

MIDLAND TX

Latitude = 31.95 N

Longitude = 102.10 W

Period of Record = 1973 to 1996

WMO No. 722650

Elevation = 2861 feet

Average Pressure = 27.03 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	103	67	52	14.4	S
0.4% Occurrence	100	68	61	12.9	S
1.0% Occurrence	97	67	65	13.4	S
2.0% Occurrence	95	68	68	13.8	S
Mean Daily Range	26	-	-	-	-
97.5% Occurrence	27	24	16	9.4	N
99.0% Occurrence	22	20	12	9.7	N
99.6% Occurrence	18	16	11	9.0	N
Median of Extreme Lows	12	10	7	10.5	NE
	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	74	87	118	12.6	S
0.4% Occurrence	73	87	112	13.1	S
1.0% Occurrence	72	87	106	13.3	S
2.0% Occurrence	71	86	101	13.2	S
	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	132	78	0.79	10.6	S
0.4% Occurrence	123	76	0.74	9.8	S
1.0% Occurrence	115	77	0.69	12.1	S
2.0% Occurrence	111	77	0.67	13.5	S
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		336	1672	60	1468

Other Site Data

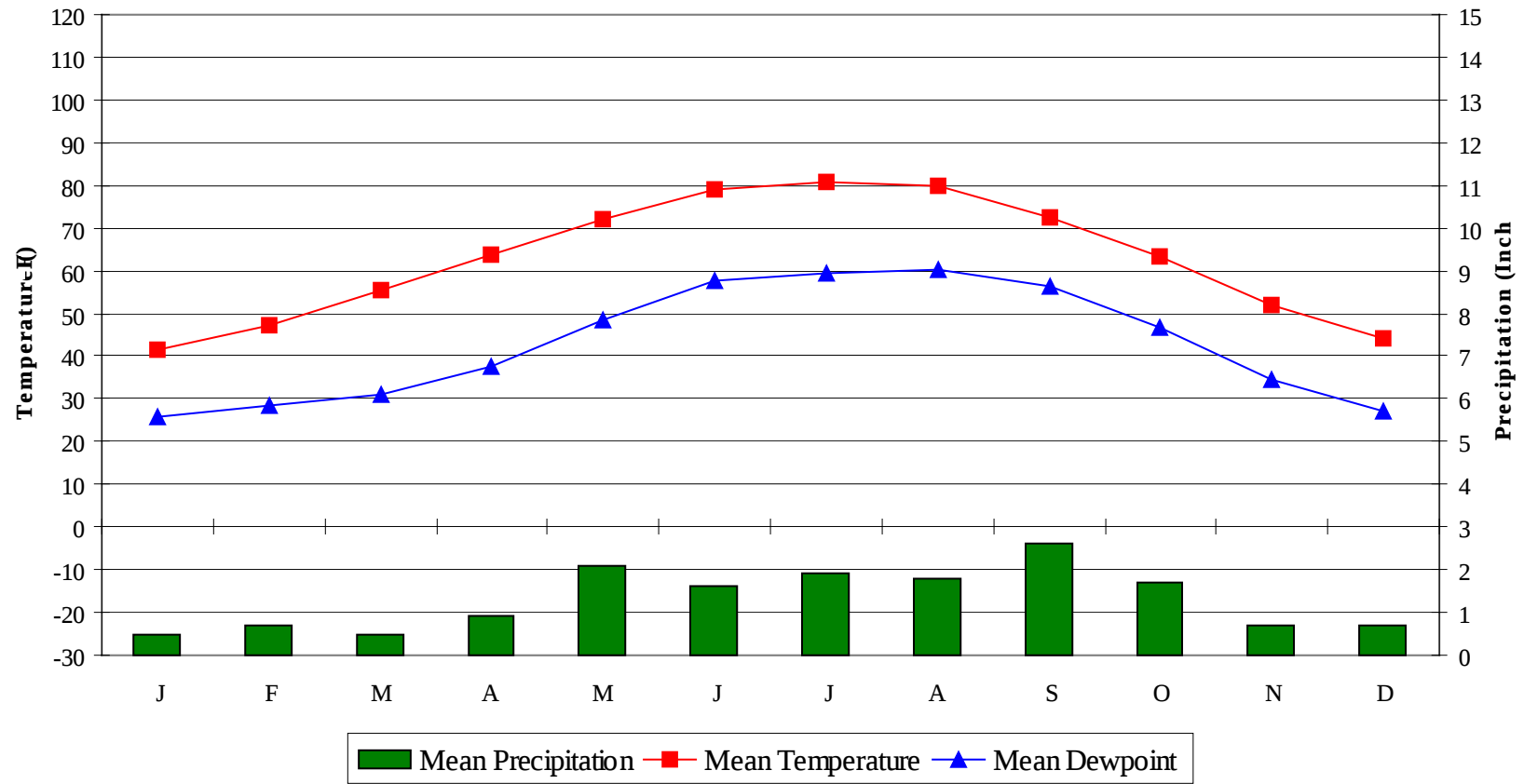
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
11	3.3	90	1.0 + 2.0
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
65.1	N/A	4	46

