

SAN ANTONIO TX

Latitude = 29.53 N

Longitude = 98.47 W

Period of Record = 1973 to 1996

WMO No. 722530

Elevation = 794 feet

Average Pressure = 29.15 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	100	74	87	9.3	SSE
0.4% Occurrence	98	74	91	9.6	SSE
1.0% Occurrence	96	74	93	9.9	SE
2.0% Occurrence	94	74	98	9.9	SE
Mean Daily Range	20	-	-	-	-
97.5% Occurrence	35	32	22	7.8	N
99.0% Occurrence	30	27	17	8.5	N
99.6% Occurrence	26	23	13	8.7	N
Median of Extreme Lows	19	16	8	9.9	N
	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	81	90	145	11.2	SSE
0.4% Occurrence	78	87	130	10.1	SSE
1.0% Occurrence	77	86	125	9.8	SSE
2.0% Occurrence	77	86	125	9.8	SSE
	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	151	84	0.97	10.5	SSE
0.4% Occurrence	140	81	0.90	9.5	SSE
1.0% Occurrence	136	80	0.88	8.9	SSE
2.0% Occurrence	132	81	0.85	10.3	SSE
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		304	2156	2084	3889

Other Site Data

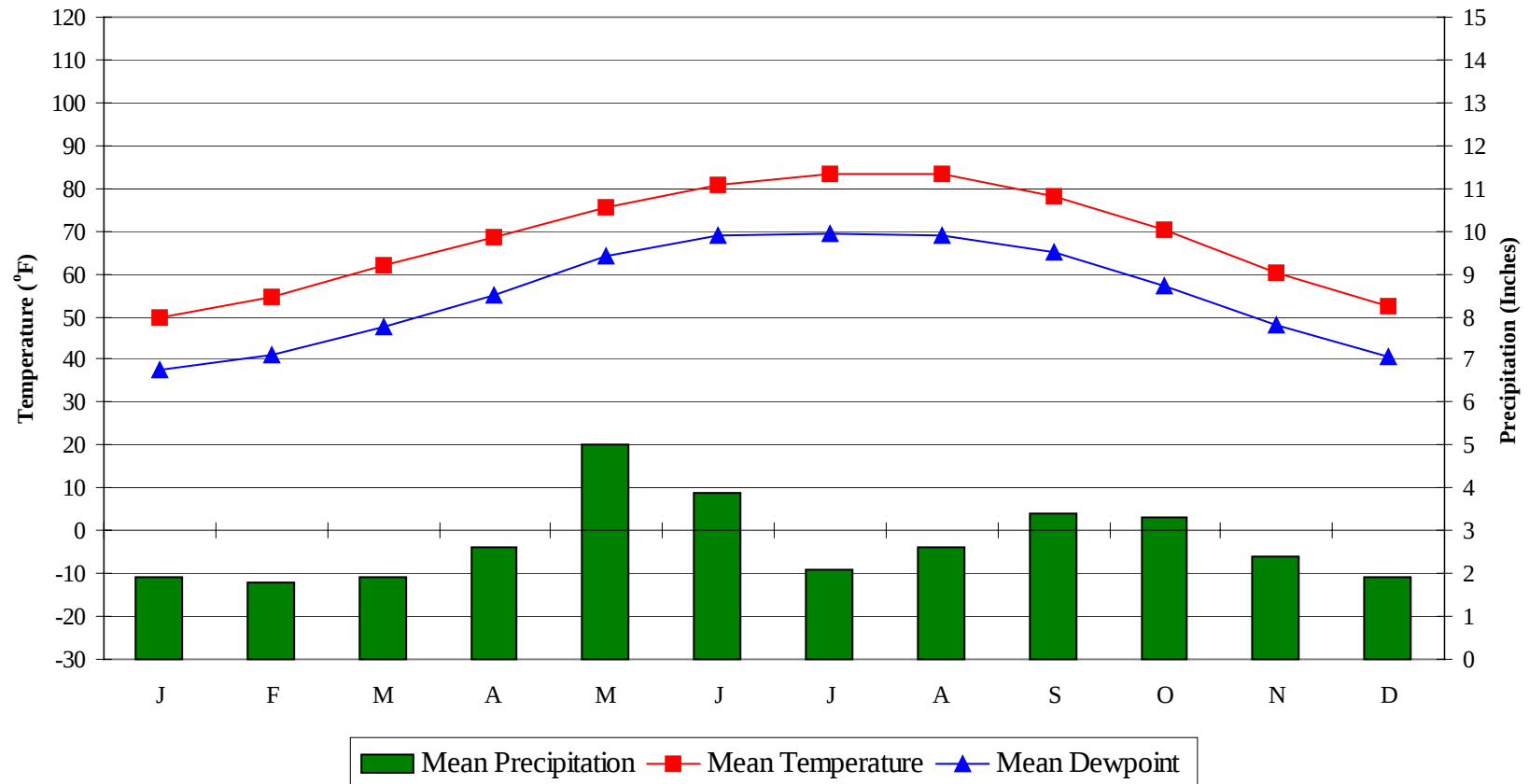
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
10	4.3	90	6.4 + 2.5
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
70.8	0	4	14

