

ERDING, GERMANY

Latitude = 48.32 N

Longitude = 11.95 E

Period of Record = 1973 to 1996

WMO No. 108690

Elevation = 1532 feet

Average Pressure = 28.38 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	90	68	74	6.0	WNW
0.4% Occurrence	84	66	71	5.1	VARIABLE
1.0% Occurrence	81	65	71	5.7	E
2.0% Occurrence	77	63	69	6.1	E
Mean Daily Range	15	-	-	-	-
97.5% Occurrence	18	18	13	5.0	E
99.0% Occurrence	10	9	9	3.2	E
99.6% Occurrence	5	5	7	2.9	E
Median of Extreme Lows	1	0	6	3.0	S
	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	71	84	94	5.5	E
0.4% Occurrence	68	81	85	5.1	E
1.0% Occurrence	66	78	80	5.4	E
2.0% Occurrence	64	75	75	5.4	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	102	79	0.65	4.8	E
0.4% Occurrence	90	74	0.57	4.7	W
1.0% Occurrence	84	72	0.54	4.9	W
2.0% Occurrence	79	70	0.50	5.0	W
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		0	108	1	64

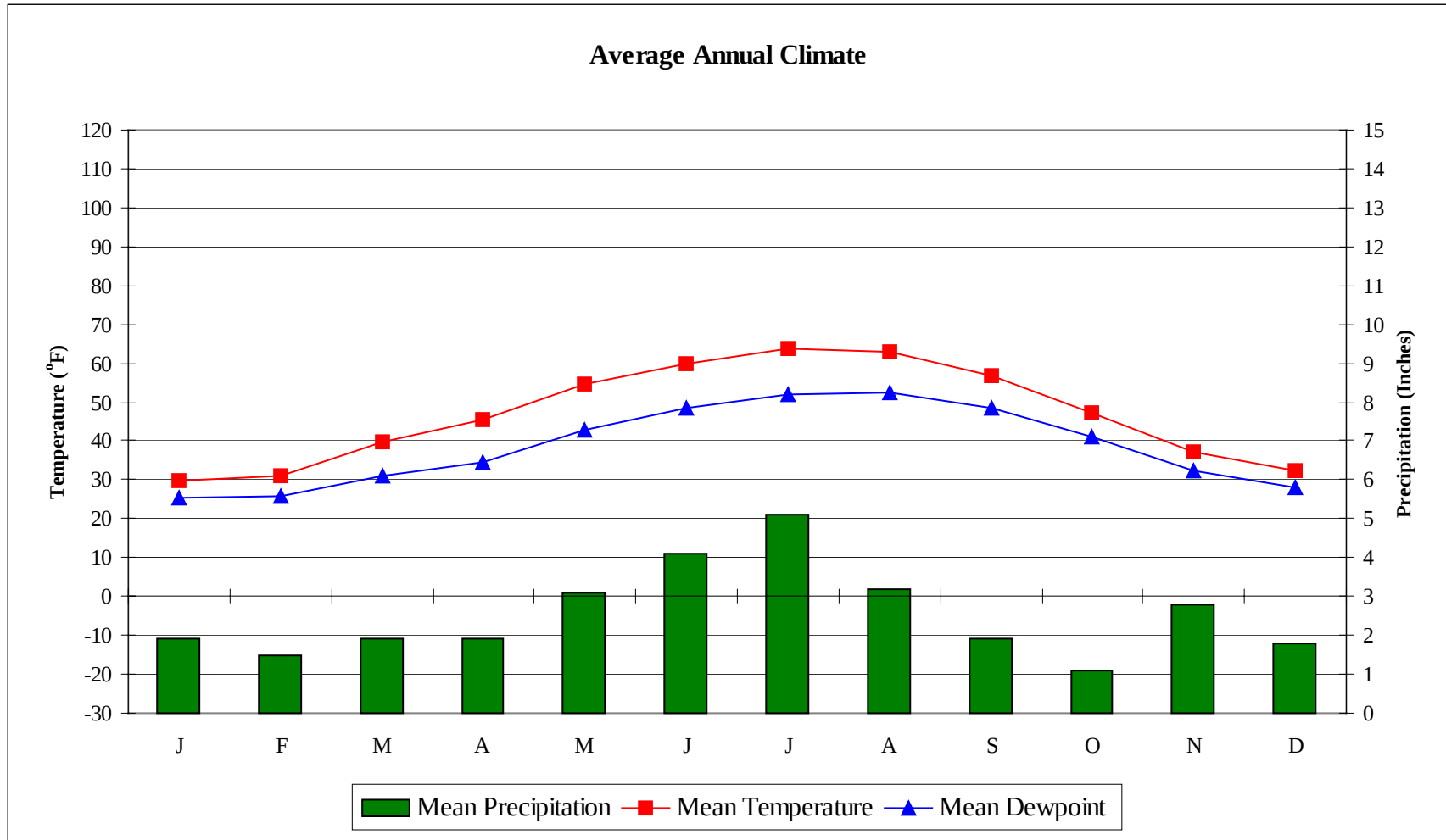
Other Site Data

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
6	N/A	N/A	0.0 + 0.1
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 (#)
49.1	N/A	N/A	50

