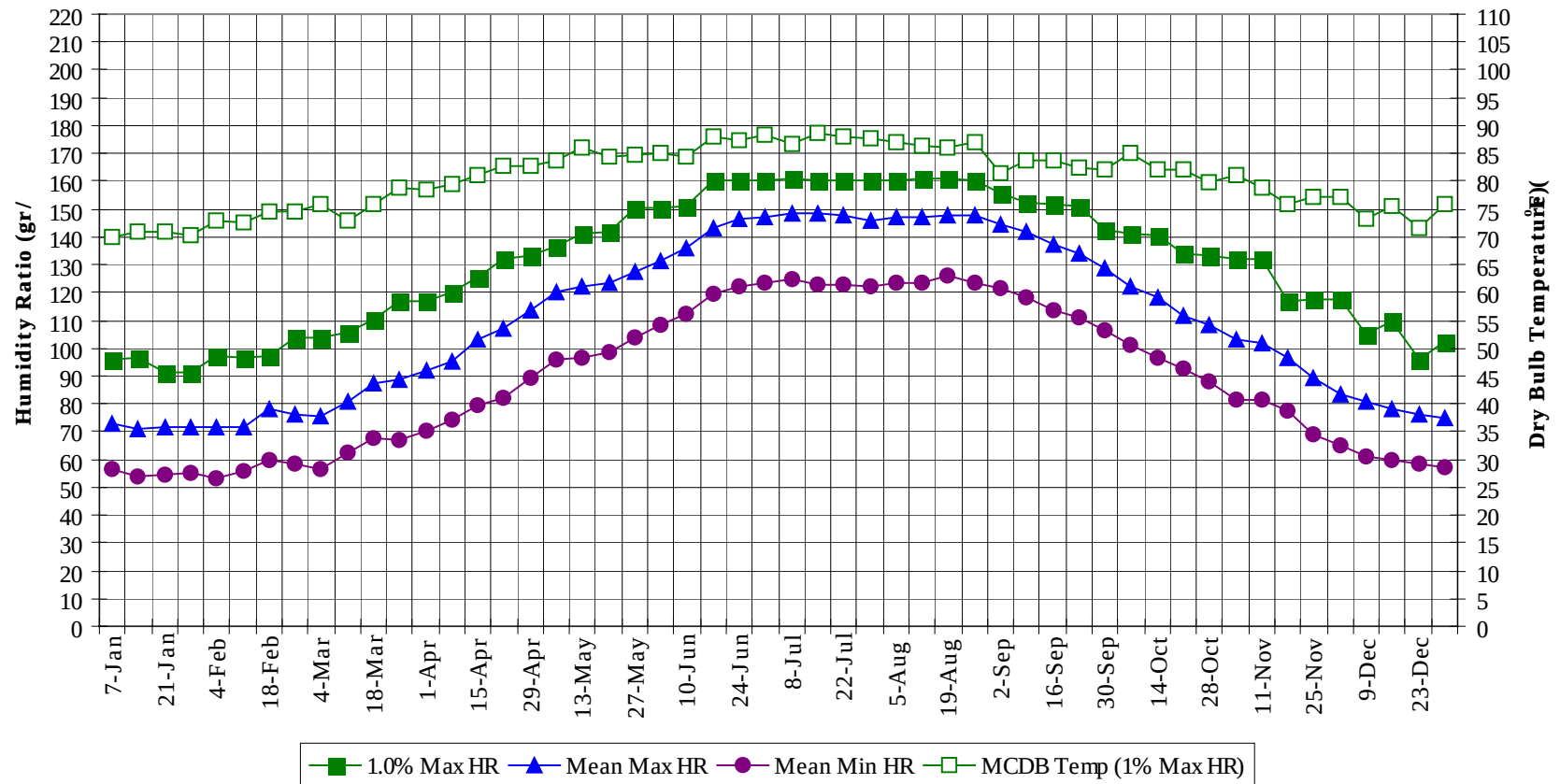
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
95 / 99	0	28	1	29	80.5
90 / 94	1	395	34	430	79.7
85 / 89	42	366	161	569	78.3
80 / 84	409	433	555	1396	76.5
75 / 79	677	440	561	1678	73.1
70 / 74	482	396	449	1327	67.8
65 / 69	319	263	327	909	63.6
60 / 64	485	322	447	1254	59.5
55 / 59	333	183	282	797	54.3
50 / 54	138	60	101	299	49.3
45 / 49	33	8	21	62	44.5
40 / 44	5	0	2	8	40.5
35 / 39	1		0	1	37.1

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.

Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary



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Long Term Dry Bulb Temperature and Humidity Summary

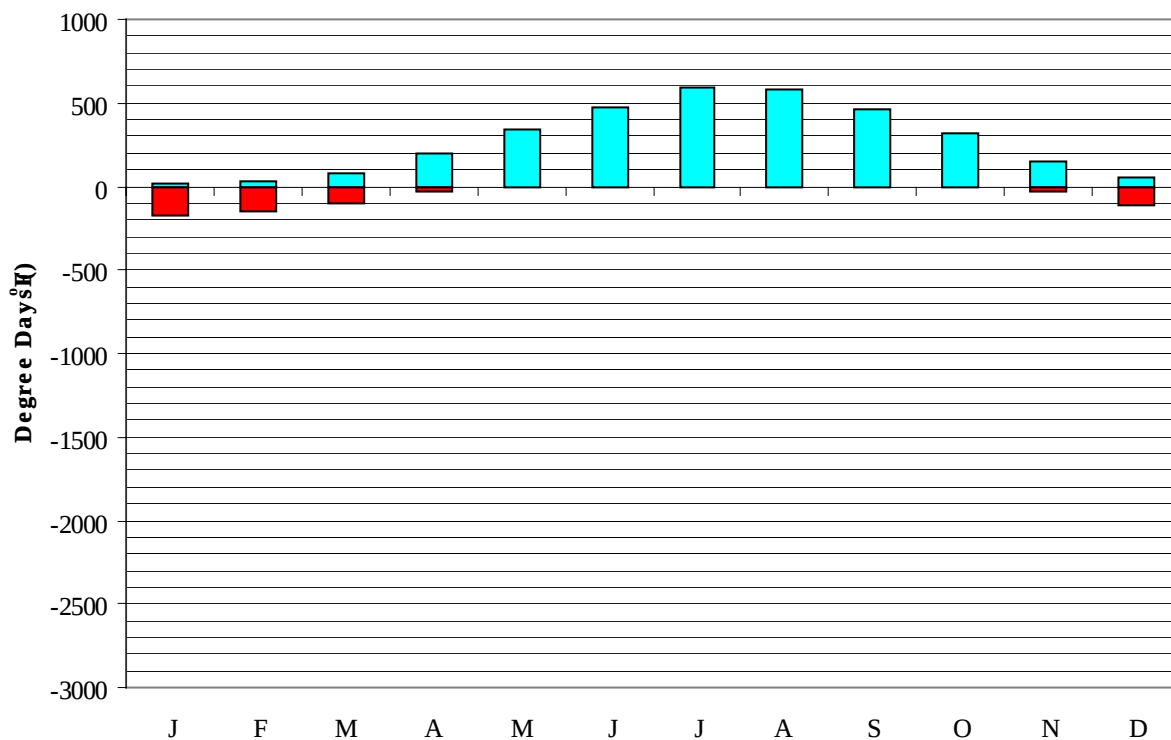
Week Ending	1.0% Temp (°F)	MCWB @ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB @ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	75.0	66.4	66.2	56.0	45.0	95.9	70.0	73.0	56.5
14-Jan	75.0	66.1	66.0	55.4	45.0	96.6	70.9	70.9	53.7
21-Jan	75.0	64.8	65.3	55.1	47.0	91.0	71.0	71.4	54.6
28-Jan	75.0	65.2	65.3	55.7	48.0	91.0	70.3	71.4	54.9
4-Feb	75.0	66.7	65.2	55.0	46.0	97.3	72.8	71.3	53.4
11-Feb	77.0	68.4	65.5	55.8	46.0	96.6	72.5	71.8	55.7
18-Feb	79.0	68.0	68.0	57.1	45.0	97.3	74.5	78.0	59.7
25-Feb	81.0	70.8	66.2	56.3	46.0	103.6	74.5	76.1	58.5
4-Mar	79.0	68.5	66.6	55.7	43.0	103.6	76.0	75.7	56.5
11-Mar	81.0	70.2	69.8	58.3	49.0	105.7	72.8	80.8	62.2
18-Mar	82.0	71.6	70.4	59.8	52.0	110.6	75.9	87.3	67.7
25-Mar	82.0	72.5	71.3	59.6	52.0	116.9	78.7	88.8	67.0
1-Apr	82.0	72.6	72.3	61.1	52.0	116.9	78.6	91.7	70.2
8-Apr	84.0	74.3	73.4	62.3	54.0	120.4	79.3	95.1	74.3
15-Apr	86.0	74.8	76.7	64.6	55.0	125.3	81.2	103.2	79.3
22-Apr	88.0	76.4	78.5	65.8	57.0	132.3	82.6	106.8	82.3
29-Apr	88.0	75.6	81.0	68.0	59.0	133.0	82.8	113.8	89.4
6-May	88.0	77.3	80.9	69.3	61.0	136.5	83.6	120.0	96.2
13-May	90.0	77.3	82.7	70.5	66.0	141.4	86.1	122.3	96.7
20-May	91.0	77.7	82.4	70.7	63.0	142.1	84.4	123.4	98.4
27-May	91.0	79.8	83.0	71.8	64.0	150.5	84.6	127.5	103.9
3-Jun	91.0	79.5	83.9	73.0	67.0	150.5	85.0	131.5	108.1
10-Jun	91.0	79.9	85.6	73.9	66.0	151.2	84.4	136.0	112.3
