

SAN CLEMENTE CA

Latitude = 33.02 N

Longitude = 118.50 W

Period of Record = 1973 to 1996

WMO No. 722925

Elevation = 180 feet

Average Pressure = 29.75 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	87	66	62	6.2	W
0.4% Occurrence	79	67	80	6.7	W
1.0% Occurrence	76	66	82	7.3	W
2.0% Occurrence	74	66	82	7.5	W
Mean Daily Range	10	-	-	-	-
97.5% Occurrence	49	47	45	5.4	WNW
99.0% Occurrence	47	45	42	3.9	S
99.6% Occurrence	45	44	39	3.3	SSE
Median of Extreme Lows	41	40	33	3.1	SSE
	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	74	78	118	7.3	SSW
0.4% Occurrence	70	74	102	7.7	W
1.0% Occurrence	69	73	98	7.4	W
2.0% Occurrence	67	72	91	7.3	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	117	75	0.77	10.1	ESE
0.4% Occurrence	107	73	0.72	7.1	W
1.0% Occurrence	100	72	0.67	7.1	W
2.0% Occurrence	94	70	0.62	7.2	W
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		1	28	8	251

Other Site Data

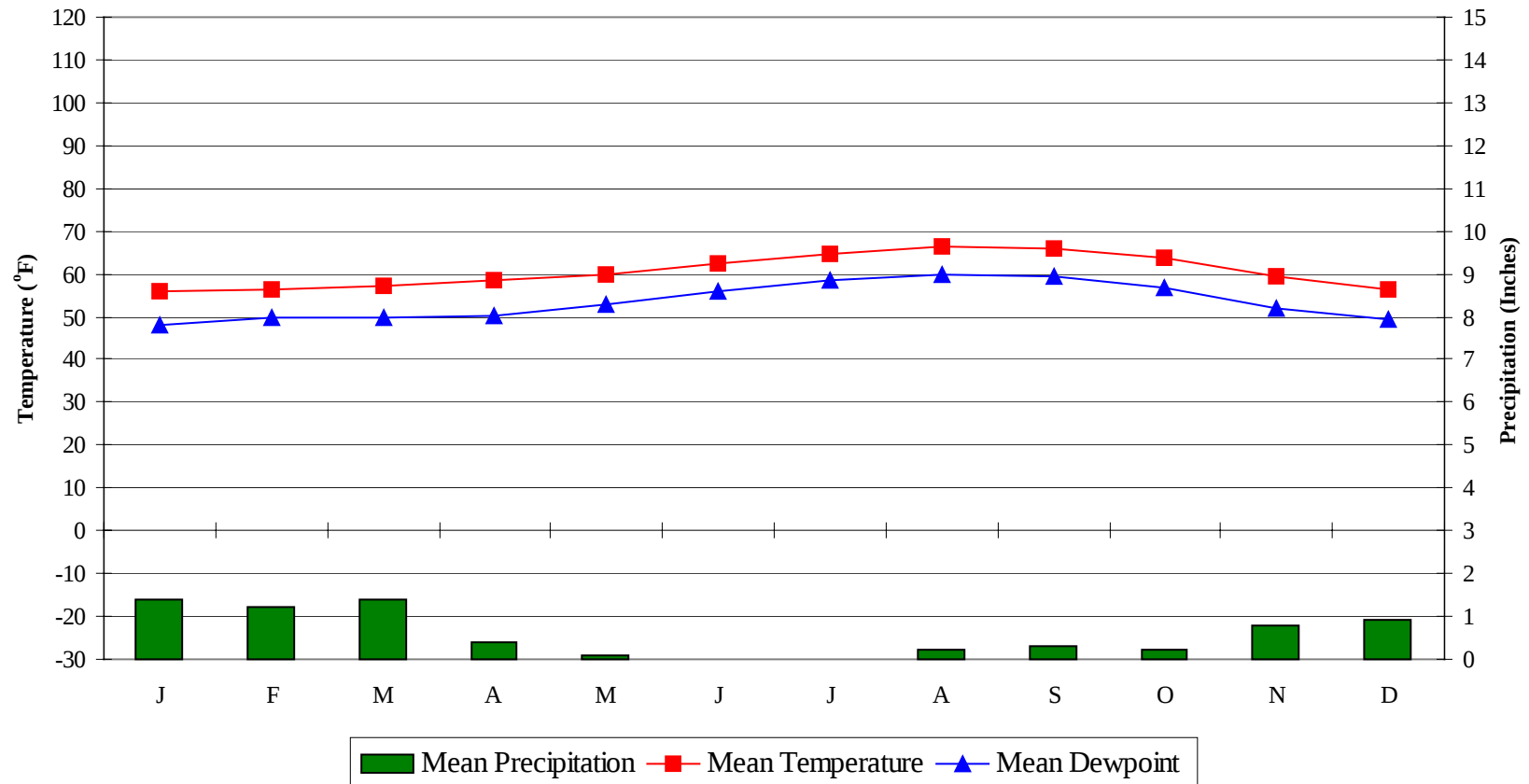
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
9	2.0	85	0.3 + 0.0
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
63.1	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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WMO No. 722925

