

DARWIN AU	
Latitude = 12.40 S	WMO No. 941200
Longitude = 130.87 E	Elevation = 98 feet
Period of Record = 1973 to 1996	Average Pressure = 29.69 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	73	84	10.3	E
0.4% Occurrence	93	75	104	11.2	E
1.0% Occurrence	92	76	110	11.1	WNW
2.0% Occurrence	91	76	113	10.8	WNW
Mean Daily Range	13	-	-	-	-
97.5% Occurrence	68	61	68	5.1	SE
99.0% Occurrence	66	58	60	5.7	SE
99.6% Occurrence	64	55	52	6.1	SE
Median of Extreme Lows	61	51	41	6.8	SE
	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	90	163	10.0	W
0.4% Occurrence	82	88	153	9.2	W
1.0% Occurrence	81	87	148	8.4	W
2.0% Occurrence	81	87	148	8.4	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	168	87	1.10	5.3	W
0.4% Occurrence	160	86	1.05	7.0	W
1.0% Occurrence	153	84	1.00	7.9	W
2.0% Occurrence	151	84	0.99	6.2	W
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		87	5370	5853	7623

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	8.9 + 5.3
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 (#)
83.7	N/A	N/A	0

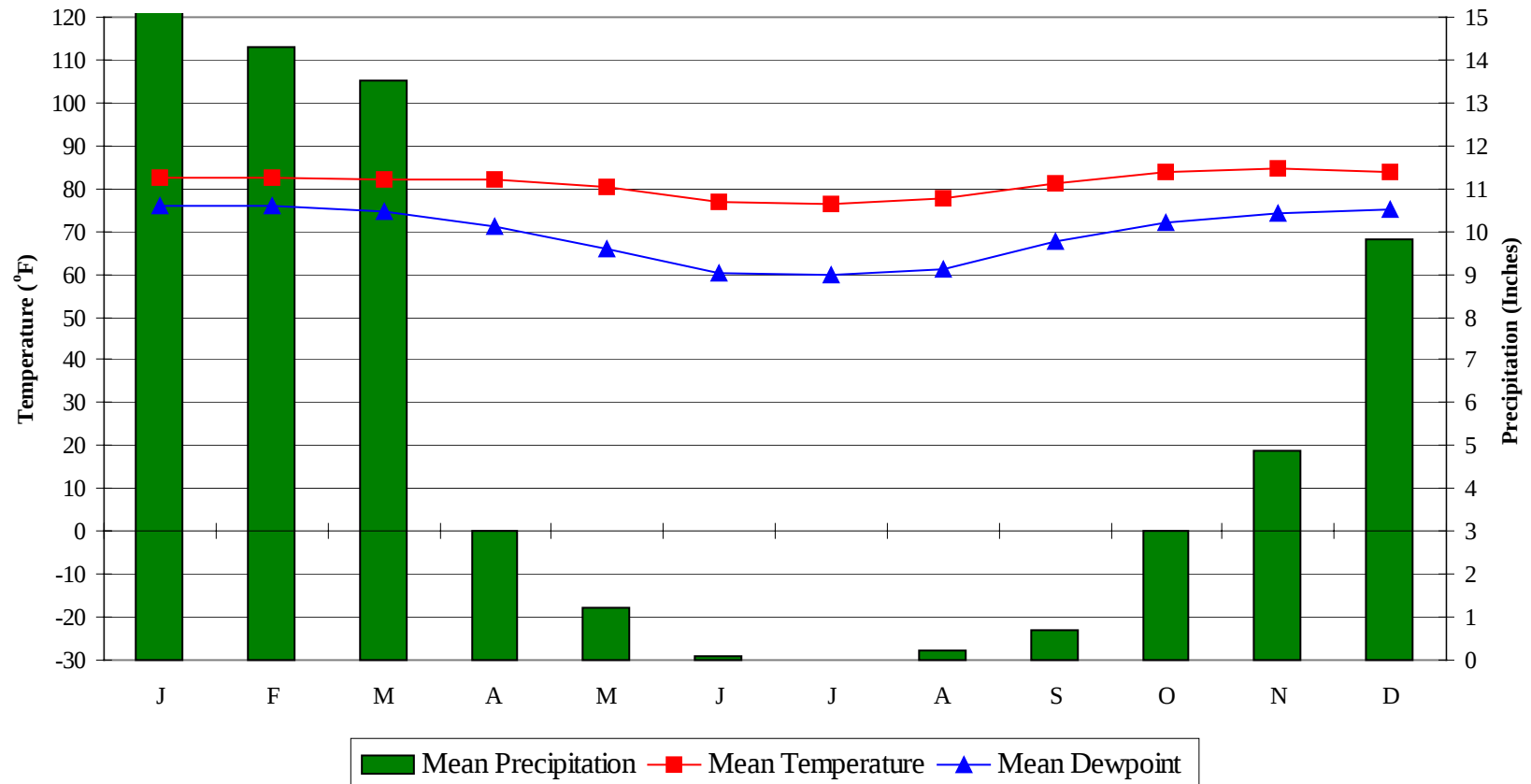
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

