

MELBOURNE AU

Latitude = 37.60 S

Longitude = 144.83 E

Period of Record = 1973 to 1996

WMO No. 948660

Elevation = 463 feet

Average Pressure = 29.49 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	100	65	42	17.0	NNW
0.4% Occurrence	93	65	49	16.0	N
1.0% Occurrence	88	63	50	15.6	N
2.0% Occurrence	84	64	56	14.4	N
Mean Daily Range	14	-	-	-	-
97.5% Occurrence	41	39	33	8.6	N
99.0% Occurrence	39	38	31	7.8	N
99.6% Occurrence	37	36	29	7.0	N
Median of Extreme Lows	32	31	24	5.7	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	72	85	96	11.9	N
0.4% Occurrence	69	82	86	11.8	N
1.0% Occurrence	67	79	79	11.8	N
2.0% Occurrence	65	77	74	11.1	N
	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	99	75	0.65	8.4	N
0.4% Occurrence	94	71	0.61	9.5	N
1.0% Occurrence	87	70	0.57	7.8	S
2.0% Occurrence	82	68	0.54	8.0	N
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		38	292	5	111

Other Site Data

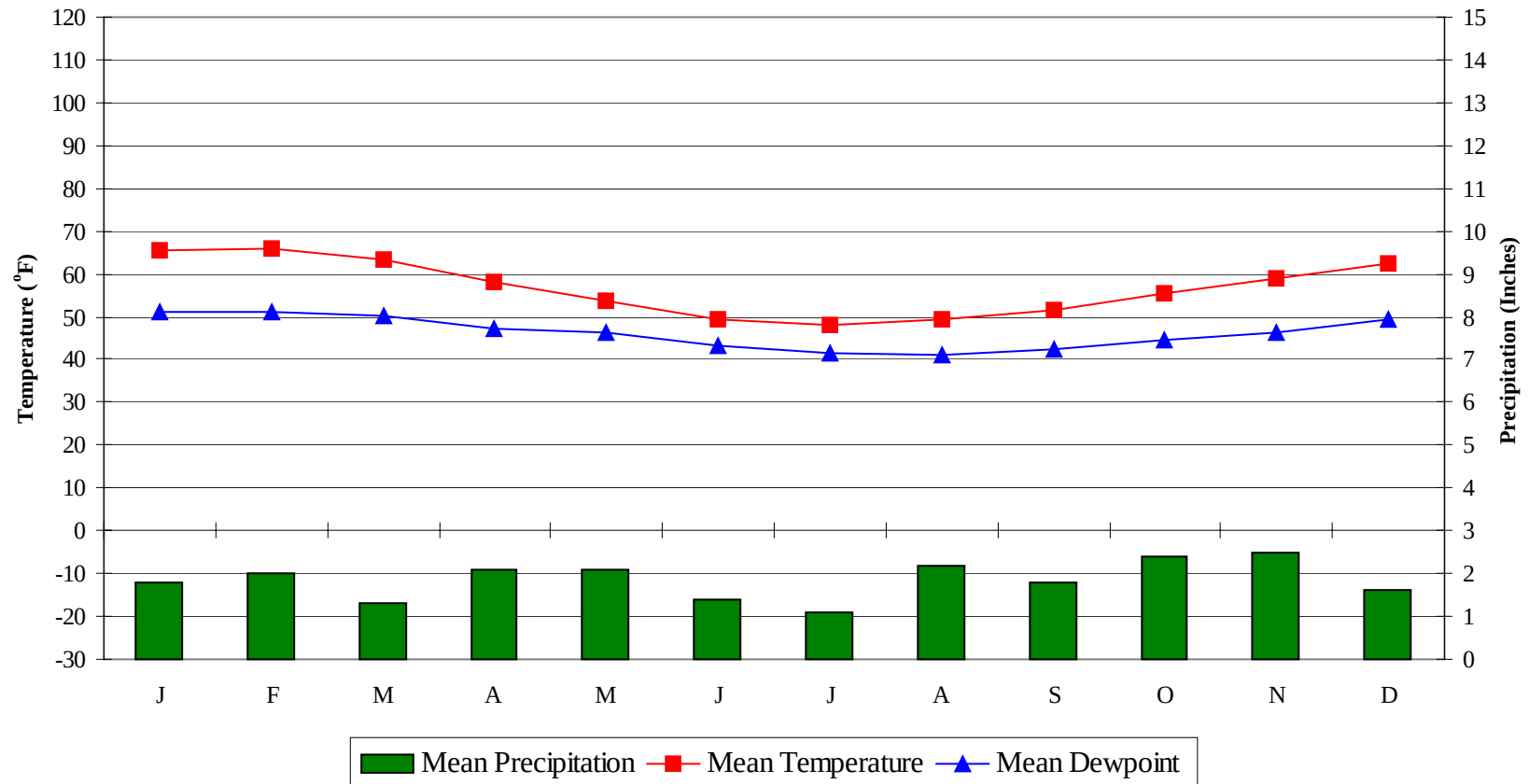
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
8	N/A	N/A	0.0 + 0.2
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
59.4	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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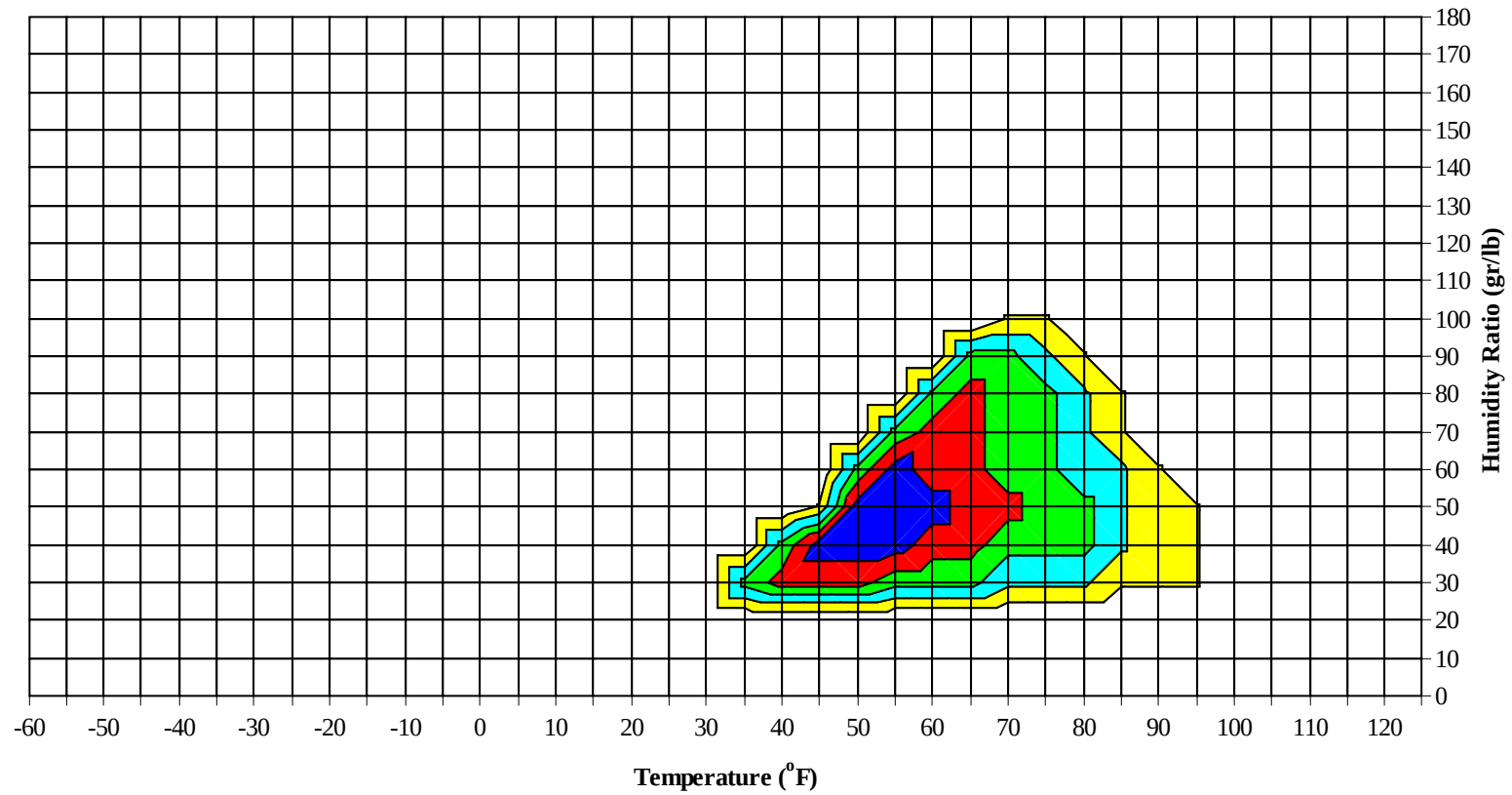
Average Annual Climate



