

VALENCIA, SPAIN

Latitude = 39.50 N

Longitude = 0.47 W

Period of Record = 1973 to 1996

WMO No. 082840

Elevation = 203 feet

Average Pressure = 29.78 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	70	65	18.6	W
0.4% Occurrence	90	71	85	13.1	E
1.0% Occurrence	88	72	93	11.5	E
2.0% Occurrence	86	72	97	11.0	E
Mean Daily Range	17	-	-	-	-
97.5% Occurrence	39	37	29	4.6	W
99.0% Occurrence	36	35	26	4.3	W
99.6% Occurrence	34	32	24	4.1	W
Median of Extreme Lows	30	29	20	3.9	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	78	86	129	10.1	E
0.4% Occurrence	76	84	120	9.1	E
1.0% Occurrence	75	82	117	8.4	E
2.0% Occurrence	74	81	114	7.6	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	135	83	0.87	8.3	E
0.4% Occurrence	126	81	0.83	6.8	E
1.0% Occurrence	124	80	0.83	6.3	E
2.0% Occurrence	118	79	0.78	6.3	E
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		14	738	432	1723

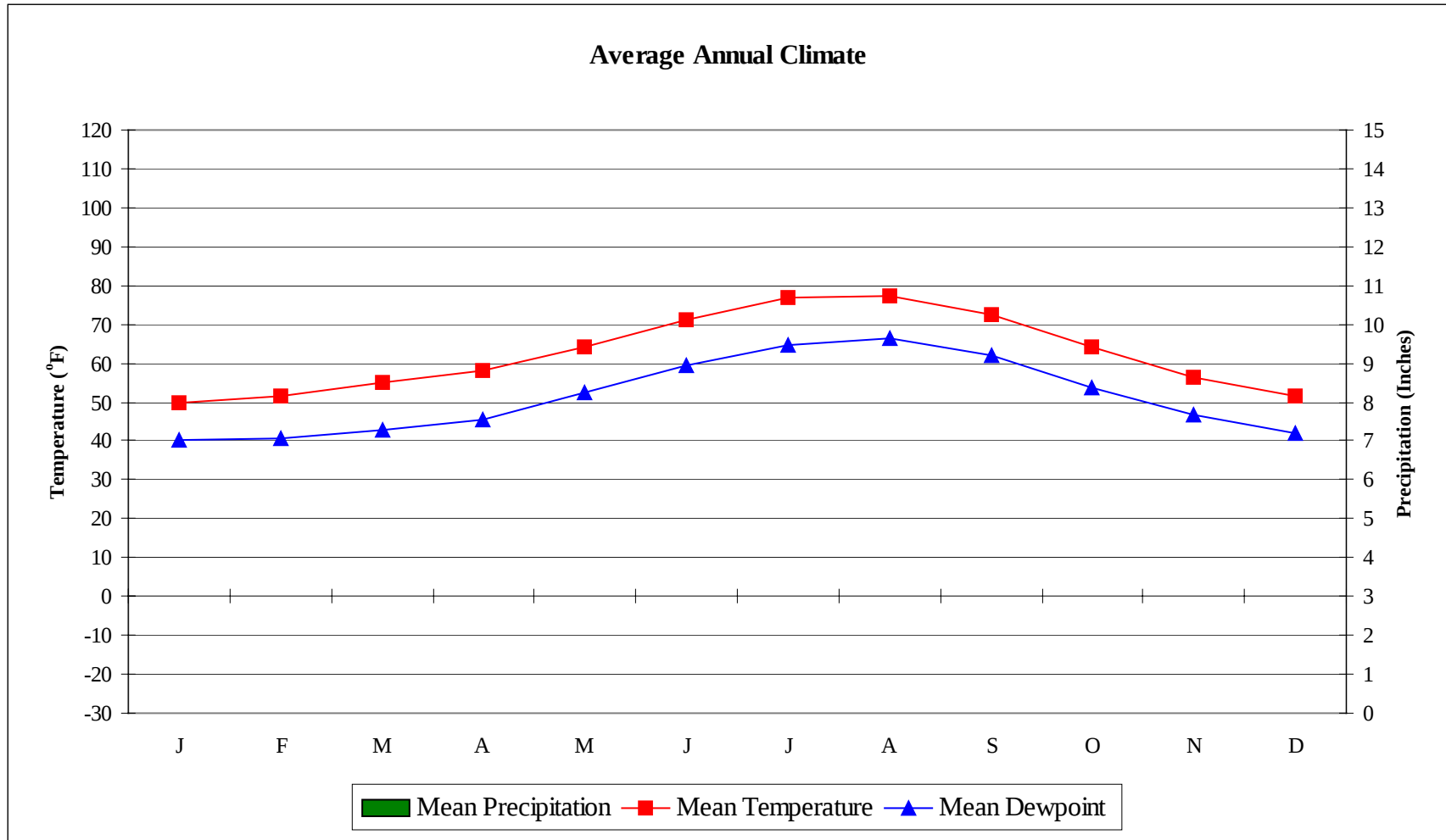
Other Site Data

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
8	N/A	N/A	2.2 + 0.7
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 (#)
64.8	N/A	N/A	2

