

POPE AFB	NC	
Latitude = 35.17 N		WMO No. 723030
Longitude = 79.02 W		Elevation = 217 feet
Period of Record = 1967 to 1996		Average Pressure = 29.79 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	99	77	103	7.0	W
0.4% Occurrence	95	76	108	7.0	SSW
1.0% Occurrence	93	76	107	6.7	SSW
2.0% Occurrence	91	75	106	6.4	SSW
Mean Daily Range	21	-	-	-	-
97.5% Occurrence	28	25	14	2.7	N
99.0% Occurrence	23	20	11	3.0	N
99.6% Occurrence	19	17	9	2.7	N
Median of Extreme Lows	13	11	7	2.9	WNW
	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	82	92	146	6.3	SSW
0.4% Occurrence	79	89	130	5.8	SSW
1.0% Occurrence	78	88	126	5.7	SW
2.0% Occurrence	77	87	123	5.6	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	153	88	1.00	6.0	SW
0.4% Occurrence	137	84	0.90	4.8	SW
1.0% Occurrence	132	83	0.88	4.7	SW
2.0% Occurrence	127	82	0.85	4.5	SW
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		101	1317	1072	2586

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	4.0	100	3.8 + 1.4
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 (#)
64.0	0	10	46

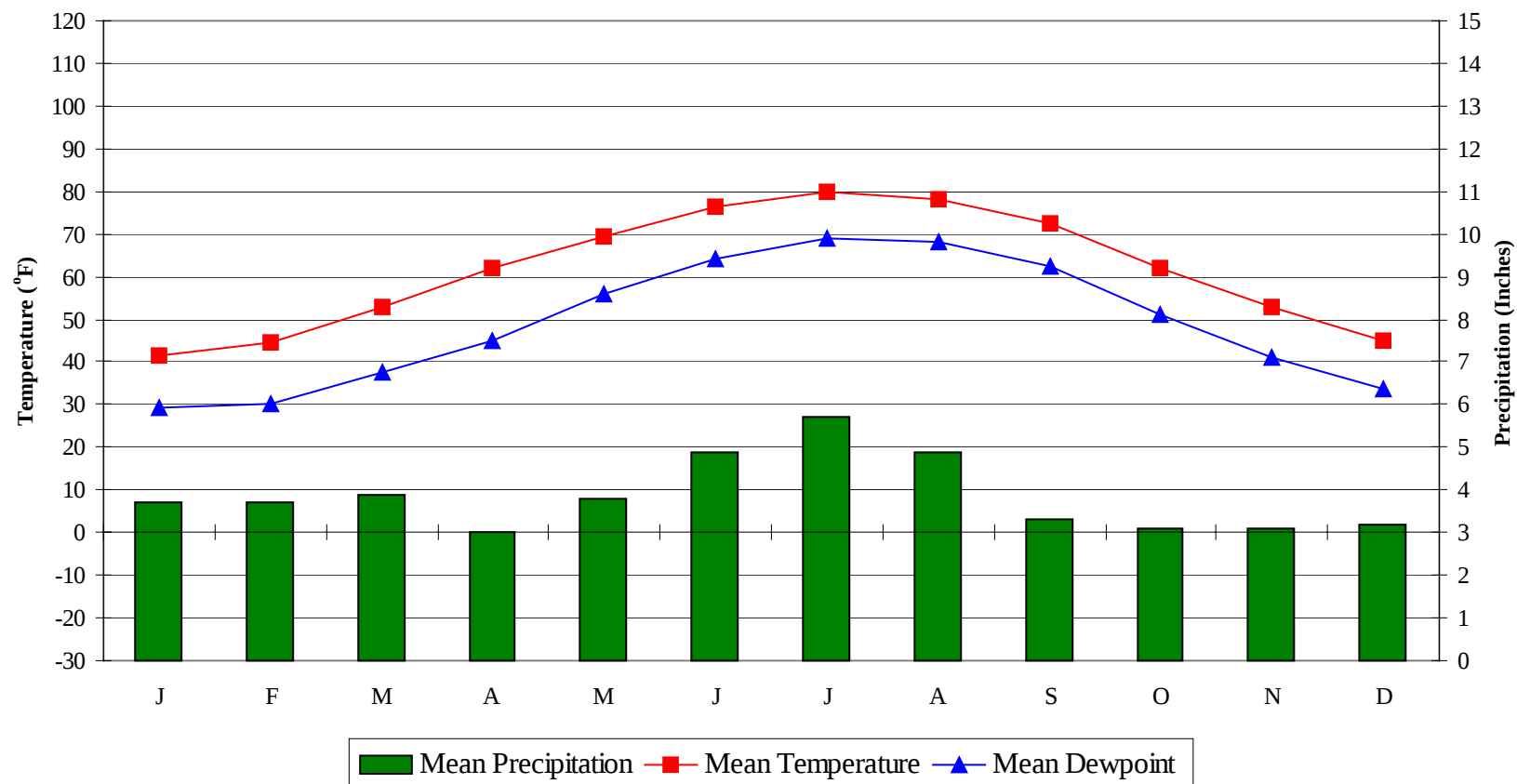
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

