

ARGENTIA (MARS)	CN	
Latitude = 47.30 N		WMO No. 718070
Longitude = 54.00 W		Elevation = 52 feet
Period of Record = 1973 to 1996		Average Pressure = 29.85 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	73	68	93	14.6	S
0.4% Occurrence	66	63	81	16.7	SSW
1.0% Occurrence	64	61	75	15.1	SSW
2.0% Occurrence	63	60	74	15.2	SSW
Mean Daily Range	9	-	-	-	-
97.5% Occurrence	3	3	6	15.4	SSW
99.0% Occurrence	-1	-1	4	17.1	N
99.6% Occurrence	-5	-5	3	16.6	W
Median of Extreme Lows	3	3	6	15.4	SSW
	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	67	69	95	15.1	S
0.4% Occurrence	64	65	86	16.0	SSW
1.0% Occurrence	62	63	80	15.8	SSW
2.0% Occurrence	61	62	77	15.3	SSW
	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	97	69	0.65	14.5	S
0.4% Occurrence	90	66	0.61	15.1	SSW
1.0% Occurrence	81	63	0.54	16.2	SSW
2.0% Occurrence	76	61	0.51	15.5	SSW
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		0	0	0	9

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
4	N/A	N/A	0.0 + 0.0
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 (#)
40.7	N/A	N/A	43

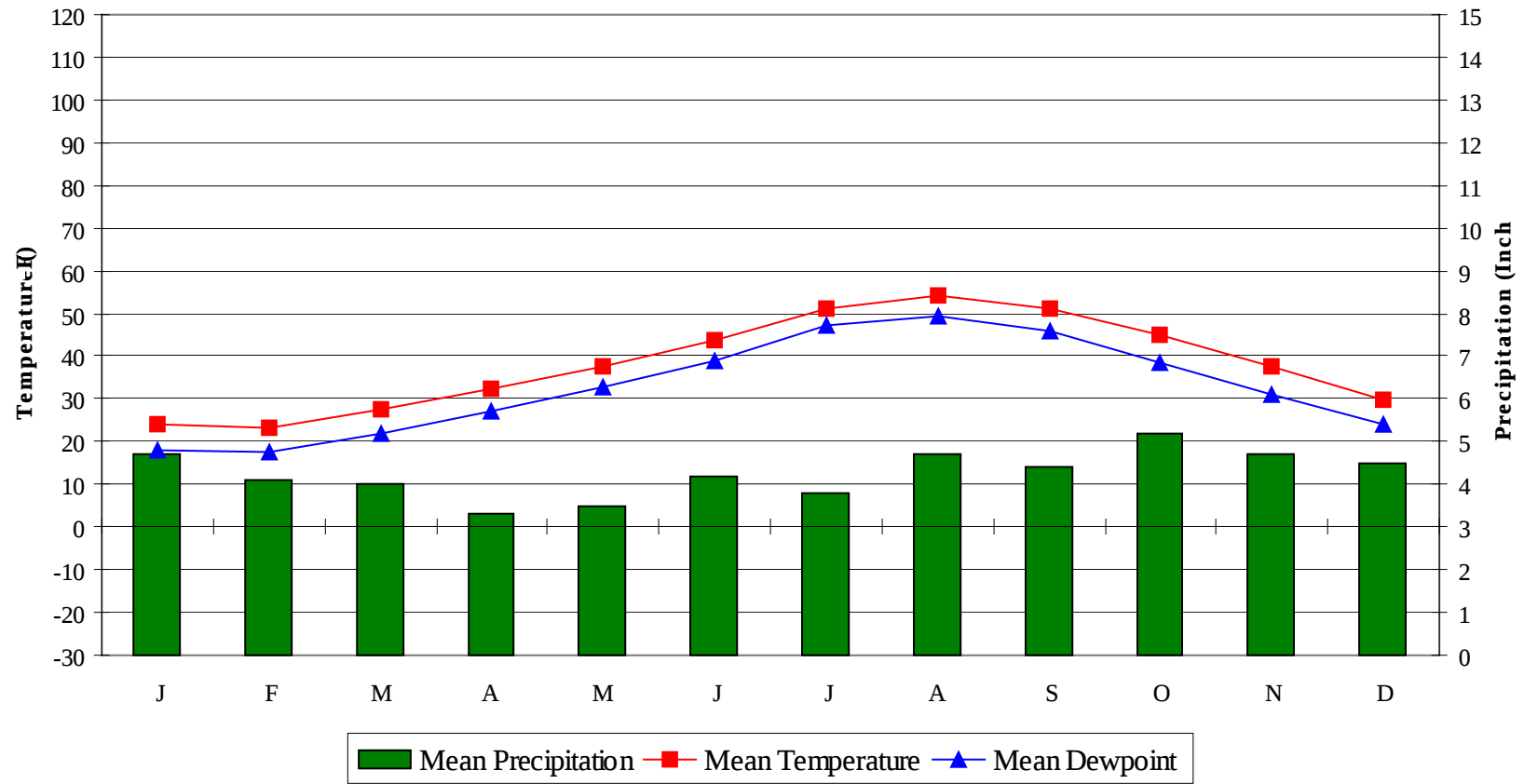
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

