

CORDOBA, SPAIN

Latitude = 37.85 N

Longitude = 4.83 W

Period of Record = 1973 to 1996

WMO No. 084100

Elevation = 302 feet

Average Pressure = 29.70 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	108	74	71	7.7	W
0.4% Occurrence	104	72	67	8.4	W
1.0% Occurrence	100	71	68	8.7	W
2.0% Occurrence	99	71	69	8.7	W
Mean Daily Range	23	-	-	-	-
97.5% Occurrence	37	35	28	2.3	E
99.0% Occurrence	34	33	26	1.8	E
99.6% Occurrence	30	29	21	1.1	E
Median of Extreme Lows	27	27	19	1.0	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	78	98	109	9.4	W
0.4% Occurrence	76	97	101	9.3	W
1.0% Occurrence	74	96	90	8.4	W
2.0% Occurrence	72	93	83	8.1	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	118	88	0.78	6.7	W
0.4% Occurrence	105	88	0.69	9.8	W
1.0% Occurrence	98	81	0.65	6.9	W
2.0% Occurrence	92	80	0.61	7.7	W
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		533	1692	162	1298

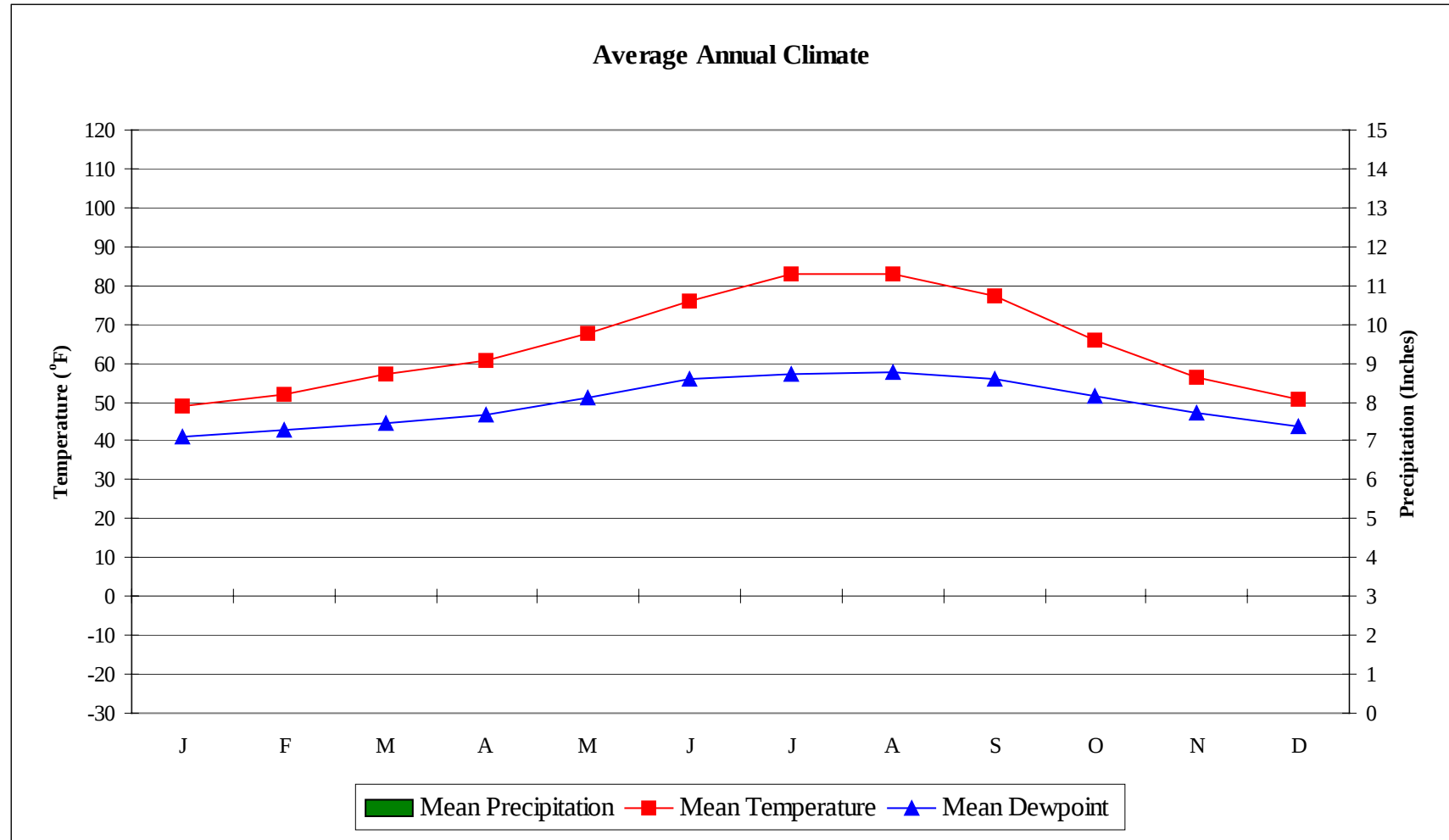
Other Site Data

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	0.2 + 1.7
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 (#)
67.5	N/A	N/A	8