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

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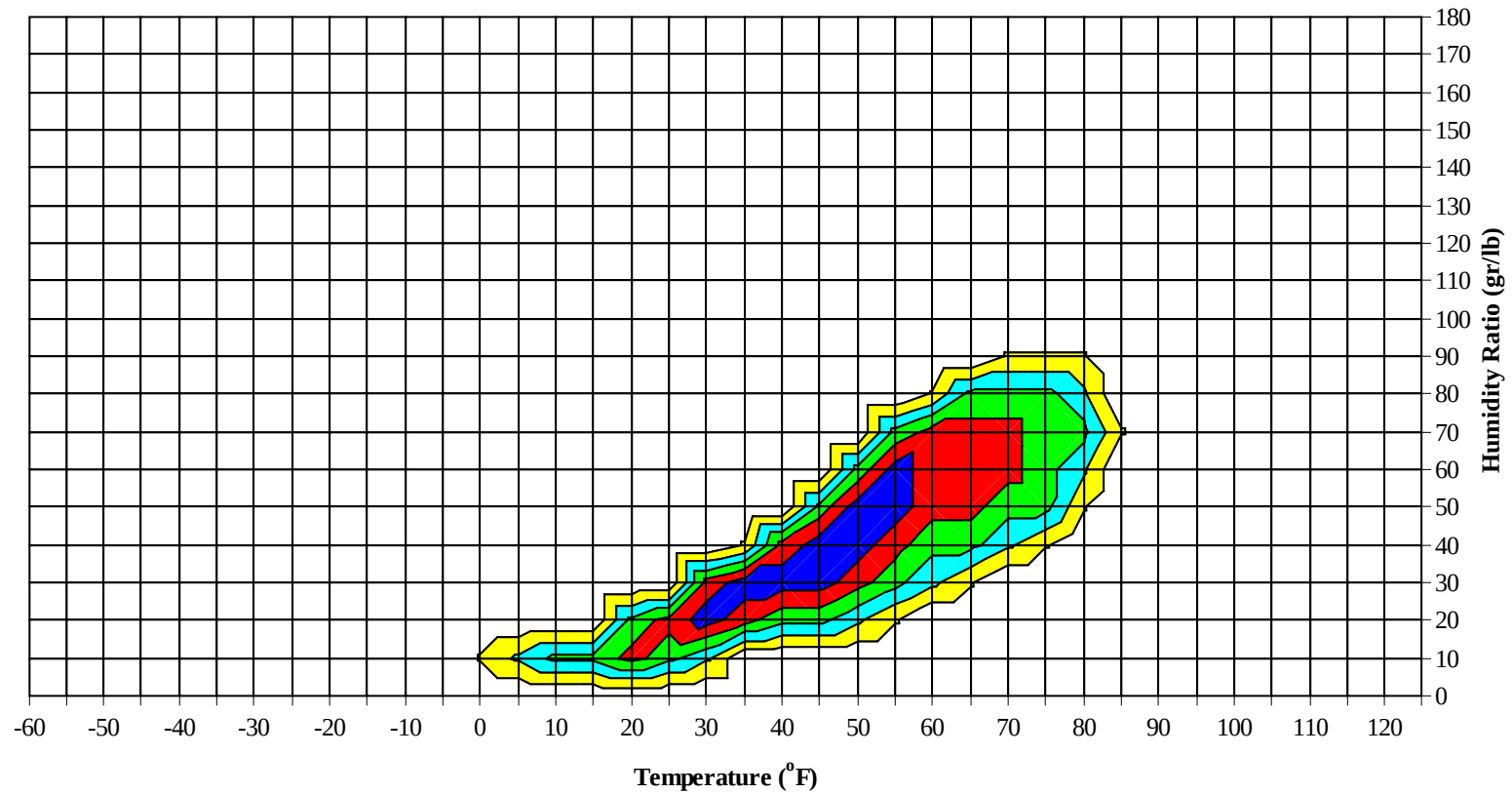


No Precipitation Data Available

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Long Term Psychrometric Summary

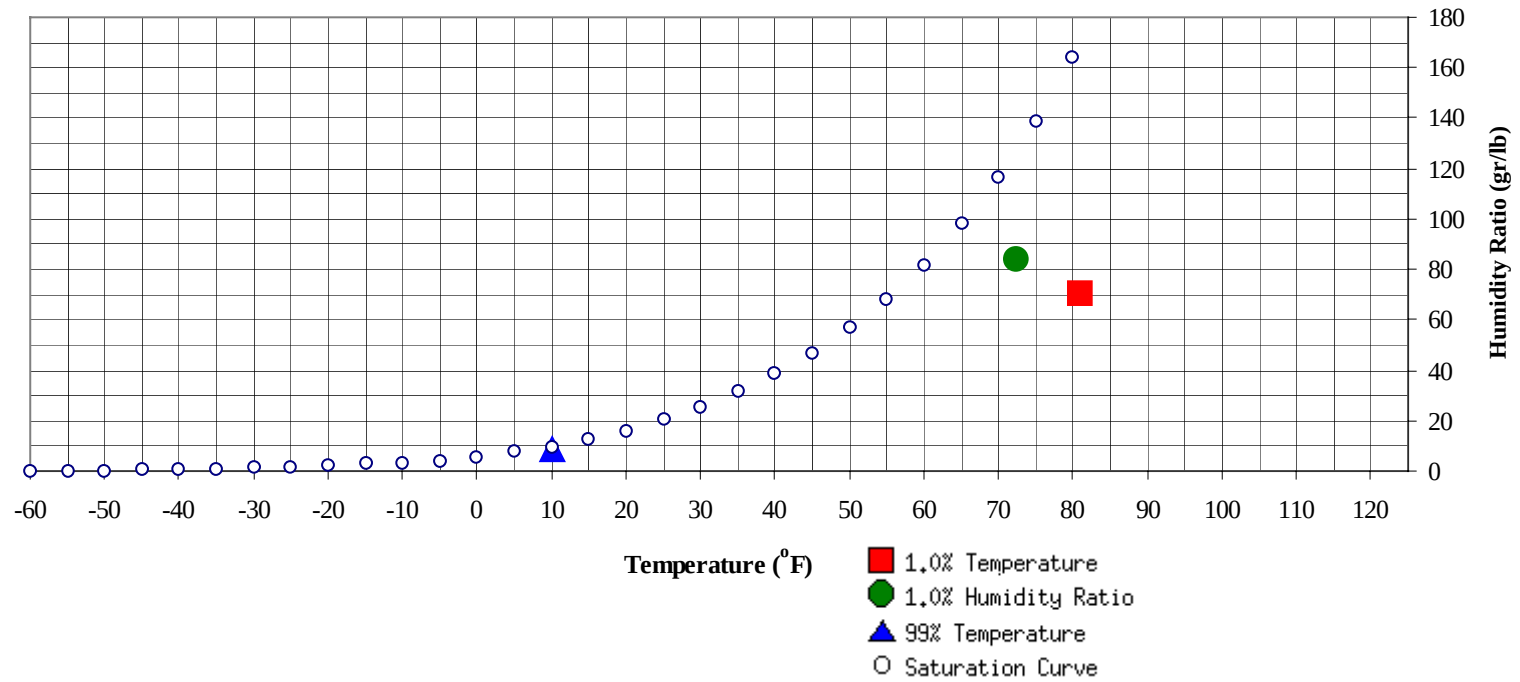


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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Psychrometric Summary of Peak Design Values



