

CLARK AFB/LUZON ISL PH

Latitude = 15.18 N

WMO No. 983270

Longitude = 120.55 E

Elevation = 643 feet

Period of Record = 1962 to 1991

Average Pressure = 29.30 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	106	6.9	VARIABLE
0.4% Occurrence	96	76	108	7.2	S
1.0% Occurrence	94	76	110	7.1	E
2.0% Occurrence	93	76	110	7.2	E
Mean Daily Range	14	-	-	-	-
97.5% Occurrence	70	64	83	4.8	NW
99.0% Occurrence	68	63	78	5.0	NW
99.6% Occurrence	66	61	73	5.5	NW
Median of Extreme Lows	64	59	67	6.1	NW
	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	83	89	160	5.0	S
0.4% Occurrence	82	88	155	5.0	S
1.0% Occurrence	81	87	150	5.0	S
2.0% Occurrence	80	87	144	5.2	S
	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	163	86	1.06	4.4	S
0.4% Occurrence	162	86	1.06	4.2	S
1.0% Occurrence	153	85	0.99	4.3	S
2.0% Occurrence	153	85	0.99	4.1	S
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		191	4108	4843	8028

Other Site Data

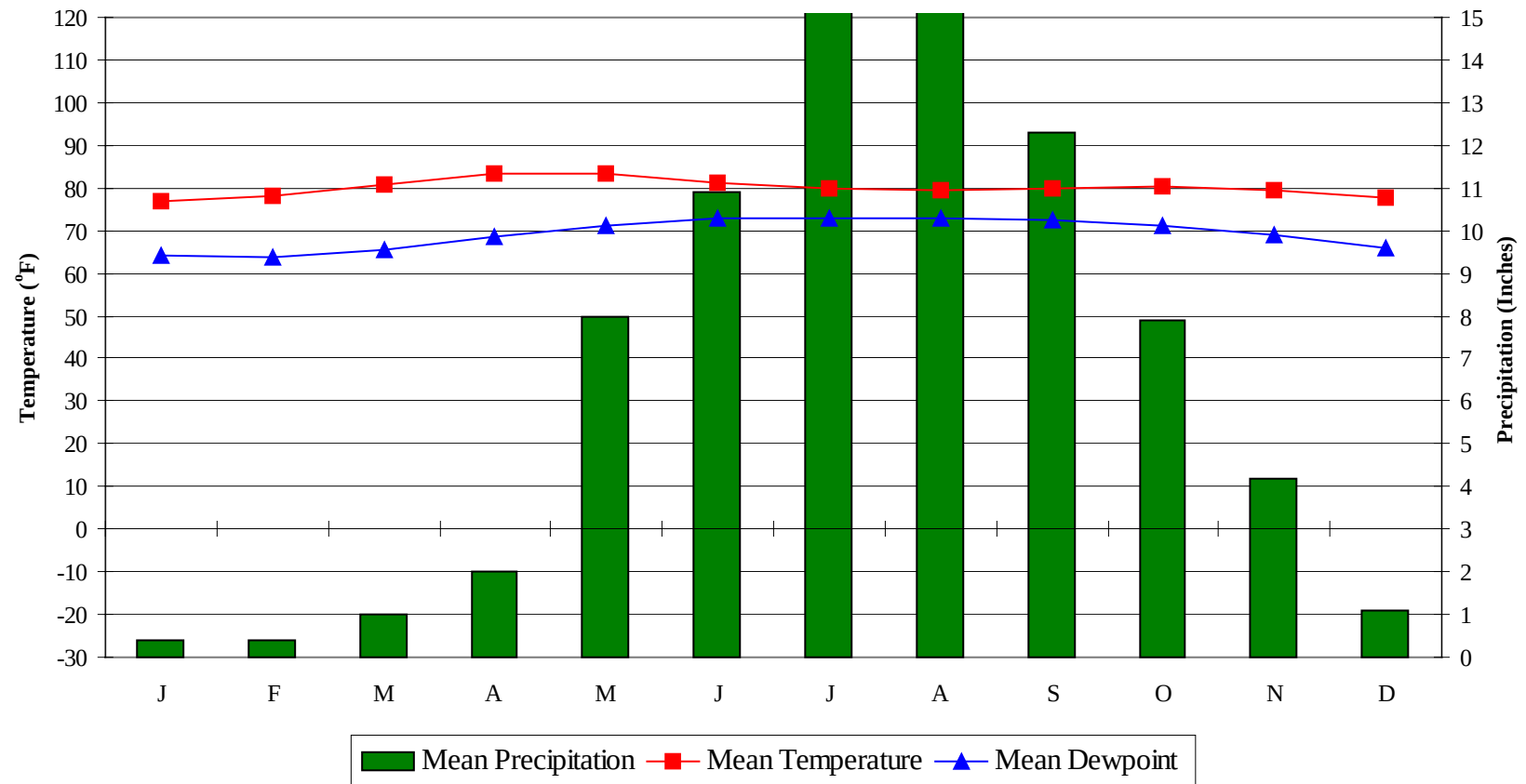
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
10	N/A	N/A	13.3 + 4.3
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
82.5	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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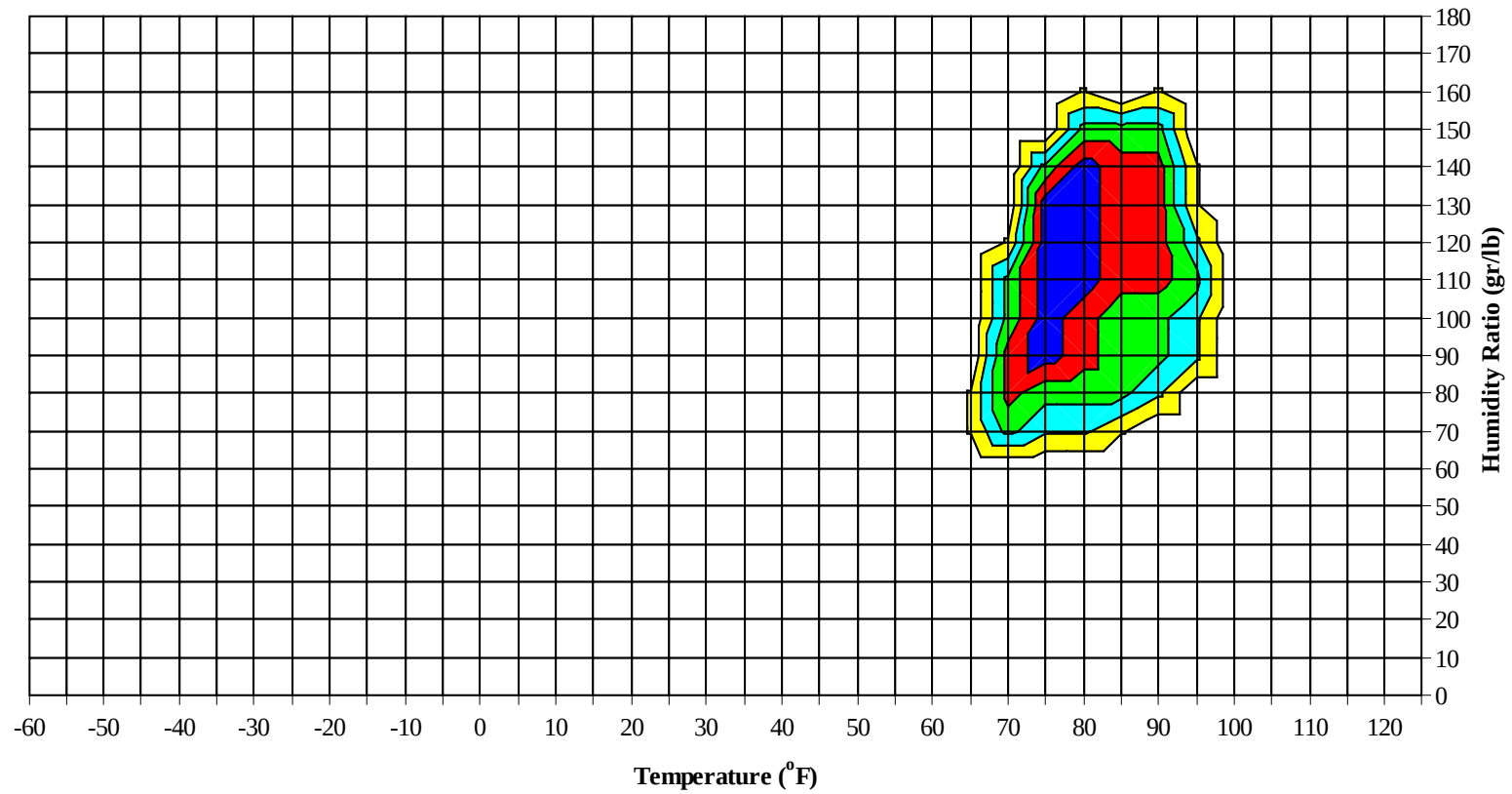
Average Annual Climate