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

CORDOBA, SPAIN

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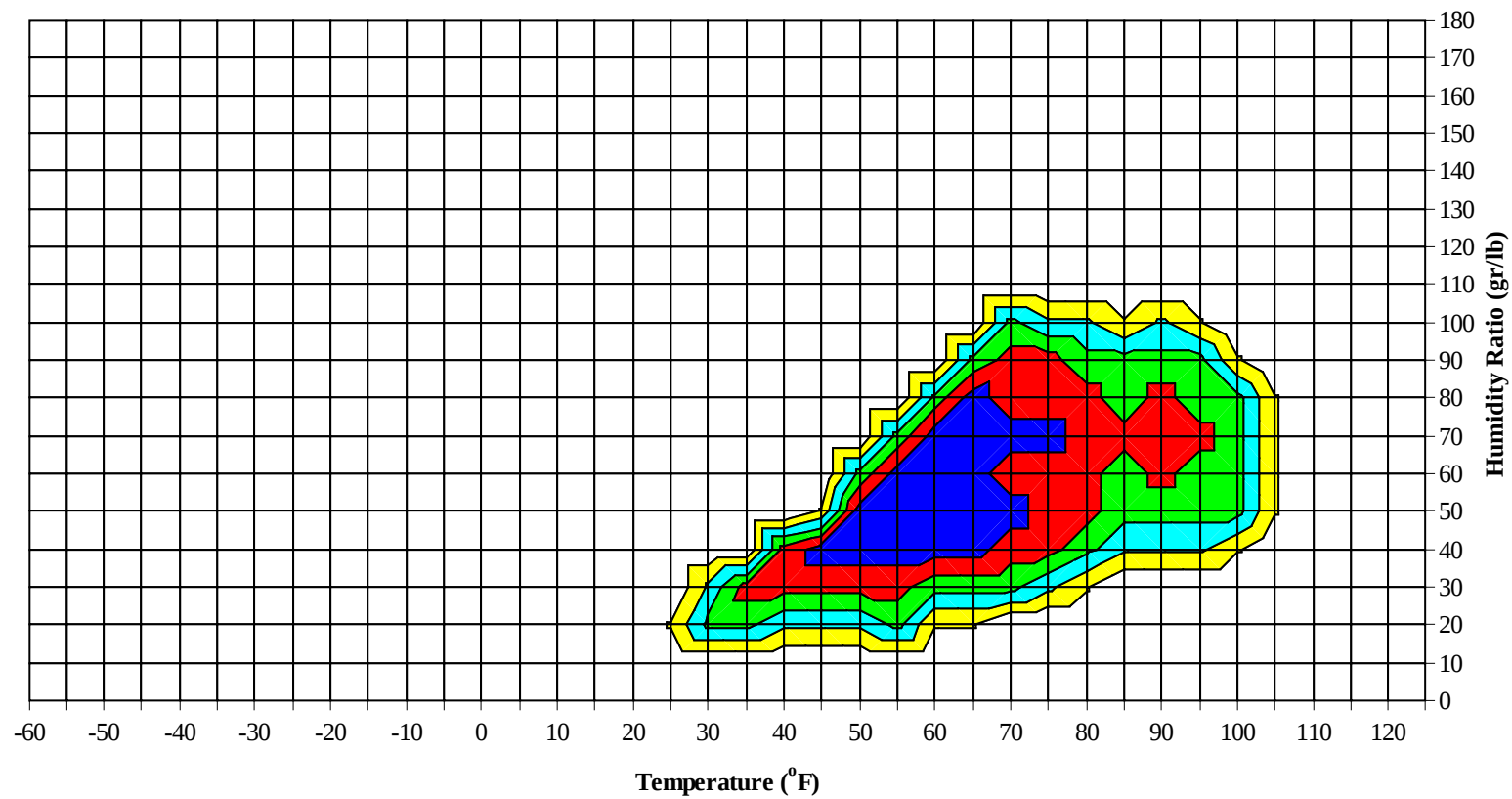


No Precipitation Data Available

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Long Term Psychrometric Summary

