

RANGOON/MINGALADON BM

Latitude = 16.90 N

WMO No. 480960

Longitude = 96.18 E

Elevation = 95 feet

Period of Record = 1973 to 1995

Average Pressure = 29.67 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	104	78	102	9.6	W
0.4% Occurrence	102	77	103	10.0	W
1.0% Occurrence	100	77	105	10.1	W
2.0% Occurrence	99	77	105	10.1	W
Mean Daily Range	16	-	-	-	-
97.5% Occurrence	66	64	84	5.2	W
99.0% Occurrence	64	61	77	4.9	N
99.6% Occurrence	63	61	77	4.9	N
Median of Extreme Lows	59	57	65	3.5	NE
	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	88	98	183	12.3	W
0.4% Occurrence	84	92	163	9.8	S
1.0% Occurrence	83	90	157	9.8	S
2.0% Occurrence	82	88	154	9.3	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	200	95	1.33	12.2	SSE
0.4% Occurrence	171	89	1.12	9.1	S
1.0% Occurrence	161	85	1.06	9.6	S
2.0% Occurrence	160	85	1.05	9.2	S
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		601	4358	6056	7603

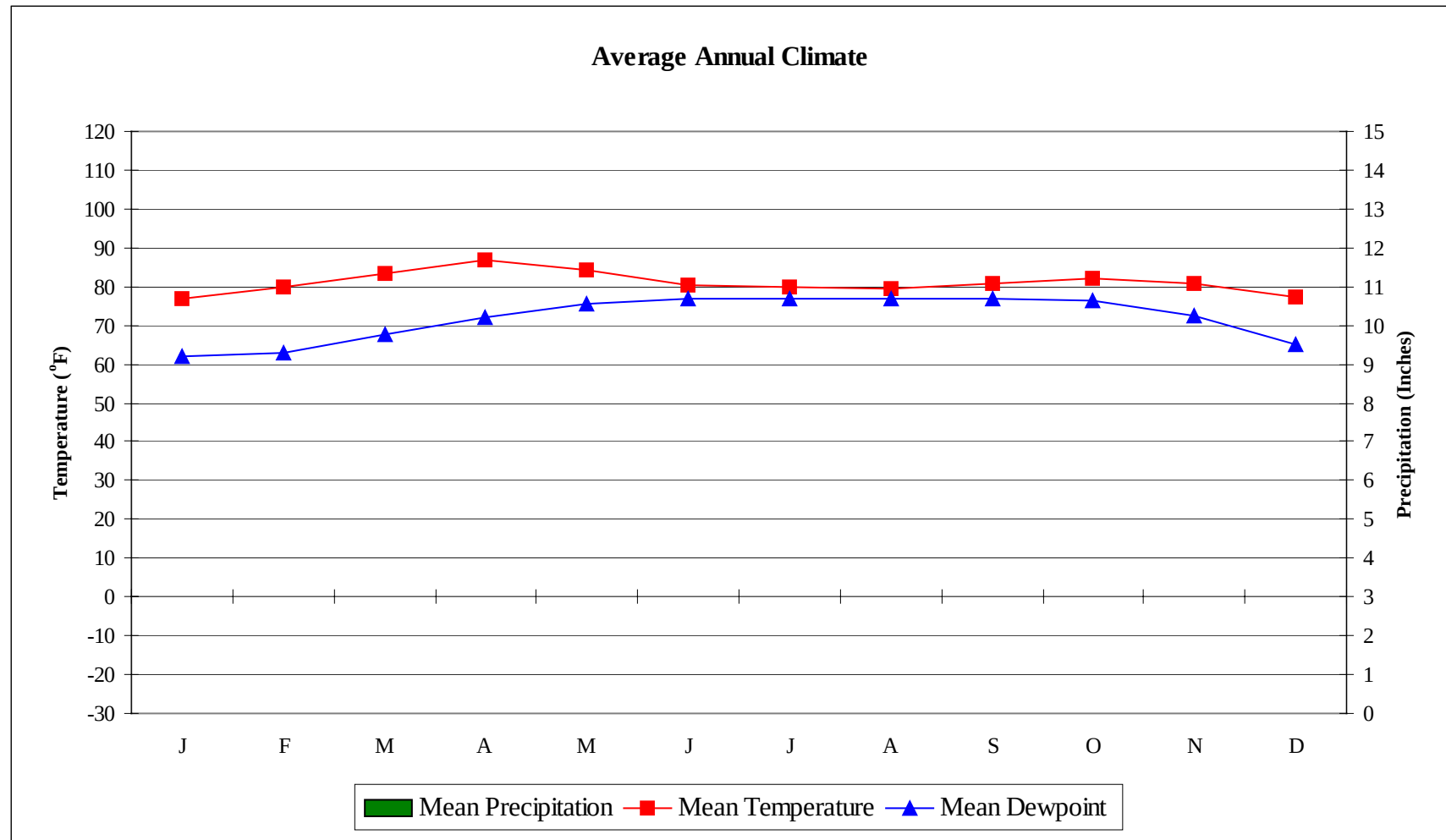
Other Site Data

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	11.8 + 5.1
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 (#)
83.4	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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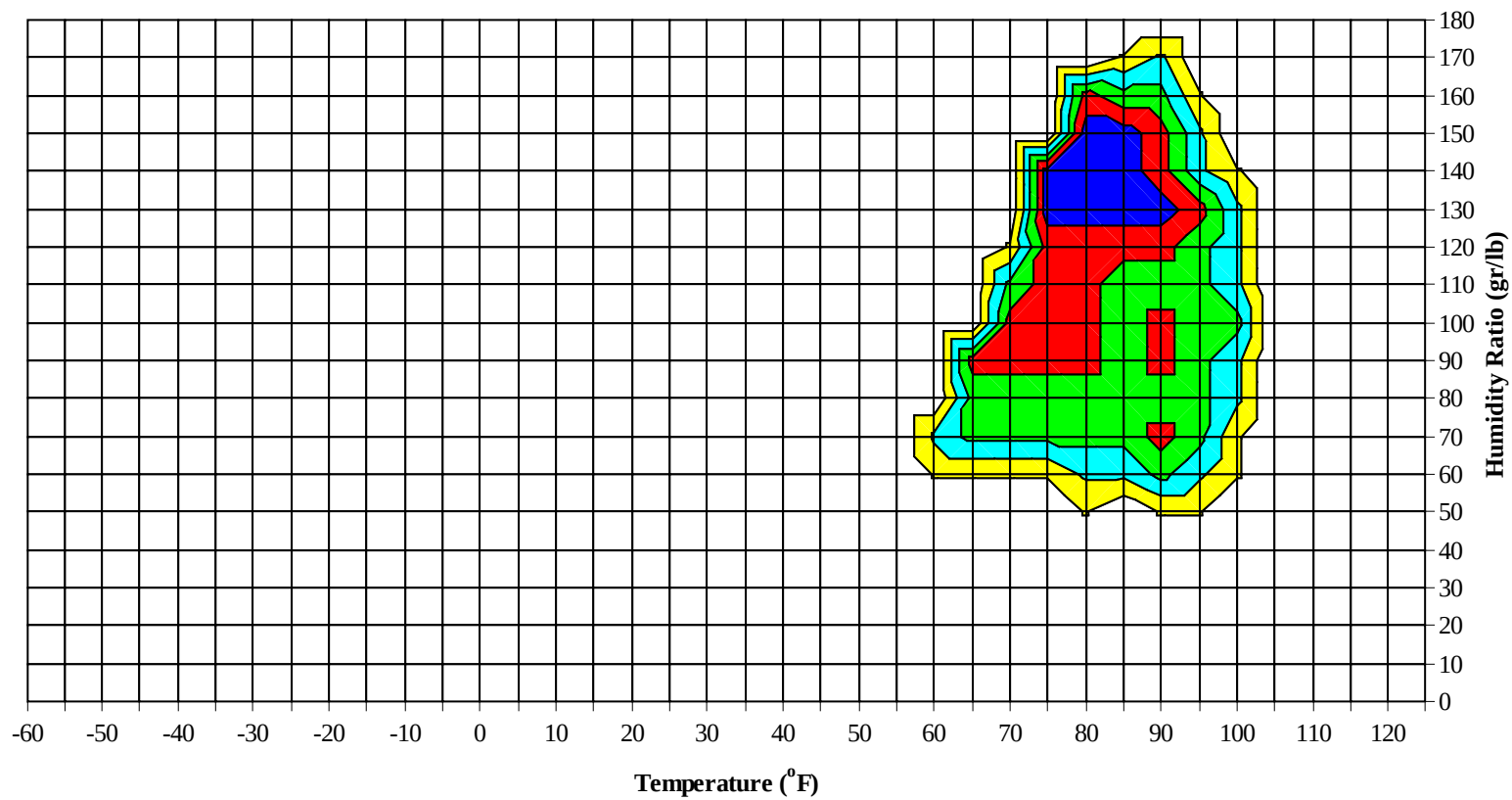


No Precipitation Data Available

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Long Term Psychrometric Summary