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)
	10	9	3.8		84	72.3	64.7	60.8	30.5

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	81	70.5	64.6	30.5

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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															
80 / 84															
75 / 79														0	54.0
70 / 74		0		0		0			0		2	0		2	54.9
65 / 69		0		0	50.5	0			0	51.0	2	1		3	52.6
60 / 64		0		0	49.3	1	0		1	50.4	10	3		13	50.7
55 / 59	0	2	0	2	46.5	3	1		4	47.4	0	22	8	31	47.9
50 / 54	2	7	2	11	44.5	1	9	2	12	44.3	8	34	24	67	44.9
45 / 49	8	20	11	38	41.6	4	20	8	32	41.1	22	46	40	108	41.3
40 / 44	14	18	17	49	38.5	12	25	17	54	38.2	31	34	37	102	38.1
35 / 39	34	45	39	118	34.6	28	44	43	115	34.7	59	53	60	171	34.5
30 / 34	64	68	71	202	30.5	68	64	71	203	30.4	80	33	56	169	30.4
25 / 29	56	46	52	154	25.8	50	33	42	124	25.5	33	7	15	55	25.5
20 / 24	22	16	16	53	21.3	20	11	13	43	20.9	8	2	3	13	20.6
15 / 19	19	15	18	52	16.9	17	9	13	38	16.7	5	1	1	7	16.9
10 / 14	12	7	12	31	12.0	12	4	8	25	11.6	1	0	0	1	12.5
5 / 9	8	4	6	18	7.1	7	2	4	13	6.9	1		0	1	6.9
0 / 4	5	1	3	9	1.5	4	0	1	5	1.7	0			0	3.0
-5 / -1	1	1	1	3	-2.6	1	0		1	-2.5					
-10 / -6	1	0	1	2	-7.9	0	0		0	-7.8					
-15 / -11	1	0	0	1	-11.8										
-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.

ERDING, GERMANY

WMO No. 108690

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	09	17			01	09	17			01	09	17		
	To 08	To 16	To 00			To 08	To 16	To 00			To 08	To 16	To 00		
95 / 99											0 69.7				
90 / 94											2 1 3 67.1				
85 / 89						0 64.0					14 4 18 64.1				
80 / 84	0 59.5					2 0 2 63.0					14 4 18 64.1				
75 / 79	1 0 1 56.7					14 5 19 60.0					0 32 15 47 62.3				
70 / 74	6 1 7 54.7					0 32 12 44 57.5					2 41 21 65 59.9				
65 / 69	10 3 14 53.0					1 31 15 47 55.6					7 31 21 59 57.8				
60 / 64	0 27 11 38 50.8					7 54 34 94 53.3					30 47 49 126 55.5				
55 / 59	2 37 20 59 48.0					31 47 53 131 50.7					68 43 55 166 52.6				
50 / 54	15 46 39 101 45.0					68 35 55 158 47.7					78 24 51 153 48.9				
45 / 49	41 48 58 148 41.7					73 25 48 147 43.6					43 5 20 68 44.5				
40 / 44	48 29 41 119 38.4					35 6 19 60 39.6					10 0 2 12 40.1				
35 / 39	70 26 43 138 34.9					25 2 7 34 35.9					2 0 2 36.3				
30 / 34	52 9 21 83 30.9					6 0 1 7 31.3					0 0 0 32.0				
25 / 29	11 0 2 13 26.0					1 0 1 27.9									
20 / 24	0 22.1														
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															

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ERDING, GERMANY

WMO No. 108690

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		0	0	0	66.8										
90 / 94		3	1	4	68.1		2	0	2	68.8					
85 / 89		5	2	7	66.4		5	1	6	68.2		0		0	66.5
80 / 84		21	8	29	65.4	0	23	7	30	65.9		6	0	6	65.9
75 / 79	1	50	19	71	63.5	1	44	14	59	63.8		17	3	20	64.1
70 / 74	5	56	32	93	61.0	4	54	28	87	61.3	0	34	12	46	61.2
65 / 69	16	34	31	82	59.2	10	37	33	80	59.5	1	31	15	47	58.5
60 / 64	56	38	63	157	57.0	52	44	65	162	57.5	17	52	44	114	56.4
55 / 59	86	29	57	172	53.4	90	28	64	182	54.0	56	55	62	172	53.1
50 / 54	67	10	32	110	49.7	65	10	29	105	50.0	74	33	59	166	49.1
45 / 49	15	1	2	18	45.2	23	1	7	30	45.1	61	11	36	107	44.8
40 / 44	1		0	1	40.8	3	0	0	3	40.9	21	1	8	30	40.7
35 / 39						0			0	37.0	9		1	10	37.0
30 / 34											1			1	32.8
25 / 29															
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															

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ERDING, GERMANY

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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															
90 / 94															
85 / 89															
80 / 84															
75 / 79		1	0	1	61.6										
70 / 74		7	1	8	59.9		0		0		0	0		0	
65 / 69		7	1	8	57.6		0		0		0	0		0	
60 / 64	1	27	6	35	54.8	0	2	1	3	52.9	0	0		0	51.3
55 / 59	7	44	23	74	51.6	2	9	1	12	49.8	0	2	0	2	48.3
50 / 54	43	60	54	157	48.4	6	23	6	35	46.7	4	10	5	20	45.3
45 / 49	61	61	64	186	43.8	18	45	27	90	42.9	11	22	17	51	42.2
40 / 44	58	23	51	132	40.3	28	38	40	107	39.6	19	22	22	63	38.7
35 / 39	47	14	34	94	36.3	57	58	62	177	35.6	42	51	43	136	35.0
30 / 34	25	5	12	41	31.4	76	47	66	189	31.0	72	73	76	221	30.6
25 / 29	6	0	1	7	27.0	39	15	26	80	26.0	53	43	47	143	25.9
20 / 24	0			0	22.4	7	3	4	14	21.3	19	10	13	42	21.3
15 / 19						3	1	3	7	17.4	15	8	15	38	17.1
10 / 14						2	0	2	4	12.3	7	4	5	16	12.1
5 / 9						1	0	0	1	7.3	3	1	2	6	7.0
0 / 4											2	1	1	4	1.5
-5 / -1											1	0	1	2	-3.1
-10 / -6											0	0	1	1	-7.4
-15 / -11															
-20 / -16															