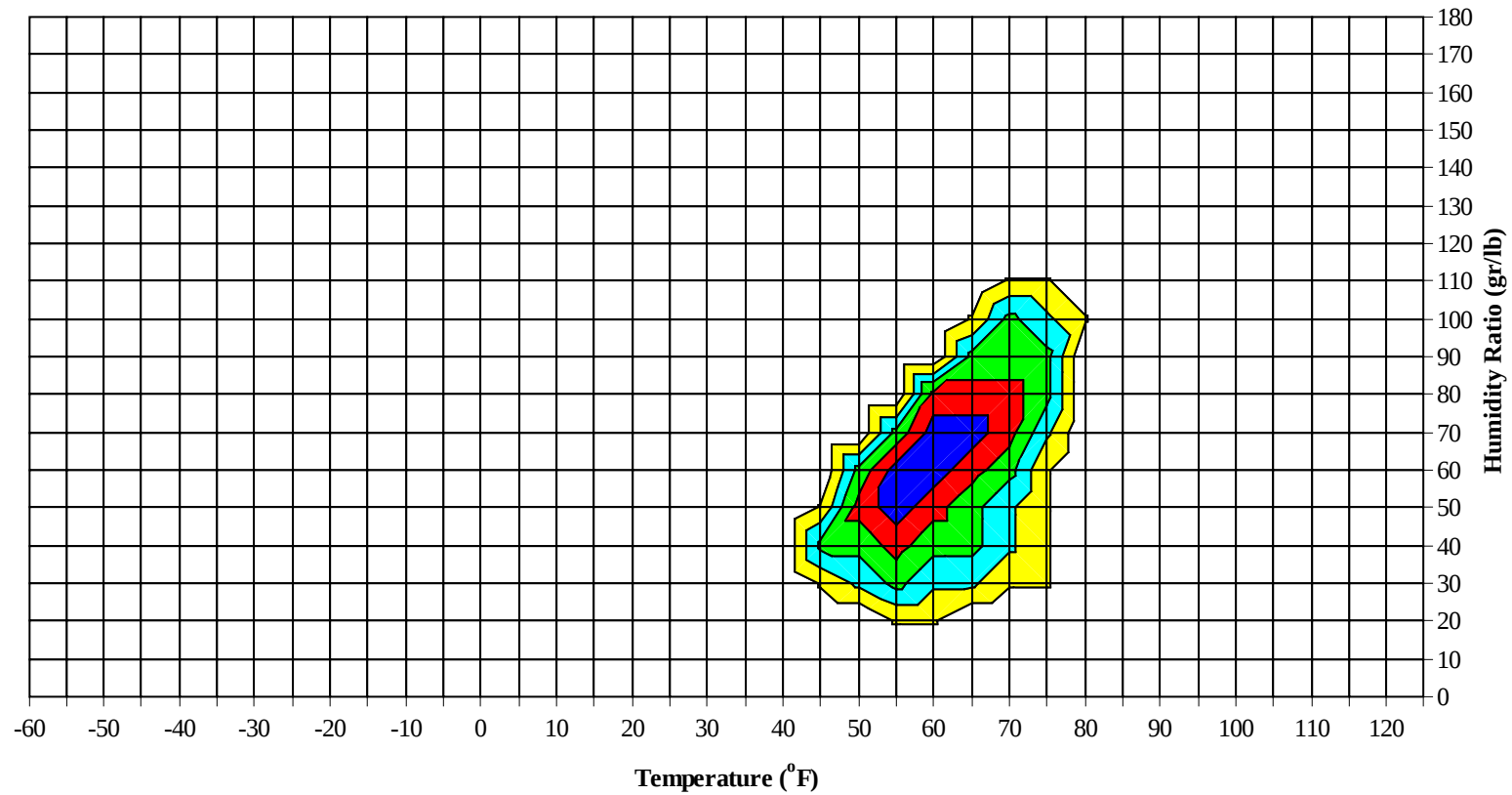
Average Annual Climate



SAN CLEMENTE CA

WMO No. 722925

Long Term Psychrometric Summary

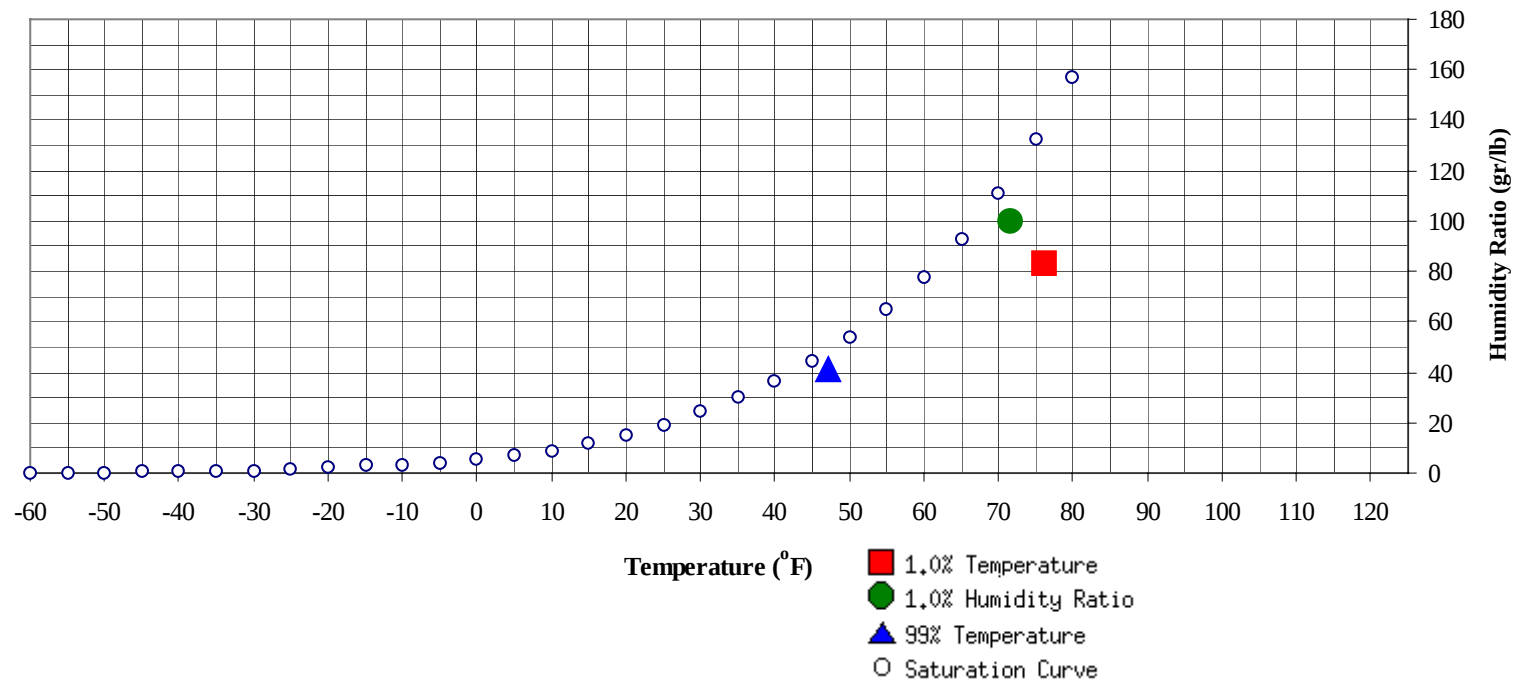


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

SAN CLEMENTE CA

WMO No. 722925

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	47	41.3	17.7		100.1	71.6	68.5	66.9	32.8

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	76	83.5	66.5	31.3

SAN CLEMENTE CA

WMO No. 722925

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		0		0	56.5							0		0	60.3
75 / 79		3	0	3	60.0							1	0	1	57.2
70 / 74	0	9	0	9	56.3							2	0	2	59.2
65 / 69	1	22	3	27	56.4	0	5	1	6	57.9	0	6	1	7	59.5
60 / 64	11	87	20	119	55.5	0	22	3	25	57.2	1	30	4	35	58.4
55 / 59	72	101	99	271	53.1	8	89	21	118	56.3	8	110	25	143	56.2
50 / 54	112	25	102	240	49.5	80	92	103	276	53.6	95	89	127	310	53.4
45 / 49	42	1	19	62	45.6	105	14	83	203	50.1	123	10	86	219	50.0
40 / 44	9		3	12	41.5	28	1	11	40	45.5	20	0	5	25	46.2
35 / 39	1		1	2	36.2	2	0	1	3	41.7	1	0	0	1	41.9
30 / 34	0			0	32.0	0	0		0	31.0	0		0	0	38.0

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.

SAN CLEMENTE CA

WMO No. 722925

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	67.0										
90 / 94		0		0	66.0							0		0	67.3