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Average Annual Climate

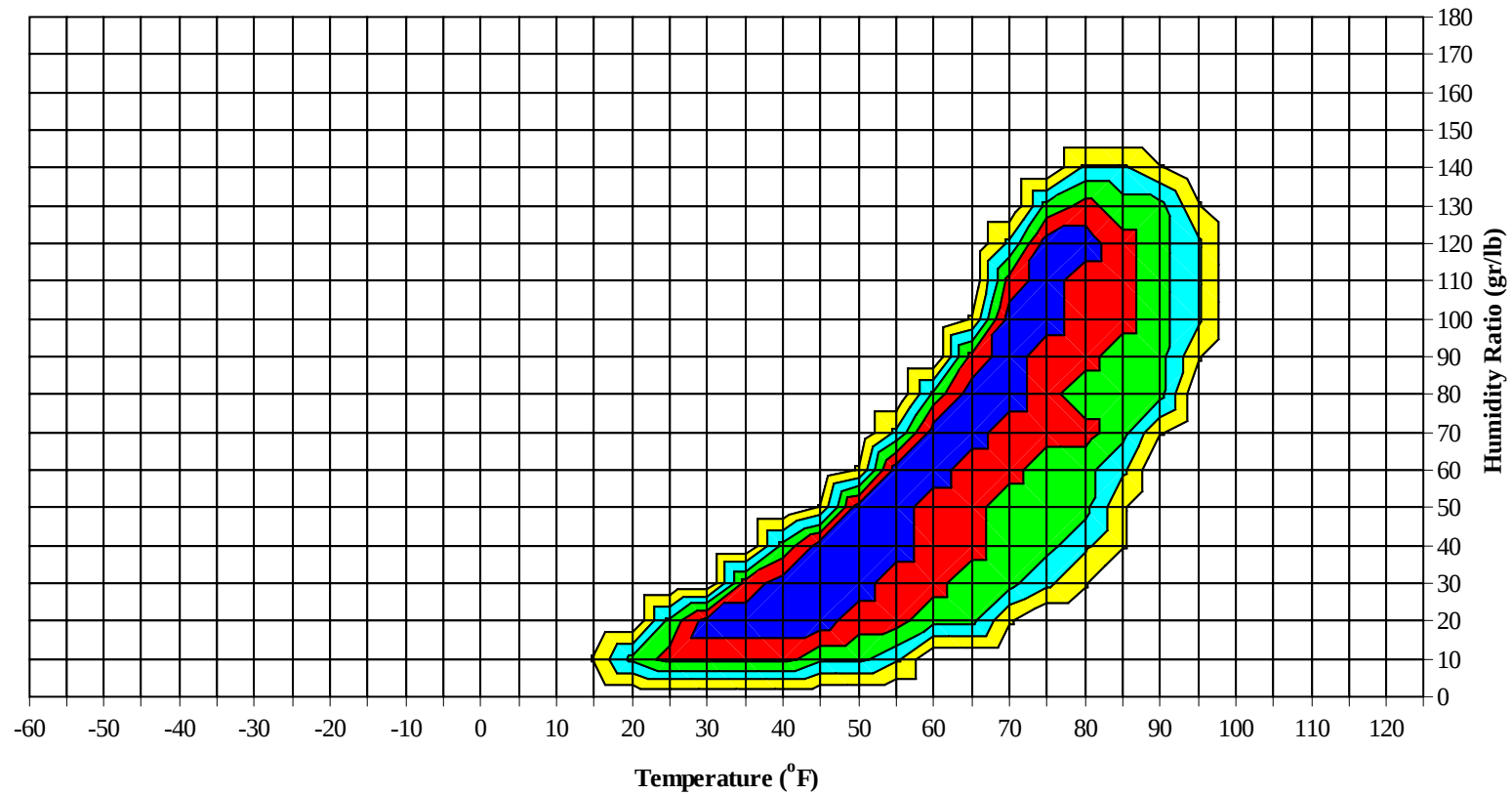


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Long Term Psychrometric Summary



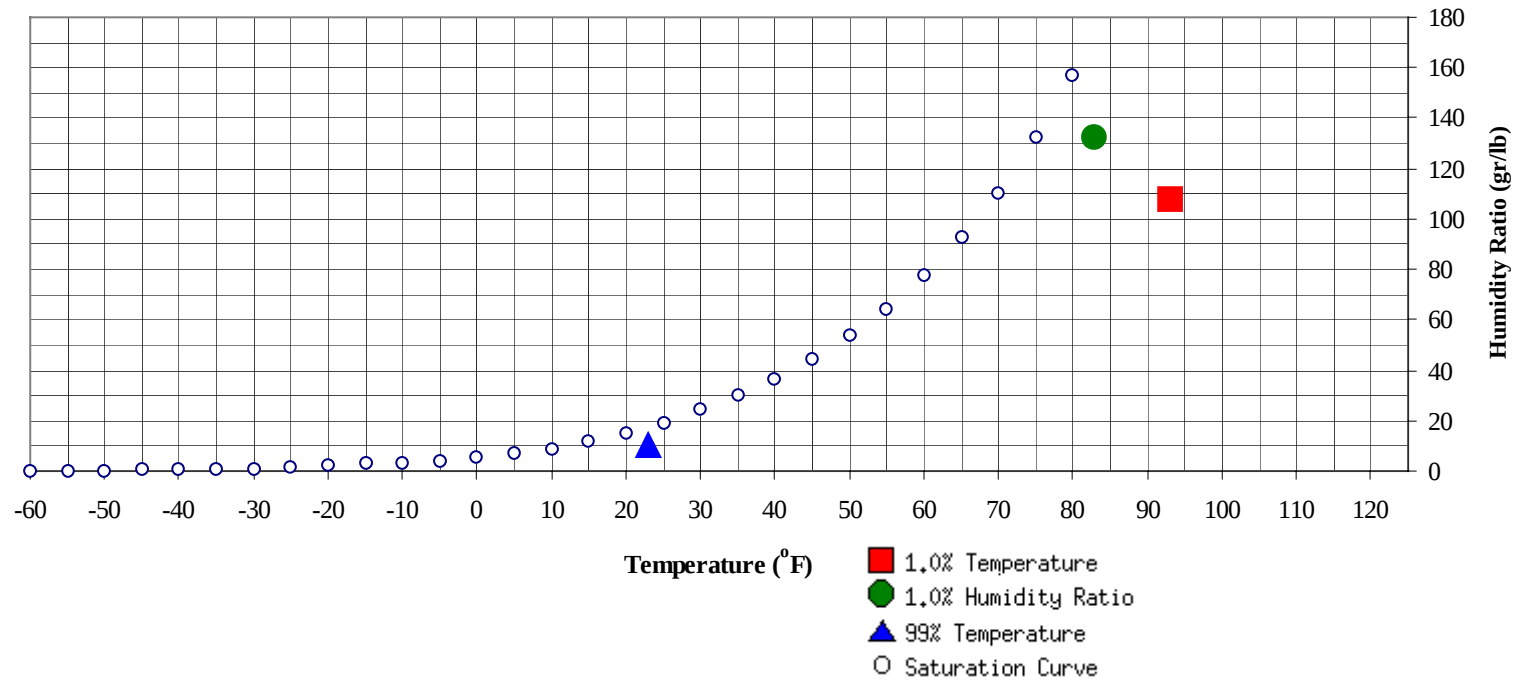
- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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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)
	23	10.7	7.2		132.3	82.9	77.1	75	40.6

