

SASEBO	JP	
Latitude = 33.15 N		WMO No. 478120
Longitude = 129.73 E		Elevation = 49 feet
Period of Record = 1973 to 1996		Average Pressure = 29.89 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	94	78	123	7.9	E
0.4% Occurrence	93	78	124	7.8	W
1.0% Occurrence	91	78	126	8.0	W
2.0% Occurrence	89	78	127	7.7	W
Mean Daily Range	7	-	-	-	-
97.5% Occurrence	37	33	21	5.4	E
99.0% Occurrence	35	31	20	5.3	E
99.6% Occurrence	33	30	19	5.1	E
Median of Extreme Lows	30	27	16	4.4	E
	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	81	88	144	6.7	W
0.4% Occurrence	81	88	144	6.7	W
1.0% Occurrence	80	87	141	6.3	W
2.0% Occurrence	79	86	138	6.0	W
	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	152	85	1.00	5.8	WSW
0.4% Occurrence	150	85	0.99	5.6	W
1.0% Occurrence	145	83	0.96	4.7	W
2.0% Occurrence	142	84	0.94	6.7	W
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		41	1404	1639	2619

Other Site Data

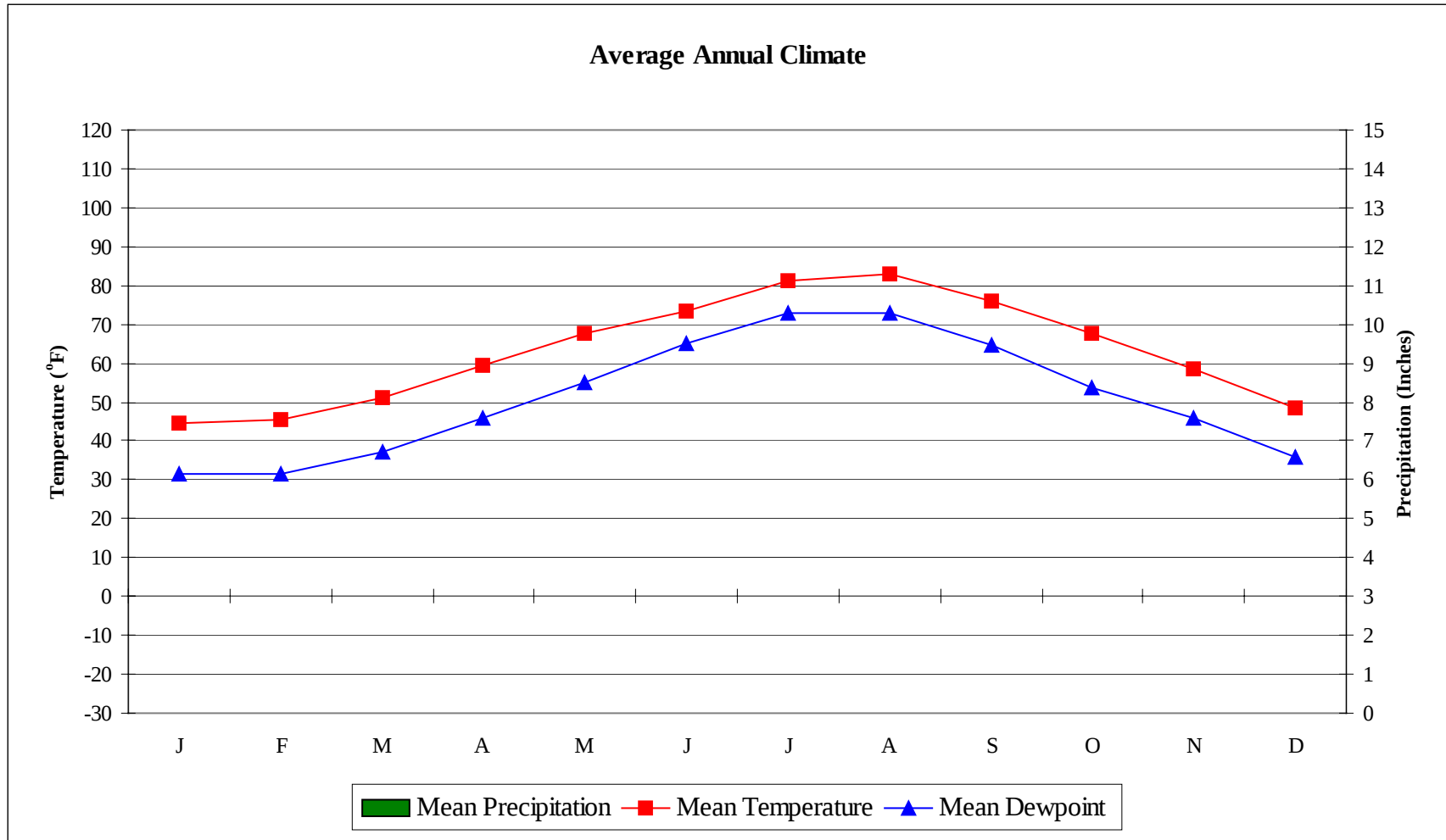
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
11	N/A	N/A	1.5 + 1.5
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
66.1	N/A	N/A	1