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Average Annual Climate

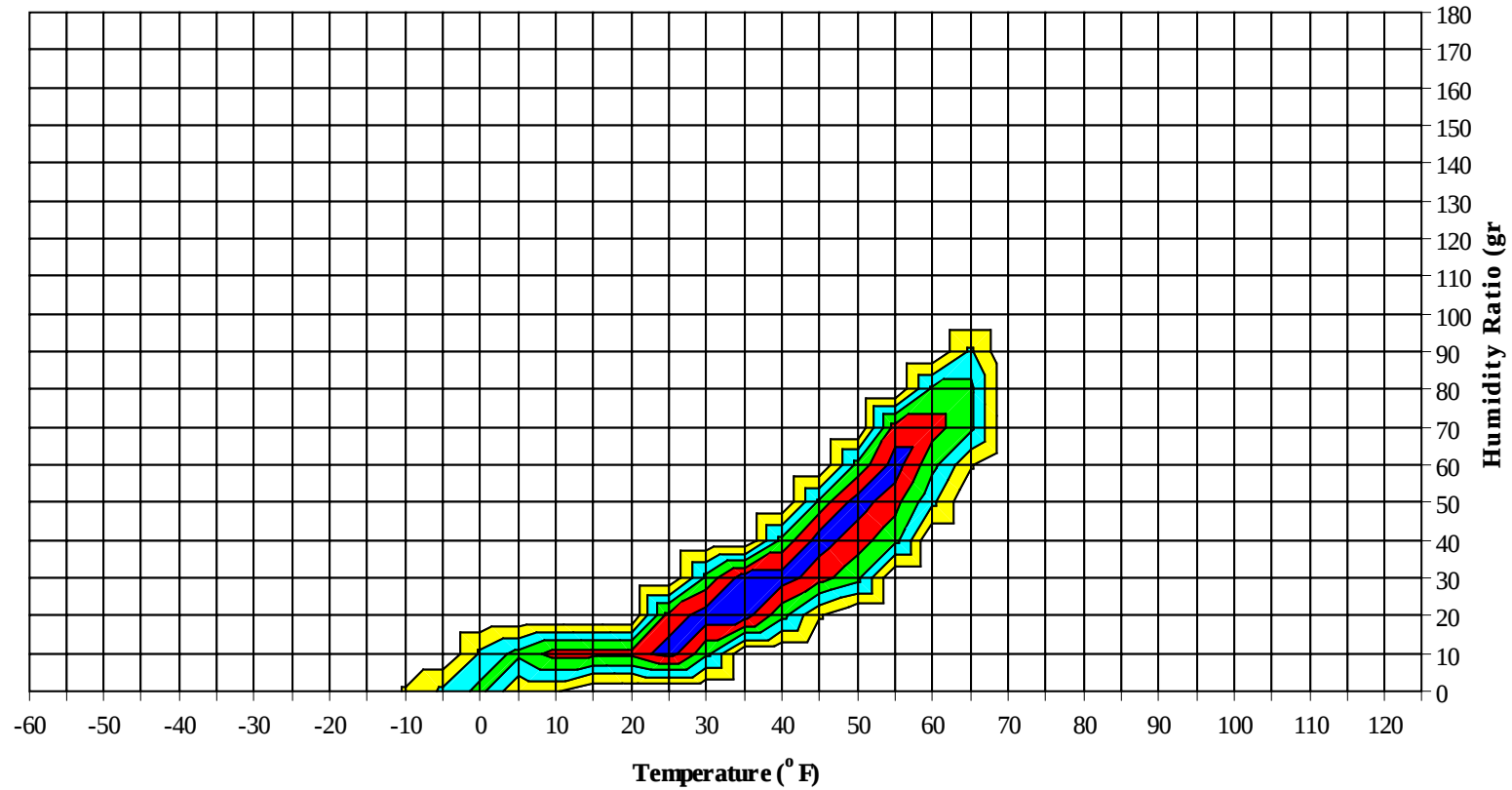


ARGENTIA (MARS)

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Long Term Psychrometric Summary

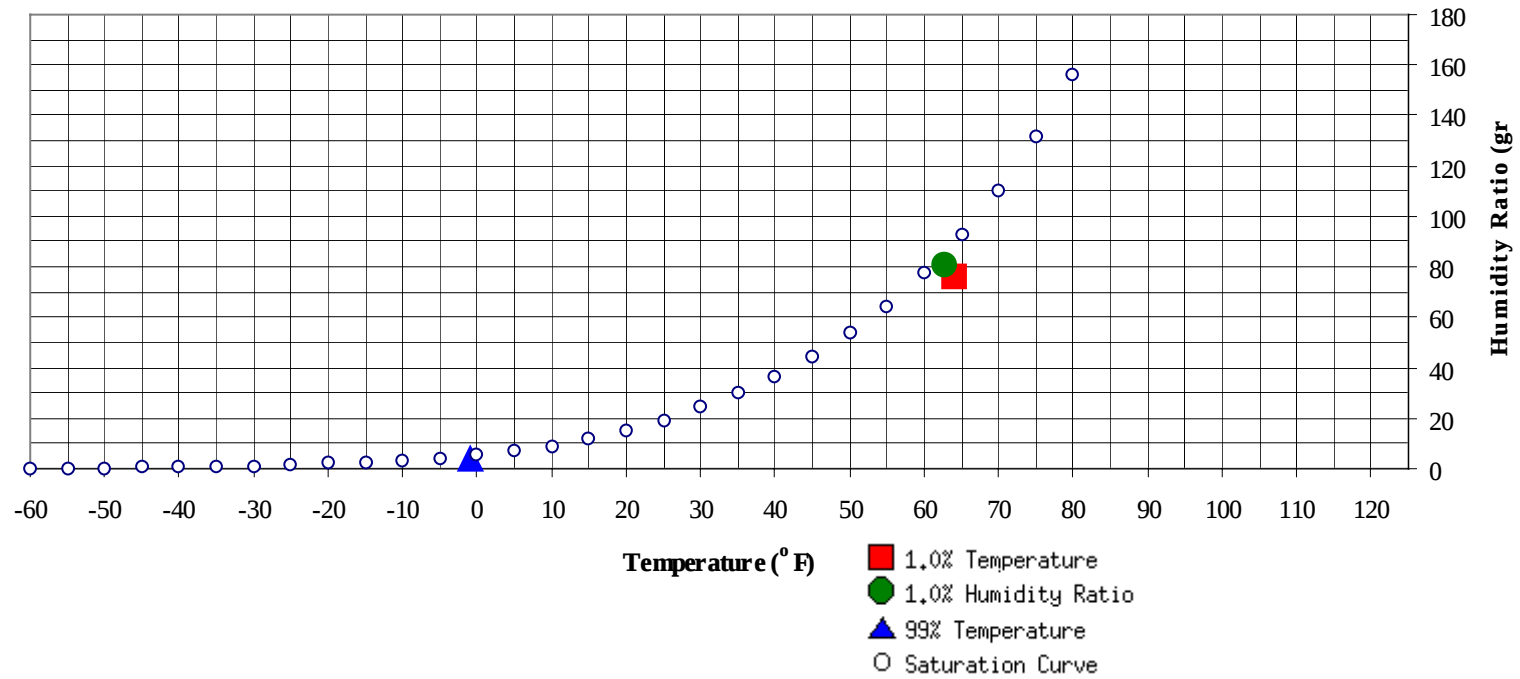


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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Psychrometric Summary of Peak Design Values

