

FORT LAUDERDALE HOLLYWOOD, FL

Latitude = 26.07 N

Longitude = 80.15 W

Period of Record = 1988 To 2017

Station ID = ICAO_KFLL

Elevation = 9 Feet

Average Pressure = 30.00 inches Hg

Design Criteria Data

Dry Bulb Temperature (T)	Mean Coincident (Average) Values				
	Design Value (°F)	Wet Bulb Temperature (°F)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	95	78	120	11.6	W
0.4% Occurrence	91	78	126	11.4	SE
1.0% Occurrence	91	78	126	11.4	SE
2.0% Occurrence	90	78	127	11.4	SE
Mean Daily Range	12	-	-	-	NNW
97.5% Occurrence	57	52	49	8.1	NNW
99.0% Occurrence	52	47	40	8.7	NNW
99.6% Occurrence	48	43	34	9.1	NNW
Median of Extreme Lows	43	38	26	9.2	NNW

Wet Bulb Temperature (T_{wb})	Design Value (°F)	Dry Bulb Temperature (°F)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	82	88	150	10.7	ESE
0.4% Occurrence	81	87	146	10	SE
1.0% Occurrence	81	87	146	10	SE
2.0% Occurrence	80	87	140	9.7	E

Humidity Ratio (HR)	Design Value (gr/lb)	Dry Bulb Temperature (°F)	Vapor Pressure (in. Hg)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	161	85	1.07	8.9	ESE
0.4% Occurrence	151	84	1	8.1	ESE
1.0% Occurrence	150	84	1	8.1	ESE
2.0% Occurrence	146	84	0.97	7.7	E

Air Conditioning/ Humid Area Criteria	Threshold	$T \geq 93^{\circ}\text{F}$	$T \geq 80^{\circ}\text{F}$	$T_{wb} \geq 73^{\circ}\text{F}$	$T_{wb} \geq 67^{\circ}\text{F}$
	# of Hours	24	3679	4229	6534

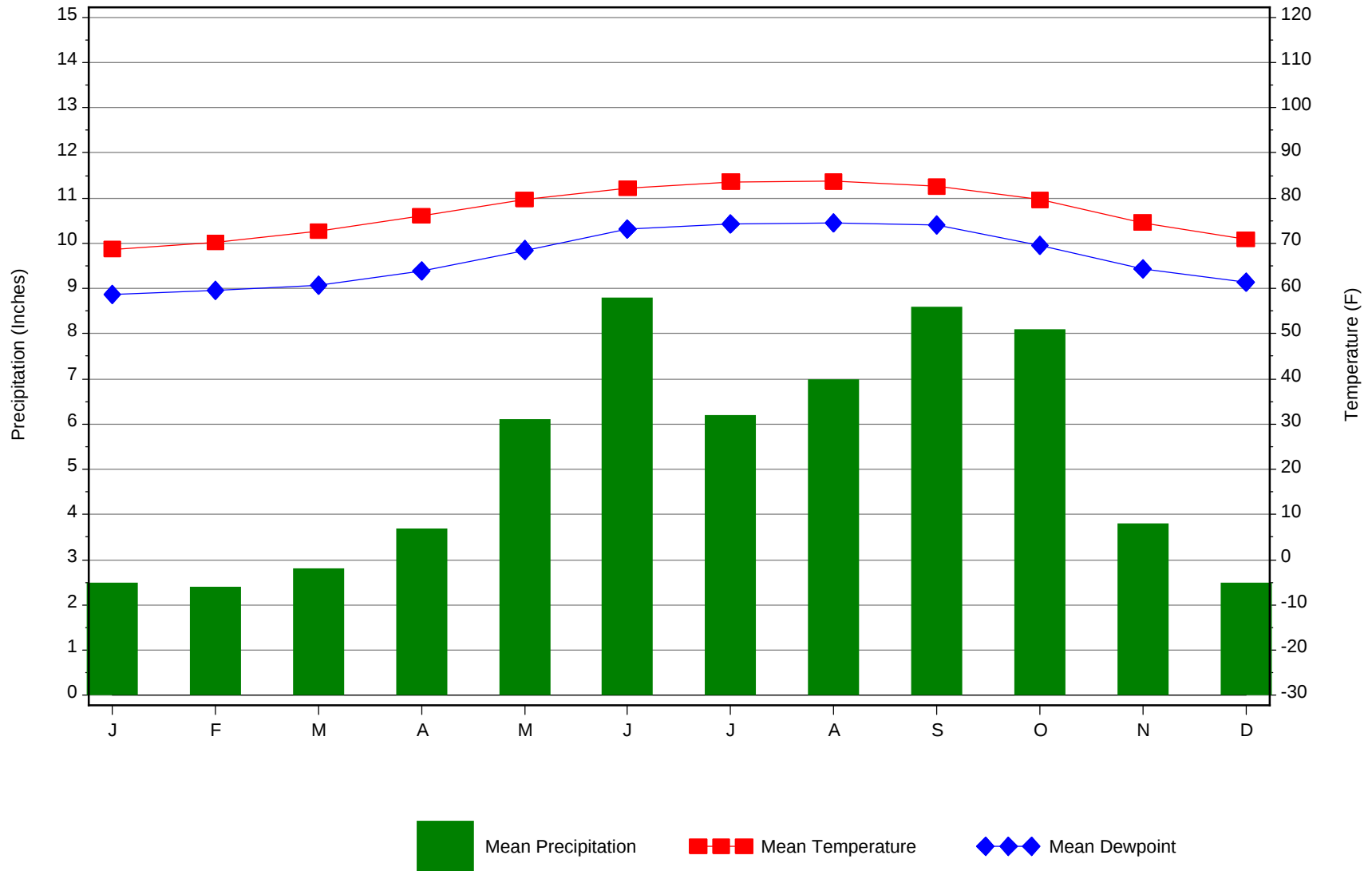
Other Site Data

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	5	150	14.0 + 3.4
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 (#)
79.6	0	0	0