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Average Annual Climate

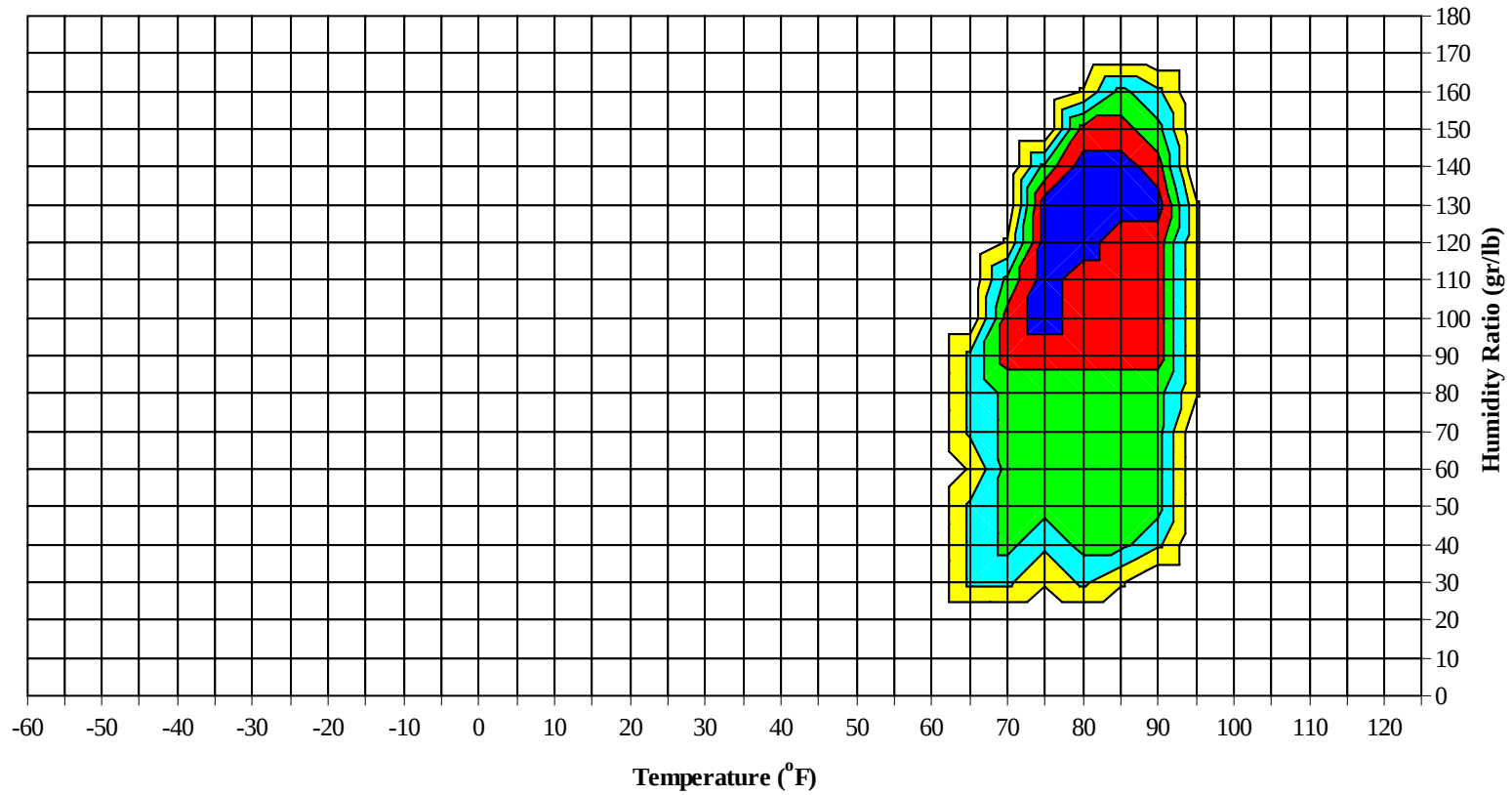


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Long Term Psychrometric Summary



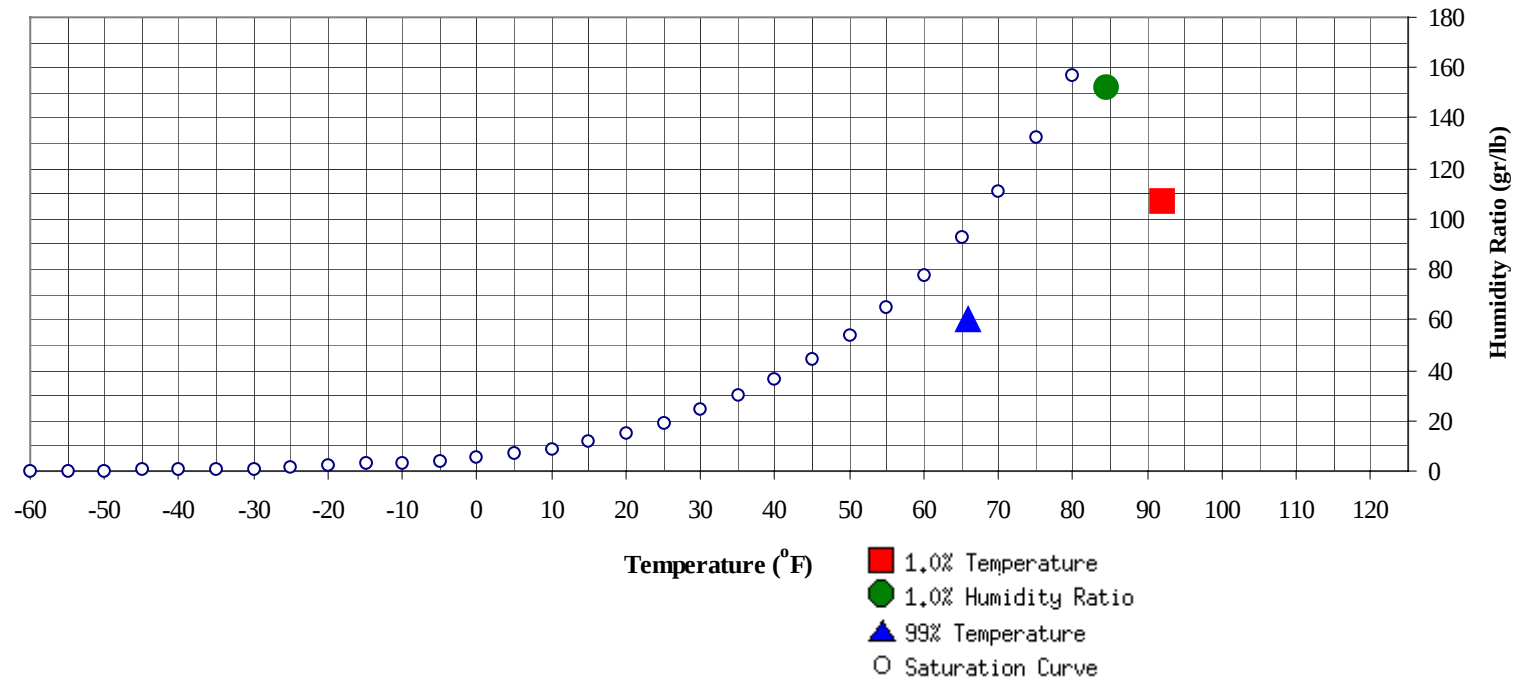
- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

