

ALICANTE, SPAIN

Latitude = 38.28 N

Longitude = 0.55 W

Period of Record = 1973 to 1996

WMO No. 083600

Elevation = 102 feet

Average Pressure = 29.85 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	97	73	82	9.8	S
0.4% Occurrence	90	72	88	10.2	S
1.0% Occurrence	88	72	95	10.0	E
2.0% Occurrence	86	72	97	10.1	E
Mean Daily Range	17	-	-	-	-
97.5% Occurrence	43	40	32	5.1	W
99.0% Occurrence	41	38	29	4.9	NW
99.6% Occurrence	38	36	26	5.1	W
Median of Extreme Lows	34	31	20	4.9	W
	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	79	84	137	7.2	E
0.4% Occurrence	77	83	127	7.4	E
1.0% Occurrence	76	83	122	7.5	E
2.0% Occurrence	75	82	118	7.1	E
	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	142	82	0.94	5.6	E
0.4% Occurrence	133	81	0.88	5.8	E
1.0% Occurrence	125	80	0.83	5.4	E
2.0% Occurrence	124	80	0.83	5.6	E
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		15	901	566	1950

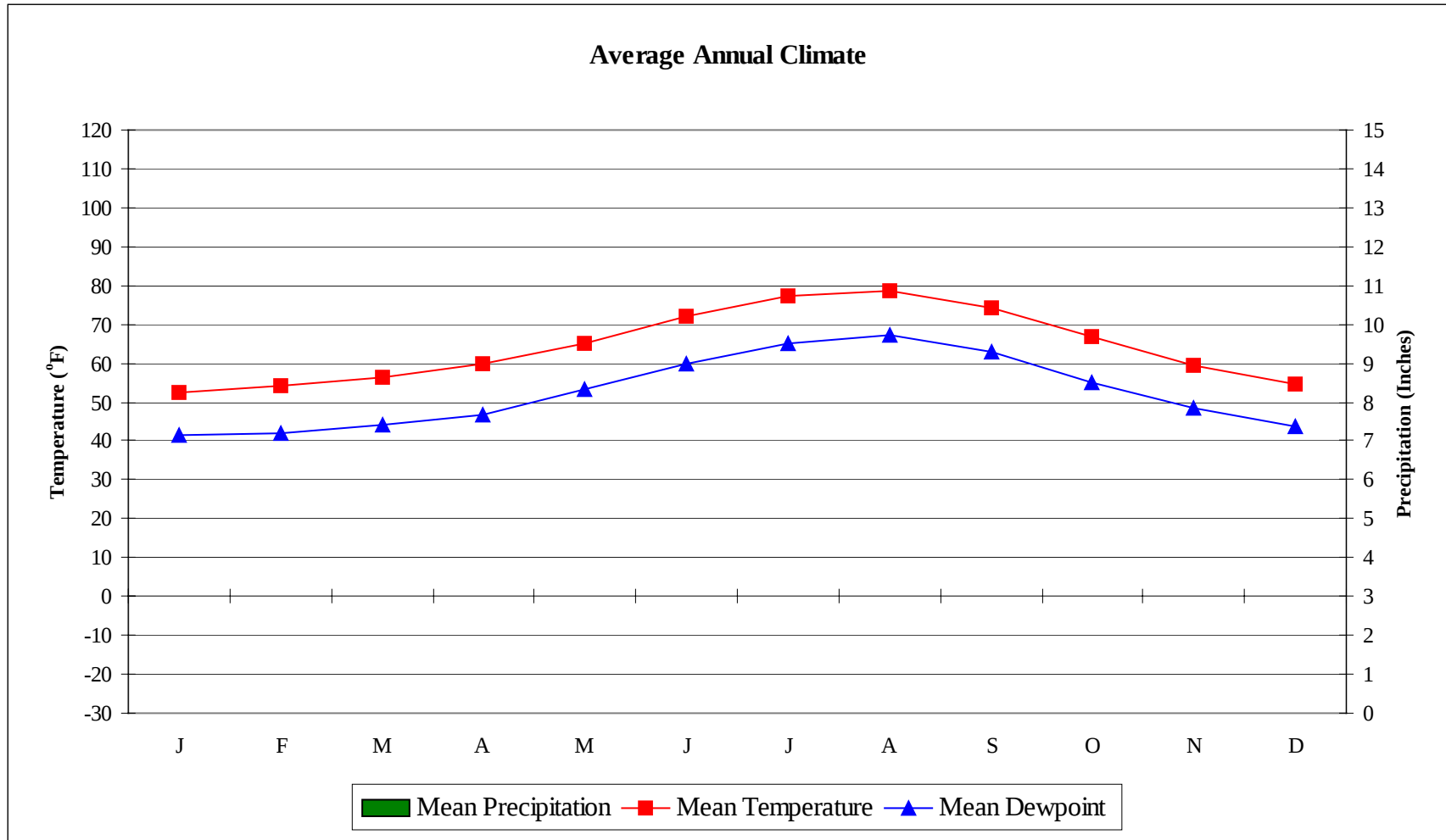
Other Site Data

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	N/A	N/A	2.6 + 0.9
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 (#)
66.8	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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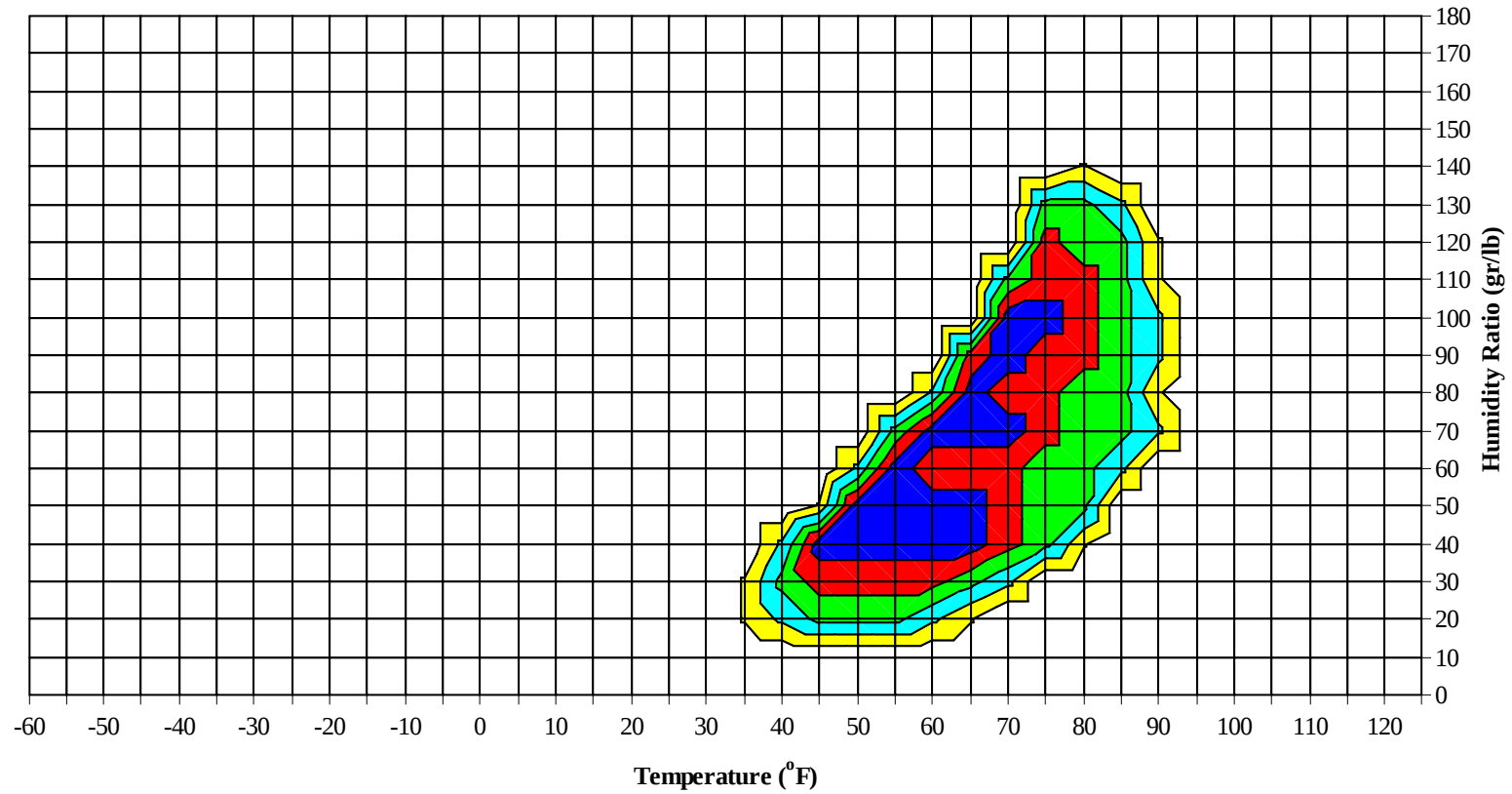


No Precipitation Data Available

ALICANTE, SPAIN

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Long Term Psychrometric Summary

