

DEL RIO TX

Latitude = 29.37 N

Longitude = 100.90 W

Period of Record = 1973 to 1996

WMO No. 722610

Elevation = 1007 feet

Average Pressure = 28.87 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	105	72	68	10.0	SSE
0.4% Occurrence	100	72	79	10.5	SSE
1.0% Occurrence	99	72	80	10.5	SSE
2.0% Occurrence	97	72	82	10.7	SSE
Mean Daily Range	20	-	-	-	-
97.5% Occurrence	38	34	23	7.0	E
99.0% Occurrence	33	29	19	7.0	E
99.6% Occurrence	29	26	15	7.1	ESE
Median of Extreme Lows	22	19	8	6.8	NNW
	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	91	130	10.8	SE
0.4% Occurrence	77	90	120	10.7	SE
1.0% Occurrence	76	89	115	10.7	SE
2.0% Occurrence	75	88	112	10.5	SE
	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	141	81	0.90	9.5	ESE
0.4% Occurrence	129	81	0.82	9.8	SE
1.0% Occurrence	124	80	0.79	10.3	SE
2.0% Occurrence	123	80	0.79	9.9	ESE
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		536	2647	1004	3395

Other Site Data

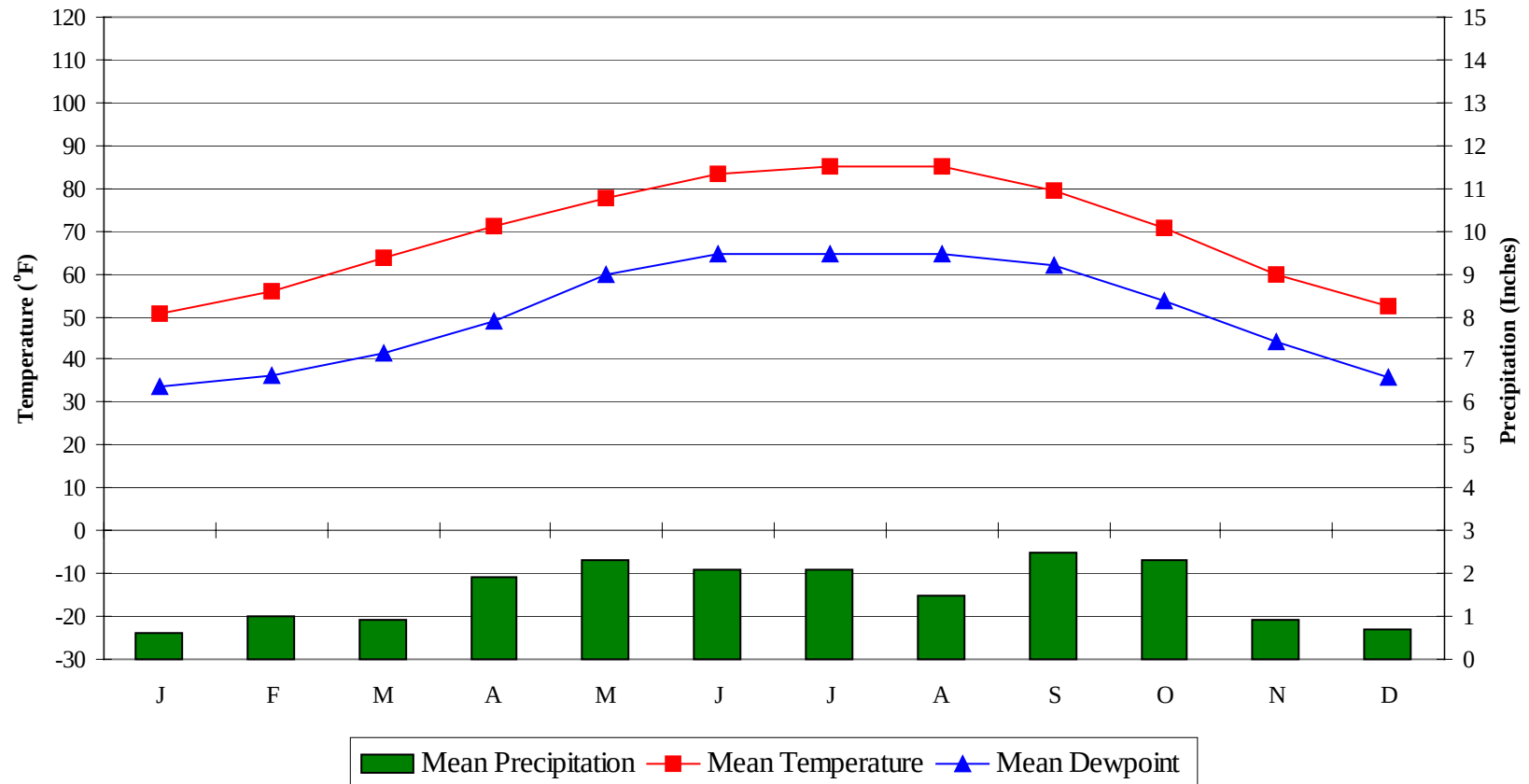
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
10	4.0	90	3.0 + 3.0
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
72.4	N/A	N/A	8