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

MIDLAND TX

WMO No. 722650

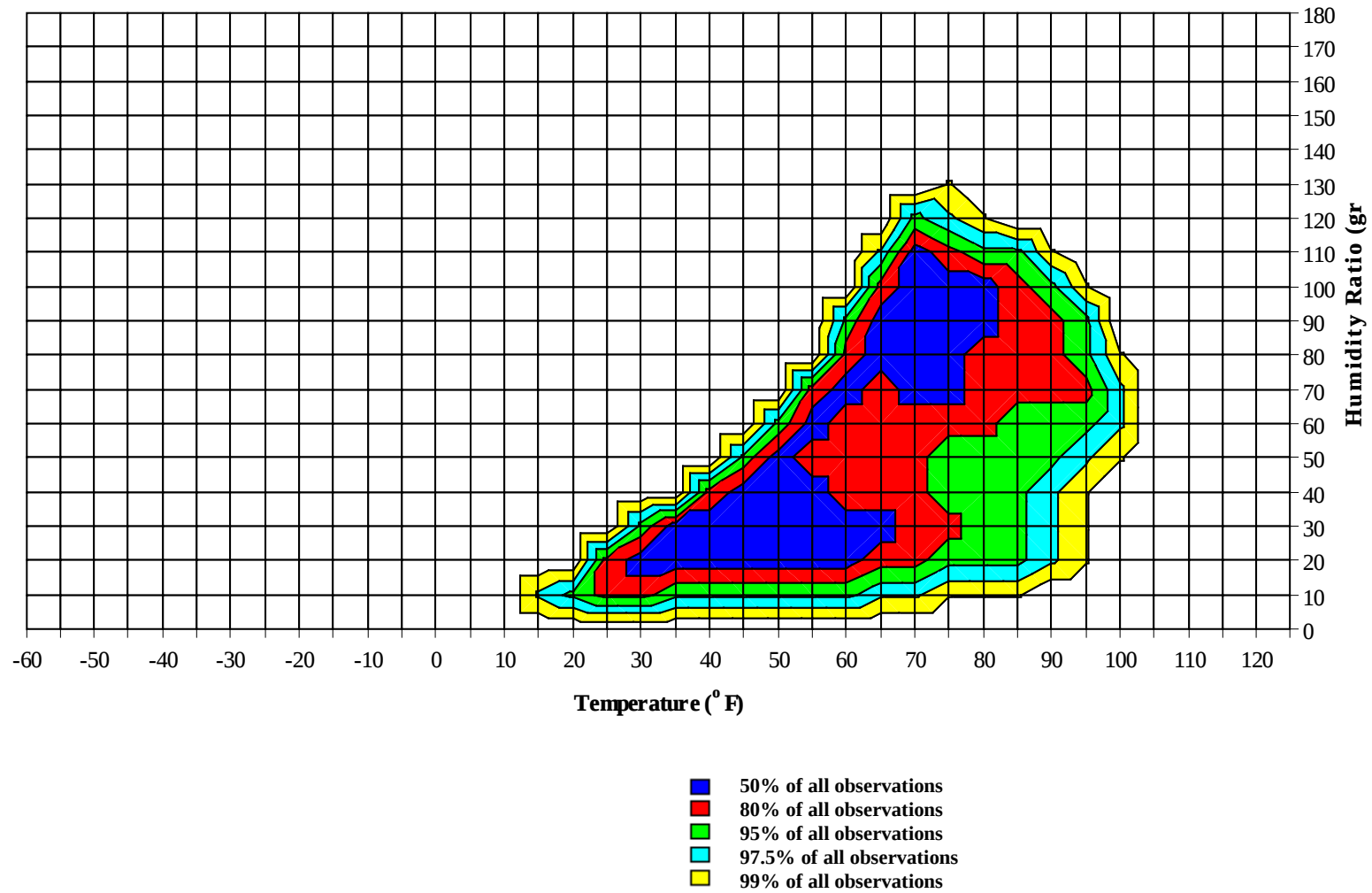
Average Annual Climate



MIDLAND TX

WMO No. 722650

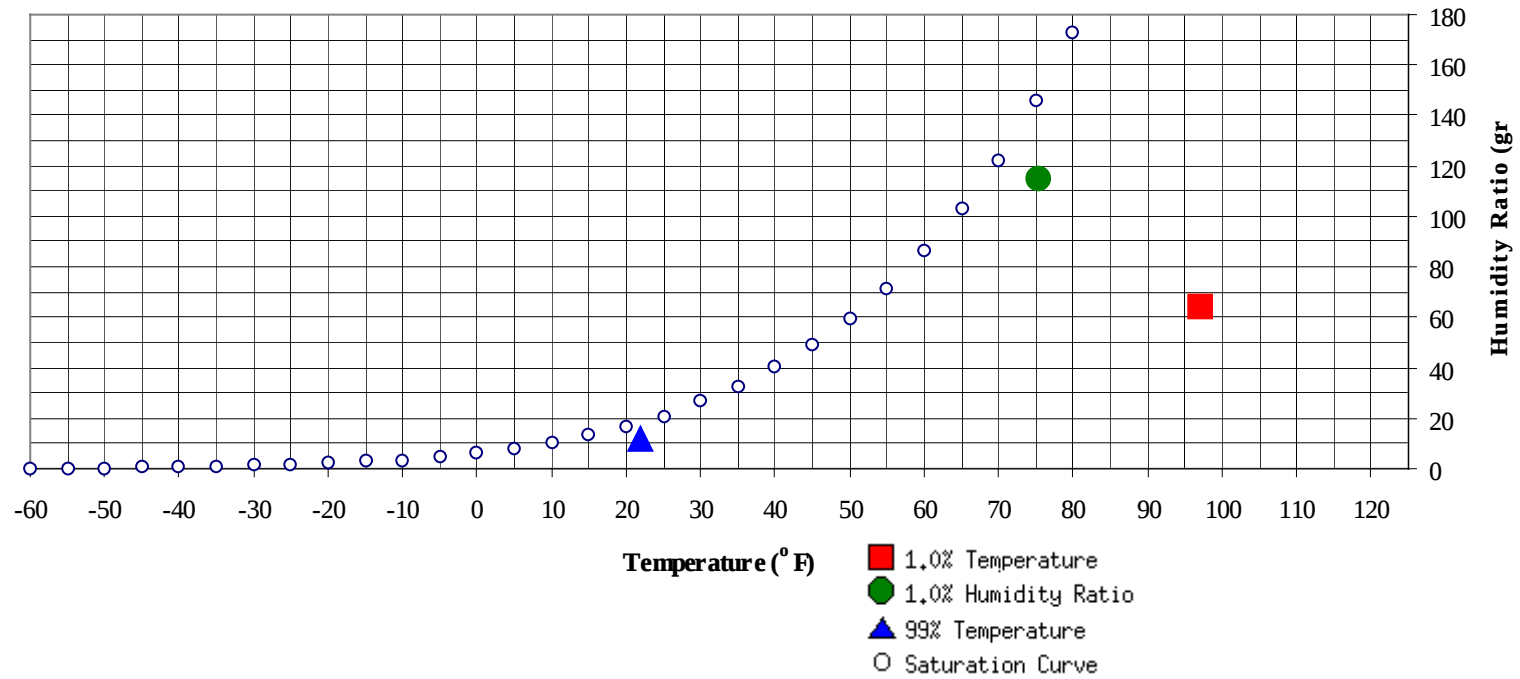
Long Term Psychrometric Summary



MIDLAND TX

WMO No. 722650

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	22	12.2	7.1		114.8	75.3	70.2	68	36.0