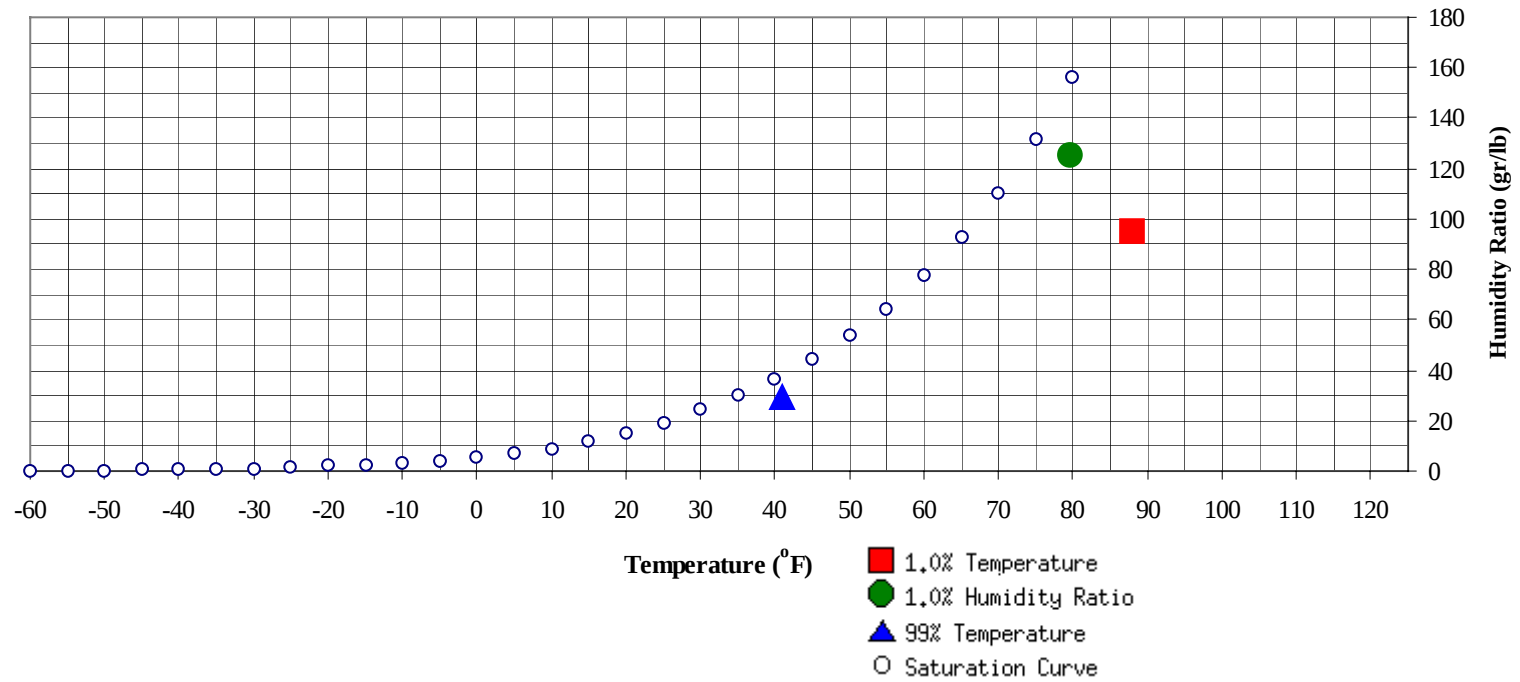


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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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)
	41	29.1	14.3		125.3	79.7	75	73.4	38.8

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	88	94.8	72.3	36.0

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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		
105 / 109															
100 / 104															
95 / 99															
90 / 94															
85 / 89												0	0	0	63.3
80 / 84		0		0	57.0		1	0	1	62.4		2	1	3	61.1
75 / 79		1	0	1	58.4		3	1	4	59.5	0	6	2	8	58.9
70 / 74		5	1	6	56.3	0	10	5	15	57.0	1	21	7	29	57.0
65 / 69	0	15	5	20	54.3	2	18	8	28	54.6	4	35	14	53	55.4
60 / 64	6	56	26	88	52.3	10	56	32	98	52.8	11	83	52	146	53.5
55 / 59	26	82	69	176	50.4	28	67	68	163	50.6	43	64	90	197	51.2
50 / 54	73	49	87	209	47.6	67	45	73	185	47.5	92	29	63	184	48.2
45 / 49	80	26	47	153	43.6	72	18	30	120	43.6	74	7	17	99	43.8
40 / 44	41	9	10	61	39.3	28	5	6	39	39.1	18	1	2	21	39.5
35 / 39	20	5	3	28	35.3	15	2	1	18	34.9	5	0	0	5	35.7
30 / 34	2	0	0	2	28.8	1	0	0	1	30.4	0			0	31.4
25 / 29	0	0		0	23.0										

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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WMO No. 083600

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		
105 / 109															
100 / 104															
95 / 99											0 0 0 71.0				
90 / 94						0 68.0					3 0 3 69.0				
85 / 89	0 63.1					1 0 1 65.0					0 11 2 13 68.3				
80 / 84	2 1 3 60.9					0 8 1 9 64.0					1 62 19 82 67.7				
75 / 79	0 9 3 12 59.6					1 46 12 59 62.7					11 102 66 179 66.3				
70 / 74	1 39 13 53 57.6					6 93 49 149 61.3					56 51 98 205 65.1				
65 / 69	4 61 26 91 56.3					21 57 65 143 59.9					82 9 41 132 63.0				
60 / 64	21 83 81 185 54.8					88 34 85 207 57.9					74 2 13 89 59.8				
55 / 59	79 39 79 196 52.3					94 7 30 131 54.1					15 0 1 16 55.2				
50 / 54	95 7 31 133 48.8					36 1 5 42 49.7					1 1 50.7				
45 / 49	35 1 5 41 44.2					3 3 45.4									
40 / 44	5 0 5 39.5														
35 / 39	1 1 36.3														
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		
105 / 109		0		0	77.0										
100 / 104		0		0	73.0		0	0	0	72.7					
95 / 99		2	0	2	72.2		2	0	2	72.8		1	0	1	70.0
90 / 94	0	17	4	21	71.6	0	20	4	24	72.9		6	1	7	69.7
85 / 89	1	55	15	71	71.8	1	69	18	88	73.7		27	4	31	71.2
80 / 84	6	112	66	184	71.1	9	116	84	209	72.5	1	88	33	122	70.3
75 / 79	53	56	113	222	69.9	82	38	116	237	71.1	23	81	97	201	68.8
70 / 74	125	6	46	177	67.3	122	3	23	148	67.8	96	28	77	200	66.6
65 / 69	50	0	4	54	63.9	27	0	2	29	63.4	71	6	21	98	63.4
60 / 64	14		0	14	60.5	7	0	0	7	60.2	42	3	6	51	59.2
55 / 59	0		0	0	55.5	0			0	56.3	7	0	1	8	53.3
50 / 54											1			1	50.8
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.

ALICANTE, SPAIN

WMO No. 083600

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		
105 / 109															
100 / 104															
95 / 99															
90 / 94		0	0	0	66.0										
85 / 89		2	0	2	66.8		0		0	66.8					
80 / 84		19	3	22	67.0		1	0	1	64.4					
75 / 79	1	64	21	86	65.0	0	9	2	11	61.3		2	0	2	59.4
70 / 74	13	85	69	168	63.0	1	43	10	54	60.2	1	9	3	13	58.2
65 / 69	44	36	65	145	61.2	7	56	31	94	58.7	1	22	7	30	56.0
60 / 64	99	30	63	193	57.9	42	66	77	185	56.4	9	76	35	120	53.8
55 / 59	67	9	22	99	53.4	78	40	73	190	52.8	44	70	82	196	51.3
50 / 54	21	2	4	27	48.7	71	18	36	125	48.4	87	43	82	212	48.1
45 / 49	3	0	0	3	43.3	32	5	10	47	43.1	71	18	32	121	43.7
40 / 44						8	1	1	10	38.8	27	5	5	37	39.1
35 / 39						2	0	0	2	35.7	9	2	1	12	35.0
30 / 34											0	0		0	28.2
25 / 29															