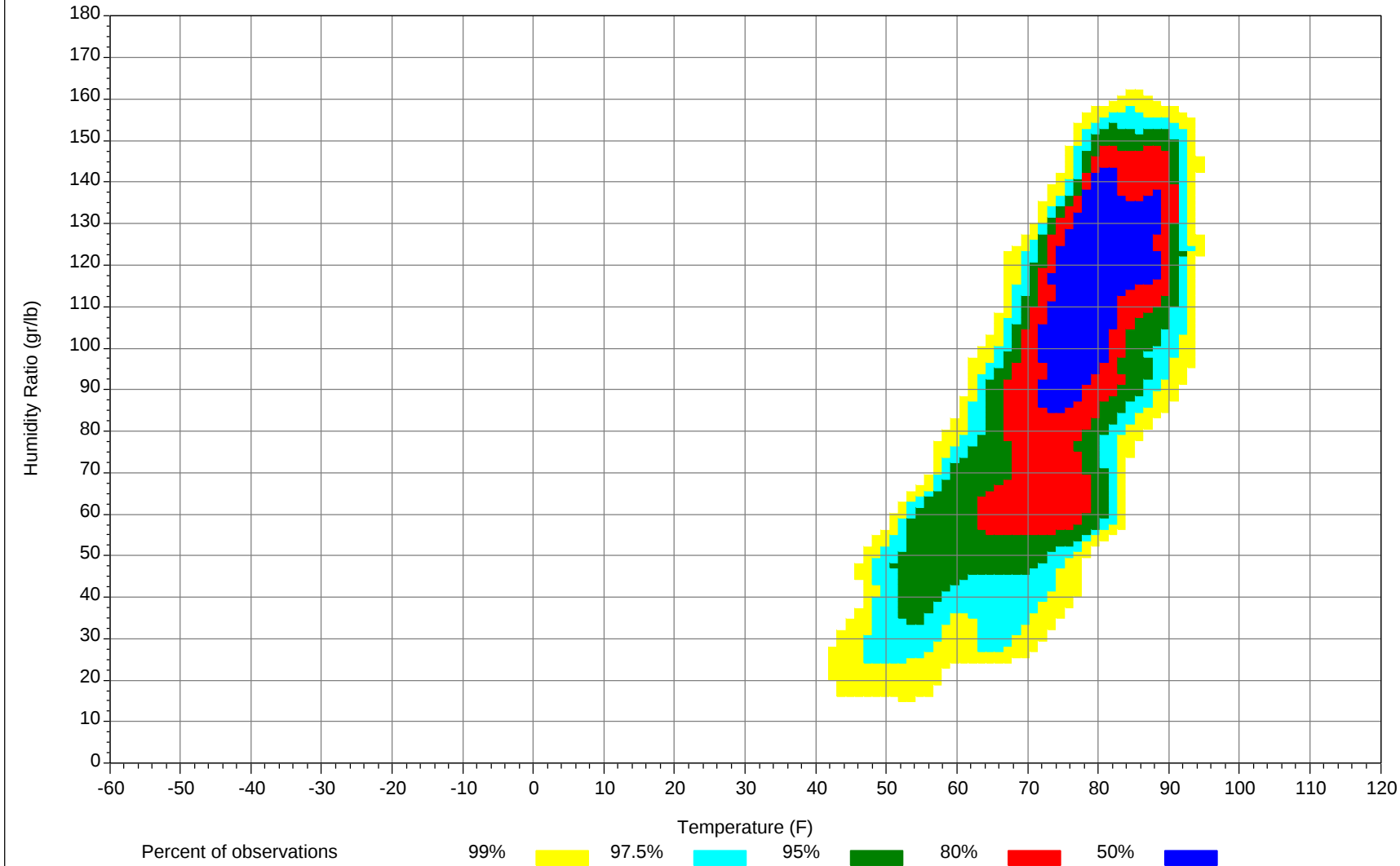
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.