85 / 89		1	0	1	64.7		0		0	61.5		1	0	1	66.0
80 / 84	0	2	0	2	63.6		1		1	62.5		1	0	1	66.8
75 / 79	0	4	0	4	61.6	0	2	0	2	63.4	0	7	1	8	67.2
70 / 74	0	11	2	13	59.8	0	13	1	15	62.4	2	38	7	48	64.0
65 / 69	2	46	7	56	58.7	3	73	12	88	59.7	15	110	30	155	60.8
60 / 64	15	118	36	169	56.1	39	126	65	230	56.9	87	75	115	277	58.3
55 / 59	106	56	126	287	53.3	157	32	148	337	54.1	130	8	85	224	55.6
50 / 54	106	4	67	176	50.3	48	1	22	71	51.1	5	0	1	6	52.3
45 / 49	10	0	2	12	46.3	1	0	0	1	46.6					
40 / 44	1		0	1	42.4										
35 / 39															
30 / 34															

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.

SAN CLEMENTE CA

WMO No. 722925

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	68.5
90 / 94												1		1	64.8
85 / 89		0		0	65.0		0		0	74.7	0	2	0	2	65.8
80 / 84		1	0	1	70.1		1	0	1	71.7	0	5	0	5	68.4
75 / 79	0	14	1	15	67.6	0	20	2	22	68.5	1	20	3	24	68.6
70 / 74	2	80	17	99	64.7	5	99	21	126	65.3	10	77	20	108	65.6
65 / 69	45	112	70	227	62.1	67	111	97	275	62.5	61	108	81	249	62.7
60 / 64	145	40	137	322	59.3	167	17	126	310	59.8	152	27	129	308	59.7
55 / 59	55	1	23	78	56.4	9	0	2	11	56.8	17	0	6	23	56.4
50 / 54	1	1	0	2	53.4	0			0	52.0	0		0	0	52.0
45 / 49															
40 / 44															
35 / 39															
30 / 34															

