

AVIANO (IT/US-AFB) IY

Latitude = 46.03 N

WMO No. 160360

Longitude = 12.60 E

Elevation = 413 feet

Period of Record = 1973 to 1996

Average Pressure = 29.42 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	91	74	99	3.6	SSW
0.4% Occurrence	90	73	99	3.8	SSW
1.0% Occurrence	86	71	94	3.6	SSW
2.0% Occurrence	84	71	92	4.1	SSW
Mean Daily Range	15	-	-	-	-
97.5% Occurrence	28	26	16	3.3	NNE
99.0% Occurrence	25	23	13	3.4	NNE
99.6% Occurrence	21	19	11	3.3	NNE
Median of Extreme Lows	16	14	9	3.5	NNE
	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	78	88	129	3.4	SSW
0.4% Occurrence	75	85	116	3.3	S
1.0% Occurrence	73	83	107	3.5	SSW
2.0% Occurrence	72	83	102	3.5	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	134	82	0.88	4.0	NNE
0.4% Occurrence	119	80	0.78	3.4	S
1.0% Occurrence	111	80	0.74	3.1	SSW
2.0% Occurrence	105	77	0.69	4.0	NE
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		6	449	120	836

Other Site Data

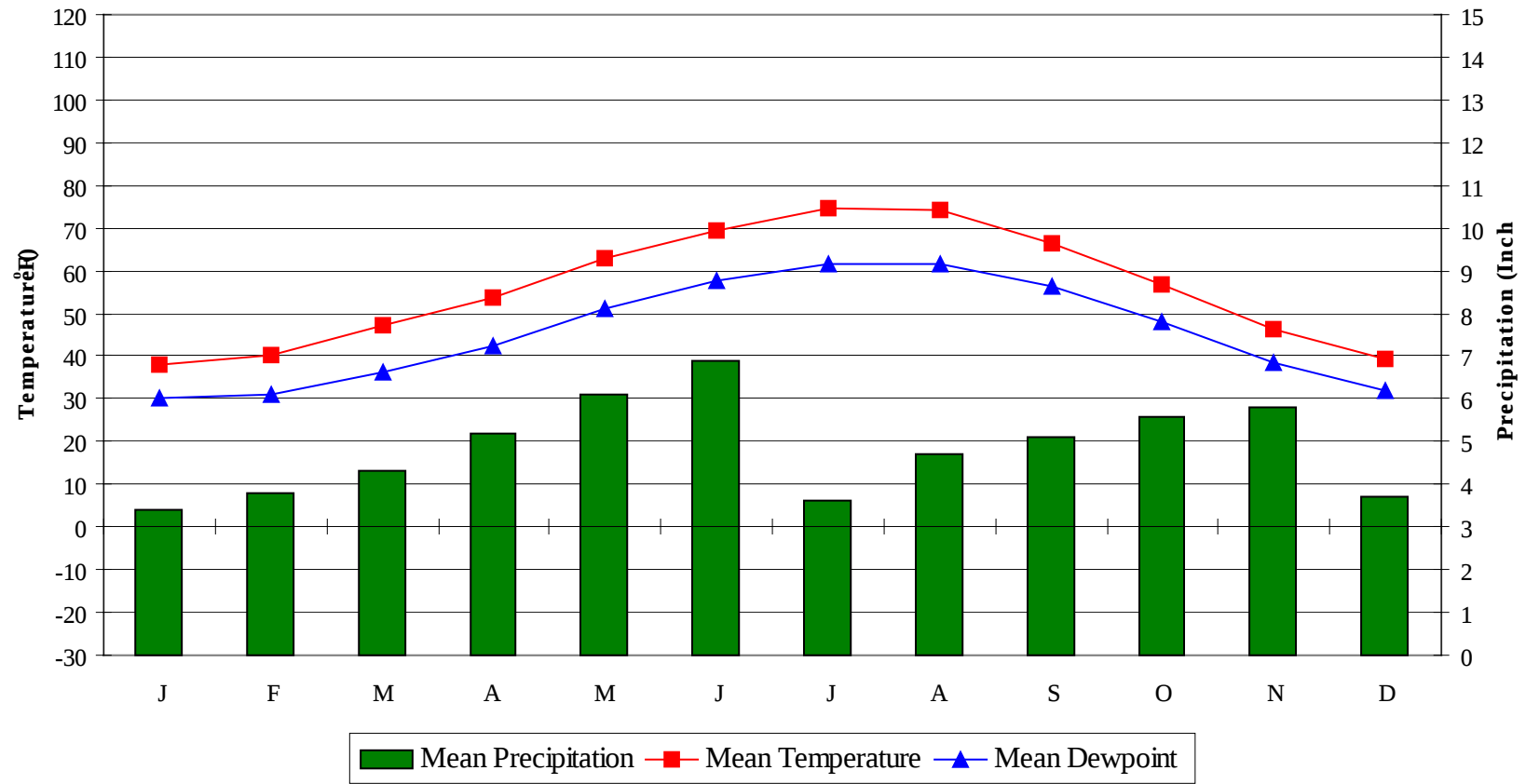
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
7	N/A	N/A	0.6 + 0.4
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
58.1	N/A	N/A	47