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

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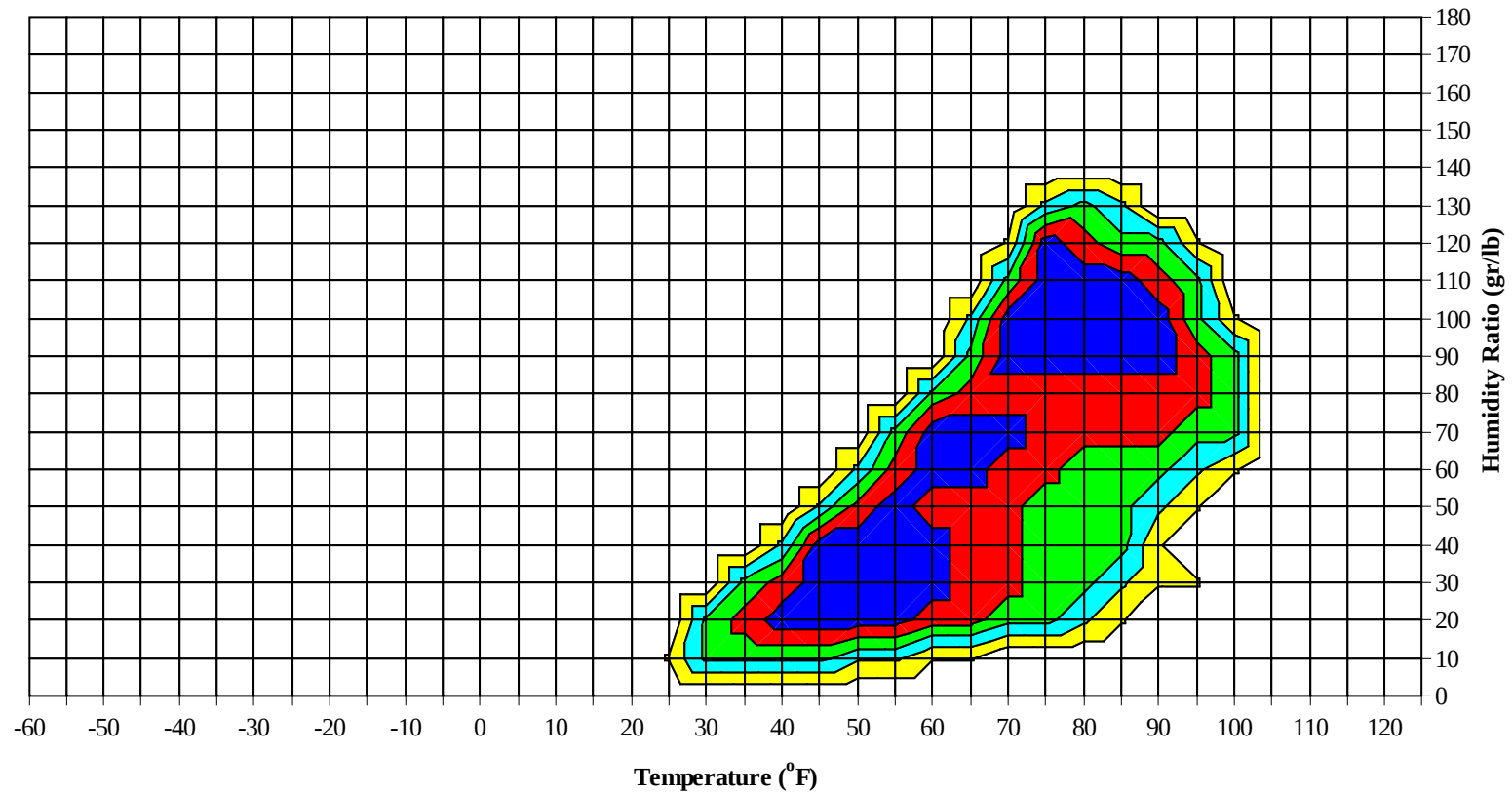
Average Annual Climate



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Long Term Psychrometric Summary

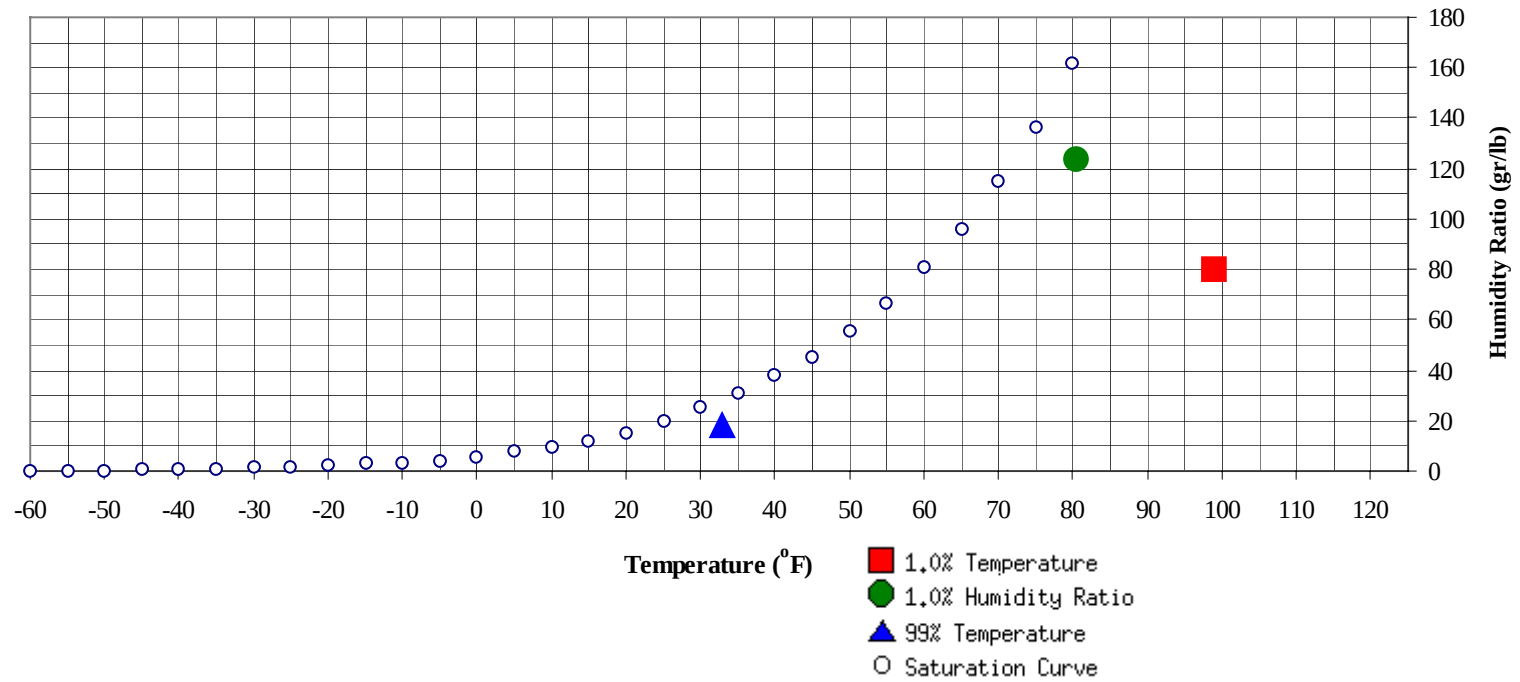


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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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	33	18.4	10.7		123.9	80.4	74.3	72	38.7