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WMO No. 722925

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		0		0	82.0										
85 / 89		2		2	65.9		0		0	62.0					
80 / 84	0	4	0	4	65.8		1	0	1	58.8					
75 / 79	0	11	1	12	64.0	0	5	0	5	57.7					
70 / 74	2	51	6	59	63.9	0	18	1	19	59.8		1		1	55.6
65 / 69	29	122	45	196	61.6	5	66	11	82	59.6	0	7	0	7	58.8
60 / 64	131	58	143	331	59.0	42	112	61	214	57.4	0	22	1	23	57.4
55 / 59	74	2	49	125	55.5	113	36	124	273	54.3	8	109	16	133	56.4
50 / 54	11	0	3	14	51.1	65	3	39	107	50.2	84	92	125	300	53.4
45 / 49	1		0	1	46.8	15	0	4	19	46.0	109	17	87	214	49.7
40 / 44						1		0	1	41.1	40	1	18	59	45.7
35 / 39						0		0	0		7		1	8	41.0
30 / 34											0			0	37.5

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

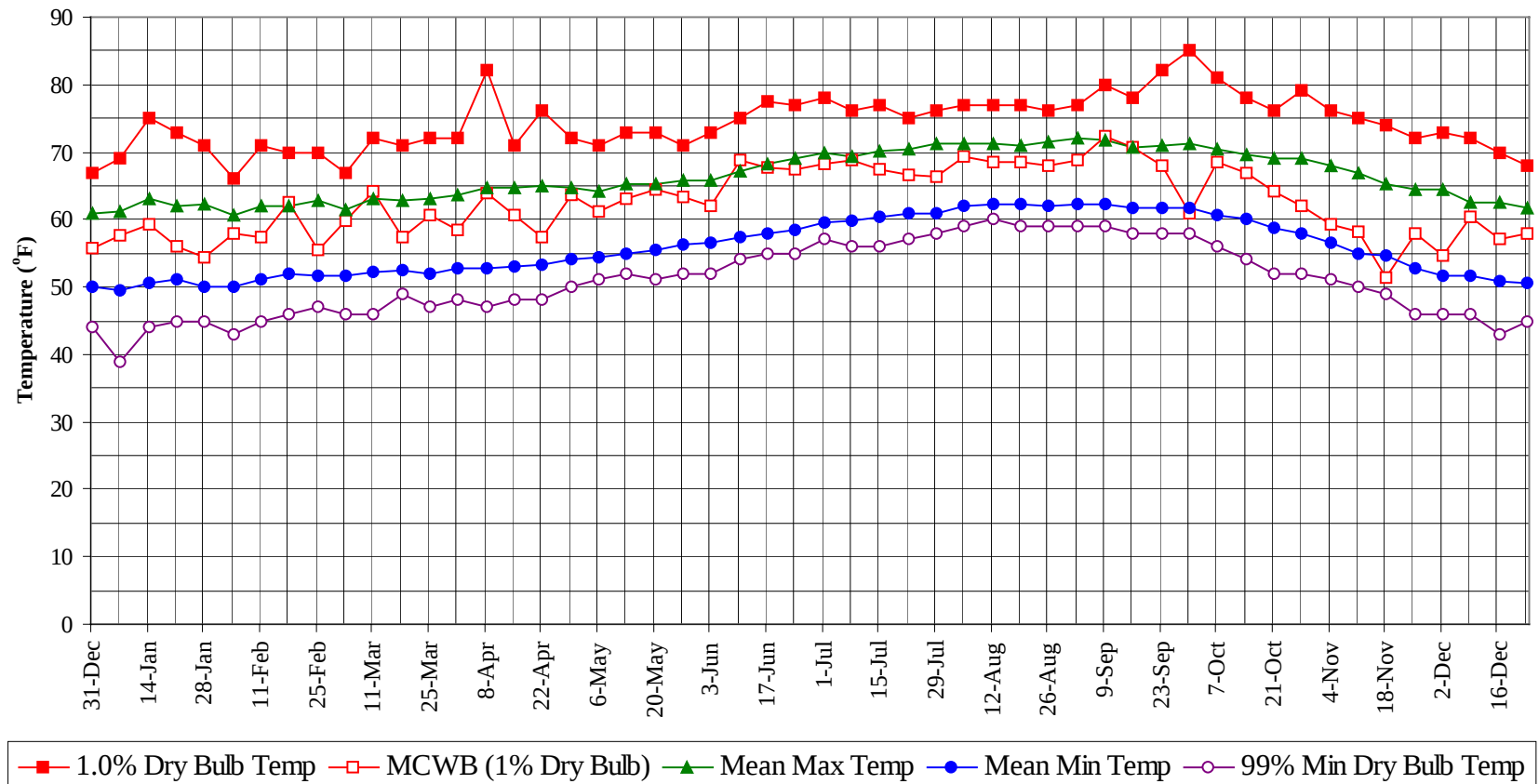
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
95 / 99		0		0	68.0
90 / 94		2		2	66.5
85 / 89	0	5	0	5	65.6
80 / 84	1	16	1	18	66.5
75 / 79	3	89	11	104	66.3
70 / 74	25	418	78	521	64.1
65 / 69	232	844	365	1442	61.3
60 / 64	819	963	895	2677	58.0
55 / 59	989	506	1014	2509	54.0
50 / 54	673	73	489	1235	50.0
45 / 49	154	4	60	218	45.8
40 / 44	21	0	5	26	41.4
35 / 39	2	0	1	3	36.3
30 / 34	0			0	32.0

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.