CLARK AFB/LUZON ISL PH

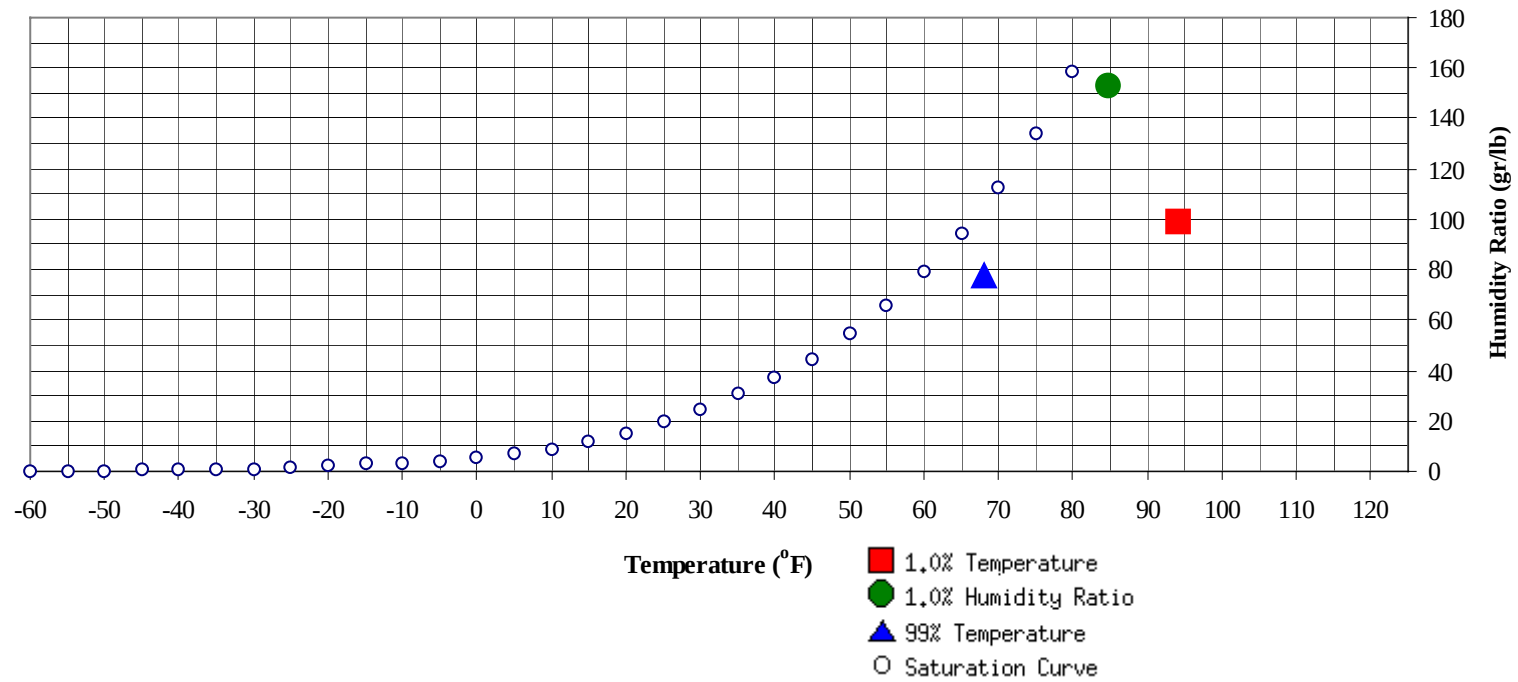
WMO No. 983270

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

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)
	68	77.8	28.4		153.3	84.7	80.2	78.8	44.4

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	94	99.3	74.8	38.2

CLARK AFB/LUZON ISL PH

WMO No. 983270

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

Period of Record = 1962 to 1991

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	73.1		10	0	10	75.4
90 / 94		13	0	13	74.2		29	2	31	72.8		88	14	102	73.6
85 / 89		57	5	62	72.1	0	69	12	82	71.4	0	71	27	98	72.3
80 / 84	2	131	39	171	70.6	2	98	48	148	70.2	19	68	81	168	71.5
75 / 79	61	43	116	220	69.1	64	25	102	191	68.8	126	11	100	237	69.7
70 / 74	147	4	78	230	66.3	128	2	56	186	66.0	93	1	25	119	66.2
65 / 69	35		9	43	62.3	27	0	5	32	62.3	9		1	10	62.7
60 / 64	4		0	4	58.9	2		0	2	59.1	0		0	1	58.7

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.

CLARK AFB/LUZON ISL PH

WMO No. 983270

Dry-Bulb Temperature Hours For An Average Year (Sheet 2 of 5)**Period of Record = 1962 to 1991**

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		1		1	77.3										
95 / 99		29	2	30	75.9		27	2	29	76.4		5	0	6	78.3
90 / 94	0	113	25	138	74.8	0	104	24	128	76.6	0	60	7	67	78.3
85 / 89	2	62	36	100	74.1	4	66	32	102	75.9	2	75	18	94	77.3
80 / 84	62	34	109	205	73.2	94	38	112	243	74.8	53	74	90	216	75.8
75 / 79	151	2	65	218	71.2	138	11	72	221	73.0	160	24	114	299	73.7
70 / 74	24	0	3	28	67.6	13	2	6	21	71.2	25	2	11	37	71.5
65 / 69	0		0	1	63.5								0	0	67.5
60 / 64															

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. 983270

Dry-Bulb Temperature Hours For An Average Year (Sheet 3 of 5)**Period of Record = 1962 to 1991**

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		1	0	1	78.7		0		0	84.0		0		0	78.9
90 / 94		35	4	39	78.8		23	1	25	78.7		33	2	35	78.9
85 / 89	0	76	12	88	77.7	0	66	8	74	77.6	0	72	10	82	77.5
80 / 84	34	100	73	207	76.2	24	112	65	201	76.2	32	104	70	206	76.0
75 / 79	174	34	141	349	73.6	178	47	153	378	73.8	165	32	143	340	73.4
70 / 74	39	3	18	60	71.1	45	3	18	66	71.4	41	2	14	56	71.2
65 / 69															
60 / 64															

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. 983270

Dry-Bulb Temperature Hours For An Average Year (Sheet 4 of 5)**Period of Record = 1962 to 1991**

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															
95 / 99		0		0	81.6										
90 / 94		22	0	23	77.7		18	0	19	76.4		6		6	75.6
85 / 89	0	98	8	106	76.0	0	89	3	92	74.8		65	1	67	73.3
80 / 84	32	102	89	222	74.8	16	107	61	183	73.5	4	140	39	183	71.6
75 / 79	185	23	143	351	72.6	151	23	149	324	71.5	93	33	139	265	70.1
70 / 74	31	2	8	41	69.8	70	3	26	99	68.1	132	3	66	201	66.8
65 / 69						3		0	3	62.9	18		3	21	62.0
60 / 64											1			1	58.2