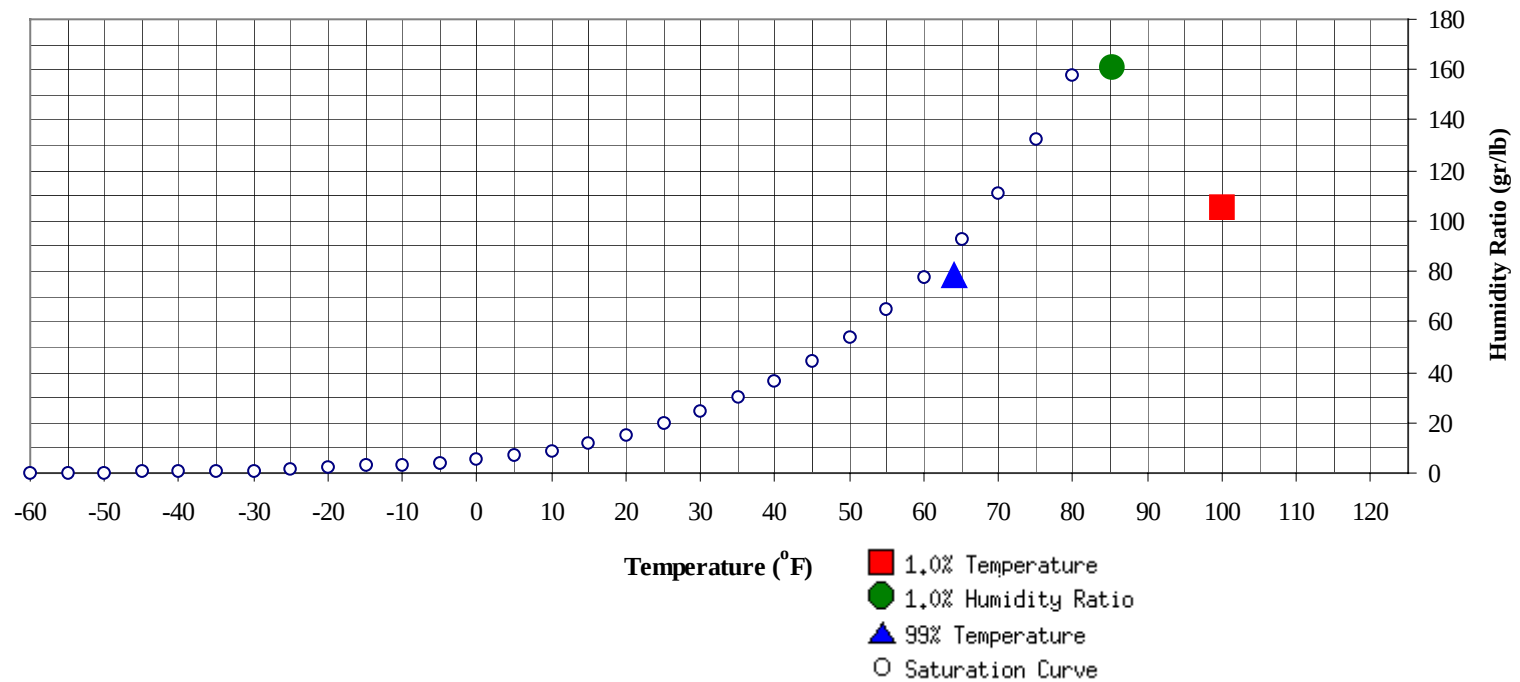


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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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	64	78.7	27.6		161	85.3	81.8	80.6	45.7

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	100	105.4	77.1	40.6

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Dry-Bulb Temperature Hours For An Average Year (Sheet 1 of 5)

Period of Record = 1973 to 1995

January						February					March				
Temperature Range (°F)	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	73.5		0		0	71.3		17	6	23	74.4
100 / 104			1	0	72.0		35	11	46	71.8		71	30	101	74.7
95 / 99		52	14	66	70.5	0	71	32	103	70.6	1	59	38	98	74.2
90 / 94	0	58	28	86	70.1	0	30	29	59	70.2	0	25	36	61	74.2
85 / 89	1	52	56	110	69.2	1	28	57	87	70.1	6	39	86	130	73.9
80 / 84	8	33	78	120	68.4	22	29	64	115	69.6	88	27	45	160	72.6
75 / 79	79	36	62	177	66.4	97	21	29	147	67.3	130	10	6	146	69.3
70 / 74	86	11	8	105	64.1	63	7	3	73	64.5	22	1	0	23	65.5
65 / 69	67	5	1	73	60.5	38	3	0	40	61.1	1	0		1	62.5
60 / 64	6	0		6	55.5	2	0		2	57.3	0			0	55.5
55 / 59	0	0		0	49.0										
50 / 54	0			0											
45 / 49															

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 1995

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		
105 / 109		0		0	83.0		0		0	80.0					
100 / 104		44	15	59	77.5		14	5	20	79.6					
95 / 99	0	75	31	106	77.8	0	39	15	54	79.7		1	0	1	83.1
90 / 94	0	49	50	100	77.7	0	60	28	87	79.8	0	16	2	18	81.4
85 / 89	1	32	46	79	77.3	2	45	36	83	79.2	0	49	12	61	80.3
80 / 84	66	31	84	181	76.4	104	59	90	253	78.1	37	116	90	242	78.9
75 / 79	158	8	13	179	74.4	139	30	71	241	76.2	200	58	133	391	76.7
70 / 74	15	1	1	17	70.6	2	2	2	6	71.7	3	1	3	7	72.4
65 / 69	0			0	67.0	0			0	62.0			0	0	
60 / 64						0			0	63.0					
55 / 59						0			0						
50 / 54															
45 / 49															

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Dry-Bulb Temperature Hours For An Average Year (Sheet 3 of 5)

Period of Record = 1973 to 1995

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															
100 / 104															
95 / 99	0	0	0	0	84.1		0		0	80.0		0	0	0	83.0
90 / 94	0	10	2	12	81.3	0	7	1	8	81.3	0	23	8	31	80.7
85 / 89	1	45	9	55	80.2	0	39	6	45	80.4	0	54	17	71	80.0
80 / 84	25	125	73	223	78.9	17	128	68	214	79.0	26	110	88	223	78.7
75 / 79	216	66	162	444	76.4	225	73	171	470	76.5	210	52	125	388	76.5
70 / 74	7	2	2	11	72.9	6	1	1	8	73.0	4	1	2	7	72.7
65 / 69	0			0							0		0	0	
60 / 64															
55 / 59															
50 / 54															
45 / 49															

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Dry-Bulb Temperature Hours For An Average Year (Sheet 4 of 5)

Period of Record = 1973 to 1995

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		0	0	0	82.5		0		0	83.0		0	0	0	76.0
95 / 99		2	1	3	82.9		2	0	2	80.0		0	0	0	
90 / 94	0	56	14	69	80.1		60	13	73	77.5	0	33	6	39	73.6
85 / 89	1	68	33	103	79.5	0	59	29	89	76.8	0	63	22	85	72.4
80 / 84	35	87	120	242	78.3	15	73	105	193	75.8	1	70	63	134	70.9
75 / 79	204	34	79	317	76.3	148	35	79	262	74.3	23	42	95	160	70.2
70 / 74	8	1	1	10	71.6	65	9	14	88	69.9	115	31	56	202	67.5
65 / 69			0	0		9	1	1	11	64.8	73	6	5	84	64.5
60 / 64						3	0	0	3	61.6	32	3	2	37	60.5
55 / 59						0			0	57.0	4	0		4	55.1
50 / 54															
45 / 49															