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	93	107.6	75.9	39.3

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WMO No. 723030

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

Period of Record = 1967 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															
100 / 104															
95 / 99															
90 / 94															
85 / 89							0		0	59.5		0	0	0	74.3
80 / 84							1	0	1	63.2		2	0	2	65.9
75 / 79		1	0	1	63.2		3	1	4	62.6		7	2	9	63.6
70 / 74	0	5	1	6	60.8	0	10	3	13	59.0		14	7	21	61.3
65 / 69	2	10	6	18	58.8	2	17	10	29	56.7	2	23	14	39	59.1
60 / 64	6	18	14	38	55.0	9	24	20	53	53.9	8	31	26	65	56.6
55 / 59	10	24	17	51	50.4	12	25	24	61	49.6	20	40	38	98	53.8
50 / 54	15	32	25	72	45.6	18	29	25	72	45.1	30	39	38	107	49.7
45 / 49	24	42	39	105	41.6	22	31	32	85	40.8	35	35	38	108	45.7
40 / 44	33	40	43	116	37.4	29	32	35	96	36.7	34	29	35	98	41.5
35 / 39	42	33	41	116	33.0	37	28	32	97	32.6	39	17	25	81	37.3
30 / 34	47	23	32	102	28.4	43	17	25	85	28.5	37	9	15	61	33.1
25 / 29	34	12	21	67	24.0	29	5	12	46	23.9	31	3	7	41	28.8
20 / 24	19	5	6	30	19.5	15	2	3	20	19.6	9	0	1	10	24.4
15 / 19	10	2	3	15	15.2	6	1	1	8	15.6	2	1	1	4	19.6
10 / 14	4	1	1	6	10.4	1	0	0	1	11.9	0		0	0	16.3
5 / 9	1	0	0	1	6.1										
0 / 4	0	0	0	0	0.1	0			0	5.9					
-5 / -1	0			0	-3.0										

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 = 1967 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												1	0	1	75.0
95 / 99		0		0	65.0		1	0	1	74.2	7	2	9	75.6	
90 / 94		2	1	3	66.9		9	3	12	71.5		32	11	43	74.4
85 / 89		11	4	15	65.2		28	10	38	69.6	1	58	29	88	72.6
80 / 84		26	11	37	63.6	0	48	24	72	67.6	8	65	49	122	70.9
75 / 79	0	35	20	55	61.6	7	57	42	106	65.6	43	47	62	152	69.7
70 / 74	6	43	38	87	59.5	37	48	60	145	64.0	89	22	56	167	67.8
65 / 69	28	41	45	114	57.5	64	30	48	142	61.3	52	5	21	78	63.5
60 / 64	44	36	42	122	54.2	54	18	31	103	57.1	28	2	7	37	58.8
55 / 59	41	23	31	95	50.2	40	6	17	63	53.2	14	0	2	16	54.4
50 / 54	41	16	24	81	46.2	28	2	9	39	48.9	5		1	6	50.2
45 / 49	34	5	14	53	42.3	14	1	2	17	44.8	0		0	0	45.8
40 / 44	28	2	7	37	38.5	5		0	5	40.3					
35 / 39	14	0	2	16	34.1	0			0	35.4					
30 / 34	4	0	1	5	29.7										
25 / 29	0			0	25.3										
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															

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WMO No. 723030

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

Period of Record = 1967 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						0	0	0	76.5						
100 / 104		2	1	3	76.6	1	0	1	77.7		0			0	78.0
95 / 99		17	5	22	77.2	8	2	10	76.6		2	0	2	76.1	
90 / 94		51	18	69	76.3	39	12	51	75.9		13	3	16	75.1	
85 / 89	1	76	38	115	74.7	0	68	30	98	74.6	0	44	12	56	73.1
80 / 84	22	60	63	145	73.4	12	68	59	139	73.1	1	62	31	94	70.8
75 / 79	94	31	74	199	72.1	71	42	76	189	71.9	25	55	57	136	69.7
70 / 74	97	9	42	148	69.4	105	18	52	175	69.2	70	36	62	167	67.6
65 / 69	24	2	6	32	64.4	42	4	13	59	64.6	57	19	38	114	63.1
60 / 64	8	0	1	9	60.0	14	0	3	17	59.8	42	8	23	73	58.8
55 / 59	2			2	55.4	3		1	4	54.7	26	2	10	38	54.3
50 / 54	0			0	52.0	1		0	1	50.7	14	0	4	18	49.8
45 / 49						0			0	46.0	6		1	7	45.2
40 / 44											0			0	42.1
35 / 39															
30 / 34															
25 / 29															
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															