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

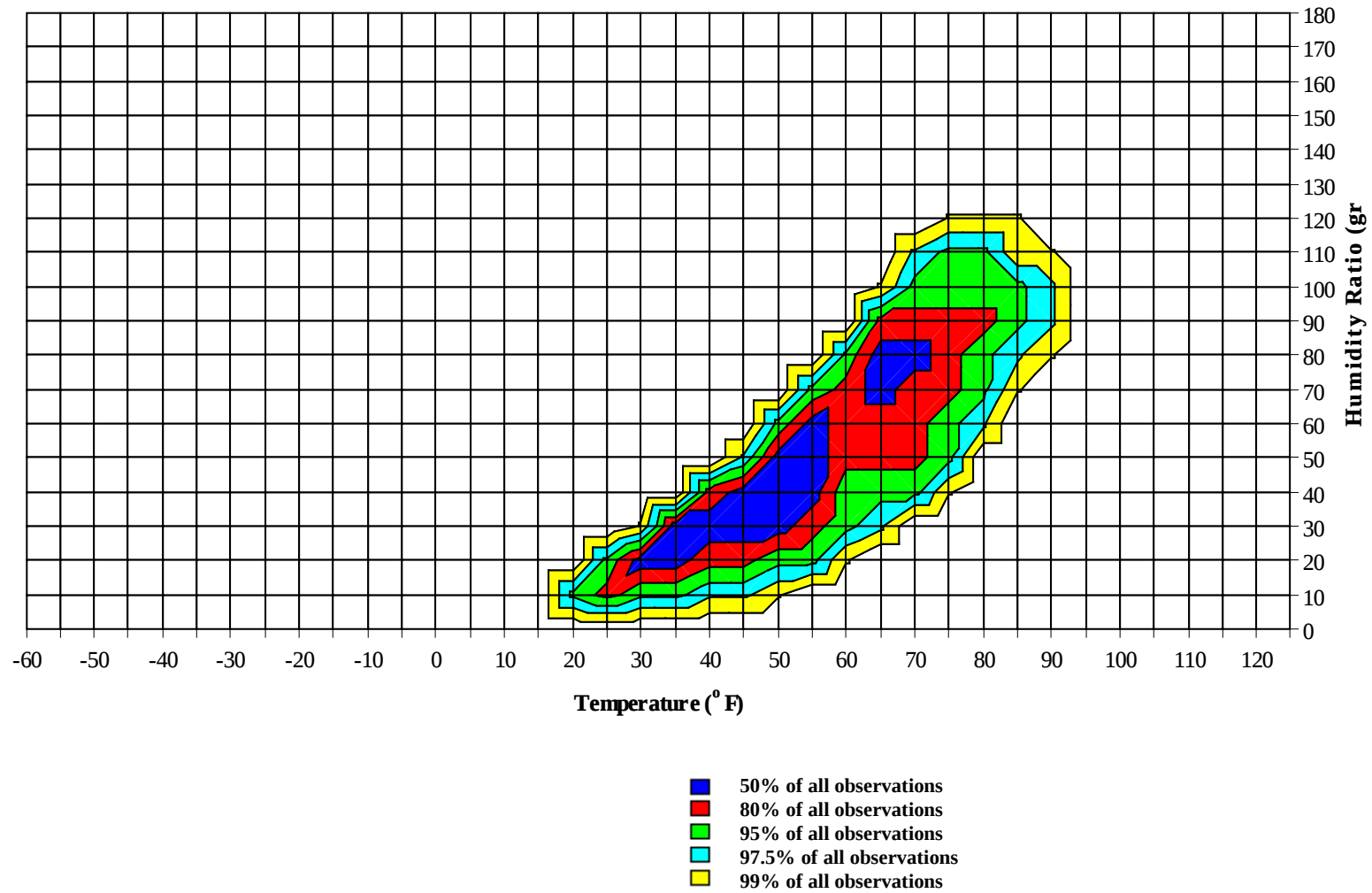
AVIANO (IT/US-AFB) IY

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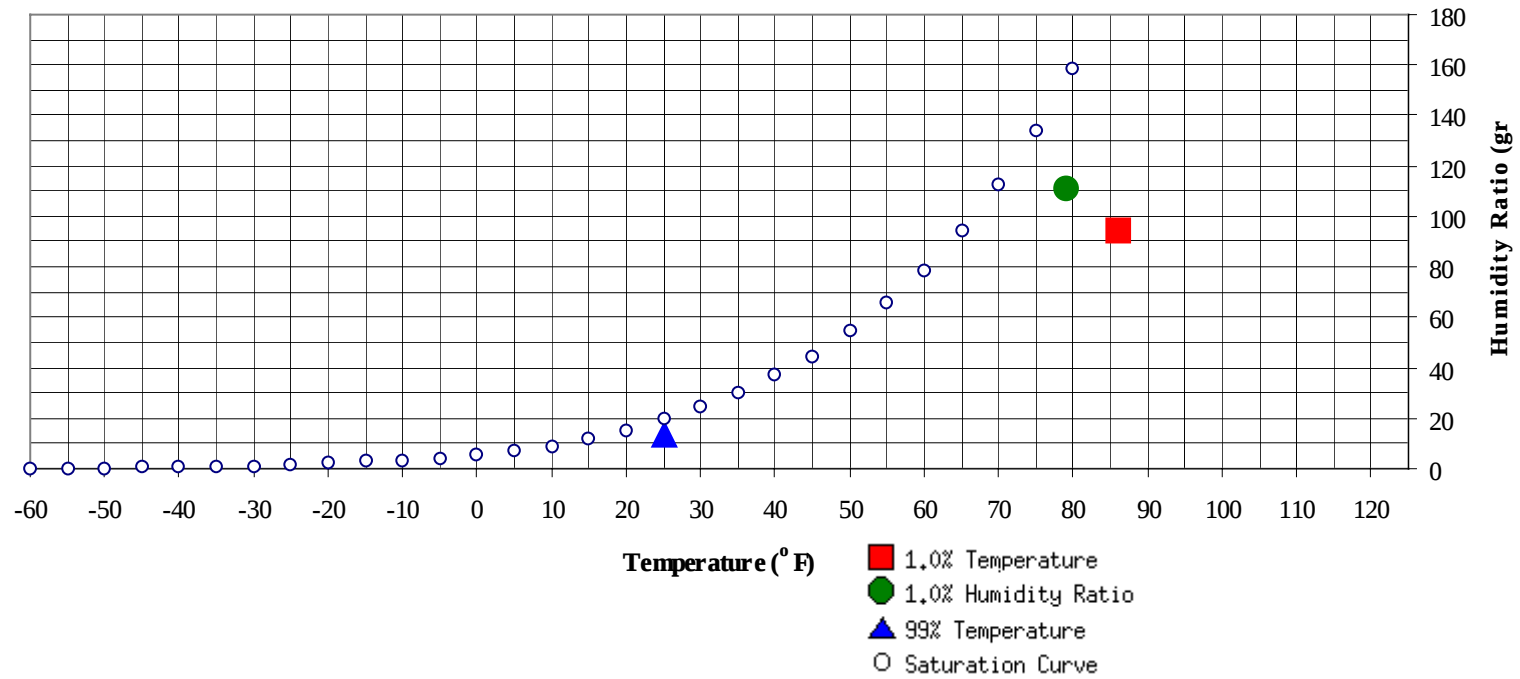
Average Annual Climate