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	99	80.1	72.2	36.4

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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		
110 / 114															
105 / 109															
100 / 104															
95 / 99							1	0	1	62.1		1	0	1	61.0
90 / 94							1	0	1	60.0		2	2	4	61.0
85 / 89		0	0	0	58.3		2	2	4	58.2		9	7	16	62.2
80 / 84		1	0	1	57.3		8	6	14	58.3	0	23	18	42	61.2
75 / 79		7	3	10	56.4	0	15	12	27	57.2	0	39	33	71	59.4
70 / 74	0	16	11	27	55.0	0	24	21	45	55.1	8	45	45	98	58.0
65 / 69	1	24	19	44	53.6	6	32	32	70	54.2	30	46	48	124	55.9
60 / 64	5	37	33	75	51.0	19	35	38	92	51.9	47	35	41	122	52.8
55 / 59	15	40	46	101	47.9	31	32	38	101	48.5	54	21	27	102	48.9
50 / 54	35	39	46	120	44.7	44	28	32	104	45.0	49	13	16	78	44.9
45 / 49	55	36	43	134	41.1	51	20	22	94	41.5	33	8	8	49	40.8
40 / 44	60	25	27	113	37.6	38	13	12	63	37.3	17	4	3	23	36.1
35 / 39	41	14	14	69	33.3	19	7	7	33	32.9	8	1	1	10	31.3
30 / 34	24	6	5	34	29.1	10	3	3	16	28.6	3	0	0	3	26.6
25 / 29	8	2	2	12	24.6	4	1	1	6	24.7	0	0		0	22.8
20 / 24	3	0	0	3	20.1	1	0	0	1	19.7	0			0	18.0
15 / 19	0	0		0	14.2	0	0	0	0	15.1					
10 / 14						0			0	13.0					

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		
110 / 114												0	0	0	69.0
105 / 109												1	1	2	71.0
100 / 104		0	0	0	64.1		2	1	3	69.3		6	5	11	72.4
95 / 99		3	2	5	65.2		11	7	19	69.6		30	21	51	72.8
90 / 94		11	7	18	64.7		30	23	53	69.9		63	51	114	72.5
85 / 89		29	21	49	64.5	0	53	43	97	69.4	6	66	63	135	71.8
80 / 84	0	46	38	84	63.8	7	64	59	130	68.4	46	47	56	150	71.0
75 / 79	5	52	55	112	62.5	49	50	59	158	67.6	103	21	27	150	69.9
70 / 74	40	47	53	140	61.3	89	26	36	151	65.1	61	6	14	81	67.3
65 / 69	63	29	35	126	58.4	66	9	15	90	61.2	19	1	3	23	63.5
60 / 64	59	15	19	94	53.9	26	3	4	32	56.6	3	0		3	59.0
55 / 59	39	6	8	53	49.0	9	0	1	9	51.5	0			0	55.5
50 / 54	22	2	3	27	44.9	2		0	2	49.2					
45 / 49	7	0	1	8	40.7										
40 / 44	3	0	0	3	37.4										
35 / 39	0			0	32.4										
30 / 34	0			0	31.0										
25 / 29															
20 / 24															
15 / 19															
10 / 14															

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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		
110 / 114						0	0	0	75.8						
105 / 109		1	1	2	73.2	0	0	0	73.7						
100 / 104		11	10	21	72.7	7	5	12	72.9		2	1	3	71.4	
95 / 99		49	38	87	72.2	54	36	90	72.5		14	8	22	71.9	
90 / 94	0	67	60	127	72.1	0	69	56	125	72.1		48	25	73	71.6
85 / 89	14	57	63	135	71.5	8	59	71	138	71.5	1	62	48	111	70.8
80 / 84	77	43	45	165	70.9	74	42	49	164	71.0	18	53	62	133	69.6
75 / 79	115	13	22	150	70.1	121	14	25	161	70.2	84	36	53	173	68.7
70 / 74	40	5	10	55	68.9	42	2	6	50	68.7	80	15	29	125	66.2
65 / 69	2	1	0	3	66.0	3	0		3	65.2	29	6	8	43	60.1
60 / 64											19	3	5	26	56.0
55 / 59											7	0	1	8	51.4
50 / 54											2	0	0	2	47.1
45 / 49											0			0	47.0
40 / 44															
35 / 39															
30 / 34															
25 / 29															
20 / 24															
15 / 19															
10 / 14															

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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		
110 / 114															
105 / 109															
100 / 104		0	0	0	64.8										
95 / 99		1	1	2	69.3		0		0	64.0					
90 / 94		10	4	14	69.2		0	0	0	62.6				0	56.5
85 / 89		29	15	44	68.4		2	0	2	63.2		0	0	0	57.4
80 / 84	1	51	34	86	66.4		12	4	16	63.5		2	1	3	58.1
75 / 79	13	58	55	126	64.8	0	27	14	41	63.0		8	3	11	58.3
70 / 74	43	47	55	145	62.8	8	43	33	84	61.2	1	21	12	34	57.5
65 / 69	60	28	44	132	59.4	20	45	43	108	58.0	4	30	22	56	55.3
60 / 64	58	15	25	99	55.5	35	41	52	128	54.2	10	42	38	90	52.2
55 / 59	44	5	9	58	51.1	46	32	37	114	49.9	27	44	49	119	49.2
50 / 54	18	2	4	23	46.2	42	20	28	91	45.6	39	42	52	132	45.2
45 / 49	8	1	2	11	42.4	40	12	17	70	41.6	56	30	36	122	41.3
40 / 44	2	0	0	2	37.6	28	4	9	41	37.2	50	17	19	87	37.2
35 / 39	1	0	0	1	33.0	14	2	3	19	33.5	35	7	11	53	33.0
30 / 34	0			0	30.1	5	0	1	6	29.1	15	3	4	22	27.9
25 / 29	0			0	28.0	1			1	25.4	6	1	1	8	23.1
20 / 24											2	1	1	4	17.8
15 / 19											1	0	0	1	14.1
10 / 14											1			1	10.5