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ALICANTE, SPAIN

WMO No. 083600

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

Period of Record = 1973 to 1996

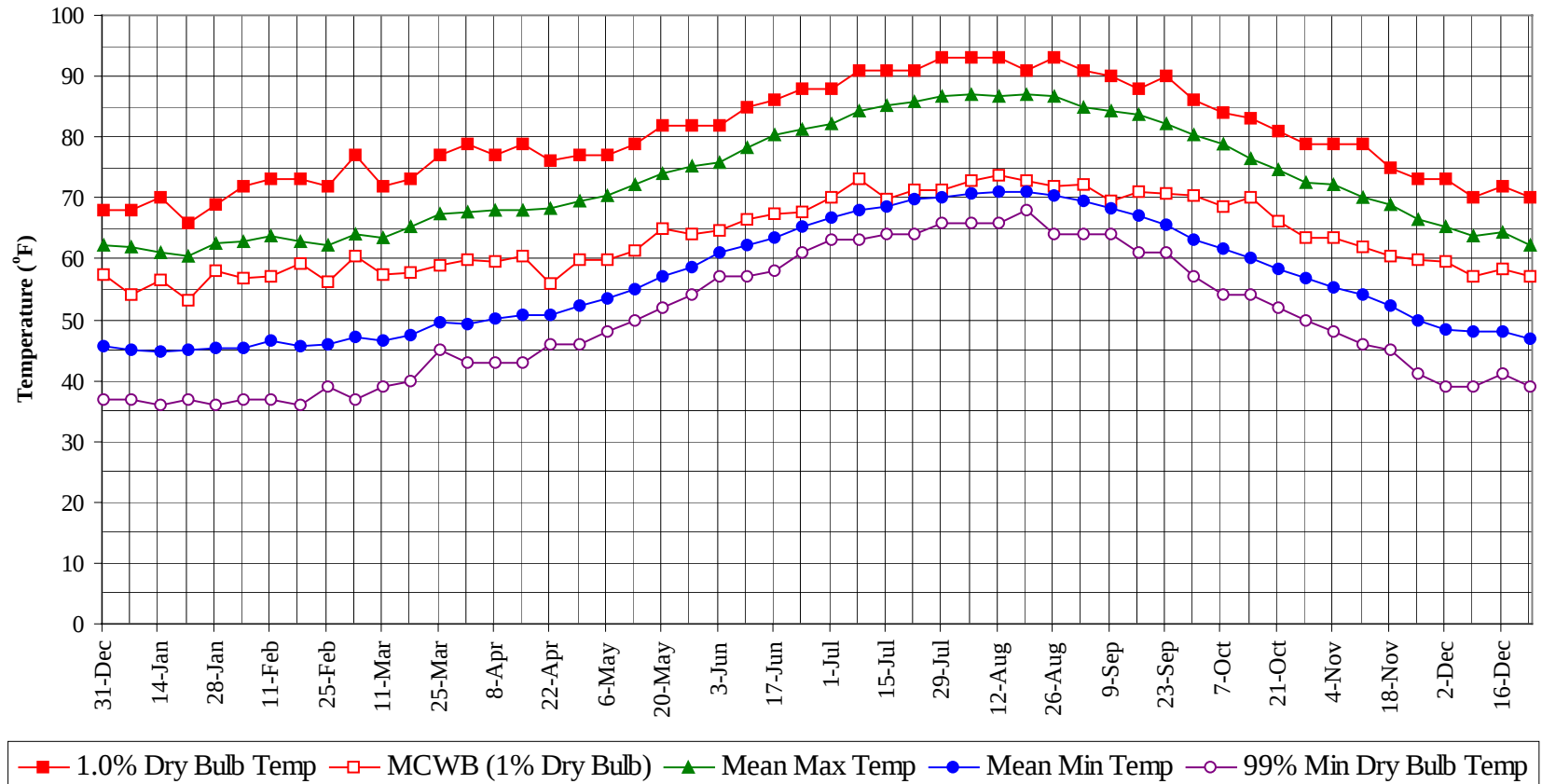
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
105 / 109	0			0	77.0
100 / 104	1			0	1 72.8
95 / 99	5			1	6 72.0
90 / 94	0	46	9	55	71.8
85 / 89	1	165	40	206	72.2
80 / 84	18	409	211	638	70.6
75 / 79	171	416	434	1022	68.1
70 / 74	423	393	399	1216	64.3
65 / 69	313	315	289	917	60.1
60 / 64	421	490	472	1383	56.0
55 / 59	479	379	514	1373	51.9
50 / 54	542	195	380	1116	48.1
45 / 49	370	75	141	586	43.7
40 / 44	126	20	24	170	39.2
35 / 39	52	9	5	66	35.2
30 / 34	4	1	0	5	29.5
25 / 29	0	0		0	23.0