Long Term Psychrometric Summary



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	25	13.3	8.0		111.3	79	72.6	69.8	36.4

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	86	94	71.2	35.4

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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	0	0	58.2
70 / 74												3	1	4	55.8
65 / 69												5	2	7	54.6
60 / 64		0		0	51.6		3	1	3	50.7	0	21	10	31	52.1
55 / 59		3	1	4	49.5		10	3	13	46.6	4	43	26	73	48.8
50 / 54	3	20	5	27	45.6	1	35	14	51	44.9	22	74	57	153	46.2
45 / 49	18	72	39	129	42.1	20	72	52	144	41.9	68	65	79	212	42.6
40 / 44	33	53	46	133	39.0	32	42	44	118	38.6	47	20	33	101	38.7
35 / 39	60	60	78	198	34.8	61	43	68	172	34.3	58	12	27	96	34.4
30 / 34	63	28	53	143	29.6	60	16	31	107	29.4	36	3	10	49	29.4
25 / 29	50	10	23	83	24.5	39	4	10	52	24.6	10	1	3	14	24.7
20 / 24	13	2	3	17	19.9	8	0	1	9	19.8	3	0	0	3	20.1
15 / 19	7	1	1	9	16.1	3	0	0	3	16.1	1			1	17.4
10 / 14	1	0		1	10.5	0			0	12.0					

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.

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		
95 / 99												0	0	0	73.7
90 / 94												2	1	3	74.2
85 / 89							0		0	68.7		0	7	3	70.5
80 / 84						0	7	3	10	65.7		0	33	20	68.4
75 / 79		2	1	3	59.2	0	33	17	49	63.3	5	60	41	106	66.1
70 / 74	0	11	5	16	57.8	5	63	41	109	60.8	35	71	64	170	63.4
65 / 69	0	20	10	30	55.6	14	40	34	88	59.2	49	29	38	116	61.5
60 / 64	3	56	32	91	52.9	60	59	71	190	56.7	95	31	51	176	58.7
55 / 59	18	73	59	149	50.2	79	33	52	164	52.9	44	6	20	70	54.4
50 / 54	78	57	76	211	47.8	68	12	26	106	49.6	12	1	2	14	49.9
45 / 49	88	19	45	151	43.3	19	2	4	25	44.2	1		0	1	45.2
40 / 44	30	2	9	41	39.2	1	0	0	1	38.7			0	0	
35 / 39	24	0	3	27	35.0	1		0	1	34.0					
30 / 34	1			1	30.0										
25 / 29															
20 / 24															
15 / 19															
10 / 14															

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 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	75.7		1	0	1	76.0					
90 / 94	0	11	4	15	73.6		14	6	20	73.1		0		0	68.1
85 / 89	0	24	16	40	71.9	0	21	12	33	71.9	0	2	1	3	71.3
80 / 84	4	71	44	119	70.0	3	70	40	113	70.1	0	15	4	20	68.9
75 / 79	23	73	64	160	67.4	19	69	58	146	67.7	0	51	23	74	65.9
70 / 74	79	50	70	198	65.0	62	52	70	185	64.9	9	84	48	141	63.3
65 / 69	66	13	27	106	62.7	62	14	29	106	62.8	23	43	45	111	61.5
60 / 64	61	6	19	86	59.3	77	7	29	113	59.6	97	34	70	201	58.8
55 / 59	13	0	3	16	54.4	21	0	3	24	54.7	70	10	37	117	54.2
50 / 54	3		0	3	50.0	4		0	4	49.8	33	1	10	44	49.6
45 / 49						0			0	46.0	9	0	1	10	45.2
40 / 44											0	0	0	0	39.0
35 / 39											0			0	36.5
30 / 34															
25 / 29															
20 / 24															
15 / 19															
10 / 14															

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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		0	0	0	63.6										
75 / 79		9	2	11	63.5										
70 / 74		29	7	36	60.6		0	0	0	54.0					
65 / 69	3	32	12	47	59.1	0	2	0	2	55.8					
60 / 64	20	77	52	150	56.8	0	18	3	21	54.6		0	0	0	51.0
55 / 59	54	61	69	183	53.1	8	53	20	81	51.7	0	4	0	4	48.4
50 / 54	72	31	61	164	48.9	34	75	50	160	47.9	4	29	8	40	46.7
45 / 49	55	8	33	95	44.1	53	58	69	179	43.2	32	92	48	172	42.9
40 / 44	21	1	8	31	39.9	38	18	40	96	39.0	38	50	45	132	39.1
35 / 39	20	0	4	24	36.1	63	14	42	119	34.6	59	44	68	171	34.7
30 / 34	3	0	0	3	31.2	32	3	12	47	29.7	57	20	53	131	29.8
25 / 29	0			0	27.0	9	1	3	13	24.4	41	7	21	68	24.8
20 / 24						1		1	2	20.5	10	1	4	14	20.2
15 / 19						1			1	16.7	7	1	2	10	16.6
10 / 14											0	0	0	0	12.4