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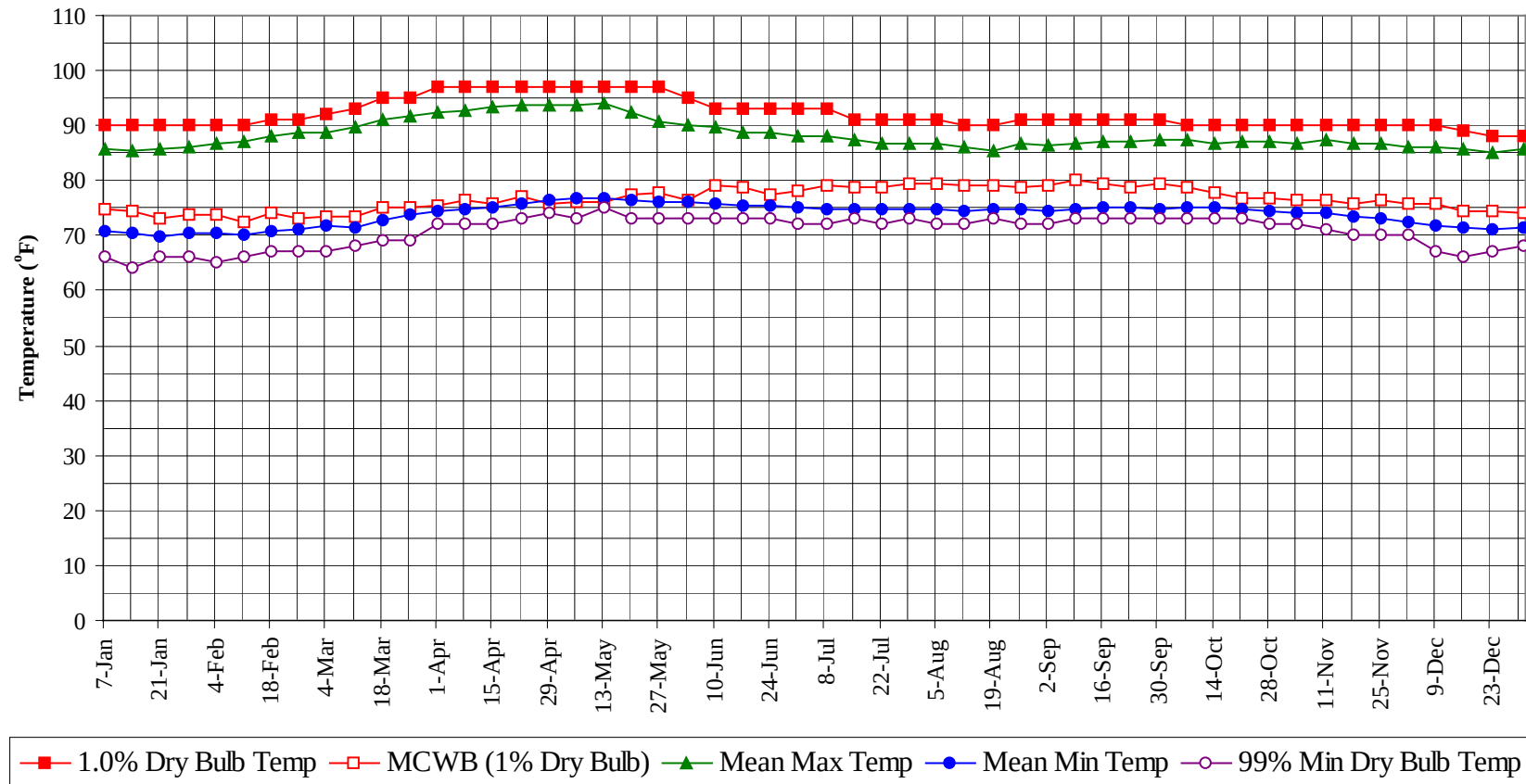
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)

Period of Record = 1962 to 1991

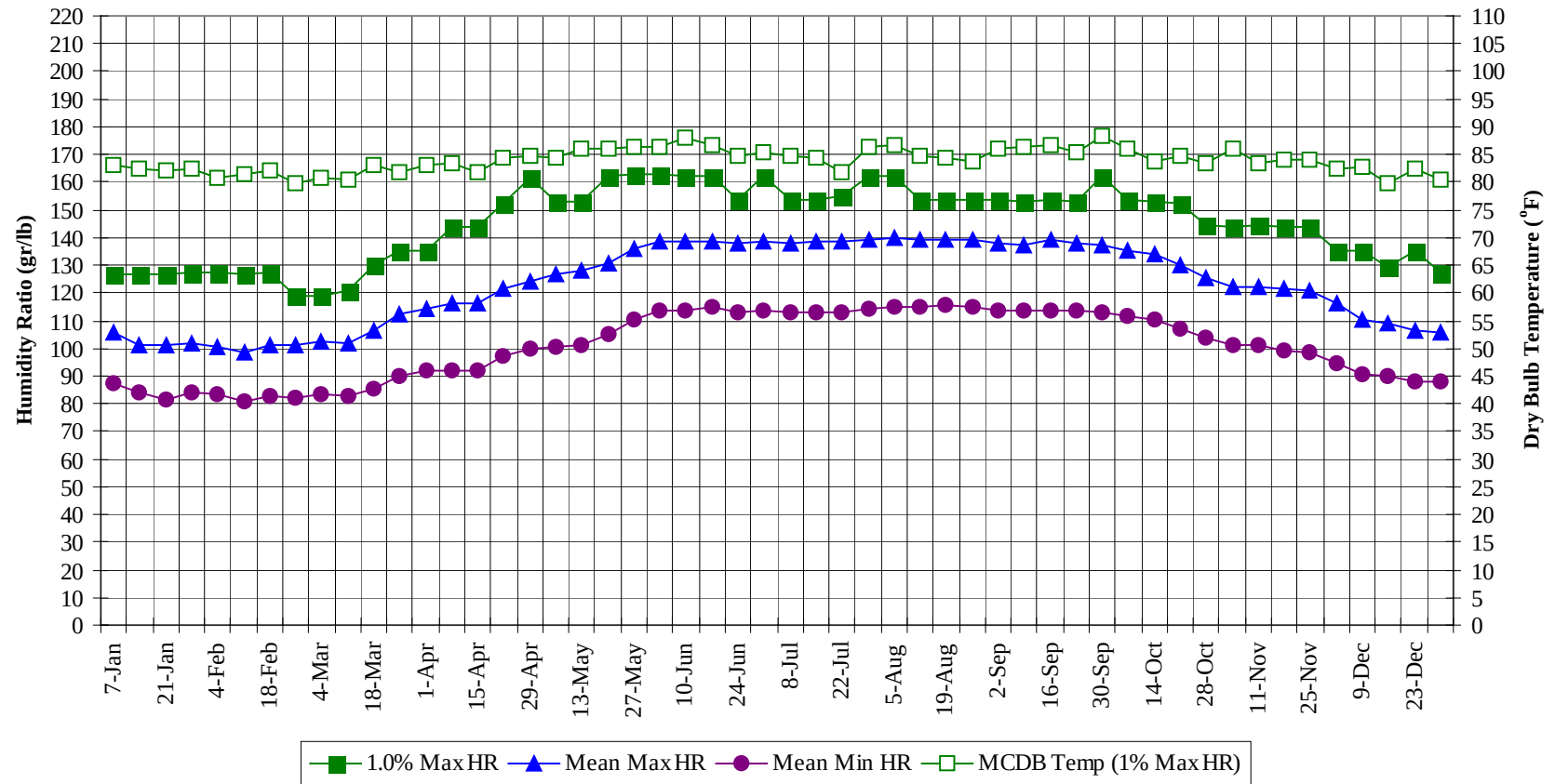
Annual Totals						
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	
	01 To 08	09 To 16	17 To 00			
100 / 104	1			1	77.3	
95 / 99	74			5	78	76.2
90 / 94	0	549	81	630	76.0	
85 / 89	9	865	174	1048	75.1	
80 / 84	375	1103	876	2354	73.9	
75 / 79	1644	310	1434	3387	72.0	
70 / 74	789	25	330	1144	67.7	
65 / 69	93	0	18	111	62.3	
60 / 64	7		1	8	58.9	