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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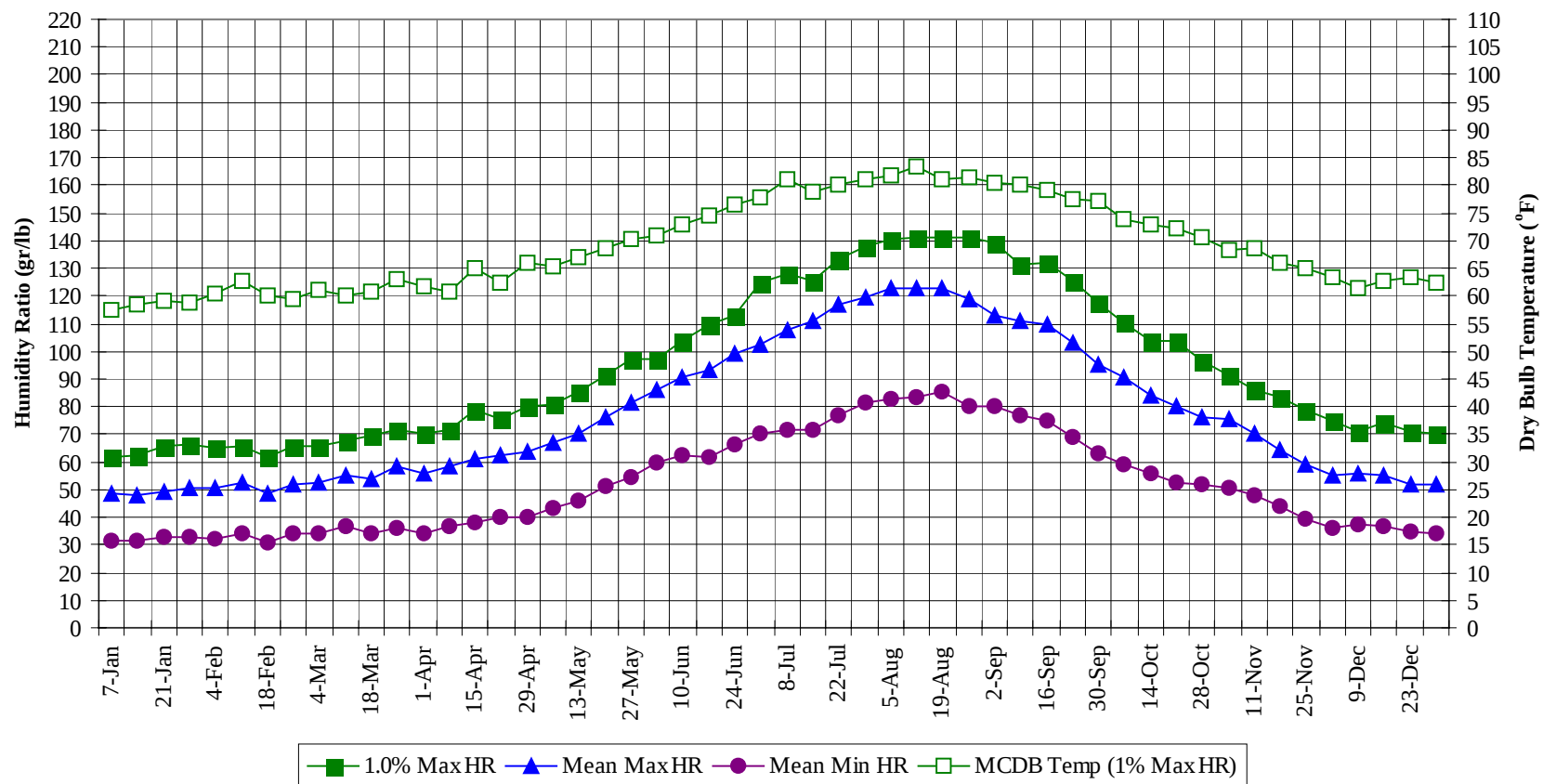
Annual Summary of Temperatures



ALICANTE, SPAIN

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Long Term Humidity and Dry Bulb Temperature Summary