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

VALENCIA, SPAIN

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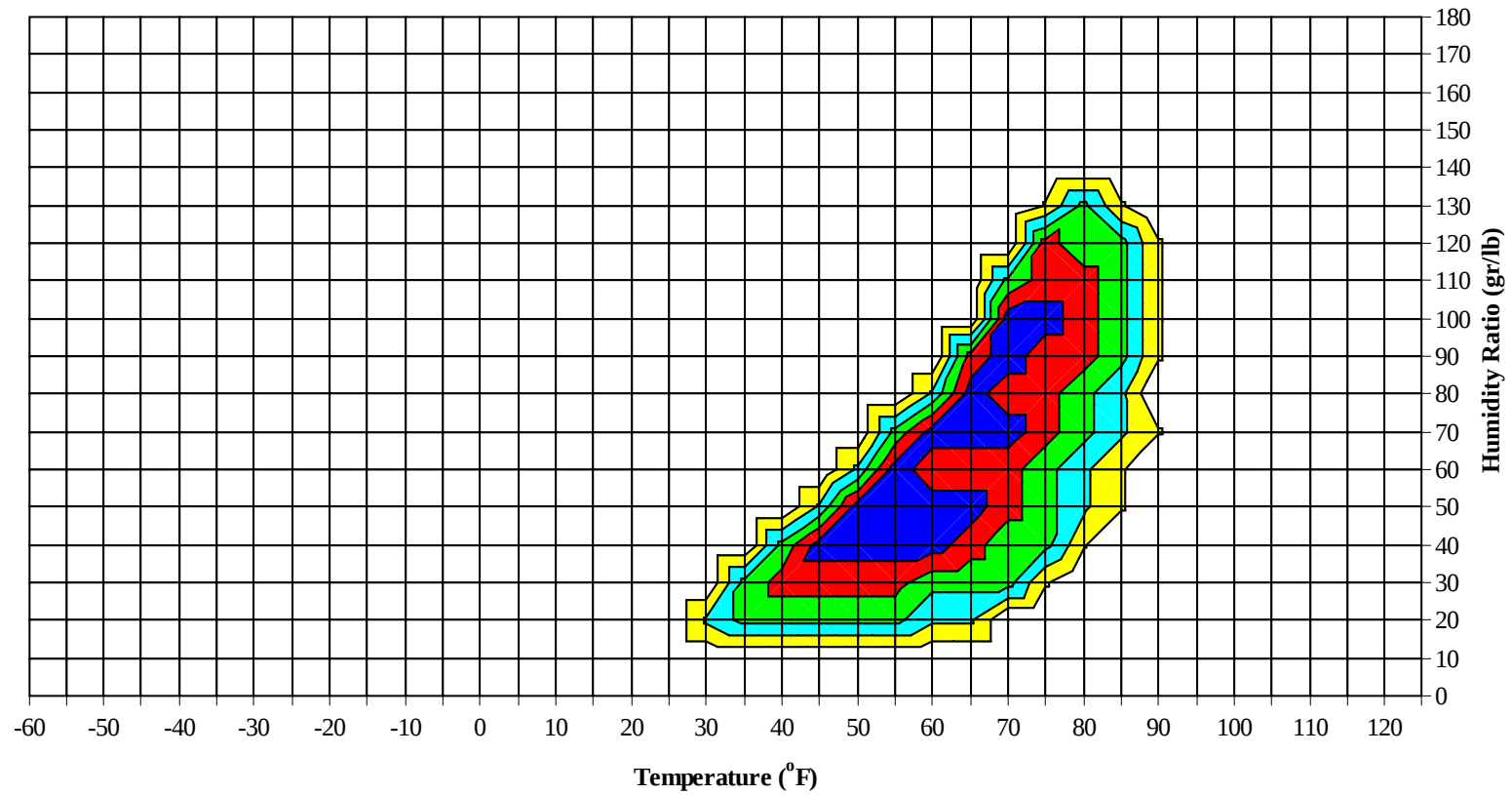


No Precipitation Data Available

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Long Term Psychrometric Summary