	(°F)	MCHR	Enthalpy	1.0% Humidity	(gr/lb)	MCDB	MCWB	MC Dewpt	Enthalpy
		(gr/lb)	(btu/lb)			(°F)	(°F)	(°F)	(btu/lb)
99% Dry Bulb	-1	4.2	0.4	Ratio	80.5	62.7	61.7	60.8	27.6

1.0% Dry Bulb	(°F)	MCHR	MCWB	Enthalpy
		(gr/lb)	(°F)	(btu/lb)
	64	76.2	61.2	27.2

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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		
75 / 79															
70 / 74															
65 / 69															
60 / 64															
55 / 59		0	0	0	51.5	0	1	0	1	52.8		0	0	0	52.4
50 / 54	1	2	2	5	49.7	2	2	3	7	49.8	1	2	1	4	49.6
45 / 49	3	3	3	9	45.3	4	3	3	10	45.6	5	9	7	21	45.0
40 / 44	5	4	6	15	41.1	3	4	3	10	40.7	8	10	5	23	39.5
35 / 39	15	20	18	53	35.7	11	13	11	35	35.7	17	38	30	86	35.2
30 / 34	50	57	54	161	30.3	39	46	46	132	30.6	70	76	79	226	30.4
25 / 29	55	65	63	183	24.7	48	52	54	155	25.0	58	51	61	169	25.0
20 / 24	38	35	36	108	20.0	32	35	35	101	20.2	33	29	28	90	20.0
15 / 19	35	29	33	96	15.7	33	31	33	96	15.8	27	16	18	60	15.8
10 / 14	18	15	15	48	10.6	21	17	16	53	10.9	11	6	5	22	10.8
5 / 9	11	7	6	24	6.3	12	8	8	28	6.0	5	3	2	10	5.9
0 / 4	4	2	3	9	1.9	10	7	7	24	1.2	5	5	6	16	1.3
-5 / -1	4	4	4	12	-2.6	5	4	4	13	-2.6	5	3	5	13	-2.4
-10 / -6	5	5	5	15	-7.1	2	1	1	4	-6.9	2	1	1	4	-6.5
-15 / -11	2	1	1	4	-10.9	1	1	1	3	-11.5	0			0	-11.4
-20 / -16						0	0		0	-15.0					

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		
75 / 79															
70 / 74		0		0	61.0							1	0	1	65.5
65 / 69		0		0	61.3						0	2	0	2	61.4
60 / 64		0	0	0	56.9	0	1	0	1	55.7	2	6	6	14	58.1
55 / 59	1	2	1	4	53.3	2	5	4	11	53.7	8	24	16	48	53.6
50 / 54	2	8	4	14	49.2	6	18	12	36	48.5	40	75	57	172	49.3
45 / 49	10	16	12	38	44.3	20	60	38	118	43.5	88	84	87	259	45.0
40 / 44	13	28	19	60	39.7	52	76	67	196	39.9	52	20	38	110	40.7
35 / 39	45	82	69	196	35.0	102	57	84	244	36.1	23	5	10	38	37.1
30 / 34	103	70	95	268	30.7	37	7	17	61	31.7	1	0	0	1	33.2
25 / 29	34	10	14	58	25.5	2	0	1	3	24.6	0	0	0	0	
20 / 24	4	2	1	7	20.2	0	0	0	0	20.3	0	0	0	0	
15 / 19	2	1	1	4	16.1	0	1	1	2	14.9	0	1	1	2	15.2
10 / 14	3	3	3	9	11.2	3	5	3	11	11.2	6	11	10	27	11.2
5 / 9	3	6	5	14	6.3	11	15	16	42	6.6	18	11	15	43	7.4
0 / 4	12	11	14	37	1.9	11	3	6	20	3.3	2	0	1	3	3.0
-5 / -1	5	2	3	10	-1.8										
-10 / -6	1	0	0	1	-6.7										
-15 / -11															
-20 / -16															

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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		
75 / 79		0		0	69.0		0	0	0	65.0					
70 / 74	0	2	1	3	67.1	1	4	2	7	65.8	0	1	0	1	66.3
65 / 69	3	7	4	14	63.4	5	16	7	29	63.3	2	3	2	7	64.2
60 / 64	16	43	26	85	59.6	44	105	80	229	59.6	15	40	20	75	59.0
55 / 59	76	107	102	284	55.1	111	83	101	295	55.3	75	107	104	286	54.5
50 / 54	93	56	72	221	51.2	47	16	30	93	50.4	81	54	70	205	49.1
45 / 49	29	10	16	55	46.2	10	0	2	12	45.8	37	13	21	71	44.0
40 / 44	3	0	1	4	41.3	1	0	0	1	42.9	7	1	1	9	39.2
35 / 39	0	0	0	0	39.0	0	0	0	0		0	0	0	0	37.3
30 / 34	0	0	0	0		0	0	0	0		0	0	0	0	
25 / 29	0	0	0	0	23.0	0	0	0	0		0	0	0	0	
20 / 24	0	3	1	4	20.3	1	2	1	4	19.9	0	1	0	1	19.8
15 / 19	11	14	15	41	16.0	15	17	18	51	16.2	4	8	4	16	15.6
10 / 14	16	7	11	33	12.7	9	5	7	21	12.2	16	11	16	43	12.0
5 / 9	1	0	0	1	8.7	2	0	0	2	8.3	3	1	2	6	7.8
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															

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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		
75 / 79															
70 / 74	0				0		0		0	61.0					
65 / 69	1	1	1	3	63.9		0		0	62.0					
60 / 64	4	5	5	14	60.1	1	1	2	4	59.5					
55 / 59	14	27	17	57	54.4	5	5	5	15	55.1	0	2	1	3	54.3
50 / 54	45	67	57	169	49.1	9	12	12	33	49.9	5	5	5	15	49.8
45 / 49	84	85	90	260	43.7	33	40	36	109	44.5	6	7	7	20	45.1
40 / 44	43	33	40	117	39.1	44	56	48	148	39.3	12	13	13	38	40.2
35 / 39	35	16	22	72	34.5	72	70	74	215	34.4	54	61	53	167	35.1
30 / 34	6	2	3	11	29.2	43	31	36	110	29.8	63	67	70	200	30.0
25 / 29	0	0	0	0	27.2	12	10	11	33	23.9	50	46	49	145	24.6
20 / 24	0	0	0	0		5	3	3	11	19.5	19	21	19	58	19.9
15 / 19	0	0	0	0	16.1	1	0	0	1	17.1	17	12	13	42	15.7
10 / 14	5	7	7	19	11.6	1	1	1	3	11.4	6	2	3	11	11.2
5 / 9	5	5	5	15	6.7	5	6	5	16	6.4	2	2	2	6	5.5
0 / 4	3	1	2	6	2.8	6	5	7	18	1.6	5	5	6	16	1.7
-5 / -1						2	1	1	4	-1.8	5	4	5	14	-2.5
-10 / -6											3	2	2	7	-6.2
-15 / -11											0			0	-10.0
-20 / -16															