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

Period of Record = 1973 to 1996

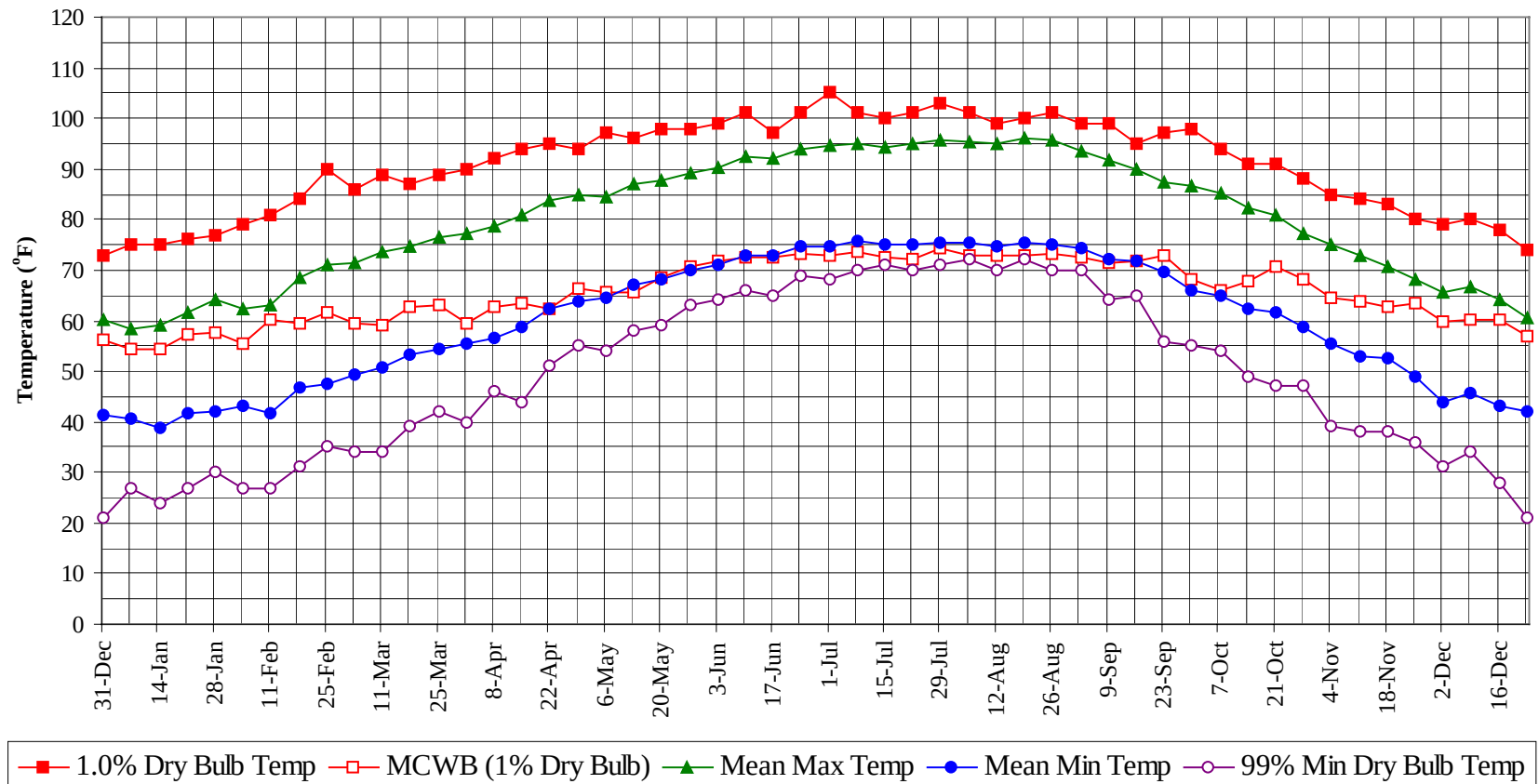
Temperature Range (°F)	Annual Totals				M C W B (°F)
	Hour Group (LST)			Total Obs	
	01 To 08	09 To 16	17 To 00		
110 / 114		0	0	0	73.3
105 / 109		2	2	4	72.0
100 / 104		30	22	51	72.3
95 / 99		169	118	287	72.0
90 / 94	0	307	236	543	71.5
85 / 89	31	372	341	744	70.2
80 / 84	234	391	377	1002	68.7
75 / 79	505	335	360	1200	66.9
70 / 74	410	294	319	1024	63.0
65 / 69	294	249	266	808	57.9
60 / 64	274	224	250	749	53.4
55 / 59	267	180	209	657	49.2
50 / 54	251	148	176	575	45.1
45 / 49	251	107	125	483	41.3
40 / 44	196	64	69	329	37.3
35 / 39	120	31	33	184	33.1
30 / 34	58	12	12	83	28.6
25 / 29	20	4	4	28	24.2
20 / 24	6	1	1	8	18.8
15 / 19	2	0	0	2	14.3
10 / 14	1			1	10.8

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.