DARWIN

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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)
	66	60.1	25.2		152.6	84.5	80.3	78.9	44.2

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	92	106.7	75	38.9

DARWIN 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		
100 / 104															
95 / 99		0	0	0	79.2	0	0		0	78.5		0	0	0	74.0
90 / 94	0	49	12	60	79.5	0	34	7	41	80.0	0	50	9	60	77.6
85 / 89	1	92	49	142	79.0	1	84	35	120	79.1	0	94	43	137	78.2
80 / 84	126	75	128	329	78.0	115	80	130	325	77.8	84	76	131	291	77.5
75 / 79	113	31	56	200	75.7	100	24	49	173	75.7	150	26	61	237	75.4
70 / 74	9	2	3	13	72.2	7	2	3	12	72.2	14	2	3	19	72.3
65 / 69	0			0	68.0								0	0	63.5
60 / 64															
55 / 59															

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. 941200

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		
100 / 104						0			0	81.0					
95 / 99		3	0	3	72.6	1			1	74.6					
90 / 94	0	68	14	83	73.4	0	53	10	63	71.6		15	2	17	69.2
85 / 89	0	77	40	118	75.7	0	86	32	118	72.0		68	16	84	68.7
80 / 84	48	72	133	253	75.8	16	68	111	195	73.2		77	55	132	68.4
75 / 79	171	18	50	239	74.0	148	31	82	261	71.3	50	49	112	210	69.1
70 / 74	20	2	2	24	68.2	71	7	12	91	65.2	126	22	47	194	65.4
65 / 69	1	0		1	60.5	12	1	0	13	58.4	43	7	8	59	58.9
60 / 64						1			1	51.2	19	2	1	22	53.5
55 / 59						0			0	50.8	2			2	47.8

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.

DARWIN AU

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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		
100 / 104															
95 / 99															
90 / 94		13	1	14	67.6	0	21	2	23	67.6		2	0	2	68.0
85 / 89	0	60	9	70	67.6	0	78	15	93	68.7	0	44	6	50	71.2
80 / 84	1	88	56	145	67.6	0	75	69	144	69.1	21	93	37	129	72.6
75 / 79	30	47	105	182	68.9	61	53	115	229	69.7	157	84	129	235	73.3
70 / 74	129	29	65	224	66.0	124	18	42	184	66.0	56	16	65	238	72.3
65 / 69	64	9	10	83	60.2	50	2	4	56	60.0	5	1	3	60	68.6
60 / 64	23	2	1	26	55.5	12	1	1	14	54.0	5		0	5	61.4
55 / 59	1			1	51.2	1	0		1	47.3	0			0	57.0

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.

DARWIN AU

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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		
100 / 104		0	0	0	80.0							0		0	83.0
95 / 99		4	1	5	73.2		3	0	3	75.8		1		1	77.4
90 / 94	0	83	21	103	75.7	0	98	25	123	77.9	0	79	17	96	78.8
85 / 89	0	101	58	159	75.8	7	97	85	189	77.9	12	97	71	179	78.5
80 / 84	124	55	160	339	75.8	150	33	111	294	77.1	137	53	123	313	77.6
75 / 79	118	5	9	131	73.9	76	8	18	102	74.4	91	16	35	143	75.4
70 / 74	6	1	0	7	69.0	6	1	2	9	71.9	8	2	2	12	71.7
65 / 69	0			0	62.0	0	0		0	66.0					
60 / 64															
55 / 59															

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.