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

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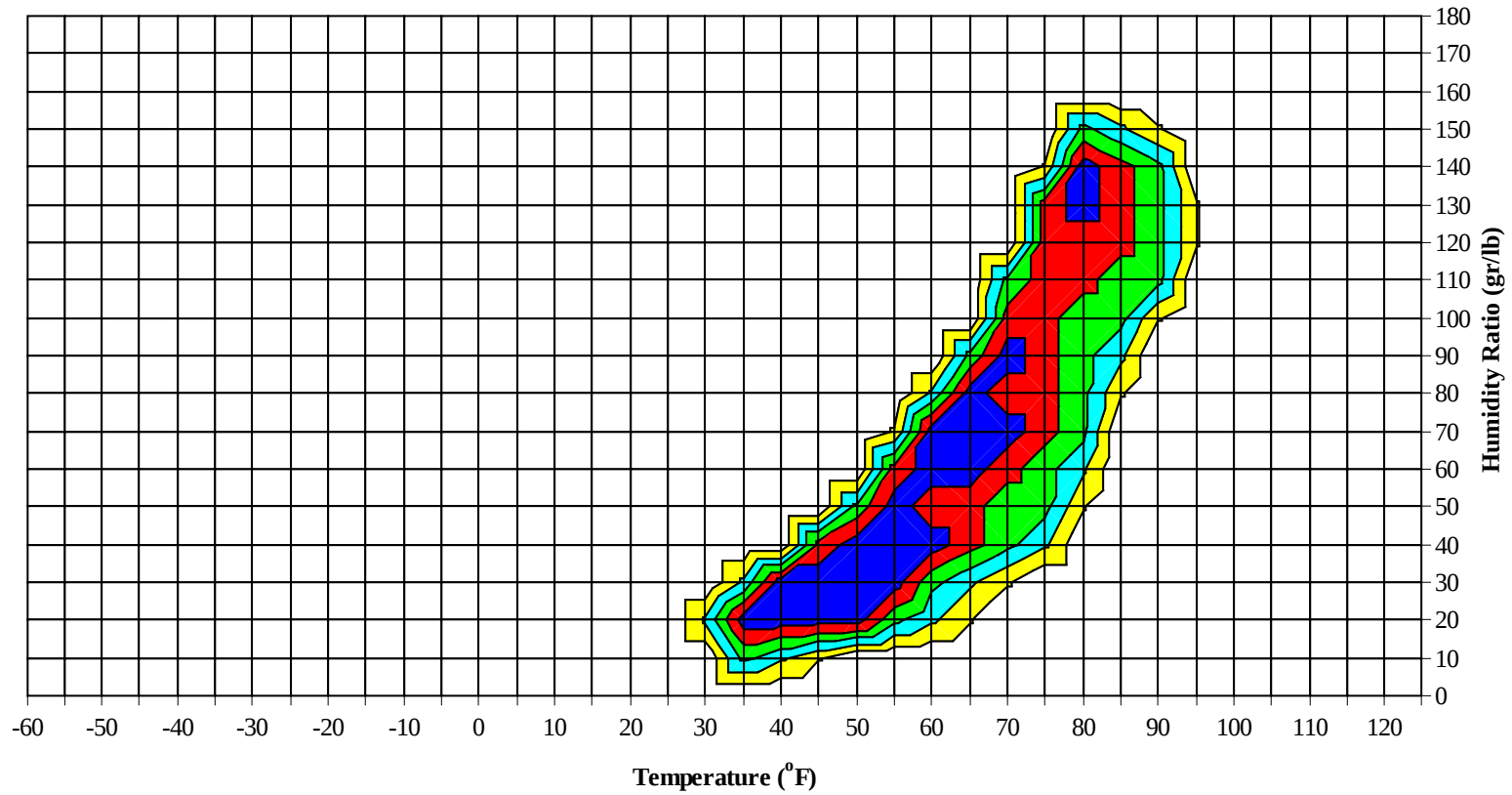
No Precipitation Data Available

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Long Term Psychrometric Summary



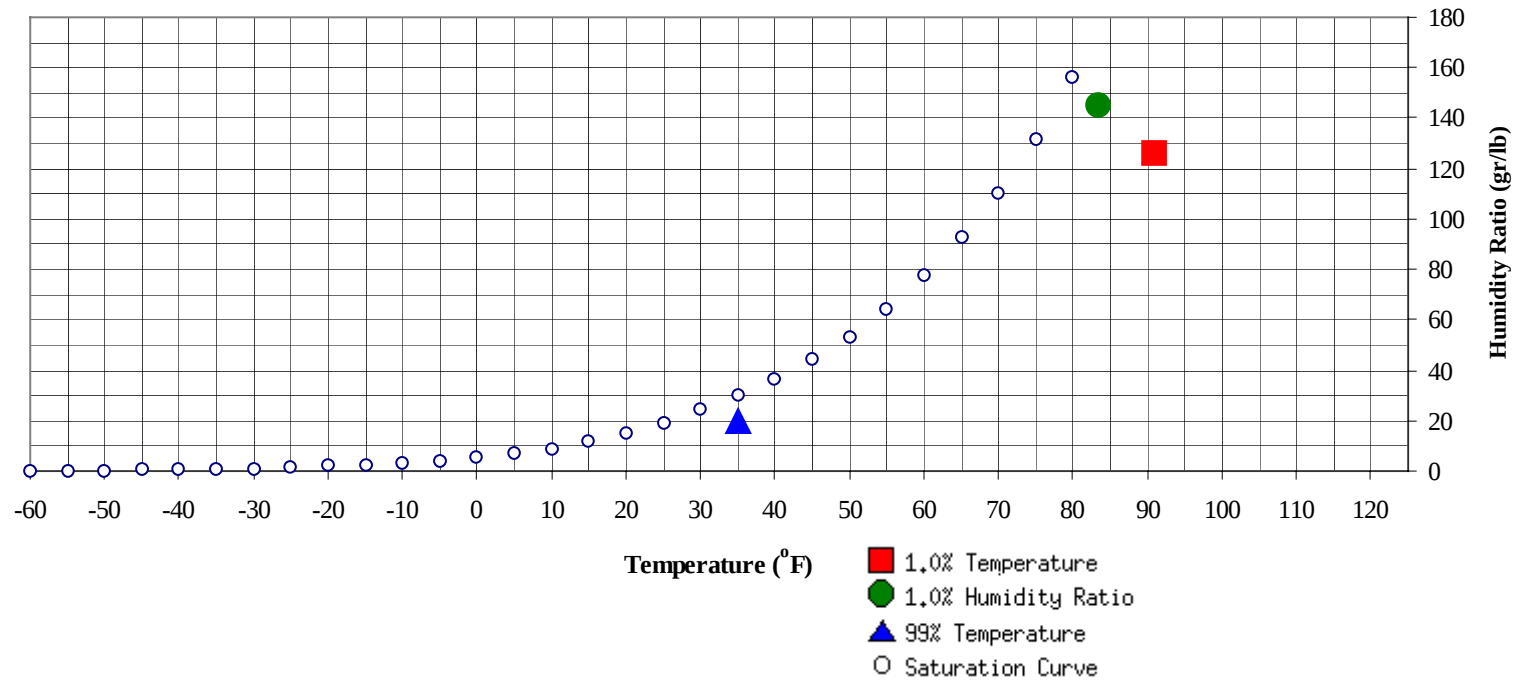
- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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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)
	35	19.9	11.5		144.9	83.4	79.2	77.6	42.7