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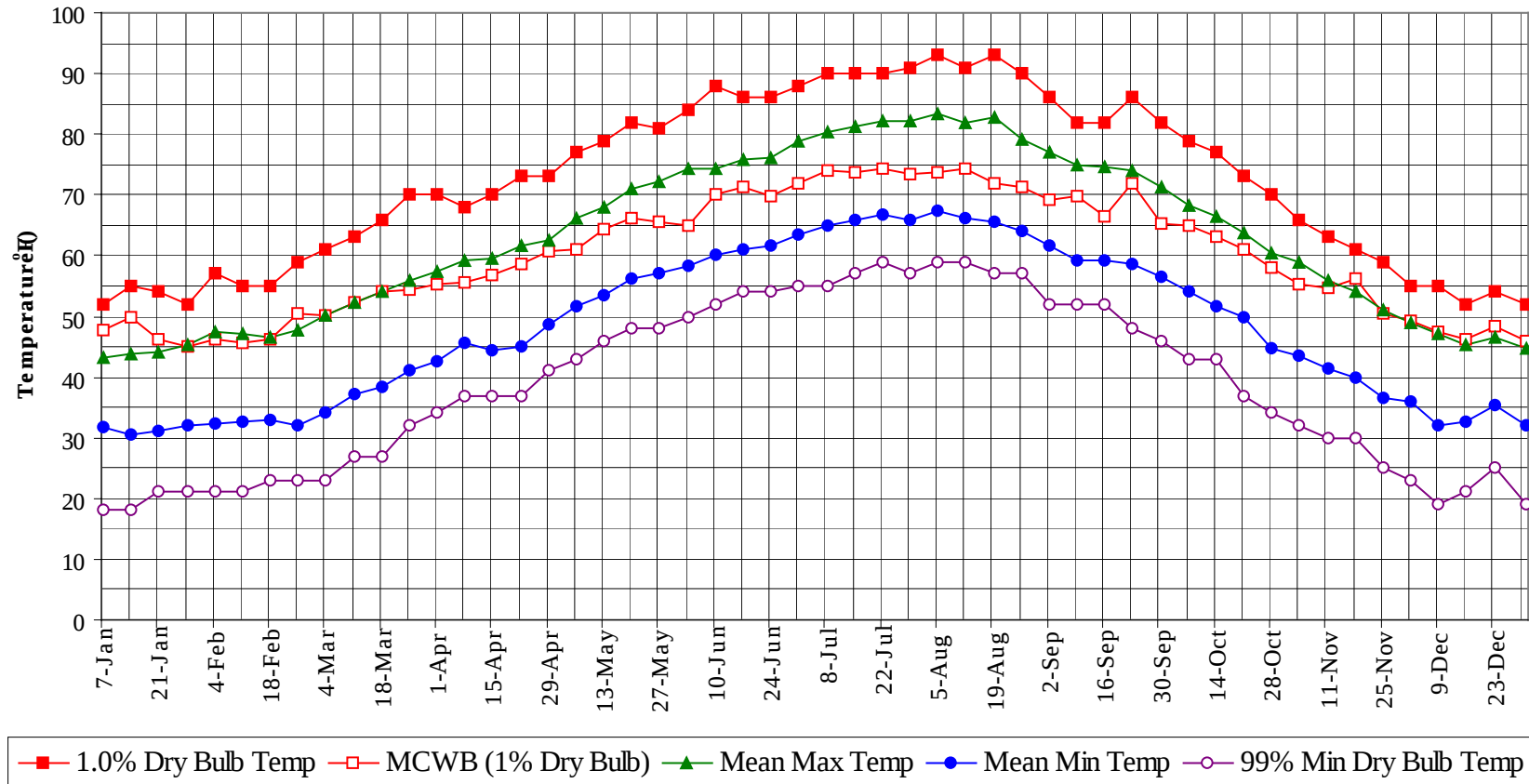
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)

Period of Record = 1973 to 1996

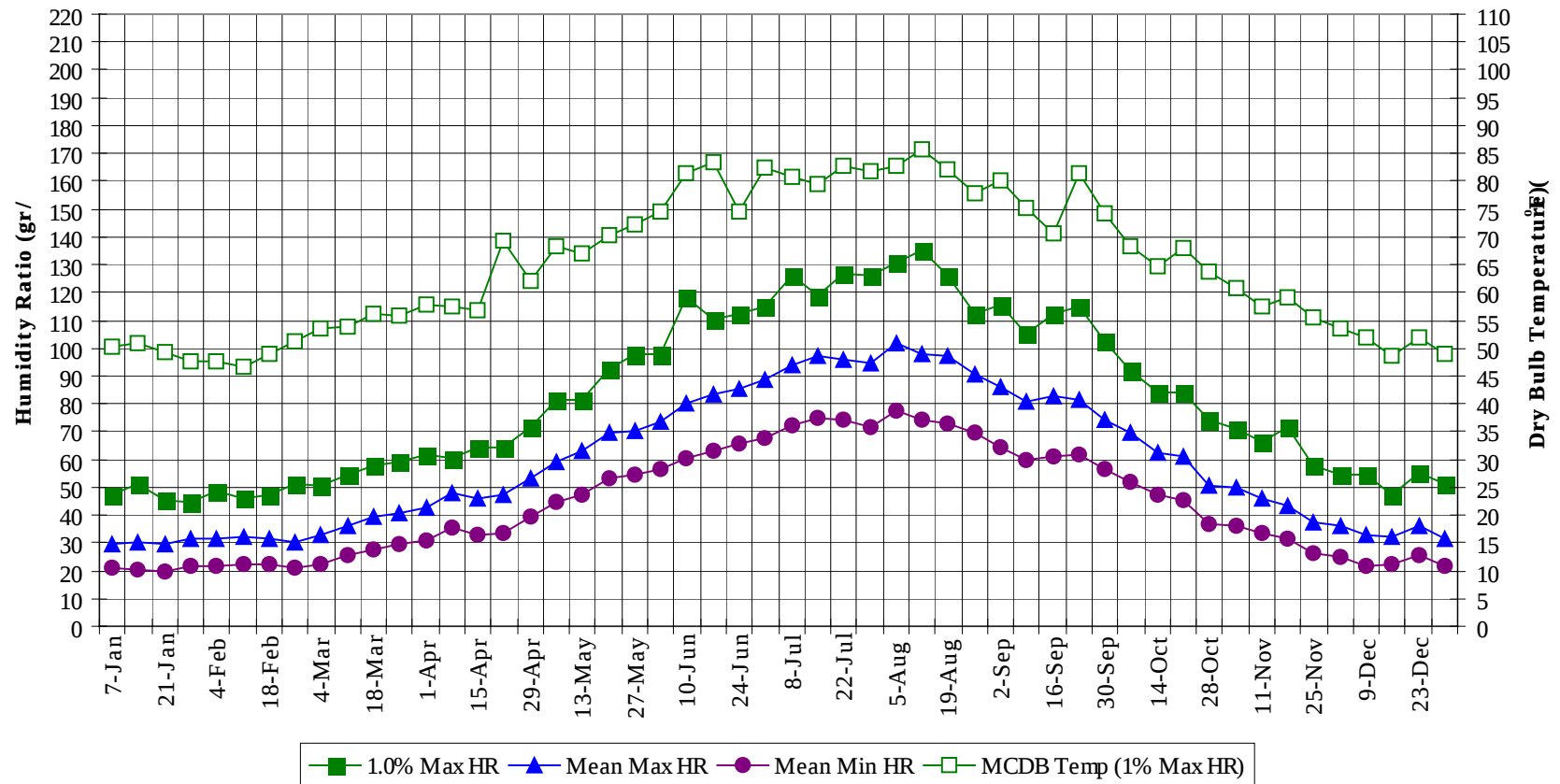
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
95 / 99		1	1	2	75.5
90 / 94	0	27	11	38	73.3
85 / 89	0	55	28	82	71.7
80 / 84	8	198	100	306	69.5
75 / 79	45	297	185	527	66.5
70 / 74	182	366	280	828	63.3
65 / 69	211	198	187	596	60.8
60 / 64	413	314	328	1055	57.2
55 / 59	316	297	297	911	52.1
50 / 54	342	335	328	1005	47.7
45 / 49	376	383	391	1151	42.8
40 / 44	243	184	240	666	38.9
35 / 39	344	170	305	819	34.6
30 / 34	247	69	166	482	29.6
25 / 29	142	21	60	223	24.6
20 / 24	33	2	9	44	20.0
15 / 19	17	2	4	23	16.4
10 / 14	1	0	0	1	11.4