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 1995

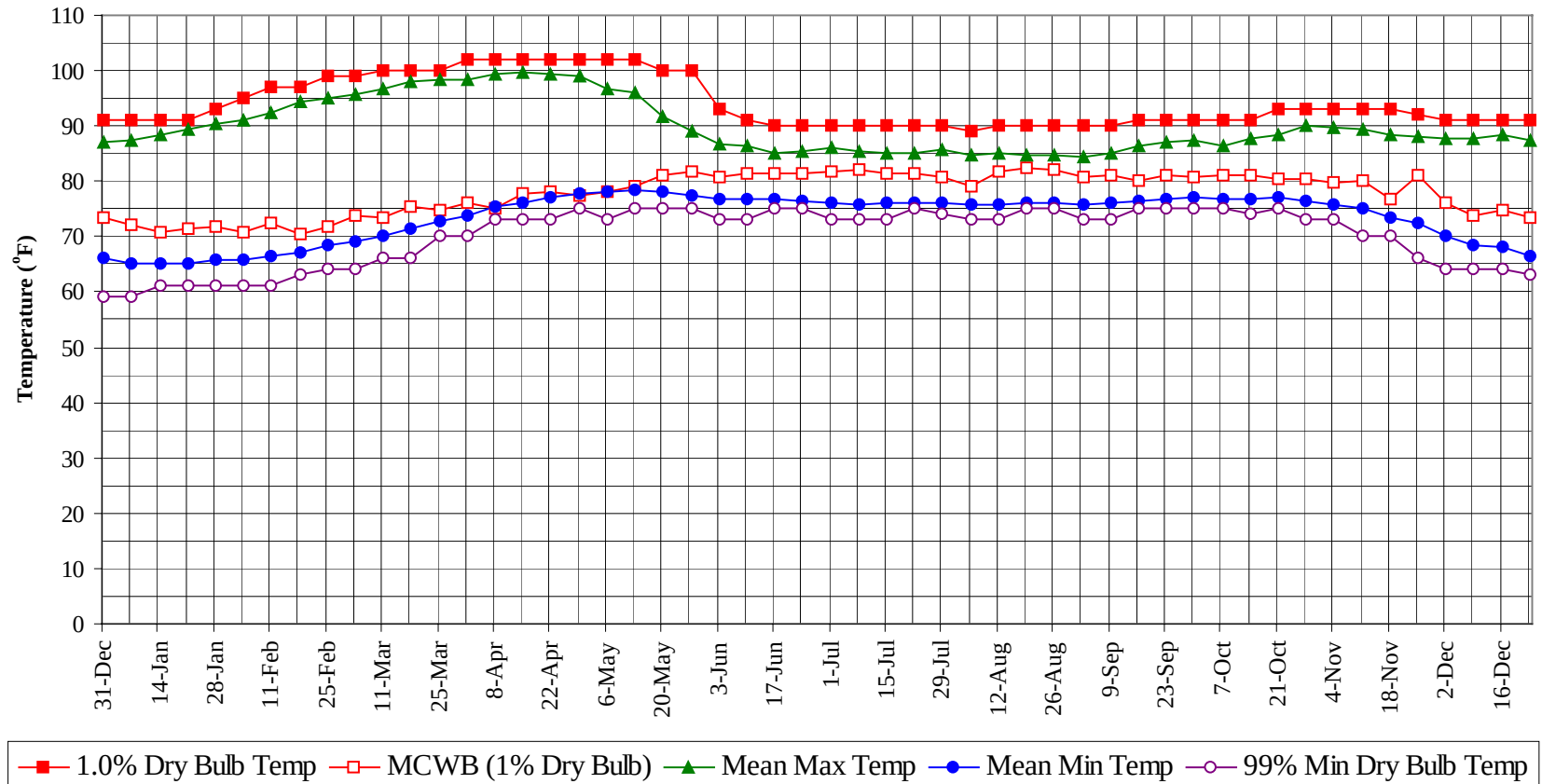
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
105 / 109		1		1	81.5
100 / 104		75	26	101	77.2
95 / 99	1	221	87	310	76.2
90 / 94	2	497	206	705	76.0
85 / 89	7	570	303	879	76.5
80 / 84	328	917	976	2221	76.6
75 / 79	1649	486	1112	3247	75.0
70 / 74	530	118	186	834	68.1
65 / 69	253	25	19	297	64.4
60 / 64	139	10	4	153	60.7
55 / 59	11	1		12	55.7
50 / 54	0	0		0	49.0
45 / 49	0			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.