MELBOURNE AU

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Long Term Psychrometric Summary

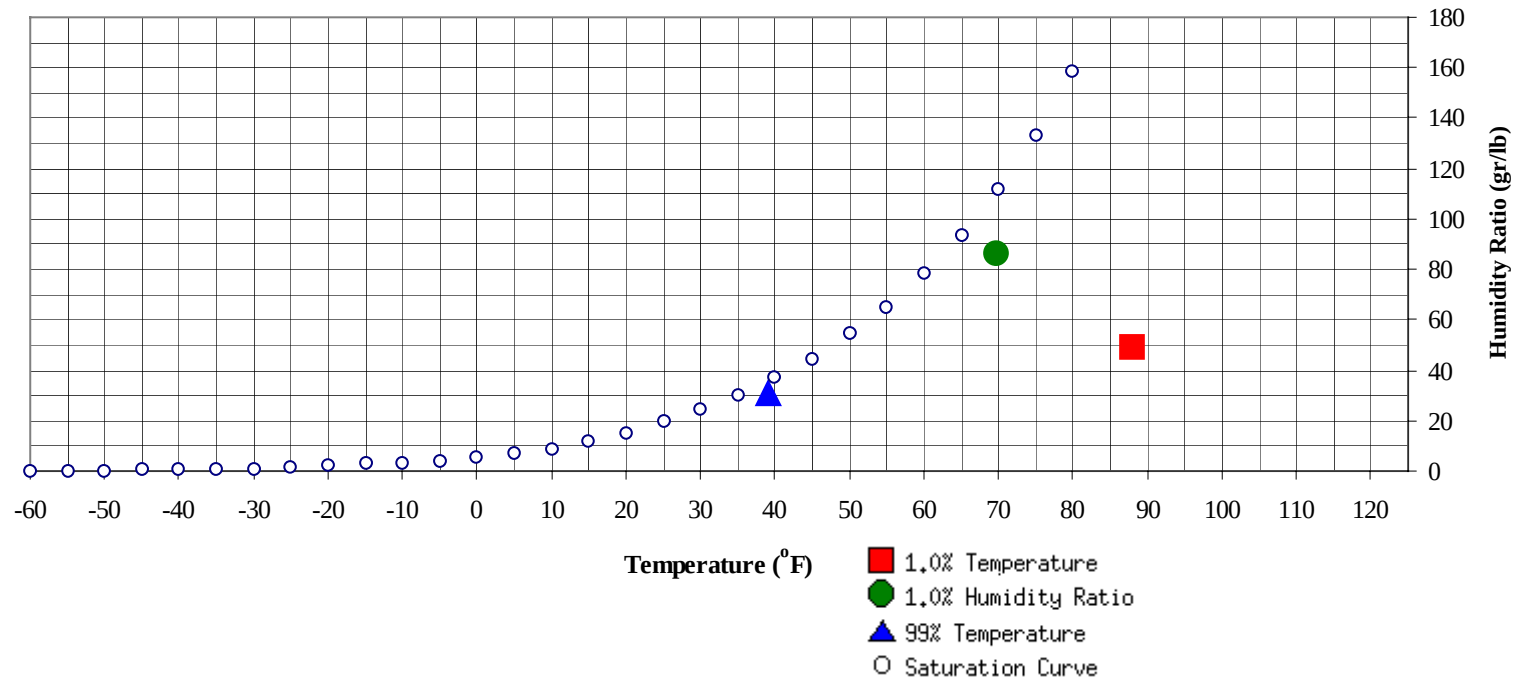


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

MELBOURNE AU

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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	39	31.1	14.2		86.8	69.8	65.1	62.6	30.3