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	97	64.6	67.5	33.5

MIDLAND TX

WMO No. 722650

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												0		0	57.0
90 / 94											1	0		1	57.4
85 / 89							1	0	1	56.6	4	2		6	55.4
80 / 84		0	0	0	53.3		3	1	5	55.1	16	7		23	54.6
75 / 79		2	1	3	51.8		9	4	13	52.3	24	12		37	53.8
70 / 74		7	2	9	50.3		18	9	27	50.8	0	34	22	57	51.9
65 / 69		18	7	24	48.3	0	25	15	40	48.9	5	37	30	71	50.4
60 / 64	1	26	13	39	46.3	3	27	20	49	47.4	13	36	36	85	48.7
55 / 59	2	28	19	49	44.3	8	30	28	66	45.6	28	32	40	100	46.6
50 / 54	9	29	30	68	41.9	20	27	35	83	43.6	43	24	39	106	43.3
45 / 49	21	32	38	91	39.8	30	24	35	89	40.3	51	18	29	98	39.9
40 / 44	36	30	44	109	36.5	41	22	31	94	37.0	47	10	16	74	36.5
35 / 39	52	28	38	118	33.1	46	15	22	83	33.3	32	4	8	44	32.5
30 / 34	54	23	29	105	29.1	39	11	12	62	29.2	17	4	4	25	28.6
25 / 29	41	15	18	74	24.9	24	7	7	37	24.7	7	2	2	10	24.7
20 / 24	22	6	7	35	20.3	8	2	3	13	20.5	3	1	1	5	20.0
15 / 19	9	3	2	14	15.7	3	1	1	5	15.5	1	0	0	2	15.6
10 / 14	2	1	0	3	11.2	2	1	0	3	10.2	0			0	11.2
5 / 9	1	0	0	1	5.9	1	0	0	1	6.1	0			0	8.0
0 / 4	0			0	2.0	0	0	0	0	0.0					
-5 / -1						0	0	0	0	-2.7					
-10 / -6						0	0	0	0	-6.1					
-15 / -11						0			0	-10.0					

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.

MIDLAND TX

WMO No. 722650

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												0		0	69.0
110 / 114												0	0	1	68.5
105 / 109							0	0	0	64.6		1	1	2	67.8
100 / 104							2	1	3	63.3		8	5	13	66.6
95 / 99		1	0	1	62.0	0	10	6	16	62.6		24	14	39	67.5
90 / 94		6	3	9	58.3	0	25	14	39	62.0	0	50	32	82	67.6
85 / 89		22	12	34	57.4	0	40	23	63	62.1	0	52	37	89	67.4
80 / 84	0	35	18	53	57.2	1	49	34	83	62.0	6	49	48	102	66.6
75 / 79	0	39	27	66	56.3	9	43	42	94	61.1	37	31	48	116	65.8
70 / 74	5	40	37	81	55.2	36	34	47	117	60.4	86	15	37	137	64.5
65 / 69	21	33	41	94	53.9	54	21	38	113	58.7	75	5	15	95	62.2
60 / 64	41	26	37	104	51.9	67	12	28	107	56.1	27	2	5	34	58.7
55 / 59	47	17	29	93	48.3	47	6	12	65	52.1	7	0	1	8	54.3
50 / 54	49	10	19	79	44.6	22	3	4	29	47.3	1	0	0	1	49.5
45 / 49	36	8	12	56	40.7	9	1	2	11	43.7	0			0	45.8
40 / 44	22	2	5	29	36.9	3	0	0	3	39.7					
35 / 39	13	1	2	16	32.8	0			0	36.0					
30 / 34	4	0	0	5	29.6										
25 / 29	0			0	24.0										
20 / 24	0			0	18.7										
15 / 19	0			0	17.0										
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															

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.

MIDLAND TX

WMO No. 722650

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															
110 / 114		0	0	0	71.8										
105 / 109		1	1	1	67.7										
100 / 104		7	4	11	68.1		5	2	7	69.3		1	1	2	66.8
95 / 99		34	22	55	68.5		29	16	45	69.0		7	3	11	67.6
90 / 94		64	39	103	68.7		58	34	91	68.8	0	25	11	36	67.0
85 / 89	1	56	40	97	68.3	0	60	38	97	68.5	0	44	21	65	66.9
80 / 84	11	49	53	112	67.4	7	50	53	110	67.6	1	50	34	85	66.0
75 / 79	62	24	49	134	66.2	43	27	54	124	66.4	9	40	43	92	64.7
70 / 74	110	11	31	152	65.2	111	13	41	165	65.4	48	33	55	136	63.9
65 / 69	61	3	9	73	63.9	76	3	11	89	63.7	85	18	39	143	62.1
60 / 64	4	0	0	4	60.6	11	1	2	14	60.2	48	10	17	74	57.7
55 / 59						1			1	56.1	27	5	11	42	53.0
50 / 54											14	4	4	22	49.0
45 / 49											5	2	2	10	44.2
40 / 44											2	0	0	3	40.8
35 / 39											0			0	36.3
30 / 34															
25 / 29															
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															

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.

MIDLAND TX

WMO No. 722650

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		1	0	1	60.7										
90 / 94		4	1	6	62.4		0		0	59.0					
85 / 89		18	5	23	62.2		1	0	1	57.3					
80 / 84		36	13	49	61.6		6	1	7	56.5		1	0	1	51.8
75 / 79	0	40	20	61	60.7		19	5	24	55.6		4	1	5	51.7
70 / 74	7	44	35	85	59.3		30	10	39	54.7		14	4	18	50.8
65 / 69	20	39	47	106	57.6	3	33	18	54	53.7	0	23	7	30	49.2
60 / 64	49	30	51	131	55.5	11	35	32	78	51.5	2	29	15	46	47.8
55 / 59	60	18	40	117	51.7	23	32	40	95	48.7	5	32	23	60	45.7
50 / 54	53	9	21	83	47.2	34	29	41	104	45.1	14	34	39	86	42.8
45 / 49	36	5	9	50	42.9	42	21	35	98	41.1	27	31	45	103	39.8
40 / 44	15	2	4	21	38.7	43	16	26	86	37.1	41	27	44	112	36.6
35 / 39	6	1	1	8	33.9	40	10	20	71	33.2	50	21	32	103	32.8
30 / 34	2	0	1	3	29.7	23	4	8	36	28.8	48	15	23	86	28.8
25 / 29	1	0	0	1	26.1	12	2	4	18	24.5	35	9	10	55	24.6
20 / 24						5	0	1	6	20.5	13	4	4	21	19.7
15 / 19						1	0	0	2	16.3	5	2	3	11	15.2
10 / 14						0			0	13.0	3	1	1	5	10.4
5 / 9											1	0	0	2	6.1
0 / 4											0		0	0	0.6
-5 / -1											0			0	-2.0
-10 / -6															
-15 / -11															

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.