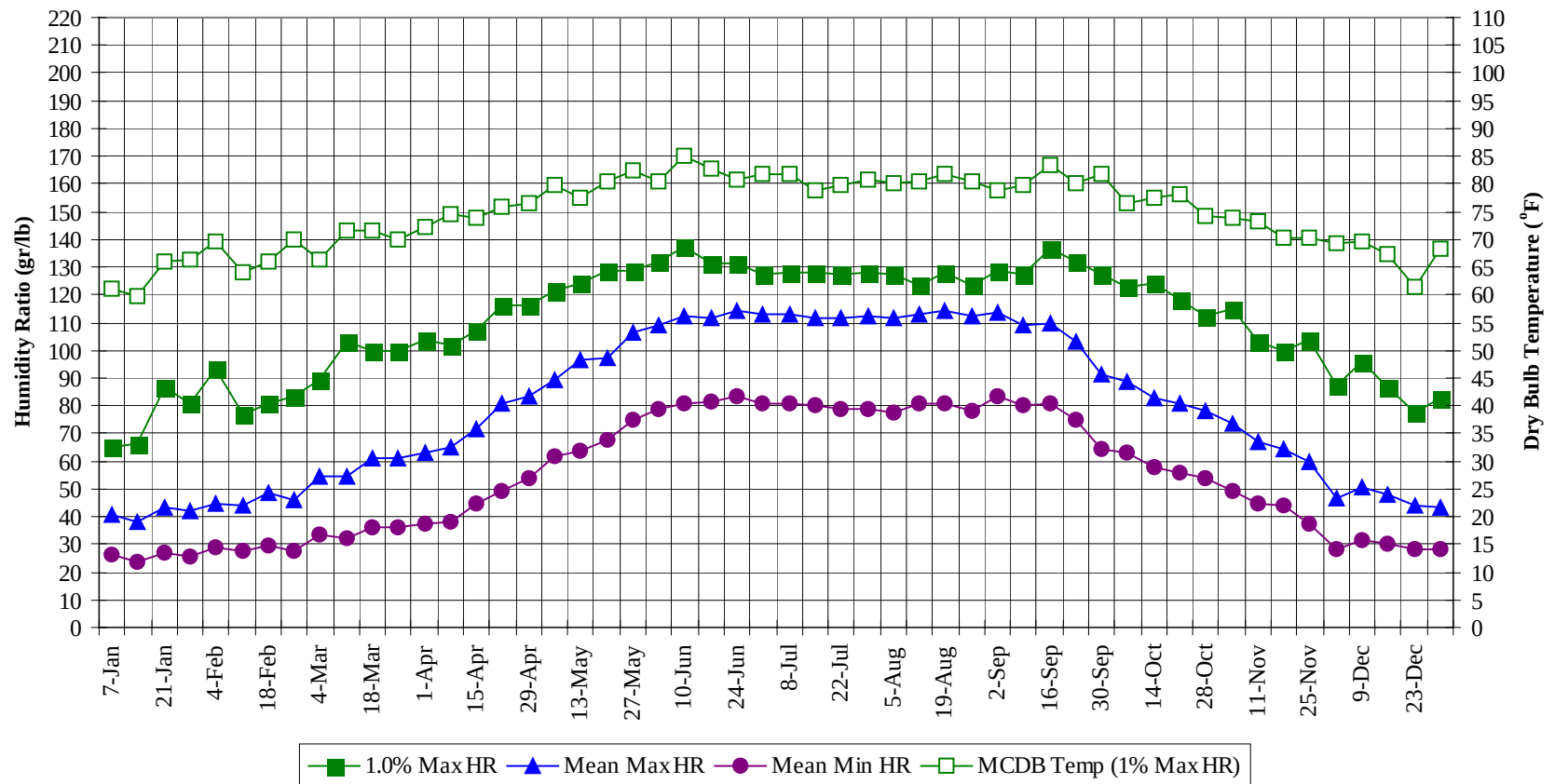
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Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary

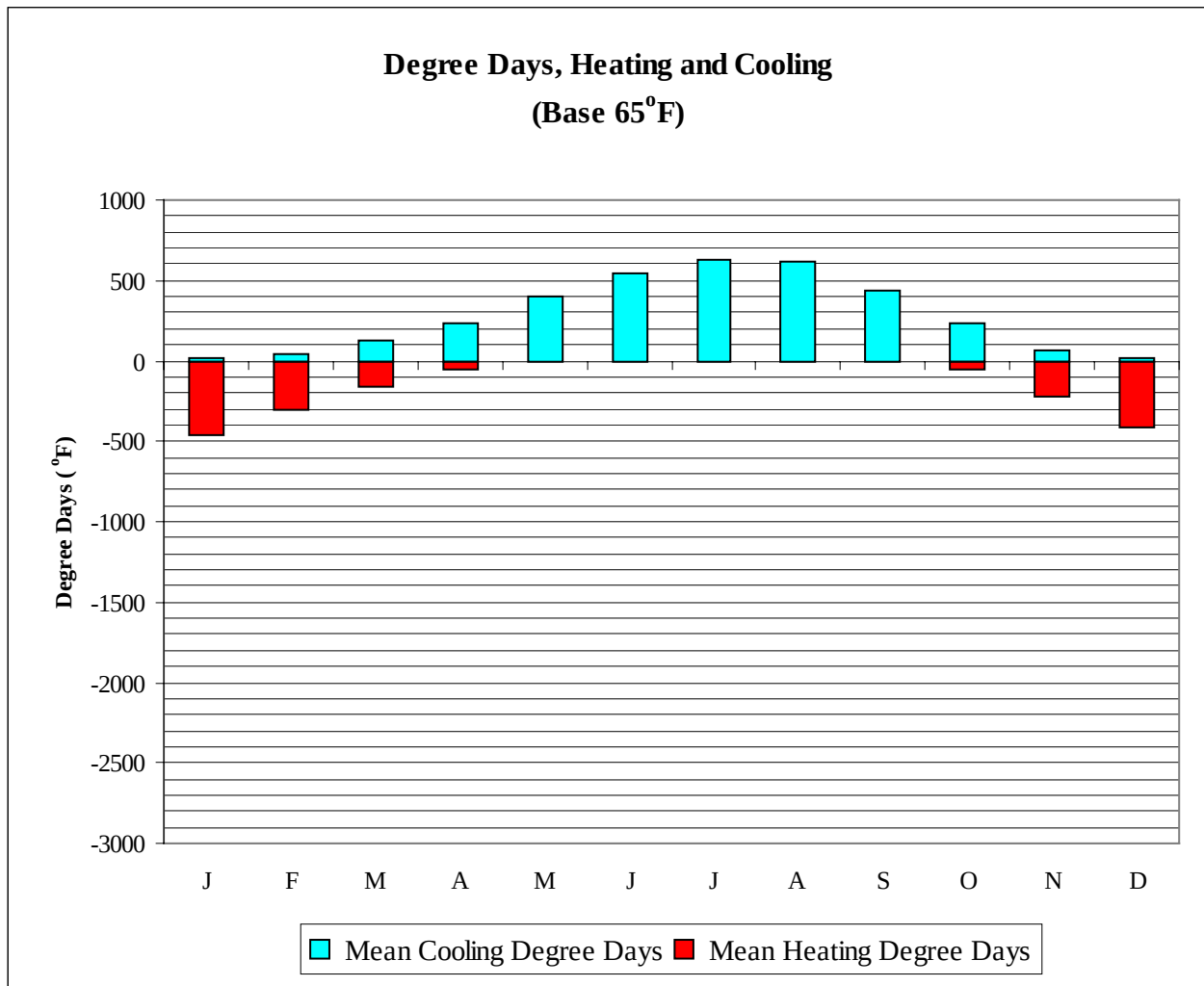


DEL RIO TX**WMO No. 722610****Long Term Dry Bulb Temperature and Humidity Summary**