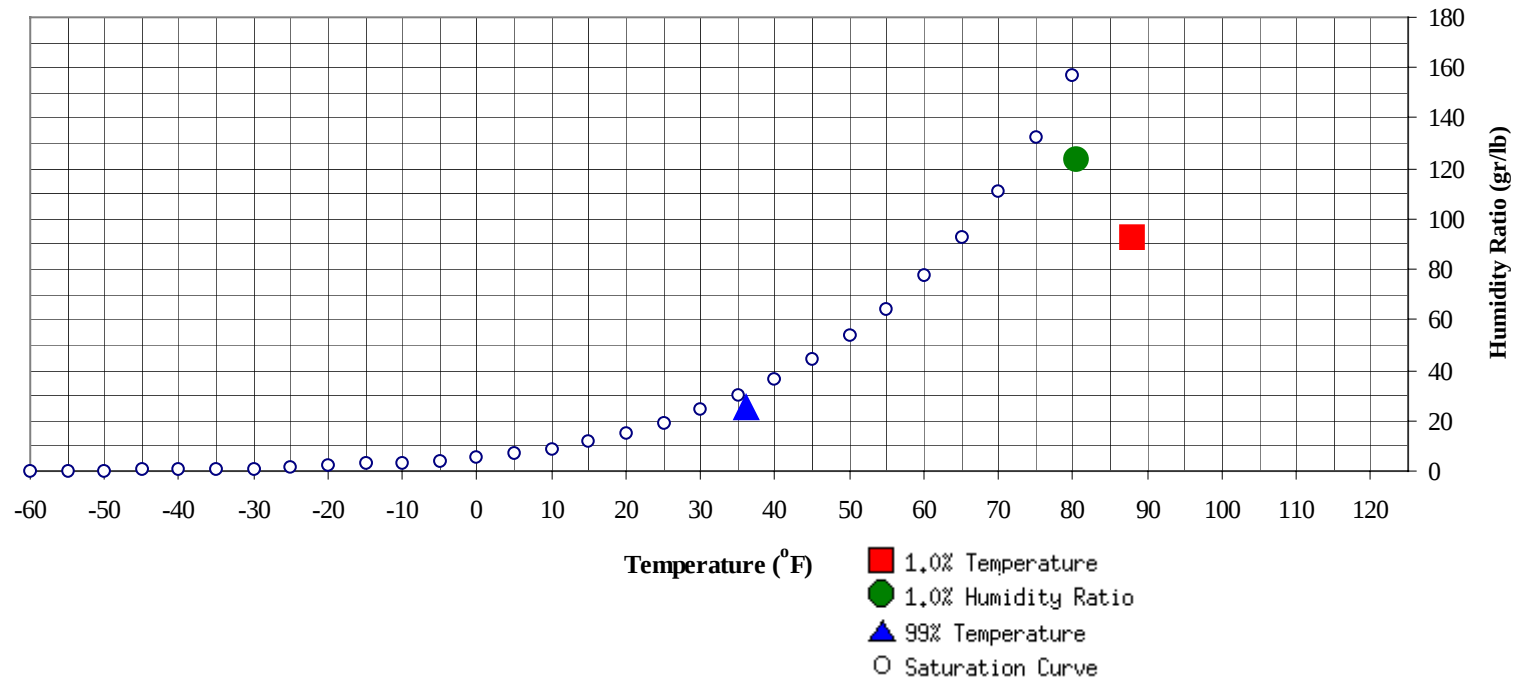


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

VALENCIA, SPAIN

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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	36	25.6	12.6		123.9	80.3	75.1	73.3	38.7

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	88	92.9	71.9	35.7

VALENCIA, SPAIN

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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													0	0	61.0
85 / 89													0	0	61.0
80 / 84							0	0	0	60.8		1	1	2	60.5
75 / 79		0	0	0	56.4		1	1	2	58.2		6	3	9	59.3
70 / 74		3	1	4	56.0		6	4	10	56.8	0	18	9	27	56.6
65 / 69	0	8	4	12	54.9	1	12	8	21	55.0	1	26	16	43	54.7
60 / 64	3	34	20	57	52.2	6	40	27	74	52.1	8	63	42	113	52.6
55 / 59	17	69	50	136	49.9	19	59	51	129	49.8	27	68	81	175	50.6
50 / 54	45	60	83	187	47.3	49	53	76	178	47.5	79	44	72	195	48.0
45 / 49	67	39	57	164	43.5	68	33	43	145	43.7	85	18	21	124	44.0
40 / 44	49	17	23	89	39.6	40	11	9	60	39.5	33	3	3	39	39.7
35 / 39	52	13	9	74	35.8	31	6	4	41	35.6	14	1	0	15	35.6
30 / 34	15	4	1	20	31.2	10	2	0	12	30.7	2	0		2	31.8
25 / 29	1	0	0	1	26.1	1	0		1	26.6					
20 / 24	0			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		
105 / 109															
100 / 104															
95 / 99															
90 / 94		0	0	0	60.3		0		0	65.8		0	0	0	66.6
85 / 89		0	0	0	60.7		1	1	2	64.7		11	3	14	67.9
80 / 84		1	1	2	59.9		7	2	9	63.6	0	49	23	72	67.6
75 / 79	0	7	4	11	58.9	0	39	14	53	62.0	3	89	60	152	66.1
70 / 74	0	28	10	38	57.0	2	78	47	127	60.8	38	61	91	190	64.6
65 / 69	1	46	24	71	55.2	12	57	59	129	59.2	78	18	44	140	62.7
60 / 64	10	77	71	158	53.9	66	46	84	197	57.4	94	9	17	120	59.6
55 / 59	59	55	91	204	52.1	108	16	35	159	54.1	26	0	1	27	55.4
50 / 54	102	22	34	159	48.8	48	3	5	56	49.5	1			1	50.4
45 / 49	55	3	5	63	44.2	11	0	0	11	44.9					
40 / 44	12	0	0	12	39.6	1			1	40.8					
35 / 39	2			2	36.0										
30 / 34															
25 / 29															
20 / 24															

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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	68.5										
100 / 104		0	0	0	68.5		0	0	0	69.1					
95 / 99		3	1	4	70.8		2	1	3	71.1		0	0	0	68.1
90 / 94		10	3	13	71.0	0	10	4	14	72.9		4	2	6	68.4
85 / 89	0	46	15	61	72.1	0	49	15	64	73.6		13	3	16	70.4
80 / 84	1	102	71	174	71.2	2	103	77	183	72.3	0	62	25	87	70.3
75 / 79	39	65	108	212	69.6	53	61	112	227	70.8	5	84	88	178	68.4
70 / 74	122	19	45	186	67.2	136	18	34	189	67.9	76	47	84	208	66.5
65 / 69	63	2	5	70	63.7	41	3	3	48	63.8	79	18	24	121	63.4
60 / 64	22	0	0	22	60.2	14	1	1	16	59.5	61	9	11	81	59.3
55 / 59	2			2	56.1	1		0	1	54.3	17	2	2	21	54.0
50 / 54											2	0	0	2	48.3
45 / 49											0			0	45.3
40 / 44															
35 / 39															
30 / 34															
25 / 29															
20 / 24															

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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		
105 / 109															
100 / 104															
95 / 99															
90 / 94		0	0	0	64.4										
85 / 89		1	0	1	67.1		0		0	63.3					
80 / 84		7	2	9	65.6		1	0	1	62.9					
75 / 79	0	35	15	51	64.4		4	1	5	61.5					
70 / 74	4	75	54	133	62.4	1	19	6	26	59.7		5	1	6	58.0
65 / 69	24	50	60	133	60.8	2	39	18	59	58.0	2	15	7	24	56.2
60 / 64	84	50	77	211	58.2	21	68	65	154	56.2	9	43	25	77	53.3
55 / 59	81	22	32	136	53.7	56	55	74	185	52.7	23	70	63	156	50.6
50 / 54	42	7	8	57	49.3	76	32	48	157	48.7	58	58	80	196	48.1
45 / 49	12	1	0	13	44.5	52	15	21	88	44.0	73	33	51	157	44.0
40 / 44	1	0		1	39.6	18	4	5	27	39.5	40	13	15	68	39.7
35 / 39	0			0	38.3	13	2	1	16	35.5	36	8	6	50	35.6
30 / 34						2	0		2	31.4	8	2	0	10	31.1
25 / 29											0			0	26.8
20 / 24															