WMO No. 941200

Period of Record = 1973 to 1996

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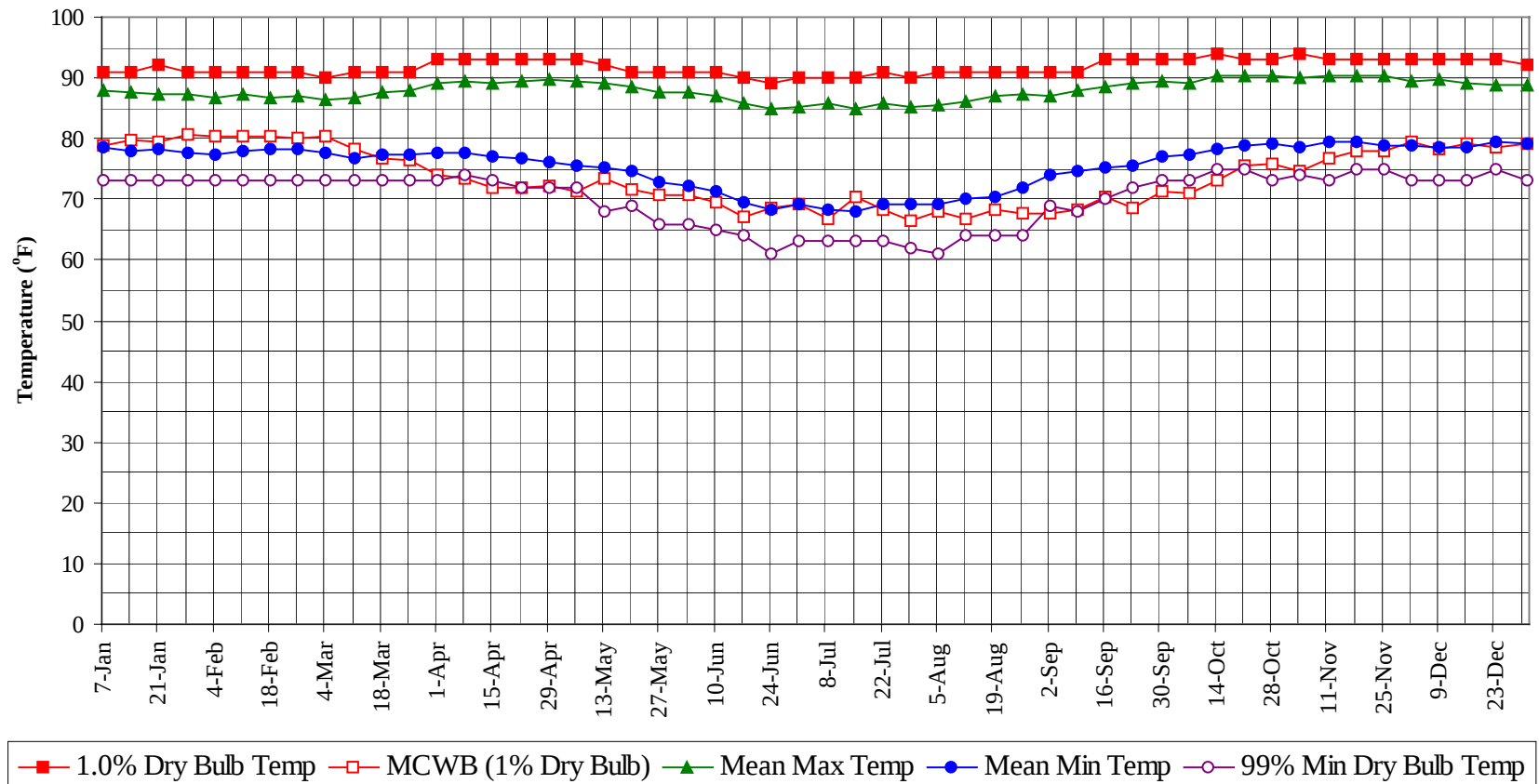
Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.