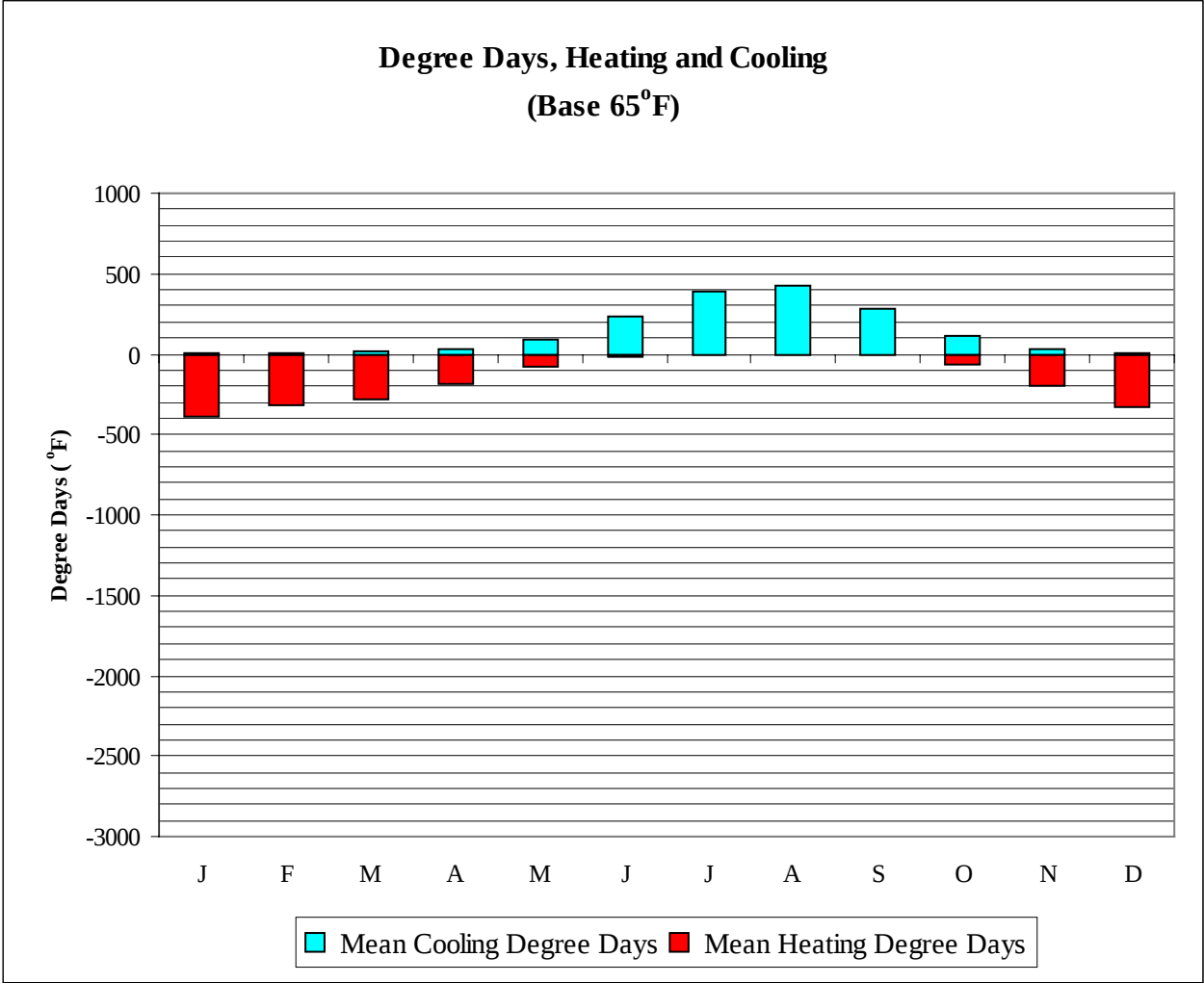


ALICANTE, SPAIN

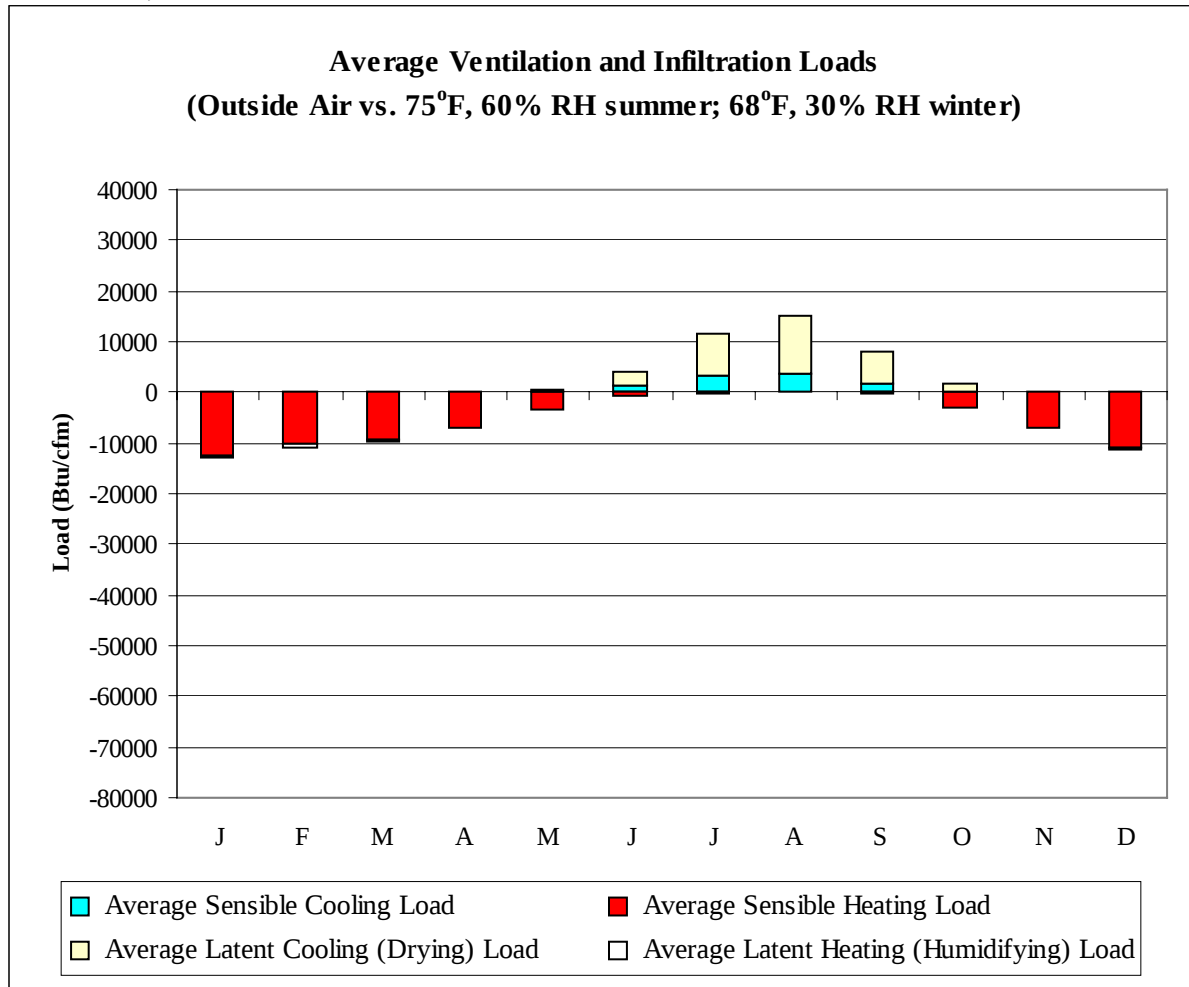
WMO No. 083600

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	54.1	61.9	45.1	37.0	61.6	57.4	48.7	31.7
14-Jan	70.0	56.4	61.1	44.6	36.0	62.3	58.6	48.1	31.3
21-Jan	66.0	53.2	60.5	44.9	37.0	65.8	59.1	49.2	33.0
28-Jan	69.0	58.0	62.6	45.3	36.0	66.5	58.9	50.6	32.8
4-Feb	72.0	56.8	62.7	45.2	37.0	65.1	60.5	50.7	32.5
11-Feb	73.0	57.2	63.8	46.5	37.0	65.8	62.8	52.4	34.0
18-Feb	73.0	59.2	62.8	45.6	36.0	61.6	60.0	48.6	30.7
25-Feb	72.0	56.2	62.3	45.9	39.0	65.8	59.3	51.7	33.9
4-Mar	77.0	60.4	64.0	47.0	37.0	65.8	61.2	52.6	34.0
11-Mar	72.0	57.5	63.6	46.6	39.0	67.9	60.1	55.4	36.9
18-Mar	73.0	57.7	65.2	47.4	40.0	69.3	60.9	53.7	34.4
25-Mar	77.0	58.9	67.4	49.4	45.0	71.4	63.1	58.1	36.4
1-Apr	79.0	59.9	67.6	49.1	43.0	70.0	61.7	55.6	33.9
8-Apr	77.0	59.4	68.0	50.0	43.0	71.4	60.7	58.8	36.8
15-Apr	79.0	60.5	68.0	50.9	43.0	79.1	64.9	61.0	38.1
22-Apr	76.0	56.0	68.2	50.8	46.0	75.6	62.3	62.5	40.3
29-Apr	77.0	59.9	69.6	52.3	46.0	79.8	66.0	63.4	40.0
6-May	77.0	59.9	70.3	53.5	48.0	80.5	65.4	67.0	43.2
13-May	79.0	61.3	72.2	55.0	50.0	85.4	67.1	70.4	46.2
20-May	82.0	64.9	74.1	57.0	52.0	91.0	68.5	76.1	51.0
27-May	82.0	64.1	75.3	58.7	54.0	97.3	70.2	81.5	54.6
3-Jun	82.0	64.6	75.9	61.0	57.0	97.3	71.0	86.2	59.5
10-Jun	85.0	66.3	78.3	62.1	57.0	103.6	72.9	90.4	62.5
17-Jun	86.0	67.3	80.5	63.6	58.0	109.9	74.6	93.1	61.6
24-Jun	88.0	67.8	81.2	65.2	61.0	112.7	76.4	99.2	66.0
1-Jul	88.0	70.2	82.3	66.9	63.0	124.6	77.8	102.5	70.3
8-Jul	91.0	73.1	84.4	68.1	63.0	128.1	81.0	108.0	71.6