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

Period of Record = 1973 to 1996

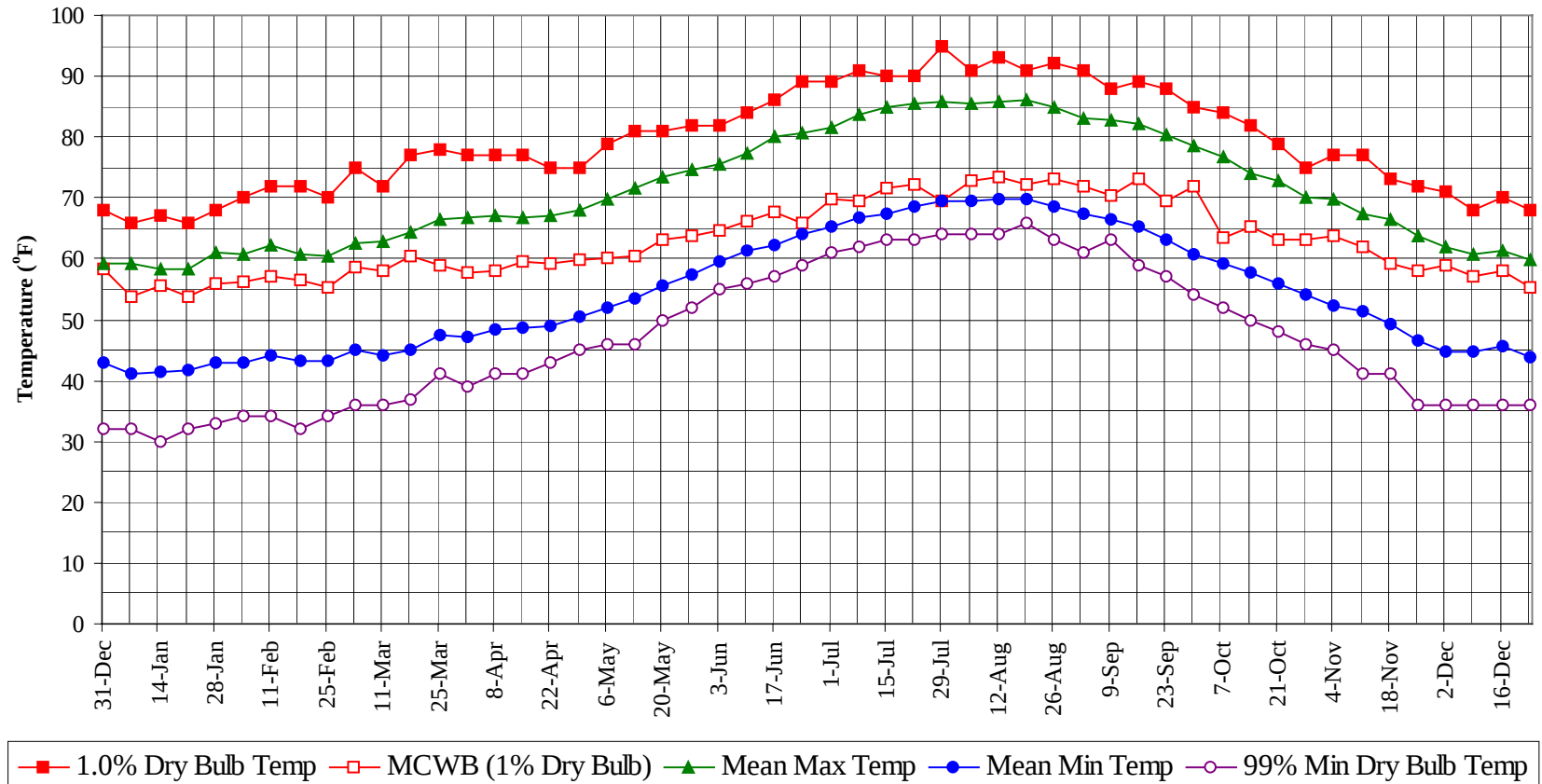
Annual Totals						
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)	
	01 To 08	09 To 16	17 To 00			
105 / 109	0			0	68.5	
100 / 104	1			1	2	68.8
95 / 99	5			2	7	70.5
90 / 94	0	26	10	36	71.0	
85 / 89	0	120	38	159	72.0	
80 / 84	3	335	201	539	70.6	
75 / 79	101	394	406	901	68.0	
70 / 74	378	376	386	1139	64.5	
65 / 69	303	295	270	869	60.3	
60 / 64	397	440	439	1276	56.2	
55 / 59	435	418	481	1334	51.9	
50 / 54	502	279	407	1189	48.2	
45 / 49	423	144	200	767	43.9	
40 / 44	193	48	55	297	39.6	
35 / 39	148	31	21	200	35.7	
30 / 34	35	8	1	44	31.1	
25 / 29	2	0	0	2	26.3	
20 / 24	0			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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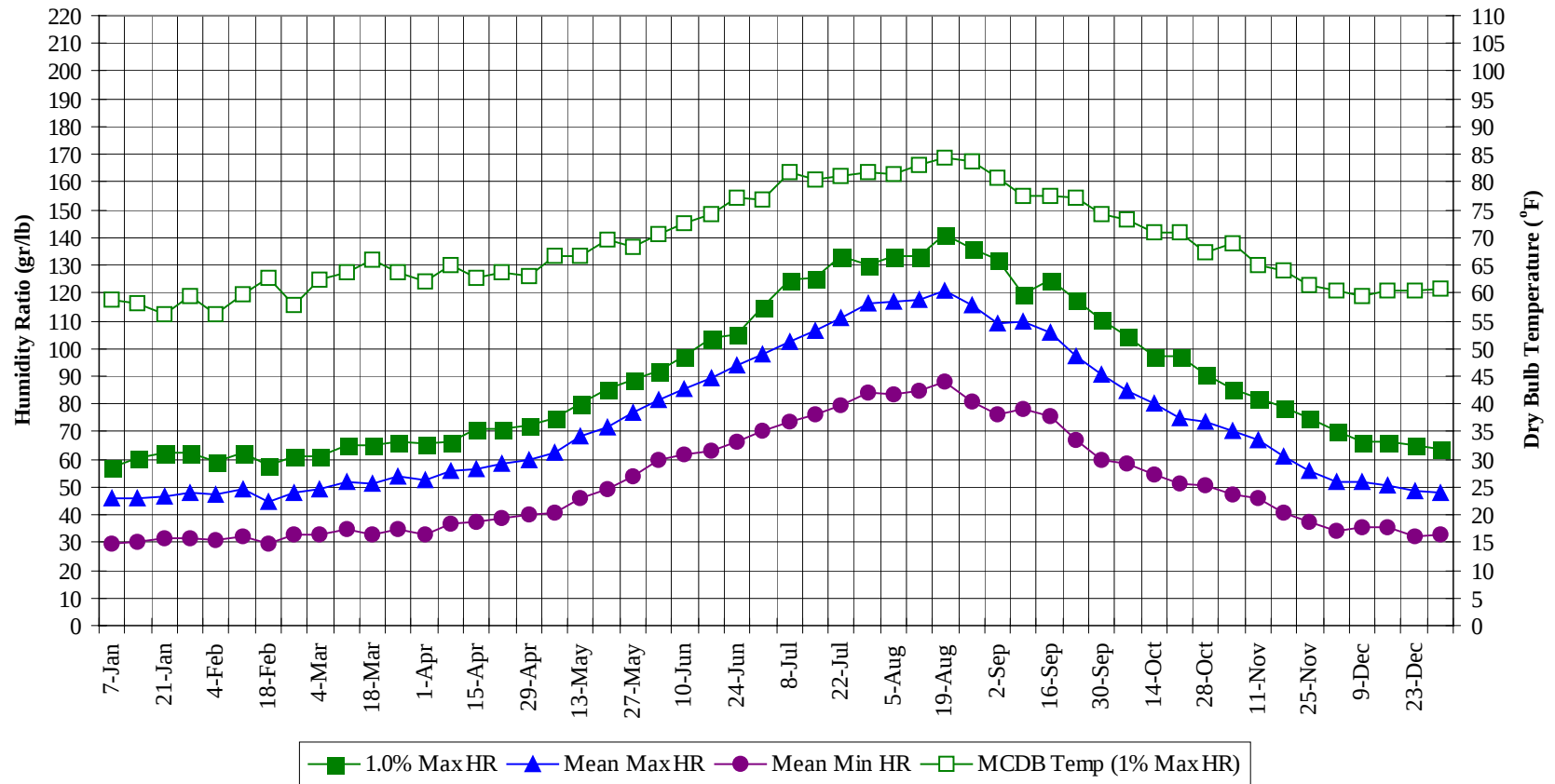
Annual Summary of Temperatures