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ARGENTIA (MARS)**CN****WMO No. 718070****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		
75 / 79		0	0	0	65.7
70 / 74	1	8	3	12	66.1
65 / 69	11	29	14	55	63.4
60 / 64	82	204	136	422	59.4
55 / 59	290	367	345	1001	54.8
50 / 54	330	319	319	968	49.8
45 / 49	327	334	323	984	44.4
40 / 44	246	250	244	740	39.8
35 / 39	382	361	378	1120	35.3
30 / 34	420	352	407	1179	30.4
25 / 29	258	226	251	735	24.8
20 / 24	132	124	122	378	20.0
15 / 19	144	127	134	405	15.8
10 / 14	114	89	94	297	11.4
5 / 9	81	63	66	210	6.6
0 / 4	61	40	52	153	1.9
-5 / -1	27	17	22	65	-2.4
-10 / -6	12	9	9	30	-6.8
-15 / -11	3	2	2	7	-11.1
-20 / -16	0	0		0	-15.0

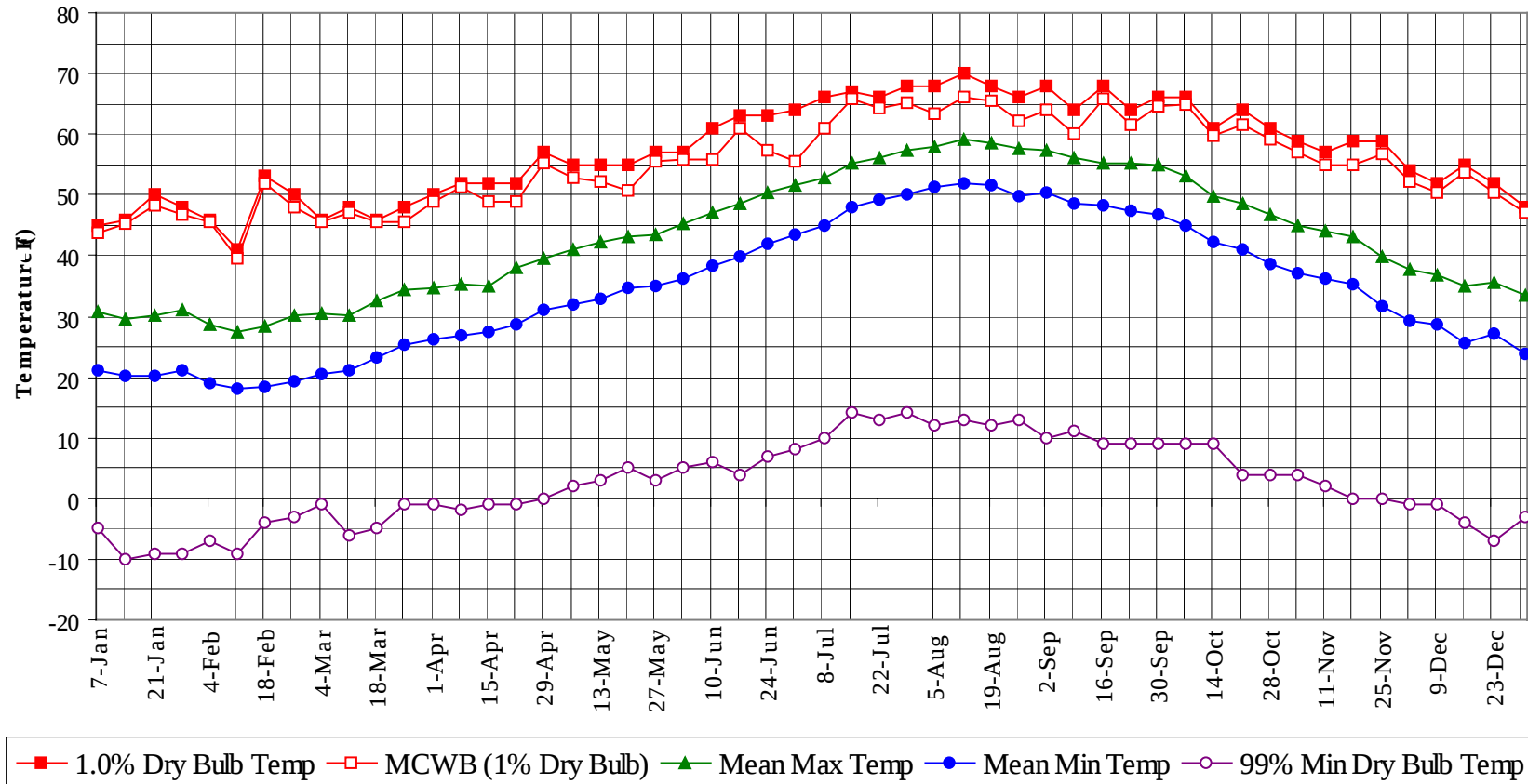
Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary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

ARGENTIA (MARS)

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Annual Summary of Temperatures