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

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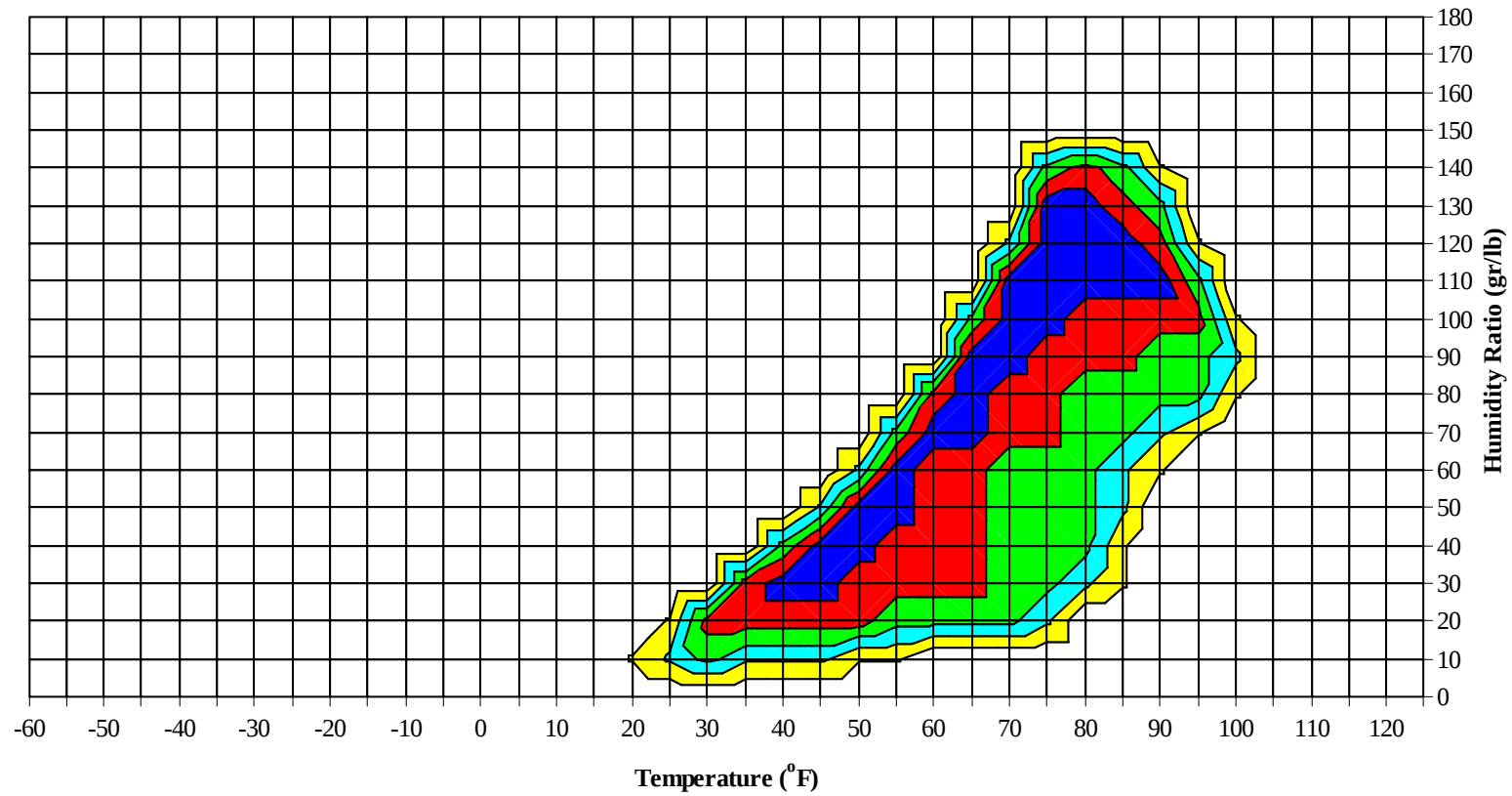
Average Annual Climate



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Long Term Psychrometric Summary

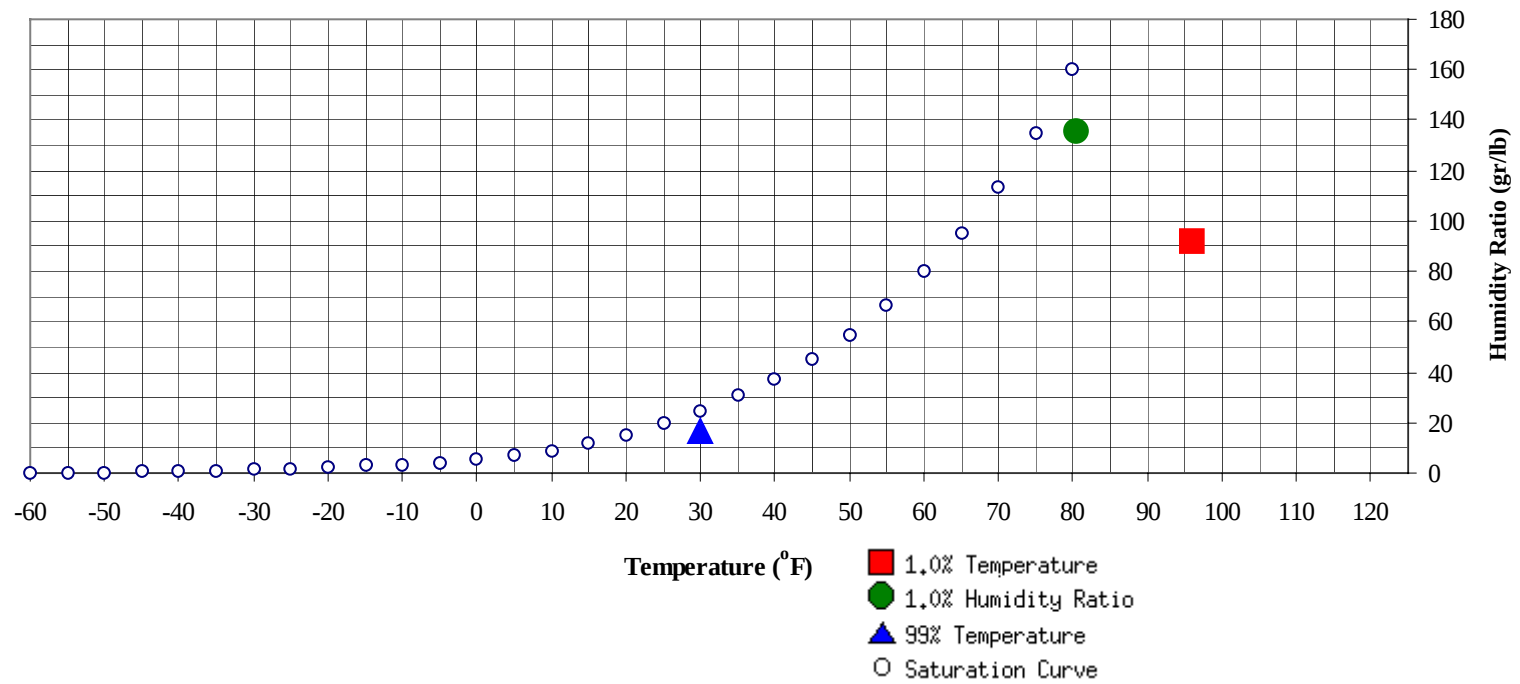


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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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	30	16.3	9.7		135.8	80.5	76.5	75	40.6