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



AVIANO (IT/US-AFB)

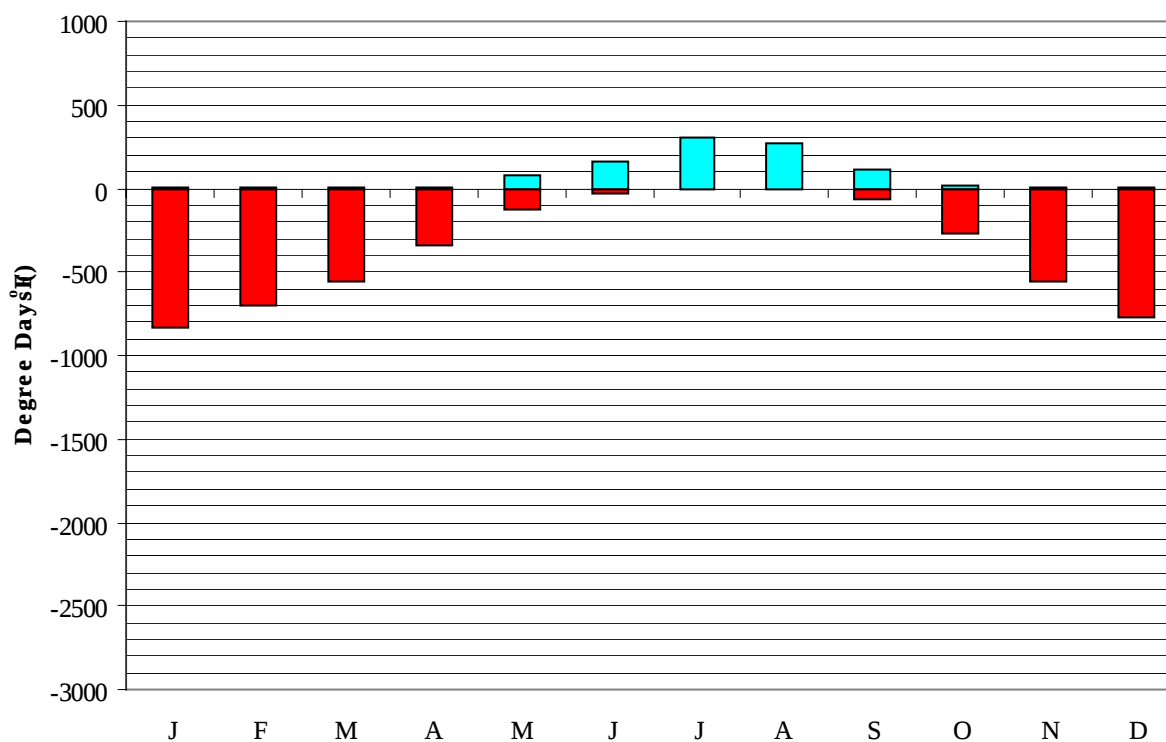
IY

WMO No. 160360

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	47.7	43.3	31.7	18.0	47.6	50.2	29.8	20.9
14-Jan	55.0	50.0	43.8	30.4	18.0	51.1	51.1	30.4	20.3
21-Jan	54.0	46.1	44.2	31.0	21.0	45.5	49.1	29.4	19.9
28-Jan	52.0	45.0	45.4	32.1	21.0	44.8	47.8	31.7	21.6
4-Feb	57.0	46.4	47.4	32.4	21.0	48.3	47.6	31.6	21.5
11-Feb	55.0	45.6	47.0	32.5	21.0	46.2	46.7	32.2	22.1
18-Feb	55.0	46.2	46.6	32.8	23.0	47.6	48.9	31.5	22.1
25-Feb	59.0	50.5	47.7	32.1	23.0	51.1	51.2	30.5	20.9
4-Mar	61.0	50.1	50.0	34.2	23.0	50.4	53.5	32.9	22.3
11-Mar	63.0	52.2	52.2	37.1	27.0	54.6	53.7	36.1	25.7
18-Mar	66.0	54.1	54.2	38.5	27.0	58.1	56.0	39.2	27.8
25-Mar	70.0	54.5	56.0	41.0	32.0	58.8	55.8	41.0	29.4
1-Apr	70.0	55.4	57.4	42.6	34.0	61.6	57.8	42.8	30.7
8-Apr	68.0	55.5	59.2	45.5	37.0	60.2	57.6	48.0	35.6
15-Apr	70.0	56.7	59.5	44.5	37.0	64.4	56.7	45.8	32.9
22-Apr	73.0	58.6	61.7	44.9	37.0	64.4	69.2	47.1	33.2
29-Apr	73.0	60.7	62.6	48.6	41.0	71.4	62.2	53.5	39.5
6-May	77.0	60.9	66.3	51.7	43.0	81.2	68.1	59.2	44.7
13-May	79.0	64.4	68.1	53.5	46.0	81.2	66.9	62.9	47.6
20-May	82.0	66.1	71.1	56.2	48.0	92.4	70.1	69.8	53.4
27-May	81.0	65.5	72.2	57.0	48.0	98.0	72.2	70.2	54.6
3-Jun	84.0	65.0	74.3	58.4	50.0	98.0	74.6	73.8	56.4
10-Jun	88.0	70.0	74.4	60.0	52.0	118.3	81.6	79.8	60.2
17-Jun	86.0	71.2	75.7	60.9	54.0	110.6	83.4	83.3	62.9
24-Jun	86.0	69.7	76.0	61.8	54.0	112.0	74.6	85.3	65.6
1-Jul	88.0	72.0	78.7	63.6	55.0	114.8	82.6	88.8	67.7
8-Jul	90.0	74.1	80.4	65.0	55.0	126.0	80.9	94.0	72.1
15-Jul	90.0	73.8	81.3	65.9	57.0	119.0	79.5	96.9	74.8
22-Jul	90.0	74.2	82.2	66.8	59.0	126.7	82.7	96.0	73.9
29-Jul	91.0	73.3	82.1	65.9	57.0	126.0	81.9	94.8	71.9
5-Aug	93.0	73.7	83.5	67.4	59.0	130.9	82.7	101.5	77.2
12-Aug	91.0	74.4	82.0	66.3	59.0	135.1	85.8	97.7	73.9
19-Aug	93.0	71.9	82.8	65.7	57.0	126.0	82.0	97.3	73.2
26-Aug	90.0	71.5	79.3	64.0	57.0	112.0	77.7	90.4	69.7
2-Sep	86.0	69.3	77.0	61.7	52.0	115.5	80.3	85.9	64.4
9-Sep	82.0	69.8	75.0	59.3	52.0	105.0	75.3	81.0	59.6
16-Sep	82.0	66.4	74.5	59.1	52.0	112.0	70.7	83.0	61.4
23-Sep	86.0	71.9	74.0	58.7	48.0	114.8	81.3	81.4	61.4
30-Sep	82.0	65.3	71.3	56.6	46.0	102.2	74.2	74.3	56.8
7-Oct	79.0	65.0	68.2	54.2	43.0	91.7	68.2	69.8	51.8
14-Oct	77.0	63.0	66.5	51.7	43.0	84.0	64.8	62.4	47.1
21-Oct	73.0	60.9	63.9	49.8	37.0	84.0	67.9	61.2	45.3
28-Oct	70.0	58.1	60.4	44.7	34.0	74.2	63.6	50.8	36.8
4-Nov	66.0	55.4	58.9	43.6	32.0	70.7	60.8	50.2	36.1
11-Nov	63.0	54.7	56.0	41.4	30.0	66.5	57.6	45.9	33.3
18-Nov	61.0	56.2	54.0	40.0	30.0	71.4	59.2	43.6	31.3
25-Nov	59.0	50.6	51.0	36.6	25.0	58.1	55.4	37.2	26.1
2-Dec	55.0	49.2	49.0	35.8	23.0	54.6	53.4	36.0	25.1
9-Dec	55.0	47.5	47.3	31.9	19.0	54.6	51.8	32.7	21.9
16-Dec	52.0	46.1	45.2	32.6	21.0	47.6	48.7	32.5	22.4
23-Dec	54.0	48.5	46.6	35.4	25.0	55.3	52.0	36.2	25.9
31-Dec	52.0	46.0	44.9	31.9	19.0	51.1	49.0	31.6	21.5