MIDLAND TX

WMO No. 722650

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

Period of Record = 1973 to 1996

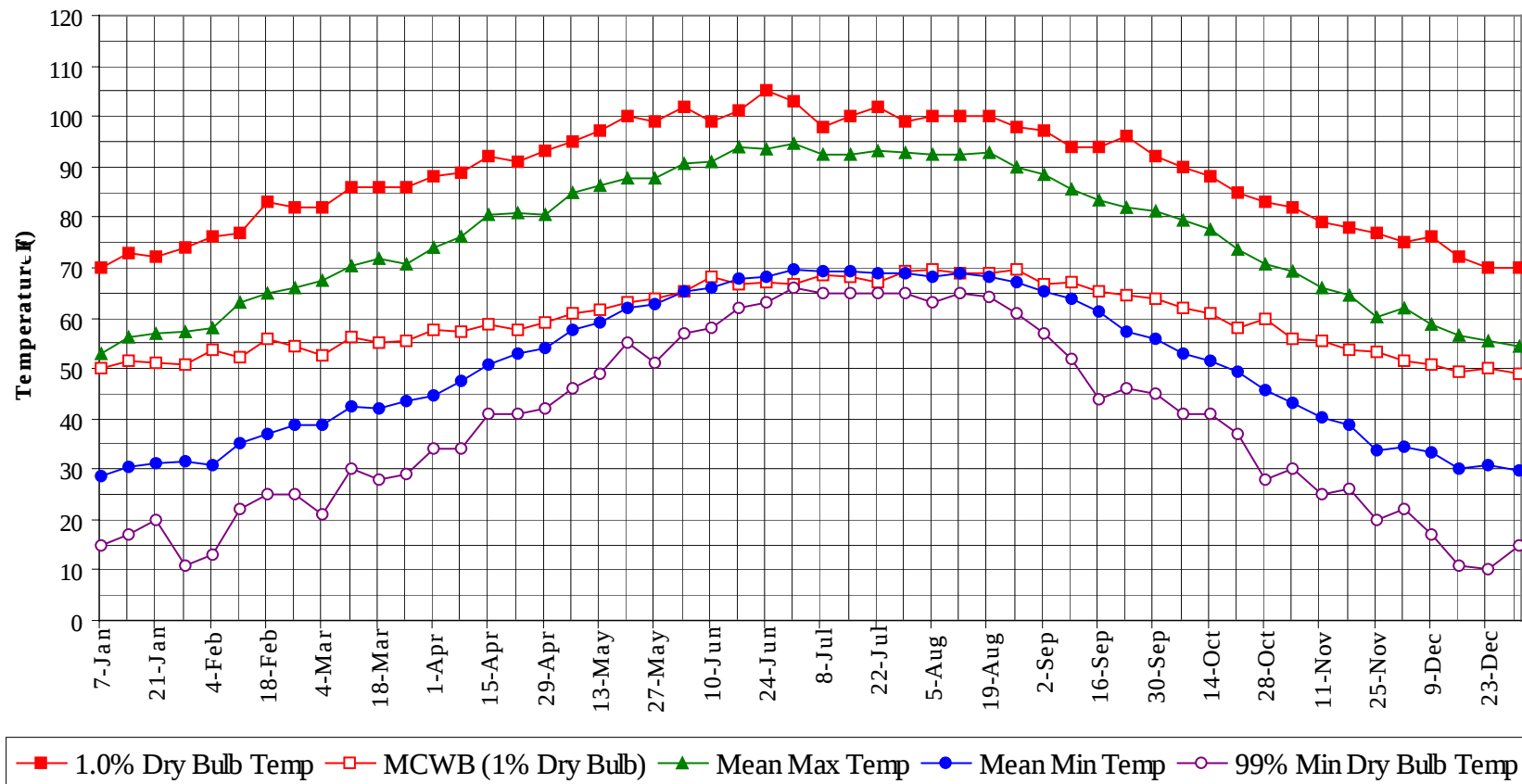
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
115 / 119	0			0	69.0
110 / 114	0			1	69.4
105 / 109	2			4	67.5
100 / 104	23			36	67.3
95 / 99	0	106	62	167	67.7
90 / 94	0	233	134	367	67.2
85 / 89	1	297	178	476	65.9
80 / 84	25	340	261	627	64.4
75 / 79	159	301	305	765	62.8
70 / 74	401	292	327	1021	61.2
65 / 69	398	258	274	930	57.9
60 / 64	274	234	254	762	52.9
55 / 59	253	201	242	697	48.6
50 / 54	259	170	233	662	44.4
45 / 49	259	142	208	609	40.6
40 / 44	251	111	173	535	36.8
35 / 39	242	81	124	447	33.0
30 / 34	188	59	78	325	29.0
25 / 29	122	34	43	198	24.8
20 / 24	52	13	16	81	20.2
15 / 19	20	7	7	34	15.5
10 / 14	8	2	2	12	10.6
5 / 9	3	1	1	4	6.1
0 / 4	1	0	0	1	1.1
-5 / -1	0	0	0	0	-2.5
-10 / -6	0	0	0	0	-6.1
-15 / -11	0			0	-10.0

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.