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

Period of Record = 1967 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	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		
105 / 109															
100 / 104															
95 / 99		0		0	74.0										
90 / 94		1	0	1	74.3										
85 / 89		6	1	7	70.6		0		0	66.1					
80 / 84	0	25	5	30	68.3		3	0	3	66.6		0		0	69.2
75 / 79	2	47	18	67	65.7	0	16	3	19	64.8		4	0	4	65.6
70 / 74	12	50	36	98	63.8	3	29	13	45	62.9	1	11	4	16	63.2
65 / 69	29	47	44	120	60.5	13	37	24	74	59.8	6	16	11	33	60.3
60 / 64	44	38	45	127	56.8	19	36	29	84	55.4	10	24	17	51	55.8
55 / 59	43	22	38	103	52.5	25	37	32	94	50.8	14	32	21	67	50.4
50 / 54	37	9	30	76	48.1	28	36	40	104	46.5	20	39	32	91	46.1
45 / 49	37	4	20	61	44.0	34	25	38	97	42.4	28	43	43	115	41.9
40 / 44	26	1	7	34	39.6	38	14	30	82	38.3	39	37	42	118	37.7
35 / 39	12	0	3	15	35.1	37	6	20	63	34.2	38	22	33	93	32.9
30 / 34	4		1	5	30.8	28	1	8	37	29.7	42	14	27	83	28.6
25 / 29	0			0	26.8	11	0	3	14	25.3	31	4	13	48	24.5
20 / 24						3	0		3	21.1	13	1	3	17	19.8
15 / 19						0			0	17.0	5	0	0	5	16.1
10 / 14											1	0	0	1	9.7
5 / 9											0			0	7.1
0 / 4															
-5 / -1															

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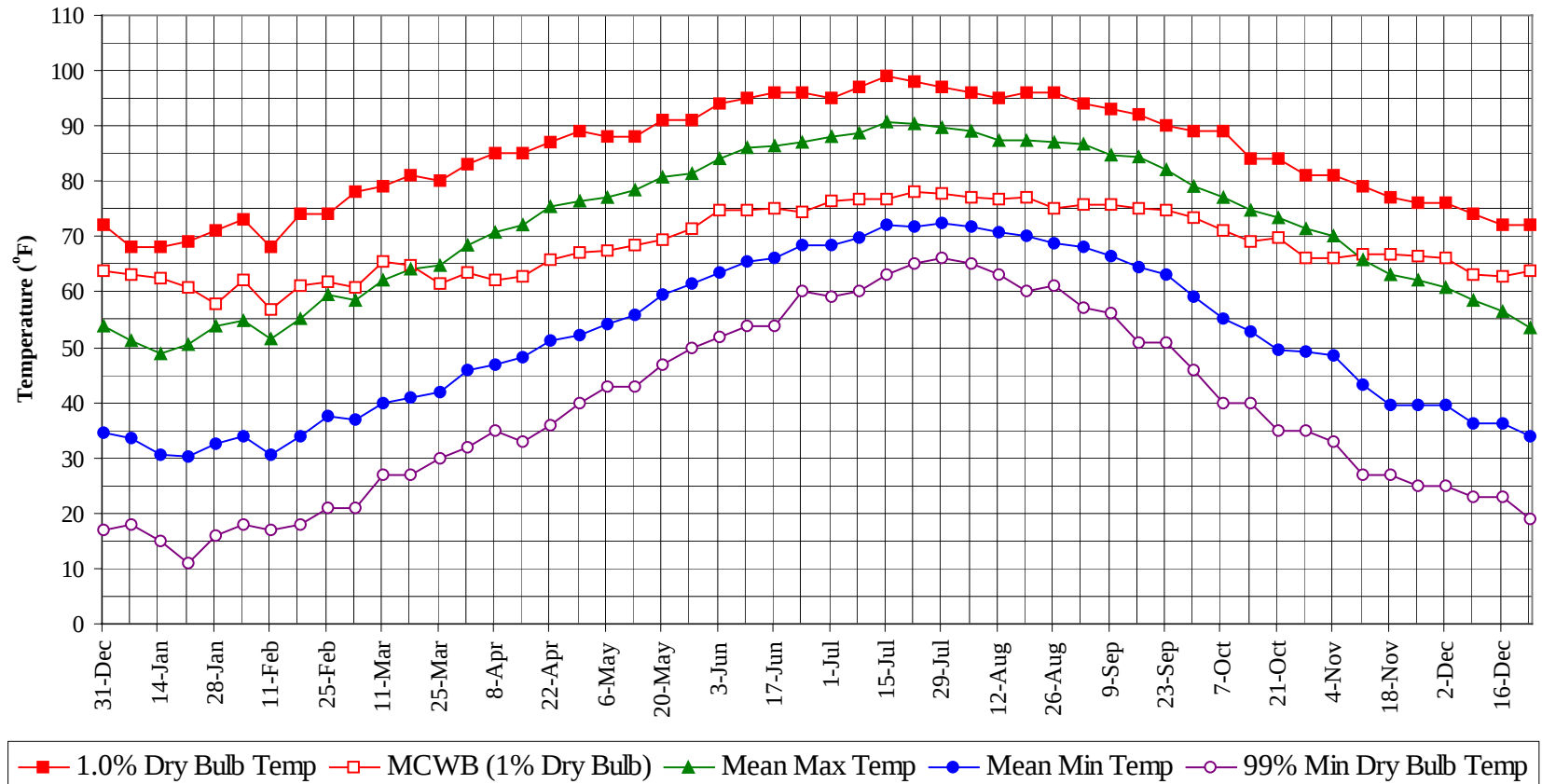
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)