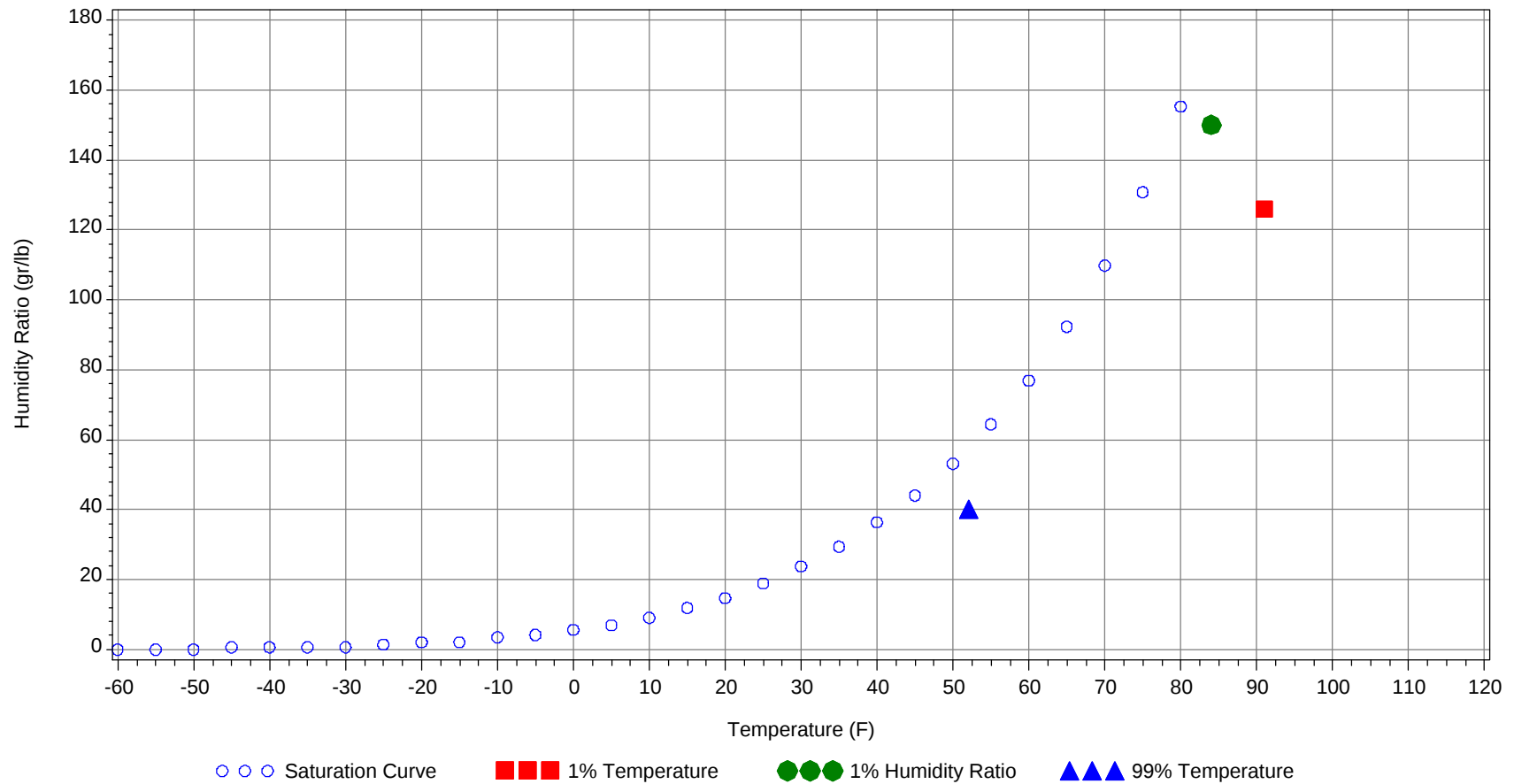
Average Annual Climate



Long Term Psychrometric Summary



Psychrometric Summary of Peak Design Values



	(° F) / (gr/lb)	MCDB (° F)	MCWB (° F)	MCDP (° F)	MCHR (gr/lb)	Enthalpy (btu/lb)
1.0% Dry Bulb	91.0		78		126.0	41.7
99.0% Dry Bulb	52.0				40.0	18.6
1.0% Humidity Ratio	150.0	84.0	80.3	79.0		43.8

Dry-Bulb Temperature Hours For An Average Year

	January					February					March				
Temperature Range (° F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (° F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (° F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (° F)
100/104															
95/ 99															
90/ 94							0		0	73		1	0	1	73.3
85/ 89		1		1	71.5		3	0	3	72		8	1	9	73.1
80/ 84		25	2	27	71.7		40	6	46	71.5	1	66	16	83	71.6
75/ 79	17	94	51	162	69.5	18	82	55	155	69.2	39	101	88	228	68.7
70/ 74	88	64	101	253	65.9	82	58	94	234	65.7	111	47	96	254	65.3
65/ 69	42	25	34	101	61.6	44	18	32	94	61.4	36	12	24	72	61
60/ 64	36	21	31	88	57	36	14	22	72	57.3	28	9	16	53	56.6
55/ 59	27	10	16	53	51.8	21	6	10	37	51.7	20	3	6	29	51.9
50/ 54	20	5	9	34	47.4	15	3	4	22	47.2	9	1	1	11	47.8
45/ 49	13	2	3	18	42.2	7	0	1	8	42.1	3	0	0	3	43.2
40/ 44	3	0	1	4	37.9	2	0	0	2	36.7	0			0	39.1
35/ 39	2	0	0	2	33.8	1			1	32.1					
30/ 34	0			0	30										

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.

Dry-Bulb Temperature Hours For An Average Year

	April					May					June				
Temperature Range (° F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (° F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (° F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (° F)
100/104							0		0	77		0		0	80
95/ 99		0		0	76.1		1	0	1	76.7		2	0	2	79.2
90/ 94		4	1	5	74.3		10	2	12	75	0	39	4	43	78.2
85/ 89		19	3	22	73.6	1	68	11	80	75	8	104	33	145	77.4
80/ 84	7	115	35	157	71.5	49	139	109	297	73.2	122	74	139	335	76
75/ 79	89	78	130	297	69.3	135	26	103	264	71.2	100	18	57	175	74
70/ 74	98	19	60	177	65.7	53	4	21	78	68.1	10	3	7	20	71.5
65/ 69	24	3	8	35	61.8	8	0	1	9	62.7					
60/ 64	15	1	4	20	56.8	2	0	0	2	57.7					
55/ 59	6	0	0	6	52.3	0			0	53.3					
50/ 54	1		0	1	47.8										
45/ 49															
40/ 44															
35/ 39															
30/ 34															

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Dry-Bulb Temperature Hours For An Average Year

	July					August					September				
Temperature Range (°F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (°F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (°F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (°F)
100/104															
95/ 99		1	0	1	78.8		1	0	1	79		0	0	0	78.3
90/ 94	0	70	5	75	78.8	0	76	5	81	78.9		30	1	31	78.2
85/ 89	16	125	64	205	78	15	118	63	196	78.2	5	129	37	171	77.7
80/ 84	162	40	138	340	76.6	166	40	142	348	76.9	139	66	157	362	76.4
75/ 79	66	12	38	116	74.7	66	12	37	115	75.1	91	14	42	147	74.9
70/ 74	4	1	3	8	71.9	1	1	1	3	71.9	5	1	3	9	71.8
65/ 69															
60/ 64															
55/ 59															
50/ 54															
45/ 49															
40/ 44															
35/ 39															
30/ 34															

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.

Dry-Bulb Temperature Hours For An Average Year

	October					November					December				
Temperature Range (° F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (° F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (° F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (° F)
100/104															
95/ 99															
90/ 94		5	0	5	77.9		0		0	72.7					
85/ 89	1	69	7	77	76.7		7	0	7	75.5		1		1	75.3
80/ 84	75	134	126	335	74.4	8	98	27	133	73	1	53	5	59	72.8
75/ 79	115	32	93	240	71.8	86	93	119	298	69.8	52	101	88	241	70.2
70/ 74	39	6	17	62	67.4	71	28	66	165	66.3	83	47	87	217	66.2
65/ 69	10	1	3	14	62	34	7	14	55	62.6	35	19	24	78	62.1
60/ 64	5	1	2	8	55.8	24	4	11	39	57.5	30	16	23	69	57.2
55/ 59	2	0	0	2	51.1	12	1	3	16	52.1	22	7	13	42	52.1
50/ 54	0			0	46.8	3	0	0	3	47.5	17	3	5	25	47.8
45/ 49						0			0	43.4	7	1	2	10	42.5
40/ 44											1	0	0	1	37.7
35/ 39											1	0	0	1	33.4
30/ 34											0	0		0	29