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	91	125.7	78.2	41.6

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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															
70 / 74							1		1	56.5		1		1	61.4
65 / 69							1		1	61.2					
60 / 64	0	5	0	5	55.5	2	6	2	10	55.2	2	33	10	45	53.2
55 / 59	5	22	15	42	50.4	2	26	11	39	49.3	16	67	47	130	49.8
50 / 54	18	46	29	93	45.3	13	51	25	89	44.9	55	80	66	202	45.5
45 / 49	40	72	61	172	40.6	36	66	69	171	40.4	57	44	73	174	41.1
40 / 44	79	62	88	229	36.6	68	38	72	179	36.9	76	13	41	130	37.1
35 / 39	72	36	48	156	32.9	68	28	37	133	32.4	36	3	10	48	33.9
30 / 34	31	6	7	44	29.3	30	5	9	45	29.1	5	0	0	5	30.8
25 / 29	4	0	0	4	25.9	5	1	0	6	26.0		0		0	26.0

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		
95 / 99															
90 / 94											0	1		1	73.0
85 / 89							1		1	70.1	0	4		4	72.3
80 / 84		0		0	60.0	0	9	0	9	65.6	2	46	14	62	71.8
75 / 79		7	0	7	62.3	0	52	11	64	64.0	25	86	56	167	70.4
70 / 74	2	34	8	43	60.4	10	81	52	142	62.5	84	80	106	270	67.6
65 / 69	6	44	27	78	58.4	56	62	76	193	60.8	90	22	56	169	64.1
60 / 64	37	78	66	180	55.4	97	36	85	219	57.5	33	1	6	40	58.9
55 / 59	54	51	62	167	50.9	62	6	22	90	53.6	7			7	55.6
50 / 54	60	20	42	122	46.2	24	1	2	26	49.7	0			0	48.0
45 / 49	44	6	27	77	41.6	0			0	48.0					
40 / 44	32	1	8	41	37.7										
35 / 39	5		0	5	34.3										
30 / 34															
25 / 29															

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		3	2	5	79.5		3	0	3	78.5		0		0	76.0
90 / 94		26	6	32	78.7		49	8	57	78.1		5	0	5	77.3
85 / 89	3	70	36	109	77.9	8	81	50	138	77.1		27	3	30	75.3
80 / 84	81	82	101	265	76.4	99	81	115	294	76.2	9	73	33	116	72.6
75 / 79	98	49	66	213	73.9	108	31	62	201	74.0	54	84	75	212	69.4
70 / 74	51	16	36	103	69.5	28	4	12	44	70.7	84	41	86	211	65.9
65 / 69	14	1	2	17	67.1	6		2	8	66.0	67	9	40	116	63.2
60 / 64											24	1	3	28	58.6
55 / 59											2		0	2	55.7
50 / 54															
45 / 49															
40 / 44															
35 / 39															
30 / 34															
25 / 29															

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 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		0		0	74.5										
80 / 84		9	0	9	67.3										
75 / 79	3	56	14	74	65.2	0	3	0	3	65.4					
70 / 74	21	85	51	157	62.5	2	24	6	32	62.6		0		0	60.0
65 / 69	58	54	90	202	59.2	18	41	34	93	59.2	2	3		4	58.7
60 / 64	86	33	67	187	56.2	45	64	62	170	55.1	5	20	10	35	54.3
55 / 59	58	9	19	85	52.0	45	54	47	146	50.4	11	48	26	85	50.0
50 / 54	21	1	6	28	48.8	63	36	54	152	46.1	32	64	50	146	45.4
45 / 49	2		0	2	44.5	40	17	29	86	42.2	62	67	91	220	41.2
40 / 44						24	1	8	33	39.2	72	32	50	154	37.6
35 / 39						3		0	3	35.1	51	12	18	81	33.6
30 / 34											11	2	3	16	29.7
25 / 29											2	0		2	27.0

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.