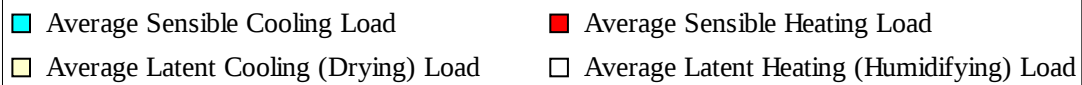
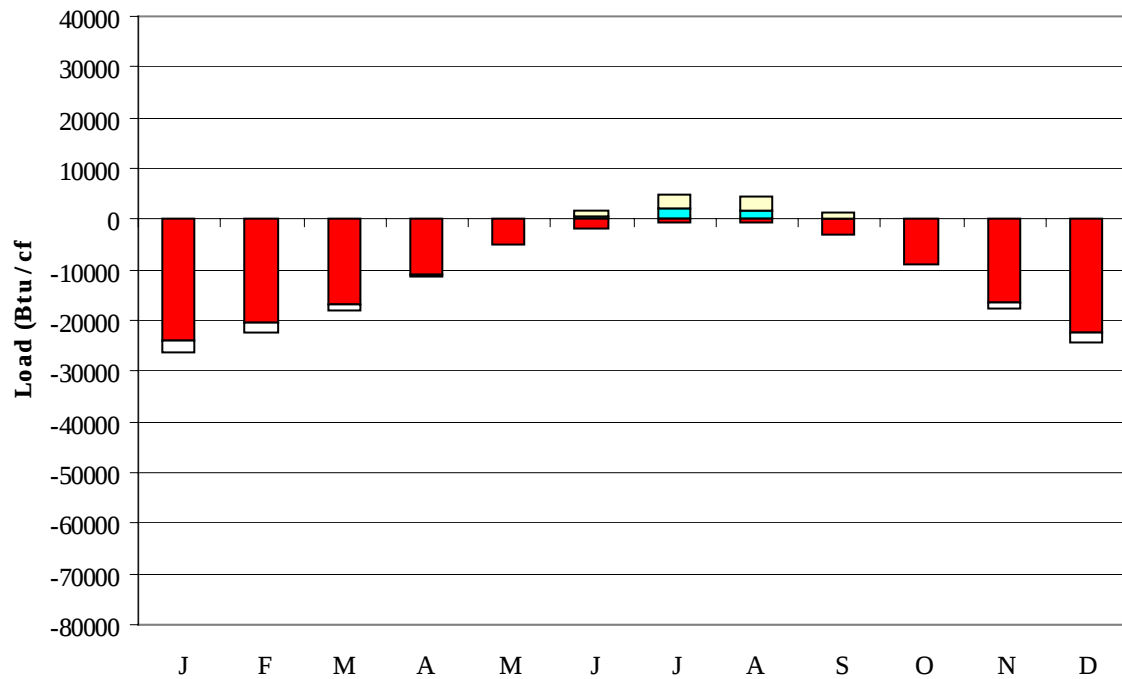
Degree Days, Heating and Cooling
(Base 65°F)



■ Mean Cooling Degree Days ■ Mean Heating Degree Days

	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	836
FEB	0	696
MAR	1	551
APR	6	337
MAY	73	126
JUN	163	35
JUL	303	8
AUG	274	10
SEP	111	64
OCT	19	265
NOV	0	551
DEC	0	772
ANN	951	4251

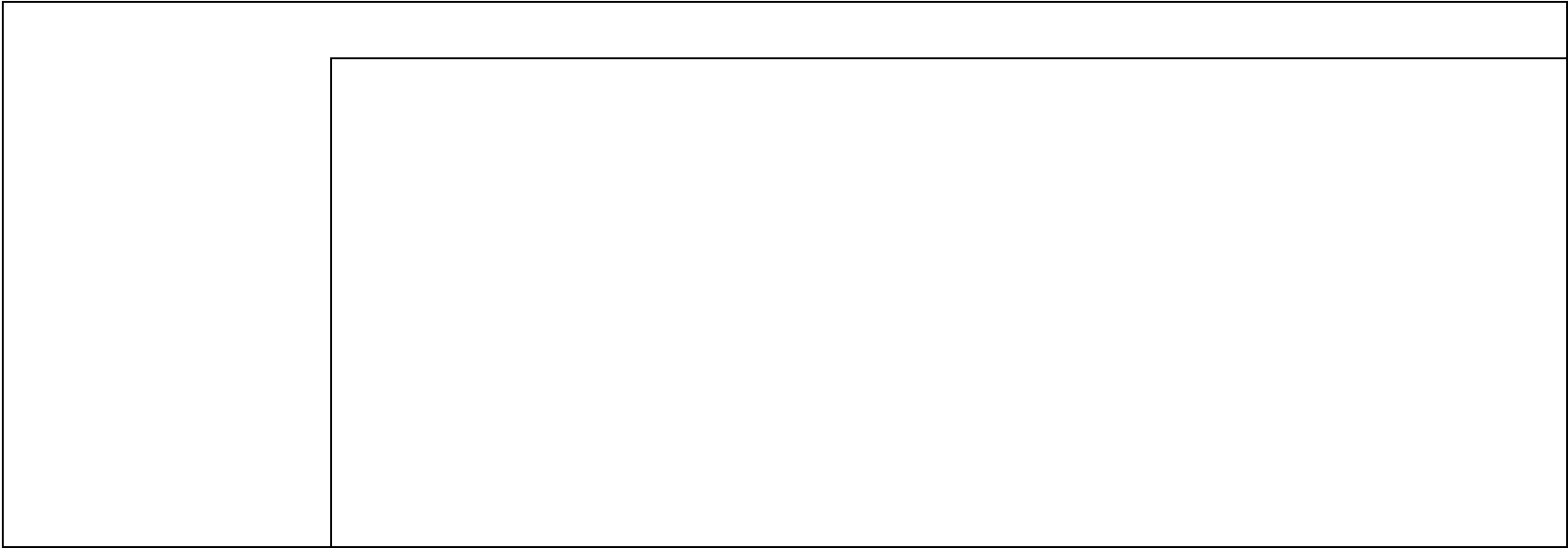
Average Ventilation and Infiltration Loads
(Outside Air vs. 75°F, 60% RH summer; 68°F, 30% RH winter)



	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	-24142	0	-2170
FEB	0	-20281	0	-1899
MAR	0	-16731	0	-1224
APR	2	-11030	0	-311
MAY	149	-4917	124	-26
JUN	670	-1756	1125	-1
JUL	2021	-529	2795	0
AUG	1807	-654	2583	0
SEP	309	-2850	837	-1
OCT	17	-9021	47	-71
NOV	0	-16573	0	-931
DEC	0	-22398	0	-1796
ANN	4975	-130882	7511	-8430