17-Jun	93.0	80.9	87.9	76.2	70.0	160.3	88.0	143.5	119.5
24-Jun	93.0	80.2	89.0	77.1	71.0	160.3	87.5	146.1	122.1
1-Jul	95.0	80.7	90.4	77.5	72.0	160.3	88.5	147.3	123.5
8-Jul	95.0	80.8	91.1	78.5	73.0	161.0	86.7	148.7	124.5
15-Jul	95.0	80.4	91.9	78.4	75.0	160.3	88.8	148.1	123.0
22-Jul	97.0	81.2	92.3	78.9	75.0	160.3	88.1	147.8	122.8
29-Jul	95.0	79.4	91.3	78.4	75.0	160.3	87.6	145.8	121.9
5-Aug	95.0	80.5	90.9	78.5	75.0	160.3	87.2	147.2	123.5
12-Aug	95.0	80.8	91.1	79.0	75.0	161.0	86.4	147.0	123.7
19-Aug	95.0	80.7	91.0	78.7	77.0	161.0	86.1	148.0	125.9
26-Aug	94.0	79.7	90.1	78.3	75.0	160.3	86.9	147.8	123.5
2-Sep	93.0	80.4	89.6	77.3	73.0	155.4	81.4	144.6	121.3
9-Sep	93.0	79.8	89.6	77.0	72.0	152.6	83.7	142.1	118.5
16-Sep	93.0	79.8	87.9	76.0	70.0	151.9	83.9	137.3	113.5
23-Sep	91.0	79.2	85.3	75.0	70.0	151.2	82.5	134.1	111.2
30-Sep	90.0	78.9	83.9	73.3	68.0	142.8	82.0	128.5	106.3
7-Oct	90.0	78.5	83.8	72.7	66.0	141.4	84.9	122.1	101.0
14-Oct	88.0	78.0	81.2	71.2	64.0	140.7	81.9	118.2	96.4
21-Oct	88.0	77.6	79.7	70.8	65.0	133.7	82.2	111.7	92.3
28-Oct	86.0	75.7	79.0	69.0	61.0	133.0	79.9	108.5	88.1
4-Nov	86.0	75.8	77.5	67.5	61.0	132.3	81.2	103.3	81.7
11-Nov	86.0	75.3	77.3	66.9	59.0	132.3	78.9	102.0	81.4
18-Nov	84.0	72.4	74.6	65.8	57.0	116.9	75.9	96.7	77.8
25-Nov	82.0	72.4	72.1	62.7	54.0	117.6	77.2	89.3	69.1
2-Dec	81.0	73.2	69.9	60.9	52.0	117.6	77.1	83.5	65.2
9-Dec	81.0	70.1	71.2	59.5	51.0	105.0	73.2	80.6	61.3
16-Dec	79.0	69.6	69.0	58.4	46.0	109.9	75.5	78.1	59.5
23-Dec	77.0	67.3	67.9	58.0	46.0	95.9	71.7	76.1	58.4
31-Dec	78.0	67.8	66.7	56.9	45.0	102.2	76.0	74.9	57.4