WMO No. 478120

Period of Record = 1973 to 1996

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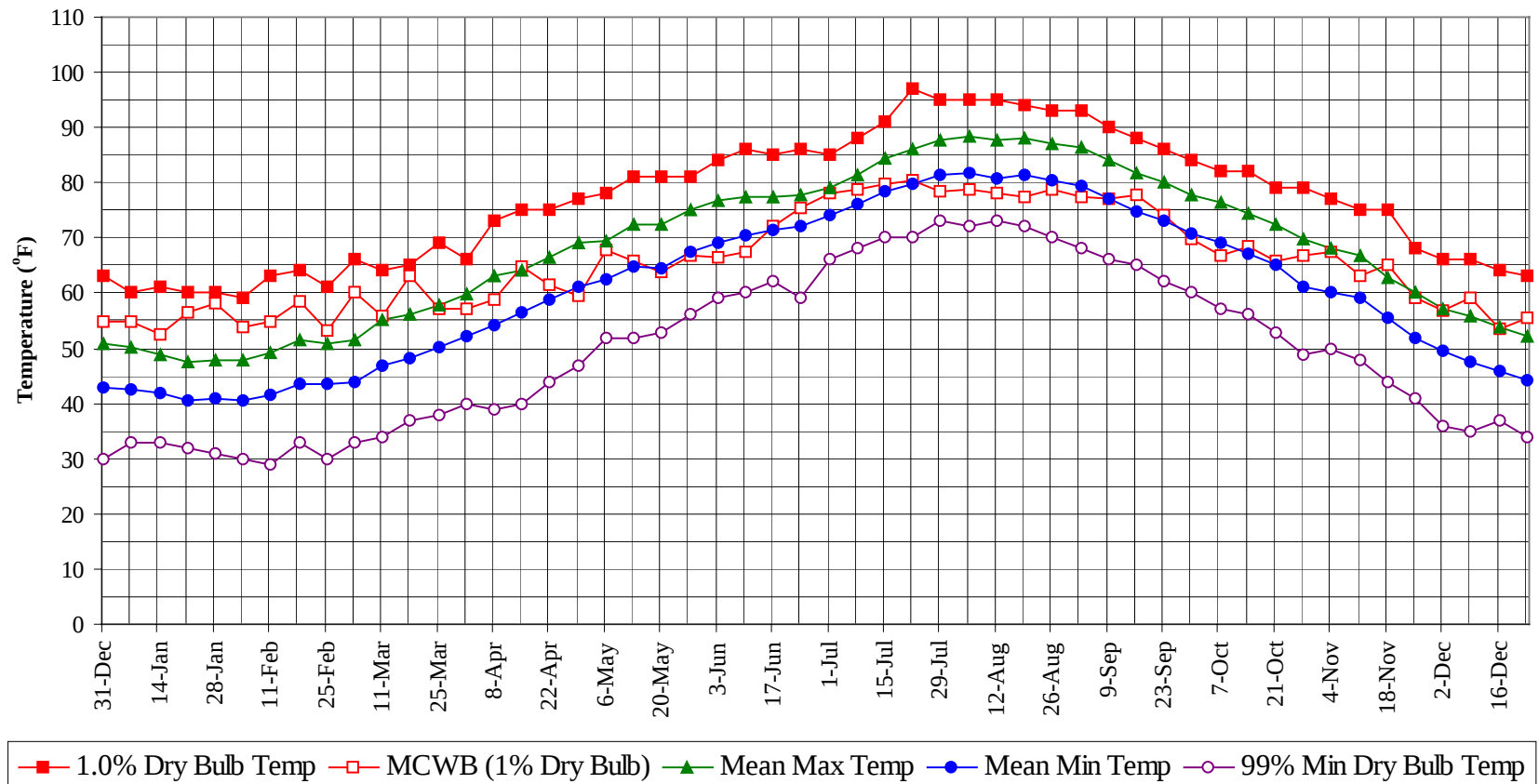
Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary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