Period of Record = 1967 to 1996

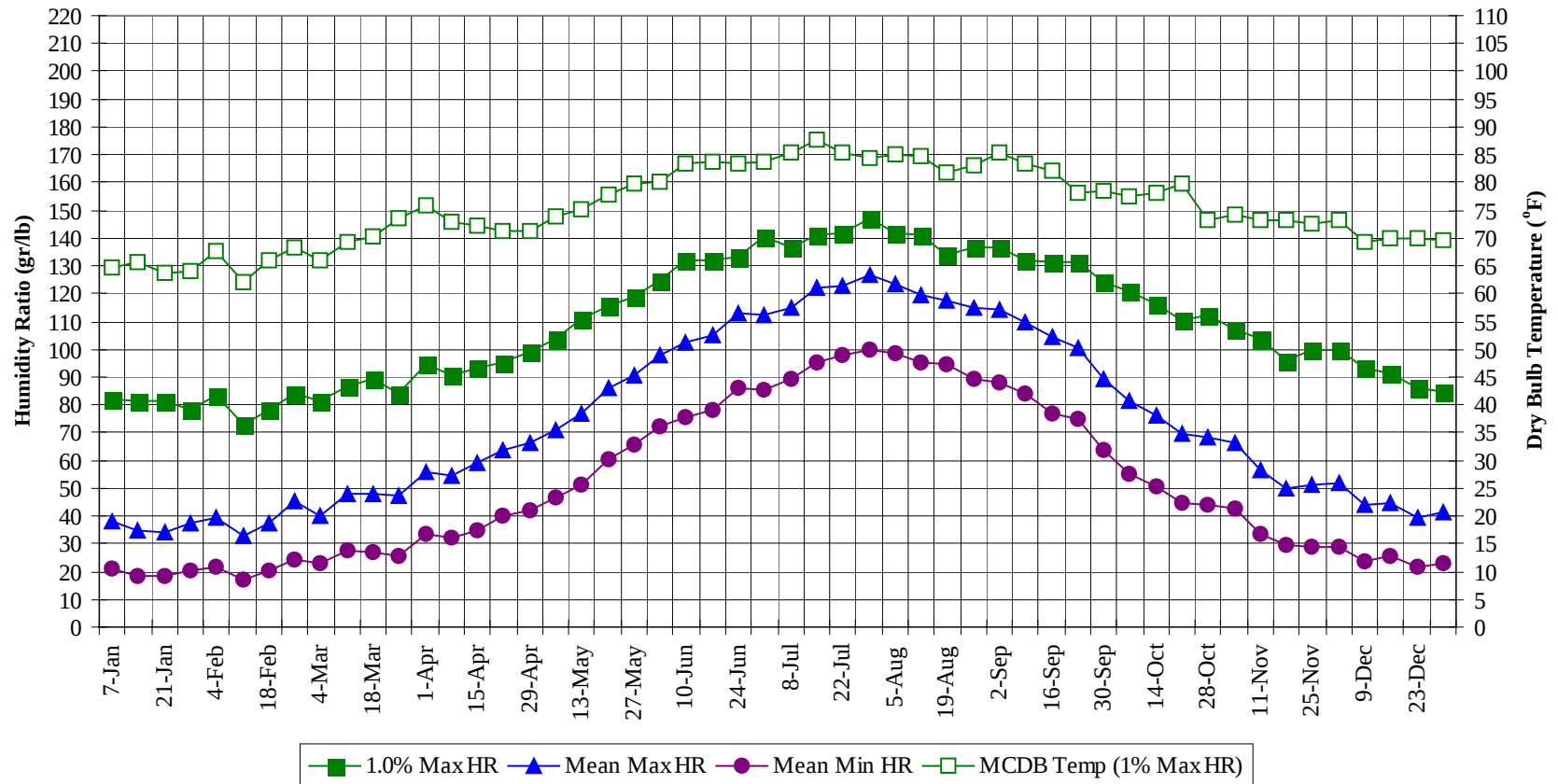
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
105 / 109		0	0	0	76.5
100 / 104		4	1	5	76.4
95 / 99		36	10	46	76.6
90 / 94		149	48	197	75.3
85 / 89	2	292	125	419	73.1
80 / 84	43	364	245	652	70.9
75 / 79	244	352	361	957	69.1
70 / 74	423	303	382	1107	66.0
65 / 69	327	259	291	877	60.7
60 / 64	297	242	271	810	56.0
55 / 59	259	211	231	701	51.2
50 / 54	241	198	228	667	46.5
45 / 49	231	180	223	634	42.1
40 / 44	236	142	190	568	37.7
35 / 39	216	98	146	460	33.2
30 / 34	200	58	101	359	28.7
25 / 29	116	22	51	189	24.2
20 / 24	52	9	13	74	19.7
15 / 19	23	3	4	30	15.5
10 / 14	6	1	1	8	10.6
5 / 9	1	0	0	1	6.3
0 / 4	0	0	0	0	0.1
-5 / -1	0			0	-3.0