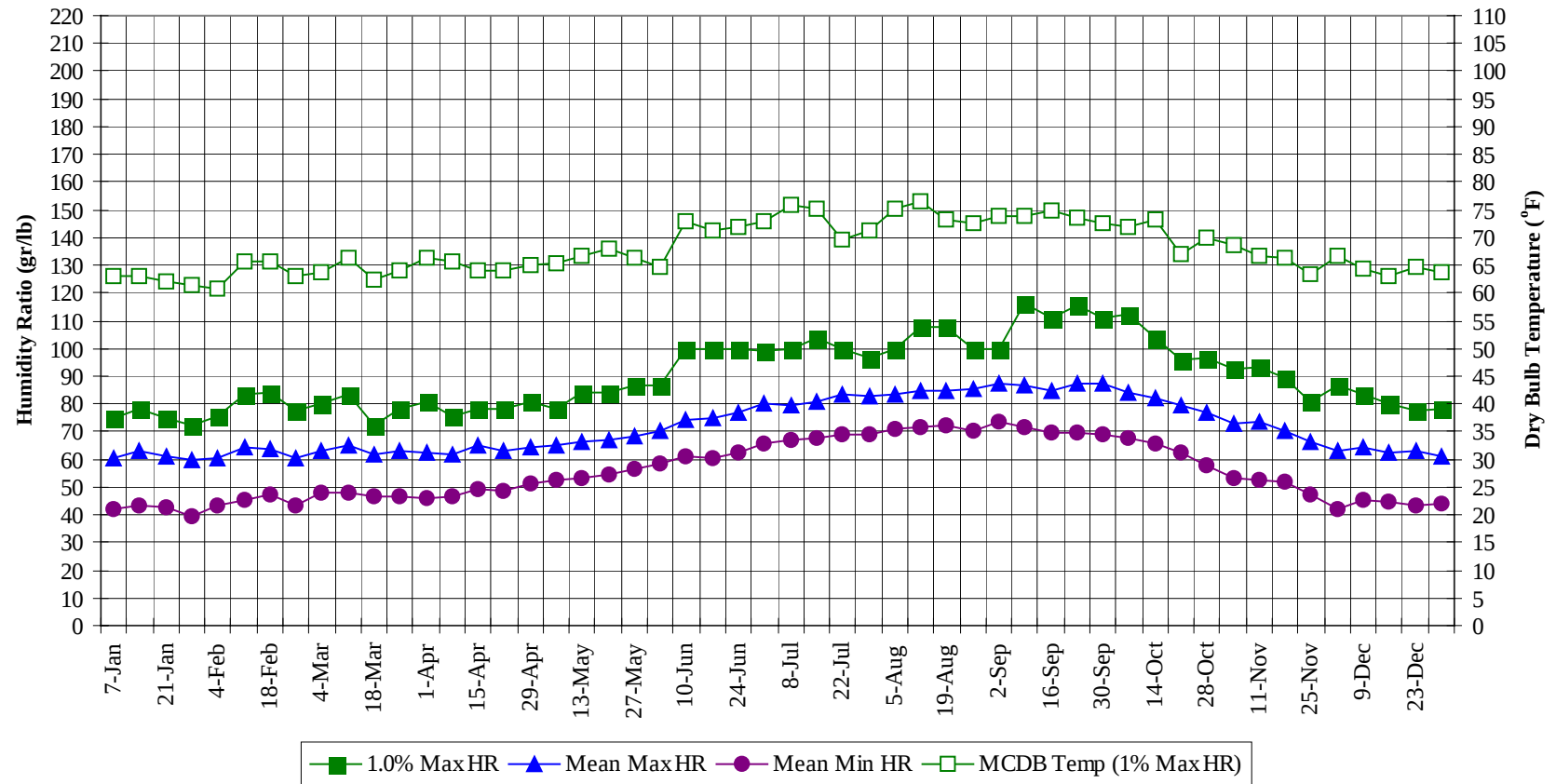
SAN CLEMENTE CA

WMO No. 722925

Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary

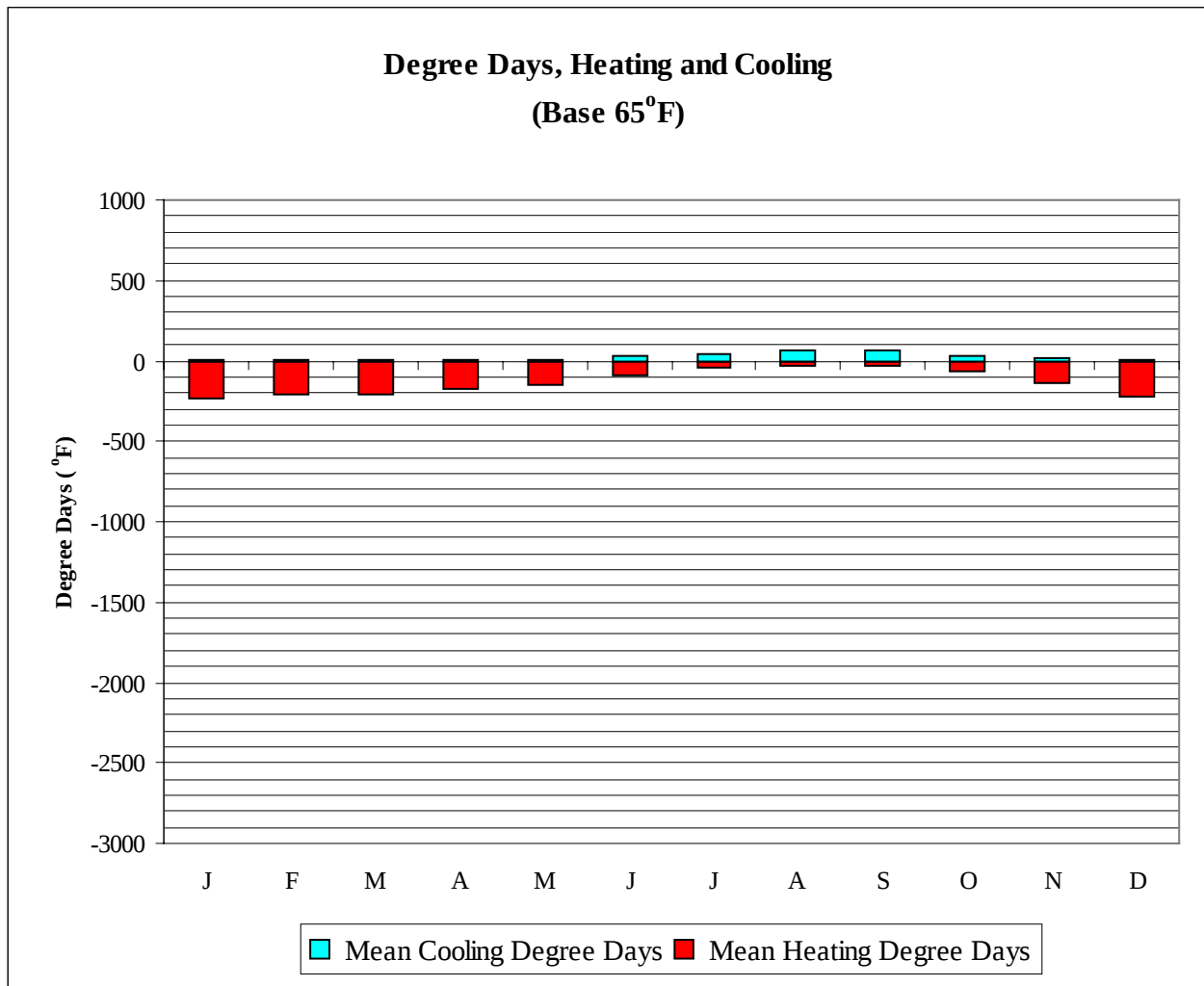