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

Period of Record = 1973 to 1996

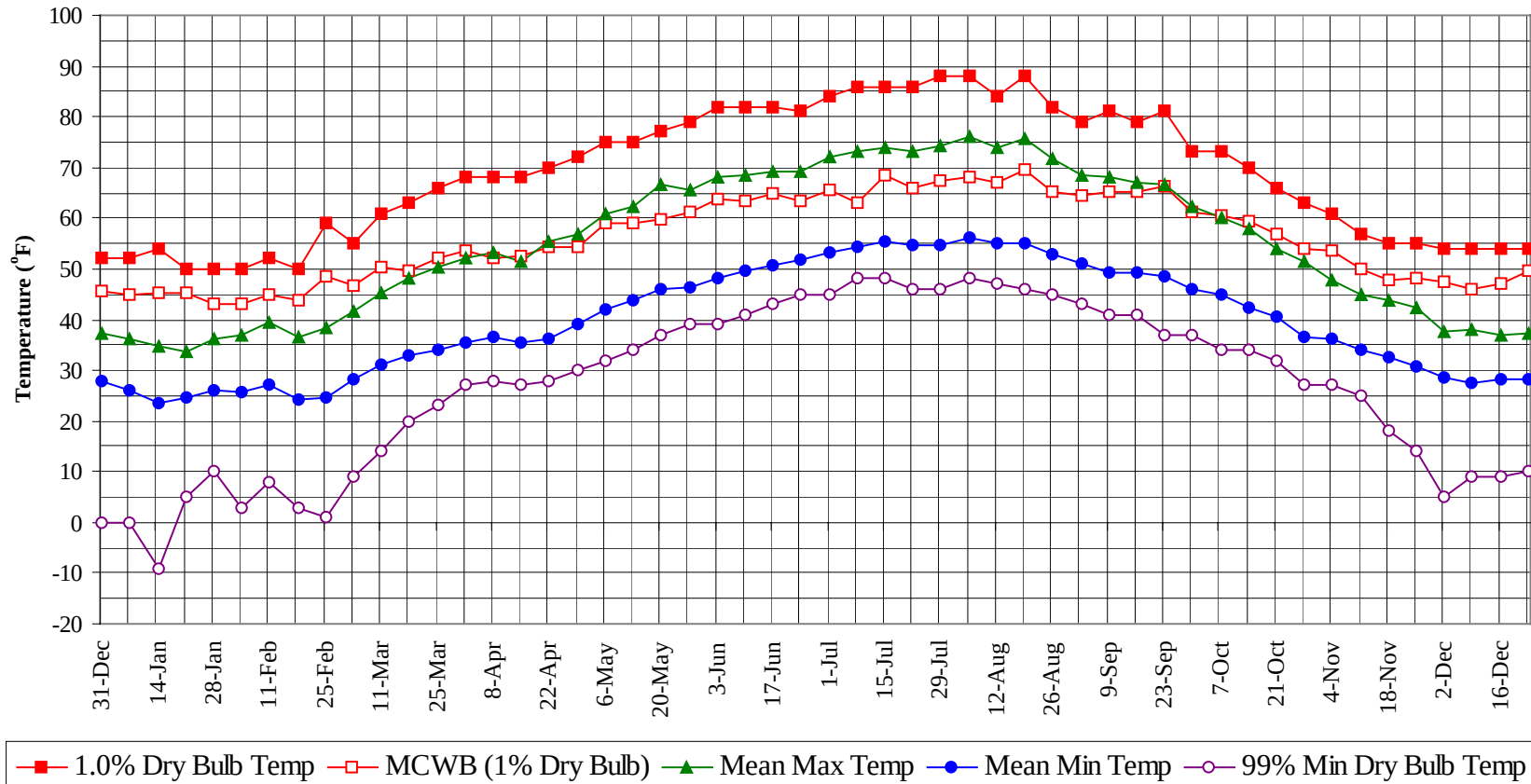
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
95 / 99		0	0	0	66.8
90 / 94		4	1	5	68.4
85 / 89		11	4	15	67.2
80 / 84	0	65	19	84	65.2
75 / 79	1	155	55	211	63.0
70 / 74	11	231	104	346	60.3
65 / 69	35	183	118	336	58.0
60 / 64	164	302	269	735	55.7
55 / 59	343	319	338	1000	52.2
50 / 54	432	304	358	1094	48.0
45 / 49	380	305	341	1026	43.1
40 / 44	283	198	257	738	39.1
35 / 39	375	295	338	1007	35.1
30 / 34	444	302	379	1125	30.6
25 / 29	246	144	187	577	25.8
20 / 24	76	43	51	169	21.2
15 / 19	59	35	49	143	16.9
10 / 14	36	16	29	80	11.9
5 / 9	20	6	13	40	7.0
0 / 4	10	3	5	18	1.6
-5 / -1	3	1	2	6	-2.7
-10 / -6	1	0	1	2	-7.7
-15 / -11	1	0	0	1	-11.8
-20 / -16	0	0		0	-15.0