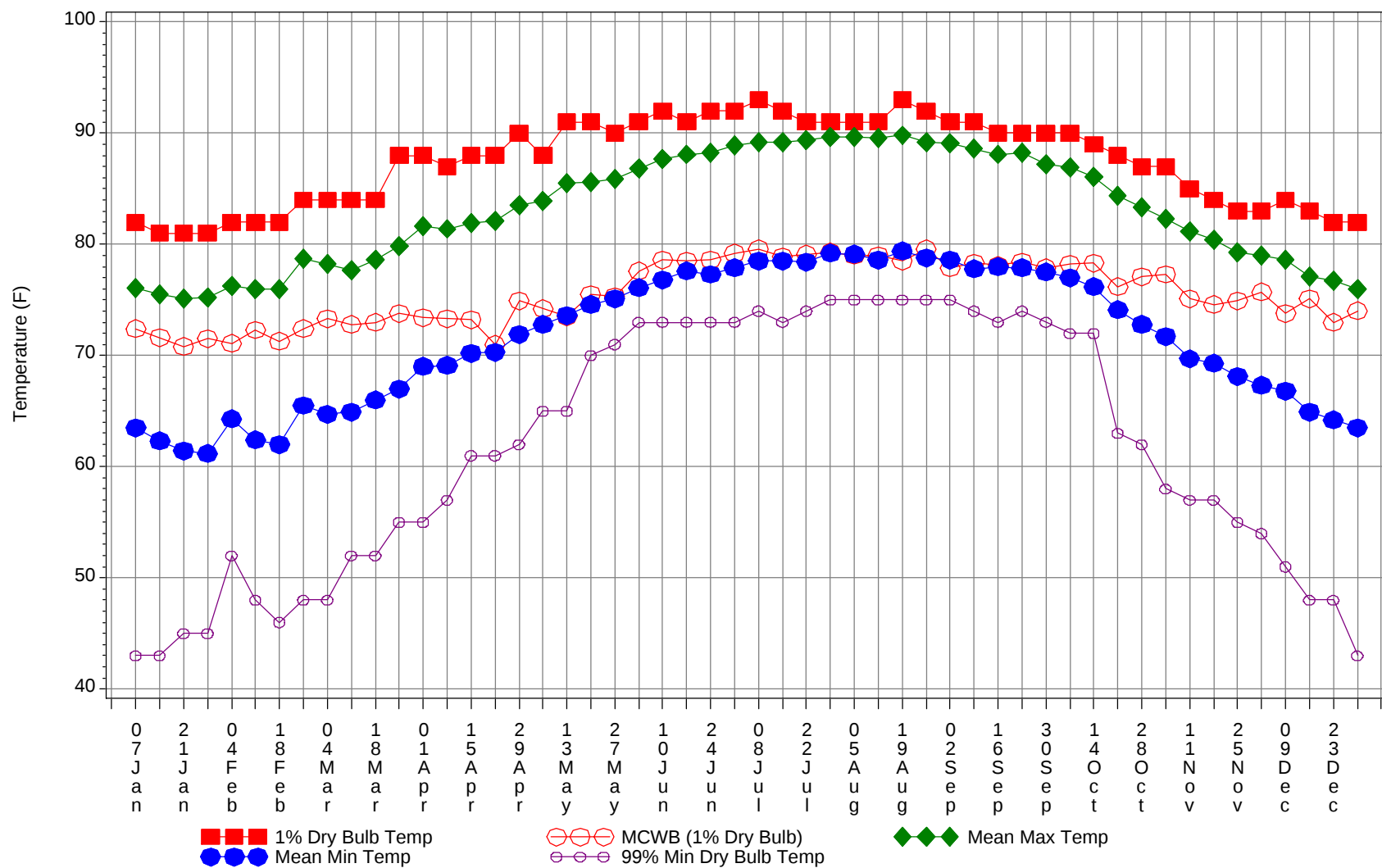
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Dry-Bulb Temperature Hours For An Average Year