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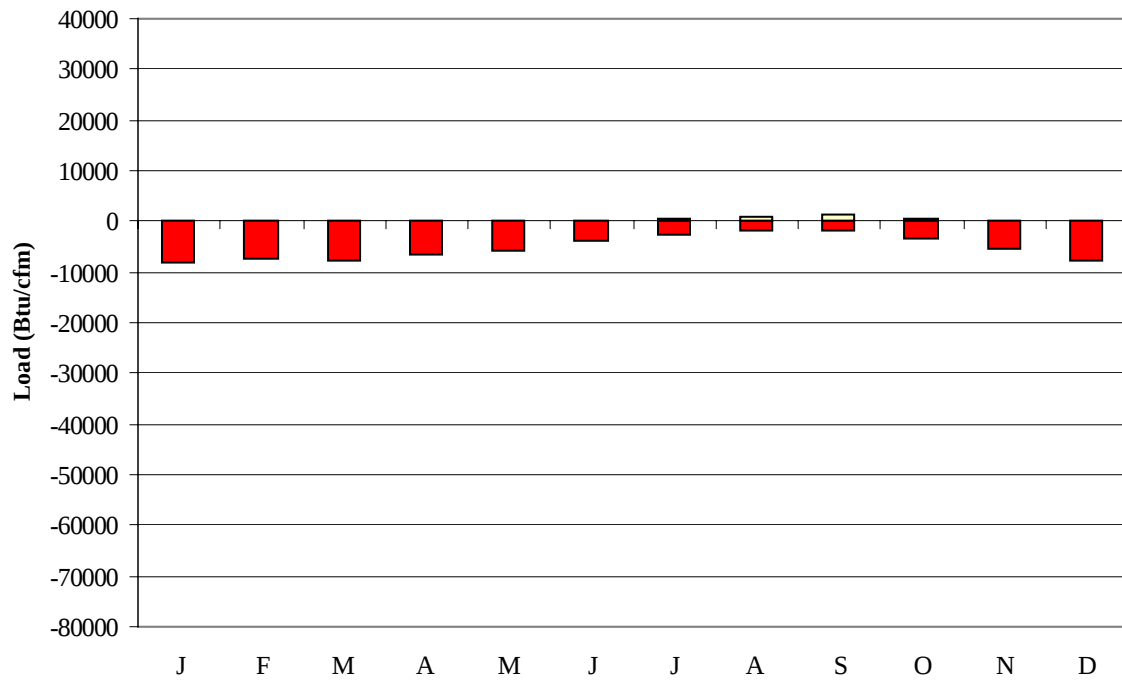
Long Term Dry Bulb Temperature and Humidity Summary