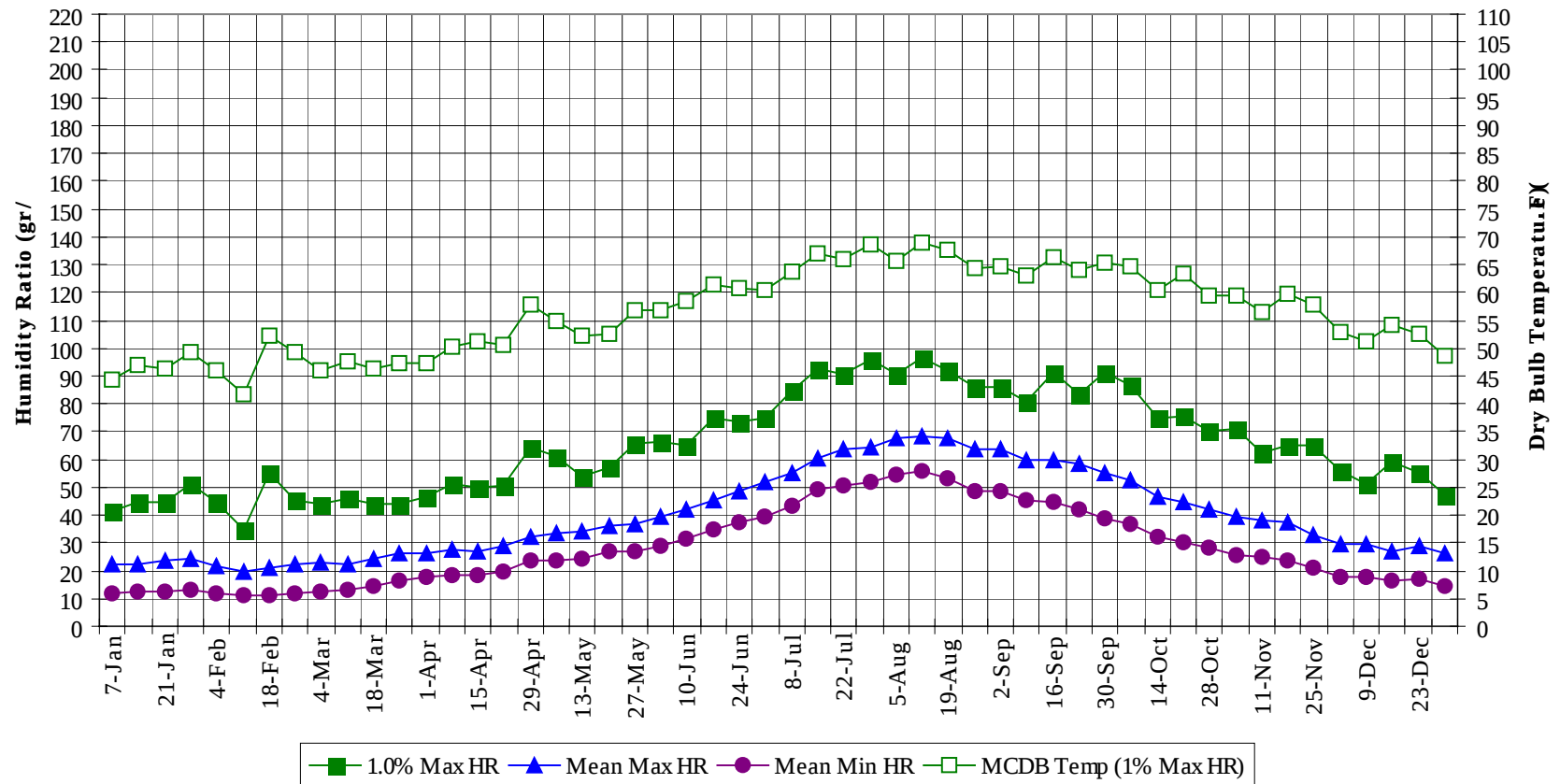


ARGENTIA (MARS)

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Long Term Humidity and Dry Bulb Temperature Summary



ARGENTIA (MARS)**CN****WMO No. 718070****Long Term Dry Bulb Temperature and Humidity Summary**