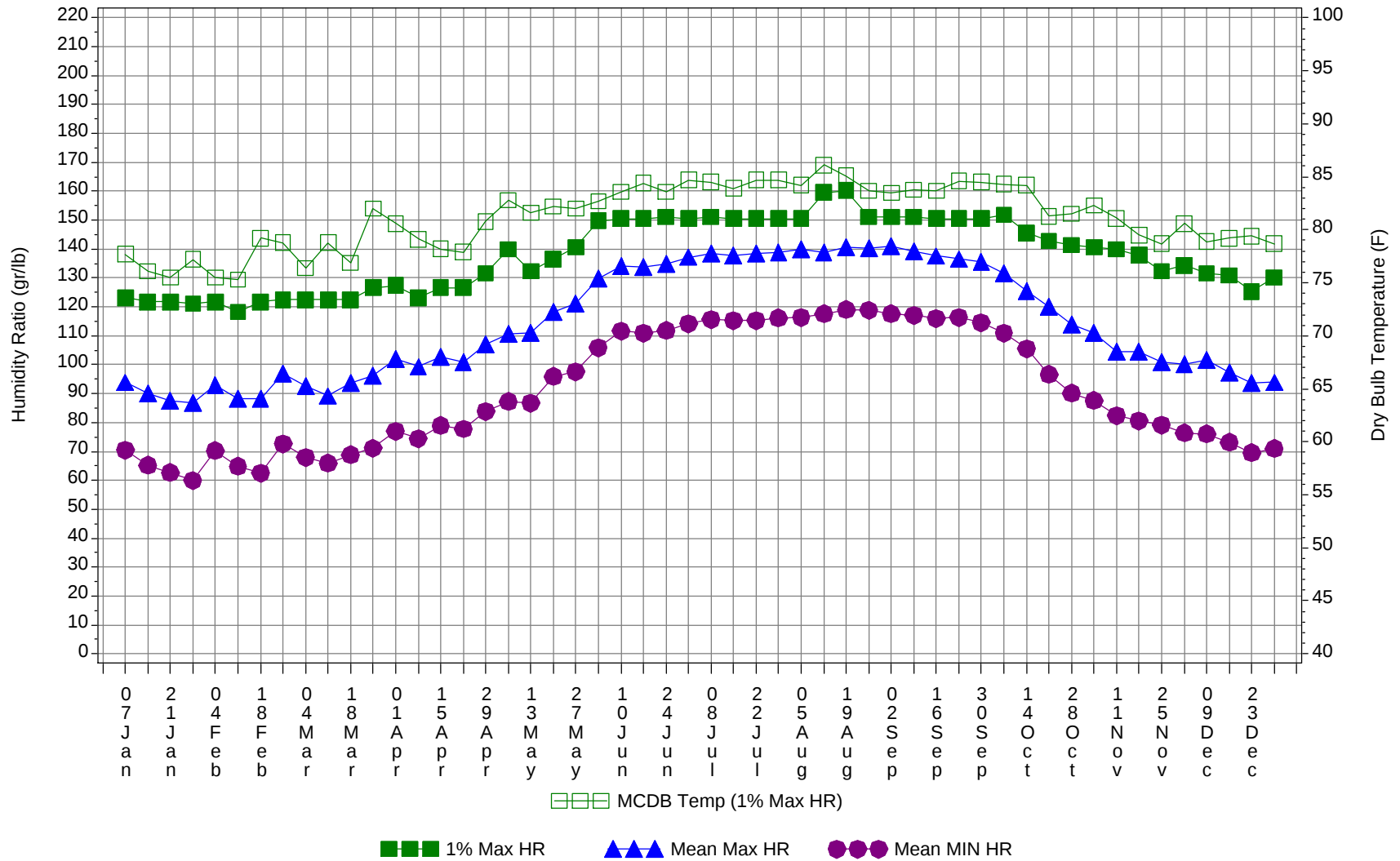
	Annual				
Temperature Range (°F)	01 To 08 LST	09 To 16 LST	17 to 00 LST	Total Obs	M C W B (°F)
100/104		0		0	79
95/ 99		6	1	7	78.3
90/ 94	0	234	17	251	78.4
85/ 89	45	651	219	915	77.3
80/ 84	728	892	901	2521	74.9
75/ 79	874	664	901	2439	71.1
70/ 74	645	279	556	1480	66.2
65/ 69	234	85	139	458	61.7
60/ 64	176	66	109	351	57.1
55/ 59	112	28	49	189	51.9
50/ 54	66	11	20	97	47.5
45/ 49	29	3	6	38	42.3
40/ 44	6	1	1	8	37.6
35/ 39	3	0	0	3	33.4
30/ 34	1	0		1	29.1

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.

Annual Summary of Temperatures



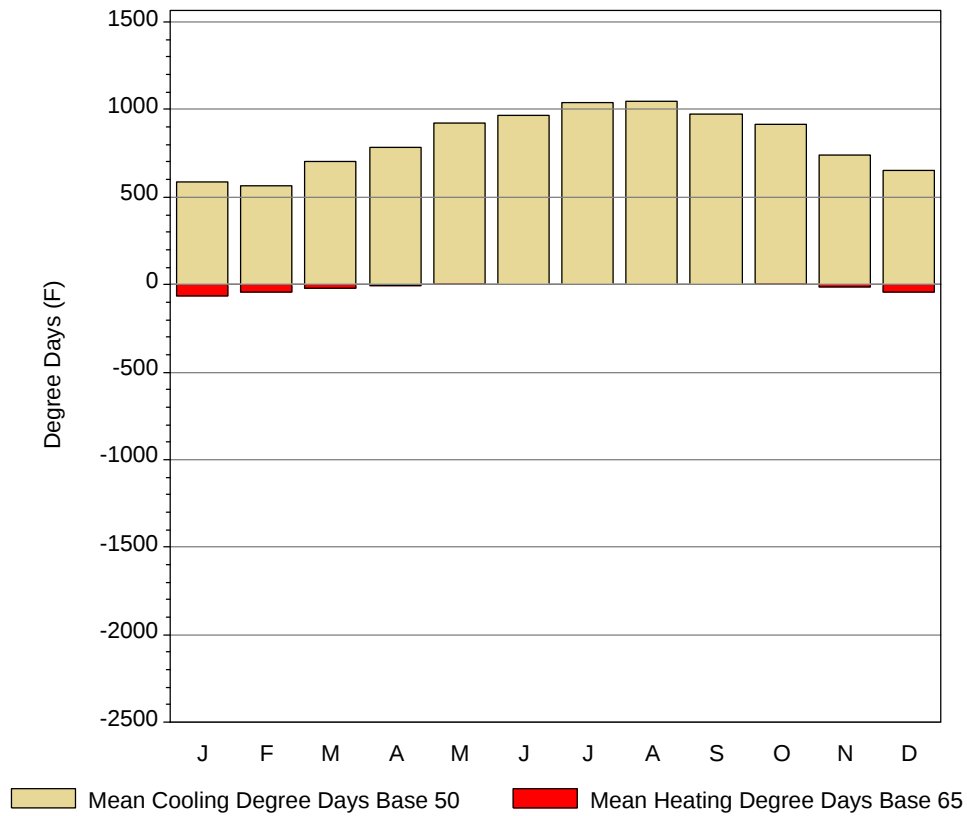
Long Term Humidity and Dry Bulb Temperature Summary