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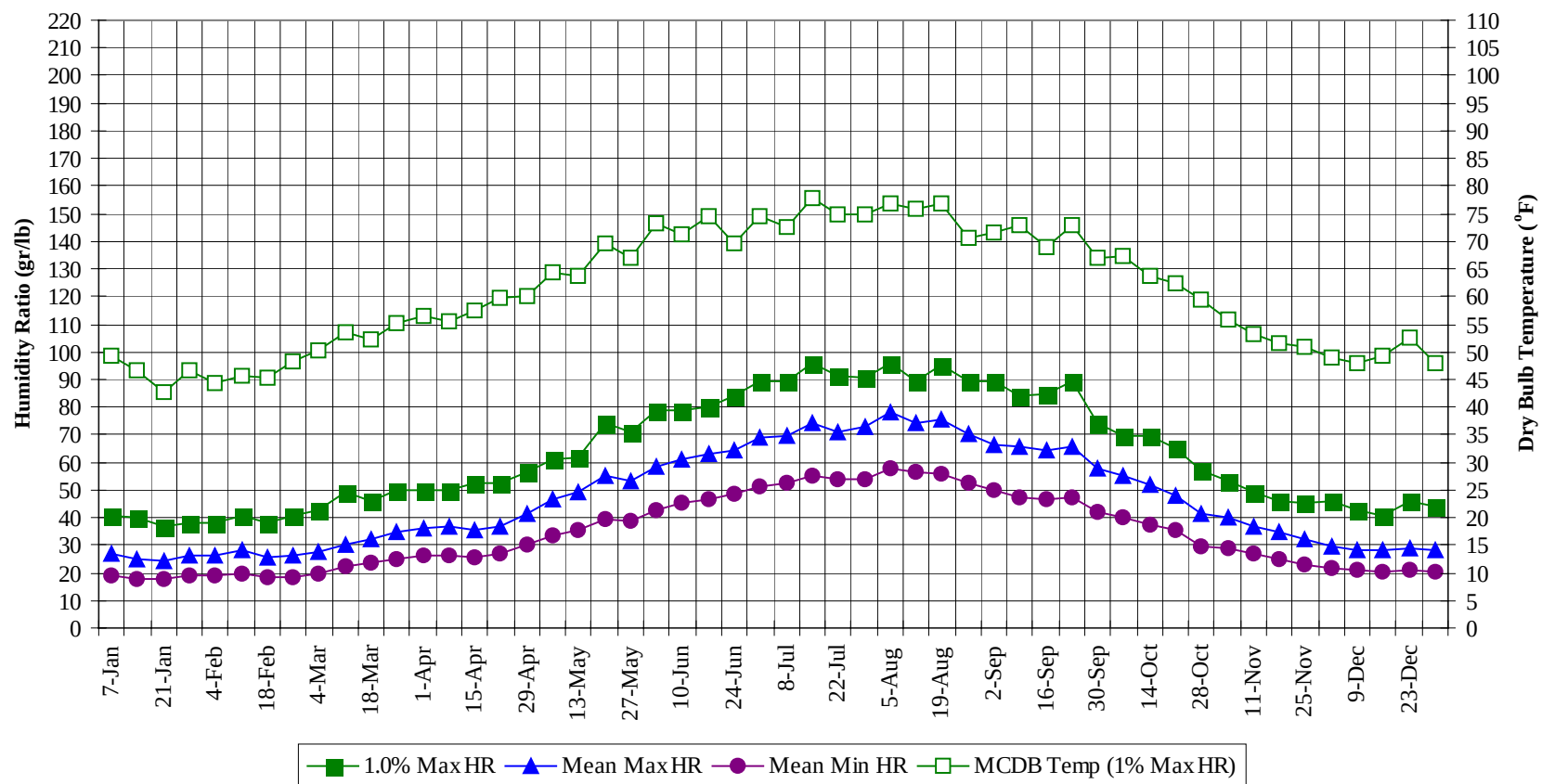
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Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary



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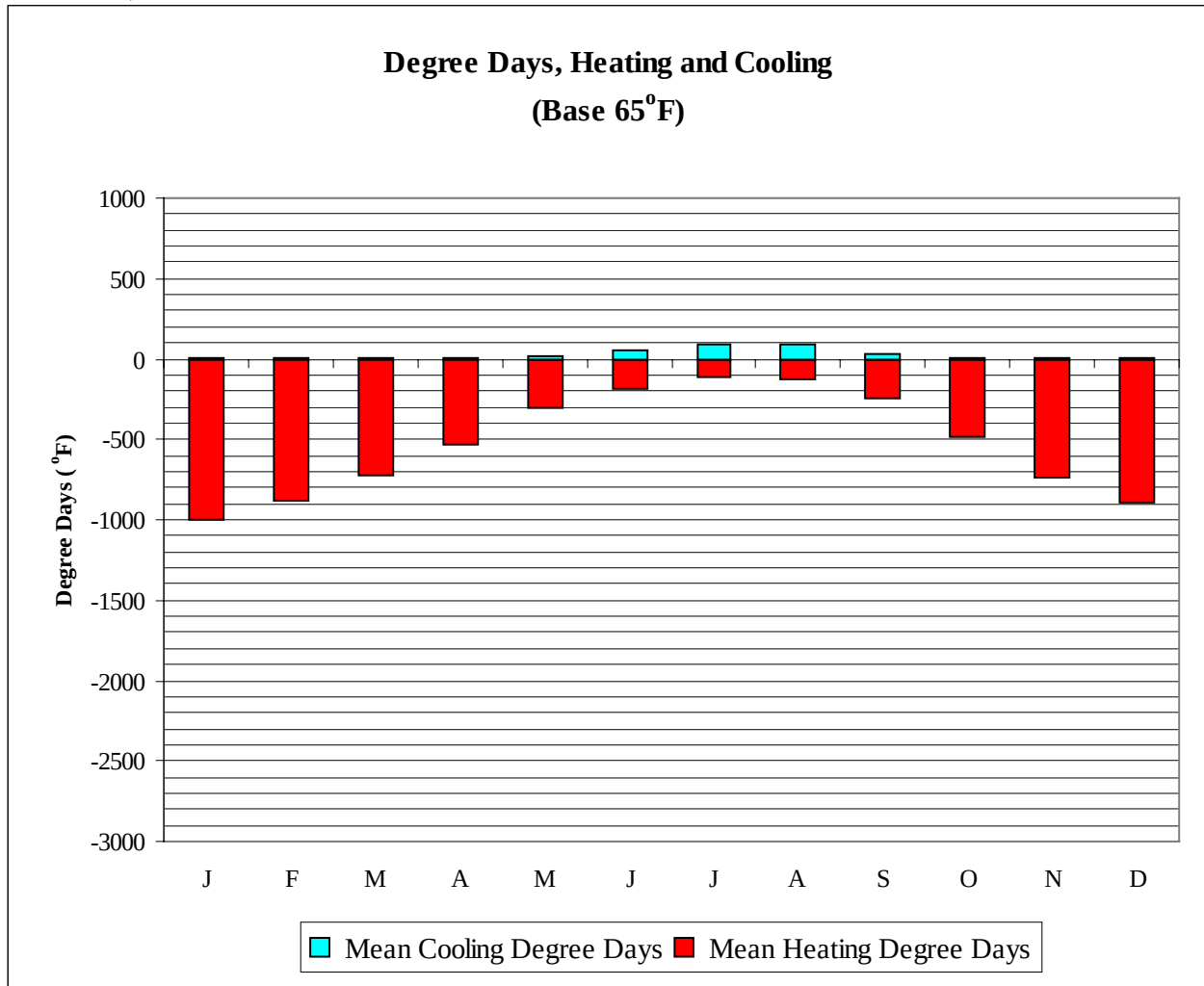
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Long Term Dry Bulb Temperature and Humidity Summary