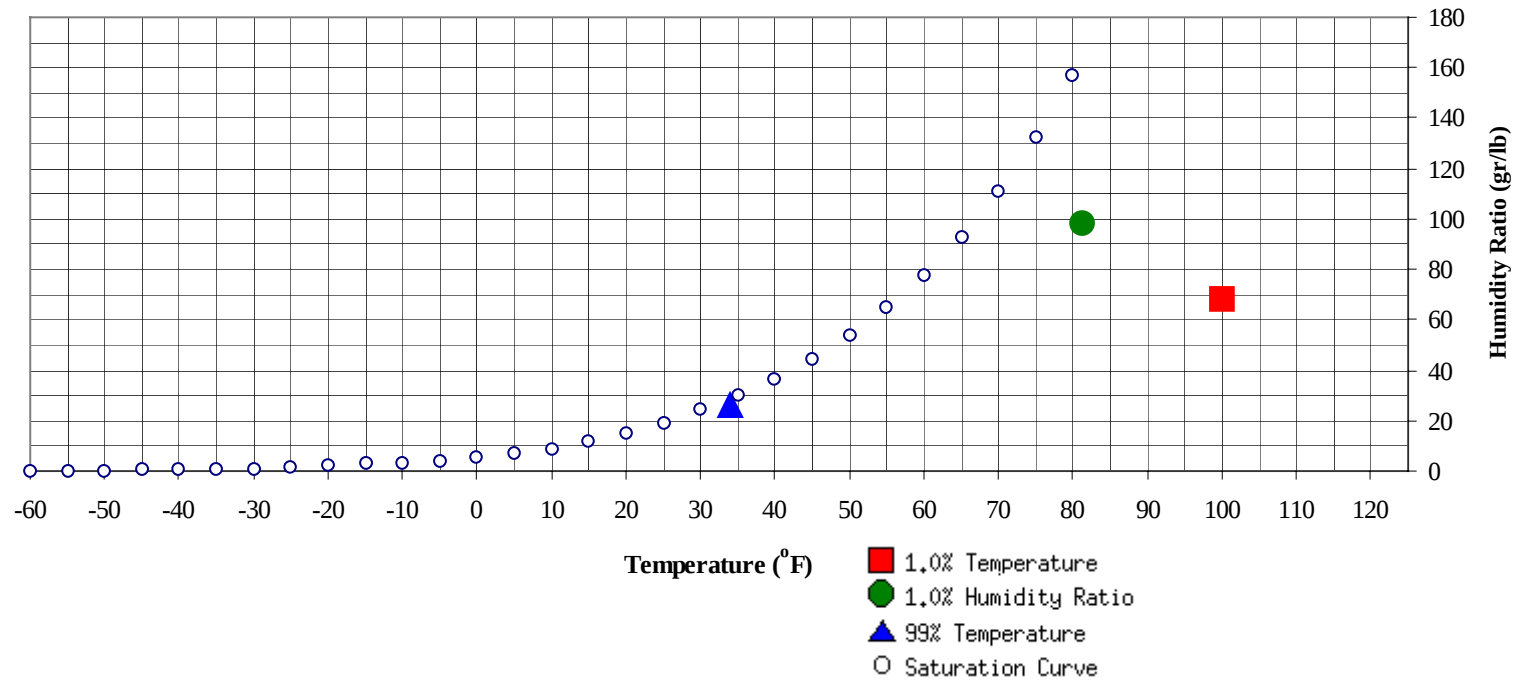


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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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	34	25.8	12.1		98	81.3	70.8	66.2	34.9

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	100	68.3	71.2	34.8

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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		
115 / 119															
110 / 114															
105 / 109															
100 / 104															
95 / 99															
90 / 94															
85 / 89													0	0	61.0
80 / 84											0	1	4	5	62.7
75 / 79			0	0			0	1	1	61.7	0	8	26	35	60.0
70 / 74		0	1	1	55.4	0	2	10	11	57.6	0	18	39	57	57.8
65 / 69		2	3	5	54.9	0	8	19	28	55.4	0	27	40	67	55.5
60 / 64	2	17	36	55	53.3	0	30	62	92	53.5	2	48	56	106	53.3
55 / 59	8	53	85	146	51.1	12	53	62	127	51.3	19	59	45	124	51.3
50 / 54	34	66	73	173	48.3	38	57	41	137	48.3	62	48	28	137	48.7
45 / 49	49	47	32	128	44.1	63	37	19	119	44.4	83	26	8	117	44.4
40 / 44	44	25	13	81	40.1	49	18	7	74	40.4	52	8	1	61	40.4
35 / 39	62	24	4	90	35.9	41	14	1	56	35.9	24	4	0	28	36.5
30 / 34	41	12	0	53	31.5	18	4	0	22	31.7	6	1		8	32.1
25 / 29	8	2	0	10	26.3	3	1		4	26.8	0	0		0	24.5
20 / 24	2	1		2	22.1	0	0		0	22.8					
15 / 19															

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		
115 / 119															
110 / 114													0	0	76.0
105 / 109												0	1	1	73.4
100 / 104												2	7	9	71.4
95 / 99							1	3	3	69.5		9	29	38	69.7
90 / 94		0	0	0	62.5		5	15	20	66.9		23	44	67	68.2
85 / 89		1	4	5	62.8		10	22	31	65.7		26	37	64	66.9
80 / 84		5	16	21	61.6		23	42	65	63.8	1	42	45	89	65.8
75 / 79		15	32	47	59.7	0	38	51	89	61.5	6	48	39	92	63.7
70 / 74	0	30	41	72	57.7	1	50	44	96	59.7	24	45	21	90	62.6
65 / 69	1	35	39	75	56.2	9	41	28	78	58.2	55	25	9	90	61.4
60 / 64	6	57	51	114	54.3	47	48	30	124	56.8	96	18	5	119	59.1
55 / 59	44	51	37	133	52.6	92	27	12	131	54.0	48	3	1	52	55.2
50 / 54	91	34	16	142	49.5	70	6	1	78	50.1	8	0	0	8	50.9
45 / 49	66	8	4	79	45.2	25	1		26	45.4	1		0	1	46.6
40 / 44	22	1		23	40.7	3			3	41.8	0		0	0	
35 / 39	9	1		9	36.4						0		0	0	
30 / 34	0			0	32.5						0		0	0	
25 / 29											0		0	0	
20 / 24											0		0	0	18.0
15 / 19											0			0	17.0

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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		
115 / 119		0		0	82.0								0	0	76.0
110 / 114		1	1	2	76.6		0	0	0	74.8			0	0	
105 / 109		3	8	11	72.9	0	2	7	9	73.3		0	0	0	73.2
100 / 104		13	41	54	71.4	0	10	33	44	72.0		1	7	8	69.6
95 / 99		30	69	98	70.2	0	29	76	105	70.3		9	32	41	70.0
90 / 94		41	51	92	68.8	0	45	56	100	69.5		26	48	74	69.0
85 / 89	0	35	29	64	67.8	1	34	25	60	68.3		28	43	71	67.7
80 / 84	6	47	30	83	66.7	8	49	32	89	67.0	1	47	48	97	66.0
75 / 79	28	41	13	83	65.2	29	41	15	85	65.5	11	49	33	94	64.3
70 / 74	65	27	3	94	63.8	70	29	4	103	64.0	40	39	19	98	63.0
65 / 69	78	9	1	87	61.8	77	7	1	86	62.0	69	21	7	96	61.4
60 / 64	61	2	1	64	59.0	52	2	0	54	58.8	69	14	3	85	58.3
55 / 59	11		0	11	55.3	8	1	0	9	54.2	33	4	1	38	53.6
50 / 54	0		0	0	50.3	1			1	50.8	13	1	0	14	48.9
45 / 49											3			3	44.9
40 / 44											0			0	39.0
35 / 39											0			0	
30 / 34											0			0	
25 / 29															
20 / 24															
15 / 19															