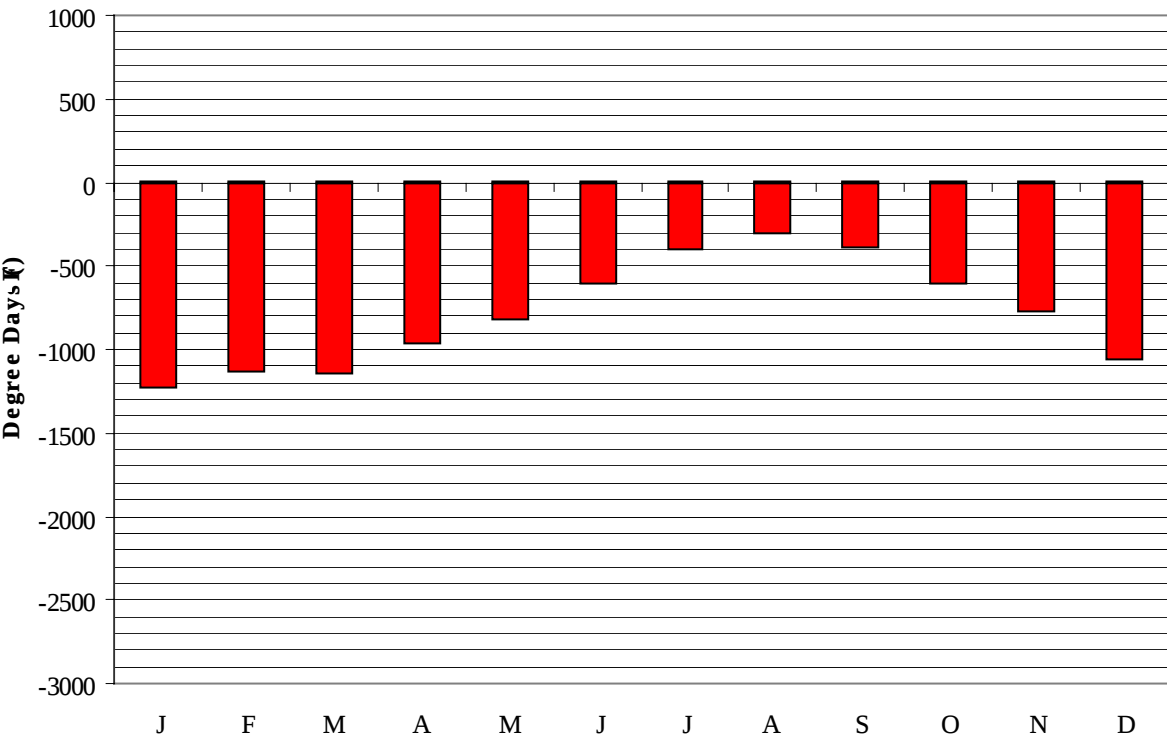
Week Ending	1.0% Temp (°F)	MCWB @ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB @ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	45.0	43.9	30.7	21.1	-5.0	41.3	44.2	22.6	12.0
14-Jan	46.0	45.3	29.6	20.1	-10.0	44.8	47.0	22.2	12.4
21-Jan	50.0	48.4	30.2	20.3	-9.0	44.8	46.3	23.4	12.3
28-Jan	48.0	46.9	30.9	21.1	-9.0	51.1	49.2	24.2	13.3
4-Feb	46.0	45.5	28.7	19.1	-7.0	44.8	45.9	21.7	12.0
11-Feb	41.0	39.5	27.5	18.1	-9.0	35.0	41.6	19.8	11.2
18-Feb	53.0	51.9	28.5	18.4	-4.0	55.3	52.3	21.3	11.3
25-Feb	50.0	48.1	30.1	19.3	-3.0	45.5	49.2	22.4	11.8
4-Mar	46.0	45.6	30.3	20.5	-1.0	44.1	46.0	23.1	12.8
11-Mar	48.0	47.1	30.2	21.0	-6.0	46.2	47.6	22.4	12.9
18-Mar	46.0	45.5	32.7	23.2	-5.0	44.1	46.4	24.3	14.5
25-Mar	48.0	45.5	34.4	25.3	-1.0	44.1	47.4	26.1	16.3
1-Apr	50.0	49.0	34.8	26.2	-1.0	46.9	47.2	26.4	17.5
8-Apr	52.0	51.2	35.3	27.0	-2.0	51.1	50.2	27.7	18.7
15-Apr	52.0	48.8	35.1	27.4	-1.0	49.7	51.4	27.2	18.1
22-Apr	52.0	49.0	38.0	28.7	-1.0	50.4	50.5	29.0	19.5
29-Apr	57.0	55.2	39.5	31.1	0.0	64.4	57.7	32.4	23.5
6-May	55.0	52.8	40.9	32.0	2.0	60.9	54.9	33.6	23.7
13-May	55.0	52.1	42.1	32.9	3.0	53.9	52.2	34.3	24.6
20-May	55.0	50.7	43.0	34.5	5.0	57.4	52.4	35.8	27.0
27-May	57.0	55.6	43.5	34.9	3.0	65.8	56.7	36.9	26.6
3-Jun	57.0	55.8	45.1	36.2	5.0	66.5	56.9	39.2	28.9
10-Jun	61.0	55.8	47.1	38.4	6.0	65.1	58.5	42.0	31.8
17-Jun	63.0	61.0	48.5	39.9	4.0	74.9	61.5	45.5	34.8
24-Jun	63.0	57.3	50.5	41.8	7.0	73.5	60.8	48.7	37.3
1-Jul	64.0	55.5	51.7	43.4	8.0	74.9	60.4	52.1	39.7
8-Jul	66.0	61.0	52.9	45.0	10.0	84.7	63.8	55.3	43.6
15-Jul	67.0	65.8	55.2	48.1	14.0	92.4	67.1	60.5	49.0
22-Jul	66.0	64.4	56.0	49.3	13.0	90.3	65.9	63.6	50.5
29-Jul	68.0	65.1	57.2	50.1	14.0	95.9	68.7	64.6	51.7
5-Aug	68.0	63.4	58.0	51.2	12.0	90.3	65.8	67.5	54.7
12-Aug	70.0	66.0	59.1	52.0	13.0	96.6	69.1	68.3	55.7
19-Aug	68.0	65.5	58.6	51.5	12.0	91.7	67.6	67.7	53.0
26-Aug	66.0	62.2	57.5	49.9	13.0	86.1	64.5	63.6	48.4
2-Sep	68.0	64.1	57.4	50.3	10.0	86.1	64.8	63.4	48.5
9-Sep	64.0	60.2	56.2	48.6	11.0	80.5	63.0	60.0	45.6
16-Sep	68.0	65.9	55.4	48.2	9.0	91.0	66.5	59.4	44.6
23-Sep	64.0	61.5	55.3	47.5	9.0	83.3	64.0	58.2	41.9
30-Sep	66.0	64.7	54.9	46.6	9.0	91.0	65.5	55.5	38.6
7-Oct	66.0	64.8	53.0	45.1	9.0	86.8	64.6	52.9	36.5
14-Oct	61.0	59.7	49.8	42.2	9.0	74.9	60.5	46.7	32.4
21-Oct	64.0	61.7	48.5	41.1	4.0	75.6	63.5	44.6	30.1
28-Oct	61.0	59.2	46.7	38.8	4.0	70.0	59.4	42.3	28.1
4-Nov	59.0	57.1	44.9	37.2	4.0	70.7	59.4	39.2	25.7
11-Nov	57.0	54.9	44.1	36.2	2.0	62.3	56.3	38.4	24.9
18-Nov	59.0	55.1	43.2	35.2	0.0	65.1	59.7	37.2	23.9
25-Nov	59.0	56.8	39.7	31.8	0.0	65.1	57.7	32.9	20.8
2-Dec	54.0	52.3	37.6	29.2	-1.0	56.0	53.0	29.8	17.6
9-Dec	52.0	50.4	36.8	28.6	-1.0	51.1	51.3	29.7	18.1
16-Dec	55.0	53.6	34.9	25.7	-4.0	58.8	54.2	27.1	16.3
23-Dec	52.0	50.5	35.6	27.1	-7.0	55.3	52.6	29.0	16.9
31-Dec	48.0	47.0	33.4	23.8	-3.0	47.6	48.5	26.3	14.6

ARGENTIA (MARS)