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



■ Mean Cooling Degree Days ■ Mean Heating Degree Days

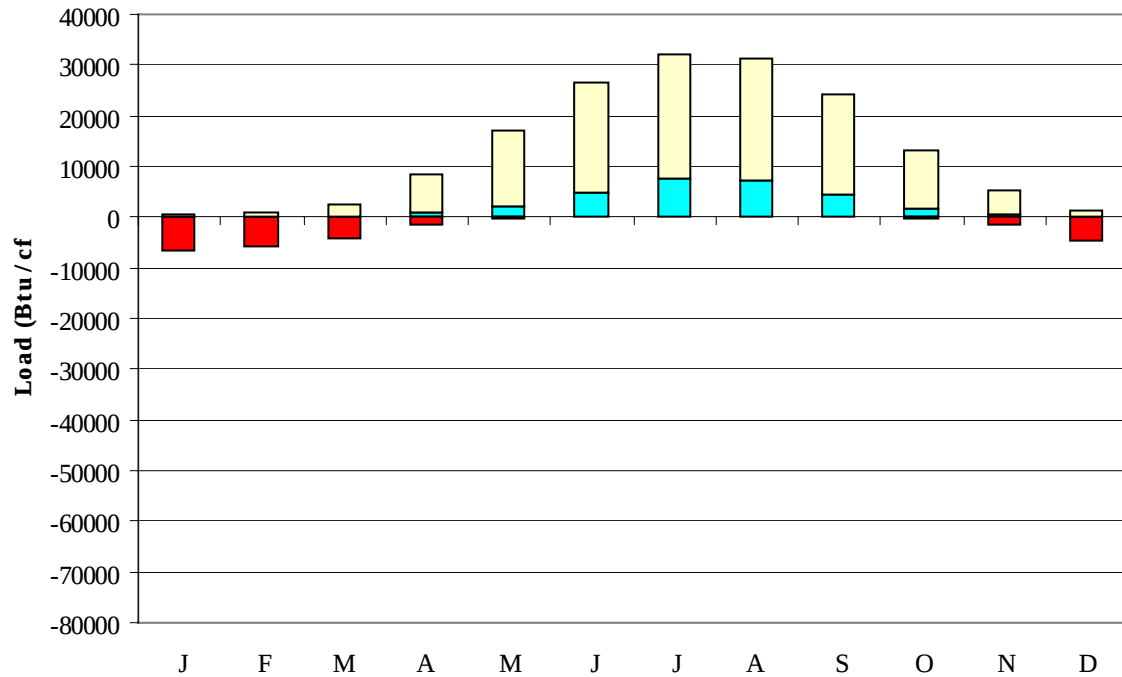
	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	23	170
FEB	31	151
MAR	72	96
APR	195	25
MAY	339	2
JUN	478	0
JUL	597	0
AUG	582	0
SEP	466	0
OCT	313	2
NOV	149	27
DEC	52	111
ANN	3298	584