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	69.0	57.6	61.1	49.5	39.0	74.9	63.1	60.3	42.0
14-Jan	75.0	59.2	63.0	50.6	44.0	78.4	62.9	63.1	43.5
21-Jan	73.0	56.0	62.0	51.1	45.0	74.9	61.9	60.8	42.4
28-Jan	71.0	54.3	62.2	50.1	45.0	72.1	61.5	59.5	39.6
4-Feb	66.0	57.9	60.6	50.1	43.0	75.6	60.6	60.6	43.3
11-Feb	71.0	57.4	61.9	51.1	45.0	83.3	65.6	64.3	45.1
18-Feb	70.0	62.4	61.9	51.9	46.0	84.0	65.6	63.7	47.4
25-Feb	70.0	55.4	62.8	51.6	47.0	77.7	63.0	60.6	43.5
4-Mar	67.0	59.8	61.5	51.8	46.0	79.8	63.8	63.2	47.8
11-Mar	72.0	64.2	63.0	52.1	46.0	83.3	66.2	65.0	48.1
18-Mar	71.0	57.5	62.9	52.4	49.0	72.1	62.5	61.7	46.5
25-Mar	72.0	60.5	63.0	52.0	47.0	78.4	64.1	62.8	46.5
1-Apr	72.0	58.6	63.6	52.9	48.0	80.5	66.3	62.4	46.0
8-Apr	82.0	64.0	64.6	52.9	47.0	75.6	65.7	61.5	46.5
15-Apr	71.0	60.7	64.8	52.9	48.0	78.4	64.1	64.8	49.1
22-Apr	76.0	57.4	64.9	53.2	48.0	78.4	64.1	63.1	48.4
29-Apr	72.0	63.8	64.7	54.1	50.0	80.5	65.2	64.3	51.5
6-May	71.0	61.1	64.3	54.4	51.0	78.4	65.2	65.0	52.8
13-May	73.0	63.1	65.2	54.9	52.0	84.0	66.8	66.3	53.4
20-May	73.0	64.3	65.4	55.5	51.0	84.0	68.1	67.3	54.5
27-May	71.0	63.3	65.8	56.3	52.0	86.8	66.2	68.4	56.5
3-Jun	73.0	61.9	65.9	56.5	52.0	86.8	64.6	70.1	58.6
10-Jun	75.0	68.7	67.2	57.3	54.0	100.1	73.0	74.4	60.9
17-Jun	77.5	67.6	68.1	57.9	55.0	100.1	71.2	74.8	60.5
24-Jun	77.0	67.6	69.0	58.4	55.0	100.1	71.9	77.1	62.6
1-Jul	78.0	68.2	69.8	59.6	57.0	99.4	73.1	80.0	65.4
8-Jul	76.0	68.7	69.4	59.8	56.0	100.1	75.8	79.6	66.8
15-Jul	77.0	67.4	70.1	60.3	56.0	103.6	75.1	80.8	67.5
22-Jul	75.0	66.6	70.3	60.9	57.0	100.1	69.6	83.2	69.1
29-Jul	76.0	66.2	71.1	61.0	58.0	96.6	71.3	82.8	69.0
5-Aug	77.0	69.4	71.1	61.9	59.0	100.1	75.3	83.6	70.9
12-Aug	77.0	68.4	71.1	62.2	60.0	107.8	76.4	84.7	71.6
19-Aug	77.0	68.5	70.9	62.3	59.0	107.8	73.1	84.6	72.0
26-Aug	76.0	67.9	71.6	61.9	59.0	100.1	72.6	85.3	70.3
2-Sep	77.0	68.8	72.1	62.4	59.0	100.1	73.9	87.1	73.3
9-Sep	80.0	72.3	71.7	62.2	59.0	116.2	73.9	86.8	71.8
16-Sep	78.0	70.8	70.6	61.8	58.0	111.3	74.8	84.5	69.8
23-Sep	82.0	68.0	71.1	61.6	58.0	115.5	73.7	87.1	69.7
30-Sep	85.0	61.0	71.3	61.8	58.0	111.3	72.4	87.2	69.0
7-Oct	81.0	68.4	70.4	60.7	56.0	112.0	72.0	84.1	67.5
14-Oct	78.0	66.9	69.6	60.1	54.0	103.6	73.3	82.1	65.6
21-Oct	76.0	64.3	69.2	58.7	52.0	95.9	67.1	79.6	62.5
28-Oct	79.0	62.0	69.0	57.9	52.0	96.6	69.8	77.0	58.0
4-Nov	76.0	59.3	67.9	56.6	51.0	92.4	68.8	72.7	53.2
11-Nov	75.0	58.1	66.8	55.0	50.0	93.1	66.7	73.5	52.2
18-Nov	74.0	51.5	65.1	54.7	49.0	89.6	66.3	70.0	52.1
25-Nov	72.0	57.9	64.3	52.7	46.0	80.5	63.4	66.2	47.4
2-Dec	73.0	54.6	64.6	51.5	46.0	86.8	66.8	63.3	42.2
9-Dec	72.0	60.3	62.6	51.8	46.0	83.3	64.4	64.0	45.4
16-Dec	70.0	57.0	62.6	50.9	43.0	79.8	63.1	62.3	44.5
23-Dec	68.0	57.8	61.7	50.7	45.0	77.7	64.7	63.2	43.7
31-Dec	67.0	55.8	61.0	50.2	44.0	78.4	63.6	61.0	43.9



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	5	232
FEB	3	212
MAR	6	213
APR	11	174
MAY	9	146
JUN	25	86
JUL	47	47
AUG	62	26
SEP	62	31
OCT	34	64
NOV	12	138
DEC	3	221
ANN	276	1590

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 (Drying) Load	■ Average Latent Heating (Humidifying) Load

	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	4	-7967	22	-66
FEB	1	-7379	26	-60
MAR	17	-7574	19	-18
APR	30	-6427	24	-13
MAY	7	-5764	45	0
JUN	25	-3888	252	0
JUL	21	-2597	631	0
AUG	28	-1921	1081	0
SEP	114	-2013	1239	-2
OCT	49	-3228	499	-5
NOV	11	-5337	96	-34
DEC	1	-7748	25	-88
ANN	308	-61843	3959	-286