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



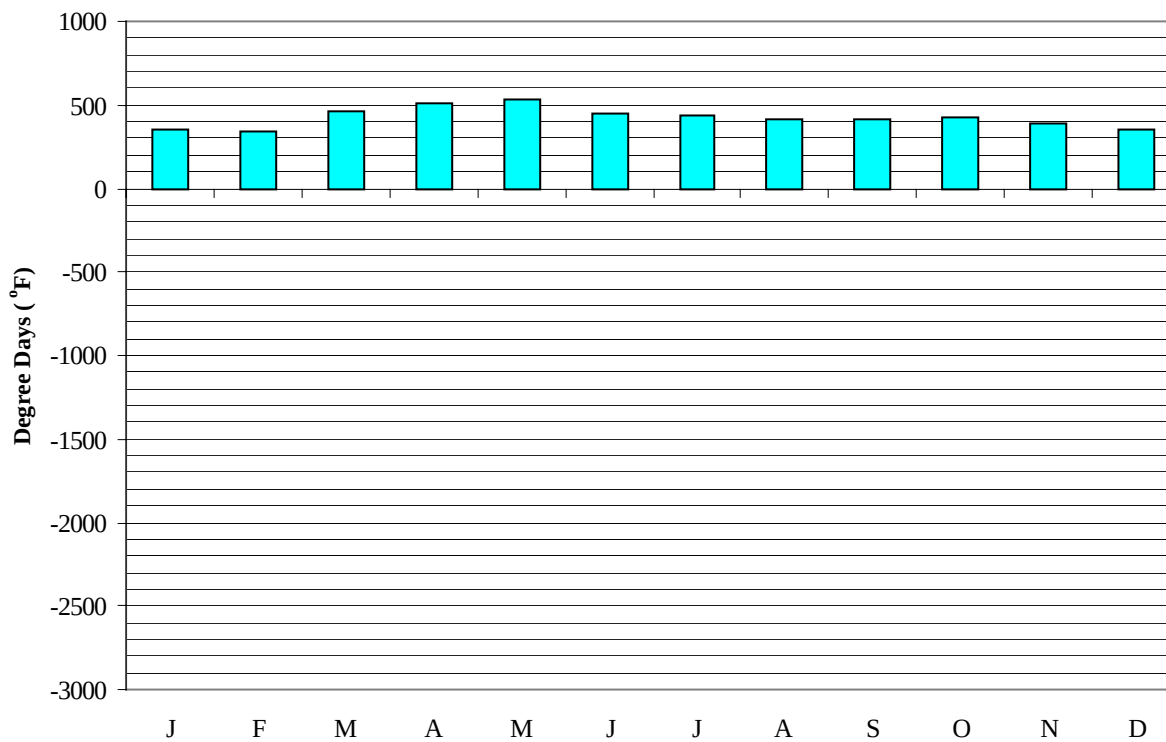
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WMO No. 983270