VALENCIA, SPAIN

WMO No. 082840

Long Term Humidity and Dry Bulb Temperature Summary



VALENCIA, SPAIN

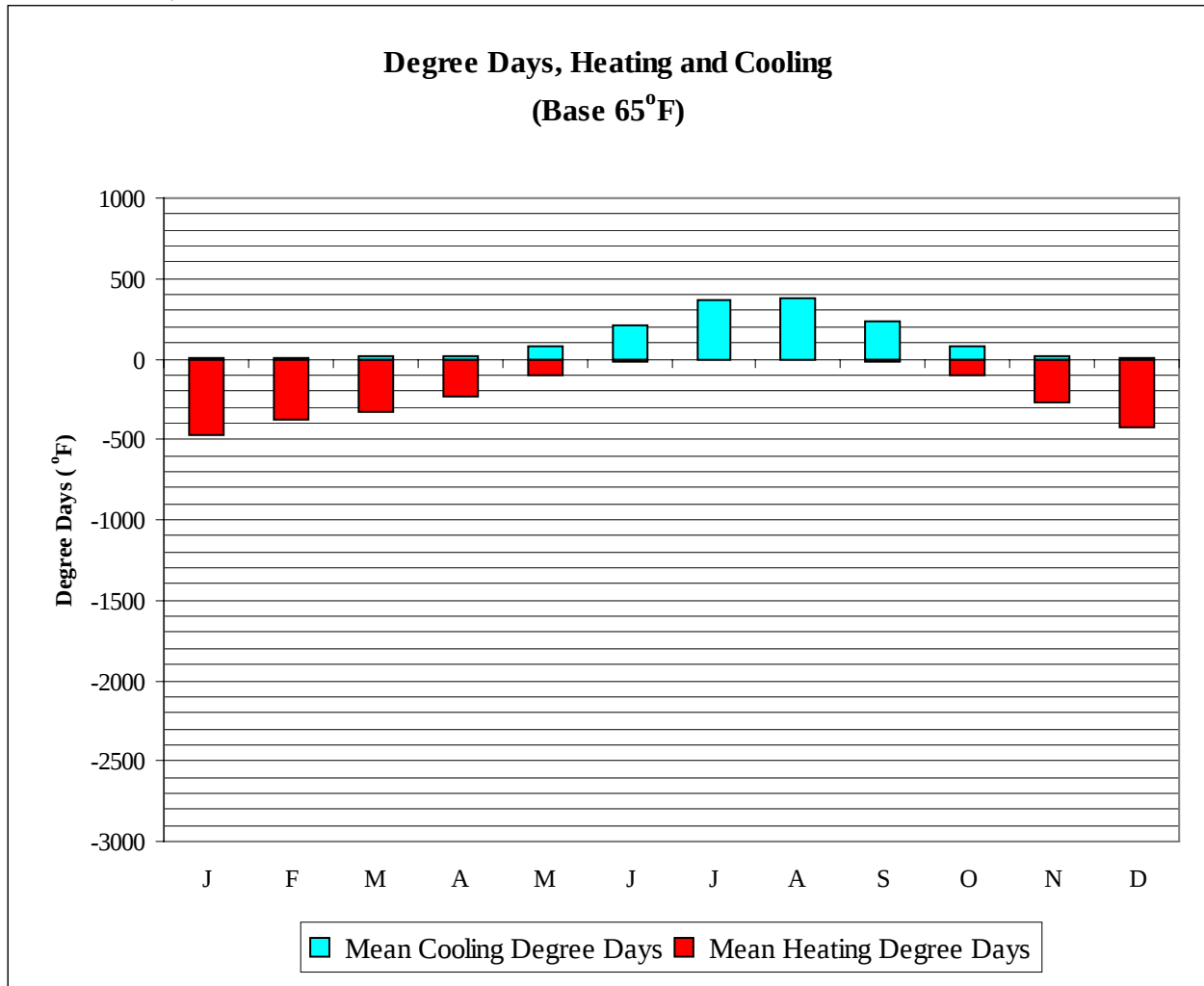
WMO No. 082840

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	66.0	53.9	59.1	41.1	32.0	57.4	58.6	46.2	29.7
14-Jan	67.0	55.7	58.4	41.2	30.0	60.2	58.2	46.3	30.0
21-Jan	66.0	53.7	58.2	41.8	32.0	62.3	56.2	46.6	31.4
28-Jan	68.0	55.9	61.0	43.0	33.0	62.3	59.5	47.6	31.4
4-Feb	70.0	56.2	60.8	42.9	34.0	58.8	56.2	47.6	30.8
11-Feb	72.0	57.0	62.2	44.0	34.0	62.3	59.9	49.2	32.3
18-Feb	72.0	56.6	60.8	43.1	32.0	58.1	62.7	45.0	29.4
25-Feb	70.0	55.4	60.5	43.3	34.0	60.9	57.7	48.1	32.6
4-Mar	75.0	58.5	62.5	44.9	36.0	60.9	62.5	49.0	32.6
11-Mar	72.0	58.0	62.7	44.2	36.0	65.1	63.8	51.8	35.0
18-Mar	77.0	60.4	64.4	45.0	37.0	65.1	65.9	51.0	32.7
25-Mar	78.0	58.8	66.5	47.6	41.0	66.5	63.6	54.0	35.1
1-Apr	77.0	57.7	66.8	47.3	39.0	65.8	61.9	52.3	32.8
8-Apr	77.0	58.0	66.9	48.4	41.0	66.5	64.9	55.9	36.9
15-Apr	77.0	59.4	66.7	48.7	41.0	70.7	62.7	56.4	37.4
22-Apr	75.0	59.3	67.0	49.1	43.0	70.7	63.9	58.5	38.8
29-Apr	75.0	59.7	68.0	50.5	45.0	72.1	63.1	59.9	39.8
6-May	79.0	60.2	69.9	51.8	46.0	74.9	66.8	62.2	41.0
13-May	81.0	60.4	71.6	53.3	46.0	79.8	66.5	68.0	46.0
20-May	81.0	63.0	73.3	55.7	50.0	85.4	69.5	71.9	49.4
27-May	82.0	63.7	74.6	57.5	52.0	88.9	68.4	76.6	54.0
3-Jun	82.0	64.7	75.7	59.5	55.0	91.7	70.5	81.4	59.5
10-Jun	84.0	66.1	77.4	61.2	56.0	97.3	72.7	85.6	61.5
17-Jun	86.0	67.7	80.2	62.3	57.0	103.6	74.3	89.1	63.2