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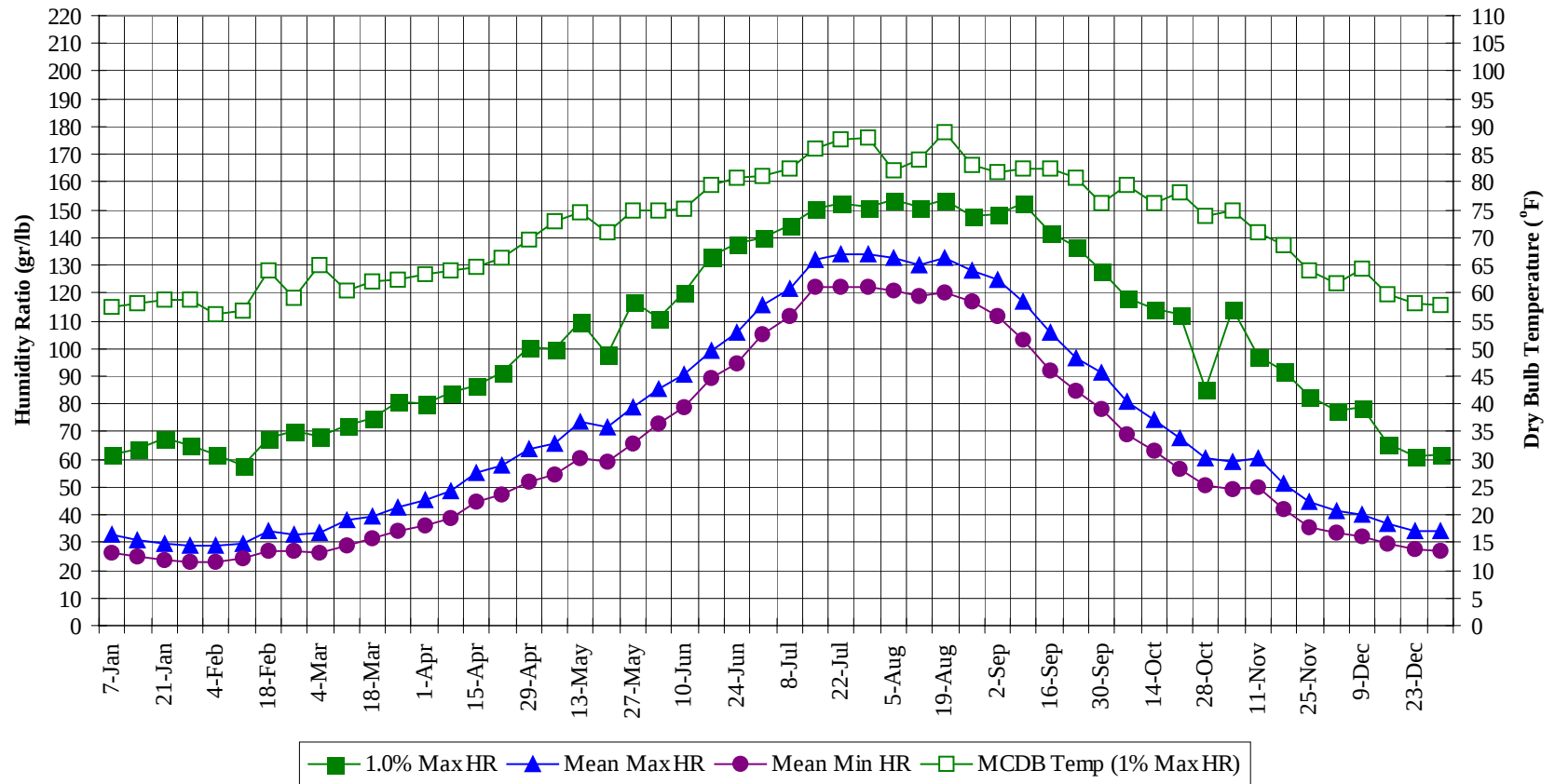
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Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary



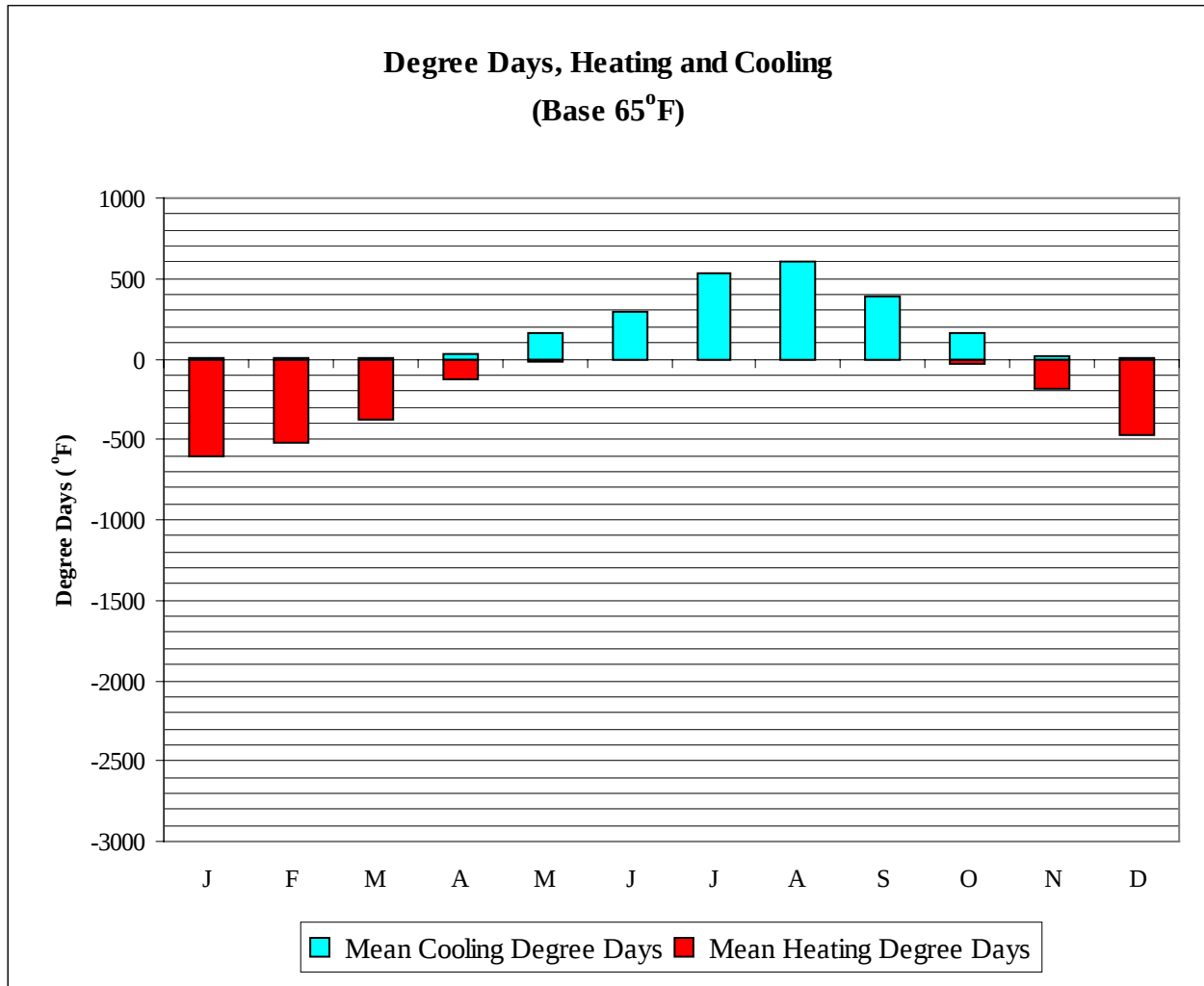
SASEBO**JP****WMO No. 478120****Long Term Dry Bulb Temperature and Humidity Summary**