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	88	49.5	63.4	28.9

MELBOURNE AU

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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												0		0	65.0
100 / 104		2	0	2	67.0		2	0	2	66.4		0	0	0	63.4
95 / 99		6	2	8	65.0		4	2	6	66.5		2	1	3	64.6
90 / 94	0	9	3	13	65.4		10	3	14	65.4	0	6	2	8	64.4
85 / 89	1	10	6	17	64.7	0	12	6	18	64.1	0	9	2	11	63.2
80 / 84	3	20	11	34	64.2	1	21	9	31	63.7	1	22	7	29	62.4
75 / 79	9	29	18	56	62.9	7	27	19	53	62.2	4	29	15	49	61.8
70 / 74	17	42	31	91	61.2	17	39	28	83	60.5	11	36	24	71	60.3
65 / 69	17	50	40	107	59.0	13	45	34	92	58.6	15	42	33	89	58.8
60 / 64	54	58	66	179	56.8	49	45	66	160	56.9	50	63	65	178	56.8
55 / 59	81	20	59	160	53.4	87	17	49	152	53.7	80	35	71	186	53.0
50 / 54	53	1	12	66	49.4	43	2	9	54	49.8	66	5	24	95	49.6
45 / 49	13		0	13	44.9	9	0	0	9	45.3	20	0	3	23	45.0
40 / 44	0			0	42.0	0			0	43.0	2	0		2	41.8
35 / 39															
30 / 34															
25 / 29															

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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WMO No. 948660

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		
105 / 109															
100 / 104															
95 / 99															
90 / 94		0		0	60.0										
85 / 89	0	1		1	62.8										
80 / 84	0	6	1	7	61.1										
75 / 79	0	18	4	22	59.7		1		1	60.4					
70 / 74	4	26	12	42	58.5		8	1	10	58.9					
65 / 69	8	31	16	55	56.9	1	16	4	21	56.7					
60 / 64	22	68	44	133	55.0	8	49	22	78	55.2	2	11	4	18	55.2
55 / 59	67	70	83	220	52.6	43	109	69	221	52.3	10	71	25	106	51.2
50 / 54	76	18	61	156	49.2	90	55	100	246	49.2	59	112	94	265	48.2
45 / 49	49	2	16	67	44.7	81	9	44	135	45.0	100	37	86	224	44.6
40 / 44	13		1	14	40.7	20	1	6	27	40.8	42	7	23	72	40.5
35 / 39	2			2	37.7	5	0	1	6	37.4	22	3	7	31	36.8
30 / 34						0			0	33.0	5	0	0	5	32.3
25 / 29															

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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															
100 / 104															
95 / 99															
90 / 94															
85 / 89															
80 / 84												0	0	0	62.0
75 / 79							0		0	51.0		2	1	3	59.3
70 / 74		0		0	56.7		1		1	55.8	0	8	2	10	57.7
65 / 69		1		1	53.3		5	0	5	54.1	2	10	5	18	56.0
60 / 64	0	4	0	4	52.2	1	18	6	24	52.5	6	42	15	63	53.4
55 / 59	3	52	14	69	50.2	6	69	24	99	49.4	17	79	45	141	50.2
50 / 54	38	117	83	238	47.5	44	105	84	233	46.9	53	79	76	208	47.6
45 / 49	116	63	109	288	44.1	107	42	100	249	43.9	93	20	73	187	44.3
40 / 44	59	9	34	103	40.3	61	7	29	97	40.3	45	1	19	65	40.1
35 / 39	28	2	8	38	36.7	27	1	6	34	36.7	22	0	3	25	36.9
30 / 34	4	0	0	4	32.3	2	0		2	32.5	1			1	32.9
25 / 29	0			0	27.0	0			0	27.0					

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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							0		0	60.8		0	3	1	4 64.3
90 / 94		0		0	60.0		3	1	4	62.9		0	6	2	8 63.0
85 / 89		2	0	2	60.8		4	1	5	61.6		0	8	4	13 62.8
80 / 84		5	1	6	60.7	0	12	5	18	61.9		1	20	7	27 62.6
75 / 79		11	3	15	59.4	2	17	8	27	59.6		5	24	13	42 61.8
70 / 74	1	19	10	30	58.0	8	27	16	51	58.6	10	36	22	67	60.2
65 / 69	6	23	11	40	55.6	9	28	16	53	57.0	13	42	29	84	58.3
60 / 64	14	54	30	98	53.8	19	57	32	108	54.4	33	65	58	156	56.0
55 / 59	38	88	57	182	50.9	47	72	72	191	51.5	83	39	77	200	52.8
50 / 54	78	42	88	208	48.3	88	18	71	177	48.8	74	5	31	110	49.3
45 / 49	78	4	41	124	44.5	55	2	16	73	44.7	25	0	4	30	45.0
40 / 44	26	0	7	33	40.3	12	0	1	13	40.8	3		0	3	40.9
35 / 39	8		0	8	37.4	1	0		1	37.0	0			0	39.0
30 / 34							0		0	22.0					
25 / 29															