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		
115 / 119															
110 / 114															
105 / 109															
100 / 104															
95 / 99		0	0	0	64.5										
90 / 94		2	7	9	66.3										
85 / 89	0	6	13	19	65.6										
80 / 84	0	17	32	49	64.2	0	1	0	1	61.5					
75 / 79	0	34	47	80	62.1	0	4	6	9	60.2	0		0	0	61.0
70 / 74	4	46	54	104	60.5	0	16	24	40	59.0	0	1	1	2	59.7
65 / 69	13	39	34	85	59.2	2	26	34	62	57.8	0	6	6	12	57.9
60 / 64	58	53	38	148	57.4	11	53	67	132	55.7	3	30	42	75	56.1
55 / 59	72	33	20	125	53.7	42	58	62	162	53.0	26	64	85	175	52.4
50 / 54	62	15	4	81	49.5	58	42	32	133	49.1	41	60	67	169	48.7
45 / 49	30	4	0	34	44.8	63	25	13	100	44.8	51	44	33	128	44.5
40 / 44	7	1	0	8	40.3	34	8	3	45	40.6	48	18	11	77	40.3
35 / 39	1	0		1	36.2	23	5	0	28	36.3	48	17	3	67	36.0
30 / 34						6	1		8	31.9	23	7	0	30	31.9
25 / 29						0	0		0	28.0	8	1		9	26.4
20 / 24						0			0	21.0	0	0		0	21.4
15 / 19											0	0		0	17.0

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

Period of Record = 1973 to 1996

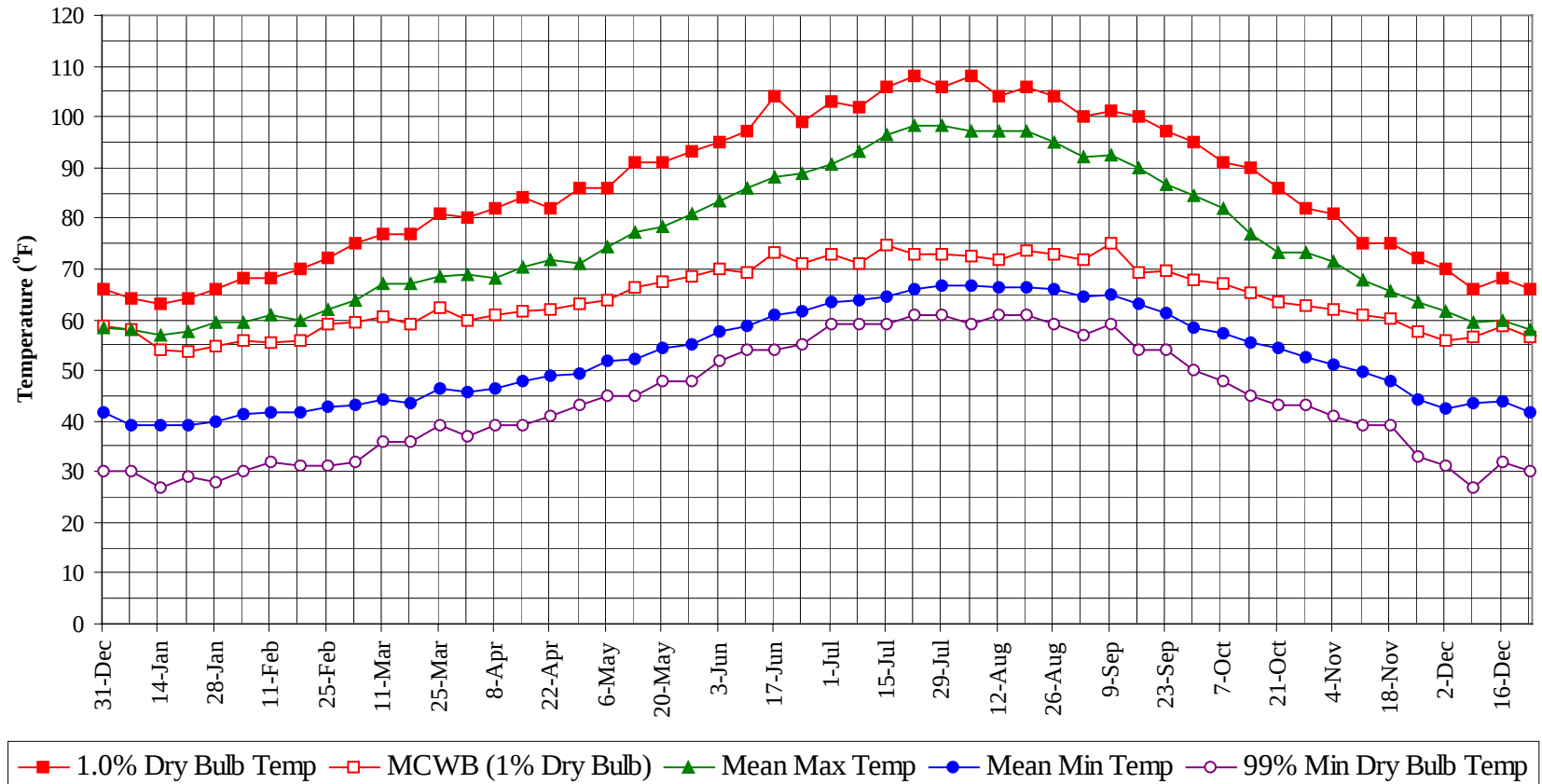
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
115 / 119		0	0	0	79.0
110 / 114		1	1	2	76.1
105 / 109		5	18	23	73.1
100 / 104	0	26	90	116	71.5
95 / 99	0	75	215	290	70.1
90 / 94	0	137	224	361	68.8
85 / 89	2	136	177	314	67.3
80 / 84	18	226	256	499	65.7
75 / 79	80	271	268	618	63.2
70 / 74	220	298	264	782	61.2
65 / 69	321	244	220	786	59.0
60 / 64	427	375	385	1187	56.1
55 / 59	420	413	400	1232	52.5
50 / 54	471	338	254	1063	48.9
45 / 49	415	197	103	716	44.5
40 / 44	244	82	34	360	40.3
35 / 39	192	66	10	267	36.0
30 / 34	89	26	1	117	31.7
25 / 29	18	4	0	22	26.4
20 / 24	3	1	0	4	22.0
15 / 19	0	0		0	17.0