Long Term Humidity and Dry Bulb Temperature Summary

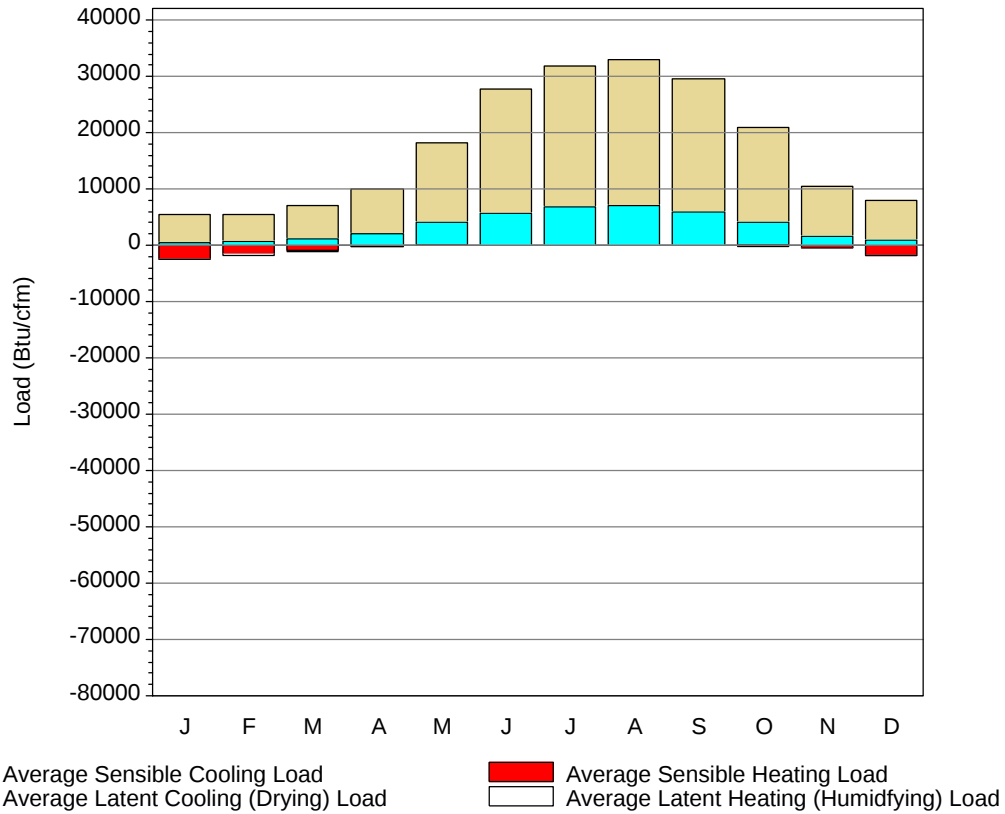
Week Ending	1.0% Temp (° F)	MCWB@ 1% Temp (° F)	Mean Max Temp (° F)	Mean Min Temp (° F)	99% Temp (° F)	1.0% HR (gr/lb)	MCDB@ 1% HR (° F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	82	72.4	76.1	63.5	43	123.2	77.7	93.9	70.4
14-Jan	81	71.6	75.5	62.3	43	121.8	76.1	90	65.2
21-Jan	81	70.8	75.1	61.4	45	121.8	75.5	87.6	62.7
28-Jan	81	71.5	75.2	61.2	45	121.1	77.2	86.7	59.9
4-Feb	82	71.1	76.3	64.3	52	121.8	75.5	93	70.3
11-Feb	82	72.3	76	62.4	48	118.3	75.3	88.2	64.8
18-Feb	82	71.3	76	62	46	121.8	79.2	88.3	62.5
25-Feb	84	72.4	78.7	65.5	48	122.5	78.8	96.9	72.7
4-Mar	84	73.3	78.2	64.7	48	122.5	76.4	92.7	67.9
11-Mar	84	72.8	77.7	64.9	52	122.5	78.8	89.2	65.9
18-Mar	84	73	78.6	66	52	122.5	76.9	93.7	68.9
25-Mar	88	73.8	79.8	67	55	126.7	82	96.3	71.1
1-Apr	88	73.4	81.6	69	55	127.4	80.6	101.9	76.9
8-Apr	87	73.3	81.4	69.1	57	123.2	79.1	99.3	74.5
15-Apr	88	73.2	81.9	70.2	61	126.7	78.2	102.8	78.9
22-Apr	88	71	82.1	70.3	61	126.7	77.9	101	77.8
29-Apr	90	74.9	83.5	71.9	62	131.6	80.8	107.1	83.9
6-May	88	74.2	83.9	72.8	65	140	82.8	110.7	87.2
13-May	91	73.5	85.5	73.6	65	132.3	81.6	111	86.7
20-May	91	75.5	85.6	74.6	70	136.5	82.2	118.2	95.9
27-May	90	75.3	85.9	75.1	71	140.7	82	121.2	97.5
4-Jun	91	77.6	86.8	76.1	73	149.8	82.7	129.8	105.9
10-Jun	92	78.6	87.7	76.8	73	150.5	83.6	134.3	111.7
17-Jun	91	78.5	88.1	77.6	73	150.5	84.4	133.7	111
24-Jun	92	78.6	88.2	77.3	73	151.2	83.6	134.8	111.8
1-Jul	92	79.2	88.9	77.9	73	150.5	84.7	137.2	114.2
8-Jul	93	79.6	89.2	78.5	74	151.2	84.5	138.6	115.6
15-Jul	92	78.9	89.2	78.5	73	150.5	83.9	137.9	115.3
22-Jul	91	79.1	89.4	78.4	74	150.5	84.7	138.6	115.2
29-Jul	91	79.3	89.7	79.2	75	150.5	84.7	138.9	116.2
5-Aug	91	79	89.7	79.1	75	150.5	84.2	139.9	116.3
12-Aug	91	79	89.6	78.6	75	159.6	86.1	138.8	117.7
19-Aug	93	78.5	89.8	79.4	75	160.3	85.1	140.8	119
26-Aug	92	79.6	89.2	78.8	75	151.2	83.7	140.2	118.8
2-Sep	91	77.9	89.1	78.6	75	151.2	83.5	140.9	117.7
9-Sep	91	78.3	88.6	77.8	74	151.2	83.8	139.1	117
16-Sep	90	78.1	88.1	78	73	150.5	83.7	137.6	116
23-Sep	90	78.4	88.2	77.9	74	150.5	84.6	136.5	116.4
30-Sep	90	77.9	87.2	77.5	73	150.5	84.5	135.6	114.6
7-Oct	90	78.2	86.9	77	72	151.9	84.3	131.7	110.9
14-Oct	89	78.3	86.1	76.2	72	145.6	84.2	125.6	105.5
21-Oct	88	76.2	84.4	74.1	63	142.8	81.3	120.2	96.7
28-Oct	87	77.1	83.3	72.8	62	141.4	81.5	114	90.2
4-Nov	87	77.3	82.3	71.7	58	140.7	82.3	111	87.7
11-Nov	85	75.1	81.2	69.7	57	140	81.1	104.6	82.4
18-Nov	84	74.6	80.4	69.3	57	137.9	79.5	104.4	80.6
25-Nov	83	74.9	79.3	68.1	55	132.3	78.7	100.9	79.2
2-Dec	83	75.7	79	67.3	54	134.4	80.6	100.3	76.4
9-Dec	84	73.8	78.6	66.8	51	131.6	78.9	101.6	76.1
16-Dec	83	75.1	77.1	64.9	48	130.9	79.2	97.3	73.2
23-Dec	82	73	76.7	64.2	48	125.3	79.4	93.8	69.6
31-Dec	82	74	76	63.5	43	130.2	78.7	93.9	71