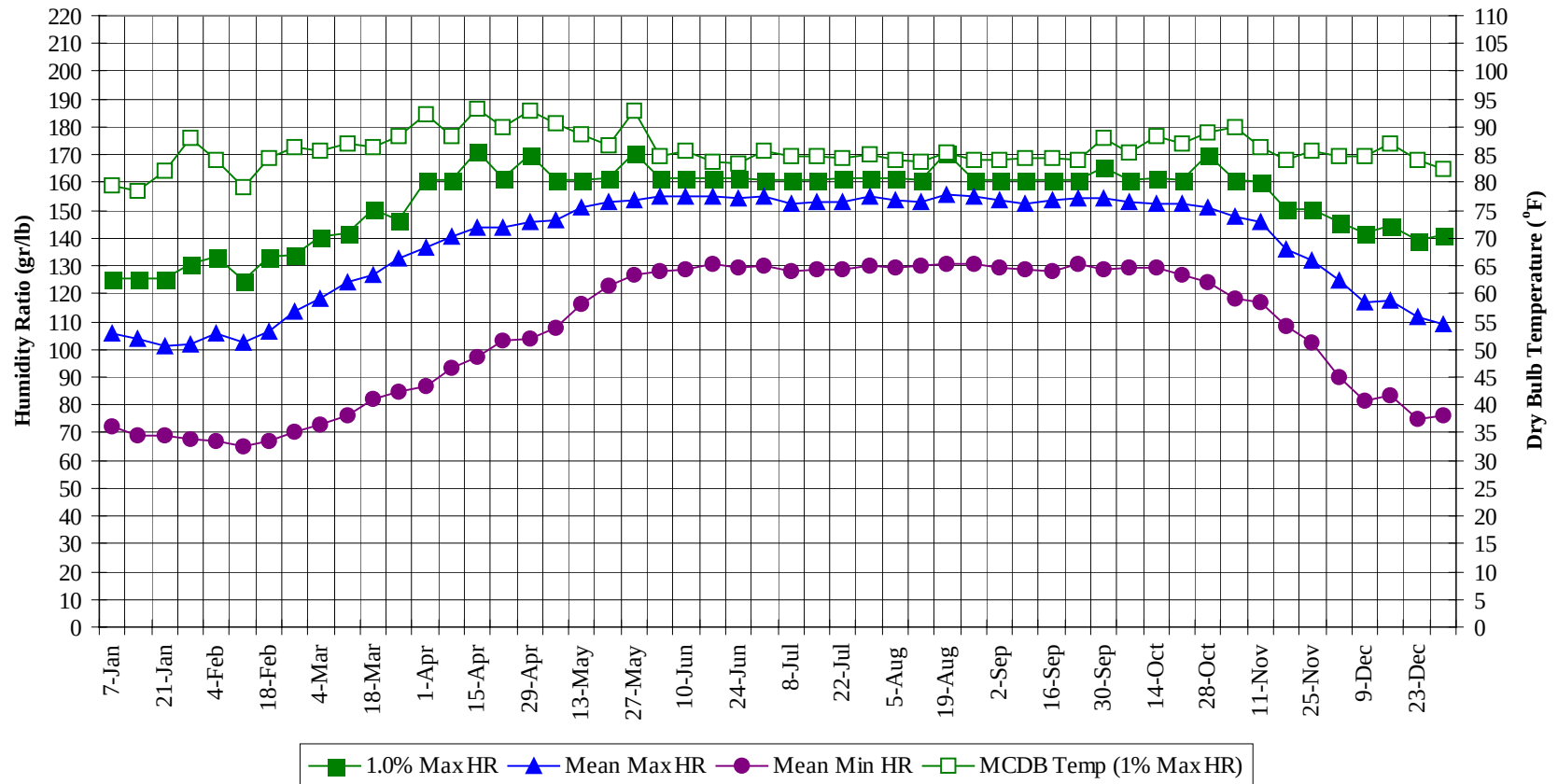
RANGOON/MINGALADON BM

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Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary