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

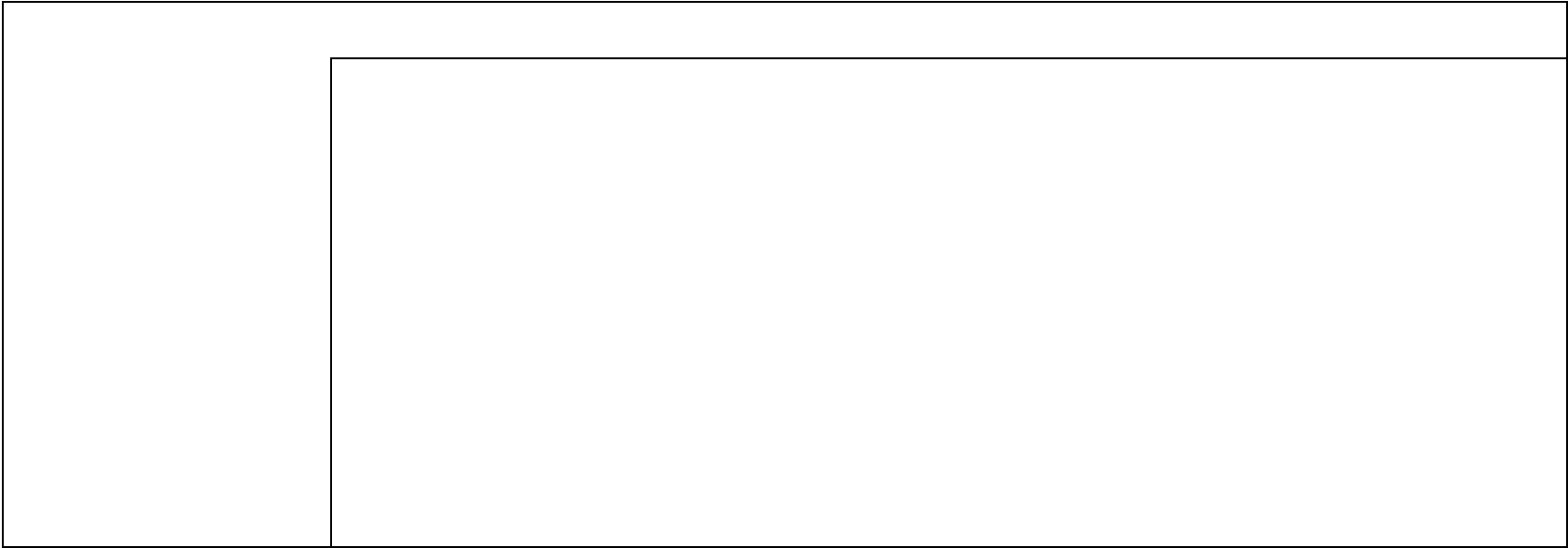


■ Average Sensible Cooling Load	■ Average Sensible Heating Load
■ Average Latent Cooling (Drying) Load	■ Average Latent Heating (Humidifying) Load

	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	16	-6450	461	-5
FEB	65	-5656	659	-8
MAR	209	-4073	2363	-3
APR	968	-1337	7634	0
MAY	2299	-160	14708	0
JUN	4991	-7	21543	0
JUL	7505	0	24413	0
AUG	7070	0	24319	0
SEP	4534	-4	19837	0
OCT	1652	-160	11430	0
NOV	418	-1455	5000	0
DEC	79	-4595	1266	-5
ANN	29806	-23897	133633	-21