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WMO No. 941200

Annual Summary of Temperatures

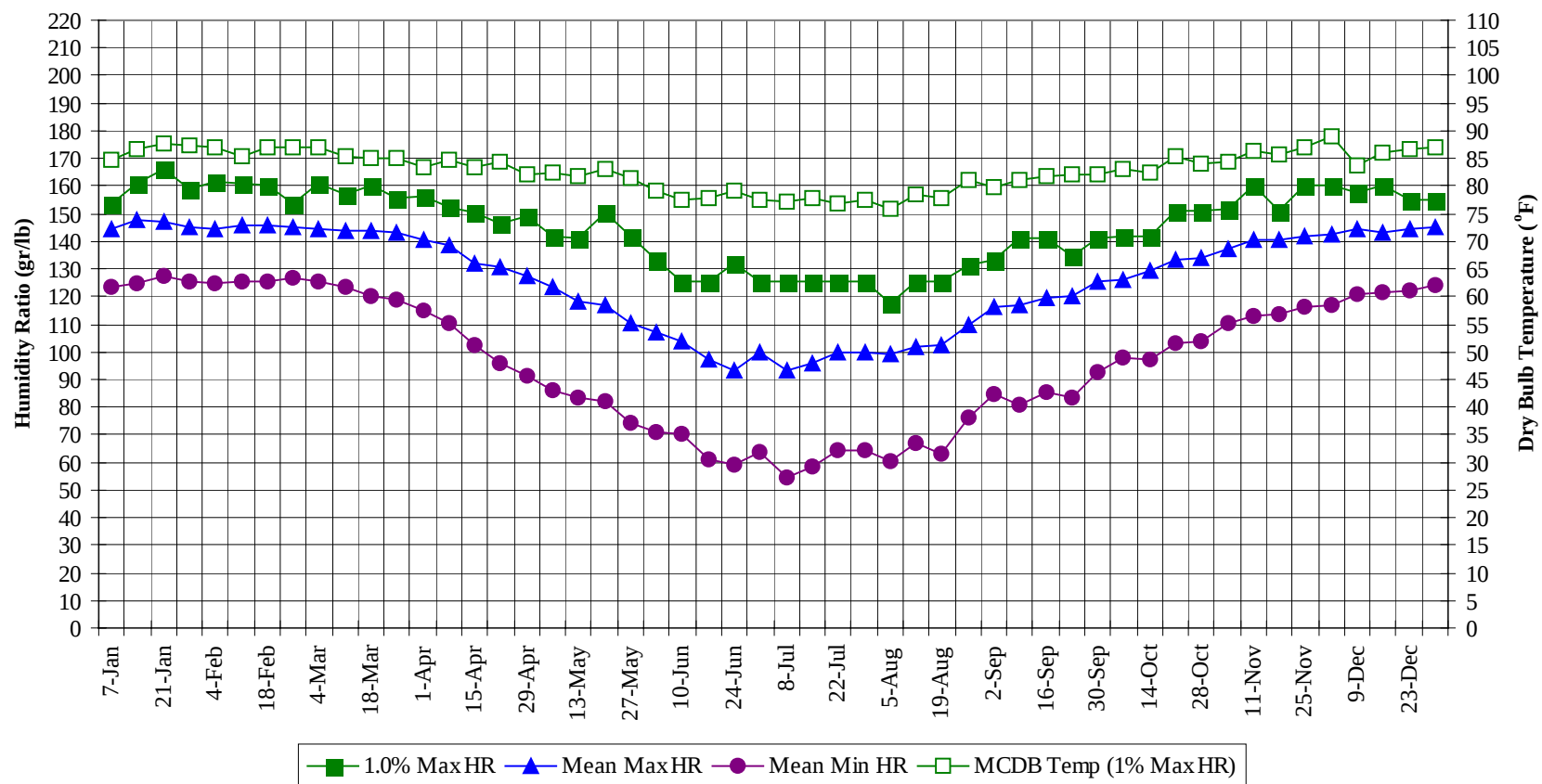


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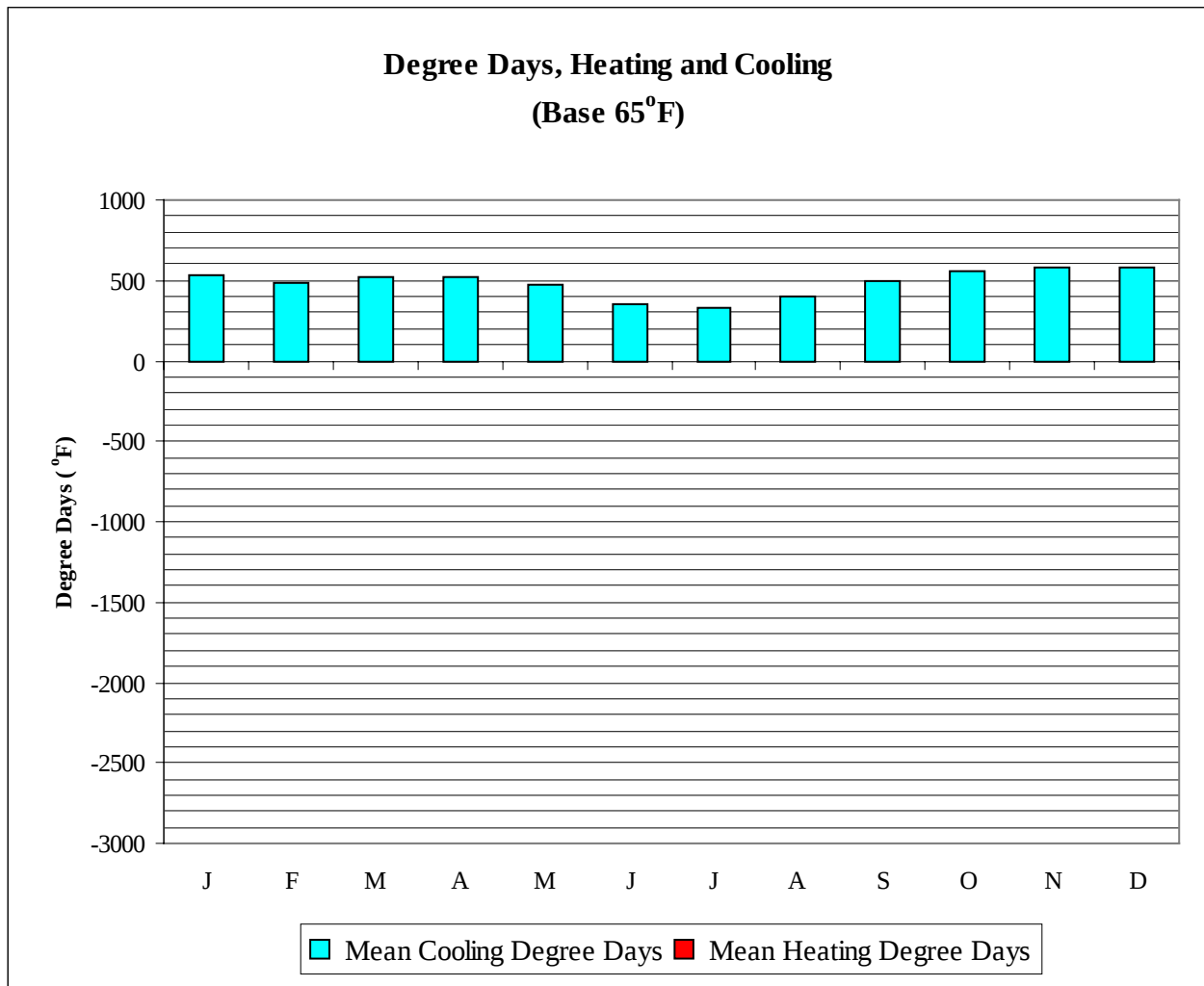
WMO No. 941200