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

No Solar Radiation
Data Available

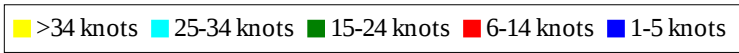
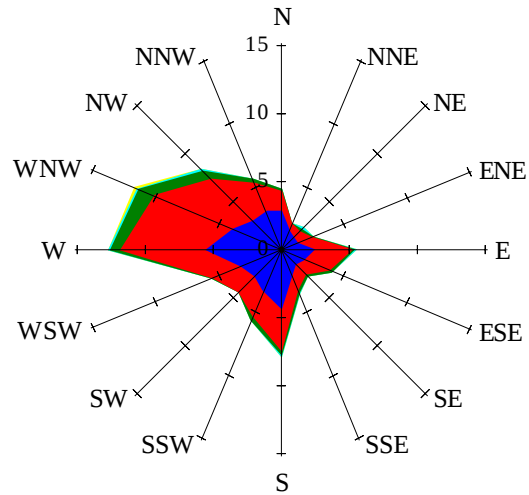


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

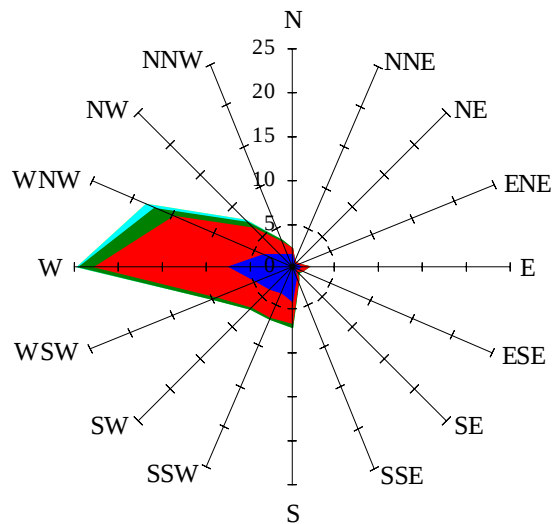
Labels of Percent Frequency on North Axis



Percent Calm = 12.56

Wind Summary - March, April, and May

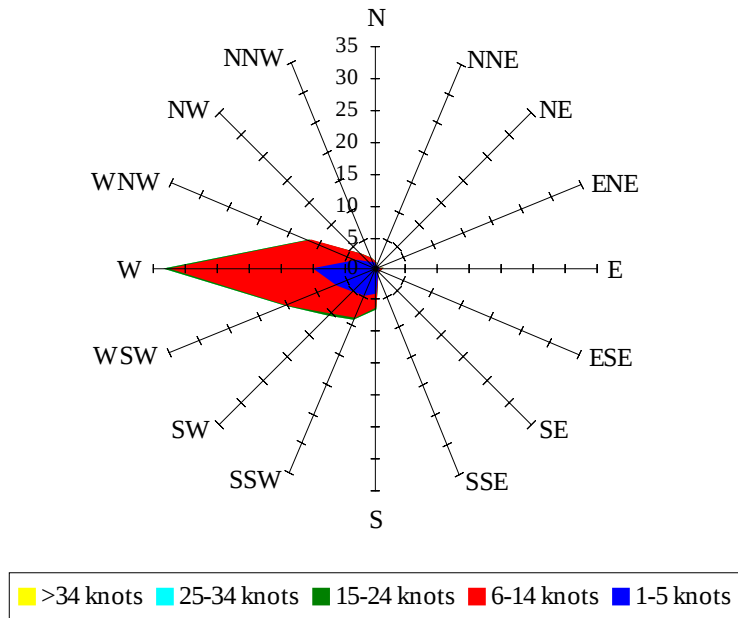
Labels of Percent Frequency on North Axis



Percent Calm = 6.57

Wind Summary - June, July, and August

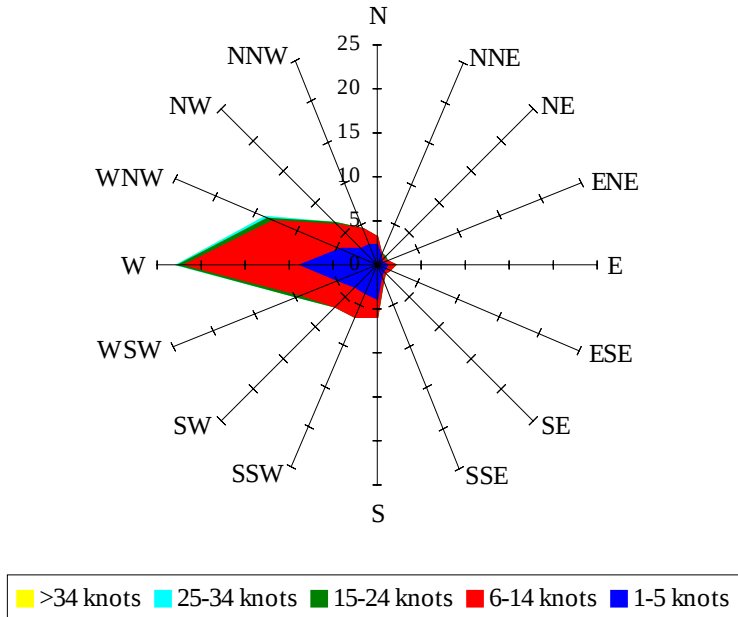
Labels of Percent Frequency on North Axis



Percent Calm = 5.63

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 9.63