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

No Solar Radiation
Data Available

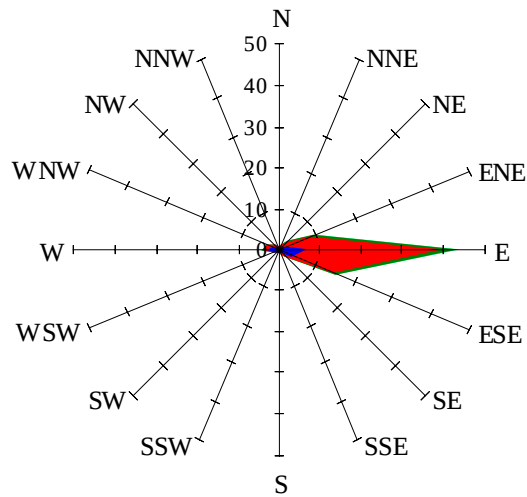


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

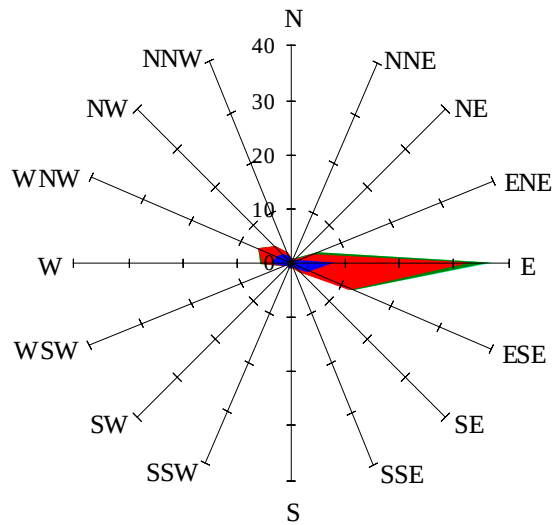
Labels of Percent Frequency on North Axis



Percent Calm = 15.50

Wind Summary - March, April, and May

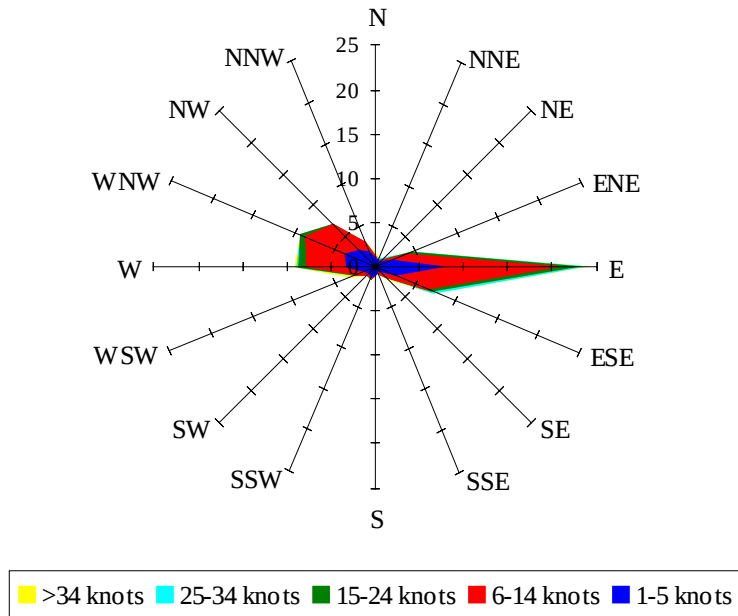
Labels of Percent Frequency on North Axis



Percent Calm = 20.60

Wind Summary - June, July, and August

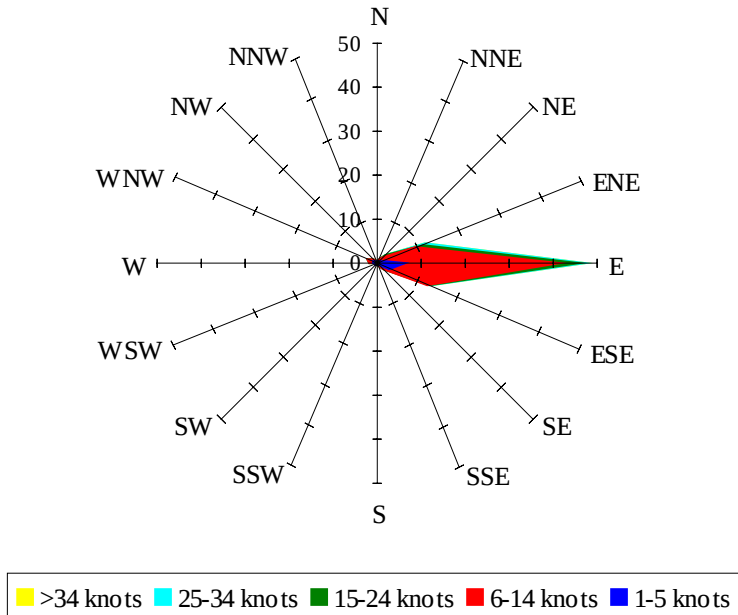
Labels of Percent Frequency on North Axis



Percent Calm = 25.77

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 12.94