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



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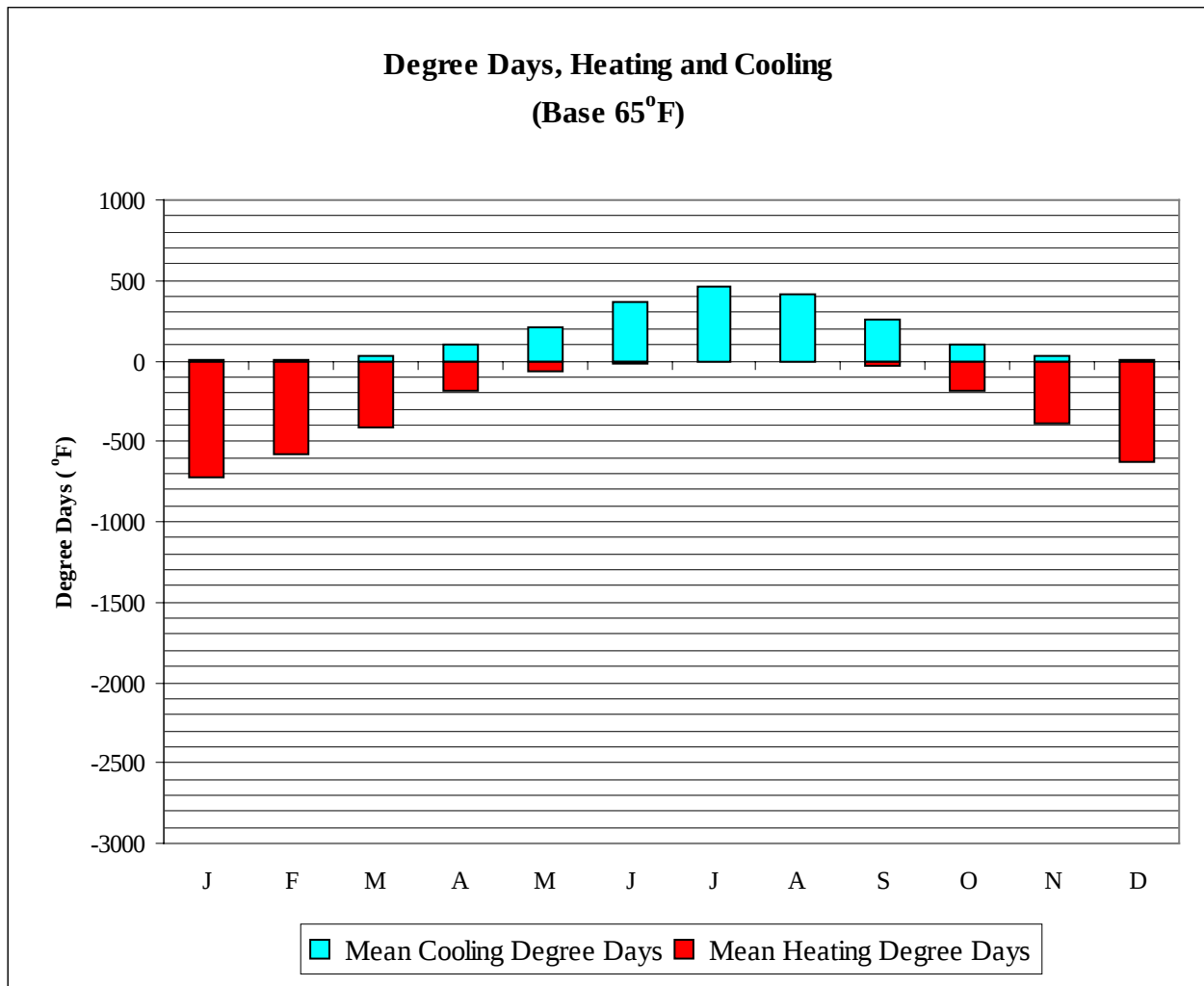
Long Term Dry Bulb Temperature and Humidity Summary

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	68.0	63.1	51.0	33.4	18.0	81.9	64.7	38.4	21.0
14-Jan	68.0	62.5	48.8	30.5	15.0	81.2	65.8	34.6	18.7
21-Jan	69.0	60.9	50.5	30.4	11.0	81.2	63.8	34.2	18.5
28-Jan	71.0	58.0	53.9	32.7	16.0	78.4	64.1	37.4	20.0
4-Feb	73.0	62.3	54.7	34.0	18.0	83.3	67.7	39.5	21.5
11-Feb	68.0	56.7	51.4	30.7	17.0	72.8	61.9	32.6	17.2
18-Feb	74.0	61.0	55.3	33.8	18.0	78.4	65.9	37.7	20.7
25-Feb	74.0	61.9	59.4	37.5	21.0	84.0	68.2	45.0	24.5
4-Mar	78.0	60.7	58.4	36.9	21.0	81.2	66.0	40.0	23.1
11-Mar	79.0	65.4	62.1	40.0	27.0	86.8	69.3	48.1	27.8
18-Mar	81.0	64.8	64.3	41.0	27.0	89.6	70.2	48.0	26.9
25-Mar	80.0	61.6	64.7	41.9	30.0	84.0	73.5	47.4	25.9
1-Apr	83.0	63.5	68.6	46.0	32.0	94.5	76.0	55.8	33.6
8-Apr	85.0	62.2	70.8	47.0	35.0	90.3	73.0	54.3	31.9
15-Apr	85.0	62.8	72.3	48.3	33.0	93.1	72.4	59.0	35.1
22-Apr	87.0	65.6	75.3	51.3	36.0	95.2	71.4	63.6	40.0
29-Apr	89.0	67.0	76.4	52.2	40.0	99.4	71.4	66.0	41.8
6-May	88.0	67.3	77.1	54.1	43.0	103.6	73.9	70.9	46.5
13-May	88.0	68.6	78.4	55.8	43.0	111.3	75.0	77.1	51.6
20-May	91.0	69.4	80.6	59.4	47.0	115.5	78.0	85.8	60.5
27-May	91.0	71.4	81.5	61.4	50.0	119.0	79.8	90.4	65.5
3-Jun	94.0	74.9	83.9	63.5	52.0	124.6	80.2	98.2	72.3
10-Jun	95.0	74.9	86.2	65.4	54.0	132.3	83.5	102.6	75.6
17-Jun	96.0	75.3	86.4	66.1	54.0	132.3	83.6	104.9	78.3
24-Jun	96.0	74.6	87.2	68.6	60.0	133.0	83.4	112.9	85.8
1-Jul	95.0	76.4	88.0	68.5	59.0	140.7	83.8	112.6	85.3
8-Jul	97.0	76.6	88.9	69.9	60.0	136.5	85.5	115.2	89.4
15-Jul	99.0	76.8	90.6	72.1	63.0	141.4	87.7	122.0	95.0
22-Jul	98.0	78.1	90.3	71.8	65.0	142.1	85.2	123.0	97.7
29-Jul	97.0	77.9	89.7	72.3	66.0	147.0	84.3	126.7	100.0
5-Aug	96.0	77.1	89.0	71.7	65.0	142.1	85.1	123.3	98.3
12-Aug	95.0	76.7	87.3	70.7	63.0	141.4	84.6	119.2	95.2
19-Aug	96.0	77.1	87.3	70.2	60.0	133.7	81.7	117.7	94.5
26-Aug	96.0	75.1	87.1	68.9	61.0	136.5	83.2	115.1	89.6
2-Sep	94.0	75.8	86.6	68.0	57.0	136.5	85.4	114.1	88.0
9-Sep	93.0	75.8	84.7	66.6	56.0	132.3	83.5	109.4	84.2
16-Sep	92.0	75.1	84.4	64.3	51.0	131.6	82.3	104.4	76.6
23-Sep	90.0	74.9	81.9	63.2	51.0	131.6	78.2	100.6	74.7
30-Sep	89.0	73.6	78.9	59.1	46.0	123.9	78.6	89.5	63.7
7-Oct	89.0	71.0	77.0	55.1	40.0	121.1	77.5	81.7	54.9
14-Oct	84.0	69.1	74.8	52.8	40.0	116.2	78.1	76.1	50.6
21-Oct	84.0	69.9	73.3	49.5	35.0	110.6	79.8	69.8	44.8
28-Oct	81.0	66.2	71.3	49.1	35.0	112.0	73.1	68.0	44.1
4-Nov	81.0	66.3	70.0	48.5	33.0	107.1	74.2	66.7	43.0
11-Nov	79.0	66.8	65.9	43.1	27.0	103.6	73.4	56.8	33.6
18-Nov	77.0	66.7	63.1	39.6	27.0	95.9	73.1	50.1	29.4
25-Nov	76.0	66.4	62.3	39.6	25.0	100.1	72.6	51.0	29.0
2-Dec	76.0	66.1	60.9	39.4	25.0	100.1	73.3	52.2	29.2
9-Dec	74.0	63.1	58.5	36.1	23.0	93.1	69.3	44.2	23.9
16-Dec	72.0	62.8	56.5	36.1	23.0	91.0	69.9	44.5	25.4
23-Dec	72.0	63.8	53.4	33.8	19.0	86.1	70.0	39.6	21.9
31-Dec	72.0	64.0	53.9	34.6	17.0	84.7	69.7	41.2	22.7