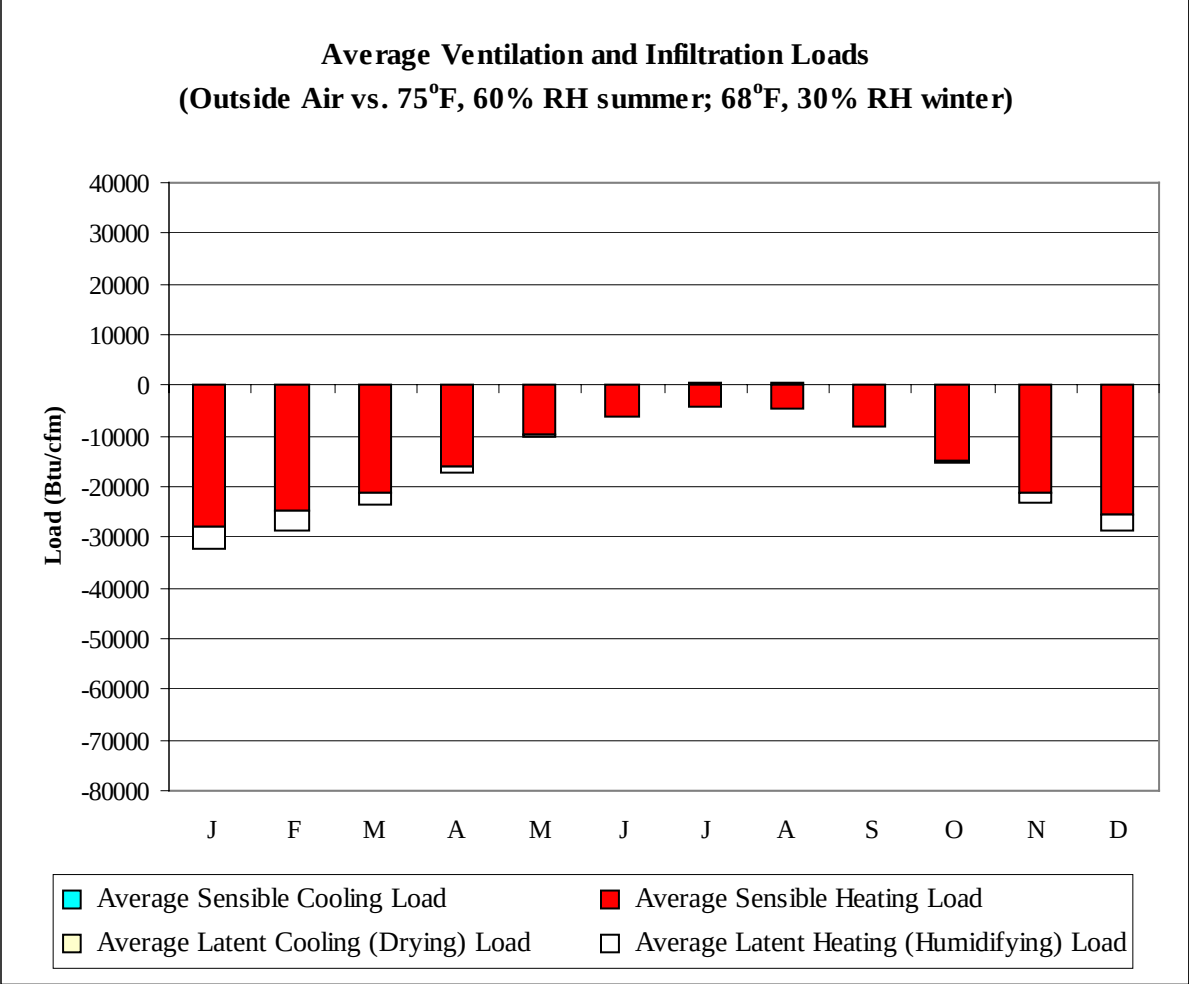
Week Ending	1.0% Temp (°F)	MCWB @ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB @ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	52.0	45.1	36.2	25.9	0.0	40.6	49.2	26.7	19.0
14-Jan	54.0	45.2	34.7	23.4	-9.0	39.9	46.7	25.0	17.9
21-Jan	50.0	45.1	33.6	24.5	5.0	37.1	42.6	24.4	18.0
28-Jan	50.0	43.1	36.3	25.9	10.0	37.8	46.8	26.4	18.7
4-Feb	50.0	43.2	36.8	25.6	3.0	37.8	44.3	26.1	18.9
11-Feb	52.0	44.8	39.3	27.2	8.0	40.6	45.6	28.3	19.8
18-Feb	50.0	43.9	36.6	24.4	3.0	37.8	45.4	25.5	18.1
25-Feb	59.0	48.7	38.3	24.5	1.0	40.6	48.2	26.0	18.2
4-Mar	55.0	46.7	41.7	28.1	9.0	42.7	50.2	27.9	19.9
11-Mar	61.0	50.5	45.1	31.1	14.0	49.0	53.6	30.1	22.1
18-Mar	63.0	49.7	48.1	32.8	20.0	46.2	52.1	32.4	23.4
25-Mar	66.0	52.1	50.3	34.1	23.0	49.7	55.3	34.8	24.8
1-Apr	68.0	53.5	52.1	35.5	27.0	49.7	56.4	35.8	26.0
8-Apr	68.0	52.3	53.1	36.6	28.0	49.7	55.6	36.9	26.4
15-Apr	68.0	52.6	51.6	35.5	27.0	52.5	57.3	35.4	25.7
22-Apr	70.0	54.3	55.5	36.3	28.0	52.5	59.9	37.0	26.9
29-Apr	72.0	54.3	57.0	39.2	30.0	56.7	60.1	41.4	30.2
6-May	75.0	58.9	60.9	42.0	32.0	60.9	64.2	46.7	33.8
13-May	75.0	59.1	62.3	43.8	34.0	61.6	63.6	49.0	35.5
20-May	77.0	59.8	66.7	45.9	37.0	74.2	69.7	55.1	39.3
27-May	79.0	61.3	65.6	46.2	39.0	70.7	67.0	53.5	38.9
3-Jun	82.0	63.8	68.0	48.3	39.0	79.1	73.1	58.3	42.8
10-Jun	82.0	63.4	68.6	49.8	41.0	79.1	71.1	61.3	45.4
17-Jun	82.0	64.8	69.4	50.6	43.0	79.8	74.6	63.1	46.5
24-Jun	81.0	63.4	69.2	51.9	45.0	84.0	69.7	64.1	48.7
1-Jul	84.0	65.6	72.0	53.3	45.0	89.6	74.5	68.6	51.3
8-Jul	86.0	63.2	73.1	54.4	48.0	89.6	72.5	69.4	52.4
15-Jul	86.0	68.5	73.8	55.4	48.0	95.9	77.8	74.4	55.2
22-Jul	86.0	65.9	73.0	54.6	46.0	91.0	74.7	70.7	53.9
29-Jul	88.0	67.5	74.4	54.5	46.0	90.3	74.7	72.8	53.9
5-Aug	88.0	68.1	76.1	56.3	48.0	95.9	76.7	77.9	57.9
12-Aug	84.0	66.9	73.9	54.9	47.0	89.6	75.7	74.2	56.3
19-Aug	88.0	69.6	75.6	54.9	46.0	95.2	76.7	75.5	56.0
26-Aug	82.0	65.3	71.7	53.0	45.0	89.6	70.6	70.5	52.7
2-Sep	79.0	64.3	68.4	51.0	43.0	89.6	71.5	66.6	49.8
9-Sep	81.0	65.1	68.1	49.3	41.0	84.0	72.8	65.6	47.5
16-Sep	79.0	65.2	67.0	49.1	41.0	84.7	69.1	64.3	46.6
23-Sep	81.0	66.5	66.5	48.4	37.0	89.6	72.8	65.4	47.5
30-Sep	73.0	61.1	62.4	46.0	37.0	74.2	66.9	57.6	42.0
7-Oct	73.0	60.6	60.3	44.8	34.0	69.3	67.3	55.4	40.0
14-Oct	70.0	59.6	57.9	42.5	34.0	69.3	63.7	51.9	37.4
21-Oct	66.0	57.0	54.1	40.7	32.0	65.1	62.5	48.1	35.6
28-Oct	63.0	53.9	51.4	36.7	27.0	57.4	59.6	41.4	29.7
4-Nov	61.0	53.4	47.9	36.3	27.0	53.2	55.7	40.3	29.2
11-Nov	57.0	50.1	45.0	34.0	25.0	49.0	53.1	36.7	26.9
18-Nov	55.0	47.8	43.9	32.4	18.0	46.2	51.5	34.6	24.9
25-Nov	55.0	48.1	42.3	30.7	14.0	45.5	51.0	32.1	23.1
2-Dec	54.0	47.3	37.7	28.7	5.0	46.2	49.0	29.4	21.8
9-Dec	54.0	46.0	38.0	27.6	9.0	42.7	48.0	28.5	20.8
16-Dec	54.0	47.2	37.0	28.1	9.0	40.6	49.2	28.0	20.3
23-Dec	54.0	49.7	37.4	28.1	10.0	46.2	52.6	28.8	20.9
31-Dec	52.0	45.5	37.1	28.0	0.0	44.1	48.1	28.0	20.7