Long Term Humidity and Dry Bulb Temperature Summary



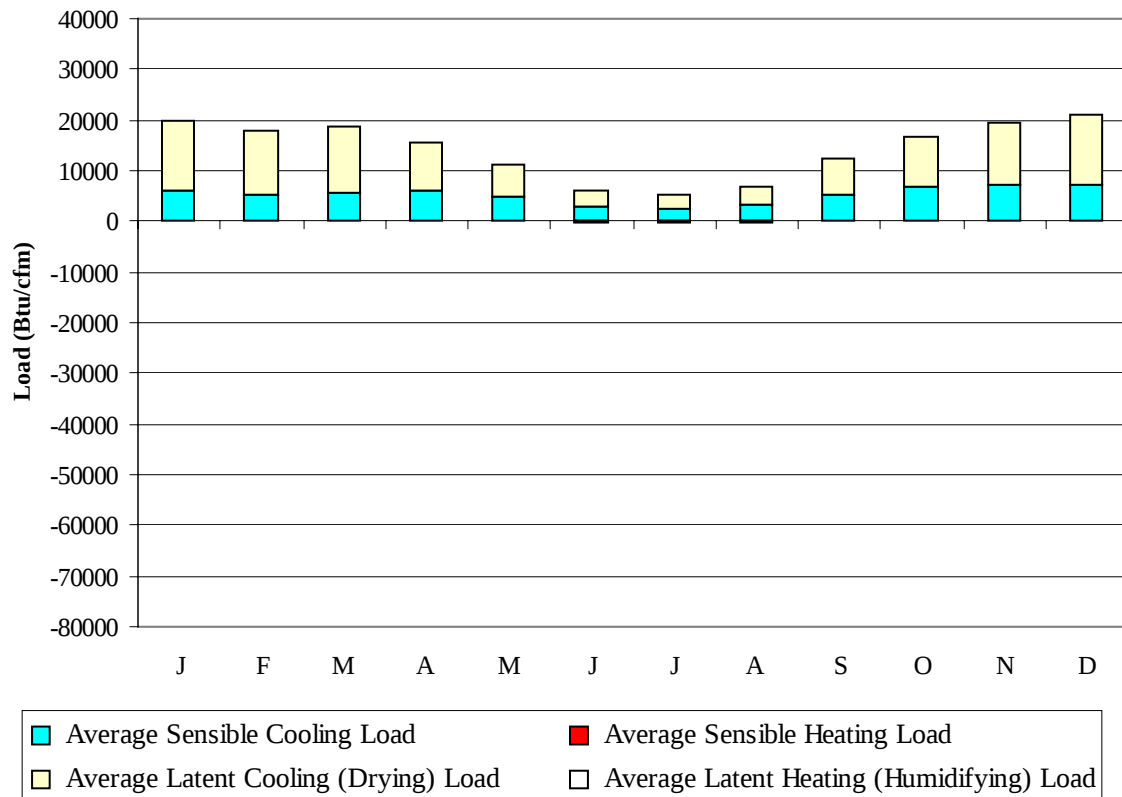
DARWIN**AU****WMO No. 941200****Long Term Dry Bulb Temperature and Humidity Summary**

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	78.8	88.0	78.4	73.0	154.0	84.6	144.8	123.7
14-Jan	91.0	79.7	87.6	78.0	73.0	161.0	86.6	147.6	125.1
21-Jan	92.0	79.5	87.4	78.1	73.0	165.9	87.8	147.2	127.1
28-Jan	91.0	80.6	87.2	77.7	73.0	158.9	87.3	145.0	125.6
4-Feb	91.0	80.3	86.8	77.4	73.0	161.7	87.1	144.5	124.9
11-Feb	91.0	80.3	87.2	78.0	73.0	161.0	85.3	145.7	125.5
18-Feb	91.0	80.2	86.8	78.1	73.0	160.3	87.2	145.7	125.6
25-Feb	91.0	80.1	86.9	78.1	73.0	154.0	87.0	144.9	126.7
4-Mar	90.0	80.2	86.5	77.5	73.0	161.0	87.1	144.3	125.5
11-Mar	91.0	78.2	86.6	76.7	73.0	156.8	85.3	143.6	123.4
18-Mar	91.0	76.8	87.7	77.4	73.0	160.3	85.2	143.9	120.3
25-Mar	91.0	76.5	88.0	77.3	73.0	155.4	85.1	143.2	119.2
1-Apr	93.0	73.9	89.1	77.7	73.0	156.1	83.5	140.4	115.2
8-Apr	93.0	73.6	89.4	77.7	74.0	152.6	84.6	138.9	110.2
15-Apr	93.0	72.0	89.2	76.9	73.0	150.5	83.2	132.2	102.1
22-Apr	93.0	72.0	89.5	76.8	72.0	146.3	84.3	130.5	95.7
29-Apr	93.0	72.3	89.7	76.3	72.0	149.1	82.0	127.4	91.5
6-May	93.0	71.2	89.5	75.6	72.0	142.1	82.4	123.5	86.2
13-May	92.0	73.4	89.1	75.1	68.0	141.4	81.8	118.0	83.7
20-May	91.0	71.6	88.5	74.5	69.0	150.5	83.2	117.2	82.2
27-May	91.0	70.7	87.7	72.9	66.0	142.1	81.6	110.3	74.1
3-Jun	91.0	70.8	87.7	72.3	66.0	133.0	79.2	107.4	70.9
10-Jun	91.0	69.6	86.9	71.5	65.0	125.3	77.6	103.6	70.1
17-Jun	90.0	67.0	85.9	69.4	64.0	125.3	77.7	97.1	61.0
24-Jun	89.0	68.7	84.9	68.3	61.0	132.3	79.3	93.4	58.9
1-Jul	90.0	69.1	85.2	69.2	63.0	125.3	77.6	99.9	63.7
8-Jul	90.0	66.7	85.9	68.4	63.0	125.3	77.2	93.5	54.3
15-Jul	90.0	70.4	84.9	68.0	63.0	125.3	77.7	95.6	58.5
22-Jul	91.0	68.3	85.8	69.3	63.0	125.3	76.9	99.7	64.1
29-Jul	90.0	66.6	85.3	69.3	62.0	125.3	77.5	100.0	64.2
5-Aug	91.0	68.0	85.5	69.1	61.0	117.6	76.0	99.0	60.6
12-Aug	91.0	66.9	86.1	70.1	64.0	125.3	78.6	101.8	66.8
19-Aug	91.0	68.3	87.1	70.4	64.0	125.3	77.8	102.7	63.3
26-Aug	91.0	67.7	87.2	71.9	64.0	131.6	81.0	109.9	76.3
2-Sep	91.0	67.7	87.2	73.9	69.0	133.0	79.7	116.5	85.0
9-Sep	91.0	68.3	88.0	74.5	68.0	141.4	81.2	116.6	80.9
16-Sep	93.0	70.4	88.6	75.1	70.0	141.4	81.9	119.3	85.1
23-Sep	93.0	68.7	89.2	75.6	72.0	134.4	82.0	120.1	83.5
30-Sep	93.0	71.3	89.4	76.9	73.0	141.4	82.0	125.6	92.5
7-Oct	93.0	71.1	89.1	77.3	73.0	142.1	83.2	126.2	97.6
14-Oct	94.0	73.0	90.3	78.3	75.0	142.1	82.5	129.4	97.0
21-Oct	93.0	75.4	90.2	78.9	75.0	151.2	85.3	133.1	103.1
28-Oct	93.0	75.8	90.3	79.1	73.0	151.2	84.0	133.9	104.0
4-Nov	94.0	74.5	90.0	78.7	74.0	151.9	84.4	137.0	110.4
11-Nov	93.0	76.7	90.4	79.4	73.0	160.3	86.5	140.4	112.9
18-Nov	93.0	77.8	90.3	79.5	75.0	151.2	85.5	140.3	113.6
25-Nov	93.0	77.9	90.2	78.8	75.0	160.3	87.0	142.1	115.9
2-Dec	93.0	79.3	89.4	78.9	73.0	160.3	89.0	142.2	117.0
9-Dec	93.0	78.3	89.7	78.4	73.0	157.5	83.8	144.2	120.6
16-Dec	93.0	79.1	89.0	78.7	73.0	160.3	86.0	143.3	121.5
23-Dec	93.0	78.6	88.8	79.4	75.0	154.7	86.6	144.7	122.4
31-Dec	92.0	79.1	88.7	79.0	73.0	154.7	87.0	144.8	124.1