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	90.0	74.7	85.6	70.9	66.0	126.7	82.9	105.5	87.3
14-Jan	90.0	74.4	85.6	70.3	64.0	126.7	82.4	101.3	83.9
21-Jan	90.0	73.1	85.7	70.0	66.0	126.7	82.2	100.8	81.7
28-Jan	90.0	73.9	86.0	70.4	66.0	127.4	82.3	102.1	84.2
4-Feb	90.0	73.8	86.7	70.4	65.0	127.4	80.8	100.4	83.4
11-Feb	90.0	72.5	87.0	70.0	66.0	126.7	81.5	98.7	80.8
18-Feb	91.0	74.1	87.9	70.8	67.0	127.4	82.0	100.8	82.6
25-Feb	91.0	73.0	88.7	71.0	67.0	119.0	79.8	101.3	81.8
4-Mar	92.0	73.5	88.7	71.8	67.0	119.0	80.7	102.3	83.5
11-Mar	93.0	73.3	89.6	71.5	68.0	121.1	80.5	102.1	83.0
18-Mar	95.0	75.1	91.1	72.6	69.0	130.2	83.0	106.3	85.7
25-Mar	95.0	75.0	91.8	73.7	69.0	135.1	81.8	112.0	89.9
1-Apr	97.0	75.3	92.3	74.4	72.0	135.1	83.1	114.5	92.1
8-Apr	97.0	76.3	92.8	74.8	72.0	143.5	83.6	116.4	91.9
15-Apr	97.0	75.7	93.3	75.0	72.0	143.5	81.8	116.1	92.0
22-Apr	97.0	77.2	93.7	75.8	73.0	152.6	84.5	121.6	97.5
29-Apr	97.0	75.9	93.6	76.4	74.0	161.7	84.7	124.0	99.8
6-May	97.0	76.1	93.9	76.7	73.0	153.3	84.4	127.1	100.7
13-May	97.0	76.2	94.1	76.9	75.0	153.3	86.1	127.9	101.4
20-May	97.0	77.4	92.4	76.4	73.0	162.4	86.0	130.6	105.2
27-May	97.0	77.9	90.8	76.1	73.0	163.1	86.2	135.9	110.6
3-Jun	95.0	76.4	90.0	76.0	73.0	163.1	86.4	138.5	113.5
10-Jun	93.0	79.2	89.7	75.7	73.0	162.4	88.0	138.8	113.6
17-Jun	93.0	78.8	88.8	75.5	73.0	162.4	86.8	138.5	114.8
24-Jun	93.0	77.5	88.7	75.5	73.0	154.0	84.7	137.7	113.0
1-Jul	93.0	78.3	87.9	75.2	72.0	162.4	85.3	138.3	113.5
8-Jul	93.0	79.2	87.9	74.7	72.0	154.0	84.7	138.2	112.8
15-Jul	91.0	78.9	87.3	74.7	73.0	154.0	84.3	138.4	113.1
22-Jul	91.0	78.7	86.9	74.7	72.0	154.7	81.9	138.4	113.2
29-Jul	91.0	79.5	86.7	74.7	73.0	162.4	86.3	139.2	114.4
5-Aug	91.0	79.3	86.6	74.7	72.0	162.4	86.6	140.1	115.3
12-Aug	90.0	79.0	86.1	74.5	72.0	154.0	84.6	139.0	115.2
19-Aug	90.0	79.0	85.4	74.7	73.0	154.0	84.4	139.0	115.8
26-Aug	91.0	78.8	86.6	74.8	72.0	154.0	83.7	139.3	114.8
2-Sep	91.0	79.1	86.4	74.4	72.0	154.0	85.9	137.8	113.9
9-Sep	91.0	80.0	86.6	74.8	73.0	153.3	86.3	137.2	113.8
16-Sep	91.0	79.5	87.2	75.0	73.0	154.0	86.8	138.9	113.9
23-Sep	91.0	78.9	87.2	74.9	73.0	153.3	85.5	137.7	113.4
30-Sep	91.0	79.4	87.5	74.7	73.0	162.4	88.2	137.2	112.9
7-Oct	90.0	78.7	87.5	75.0	73.0	154.0	86.0	135.2	111.4
14-Oct	90.0	77.7	86.8	75.2	73.0	153.3	83.8	133.7	110.0
21-Oct	90.0	76.8	87.0	74.8	73.0	152.6	84.8	129.9	107.4
28-Oct	90.0	76.8	86.9	74.4	72.0	144.2	83.3	125.4	103.5
4-Nov	90.0	76.5	86.7	74.2	72.0	143.5	85.9	122.2	100.9
11-Nov	90.0	76.3	87.3	74.0	71.0	144.2	83.3	122.2	101.0
18-Nov	90.0	75.9	86.8	73.5	70.0	143.5	84.0	121.4	99.1
25-Nov	90.0	76.5	86.6	73.2	70.0	143.5	84.2	120.6	98.8
2-Dec	90.0	75.7	86.1	72.5	70.0	135.1	82.3	116.1	94.7
9-Dec	90.0	75.7	86.0	71.9	67.0	135.1	82.7	110.6	90.7
16-Dec	89.0	74.6	85.7	71.5	66.0	129.5	79.8	108.8	89.7
23-Dec	88.0	74.4	85.1	71.1	67.0	135.1	82.5	106.5	88.1
31-Dec	88.0	74.3	85.8	71.4	68.0	127.4	80.4	105.7	87.8