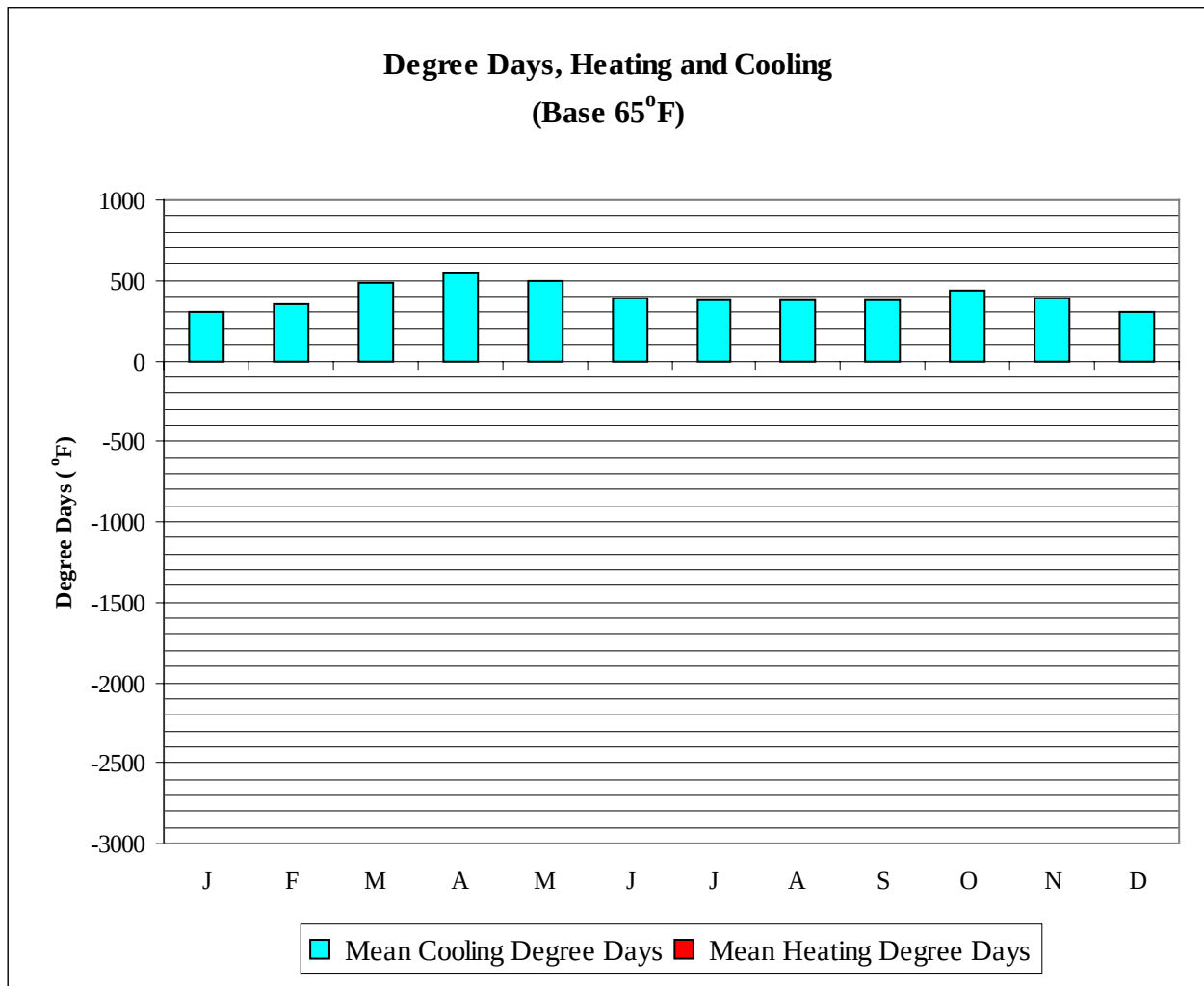


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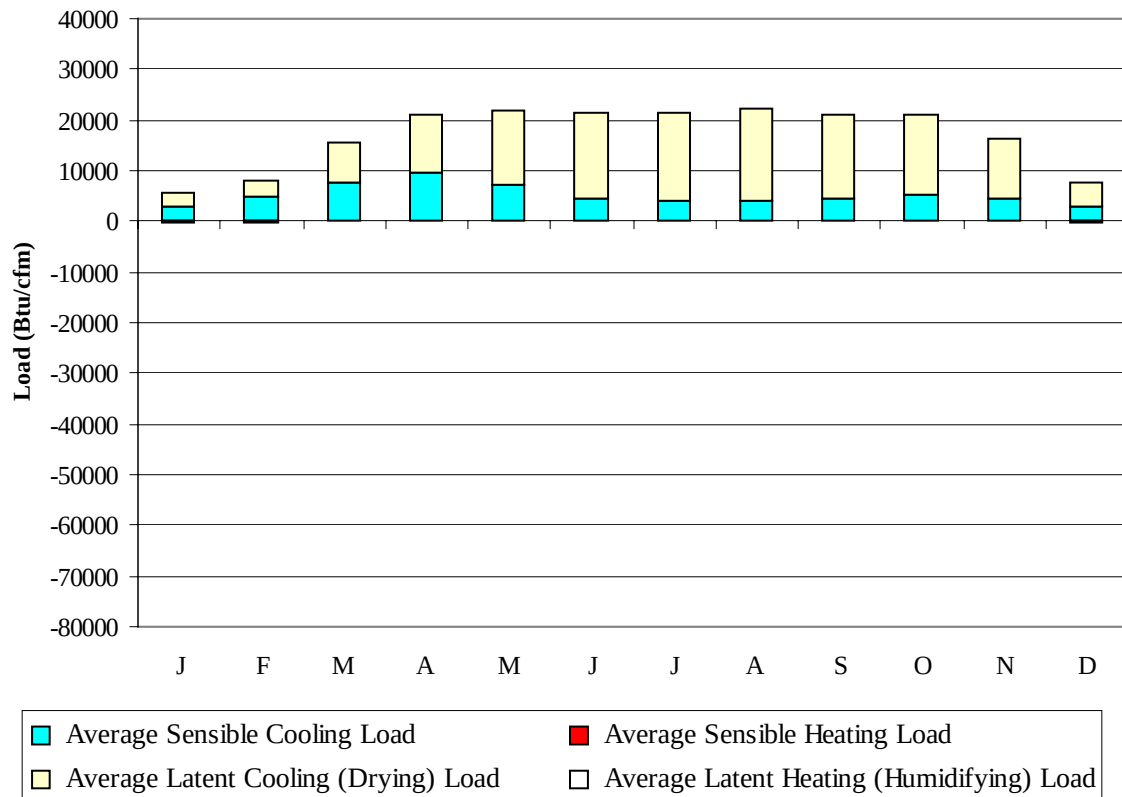
Long Term Dry Bulb Temperature and Humidity Summary

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	91.0	72.1	87.4	65.1	59.0	125.3	79.6	105.4	72.2
14-Jan	91.0	70.9	88.5	65.1	61.0	125.3	78.4	103.5	69.2
21-Jan	91.0	71.4	89.4	65.1	61.0	125.3	81.9	101.0	68.9
28-Jan	93.0	71.8	90.3	65.8	61.0	130.9	88.0	101.8	67.5
4-Feb	95.0	70.9	91.2	65.9	61.0	133.0	84.0	105.8	67.1
11-Feb	97.0	72.4	92.5	66.4	61.0	124.6	79.3	102.5	64.7
18-Feb	97.0	70.5	94.4	67.0	63.0	133.0	84.5	106.4	66.9
25-Feb	99.0	71.7	94.9	68.5	64.0	133.7	86.4	113.8	70.0
4-Mar	99.0	73.7	95.6	69.3	64.0	140.7	85.7	118.4	72.7
11-Mar	100.0	73.6	96.6	70.0	66.0	142.1	87.0	124.0	76.5
18-Mar	100.0	75.3	98.1	71.6	66.0	150.5	86.3	126.7	81.8
25-Mar	100.0	74.6	98.4	72.7	70.0	146.3	88.3	132.9	84.8
1-Apr	102.0	76.0	98.5	73.6	70.0	161.0	92.3	136.3	87.0
8-Apr	102.0	75.0	99.4	75.3	73.0	161.0	88.3	140.5	93.3
15-Apr	102.0	77.8	99.7	76.2	73.0	171.5	93.2	143.7	97.3
22-Apr	102.0	78.2	99.3	77.2	73.0	161.7	89.9	144.0	103.0
29-Apr	102.0	77.5	99.0	77.9	75.0	170.1	92.9	145.7	103.7
6-May	102.0	78.0	96.6	78.0	73.0	161.0	90.5	146.2	107.8
13-May	102.0	78.9	95.9	78.4	75.0	161.0	88.6	150.9	116.1
20-May	100.0	81.1	91.9	77.9	75.0	161.7	86.7	153.3	123.1
27-May	100.0	81.7	89.0	77.3	75.0	170.8	92.9	153.8	127.1
3-Jun	93.0	80.8	86.8	76.6	73.0	161.7	84.8	154.8	128.3
10-Jun	91.0	81.3	86.5	76.8	73.0	161.7	85.8	155.0	128.5
17-Jun	90.0	81.4	85.1	76.9	75.0	161.7	83.7	154.9	130.5