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WMO No. 948660

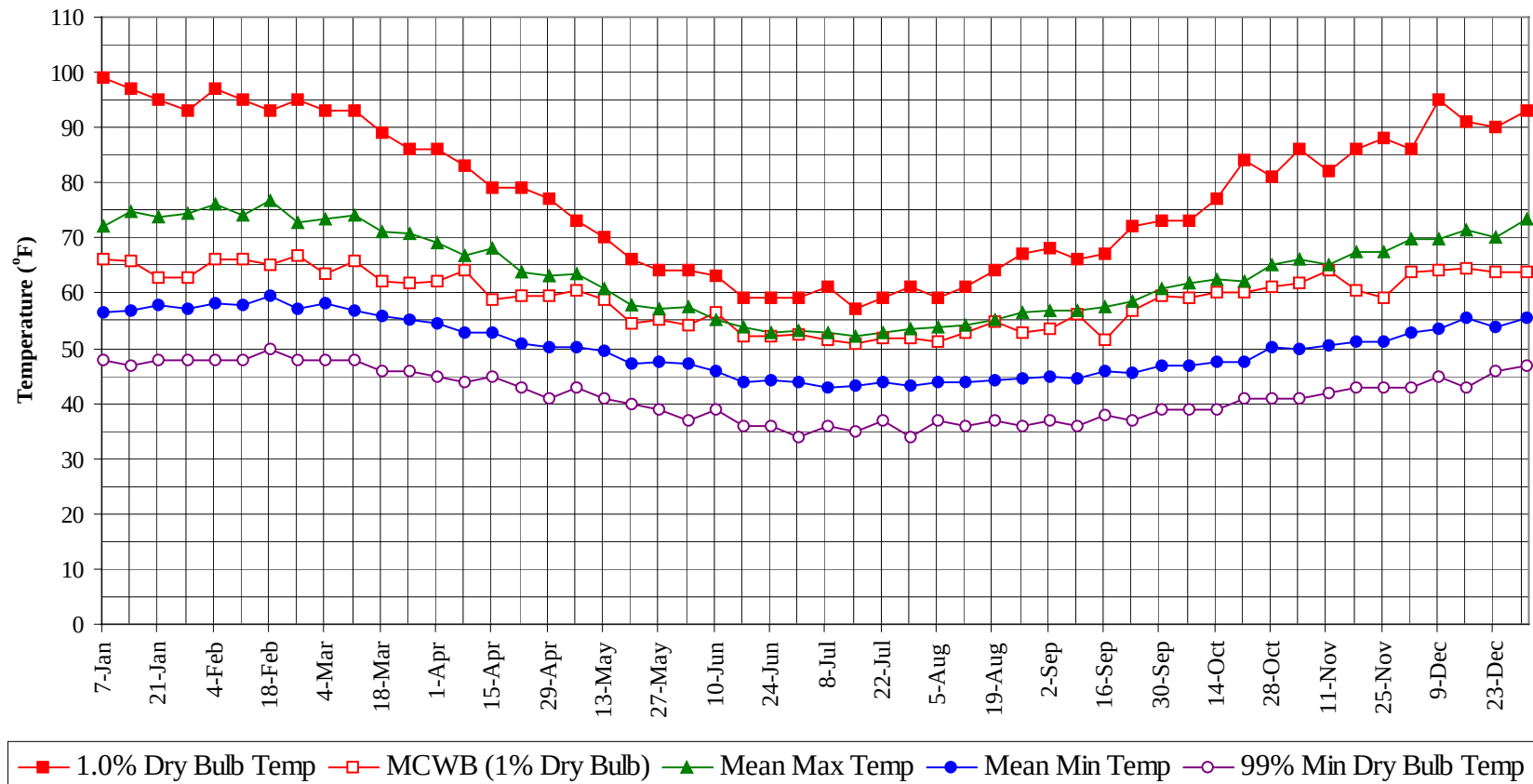
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)

Period of Record = 1973 to 1996

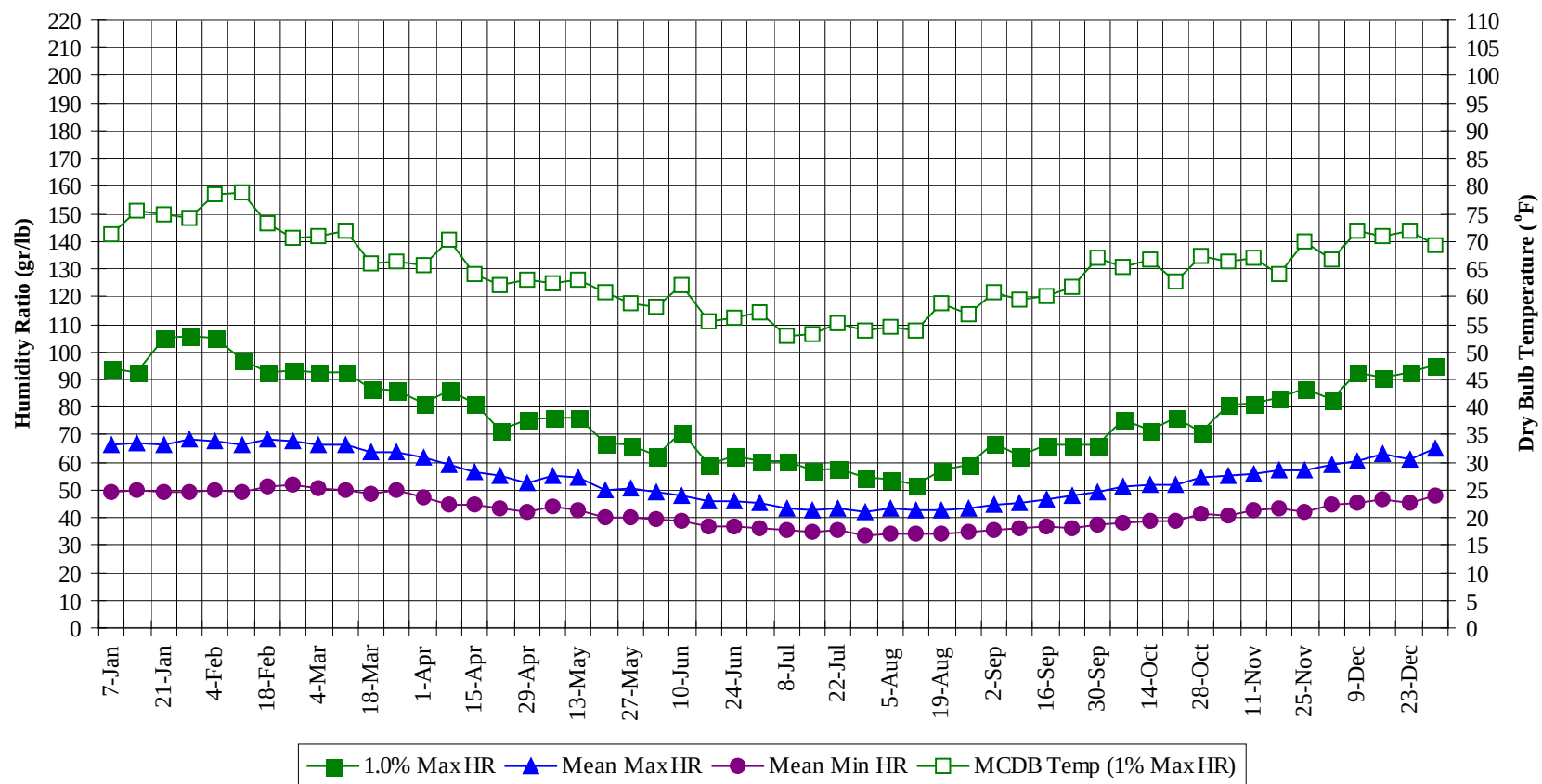
Annual Totals						
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	
	01 To 08	09 To 16	17 To 00			
105 / 109	0			0	65.0	
100 / 104	5			1	6	66.4
95 / 99	0	15	5	21	65.1	
90 / 94	0	34	11	45	64.5	
85 / 89	1	46	19	66	63.4	
80 / 84	7	105	42	153	62.9	
75 / 79	26	160	80	266	61.5	
70 / 74	66	243	148	457	59.9	
65 / 69	82	294	190	565	57.9	
60 / 64	258	540	411	1209	55.6	
55 / 59	564	722	651	1937	52.0	
50 / 54	768	552	736	2056	48.4	
45 / 49	744	174	487	1405	44.4	
40 / 44	279	24	115	419	40.4	
35 / 39	112	6	24	142	36.9	
30 / 34	13	1	0	14	32.3	
25 / 29	0			0	27.0	
					</	