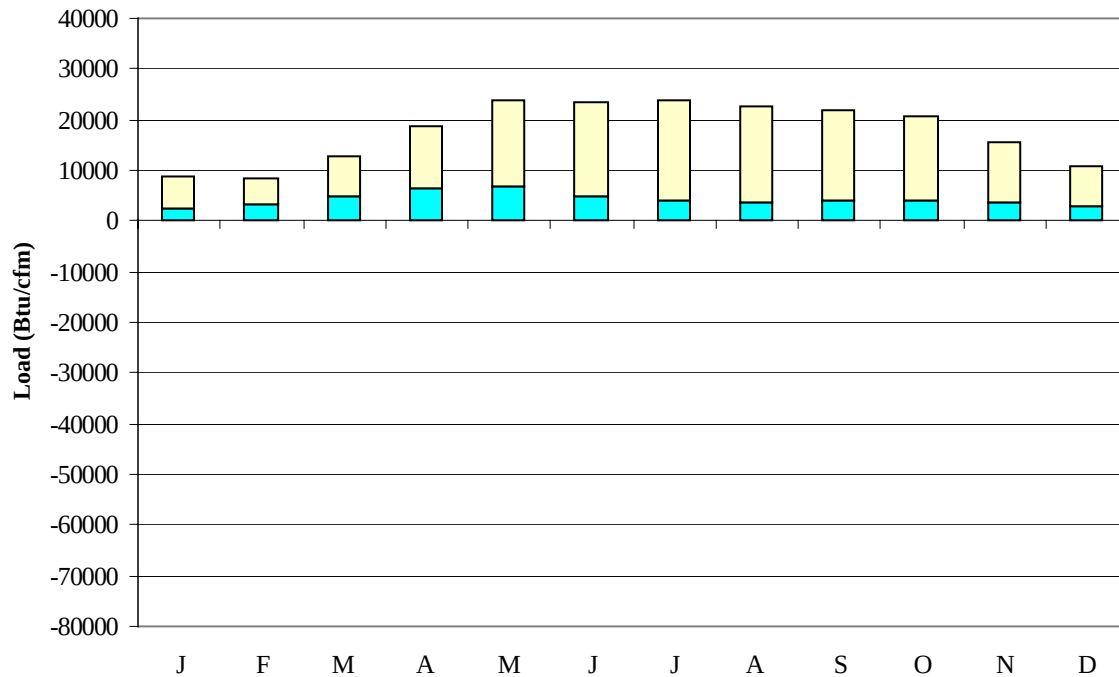
Degree Days, Heating and Cooling
(Base 65°F)



■ Mean Cooling Degree Days ■ Mean Heating Degree Days

	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	348	0
FEB	344	0
MAR	456	0
APR	513	0
MAY	528	0
JUN	449	0
JUL	434	0
AUG	416	0
SEP	417	0
OCT	423	0
NOV	384	0
DEC	350	0
ANN	5062	0

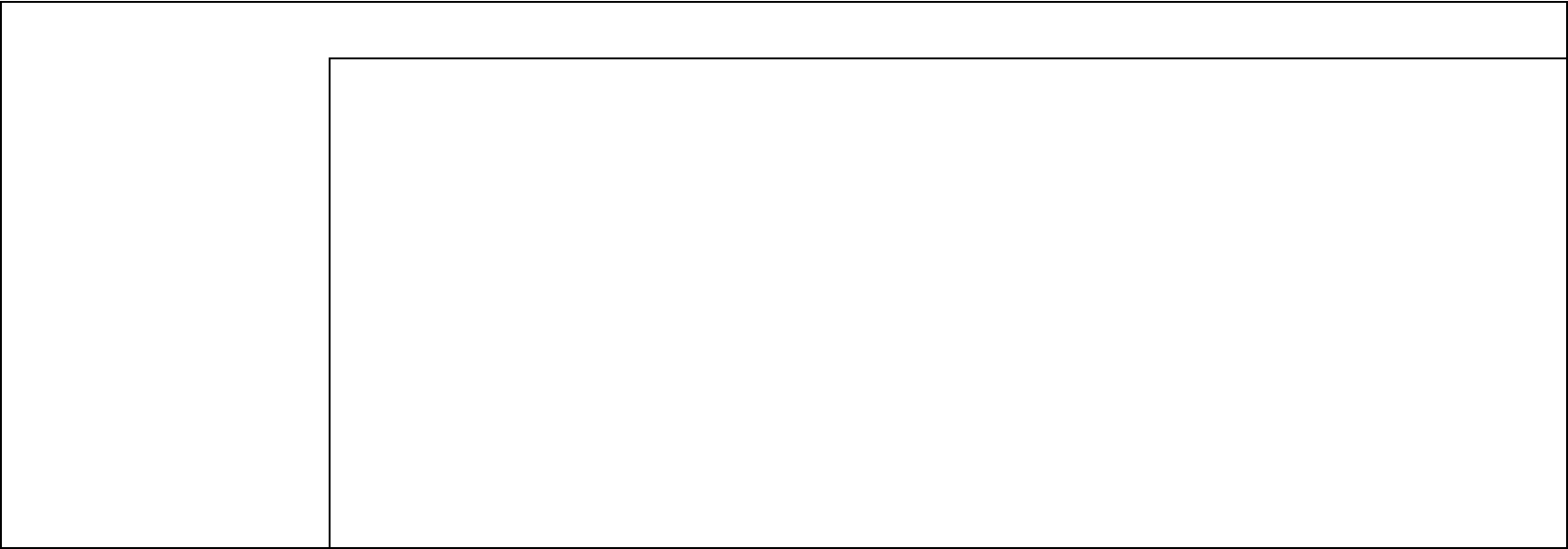
Average Ventilation and Infiltration Loads
(Outside Air vs. 75°F, 60% RH summer; 68°F, 30% RH winter)



	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	2645	-51	6007	0
FEB	3108	-32	5169	0
MAR	5051	-7	7880	0
APR	6542	0	11985	0
MAY	6664	0	16980	0
JUN	4810	0	18714	0
JUL	4130	0	19779	0
AUG	3661	0	19068	0
SEP	3933	0	17958	0
OCT	4241	0	16226	0
NOV	3560	0	12017	0
DEC	2825	-20	8045	0
ANN	51170	-110	159828	0