MIDLAND TX

WMO No. 722650

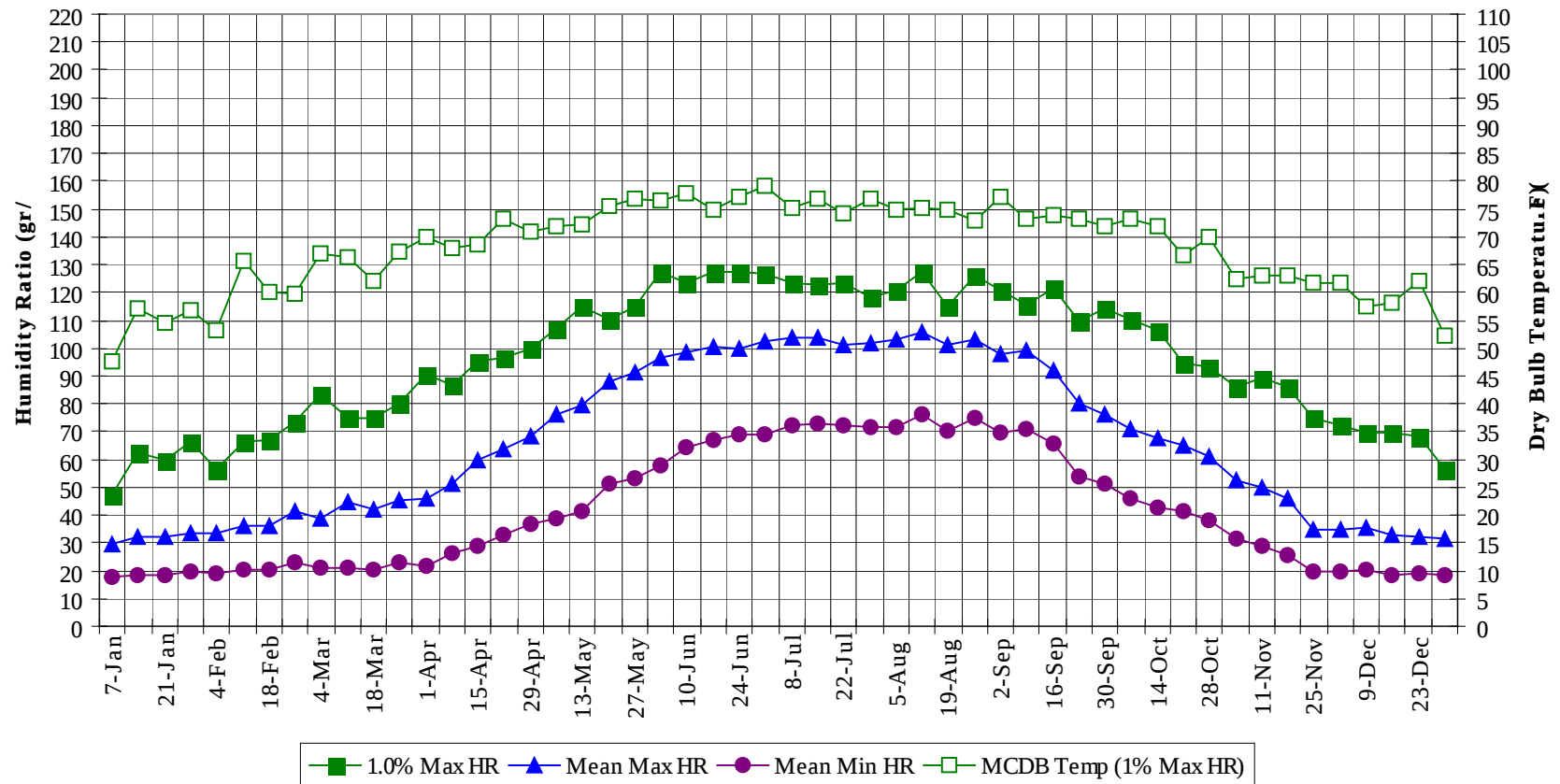
Annual Summary of Temperatures



MIDLAND TX

WMO No. 722650

Long Term Humidity and Dry Bulb Temperature Summary



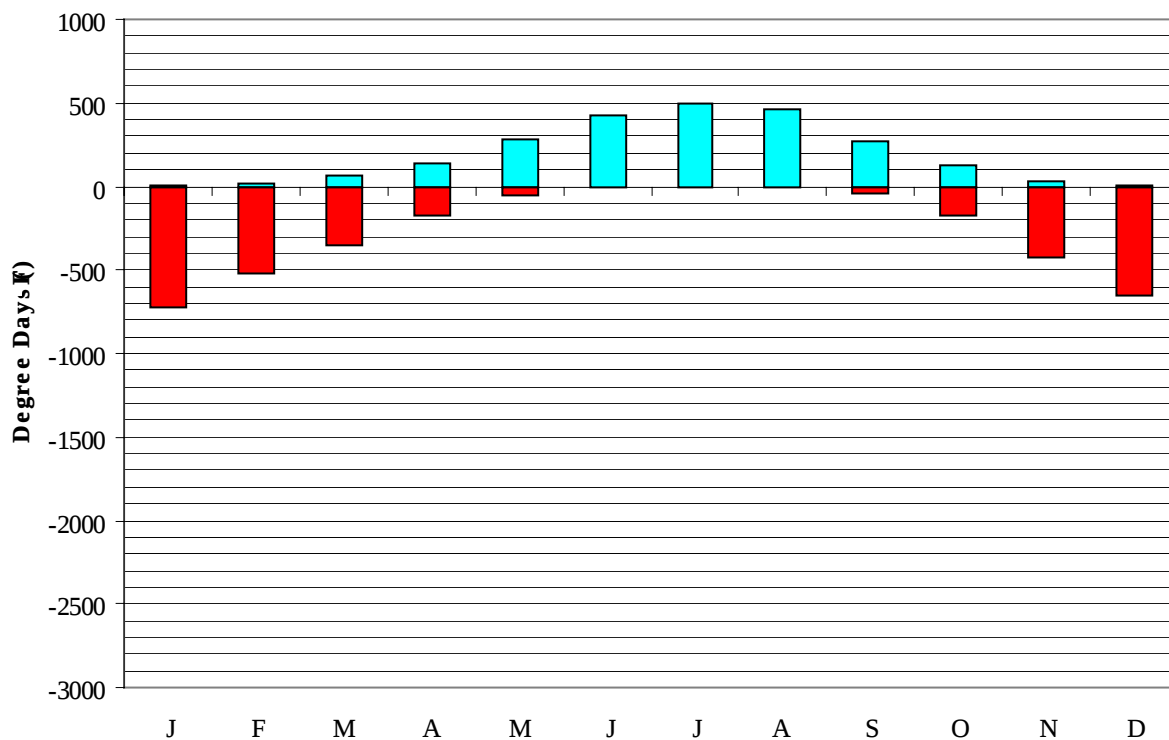
MIDLAND TX**WMO No. 722650****Long Term Dry Bulb Temperature and Humidity Summary**