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	536	0
FEB	485	0
MAR	525	0
APR	520	0
MAY	477	0
JUN	351	1
JUL	334	1
AUG	400	1
SEP	494	0
OCT	558	0
NOV	580	0
DEC	576	0
ANN	5836	3

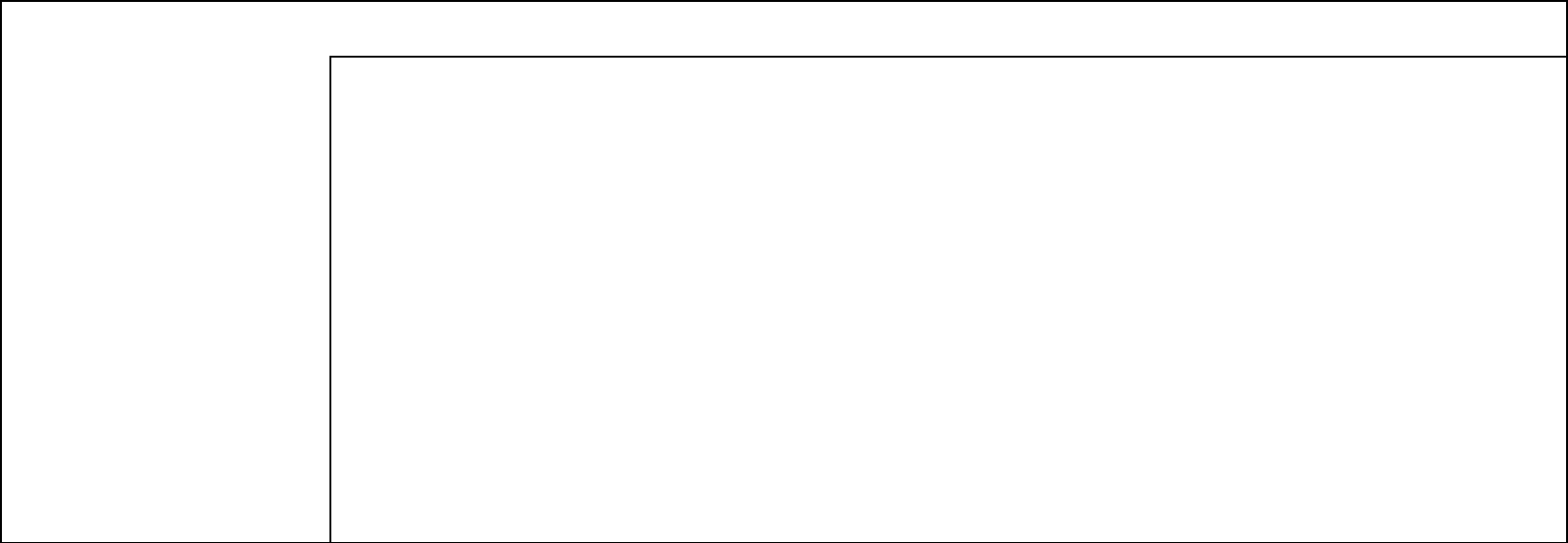
Average Ventilation and Infiltration Loads
(Outside Air vs. 75°F, 60% RH summer; 68°F, 30% RH winter)



	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	6050	0	13646	0
FEB	5360	0	12634	0
MAR	5807	0	12720	0
APR	6105	0	9483	0
MAY	5009	-10	6051	-1
JUN	2723	-93	3295	-22
JUL	2306	-98	2929	-53
AUG	3342	-56	3534	-74
SEP	5384	-1	6902	-22
OCT	6950	0	9957	0
NOV	7377	0	12226	0
DEC	7061	0	13840	0
ANN	63474	-258	107217	-172