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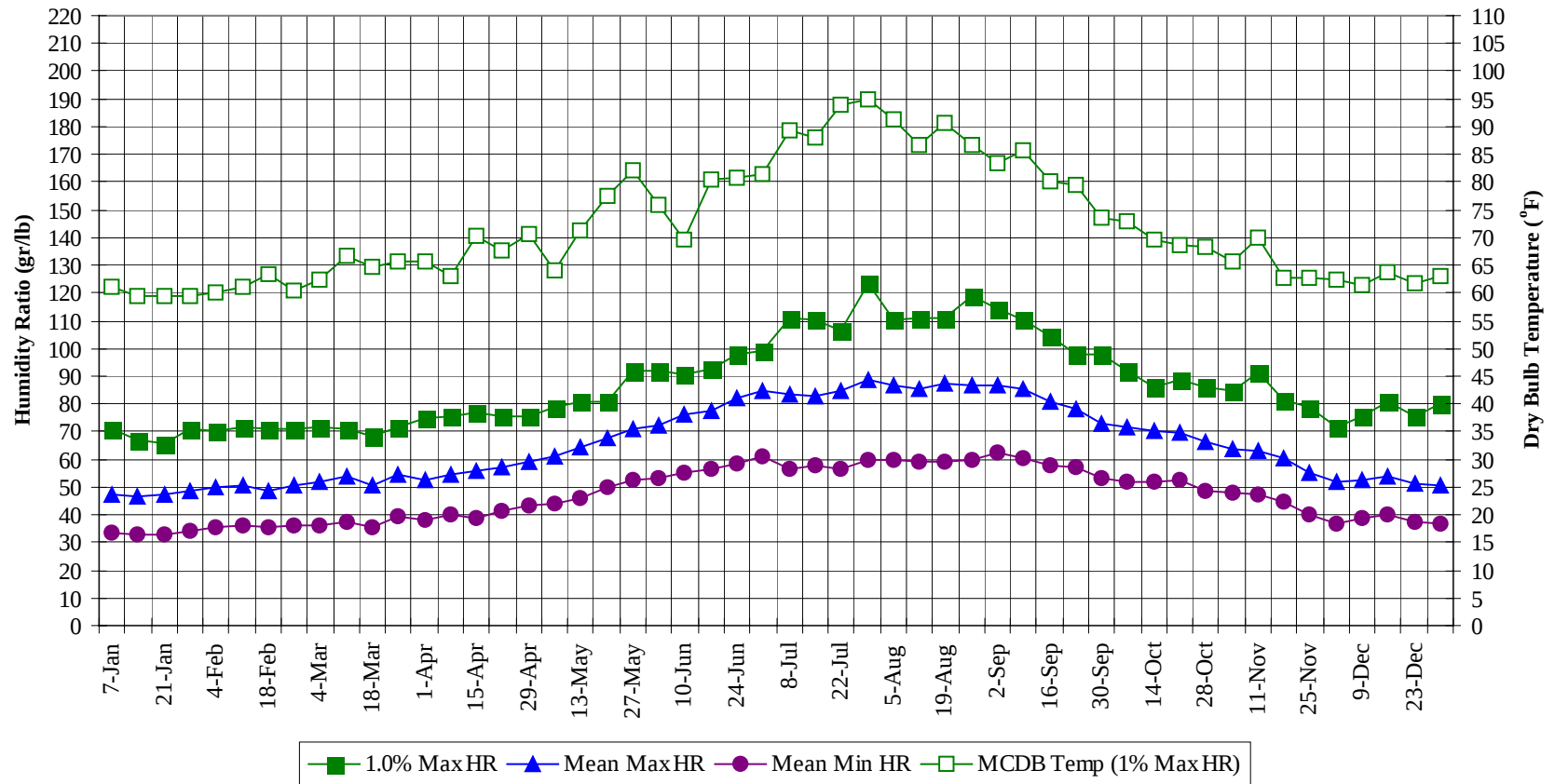
Annual Summary of Temperatures



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Long Term Humidity and Dry Bulb Temperature Summary