15-Jul	91.0	69.9	85.3	68.5	64.0	125.3	78.9	111.1	71.8
22-Jul	91.0	71.3	85.8	69.7	64.0	133.0	80.2	116.9	77.0
29-Jul	93.0	71.4	86.7	70.2	66.0	137.9	81.0	119.8	81.4
5-Aug	93.0	72.8	86.9	70.7	66.0	140.7	81.9	123.0	82.9
12-Aug	93.0	73.8	86.7	70.9	66.0	141.4	83.5	122.5	83.2
19-Aug	91.0	72.7	87.0	71.0	68.0	141.4	81.2	123.0	85.2
26-Aug	93.0	71.8	86.6	70.5	64.0	141.4	81.5	119.1	80.3
2-Sep	91.0	72.2	84.8	69.5	64.0	139.3	80.3	113.0	80.2
9-Sep	90.0	69.4	84.3	68.4	64.0	131.6	80.2	110.8	77.1
16-Sep	88.0	70.9	83.6	67.2	61.0	132.3	79.2	109.4	74.5
23-Sep	90.0	70.6	82.2	65.5	61.0	125.3	77.6	103.1	69.1
30-Sep	86.0	70.4	80.4	63.1	57.0	117.6	77.2	95.3	62.8
7-Oct	84.0	68.7	79.0	61.5	54.0	110.6	74.0	90.7	58.9
14-Oct	83.0	70.0	76.4	60.2	54.0	103.6	72.9	83.9	55.8
21-Oct	81.0	66.2	74.8	58.4	52.0	103.6	72.4	80.1	52.9
28-Oct	79.0	63.5	72.4	56.7	50.0	96.6	70.6	76.4	52.1
4-Nov	79.0	63.4	72.2	55.3	48.0	91.0	68.4	75.8	50.5
11-Nov	79.0	62.0	70.1	54.1	46.0	86.1	68.6	70.5	47.7
18-Nov	75.0	60.4	68.9	52.4	45.0	83.3	65.9	64.7	43.7
25-Nov	73.0	59.9	66.3	49.8	41.0	79.1	65.0	59.0	39.7
2-Dec	73.0	59.4	65.1	48.2	39.0	74.9	63.3	55.2	36.0
9-Dec	70.0	57.2	63.8	48.1	39.0	70.7	61.5	55.5	37.4
16-Dec	72.0	58.3	64.3	47.9	41.0	74.2	62.6	54.9	37.1
23-Dec	70.0	57.2	62.2	46.9	39.0	70.7	63.4	51.8	34.6
31-Dec	68.0	57.3	62.1	45.7	37.0	70.0	62.3	51.7	34.5



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	3	388
FEB	8	318
MAR	17	278
APR	28	187
MAY	87	83
JUN	229	12
JUL	388	1
AUG	424	0
SEP	286	6
OCT	114	63
NOV	28	192
DEC	6	332
ANN	1619	1860