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	96	92	73.6	37.5

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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							1	0	1	63.2		0	0	0	62.4
90 / 94							1	0	1	62.1		1	0	1	62.9
85 / 89		0	0	0	59.0		1	1	2	61.3		5	2	7	64.3
80 / 84		1	0	1	60.2		6	3	9	61.4		19	10	29	64.2
75 / 79		8	3	11	60.8		16	8	24	60.1		36	23	59	62.8
70 / 74	1	19	9	29	59.7	1	26	18	45	59.5	14	54	47	115	62.3
65 / 69	9	28	20	57	58.4	14	34	30	78	58.7	37	45	48	130	59.7
60 / 64	12	34	29	75	54.4	22	34	34	90	55.3	42	36	41	119	55.5
55 / 59	18	36	36	90	50.1	26	30	33	89	50.9	40	22	33	95	51.0
50 / 54	28	34	38	100	46.6	32	25	33	90	46.6	40	13	22	75	46.9
45 / 49	41	33	38	112	42.5	39	22	25	86	42.6	32	8	12	52	42.6
40 / 44	43	27	35	105	38.0	37	14	18	69	38.3	24	6	6	36	38.5
35 / 39	47	16	25	88	34.1	28	8	10	46	33.9	12	2	3	17	33.9
30 / 34	30	8	11	49	29.3	17	4	6	27	29.5	6	0	1	7	28.5
25 / 29	14	3	4	21	24.7	7	2	2	11	25.0	2	0	0	2	24.2
20 / 24	4	0	1	5	20.4	3	1	1	5	20.7	0			0	18.0
15 / 19	2	0	0	2	15.5	0	0	0	0	14.8					
10 / 14	0			0	10.5	0			0	13.0					
5 / 9															

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							0	0	0	72.8		1	1	2	74.9
95 / 99		0	0	0	67.9		4	2	6	72.9		12	8	20	75.2
90 / 94		3	2	5	68.4		12	7	19	73.6		50	28	78	75.0
85 / 89		16	8	24	67.8	0	46	25	71	72.4	0	79	51	130	74.2
80 / 84	0	44	24	68	66.9	1	72	52	124	70.9	18	62	70	150	73.6
75 / 79	3	58	45	106	65.6	47	66	73	185	70.3	126	24	56	207	72.7
70 / 74	43	54	62	159	65.2	89	33	54	176	67.8	65	9	22	96	69.2
65 / 69	60	33	44	137	61.5	59	12	25	96	63.5	23	2	4	29	64.6
60 / 64	46	18	28	92	56.6	33	3	9	45	58.8	7	0	0	7	58.7
55 / 59	39	9	16	64	51.8	14	0	1	15	53.7	1			1	55.3
50 / 54	24	4	7	35	47.2	5	0	1	6	49.3					
45 / 49	16	1	3	20	43.1	1			1	45.2					
40 / 44	6	0	1	7	38.7										
35 / 39	2		0	2	33.8										
30 / 34	0			0	30.8										
25 / 29															
20 / 24															
15 / 19															
10 / 14															
5 / 9															

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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	74.0					
100 / 104		3	2	5	72.9	2	1		3	74.3		0	0	0	72.0
95 / 99		34	23	57	73.9	36	21		57	74.0		10	4	14	73.3
90 / 94		76	45	121	74.5	78	43		121	74.2		46	18	64	73.4
85 / 89	0	70	57	127	74.4	0	69	55	124	74.1	0	67	37	104	72.7
80 / 84	34	49	76	159	74.1	29	49	81	159	73.8	9	60	60	129	72.0
75 / 79	173	11	35	219	73.2	165	10	38	213	73.1	94	34	65	193	71.6
70 / 74	38	4	9	51	70.0	49	3	10	62	69.8	72	15	35	122	67.9
65 / 69	3	0	1	4	66.0	5	0	0	5	64.6	29	5	11	45	61.7
60 / 64	0			0	60.5	0			0	59.0	18	2	7	27	56.6
55 / 59											13	0	3	16	52.5
50 / 54											5	0	0	5	48.9
45 / 49											1		0	1	45.2
40 / 44															
35 / 39															
30 / 34															
25 / 29															
20 / 24															
15 / 19															
10 / 14															
5 / 9															

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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		1	0	1	68.3										
90 / 94		9	2	11	71.6		0		0	64.4					
85 / 89		33	13	46	70.6		2	1	3	67.8		0		0	59.3
80 / 84	1	56	33	90	68.6		17	5	22	67.9		2	0	2	63.5
75 / 79	28	59	54	141	67.8	1	35	18	54	66.4	0	13	4	17	63.5
70 / 74	41	44	53	138	64.9	27	45	38	110	64.9	4	30	16	50	62.5
65 / 69	50	25	38	114	61.5	23	39	35	97	60.0	20	32	27	79	60.5
60 / 64	43	12	26	81	56.8	32	36	39	107	55.8	18	40	32	90	55.1
55 / 59	38	6	15	59	52.8	37	28	36	101	51.3	26	37	39	102	50.6
50 / 54	25	2	9	36	48.3	33	18	30	81	46.9	30	31	39	100	46.6
45 / 49	14	1	3	18	44.2	32	11	20	63	42.6	39	27	36	102	42.5
40 / 44	5	0	1	6	39.7	21	5	12	38	38.6	38	18	27	83	38.2
35 / 39	2	0	0	2	34.5	20	2	6	28	34.2	36	9	18	63	33.8
30 / 34	0			0	29.7	10	0	2	12	29.9	22	3	7	32	29.1
25 / 29	0			0	26.5	2	0	0	2	25.4	9	1	3	13	24.2
20 / 24						1			1	21.5	3	1	2	6	19.2
15 / 19											3	1	1	5	14.4
10 / 14											1	0	0	1	9.6
5 / 9											0	0		0	5.2