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.

Annual Summary of Temperatures

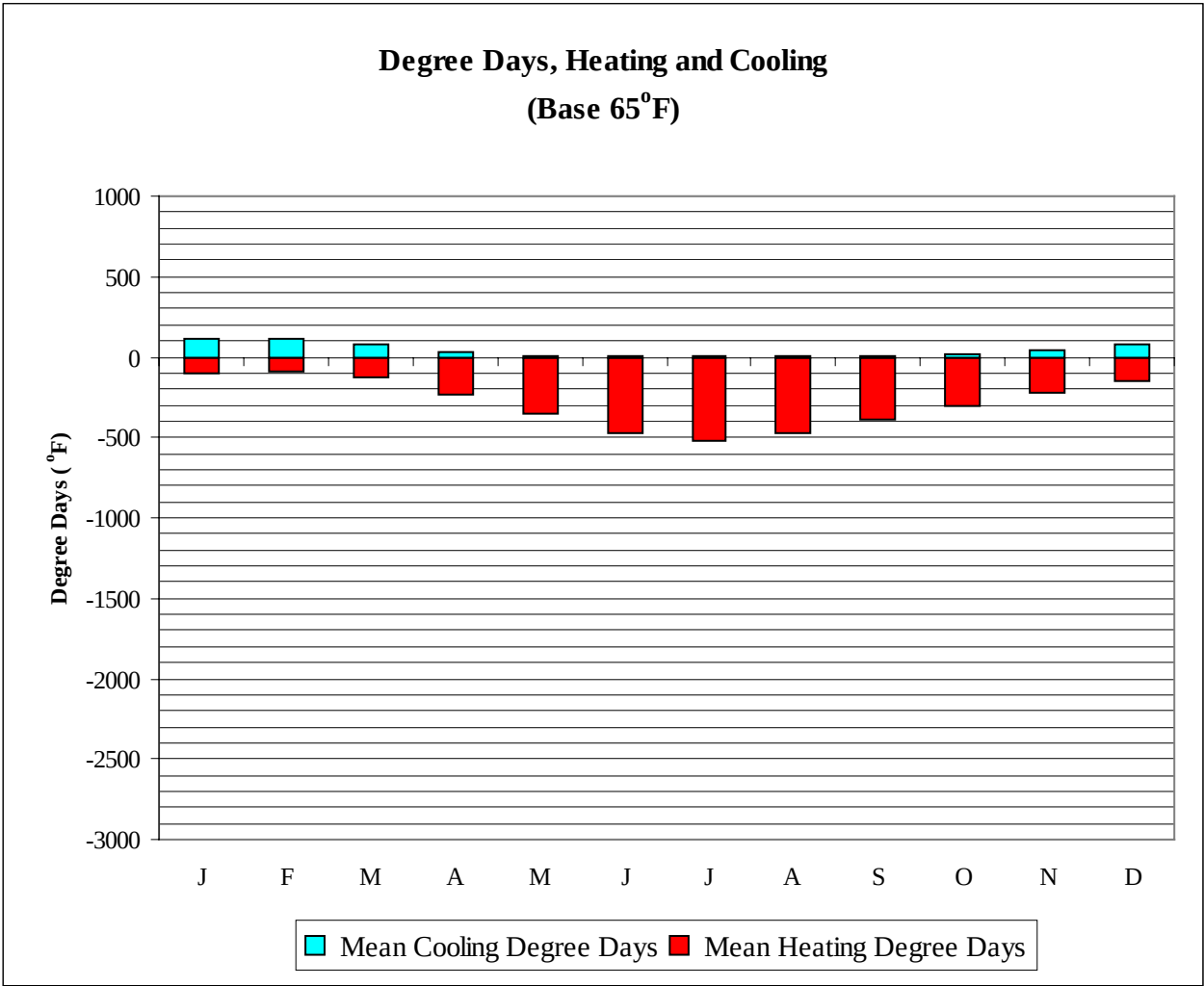


Long Term Humidity and Dry Bulb Temperature Summary

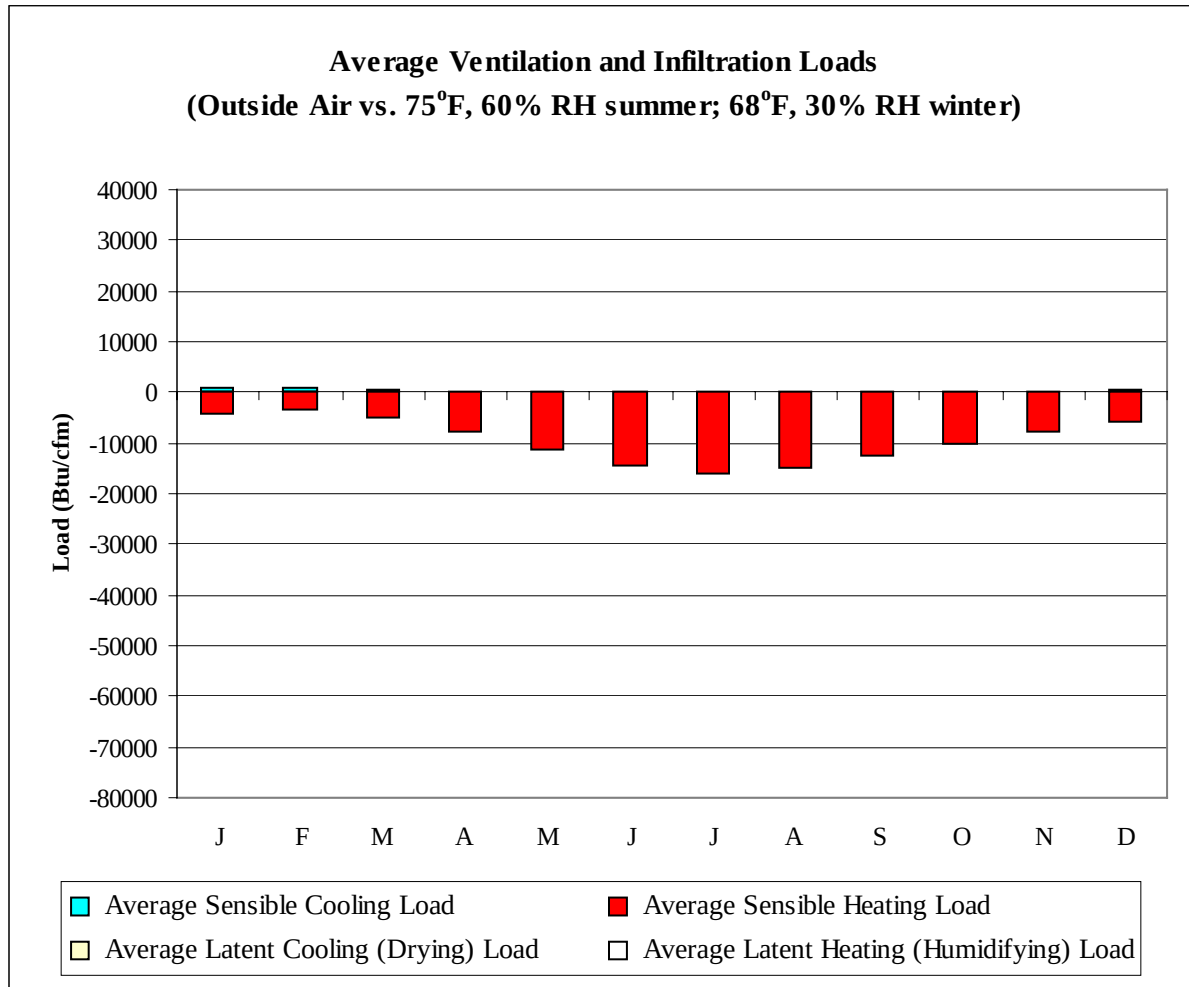


MELBOURNE AU**WMO No. 948660****Long Term Dry Bulb Temperature and Humidity Summary**