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	60.0	55.0	50.1	42.7	33.0	61.6	57.4	33.0	26.6
14-Jan	61.0	52.4	48.9	41.9	33.0	63.7	58.0	31.0	25.2
21-Jan	60.0	56.6	47.5	40.6	32.0	67.9	58.7	29.6	23.9
28-Jan	60.0	58.0	48.0	40.8	31.0	65.1	58.8	29.0	23.2
4-Feb	59.0	53.8	47.8	40.6	30.0	61.6	56.0	28.7	23.0
11-Feb	63.0	54.7	49.1	41.6	29.0	58.1	56.8	29.7	24.0
18-Feb	64.0	58.3	51.4	43.7	33.0	67.9	64.0	33.9	26.8
25-Feb	61.0	53.1	50.8	43.6	30.0	70.0	59.0	33.0	27.0
4-Mar	66.0	60.3	51.5	43.7	33.0	68.6	65.0	33.6	26.5
11-Mar	64.0	55.8	55.2	46.8	34.0	72.1	60.3	38.1	28.9
18-Mar	65.0	63.0	56.1	48.2	37.0	74.9	62.0	39.4	31.3
25-Mar	69.0	57.1	57.8	50.2	38.0	80.5	62.5	42.6	34.1
1-Apr	66.0	57.1	59.7	52.1	40.0	79.8	63.5	45.2	36.1
8-Apr	73.0	58.7	63.0	54.2	39.0	84.0	64.0	48.7	38.7
15-Apr	75.0	64.8	64.2	56.4	40.0	86.8	64.8	55.3	44.8
22-Apr	75.0	61.3	66.6	58.7	44.0	91.0	66.4	57.8	47.4
29-Apr	77.0	59.5	69.0	61.2	47.0	100.8	69.5	63.8	51.8
6-May	78.0	67.8	69.4	62.4	52.0	100.1	73.0	65.9	54.8
13-May	81.0	65.7	72.5	64.7	52.0	109.9	74.6	73.5	60.6
20-May	81.0	63.8	72.3	64.4	53.0	98.0	70.9	71.7	59.3
27-May	81.0	66.7	75.2	67.3	56.0	116.9	75.0	78.6	65.7
3-Jun	84.0	66.4	76.9	69.1	59.0	111.3	74.8	85.4	73.1
10-Jun	86.0	67.6	77.5	70.5	60.0	120.4	75.3	90.6	78.7
17-Jun	85.0	72.0	77.6	71.4	62.0	133.0	79.6	99.4	89.1
24-Jun	86.0	75.3	77.7	72.1	59.0	137.9	80.8	105.5	94.4
1-Jul	85.0	78.2	79.1	74.0	66.0	140.0	81.1	115.4	105.2
8-Jul	88.0	78.7	81.5	76.0	68.0	144.2	82.4	121.2	111.3
15-Jul	91.0	79.7	84.3	78.5	70.0	150.5	85.9	132.0	122.4
22-Jul	97.0	80.3	86.0	79.9	70.0	152.6	87.6	134.0	122.3
29-Jul	95.0	78.3	87.7	81.3	73.0	151.2	88.0	133.8	122.3
5-Aug	95.0	78.9	88.3	81.9	72.0	154.0	82.1	132.4	120.8
12-Aug	95.0	78.2	87.6	80.8	73.0	151.2	84.0	130.2	118.7
19-Aug	94.0	77.6	88.0	81.6	72.0	154.0	89.0	132.6	120.0
26-Aug	93.0	78.7	86.9	80.4	70.0	147.7	82.9	128.2	116.9
2-Sep	93.0	77.3	86.3	79.3	68.0	148.4	81.7	124.9	111.4
9-Sep	90.0	77.1	84.0	77.1	66.0	152.6	82.3	116.9	103.4
16-Sep	88.0	77.8	81.9	74.8	65.0	142.1	82.4	105.7	91.8
23-Sep	86.0	74.2	79.9	73.1	62.0	136.5	80.7	96.7	84.8
30-Sep	84.0	69.8	77.8	70.8	60.0	128.1	76.2	91.1	78.2
7-Oct	82.0	66.7	76.4	69.1	57.0	118.3	79.4	80.8	69.2
14-Oct	82.0	68.5	74.6	67.1	56.0	114.1	76.3	74.4	63.1
21-Oct	79.0	65.8	72.4	65.0	53.0	112.0	78.0	68.0	56.3
28-Oct	79.0	66.7	69.7	61.2	49.0	85.4	73.9	60.6	50.3
4-Nov	77.0	67.6	68.0	60.0	50.0	114.1	75.0	59.1	49.4
11-Nov	75.0	63.0	66.7	59.0	48.0	97.3	70.8	60.1	49.7
18-Nov	75.0	65.3	62.9	55.4	44.0	91.7	68.8	51.1	42.1
25-Nov	68.0	59.2	60.0	51.8	41.0	82.6	64.0	44.9	35.7
2-Dec	66.0	56.7	57.2	49.4	36.0	77.7	61.8	41.1	33.3
9-Dec	66.0	59.1	55.8	47.6	35.0	79.1	64.3	40.3	32.3
16-Dec	64.0	53.4	53.8	45.9	37.0	65.8	59.6	36.7	29.5
23-Dec	63.0	55.6	52.1	44.2	34.0	60.9	58.1	34.0	27.7
31-Dec	63.0	54.9	50.7	42.8	30.0	61.6	57.8	34.0	26.9