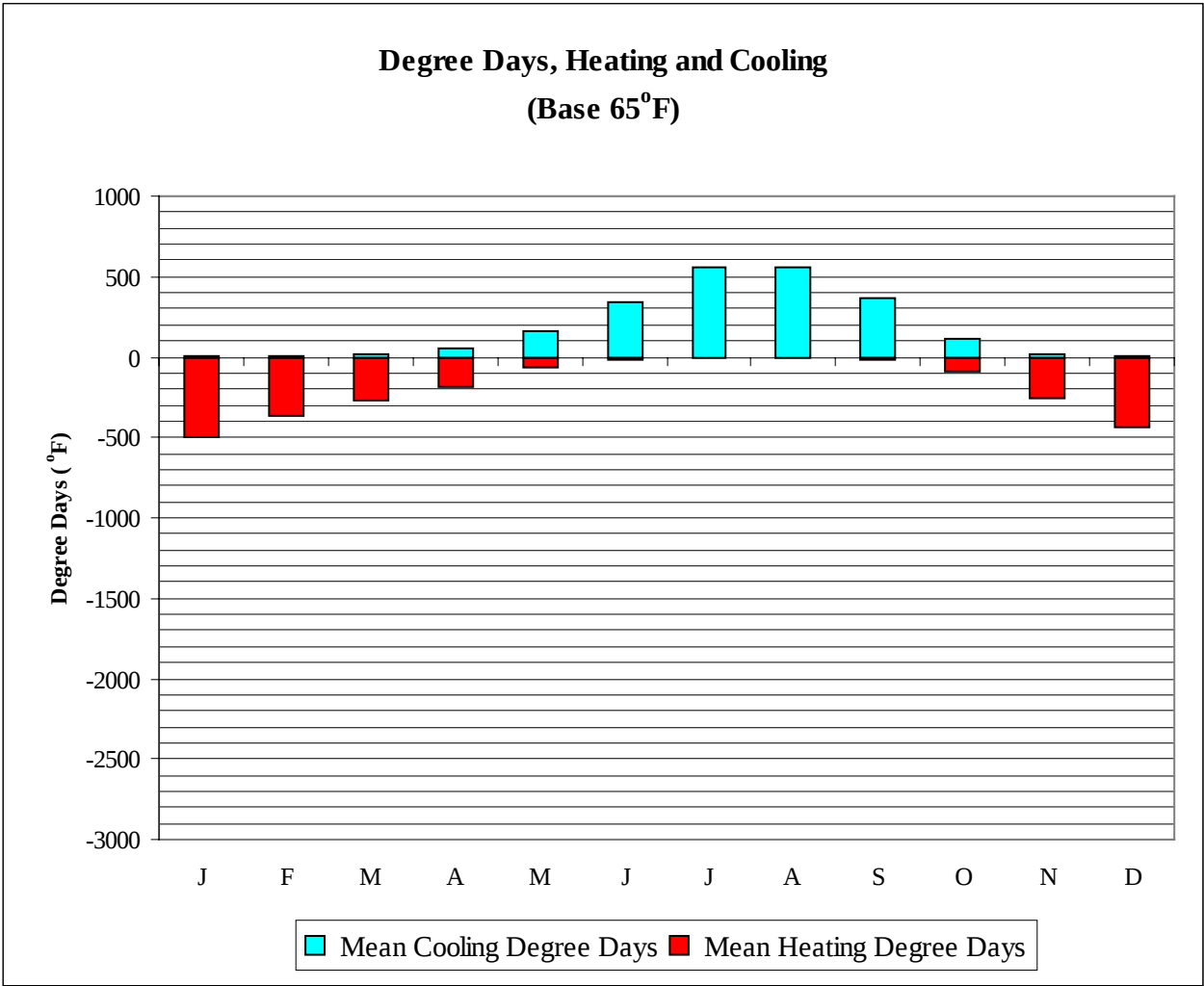


CORDOBA, SPAIN

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Long Term Dry Bulb Temperature and Humidity Summary