Degree Days, Heating and Cooling (Base 65 F) & Cooling (Base 50F)



Month	Mean Cooling Degree Days (°F) Base 50	Mean Cooling Degree Days (°F) Base 65	Mean Heating Degree Days (°F) Base 65
JAN	585.1	179.3	63.8
FEB	568.3	184	41.6
MAR	702.5	260.1	23
APR	784.1	338.5	4.4
MAY	920.9	456.2	0.3
JUN	966.5	516.5	0
JUL	1042.1	577.1	0
AUG	1045.4	580.4	0
SEP	977.4	527.4	0
OCT	917.7	454.3	1.6
NOV	740.2	301.1	10.9
DEC	649.2	227.3	45.9
ANN	9899.4	4602.2	191.5

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



Month	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	464	-2413	5017	-132
FEB	627	-1670	4860	-84
MAR	1153	-985	5922	-30
APR	2101	-238	8005	-6
MAY	4112	-27	14175	0
JUN	5652	0	22202	0
JUL	6939	0	25009	0
AUG	7013	0	25871	0
SEP	5913	0	23702	0
OCT	4151	-91	16783	-2
NOV	1648	-537	8934	-5
DEC	840	-1767	7124	-79
ANN	40613	-7728	167604	-338

Station Information		Shading Geometry in Dimensionless Units	
City, State, WBAN	MIAMI, FL 12839	Window:	1.000
Lat, Lon, Elev	25.80N 80.27W 7ft	Overhang:	1.395
Press, Stn Type	14.7psia Primary	Vert Gap:	0.200

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	1120	1340	1630	1900	1890	1770	1850	1770	1550	1380	1160	1040	1530
	Std.Dev.	70	94	106	129	130	111	138	89	107	88	76	76	48
	Minimum	990	1150	1410	1610	1610	1560	1500	1550	1300	1230	1010	900	1430
	Maximum	1270	1480	1820	2110	2180	1980	2100	1900	1780	1580	1280	1160	1620
	Diffuse	460	540	680	780	890	950	960	920	810	660	520	440	720
Clear Day	Global	1460	1750	2100	2380	2490	2510	2460	2340	2100	1780	1480	1350	2020
NORTH	Global	300	350	420	480	580	630	610	520	440	390	320	290	440
	Diffuse	300	350	410	470	510	540	540	500	440	390	320	290	420
Clear Day	Global	260	310	370	450	610	730	670	500	400	340	280	250	430
EAST	Global	690	800	940	1030	1020	960	990	960	880	810	710	650	870
	Diffuse	370	430	520	600	630	630	650	630	570	490	400	360	520
Clear Day	Global	930	1070	1210	1310	1310	1290	1260	1240	1170	1050	920	860	1130
SOUTH	Global	1320	1250	1080	810	590	520	550	680	860	1100	1240	1310	940
	Diffuse	490	520	560	550	520	510	520	550	570	570	520	480	530
Clear Day	Global	1990	1820	1440	930	600	500	540	770	1200	1620	1870	1960	1270
WEST	Global	670	780	920	1030	970	860	910	900	800	770	670	630	820
	Diffuse	380	430	530	590	620	610	630	610	550	490	400	360	520
Clear Day	Global	930	1070	1210	1310	1310	1290	1260	1240	1170	1050	920	860	1130

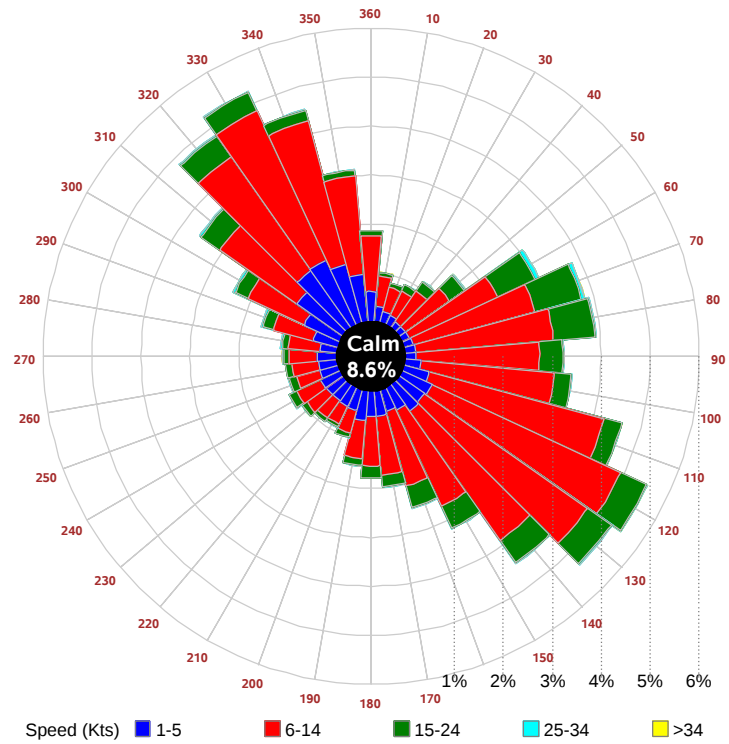
Average Annual Solar Radiation - Nearest Available Site Source: National Renewable Energy Laboratory, Golden CO, 1995