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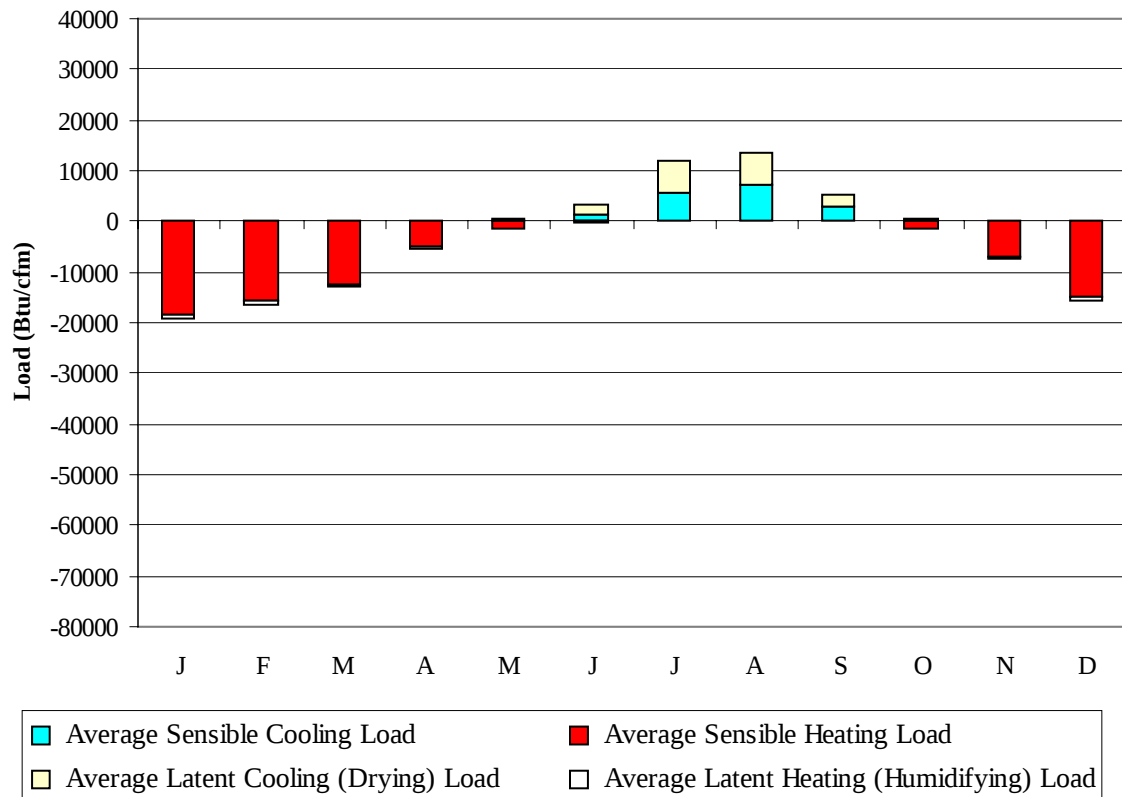
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	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	609
FEB	0	515
MAR	1	376
APR	35	125
MAY	159	23
JUN	297	1
JUL	527	0
AUG	600	0
SEP	390	1
OCT	160	24
NOV	18	191
DEC	0	477
ANN	2187	2342

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



	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	-18411	0	-700
FEB	0	-15783	0	-673
MAR	0	-12403	7	-432
APR	9	-5186	58	-164
MAY	232	-1330	308	-11
JUN	1241	-99	2223	0
JUL	5687	-1	6098	0
AUG	7367	0	6270	0
SEP	2891	-64	2404	0
OCT	199	-1395	305	-2
NOV	1	-7155	77	-77
DEC	0	-15040	2	-448
ANN	17627	-76867	17752	-2507