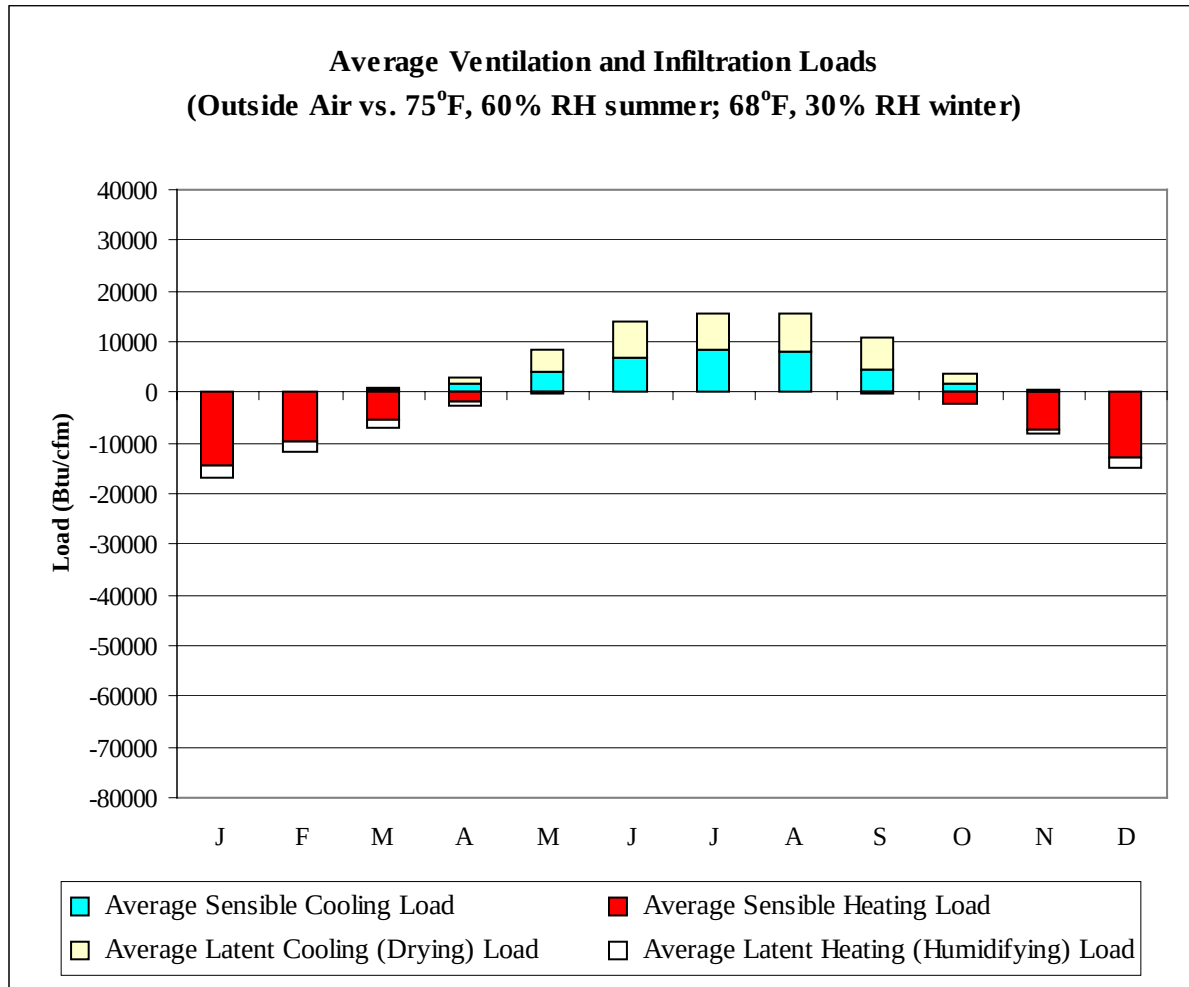
Week Ending	1.0% Temp (°F)	MCWB @ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB @ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	75.0	54.6	58.4	40.5	27.0	65.1	61.1	41.0	26.2
14-Jan	75.0	54.3	59.0	39.0	24.0	66.5	59.8	38.1	23.6
21-Jan	76.0	57.4	61.5	41.7	27.0	86.8	66.0	43.4	26.8
28-Jan	77.0	57.7	64.1	42.0	30.0	80.5	66.5	42.1	25.3
4-Feb	79.0	55.5	62.4	43.0	27.0	93.1	69.6	44.7	28.8
11-Feb	81.0	60.2	63.0	41.6	27.0	77.0	63.9	44.0	27.9
18-Feb	84.0	59.3	68.5	46.9	31.0	80.5	65.9	48.8	29.6
25-Feb	90.0	61.5	71.1	47.5	35.0	83.3	69.8	45.9	27.7
4-Mar	86.0	59.6	71.3	49.4	34.0	89.6	66.3	54.7	33.8
11-Mar	89.0	59.2	73.5	50.8	34.0	102.9	71.6	54.8	32.3
18-Mar	87.0	62.7	74.7	53.4	39.0	100.1	71.5	61.3	35.9
25-Mar	89.0	63.0	76.3	54.4	42.0	100.1	69.8	61.3	36.1
1-Apr	90.0	59.5	77.1	55.5	40.0	103.6	72.3	63.1	37.4
8-Apr	92.0	62.7	78.7	56.5	46.0	101.5	74.7	65.1	38.2
15-Apr	94.0	63.3	80.8	58.8	44.0	107.1	73.9	71.3	44.7
22-Apr	95.0	62.4	83.9	62.3	51.0	116.2	76.0	80.9	49.3
29-Apr	94.0	66.2	84.7	64.0	55.0	116.2	76.6	83.3	53.7
6-May	97.0	65.8	84.3	64.6	54.0	121.8	79.7	89.5	61.8
13-May	96.0	65.8	87.1	67.0	58.0	123.9	77.5	96.5	63.8
20-May	98.0	68.6	87.9	68.0	59.0	128.8	80.6	97.2	67.3
27-May	98.0	70.8	89.2	70.1	63.0	128.8	82.5	106.3	75.1
3-Jun	99.0	71.9	90.1	70.9	64.0	132.3	80.5	109.0	79.1
10-Jun	101.0	72.5	92.4	72.9	66.0	137.2	85.0	112.3	80.8
17-Jun	97.0	72.6	92.1	72.7	65.0	131.6	82.8	111.8	81.4
24-Jun	101.0	73.1	93.9	74.6	69.0	131.6	80.8	114.0	83.3
1-Jul	105.0	72.8	94.8	74.5	68.0	127.4	81.9	112.8	80.5
8-Jul	101.0	73.7	95.1	75.6	70.0	128.1	81.7	112.9	80.6
15-Jul	100.0	72.6	94.2	75.1	71.0	128.1	78.8	111.4	80.2
22-Jul	101.0	72.0	95.0	75.2	70.0	127.4	79.7	111.7	78.9
29-Jul	103.0	74.2	95.9	75.5	71.0	128.1	80.7	112.2	78.7
5-Aug	101.0	73.0	95.5	75.4	72.0	127.4	80.1	111.9	77.3
12-Aug	99.0	72.9	95.0	74.8	70.0	123.2	80.5	112.8	80.7
19-Aug	100.0	73.0	96.1	75.5	72.0	128.1	81.7	114.3	80.5
26-Aug	101.0	73.3	95.7	74.9	70.0	123.2	80.4	112.0	77.8
2-Sep	99.0	72.5	93.5	74.4	70.0	128.8	78.8	113.6	83.3
9-Sep	99.0	71.3	91.7	72.2	64.0	127.4	79.8	109.2	79.8
16-Sep	95.0	71.7	90.1	71.8	65.0	136.5	83.3	109.4	80.7
23-Sep	97.0	72.7	87.5	69.5	56.0	132.3	80.1	103.1	75.2
30-Sep	98.0	68.0	86.7	66.1	55.0	127.4	81.6	91.6	64.4
7-Oct	94.0	66.0	85.1	64.9	54.0	122.5	76.4	88.5	62.9
14-Oct	91.0	67.7	82.3	62.2	49.0	123.9	77.6	83.0	57.7
21-Oct	91.0	70.7	81.0	61.5	47.0	118.3	78.3	80.9	55.9
28-Oct	88.0	68.1	77.3	58.8	47.0	112.0	74.3	78.3	54.2
4-Nov	85.0	64.6	75.2	55.6	39.0	114.8	73.7	73.6	49.3
11-Nov	84.0	63.6	72.9	52.9	38.0	102.9	73.1	67.1	44.9
18-Nov	83.0	62.7	70.8	52.6	38.0	100.1	70.3	64.6	44.1
25-Nov	80.0	63.6	68.3	49.0	36.0	103.6	70.4	59.9	37.4
2-Dec	79.0	60.0	65.7	43.7	31.0	87.5	69.4	46.8	28.3
9-Dec	80.0	60.2	66.6	45.6	34.0	95.9	69.6	50.9	31.4
16-Dec	78.0	60.3	64.2	43.3	28.0	86.8	67.2	47.9	30.5
23-Dec	74.0	56.8	60.6	42.1	21.0	77.7	61.5	44.1	27.9
31-Dec	73.0	56.3	60.1	41.5	21.0	82.6	68.2	43.0	28.3