24-Jun	89.0	66.0	80.7	64.0	59.0	105.0	77.2	94.0	66.6
1-Jul	89.0	69.8	81.5	65.1	61.0	114.8	77.0	97.9	70.6
8-Jul	91.0	69.6	83.8	66.7	62.0	124.6	81.7	102.7	73.4
15-Jul	90.0	71.5	85.0	67.3	63.0	125.3	80.4	106.7	76.1
22-Jul	90.0	72.3	85.4	68.6	63.0	133.0	81.3	111.2	79.2
29-Jul	95.0	69.6	85.8	69.4	64.0	130.2	81.7	116.2	84.1
5-Aug	91.0	72.9	85.6	69.4	64.0	133.0	81.5	116.9	83.6
12-Aug	93.0	73.4	85.9	69.7	64.0	133.0	83.0	117.7	84.9
19-Aug	91.0	72.2	86.0	69.8	66.0	141.4	84.3	120.6	88.2
26-Aug	92.0	73.2	85.0	68.7	63.0	135.8	83.6	115.9	81.0
2-Sep	91.0	71.8	83.2	67.3	61.0	132.3	80.7	108.9	76.4
9-Sep	88.0	70.4	82.8	66.5	63.0	119.7	77.5	109.4	78.0
16-Sep	89.0	73.0	82.2	65.4	59.0	124.6	77.4	105.6	75.6
23-Sep	88.0	69.6	80.3	63.2	57.0	117.6	77.1	96.9	67.2
30-Sep	85.0	72.0	78.7	60.8	54.0	110.6	74.2	90.8	59.7
7-Oct	84.0	63.6	76.9	59.2	52.0	104.3	73.3	84.9	58.4
14-Oct	82.0	65.2	73.9	57.9	50.0	97.3	71.1	80.4	54.3
21-Oct	79.0	63.3	72.8	56.0	48.0	97.3	70.9	75.2	50.9
28-Oct	75.0	63.2	70.0	54.2	46.0	90.3	67.3	73.5	50.8
4-Nov	77.0	63.7	69.8	52.3	45.0	85.4	68.8	70.4	47.4
11-Nov	77.0	61.8	67.2	51.3	41.0	81.9	64.9	66.8	46.1
18-Nov	73.0	59.3	66.3	49.2	41.0	79.1	64.1	61.1	40.8
25-Nov	72.0	58.0	63.6	46.4	36.0	74.9	61.5	55.8	37.4
2-Dec	71.0	59.0	62.1	44.8	36.0	70.0	60.5	51.9	34.1
9-Dec	68.0	57.2	60.8	44.8	36.0	66.5	59.4	52.1	35.5
16-Dec	70.0	58.1	61.4	45.6	36.0	66.5	60.5	50.9	35.3
23-Dec	68.0	55.2	59.7	43.9	36.0	65.1	60.4	48.7	32.2
31-Dec	68.0	58.4	59.2	42.8	32.0	63.7	60.8	48.1	32.6