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

No Solar Radiation
Data Available

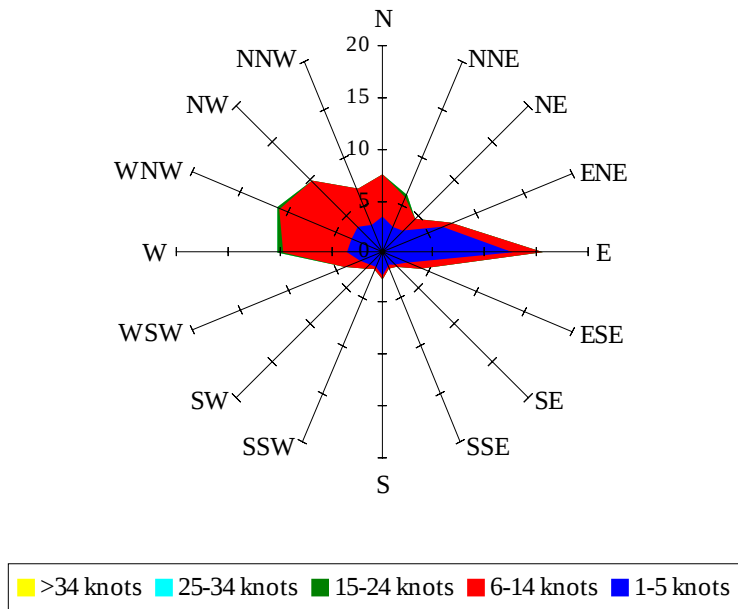


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

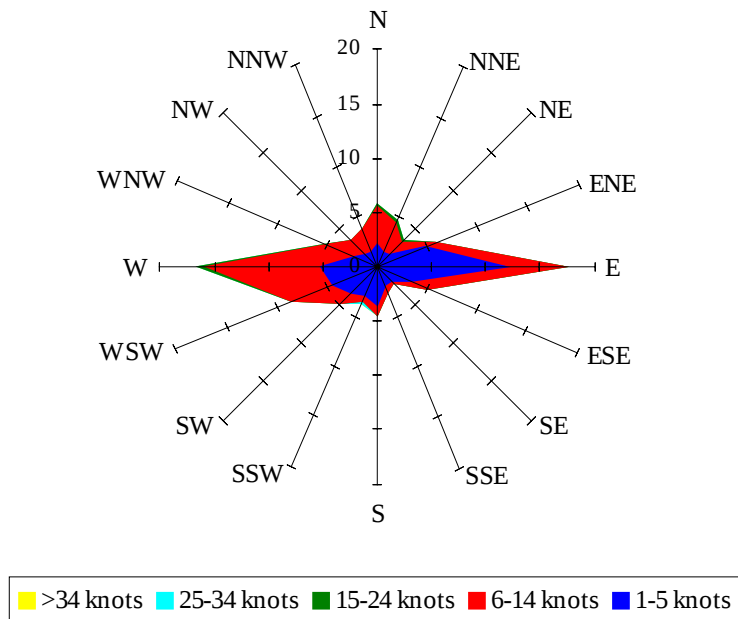
Labels of Percent Frequency on North Axis



Percent Calm = 4.94

Wind Summary - March, April, and May

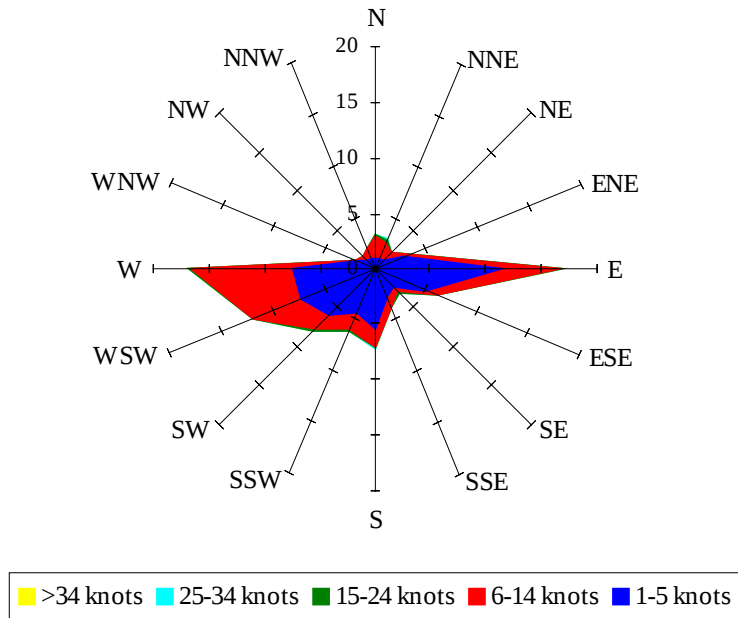
Labels of Percent Frequency on North Axis



Percent Calm = 3.87

Wind Summary - June, July, and August

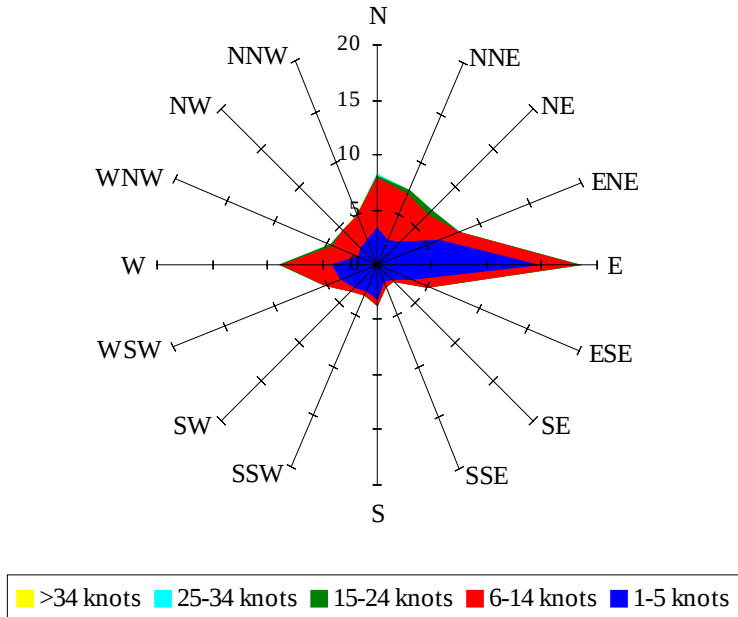
Labels of Percent Frequency on North Axis



Percent Calm = 3.11

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 4.59