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	70.0	50.1	52.9	28.6	15.0	47.6	47.7	29.3	17.5
14-Jan	73.0	51.5	56.2	30.4	17.0	62.3	57.2	32.3	18.1
21-Jan	72.0	51.0	56.9	31.2	20.0	59.5	54.4	32.1	18.6
28-Jan	74.0	50.8	57.1	31.5	11.0	66.5	56.9	33.8	19.6
4-Feb	76.0	53.5	57.9	30.9	13.0	56.7	53.2	33.8	19.2
11-Feb	77.0	52.3	63.2	35.3	22.0	66.5	65.8	36.1	20.6
18-Feb	83.0	56.0	65.0	37.0	25.0	67.2	59.9	36.3	20.6
25-Feb	82.0	54.5	66.0	38.7	25.0	73.5	59.7	41.5	23.2
4-Mar	82.0	52.4	67.6	38.9	21.0	83.3	67.0	38.5	20.8
11-Mar	86.0	56.3	70.3	42.3	30.0	74.9	66.2	44.8	21.2
18-Mar	86.0	55.3	71.7	42.1	28.0	74.9	62.0	41.9	20.3
25-Mar	86.0	55.4	70.5	43.6	29.0	79.8	67.5	45.3	22.9
1-Apr	88.0	57.8	73.9	44.4	34.0	90.3	70.0	46.0	21.9
8-Apr	89.0	57.1	76.3	47.6	34.0	86.8	68.0	50.9	26.6
15-Apr	92.0	58.6	80.4	50.8	41.0	95.2	68.6	59.5	28.7
22-Apr	91.0	57.6	80.8	53.1	41.0	96.6	73.3	63.9	32.8
29-Apr	93.0	59.1	80.5	54.2	42.0	100.1	70.9	68.0	37.1
6-May	95.0	61.0	84.9	57.6	46.0	107.1	71.9	76.1	38.6
13-May	97.0	61.7	86.2	59.1	49.0	114.8	72.1	79.4	41.1
20-May	100.0	63.2	87.8	62.1	55.0	110.6	75.7	87.9	51.4
27-May	99.0	63.7	87.8	62.7	51.0	114.8	76.8	91.5	53.0
3-Jun	102.0	65.1	90.7	65.2	57.0	127.4	76.6	96.5	58.0
10-Jun	99.0	68.3	90.9	65.9	58.0	123.2	77.8	98.3	64.6
17-Jun	101.0	66.9	93.9	67.9	62.0	127.4	75.0	100.7	67.1
24-Jun	105.0	67.1	93.6	68.2	63.0	127.4	77.1	100.1	69.2
1-Jul	103.0	66.7	94.6	69.7	66.0	126.7	79.1	102.5	68.6
8-Jul	98.0	68.4	92.5	69.1	65.0	123.2	75.1	103.6	72.1
15-Jul	100.0	68.1	92.4	69.2	65.0	122.5	76.9	103.6	72.6
22-Jul	102.0	67.2	93.1	68.8	65.0	123.2	74.3	100.9	72.0
29-Jul	99.0	69.3	92.9	69.0	65.0	118.3	76.8	101.5	71.9
5-Aug	100.0	69.5	92.3	68.3	63.0	121.1	74.8	103.3	71.5
12-Aug	100.0	68.9	92.5	68.9	65.0	127.4	75.2	106.0	76.4
19-Aug	100.0	69.1	92.8	68.2	64.0	114.8	74.7	101.0	70.4
26-Aug	98.0	69.5	90.1	67.1	61.0	126.0	73.0	102.9	75.1
2-Sep	97.0	66.9	88.5	65.1	57.0	121.1	77.2	98.0	69.8
9-Sep	94.0	67.2	85.4	63.7	52.0	115.5	73.3	99.0	71.1
16-Sep	94.0	65.1	83.3	61.1	44.0	121.8	74.0	92.1	65.6
23-Sep	96.0	64.7	82.0	57.2	46.0	109.9	73.3	79.9	53.9
30-Sep	92.0	63.9	81.1	55.9	45.0	114.1	72.0	76.2	51.0
7-Oct	90.0	61.9	79.3	53.0	41.0	110.6	73.2	70.8	46.0
14-Oct	88.0	60.8	77.5	51.5	41.0	106.4	71.9	67.9	42.5
21-Oct	85.0	58.1	73.6	49.2	37.0	94.5	66.7	64.8	41.2
28-Oct	83.0	59.9	70.7	45.8	28.0	93.1	69.9	60.8	37.8
4-Nov	82.0	55.9	69.4	43.1	30.0	86.1	62.4	52.3	31.5
11-Nov	79.0	55.5	65.9	40.3	25.0	89.6	63.1	50.2	28.7
18-Nov	78.0	53.8	64.6	38.7	26.0	86.1	63.1	45.8	25.5
25-Nov	77.0	53.4	60.1	33.6	20.0	74.9	61.9	34.7	19.6
2-Dec	75.0	51.4	62.0	34.3	22.0	72.1	61.8	35.0	19.9
9-Dec	76.0	50.6	58.9	33.4	17.0	69.3	57.6	35.5	20.4
16-Dec	72.0	49.4	56.5	30.3	11.0	69.3	58.1	32.8	18.2
23-Dec	70.0	50.0	55.4	30.9	10.0	68.6	61.9	31.9	18.9
31-Dec	70.0	48.9	54.2	29.6	15.0	56.7	52.3	31.6	18.6

MIDLAND TX

WMO No. 722650

Degree Days, Heating and Cooling
(Base 65°F)



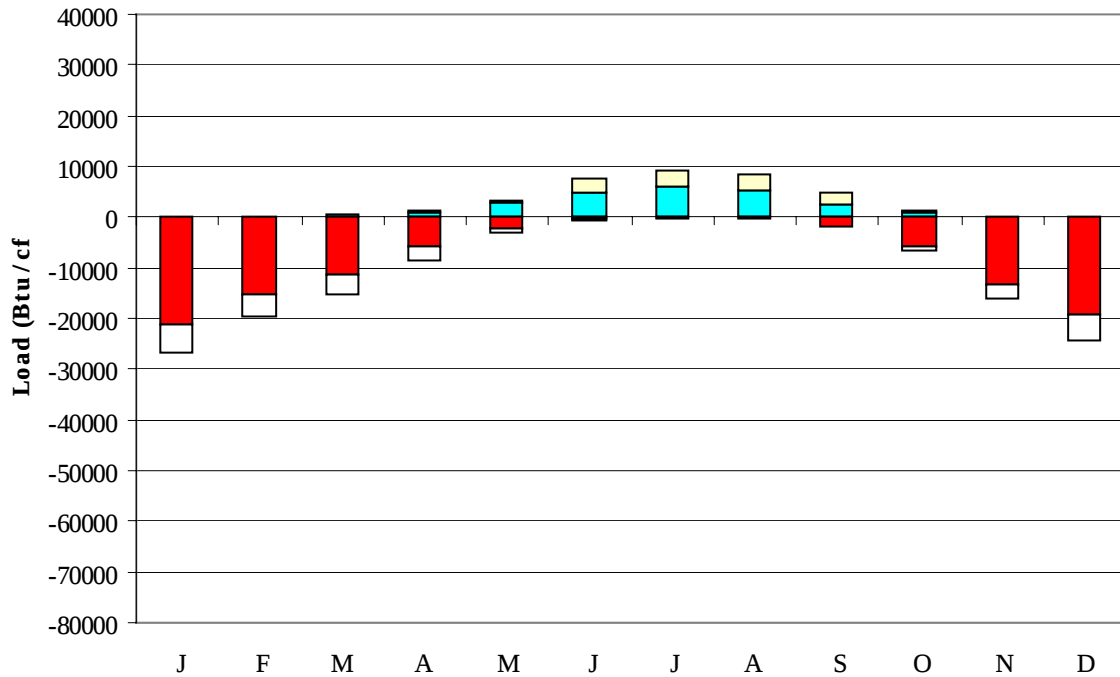
■ Mean Cooling Degree Days ■ Mean Heating Degree Days