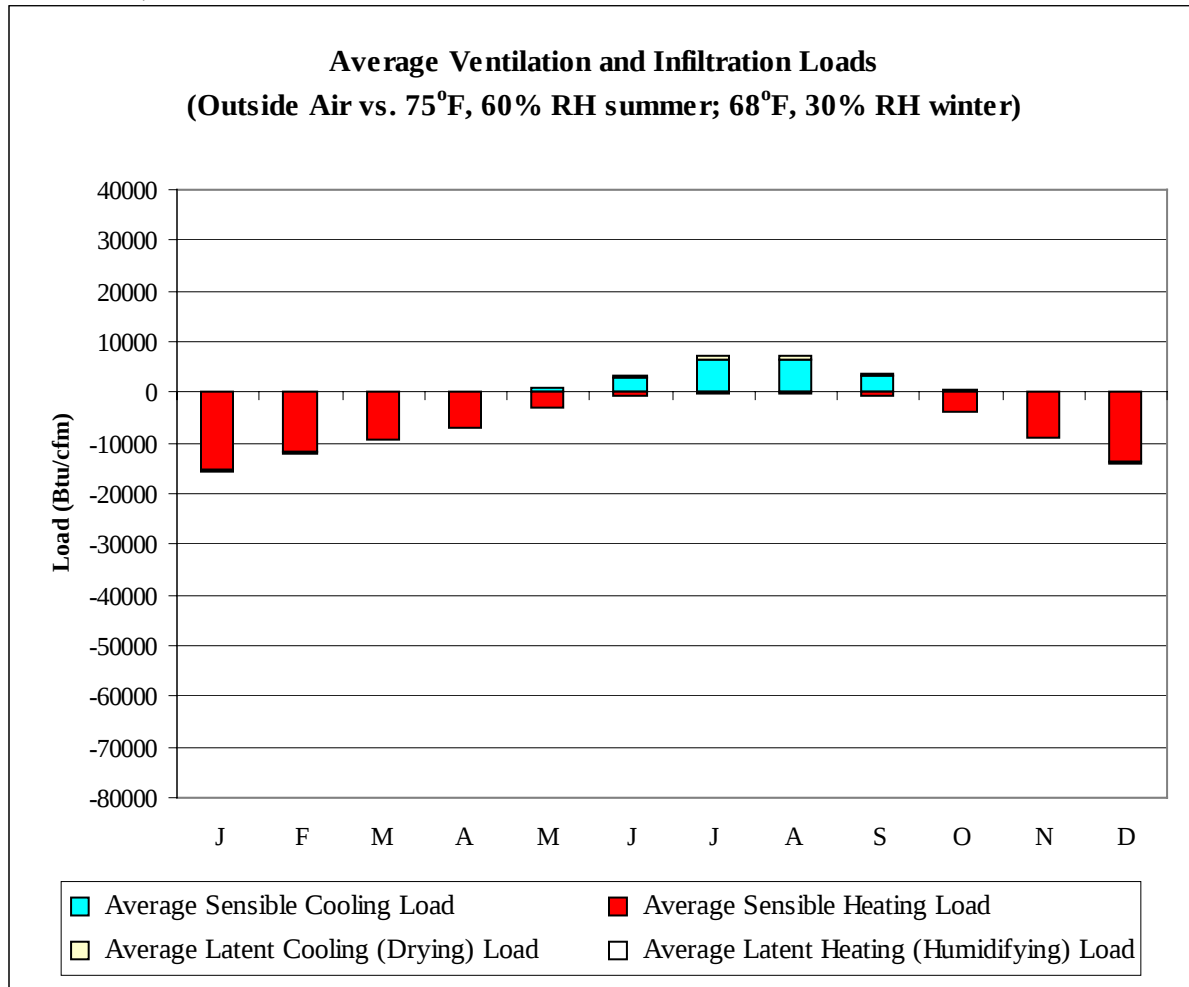
Week Ending	1.0% Temp (°F)	MCWB @ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB @ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	64.0	57.8	58.0	39.1	30.0	70.7	61.0	47.5	33.2
14-Jan	63.0	54.1	56.9	39.3	27.0	67.2	59.5	46.6	32.7
21-Jan	64.0	53.8	57.6	39.3	29.0	65.8	59.4	47.4	32.9
28-Jan	66.0	54.8	59.3	39.9	28.0	70.7	59.5	48.4	34.2
4-Feb	68.0	55.8	59.6	41.4	30.0	70.0	60.2	50.2	35.4
11-Feb	68.0	55.5	60.9	41.8	32.0	71.4	61.0	50.8	36.3
18-Feb	70.0	55.9	59.8	41.6	31.0	70.7	63.3	48.6	35.3
25-Feb	72.0	58.9	62.0	42.7	31.0	70.7	60.4	50.4	36.1
4-Mar	75.0	59.3	63.7	43.3	32.0	71.4	62.3	51.6	35.9
11-Mar	77.0	60.7	67.0	44.1	36.0	70.7	66.8	53.5	37.7
18-Mar	77.0	59.2	67.1	43.6	36.0	68.6	64.8	50.9	35.7
25-Mar	81.0	62.4	68.7	46.5	39.0	71.4	65.7	54.5	39.2
1-Apr	80.0	59.7	68.9	45.8	37.0	74.9	65.8	52.7	37.9
8-Apr	82.0	60.8	68.3	46.5	39.0	75.6	63.2	54.5	40.2
15-Apr	84.0	61.8	70.5	47.7	39.0	77.0	70.3	55.6	38.9
22-Apr	82.0	61.8	71.9	48.8	41.0	75.6	67.7	57.0	41.2
29-Apr	86.0	63.1	70.9	49.4	43.0	75.6	70.5	58.9	43.3
6-May	86.0	63.8	74.4	51.8	45.0	79.1	64.0	60.9	44.0
13-May	91.0	66.4	77.2	52.1	45.0	80.5	71.4	64.1	46.3
20-May	91.0	67.4	78.4	54.2	48.0	80.5	77.6	67.7	50.1
27-May	93.0	68.6	80.7	55.2	48.0	91.7	82.0	70.9	52.2
3-Jun	95.0	70.1	83.5	57.5	52.0	91.7	75.7	72.5	52.9
10-Jun	97.0	69.4	85.9	58.9	54.0	90.3	69.7	76.2	54.9
17-Jun	104.0	73.1	88.1	60.8	54.0	92.4	80.5	77.2	56.3
24-Jun	99.0	71.0	88.9	61.8	55.0	98.0	80.9	81.9	58.7
1-Jul	103.0	72.8	90.6	63.4	59.0	99.4	81.4	84.7	60.9
8-Jul	102.0	70.9	93.2	63.9	59.0	111.3	89.2	83.6	56.7
15-Jul	106.0	74.6	96.5	64.6	59.0	110.6	88.1	82.8	57.9
22-Jul	108.0	73.0	98.3	66.0	61.0	106.4	94.0	84.8	56.4
29-Jul	106.0	72.7	98.4	66.6	61.0	123.2	95.0	88.7	59.5
5-Aug	108.0	72.6	97.3	66.6	59.0	110.6	91.4	86.9	59.6
12-Aug	104.0	71.8	97.3	66.3	61.0	111.3	86.6	85.4	59.1
19-Aug	106.0	73.6	97.1	66.4	61.0	111.3	90.6	87.6	59.1
26-Aug	104.0	73.0	94.9	65.9	59.0	119.0	86.6	86.8	59.9
2-Sep	100.0	71.8	92.0	64.5	57.0	114.1	83.5	86.5	62.2
9-Sep	101.0	75.0	92.3	64.8	59.0	110.6	85.7	85.7	60.3
16-Sep	100.0	69.2	90.0	63.2	54.0	104.3	80.0	80.7	58.1
23-Sep	97.0	69.5	86.6	61.2	54.0	98.0	79.5	78.1	57.2
30-Sep	95.0	67.8	84.3	58.5	50.0	98.0	73.4	72.9	52.9
7-Oct	91.0	66.9	81.8	57.3	48.0	91.7	72.9	71.9	52.2
14-Oct	90.0	65.3	76.9	55.5	45.0	86.1	69.6	70.4	51.8
21-Oct	86.0	63.3	73.3	54.5	43.0	88.9	68.5	69.6	52.6
28-Oct	82.0	62.9	73.2	52.6	43.0	86.1	68.4	66.4	48.9
4-Nov	81.0	62.0	71.4	51.0	41.0	84.7	65.6	63.9	47.8
11-Nov	75.0	60.8	67.8	49.7	39.0	91.0	69.8	62.7	47.0
18-Nov	75.0	60.1	65.7	47.9	39.0	81.2	62.6	60.5	44.7
25-Nov	72.0	57.8	63.3	44.3	33.0	79.1	62.9	55.0	40.1
2-Dec	70.0	55.9	61.6	42.5	31.0	71.4	62.3	52.1	37.0
9-Dec	66.0	56.7	59.4	43.5	27.0	75.6	61.4	52.8	39.0
16-Dec	68.0	58.9	60.0	43.9	32.0	80.5	63.6	53.9	40.2
23-Dec	66.0	56.4	57.9	41.8	30.0	75.6	61.7	51.5	37.4
31-Dec	66.0	58.8	58.3	41.6	30.0	79.8	63.1	50.4	37.0



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	500
FEB	3	368
MAR	23	268
APR	48	180
MAY	156	70
JUN	343	14
JUL	557	3
AUG	553	3
SEP	360	12
OCT	116	89
NOV	13	262
DEC	1	440
ANN	2172	2209