24-Jun	90.0	81.5	85.4	76.4	75.0	161.7	83.5	154.5	129.3
1-Jul	90.0	81.7	85.9	76.2	73.0	161.0	85.6	154.7	130.0
8-Jul	90.0	82.1	85.4	75.8	73.0	161.0	84.8	152.6	128.3
15-Jul	90.0	81.3	85.2	76.1	73.0	161.0	84.6	153.3	128.8
22-Jul	90.0	81.4	84.9	76.0	75.0	161.7	84.3	153.2	129.0
29-Jul	90.0	80.8	85.6	76.1	74.0	161.7	85.1	154.9	129.9
5-Aug	89.0	79.0	84.7	75.9	73.0	161.7	84.0	153.7	129.6
12-Aug	90.0	81.6	84.9	75.9	73.0	161.0	83.9	153.1	130.2
19-Aug	90.0	82.3	84.7	76.1	75.0	170.8	85.5	155.6	130.4
26-Aug	90.0	82.0	84.9	76.1	75.0	161.0	84.2	155.1	130.5
2-Sep	90.0	80.7	84.4	75.7	73.0	161.0	84.0	153.9	129.5
9-Sep	90.0	81.0	85.2	76.0	73.0	161.0	84.5	152.4	128.6
16-Sep	91.0	80.2	86.4	76.3	75.0	161.0	84.3	153.8	128.3
23-Sep	91.0	81.1	87.2	76.8	75.0	161.0	84.2	154.5	130.5
30-Sep	91.0	80.9	87.6	77.0	75.0	165.2	88.0	154.5	129.0
7-Oct	91.0	81.1	86.3	76.8	75.0	161.0	85.5	152.8	129.2
14-Oct	91.0	81.0	87.8	76.6	74.0	161.7	88.3	152.6	129.4
21-Oct	93.0	80.6	88.4	77.1	75.0	161.0	86.9	152.5	126.9
28-Oct	93.0	80.5	90.0	76.6	73.0	170.1	89.1	151.2	124.2
4-Nov	93.0	79.9	89.7	75.9	73.0	161.0	90.1	147.7	118.1
11-Nov	93.0	80.0	89.3	75.1	70.0	160.3	86.3	145.7	116.9
18-Nov	93.0	76.9	88.5	73.6	70.0	150.5	84.2	136.0	108.5
25-Nov	92.0	81.0	88.2	72.5	66.0	150.5	85.8	131.7	102.4
2-Dec	91.0	76.2	87.8	70.1	64.0	145.6	84.7	124.6	90.0
9-Dec	91.0	73.8	87.8	68.3	64.0	142.1	84.8	117.1	81.5
16-Dec	91.0	74.8	88.4	68.2	64.0	144.2	87.0	117.7	83.3
23-Dec	91.0	73.6	87.3	66.5	63.0	139.3	84.0	111.4	75.0
31-Dec	91.0	73.4	87.2	66.2	59.0	141.4	82.6	109.0	75.9