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

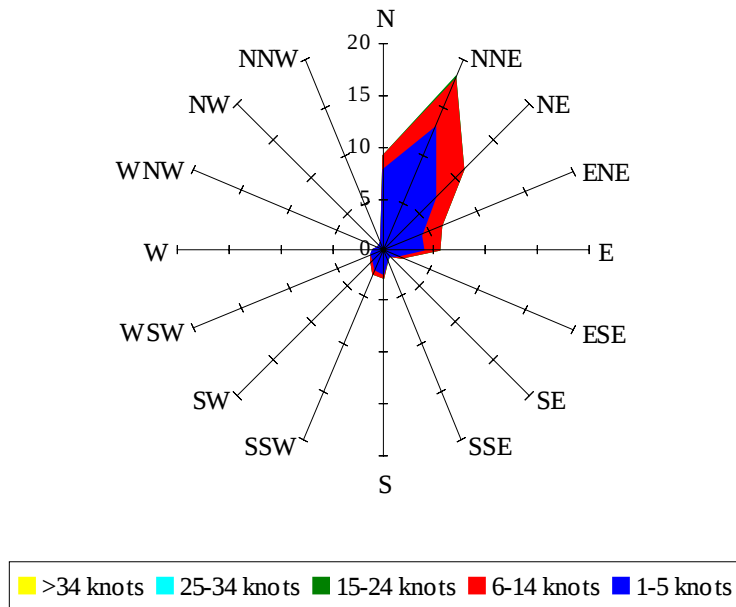
No Solar Radiation
Data Available



Average Annual Solar Heat and Illumination – Nearest Available Site

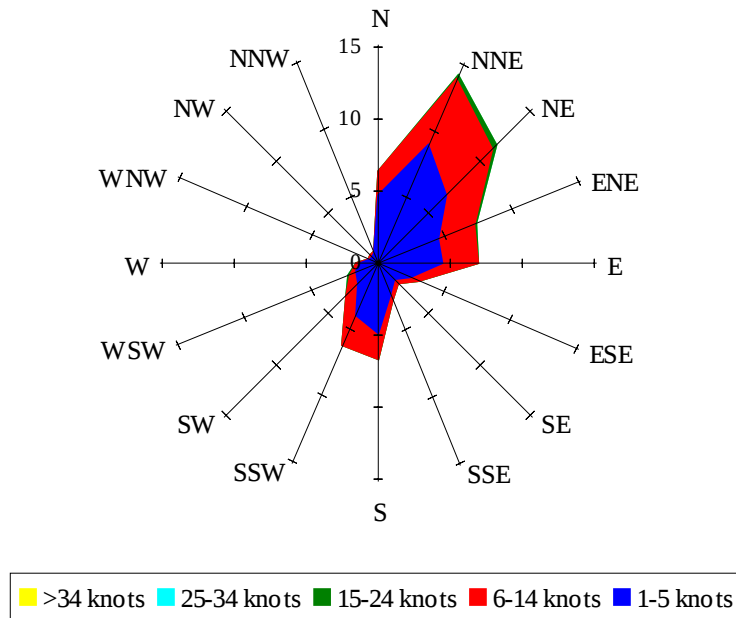
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

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



Percent Calm = 35.03

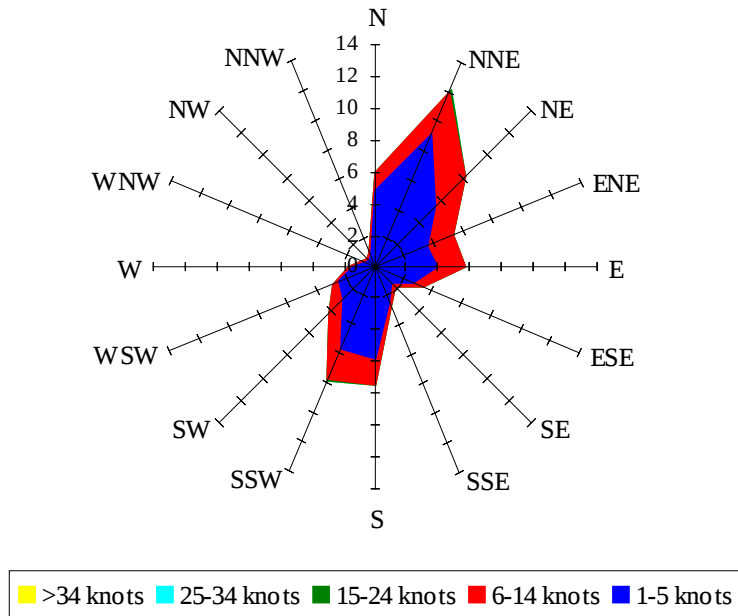
Wind Summary - March, April, and May **Labels of Percent Frequency on North Axis**



Percent Calm = 24.38

Wind Summary - June, July, and August

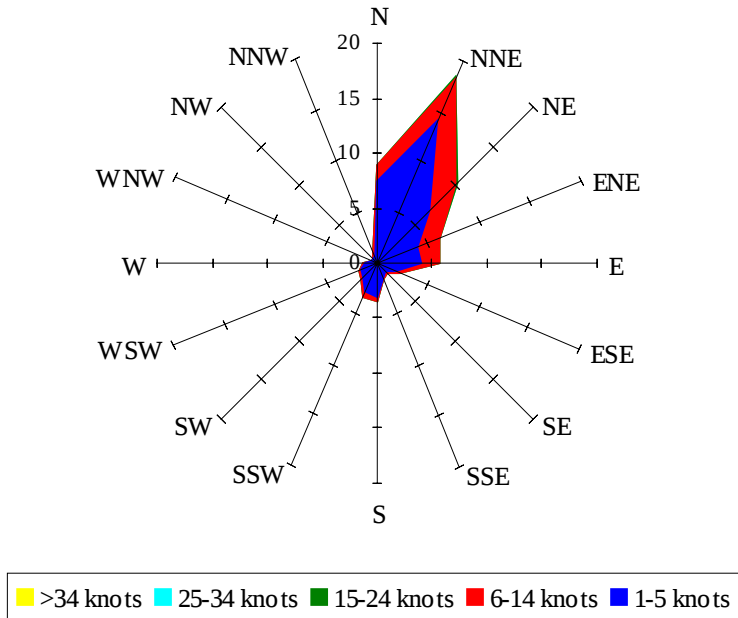
Labels of Percent Frequency on North Axis



Percent Calm = 28.96

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 31.77