DEL RIO TX

WMO No. 722610



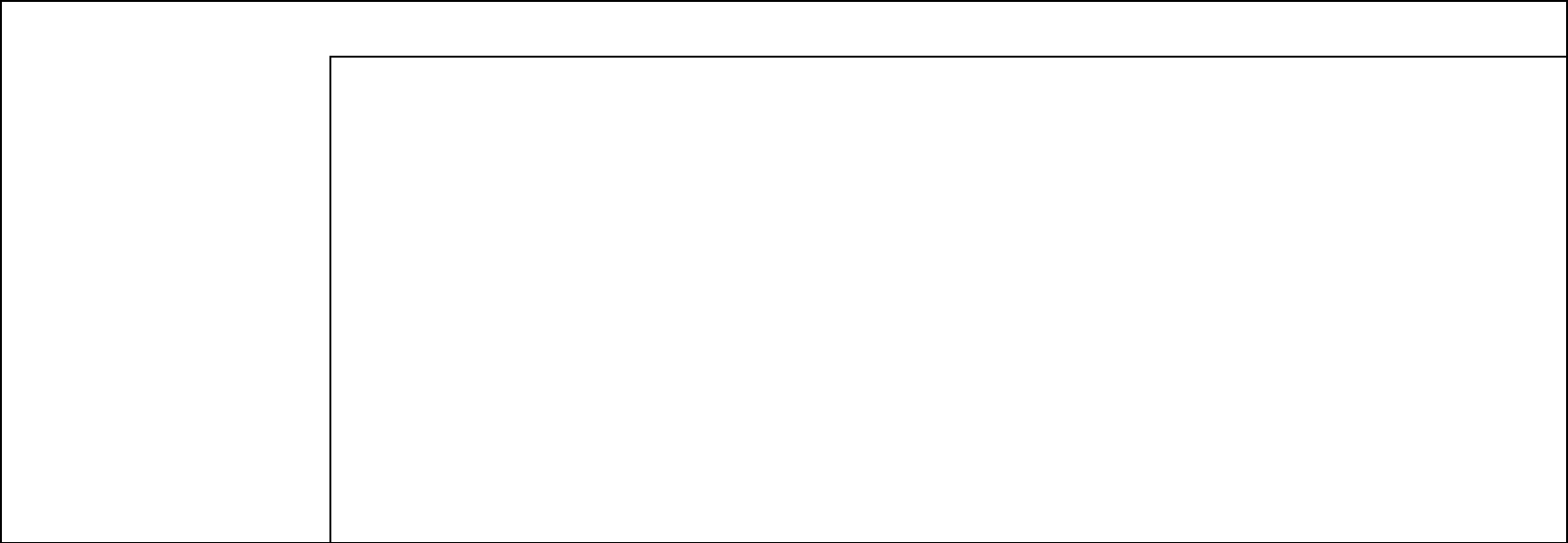
	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	15	467
FEB	42	306
MAR	120	157
APR	236	51
MAY	402	6
JUN	550	0
JUL	624	0
AUG	616	0
SEP	439	7
OCT	231	51
NOV	66	217
DEC	20	409
ANN	3362	1671