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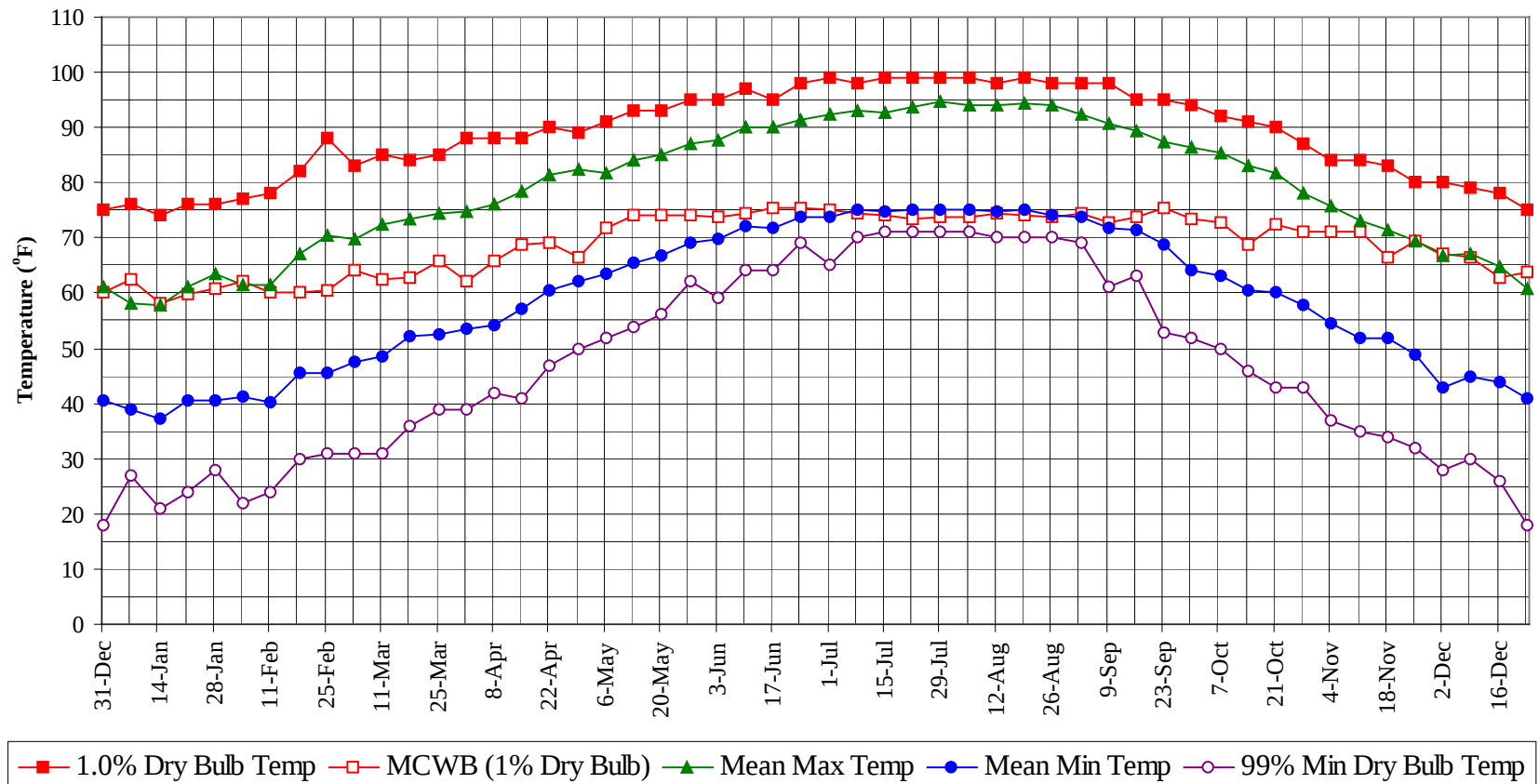
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)

Period of Record = 1973 to 1996

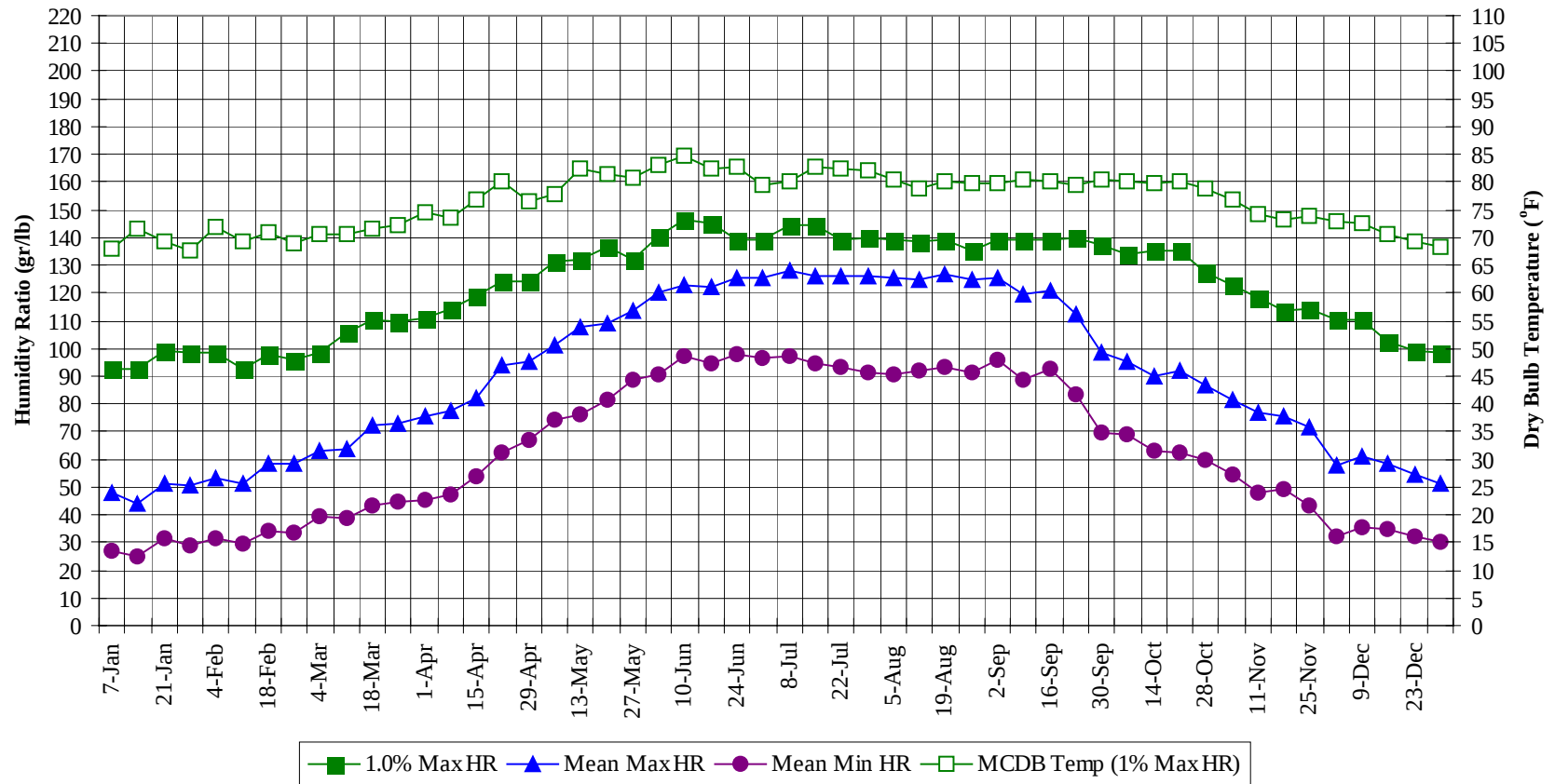
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
105 / 109		0		0	74.0
100 / 104		6	5	11	73.6
95 / 99		97	59	156	73.8
90 / 94		277	145	423	74.1
85 / 89	1	389	248	638	73.1
80 / 84	92	435	411	938	71.6
75 / 79	635	369	418	1422	70.3
70 / 74	442	334	372	1148	65.8
65 / 69	329	256	282	867	60.9
60 / 64	274	217	247	738	55.9
55 / 59	250	170	213	633	51.2
50 / 54	223	130	178	531	46.9
45 / 49	215	104	137	457	42.6
40 / 44	176	71	100	347	38.3
35 / 39	147	38	62	247	34.0
30 / 34	86	16	27	129	29.3
25 / 29	34	7	10	51	24.7
20 / 24	12	3	4	19	20.0
15 / 19	5	1	1	7	14.7
10 / 14	1	0	0	1	9.9
5 / 9	0	0		0	5.2