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WMO No. 108690



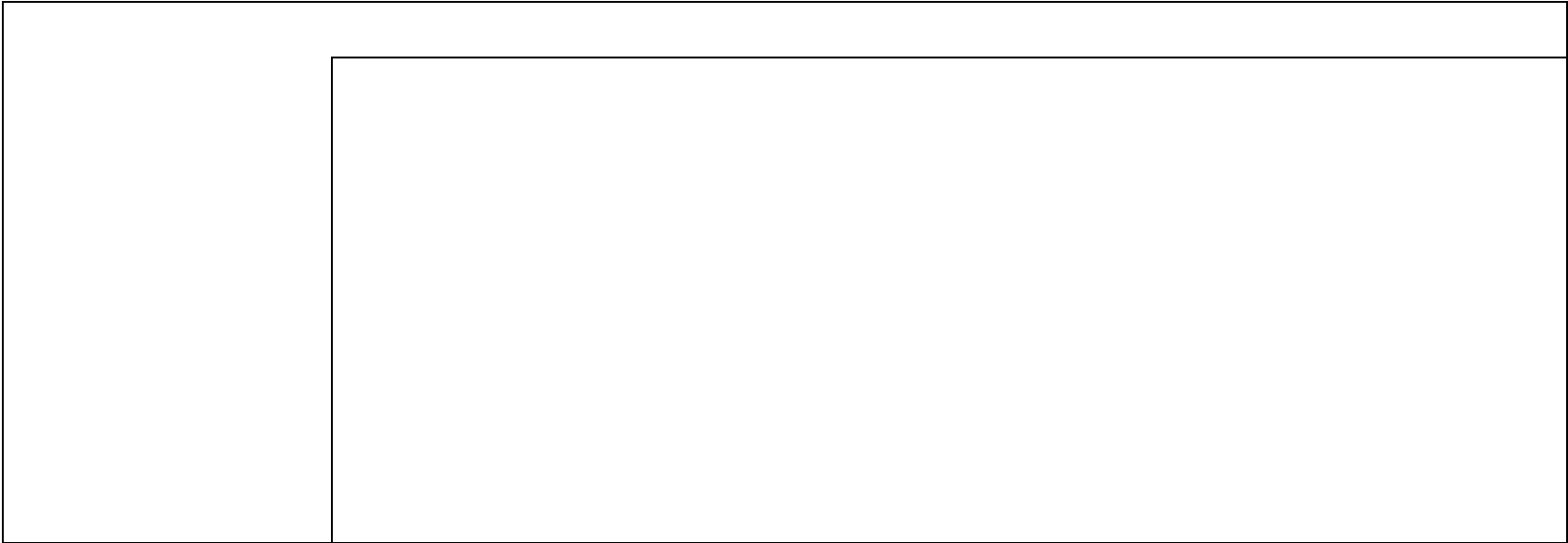
	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	995
FEB	0	875
MAR	1	727
APR	3	535
MAY	23	307
JUN	56	181
JUL	94	115
AUG	85	128
SEP	25	246
OCT	3	488
NOV	0	740
DEC	0	896
ANN	290	6233