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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	-15396	0	-320
FEB	1	-11797	0	-212
MAR	45	-9377	0	-130
APR	151	-6790	5	-64
MAY	793	-3091	40	-17
JUN	2814	-742	310	-2
JUL	6555	-208	685	-1
AUG	6492	-184	904	-1
SEP	3152	-640	545	-5
OCT	507	-3682	85	-22
NOV	10	-9046	19	-71
DEC	0	-13778	3	-195
ANN	20520	-74731	2596	-1040

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

No Solar Radiation
Data Available

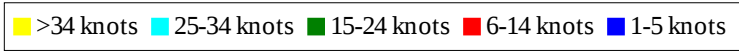
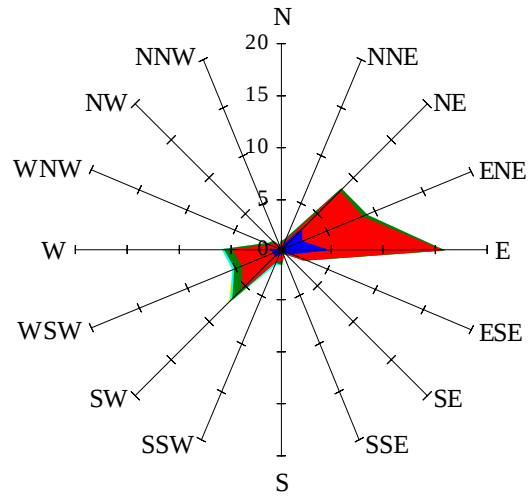


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

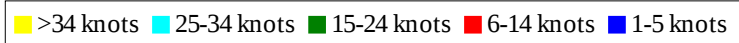
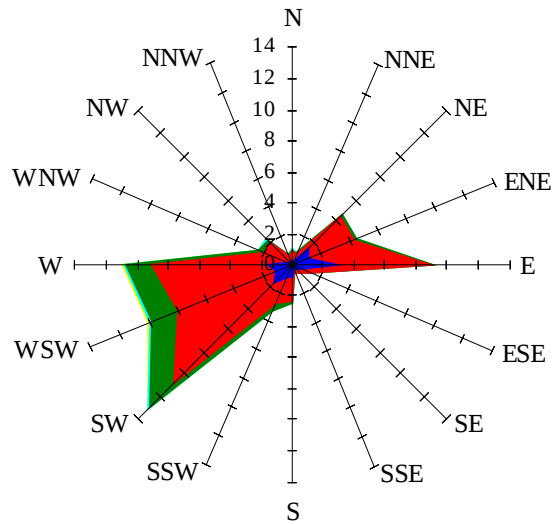
Labels of Percent Frequency on North Axis



Percent Calm = 38.84

Wind Summary - March, April, and May

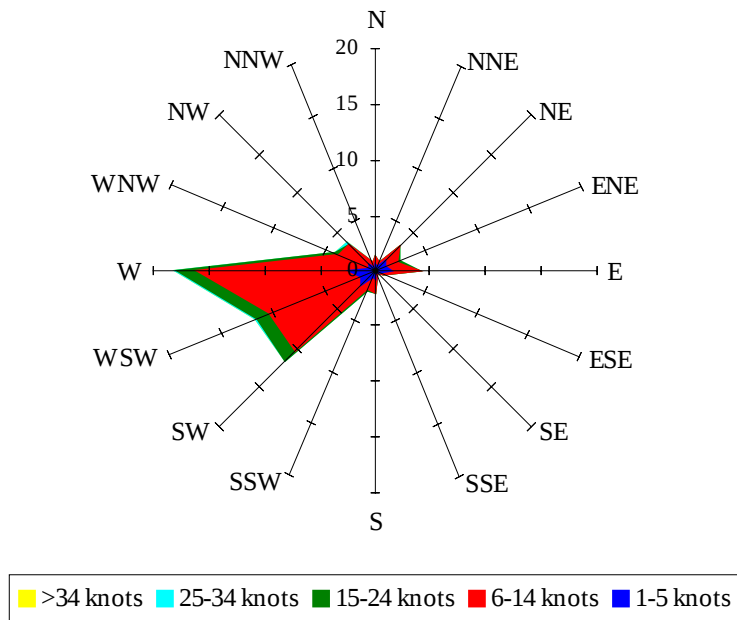
Labels of Percent Frequency on North Axis



Percent Calm = 32.54

Wind Summary - June, July, and August

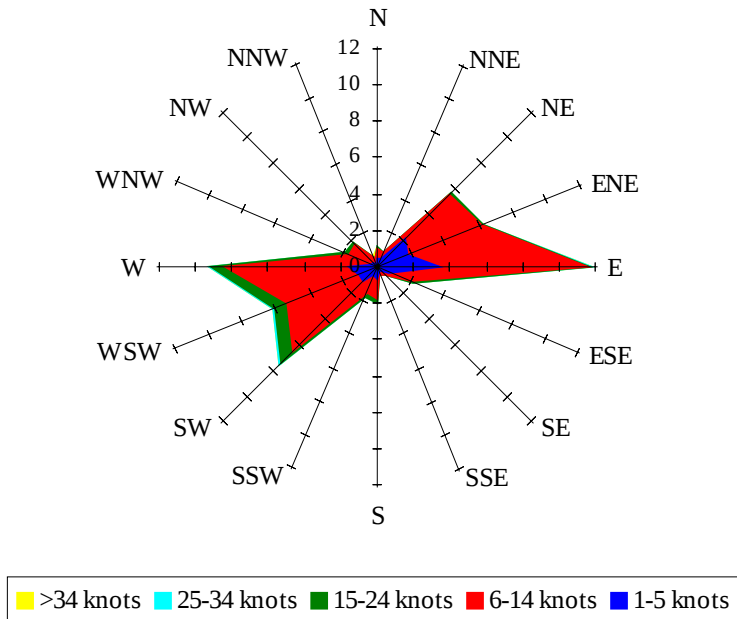
Labels of Percent Frequency on North Axis



Percent Calm = 33.81

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 40.48