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Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary



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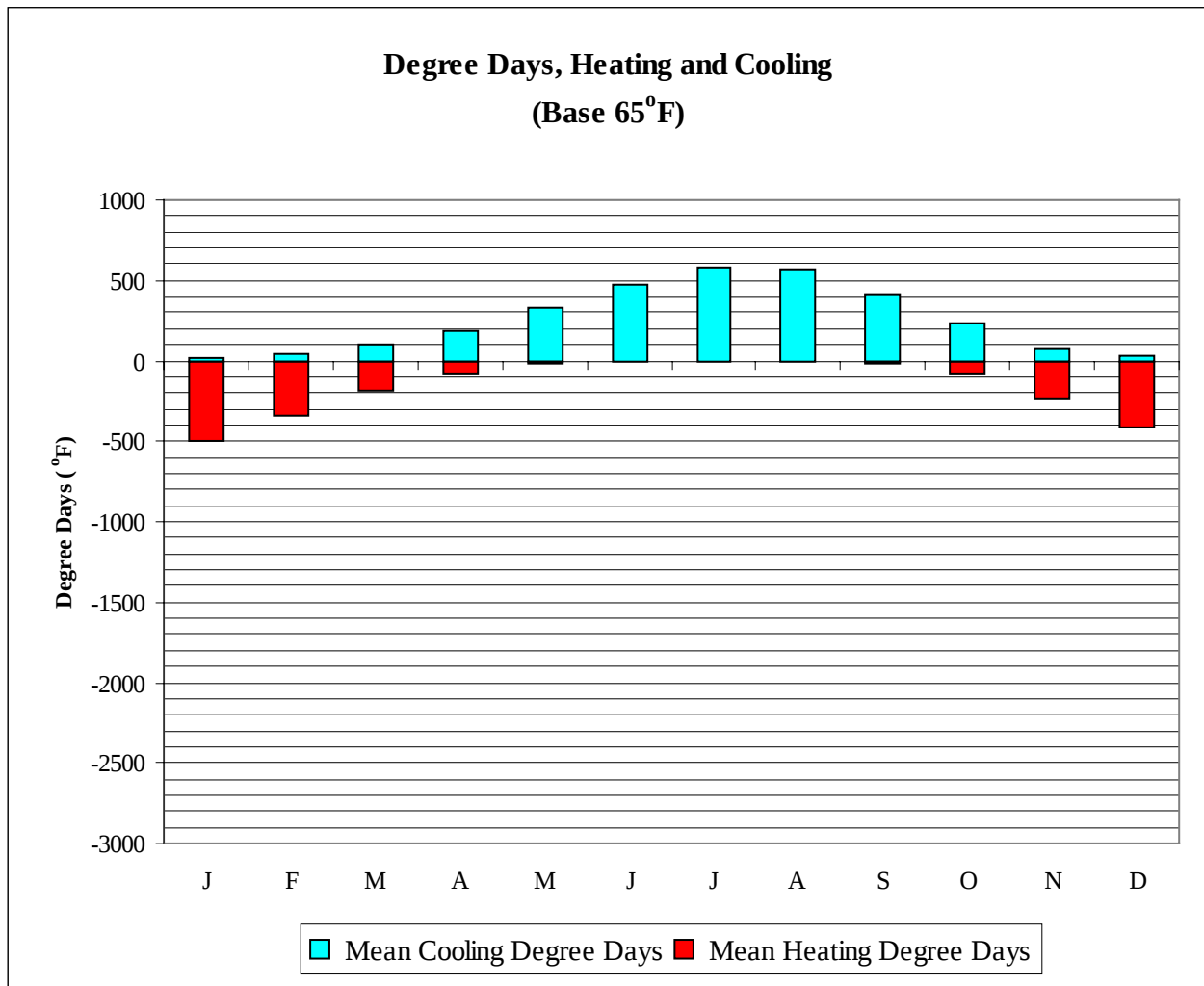
Long Term Dry Bulb Temperature and Humidity Summary