CN

WMO No. 718070

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



Mean Cooling Degree Days Mean Heating Degree Days

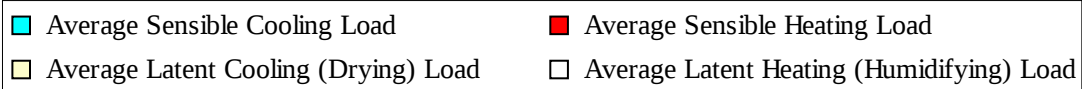
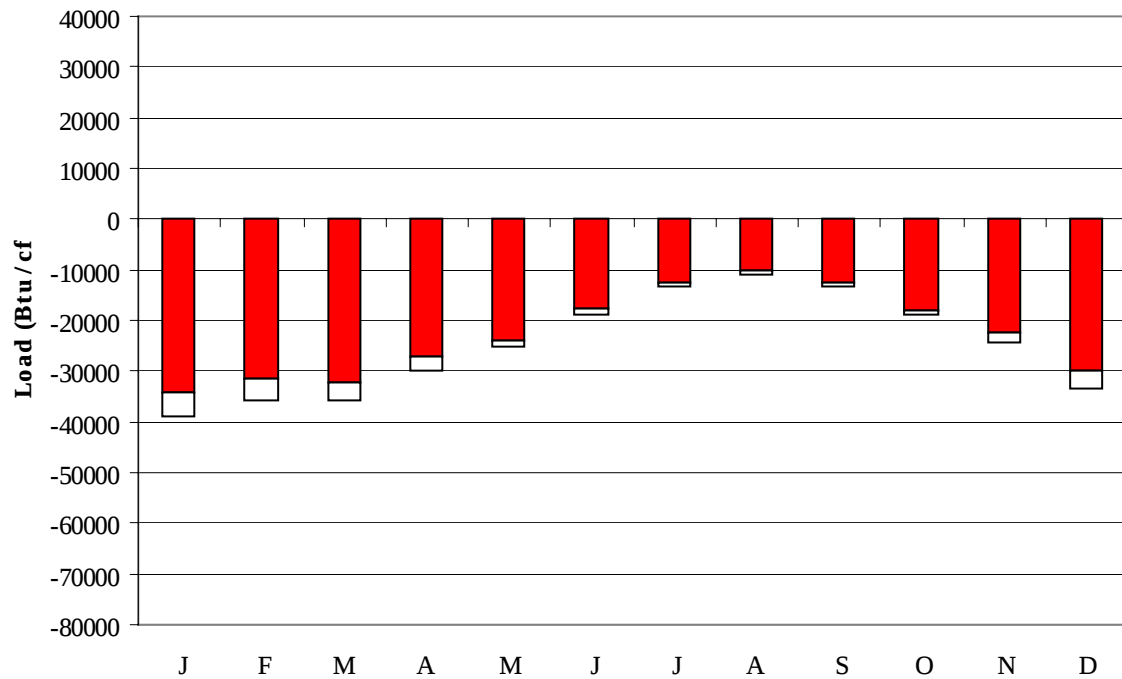
	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	1224
FEB	0	1130
MAR	0	1148
APR	0	964
MAY	0	826
JUN	0	599
JUL	1	396
AUG	3	308
SEP	1	392
OCT	0	603
NOV	0	774
DEC	0	1061
ANN	5	9425

ARGENTIA (MARS)

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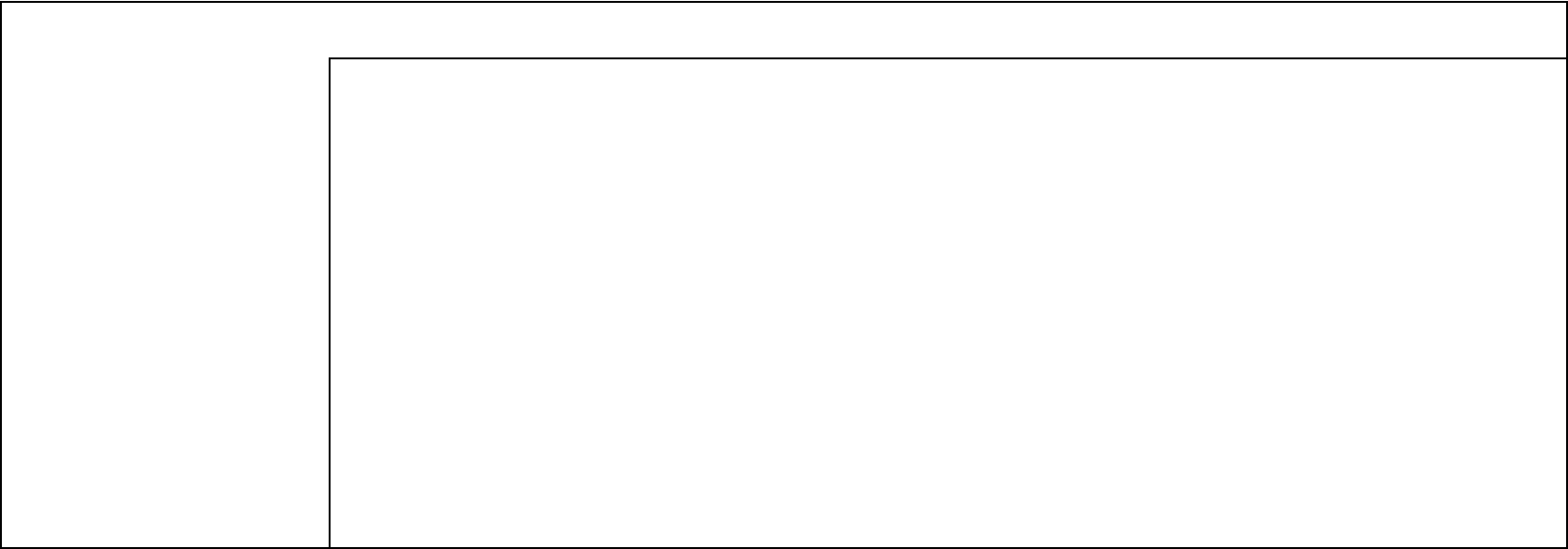
Average Ventilation and Infiltration Loads
(Outside Air vs. 75°F, 60% RH summer; 68°F, 30% RH winter)



	Average Sensible Cooling Load (Btu/cfm)	Average Sensible Heating Load (Btu/cfm)	Average Latent Cooling Load (Btu/cfm)	Average Latent Heating Load (Btu/cfm)
JAN	0	-34111	0	-4792
FEB	0	-31415	0	-4308
MAR	0	-32165	0	-3808
APR	0	-27256	0	-2659
MAY	0	-23750	3	-1470
JUN	0	-17762	3	-867
JUL	0	-12623	94	-749
AUG	0	-10304	166	-748
SEP	0	-12442	57	-683
OCT	0	-18037	15	-896
NOV	0	-22313	0	-1963
DEC	0	-29884	0	-3509
ANN	0	-272062	338	-26452