	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	25	-14331	36	-2370
FEB	215	-9753	20	-1820
MAR	679	-5461	347	-1407
APR	1771	-2024	1172	-615
MAY	3902	-358	4390	-58
JUN	6854	-29	6999	-1
JUL	8275	0	7216	-2
AUG	8065	0	7570	-1
SEP	4638	-339	5961	-26
OCT	1626	-2084	1905	-209
NOV	204	-7246	507	-1039
DEC	41	-12766	57	-2076
ANN	36295	-54391	36180	-9624

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

No Solar Radiation
Data Available

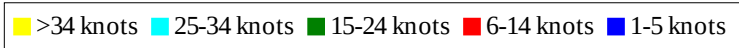
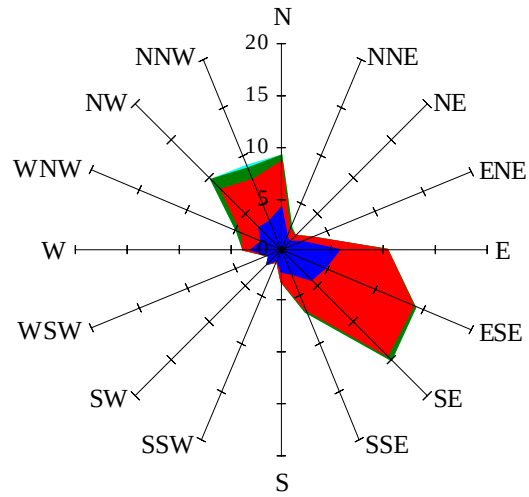


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

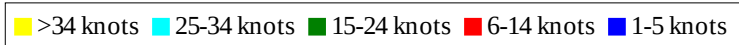
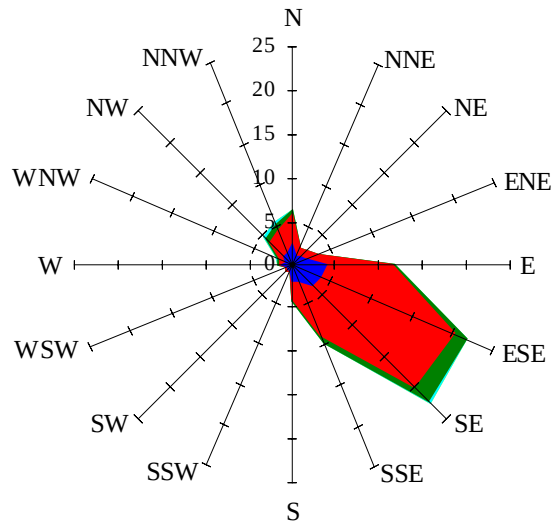
Labels of Percent Frequency on North Axis



Percent Calm = 2.96

Wind Summary - March, April, and May

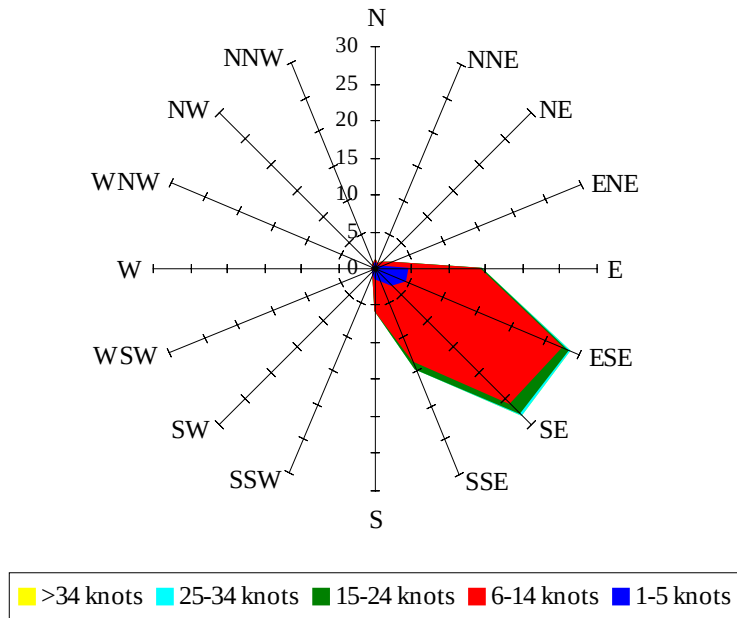
Labels of Percent Frequency on North Axis



Percent Calm = 1.13

Wind Summary - June, July, and August

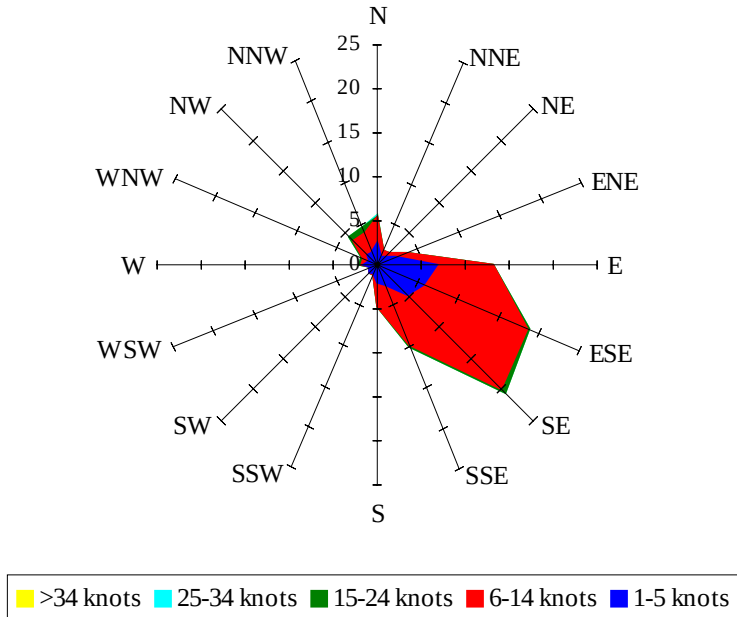
Labels of Percent Frequency on North Axis



Percent Calm = 0.56

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 2.63