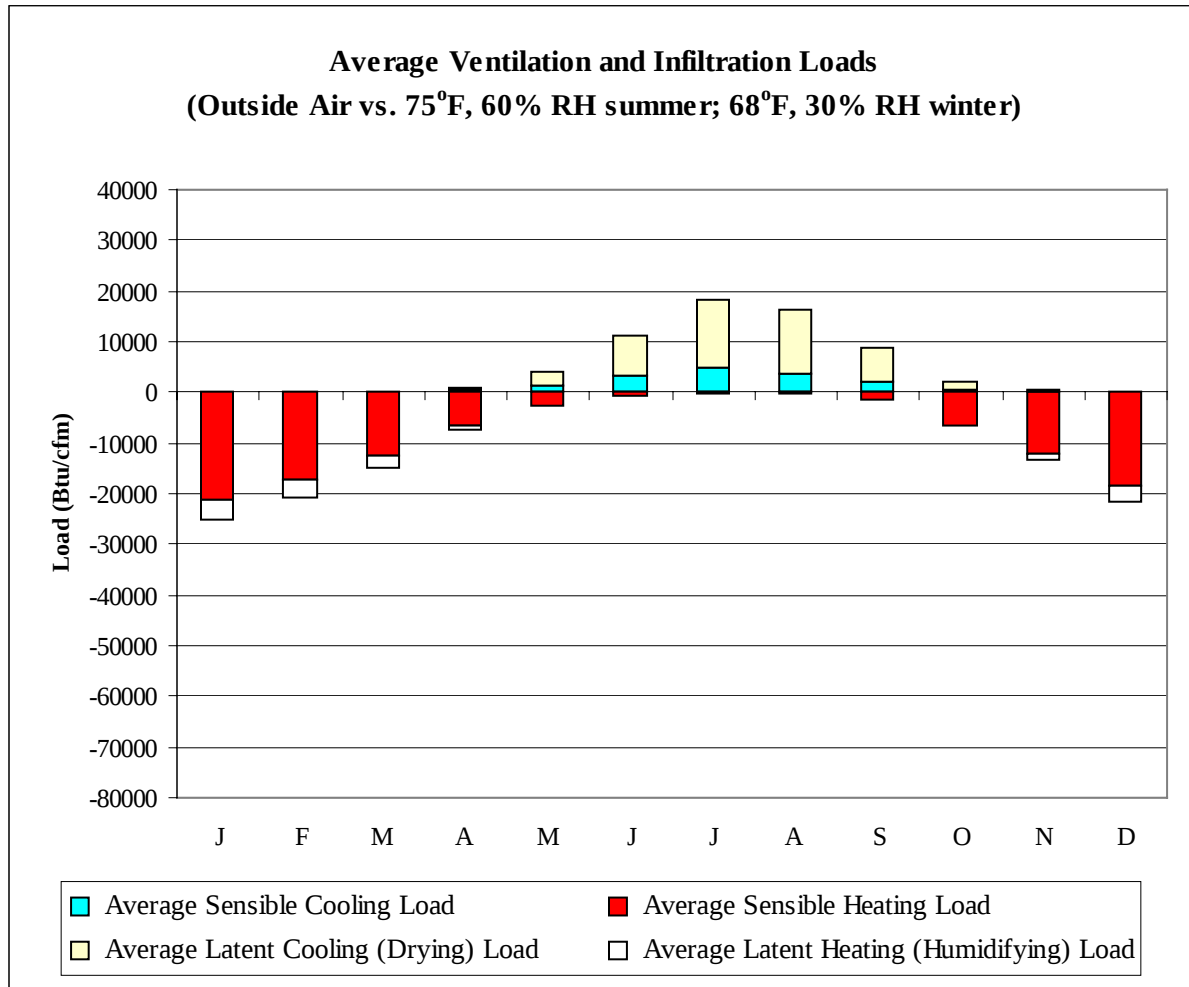
POPE AFB

NC

WMO No. 723030



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	3	730
FEB	8	586
MAR	33	409
APR	103	191
MAY	206	71
JUN	360	12
JUL	464	2
AUG	409	3
SEP	262	35
OCT	97	190
NOV	30	392
DEC	8	623
ANN	1984	3244