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

No Solar Radiation
Data Available

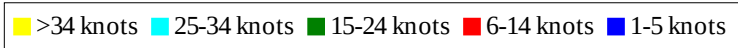
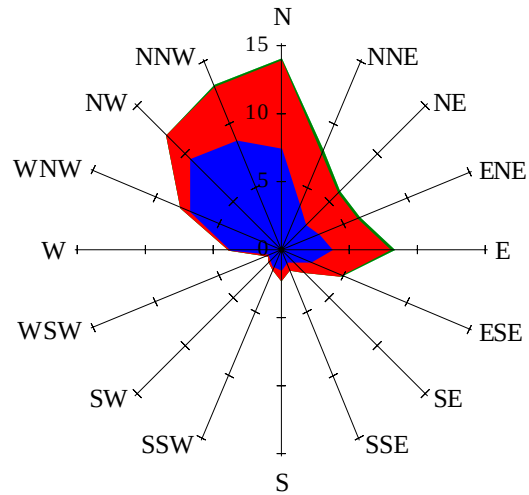


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

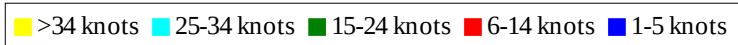
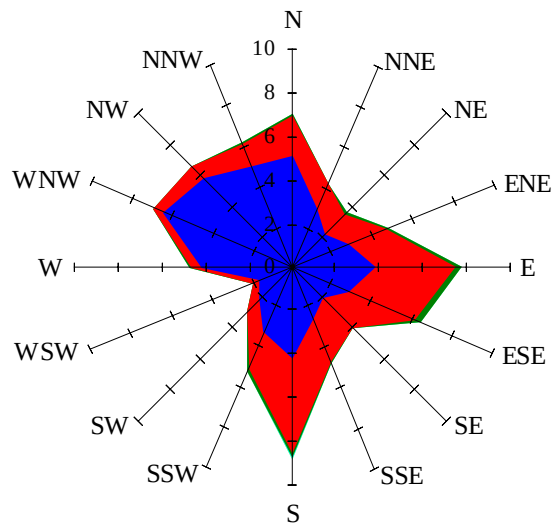
Labels of Percent Frequency on North Axis



Percent Calm = 7.89

Wind Summary - March, April, and May

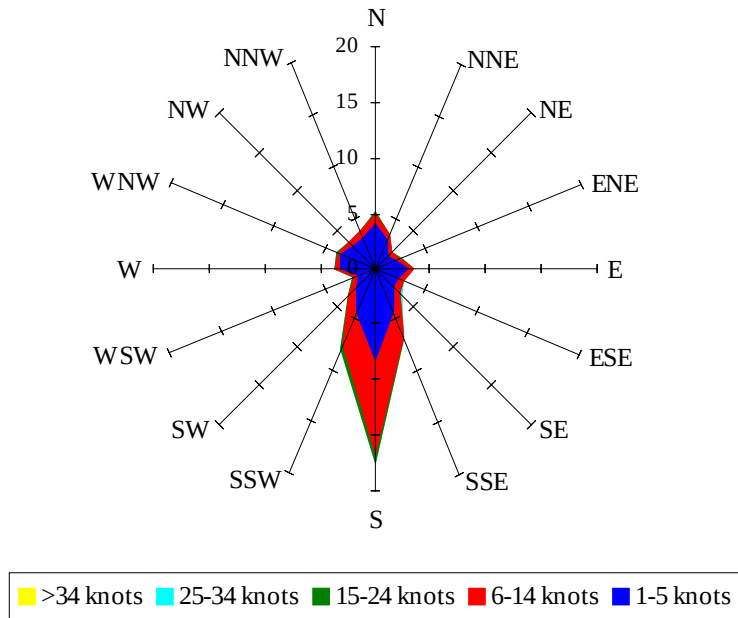
Labels of Percent Frequency on North Axis



Percent Calm = 14.97

Wind Summary - June, July, and August

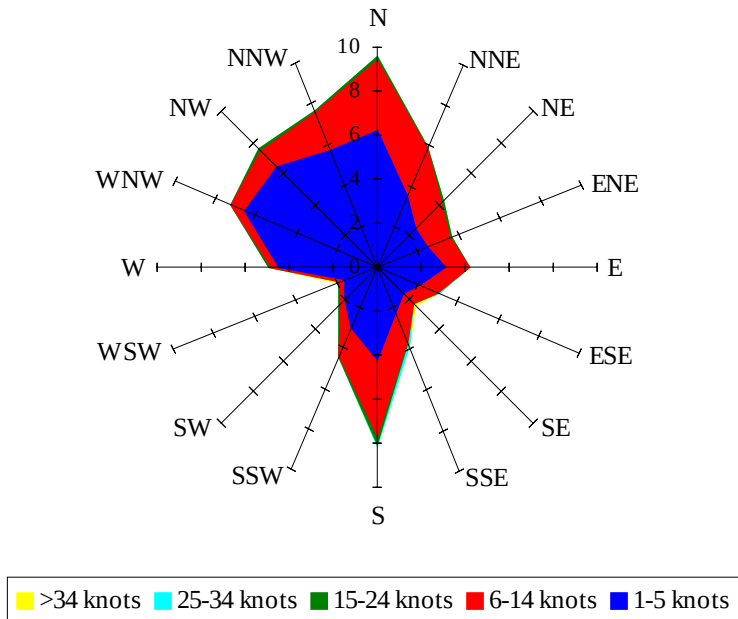
Labels of Percent Frequency on North Axis



Percent Calm = 26.29

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 19.10