VALENCIA, SPAIN

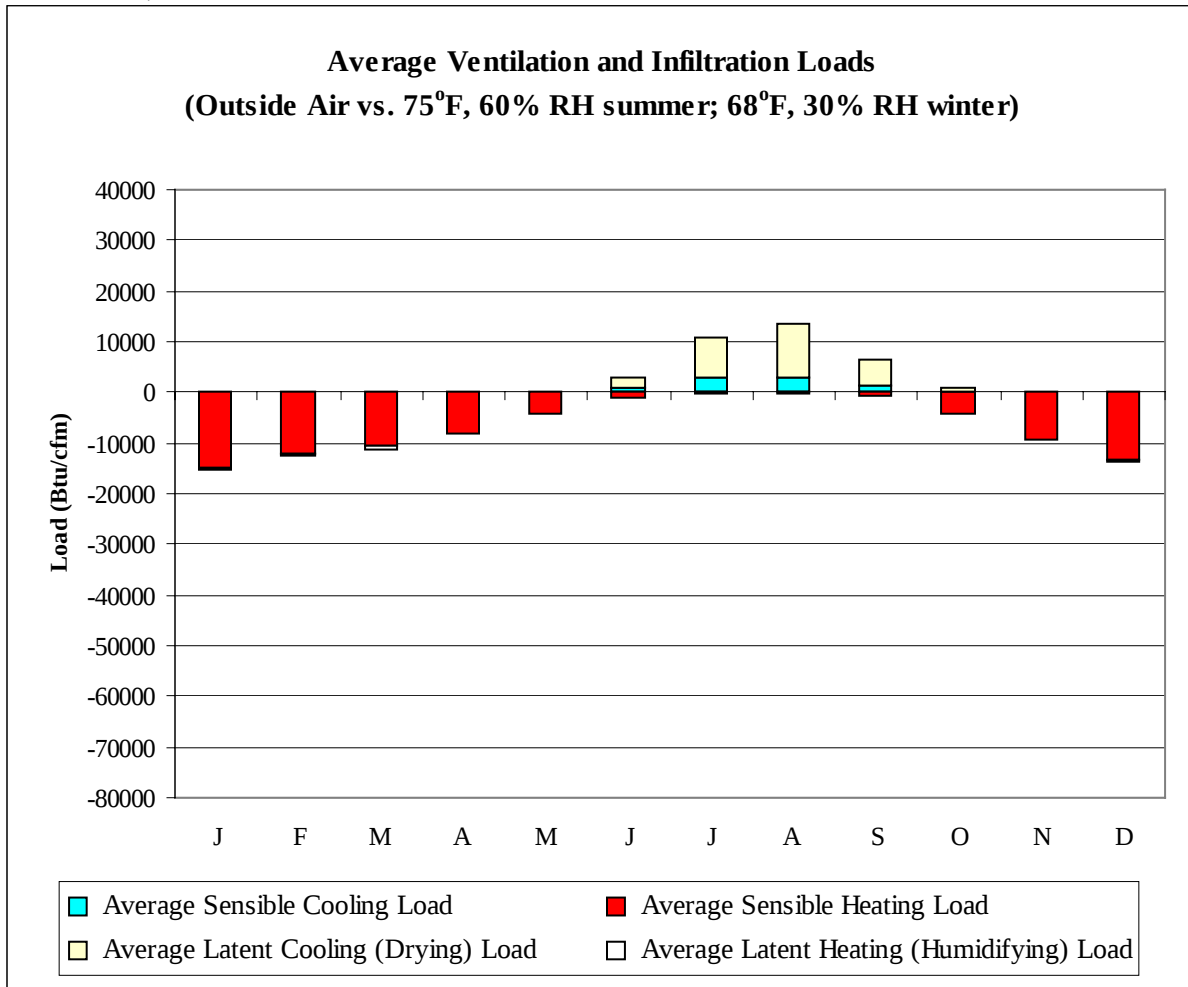
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	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	2	475
FEB	5	381
MAR	16	328
APR	22	229
MAY	78	106
JUN	206	18
JUL	365	2
AUG	380	1
SEP	236	14
OCT	78	102
NOV	14	271
DEC	3	421
ANN	1405	2348