	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	1	-12398	0	-559
FEB	10	-10323	0	-486
MAR	33	-9377	1	-367
APR	39	-6795	6	-153
MAY	162	-3548	391	-18
JUN	1131	-766	2871	0
JUL	3167	-105	8452	0
AUG	3714	-53	11580	0
SEP	1788	-436	6251	-2
OCT	310	-2837	1269	-41
NOV	32	-6889	105	-204
DEC	1	-10911	1	-433
ANN	10388	-64438	30927	-2263

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

No Solar Radiation
Data Available

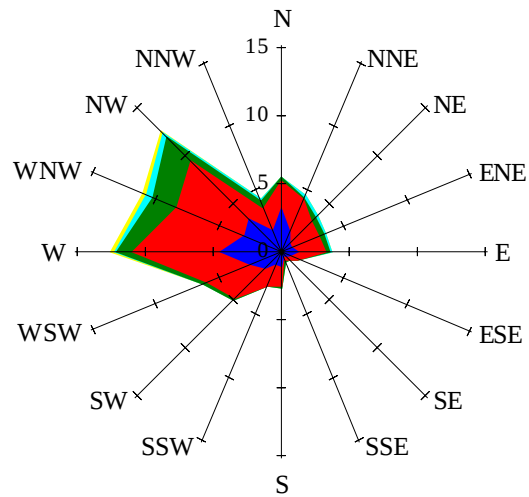


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

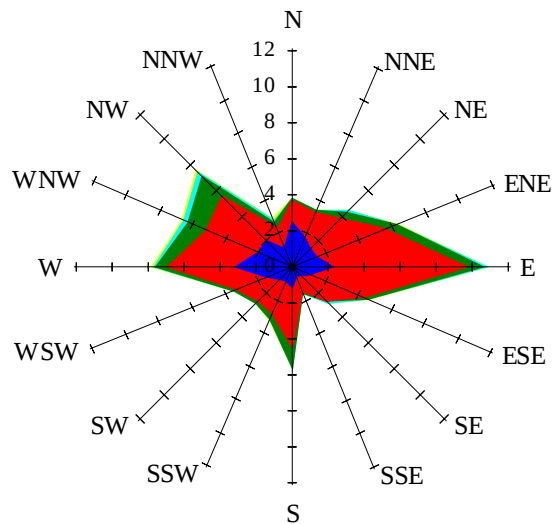
Labels of Percent Frequency on North Axis



Percent Calm = 20.32

Wind Summary - March, April, and May

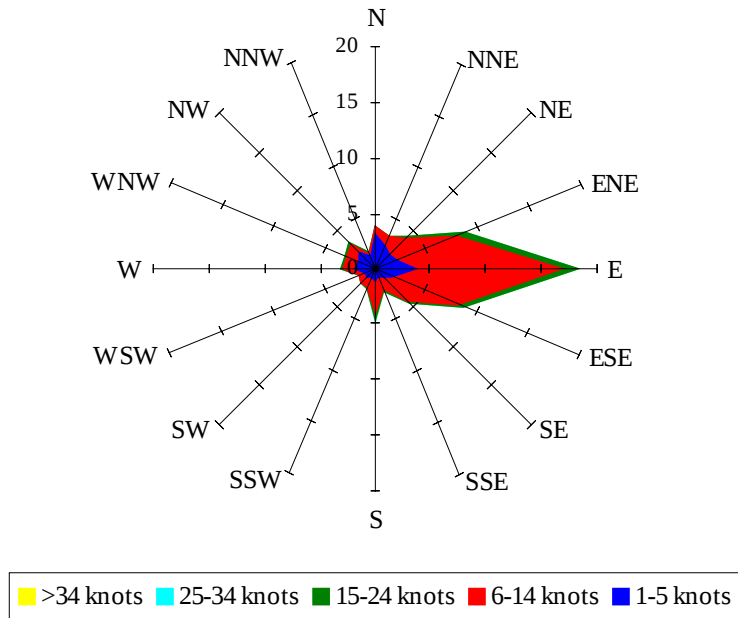
Labels of Percent Frequency on North Axis



Percent Calm = 23.04

Wind Summary - June, July, and August

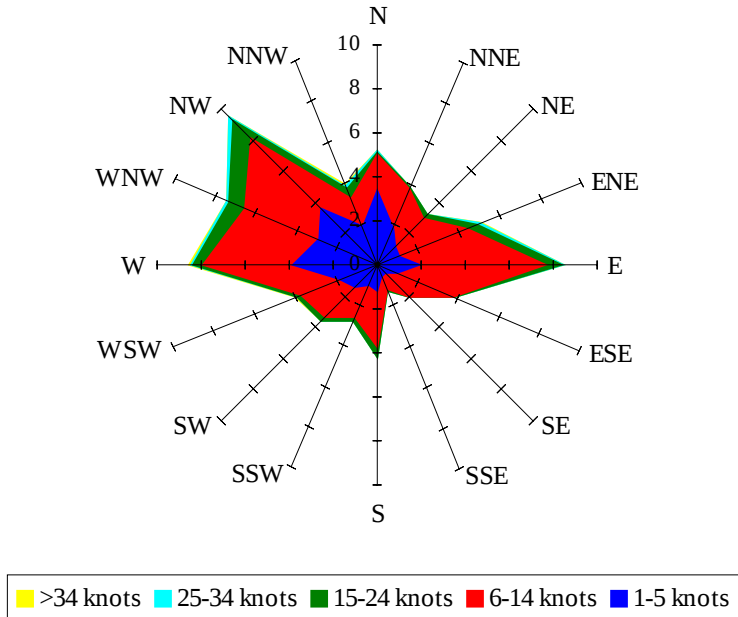
Labels of Percent Frequency on North Axis



Percent Calm = 25.83

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 23.11