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	310	4
FEB	354	2
MAR	483	0
APR	550	0
MAY	495	0
JUN	388	0
JUL	383	0
AUG	378	0
SEP	379	0
OCT	438	0
NOV	390	0
DEC	306	2
ANN	4855	8

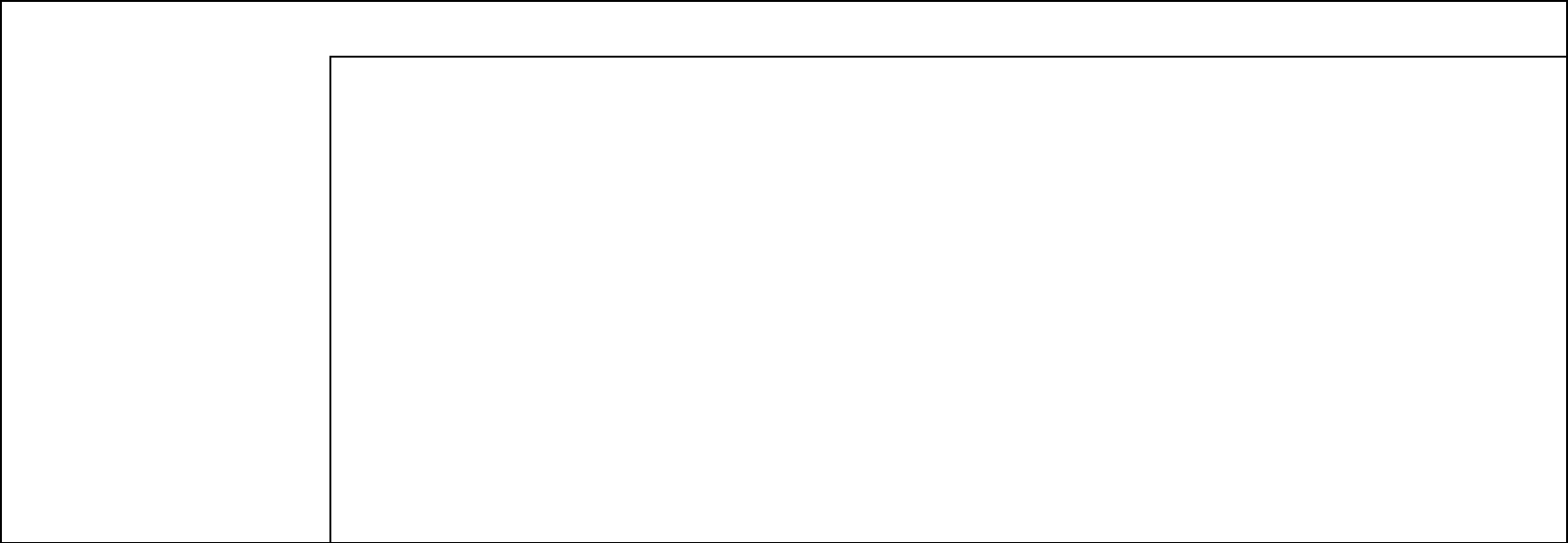
Average Ventilation and Infiltration Loads
(Outside Air vs. 75°F, 60% RH summer; 68°F, 30% RH winter)