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

No Solar Radiation
Data Available

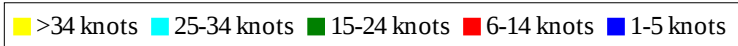
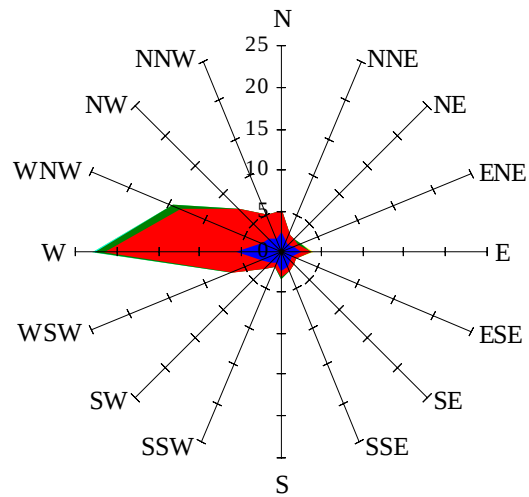


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

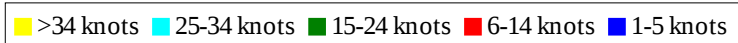
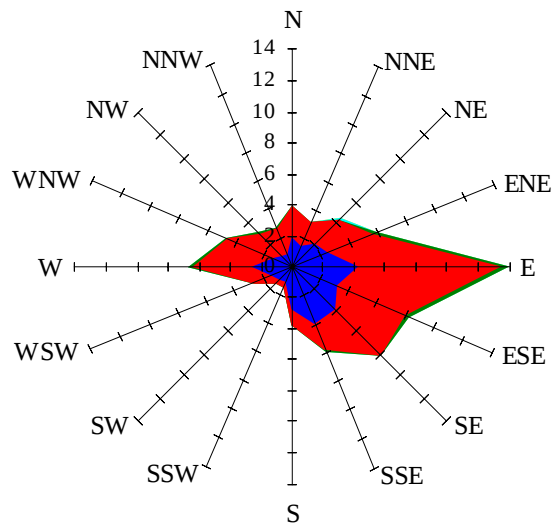
Labels of Percent Frequency on North Axis



Percent Calm = 14.87

Wind Summary - March, April, and May

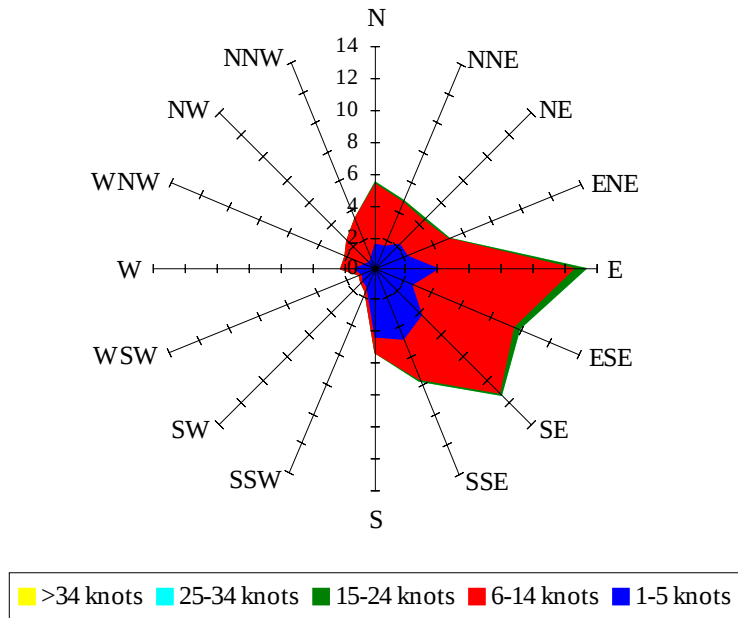
Labels of Percent Frequency on North Axis



Percent Calm = 20.85

Wind Summary - June, July, and August

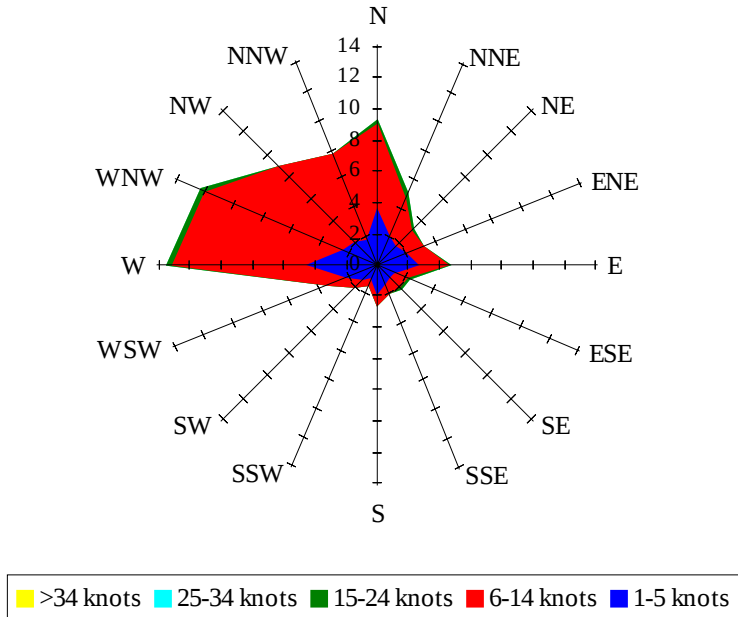
Labels of Percent Frequency on North Axis



Percent Calm = 19.55

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 17.52