	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	6	730
FEB	21	519
MAR	62	359
APR	141	178
MAY	282	57
JUN	429	7
JUL	496	0
AUG	458	1
SEP	273	42
OCT	124	170
NOV	32	428
DEC	10	658
ANN	2332	3149

MIDLAND TX

WMO No. 722650

Average Ventilation and Infiltration Loads
(Outside Air vs. 75°F, 60% RH summer; 68°F, 30% RH winter)



	Average Sensible Cooling Load (Btu/cfm)	Average Sensible Heating Load (Btu/cfm)	Average Latent Cooling Load (Btu/cfm)	Average Latent Heating Load (Btu/cfm)
JAN	6	-21257	0	-5455
FEB	71	-15442	0	-4118
MAR	333	-11200	7	-3885
APR	1082	-5978	89	-2465
MAY	2834	-2299	645	-740
JUN	4994	-409	2539	-72
JUL	5901	-75	3140	-1
AUG	5210	-155	3244	-3
SEP	2578	-1745	2197	-41
OCT	872	-5895	385	-585
NOV	104	-13114	23	-2821
DEC	13	-19333	0	-5162
ANN	23998	-96902	12269	-25348

Average Annual Solar Radiation – Nearest Available Site

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

City: MIDLAND
 State: TX
 WBAN No: 23023
 Lat(N): 31.93
 Long(W): 102.2
 Elev(ft): 2858

Stn Type: Primary
 SHADING GEOMETRY IN DIMENSIONLESS UNITS

Window: 1
 Overhang: 0.311
 Vert Gap: 0.252

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	1040	1330	1730	2050	2220	2320	2230	2050	1710	1470	1130	960	1690
	Std Dev	85	87	110	147	96	108	147	109	126	126	98	72	30
	Minimum	900	1140	1500	1790	2020	2120	1870	1810	1400	1230	860	810	1630
	Maximum	1210	1510	1920	2310	2350	2600	2520	2240	1920	1650	1290	1130	1740
	Diffuse	350	430	540	640	710	720	730	690	590	430	360	310	540
Clear Day	Global	1280	1620	2050	2420	2630	2680	2610	2420	2100	1690	1340	1180	2000
NORTH	Global	260	320	390	470	590	670	640	510	400	330	270	240	420
	Diffuse	260	320	390	450	500	520	520	470	400	330	270	240	390
Clear Day	Global	230	280	350	440	600	720	650	480	360	300	240	210	400
EAST	Global	670	820	1030	1150	1190	1210	1230	1170	990	880	710	630	970
	Diffuse	310	380	480	560	600	610	610	580	500	410	330	280	470
Clear Day	Global	890	1060	1270	1400	1450	1450	1430	1370	1250	1080	910	820	1200
SOUTH	Global	1490	1480	1340	1030	760	650	680	870	1100	1440	1510	1500	1150
	Diffuse	410	470	530	540	530	520	520	540	520	470	430	390	490
Clear Day	Global	2110	2010	1690	1170	790	650	690	970	1430	1850	2050	2100	1460
WEST	Global	690	850	1040	1170	1210	1240	1210	1120	1000	920	750	650	990
	Diffuse	310	390	490	570	610	630	630	590	510	410	330	290	480
Clear Day	Global	890	1060	1270	1400	1450	1450	1430	1370	1250	1080	910	820	1200

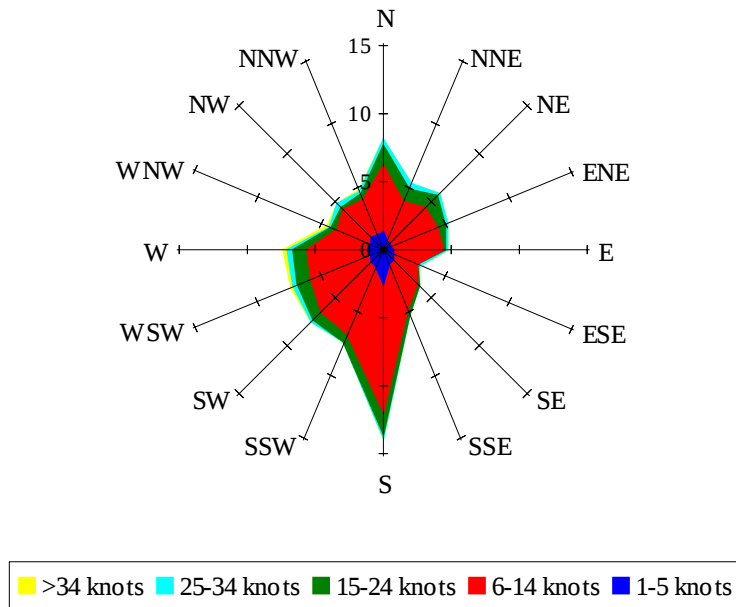
Average Annual Solar Heat and Illumination – Nearest Available Site

(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	700	930	1250	1500	1630	1700	1640	1500	1240	1040	780	640	1210
NORTH	Unshaded	180	220	270	320	380	420	400	330	280	230	190	160	280
	Shaded	170	210	260	300	350	390	380	320	270	220	180	150	270
EAST	Unshaded	460	570	730	820	840	860	870	830	700	620	500	430	690
	Shaded	440	540	690	760	780	790	810	770	660	590	470	410	640
SOUTH	Unshaded	1110	1060	890	620	440	380	400	510	700	1000	1120	1120	780
	Shaded	1100	1010	760	470	350	340	350	390	570	920	1100	1110	700
WEST	Unshaded	480	600	740	830	870	880	860	800	720	650	520	450	700
	Shaded	450	570	690	770	800	810	800	740	670	610	500	420	650