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

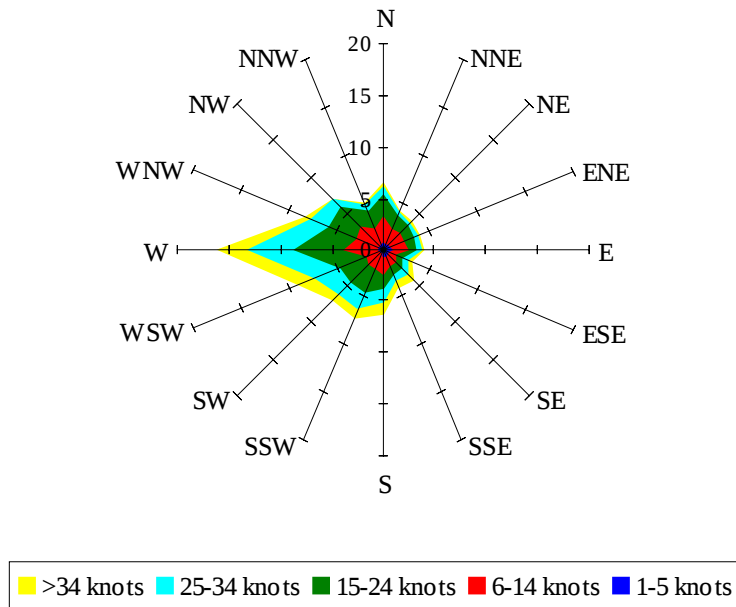
No Solar Radiation
Data Available



Average Annual Solar Heat and Illumination – Nearest Available Site

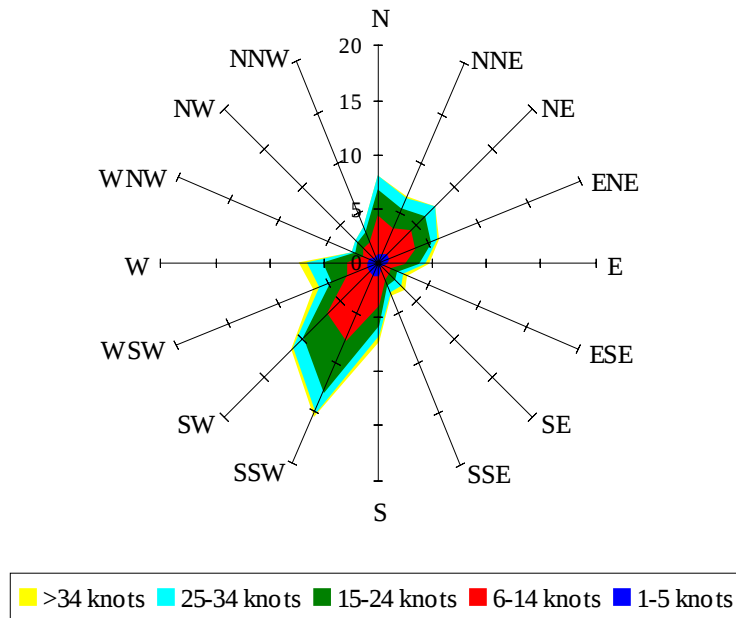
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

Wind Summary - December, January, and February **Labels of Percent Frequency on North Axis**



Percent Calm = 1.66

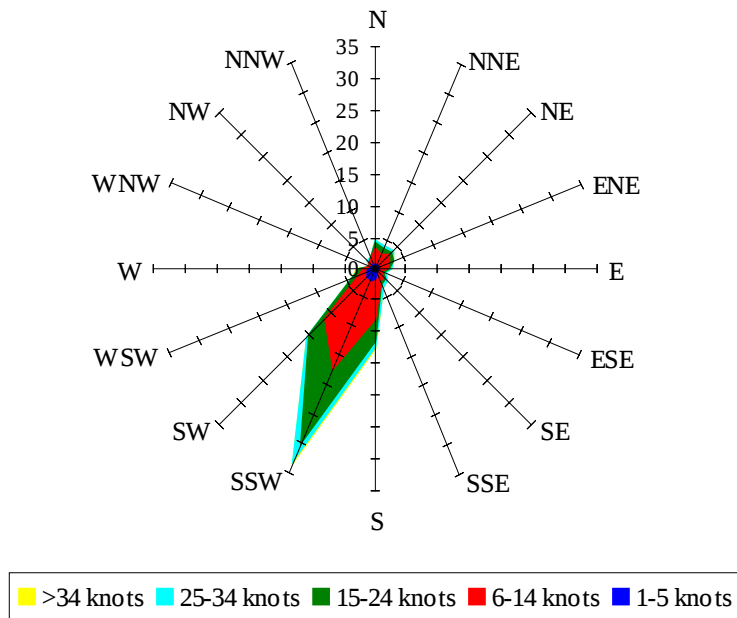
Wind Summary - March, April, and May **Labels of Percent Frequency on North Axis**



Percent Calm = 2.75

Wind Summary - June, July, and August

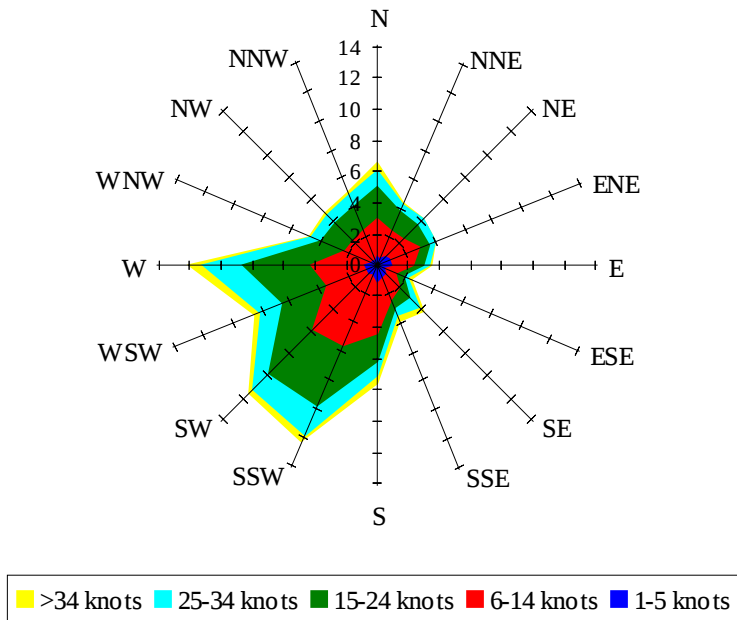
Labels of Percent Frequency on North Axis



Percent Calm = 2.86

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 1.63