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	99.0	66.2	72.0	56.3	48.0	93.8	71.1	66.2	49.5
14-Jan	97.0	65.9	74.8	56.9	47.0	92.4	75.5	66.7	50.2
21-Jan	95.0	62.8	73.8	57.8	48.0	105.0	75.0	66.4	49.4
28-Jan	93.0	62.9	74.5	57.2	48.0	105.7	74.4	68.0	49.3
4-Feb	97.0	66.0	76.0	58.0	48.0	105.0	78.4	67.6	50.0
11-Feb	95.0	66.0	74.2	57.7	48.0	97.3	78.8	66.3	49.3
18-Feb	93.0	65.0	76.7	59.3	50.0	92.4	73.2	68.6	51.4
25-Feb	95.0	66.8	72.9	57.2	48.0	93.1	70.5	67.5	52.0
4-Mar	93.0	63.6	73.6	58.0	48.0	92.4	70.9	66.6	50.5
11-Mar	93.0	65.9	74.0	56.9	48.0	92.4	71.9	66.5	50.2
18-Mar	89.0	62.0	71.3	55.7	46.0	86.8	66.0	63.6	48.5
25-Mar	86.0	61.8	70.8	55.2	46.0	86.1	66.4	63.8	49.9
1-Apr	86.0	62.2	69.1	54.5	45.0	81.2	65.7	61.4	47.1
8-Apr	83.0	64.0	66.9	53.0	44.0	86.1	70.2	59.2	44.9
15-Apr	79.0	58.9	68.1	52.9	45.0	81.2	64.1	56.6	44.6
22-Apr	79.0	59.4	64.0	50.9	43.0	71.4	62.0	54.9	43.3
29-Apr	77.0	59.5	63.3	50.0	41.0	75.6	63.1	52.9	41.8
6-May	73.0	60.4	63.4	50.3	43.0	76.3	62.4	55.0	44.0
13-May	70.0	58.9	60.7	49.4	41.0	76.3	63.1	54.4	42.6
20-May	66.0	54.6	57.9	47.0	40.0	67.2	60.9	50.2	39.9
27-May	64.0	55.3	57.3	47.5	39.0	66.5	58.8	50.4	40.1
3-Jun	64.0	54.2	57.4	47.1	37.0	62.3	58.2	49.0	39.6
10-Jun	63.0	56.6	55.3	45.7	39.0	70.7	62.0	48.1	39.1
17-Jun	59.0	52.3	53.9	44.0	36.0	58.8	55.3	46.0	36.9
24-Jun	59.0	52.3	53.0	44.1	36.0	62.3	56.3	45.8	36.9
1-Jul	59.0	52.5	53.1	43.8	34.0	60.2	57.0	45.2	36.4
8-Jul	61.0	51.6	52.9	43.0	36.0	60.2	53.0	43.4	35.2
15-Jul	57.0	50.8	52.2	43.2	35.0	57.4	53.2	42.4	34.7
22-Jul	59.0	51.7	52.7	43.7	37.0	58.1	55.2	43.5	35.2
29-Jul	61.0	51.9	53.5	43.3	34.0	54.6	54.0	42.1	33.6
5-Aug	59.0	51.0	53.9	43.7	37.0	53.9	54.4	43.5	34.4
12-Aug	61.0	52.9	54.3	44.0	36.0	51.8	53.8	42.8	34.2
19-Aug	64.0	54.8	55.1	44.4	37.0	57.4	58.7	42.7	34.3
26-Aug	67.0	53.0	56.5	44.5	36.0	58.8	56.8	43.5	34.7
2-Sep	68.0	53.4	56.8	44.8	37.0	67.2	60.8	44.7	35.3
9-Sep	66.0	56.0	56.8	44.7	36.0	62.3	59.5	45.5	36.2
16-Sep	67.0	51.7	57.5	45.8	38.0	66.5	60.2	46.6	37.0
23-Sep	72.0	56.8	58.5	45.5	37.0	66.5	61.8	47.7	36.4
30-Sep	73.0	59.6	60.7	46.8	39.0	66.5	67.1	49.3	37.4
7-Oct	73.0	59.2	61.8	47.0	39.0	75.6	65.4	50.9	38.1
14-Oct	77.0	60.1	62.5	47.6	39.0	71.4	66.8	51.8	38.6
21-Oct	84.0	60.0	62.1	47.7	41.0	76.3	62.6	51.8	39.0
28-Oct	81.0	61.1	65.0	50.2	41.0	70.7	67.2	54.3	41.4
4-Nov	86.0	61.8	66.2	49.7	41.0	80.5	66.4	55.3	40.7
11-Nov	82.0	64.3	65.0	50.6	42.0	81.2	66.9	56.0	42.6
18-Nov	86.0	60.4	67.4	51.2	43.0	83.3	64.0	57.2	43.1
25-Nov	88.0	59.3	67.6	51.2	43.0	86.8	70.1	57.4	42.0
2-Dec	86.0	63.8	69.7	52.7	43.0	82.6	66.6	59.4	44.6
9-Dec	95.0	64.1	69.9	53.4	45.0	92.4	71.8	60.5	45.1
16-Dec	91.0	64.4	71.5	55.4	43.0	90.3	71.0	63.2	46.4
23-Dec	90.0	63.7	70.3	53.8	46.0	92.4	71.9	60.8	45.6
31-Dec	93.0	63.9	73.4	55.5	47.0	95.2	69.2	64.9	47.8



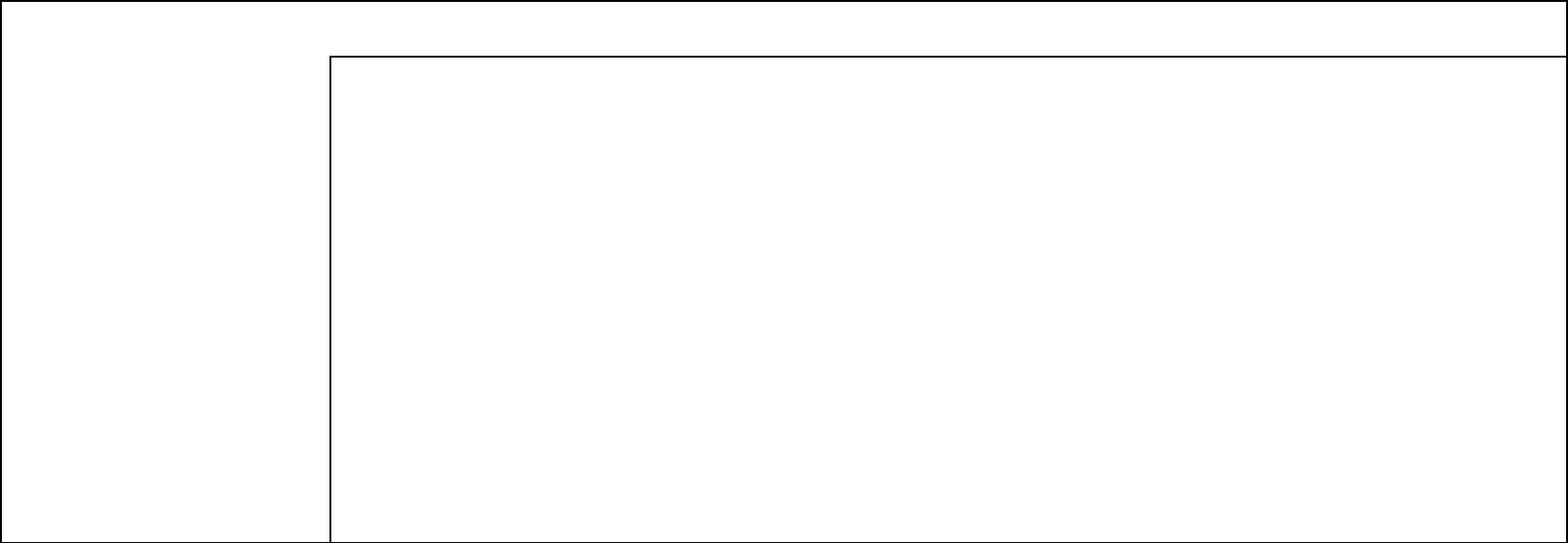
	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	113	102
FEB	112	85
MAR	82	130
APR	25	228
MAY	2	348
JUN	0	474
JUL	0	524
AUG	0	478
SEP	3	395
OCT	18	308
NOV	45	225
DEC	78	152
ANN	479	3449