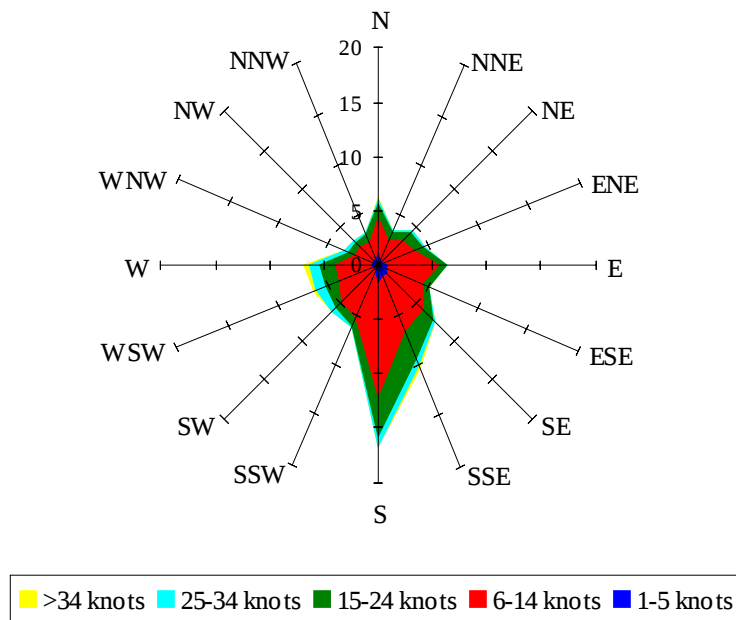
AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9		March					June				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	29	73	94	86	51	29	74	103	106	84
	M.Cloudy	18	51	68	63	36	20	54	77	84	67
NORTH	M.Clear	8	14	16	15	11	24	17	17	16	16
	M.Cloudy	7	16	19	18	12	14	18	19	19	18
EAST	M.Clear	74	75	29	15	11	65	83	51	16	16
	M.Cloudy	27	45	26	18	12	29	52	41	19	18
SOUTH	M.Clear	25	60	76	70	42	9	15	30	33	20
	M.Cloudy	12	38	53	48	27	8	17	28	30	21
WEST	M.Clear	8	14	16	57	83	9	15	17	35	75
	M.Cloudy	7	16	19	41	46	8	17	19	32	57
M.Clear	(% hrs)	53	54	52	51	49	52	58	61	59	57
		Sept					Dec				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	14	61	91	93	68	11	48	65	54	20
	M.Cloudy	9	38	60	66	49	7	30	42	35	13
NORTH	M.Clear	6	13	16	16	14	4	10	12	11	6
	M.Cloudy	4	14	18	19	15	3	11	14	12	6
EAST	M.Clear	47	82	49	16	14	43	58	18	11	6
	M.Cloudy	14	38	34	19	15	11	27	17	12	6
SOUTH	M.Clear	8	41	64	66	47	30	80	97	87	45
	M.Cloudy	5	24	40	45	32	9	35	48	42	18
WEST	M.Clear	6	13	16	37	76	4	10	12	51	56
	M.Cloudy	4	14	18	30	47	3	11	14	28	22
M.Clear	(% hrs)	51	53	52	48	48	48	51	52	51	50

Wind Summary - December, January, and February **Labels of Percent Frequency on North Axis**



Percent Calm = 3.01

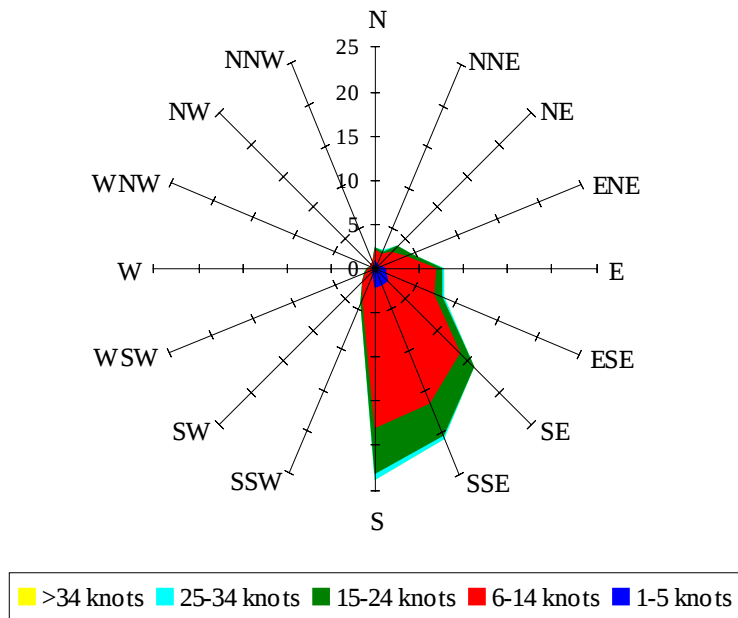
Wind Summary - March, April, and May **Labels of Percent Frequency on North Axis**



Percent Calm = 1.25

Wind Summary - June, July, and August

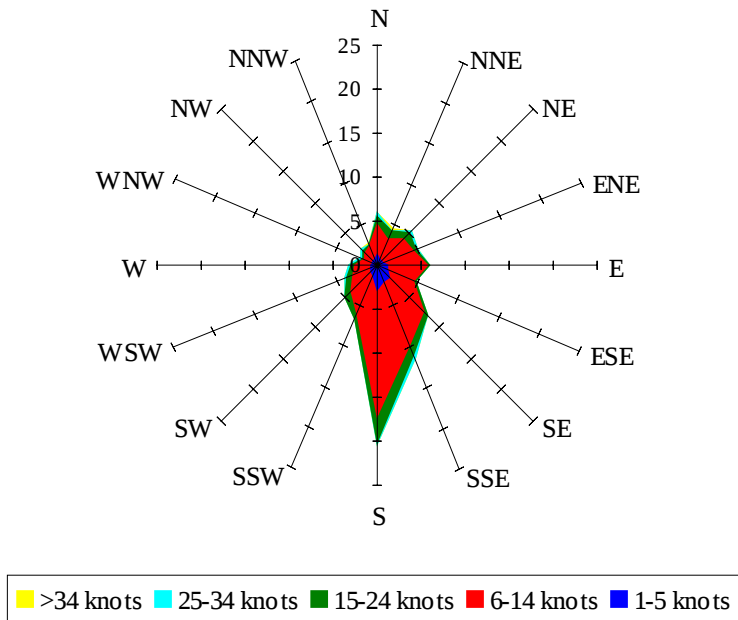
Labels of Percent Frequency on North Axis



Percent Calm = 1.41

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 2.89