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	76.0	62.4	58.3	39.0	27.0	92.4	67.9	48.2	27.0
14-Jan	74.0	58.3	57.9	37.1	21.0	92.4	71.4	44.0	24.9
21-Jan	76.0	59.7	61.1	40.5	24.0	99.4	69.2	51.5	31.2
28-Jan	76.0	60.8	63.5	40.7	28.0	98.7	67.8	50.7	28.6
4-Feb	77.0	62.1	61.5	41.2	22.0	98.7	71.9	53.4	31.7
11-Feb	78.0	60.2	61.6	40.1	24.0	92.4	69.2	51.4	29.3
18-Feb	82.0	60.1	67.3	45.5	30.0	98.0	71.1	58.5	34.3
25-Feb	88.0	60.6	70.4	45.5	31.0	95.9	68.8	58.5	33.6
4-Mar	83.0	64.2	69.9	47.6	31.0	98.7	70.7	63.2	39.3
11-Mar	85.0	62.6	72.3	48.4	31.0	105.7	70.7	63.8	38.6
18-Mar	84.0	63.0	73.6	52.3	36.0	110.6	71.5	72.0	43.4
25-Mar	85.0	65.9	74.6	52.5	39.0	109.9	72.1	72.6	44.7
1-Apr	88.0	62.0	74.6	53.4	39.0	111.3	74.4	75.5	45.3
8-Apr	88.0	65.8	76.1	54.3	42.0	114.1	73.7	77.4	47.0
15-Apr	88.0	68.9	78.3	57.0	41.0	119.0	76.7	82.1	53.6
22-Apr	90.0	69.0	81.4	60.5	47.0	123.9	80.2	93.7	62.3
29-Apr	89.0	66.4	82.3	62.1	50.0	123.9	76.4	95.4	66.7
6-May	91.0	71.9	81.9	63.3	52.0	131.6	77.9	101.2	74.1
13-May	93.0	74.2	84.0	65.5	54.0	132.3	82.3	107.5	76.1
20-May	93.0	74.1	85.2	66.7	56.0	136.5	81.5	109.3	81.4
27-May	95.0	74.2	87.1	69.2	62.0	132.3	80.8	113.7	88.8
3-Jun	95.0	73.9	87.8	69.8	59.0	140.7	83.1	120.1	90.9
10-Jun	97.0	74.4	89.9	72.2	64.0	146.3	84.9	122.8	97.1
17-Jun	95.0	75.4	89.9	71.7	64.0	144.9	82.3	122.4	94.9
24-Jun	98.0	75.5	91.3	73.8	69.0	139.3	82.7	125.3	97.7
1-Jul	99.0	75.1	92.4	73.8	65.0	139.3	79.5	125.4	96.8
8-Jul	98.0	74.4	93.0	75.0	70.0	144.2	80.2	128.3	97.2
15-Jul	99.0	74.2	92.7	74.9	71.0	144.2	82.7	126.1	94.3
22-Jul	99.0	73.4	93.6	75.0	71.0	139.3	82.5	126.2	93.0
29-Jul	99.0	73.6	94.7	75.1	71.0	140.0	82.1	126.2	91.4
5-Aug	99.0	73.8	94.1	75.0	71.0	139.3	80.4	125.4	90.4
12-Aug	98.0	74.4	94.0	74.7	70.0	138.6	78.9	125.1	92.1
19-Aug	99.0	74.0	94.4	75.2	70.0	139.3	80.2	127.0	93.3
26-Aug	98.0	73.7	94.0	74.3	70.0	135.1	79.8	125.0	91.6
2-Sep	98.0	74.6	92.3	73.7	69.0	139.3	79.9	125.7	95.6
9-Sep	98.0	72.8	90.8	71.8	61.0	139.3	80.3	119.7	88.5
16-Sep	95.0	73.8	89.5	71.5	63.0	139.3	80.2	120.6	92.9
23-Sep	95.0	75.4	87.4	68.8	53.0	140.0	79.6	112.0	83.5
30-Sep	94.0	73.5	86.5	64.2	52.0	137.2	80.3	98.2	69.4
7-Oct	92.0	72.9	85.3	63.2	50.0	133.7	80.2	95.1	69.0
14-Oct	91.0	68.9	82.9	60.3	46.0	135.1	79.9	90.2	63.1
21-Oct	90.0	72.6	81.7	60.1	43.0	135.1	80.2	91.7	62.3
28-Oct	87.0	71.0	78.1	57.9	43.0	127.4	78.8	86.9	59.9
4-Nov	84.0	71.0	75.8	54.5	37.0	122.5	77.0	81.1	54.3
11-Nov	84.0	71.0	73.1	52.0	35.0	118.3	74.2	76.6	47.9
18-Nov	83.0	66.4	71.5	51.8	34.0	113.4	73.1	75.8	49.4
25-Nov	80.0	69.6	69.4	49.0	32.0	114.1	73.9	71.3	43.2
2-Dec	80.0	67.2	66.7	43.0	28.0	110.6	72.9	57.9	32.1
9-Dec	79.0	66.4	67.1	44.8	30.0	110.6	72.5	61.3	35.6
16-Dec	78.0	62.7	64.9	43.8	26.0	102.2	70.6	58.5	35.0
23-Dec	75.0	64.0	60.9	41.0	18.0	99.4	69.3	54.6	32.1
31-Dec	75.0	60.1	61.0	40.7	18.0	98.7	68.3	51.3	30.4

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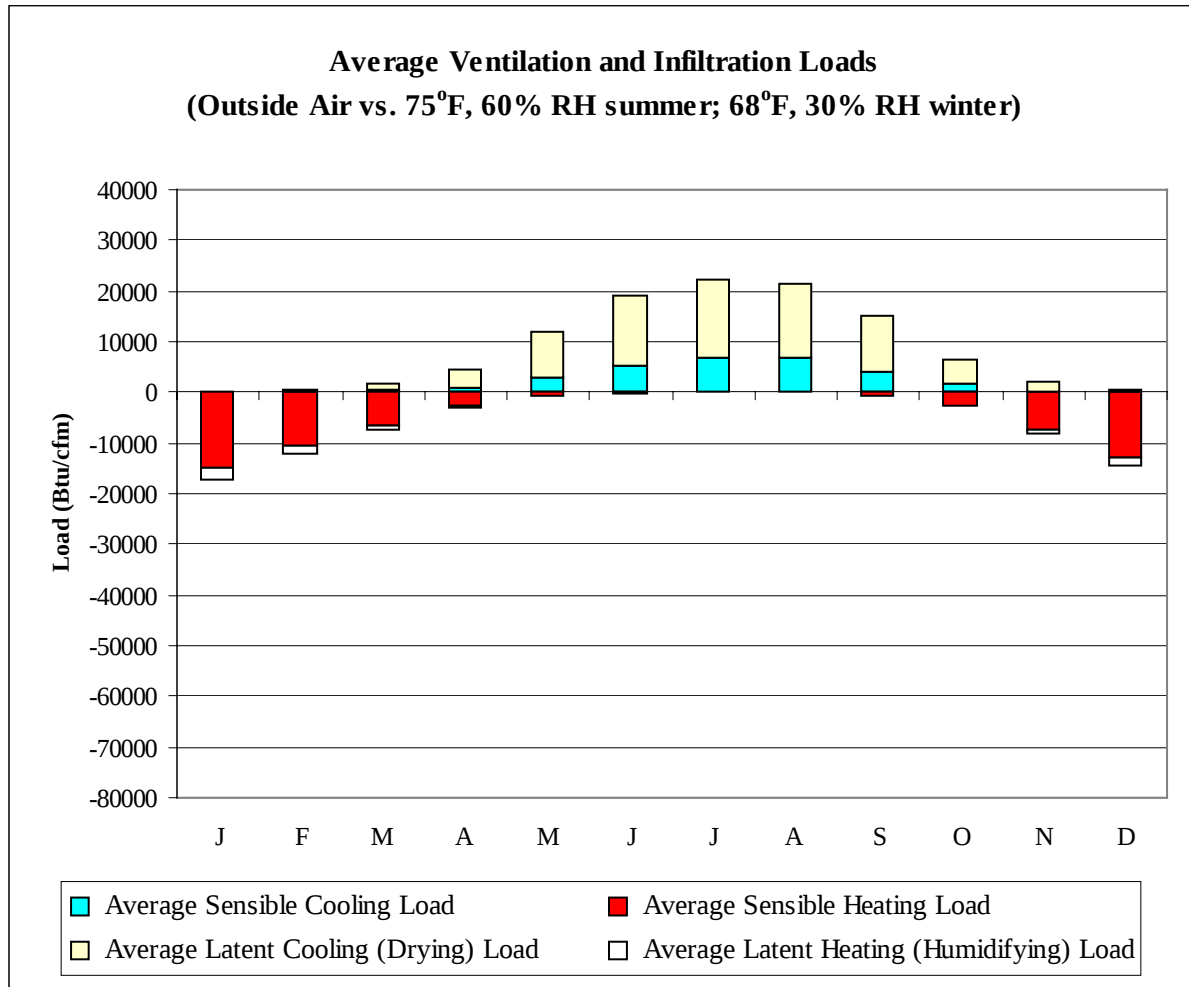