	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	822	-4131	223	-19
FEB	762	-3487	137	-14
MAR	497	-5011	71	-11
APR	61	-7876	10	-10
MAY	1	-11329	1	-7
JUN	0	-14559	0	-31
JUL	0	-15893	0	-50
AUG	0	-14755	0	-51
SEP	3	-12505	0	-63
OCT	58	-10205	1	-42
NOV	217	-7727	17	-47
DEC	514	-5654	101	-26
ANN	2935	-113132	561	-371

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

No Solar Radiation
Data Available

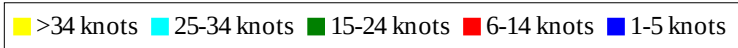
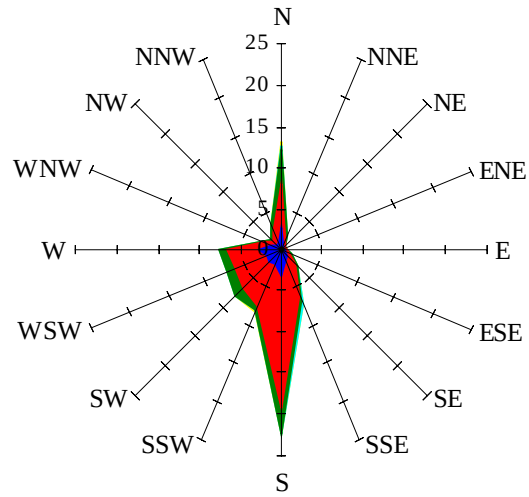


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

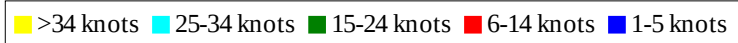
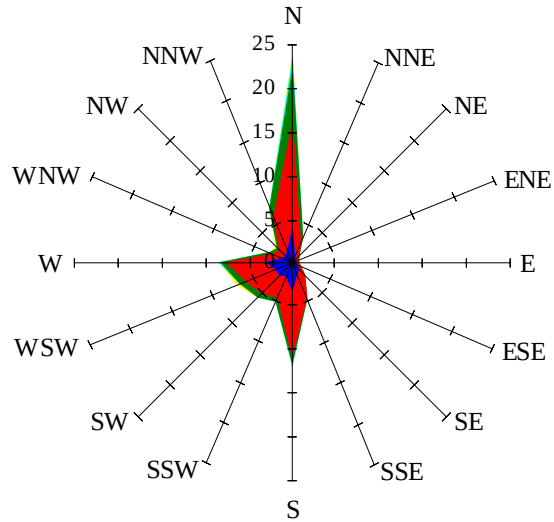
Labels of Percent Frequency on North Axis



Percent Calm = 11.12

Wind Summary - March, April, and May

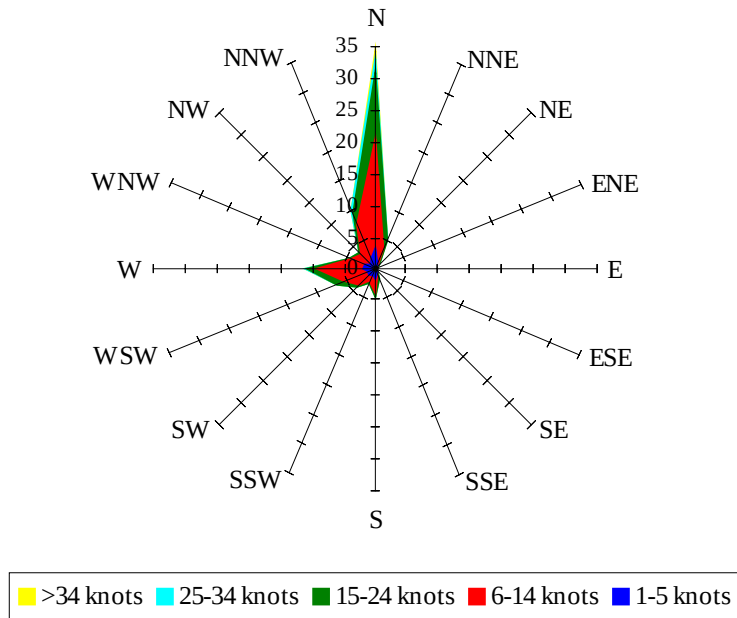
Labels of Percent Frequency on North Axis



Percent Calm = 15.69

Wind Summary - June, July, and August

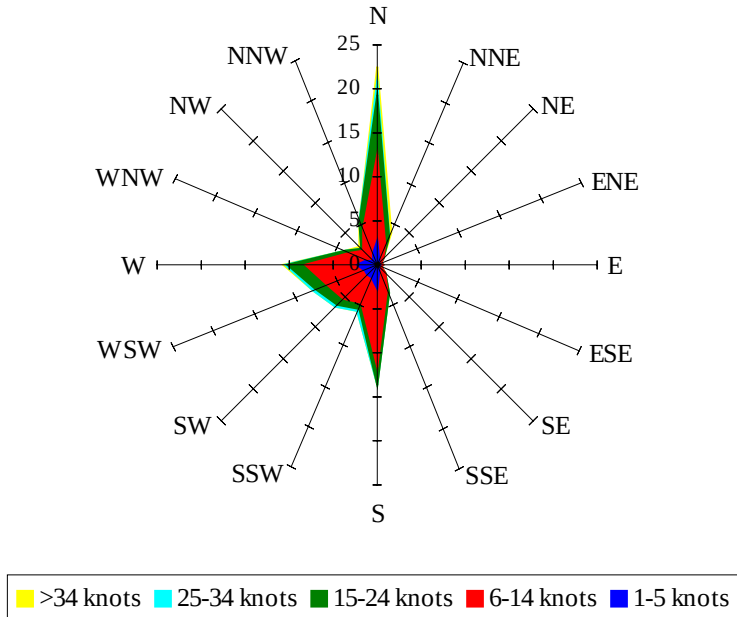
Labels of Percent Frequency on North Axis



Percent Calm = 9.80

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 9.84