VALENCIA, SPAIN

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	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	-14683	0	-690
FEB	5	-11987	1	-618
MAR	31	-10697	0	-463
APR	36	-7982	1	-273
MAY	164	-4270	150	-33
JUN	1020	-1072	2026	-1
JUL	2844	-184	7879	0
AUG	2973	-119	10706	0
SEP	1263	-820	5359	-5
OCT	169	-4150	767	-29
NOV	16	-9152	29	-235
DEC	0	-13261	0	-497
ANN	8521	-78377	26918	-2844

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

No Solar Radiation
Data Available

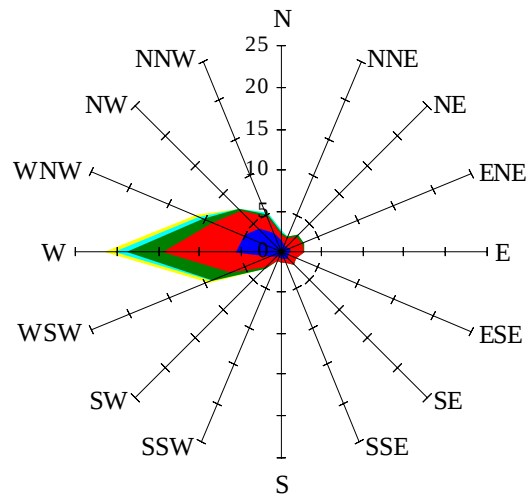


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

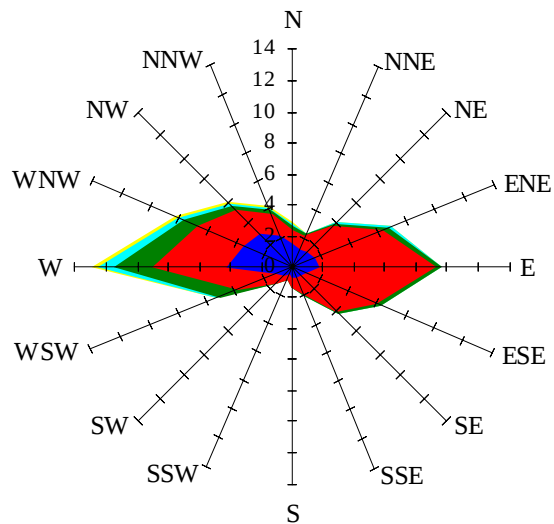
Labels of Percent Frequency on North Axis



Percent Calm = 23.25

Wind Summary - March, April, and May

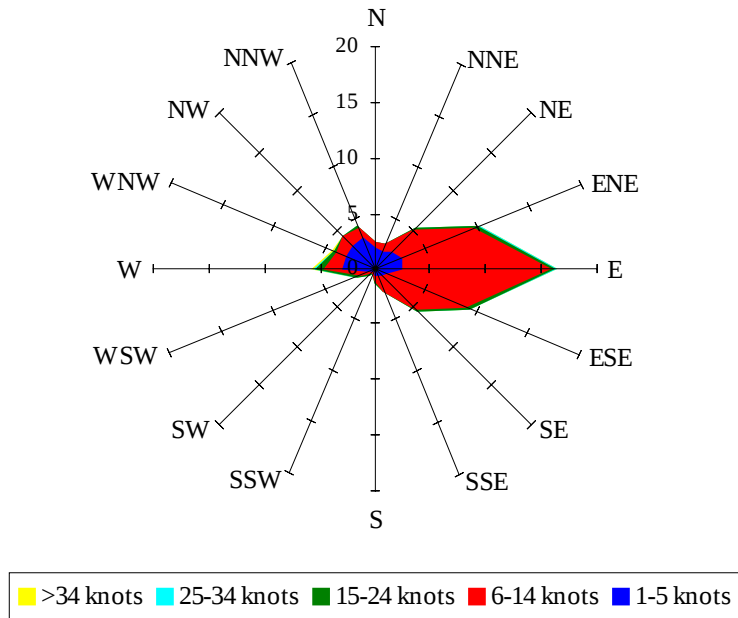
Labels of Percent Frequency on North Axis



Percent Calm = 22.68

Wind Summary - June, July, and August

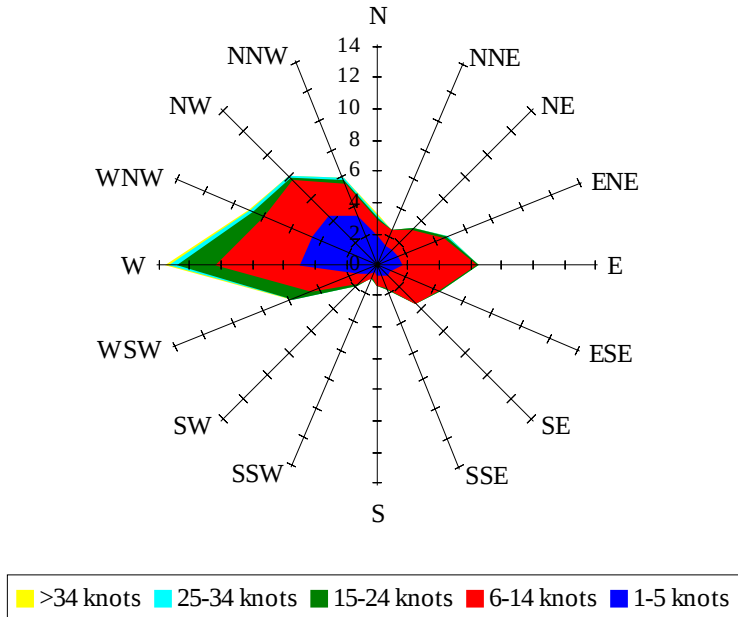
Labels of Percent Frequency on North Axis



Percent Calm = 25.18

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 24.91