	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	18	492
FEB	40	339
MAR	99	191
APR	185	73
MAY	335	13
JUN	479	1
JUL	575	0
AUG	570	0
SEP	413	12
OCT	236	72
NOV	83	229
DEC	30	413
ANN	3064	1835

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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	25	-14942	239	-2211
FEB	165	-10567	295	-1530
MAR	427	-6422	1376	-823
APR	1088	-2756	3436	-258
MAY	2703	-631	9101	-9
JUN	5222	-76	14017	0
JUL	7019	-2	15398	0
AUG	6927	-5	14648	0
SEP	4176	-511	10959	-4
OCT	1724	-2658	4723	-109
NOV	289	-7462	1863	-831
DEC	47	-12749	632	-1819
ANN	29812	-58781	76687	-7594

Average Annual Solar Radiation – Nearest Available Site

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

City: SAN ANTONIO
 State: TX
 WBAN No: 12921
 Lat(N): 29.53
 Long(W): 98.47
 Elev(ft): 794

Stn Type: Primary
 SHADING GEOMETRY IN DIMENSIONLESS UNITS
 Window: 1
 Overhang: 0.858
 Vert Gap: 0.646

AVERAGE INCIDENT SOLAR RADIATION (Btu/sq.ft./day), Percentage Uncertainty = 9		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ	Global	970	1230	1520	1740	1890	2120	2170	2040	1720	1420	1080	900	1570
	Std Dev	74	108	122	157	127	136	148	100	100	106	104	70	37
	Minimum	820	1040	1210	1380	1560	1790	1790	1780	1480	1140	850	780	1490
	Maximum	1120	1460	1820	2030	2060	2320	2430	2240	1950	1610	1310	1100	1640
	Diffuse	420	510	650	790	890	870	820	780	700	530	440	400	650
Clear Day	Global	1350	1660	2050	2380	2560	2610	2570	2410	2120	1740	1390	1240	2010
NORTH	Global	270	330	400	480	570	660	630	520	430	350	290	260	430
	Diffuse	270	330	400	470	520	540	530	490	430	350	290	260	410
Clear Day	Global	240	290	360	440	590	710	660	490	380	310	260	230	410
EAST	Global	580	700	810	860	900	1000	1080	1050	920	790	630	530	820
	Diffuse	330	390	480	560	610	640	630	610	540	430	350	310	490
Clear Day	Global	900	1050	1230	1340	1370	1380	1370	1330	1230	1070	910	830	1170
SOUTH	Global	1210	1220	1080	840	660	600	640	820	1050	1270	1270	1200	990
	Diffuse	430	470	530	540	540	530	530	550	560	510	450	410	510
Clear Day	Global	2050	1920	1570	1060	710	580	630	900	1340	1760	1980	2040	1380
WEST	Global	620	770	930	1020	1070	1170	1180	1120	1000	890	700	590	920
	Diffuse	330	400	500	580	630	650	640	620	550	450	360	310	500
Clear Day	Global	900	1050	1230	1340	1370	1380	1370	1330	1230	1070	910	830	1170

Average Annual Solar Heat and Illumination – Nearest Available Site

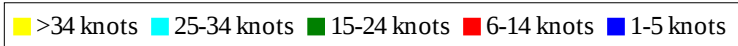
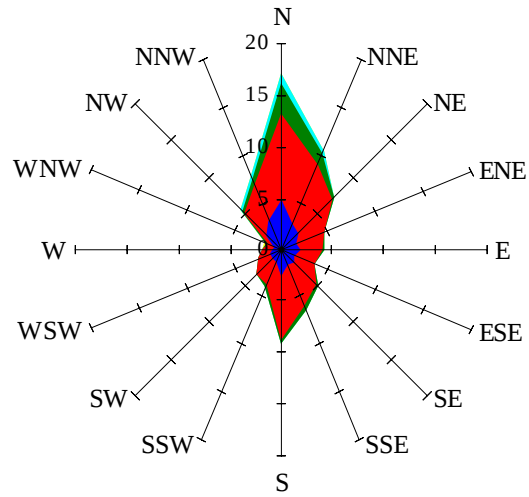
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

AVERAGE TRANSMITTED SOLAR RADIATION (Btu/sq.ft./day) FOR DOUBLE GLAZING, Percentage Uncertainty = 9		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ	Unshaded	670	870	1090	1260	1380	1550	1590	1490	1240	1010	750	610	1130
NORTH	Unshaded	190	230	280	320	370	420	400	340	300	250	200	180	290
	Shaded	170	200	240	290	320	360	350	310	270	220	180	160	250
EAST	Unshaded	400	490	570	610	630	700	760	750	650	550	440	370	580
	Shaded	340	410	480	500	520	570	620	610	550	470	380	320	480
SOUTH	Unshaded	890	860	710	520	410	380	390	480	660	880	930	890	670
	Shaded	840	700	420	330	330	330	330	340	360	620	850	860	520
WEST	Unshaded	440	540	660	730	760	840	840	800	710	630	490	410	650
	Shaded	380	470	560	600	630	690	690	660	600	540	420	360	550

AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9		March					June				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	35	77	95	84	45	33	76	103	104	78
	M.Cloudy	18	46	62	54	30	21	57	81	85	62
NORTH	M.Clear	9	15	16	15	11	24	19	18	18	18
	M.Cloudy	8	17	20	18	11	14	19	20	19	19
EAST	M.Clear	76	70	22	15	11	64	78	45	18	17
	M.Cloudy	19	34	22	18	11	27	51	38	19	18
SOUTH	M.Clear	28	59	73	64	35	10	17	28	28	17
	M.Cloudy	11	31	44	38	20	9	18	27	27	18
WEST	M.Clear	9	15	16	62	80	10	17	18	42	75
	M.Cloudy	8	17	20	37	37	9	18	20	37	56
M.Clear	(% hrs)	31	34	38	41	42	21	30	38	44	53
		Sept					Dec				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	19	66	93	92	63	17	53	67	53	17
	M.Cloudy	13	46	69	72	49	9	31	40	32	11
NORTH	M.Clear	7	15	17	17	15	6	11	13	11	6
	M.Cloudy	6	16	19	20	16	4	12	15	12	5
EAST	M.Clear	52	78	44	17	15	51	54	13	11	6
	M.Cloudy	19	46	35	20	16	11	23	15	12	5
SOUTH	M.Clear	11	42	62	61	41	38	80	93	80	37
	M.Cloudy	7	29	45	48	30	9	30	40	33	12
WEST	M.Clear	7	15	17	44	76	6	11	14	55	49
	M.Cloudy	6	16	19	37	50	4	12	15	25	15
M.Clear	(% hrs)	34	37	41	43	48	33	35	38	39	42

Wind Summary - December, January, and February

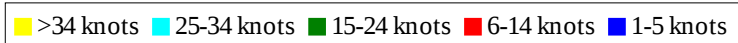
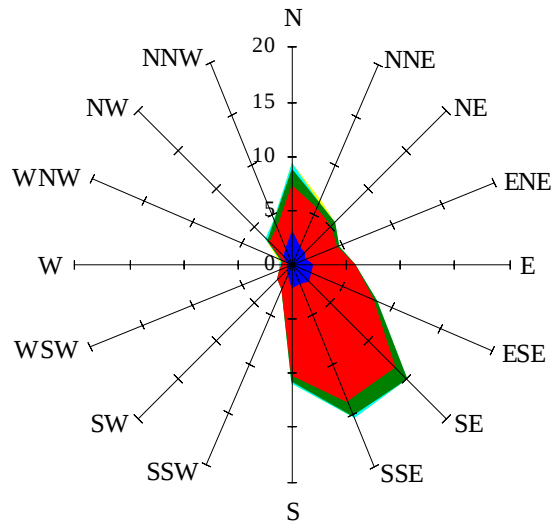
Labels of Percent Frequency on North Axis



Percent Calm = 7.31

Wind Summary - March, April, and May

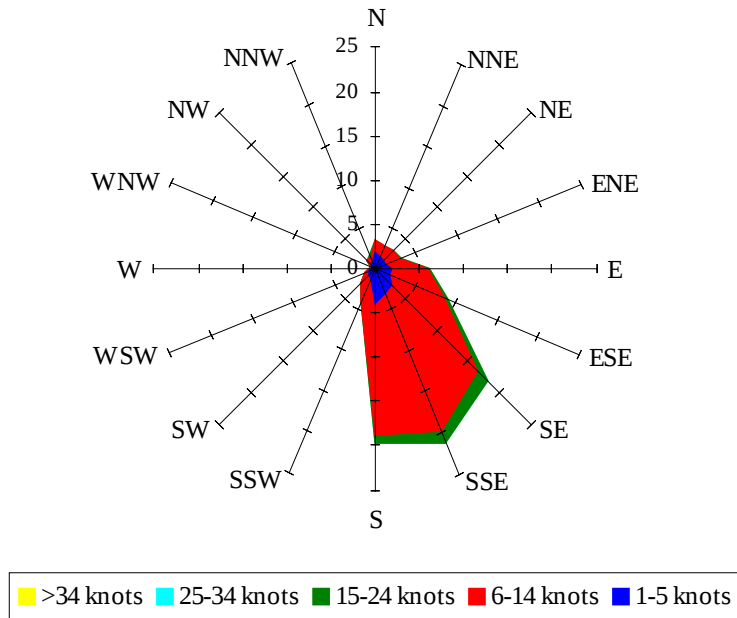
Labels of Percent Frequency on North Axis



Percent Calm = 4.14

Wind Summary - June, July, and August

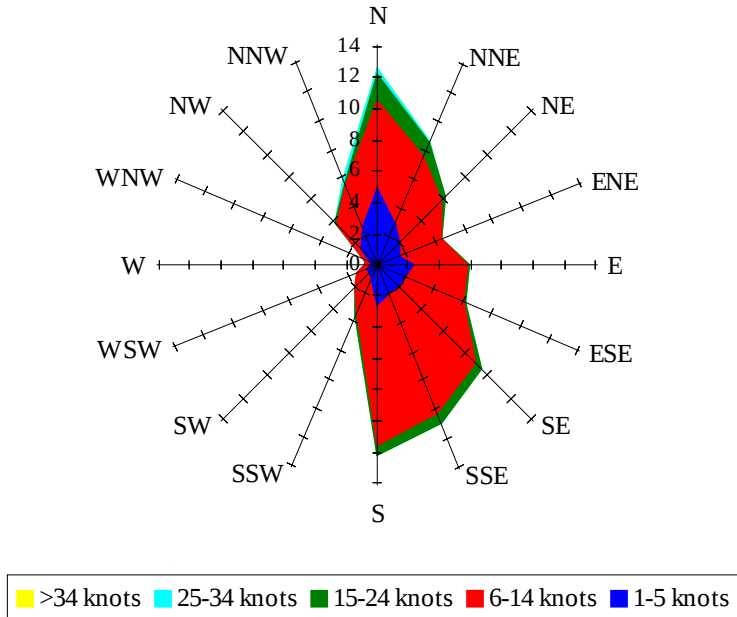
Labels of Percent Frequency on North Axis



Percent Calm = 3.00

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 5.99