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	780	950	1170	1390	1370	1280	1340	1280	1120	990	810	720	1100
NORTH	Unshaded	210	240	290	330	370	400	400	350	310	270	220	200	300
	Shaded	150	170	210	240	250	250	260	240	210	190	160	140	200
EAST	Unshaded	480	570	670	740	720	680	700	680	620	570	490	450	610
	Shaded	270	300	350	380	370	340	360	350	320	300	260	250	320
SOUTH	Unshaded	960	870	690	480	370	350	370	420	540	750	900	960	640
	Shaded	270	220	250	260	250	240	250	250	250	230	240	290	250
WEST	Unshaded	470	550	650	730	680	600	640	630	560	540	470	430	580
	Shaded	260	300	340	380	350	310	330	320	290	290	250	240	310

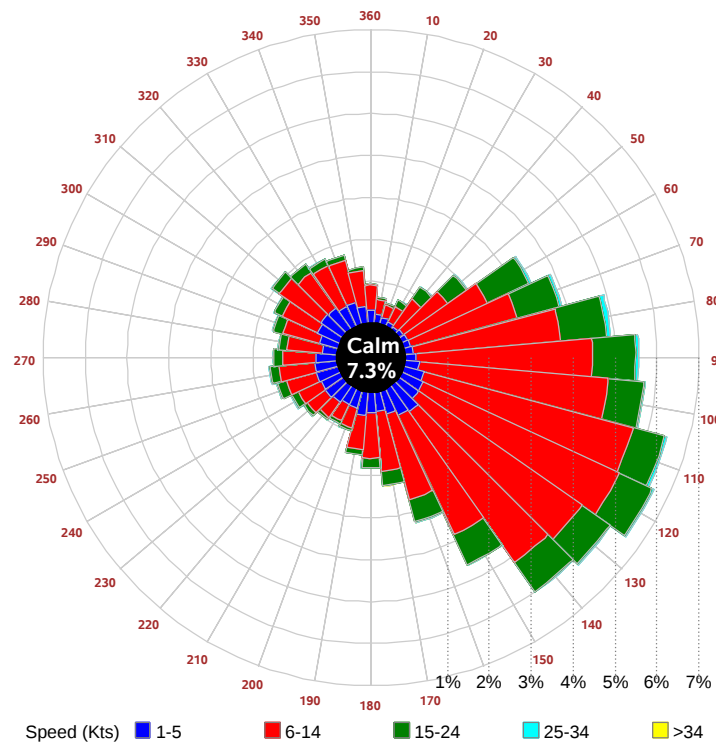
AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS Percentage Uncertainty = 9												
		March					June					
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm	
HORIZ.	M.Clear	39	79	94	80	39	32	74	101	99	71	
	M.Cloudy	28	60	71	59	28	24	58	74	69	45	
NORTH	M.Clear	11	16	17	17	11	23	23	19	19	24	
	M.Cloudy	11	18	19	18	11	16	21	19	19	19	
EAST	M.Clear	70	64	18	17	11	55	69	40	19	18	
	M.Cloudy	39	46	19	18	11	32	51	32	19	16	
SOUTH	M.Clear	28	55	66	55	28	11	18	23	22	18	
	M.Cloudy	18	41	49	40	18	10	18	22	21	16	
WEST	M.Clear	11	16	18	64	70	11	18	19	47	73	
	M.Cloudy	11	18	19	45	37	10	18	19	34	39	
M.Clear	(% hrs)	48	35	32	37	43	36	23	21	20	21	

		Sept					Dec					
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm	
HORIZ.	M.Clear	21	67	93	92	57	23	58	69	51	14	
	M.Cloudy	17	53	72	67	40	16	42	50	37	10	
NORTH	M.Clear	8	17	20	19	16	8	13	15	13	6	
	M.Cloudy	7	17	20	20	15	7	14	16	13	5	
EAST	M.Clear	43	70	39	19	16	50	49	15	13	6	
	M.Cloudy	25	50	33	20	15	23	32	16	13	5	
SOUTH	M.Clear	12	40	56	55	33	39	75	85	68	27	
	M.Cloudy	9	31	44	40	23	19	46	52	39	12	
WEST	M.Clear	8	17	20	51	70	8	13	20	54	38	
	M.Cloudy	7	17	20	38	41	7	14	19	32	16	
M.Clear	(% hrs)	37	22	16	16	20	50	43	37	41	46	

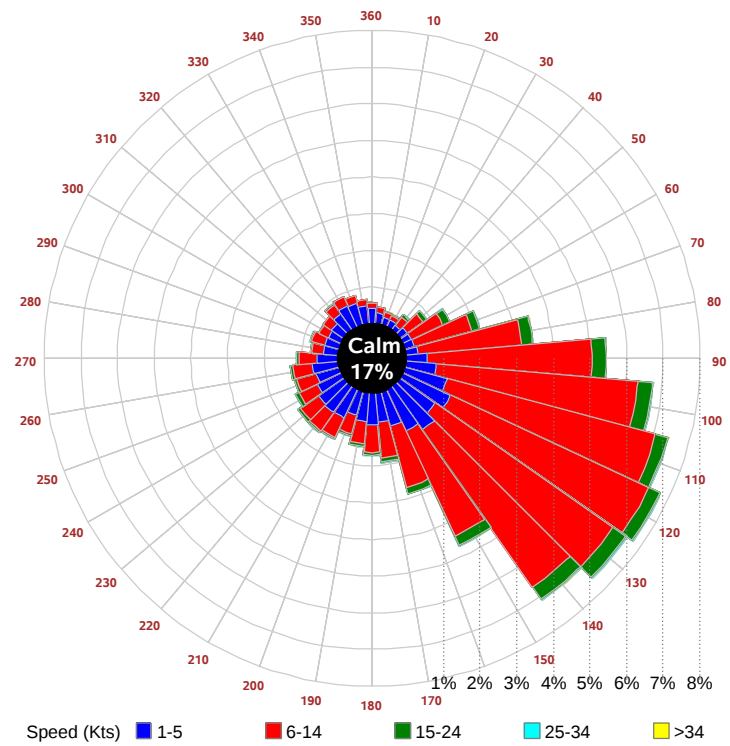
Wind Summary - December, January, and February



Wind Summary - March, April, and May



Wind Summary - June, July, and August



Wind Summary - September, October, and November