	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	2	-21287	29	-3901
FEB	14	-17276	26	-3358
MAR	119	-12664	105	-2012
APR	608	-6435	279	-740
MAY	1461	-2739	2514	-43
JUN	3346	-589	7919	0
JUL	4796	-109	13476	0
AUG	3817	-214	12416	0
SEP	1966	-1463	6711	-1
OCT	441	-6460	1514	-211
NOV	58	-12112	486	-1345
DEC	6	-18437	139	-3026
ANN	16634	-99785	45614	-14637

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

No Solar Radiation
Data Available

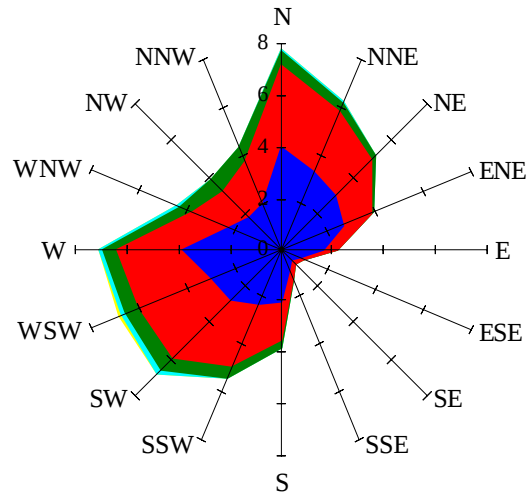


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

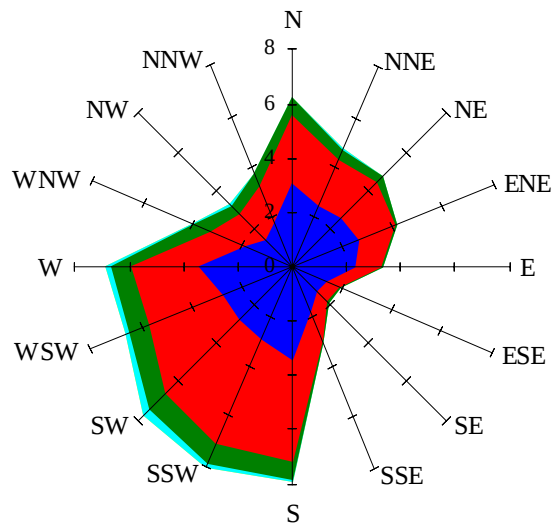
Labels of Percent Frequency on North Axis



Percent Calm = 29.47

Wind Summary - March, April, and May

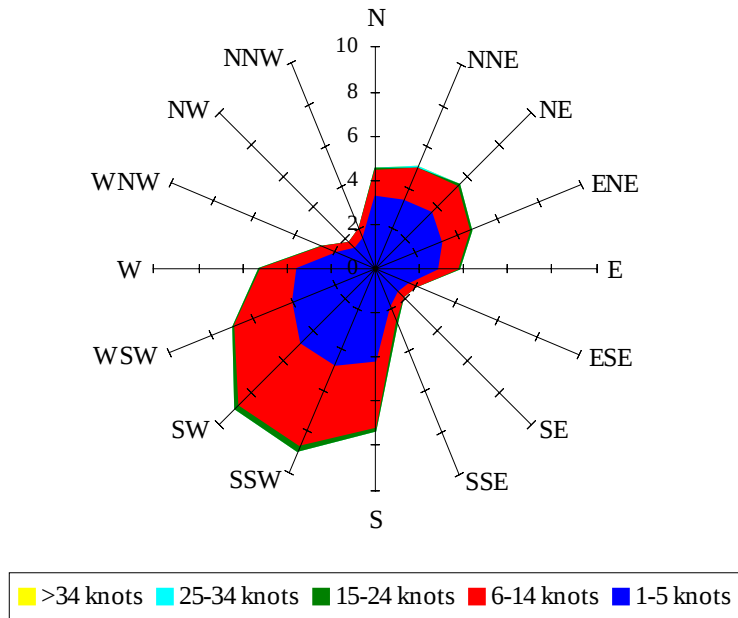
Labels of Percent Frequency on North Axis



Percent Calm = 22.58

Wind Summary - June, July, and August

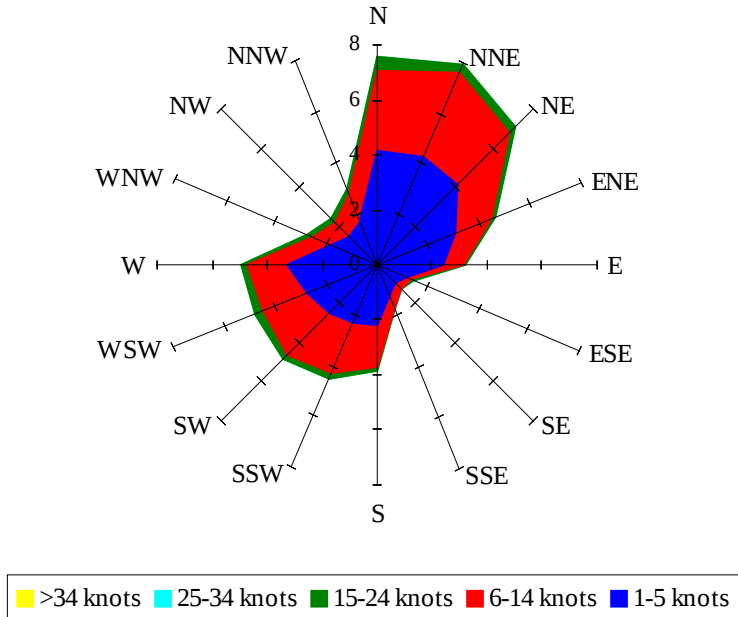
Labels of Percent Frequency on North Axis



Percent Calm = 26.73

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 34.05