	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	0	-28027	0	-4289
FEB	0	-24709	0	-3785
MAR	0	-21124	0	-2499
APR	1	-15989	0	-1401
MAY	39	-9903	0	-225
JUN	210	-6259	29	-13
JUL	433	-4314	116	0
AUG	366	-4761	130	-1
SEP	61	-8244	35	-14
OCT	0	-14839	0	-370
NOV	0	-21301	0	-1909
DEC	0	-25354	0	-3322
ANN	1110	-184824	310	-17828

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

No Solar Radiation
Data Available

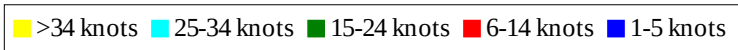
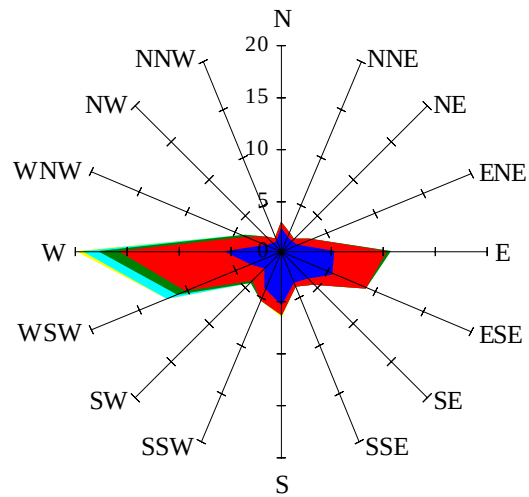


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

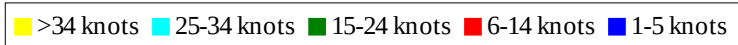
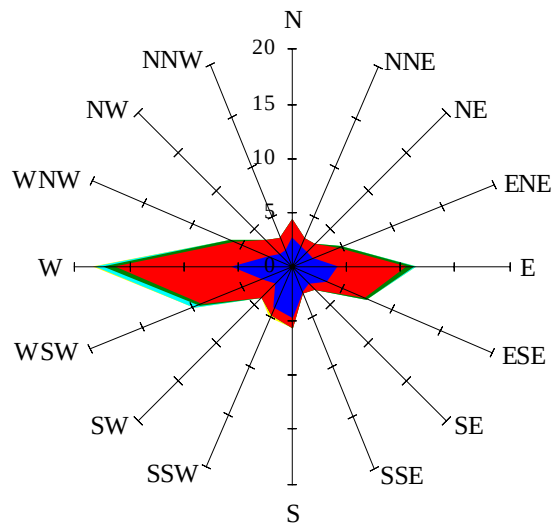
Labels of Percent Frequency on North Axis



Percent Calm = 8.92

Wind Summary - March, April, and May

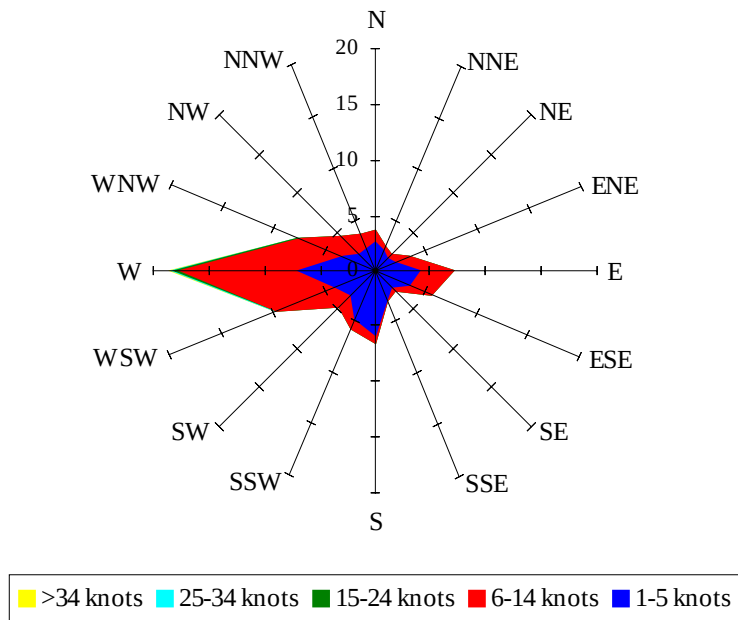
Labels of Percent Frequency on North Axis



Percent Calm = 6.94

Wind Summary - June, July, and August

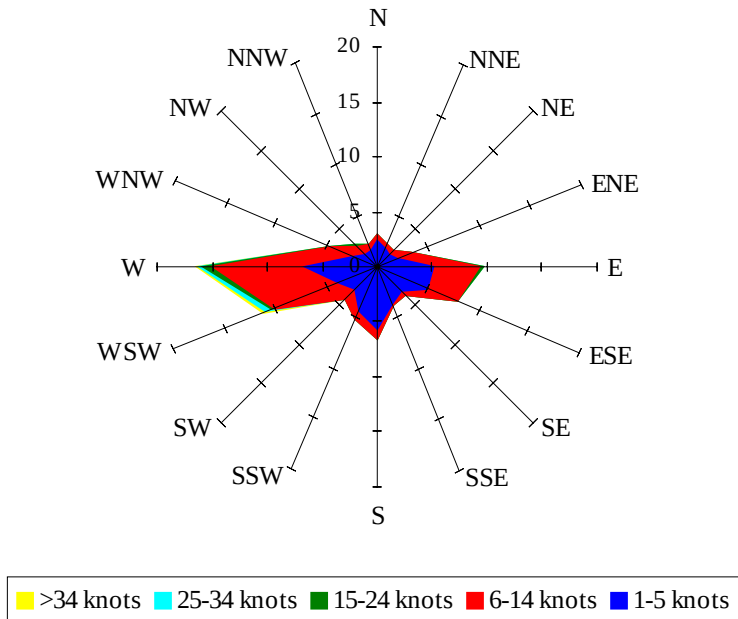
Labels of Percent Frequency on North Axis



Percent Calm = 10.67

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 11.80