	Average Sensible Cooling Load	Average Sensible Heating Load	Average Latent Cooling Load	Average Latent Heating Load
	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)
JAN	3007	-301	2815	0
FEB	4689	-157	3293	-1
MAR	7545	-14	7997	0
APR	9582	0	11591	0
MAY	7269	-1	14487	0
JUN	4487	0	17149	0
JUL	4103	0	17231	0
AUG	3905	0	18420	0
SEP	4468	0	16578	0
OCT	5175	0	15854	0
NOV	4509	-16	11926	0
DEC	2816	-161	4851	0
ANN	61555	-650	142192	-1

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

No Solar Radiation
Data Available

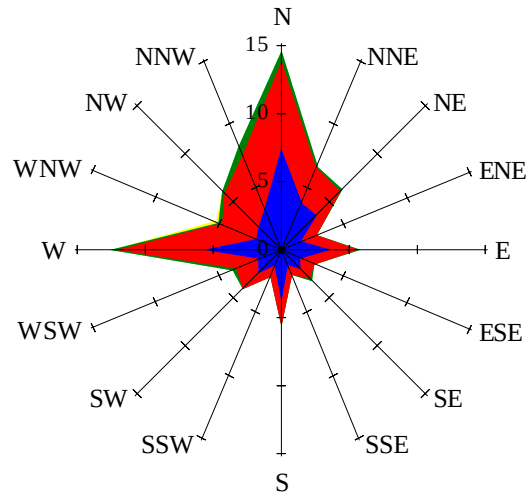


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

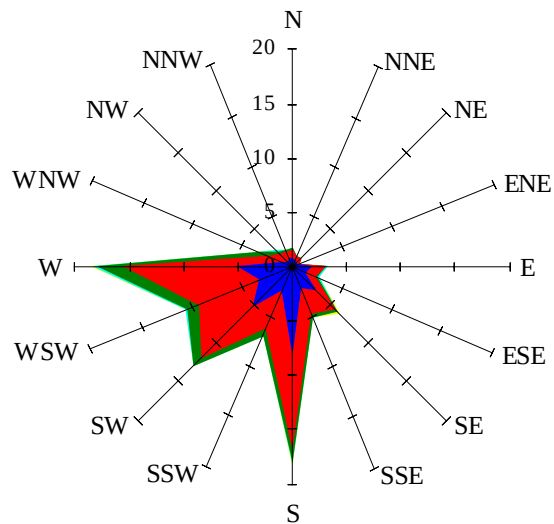
Labels of Percent Frequency on North Axis



Percent Calm = 11.22

Wind Summary - March, April, and May

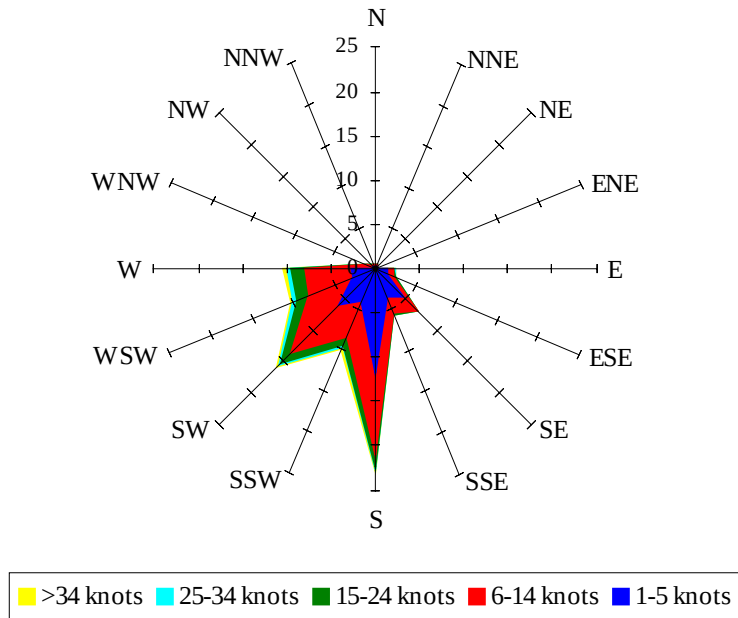
Labels of Percent Frequency on North Axis



Percent Calm = 6.35

Wind Summary - June, July, and August

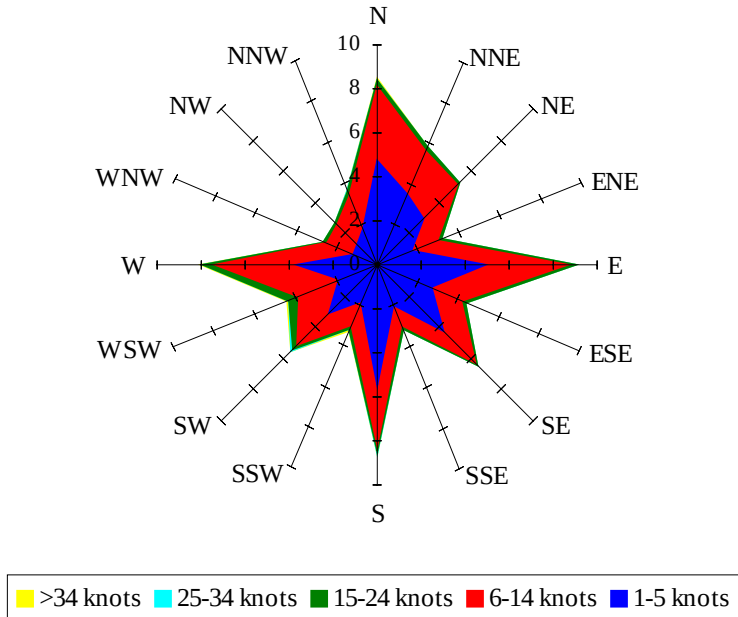
Labels of Percent Frequency on North Axis



Percent Calm = 10.80

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 15.69