LUIS MUNOZ MARIN INTL, RQ

Latitude = 18.44 N	Station ID = ICAO_TJSJ
Longitude = 66.00 W	Elevation = 9 Feet
Period of Record = 1988 To 2017	Average Pressure = 29.96 inches Hg

Design Criteria Data

	Mean Coincident (Average) Values				
Dry Bulb Temperature (T)	**Design Value (°F)**	**Wet Bulb Temperature (°F)**	**Humidity Ratio (gr/lb)**	**Wind Speed (mph)**	**Prevailing Direction (NSEW)**
Median of Extreme Highs	93	77	117	11.3	SSE
0.4% Occurrence	91	78	123	12.8	ENE
1.0% Occurrence	90	78	124	13.3	ENE
2.0% Occurrence	90	78	124	13.3	ENE
Mean Daily Range	11	-	-	-	E
97.5% Occurrence	72	70	104	3.6	E
99.0% Occurrence	71	69	101	2.8	S
99.6% Occurrence	70	68	98	2.8	S
Median of Extreme Lows	68	66	92	2.4	S

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	87	152	13	ENE
0.4% Occurrence	81	86	147	12.2	ENE
1.0% Occurrence	80	86	140	11.9	ENE
2.0% Occurrence	80	86	140	11.9	ENE

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	160	84	1.05	9.2	E
0.4% Occurrence	151	83	1	9.1	E
1.0% Occurrence	149	84	0.99	9.6	E
2.0% Occurrence	146	84	0.97	9.6	E

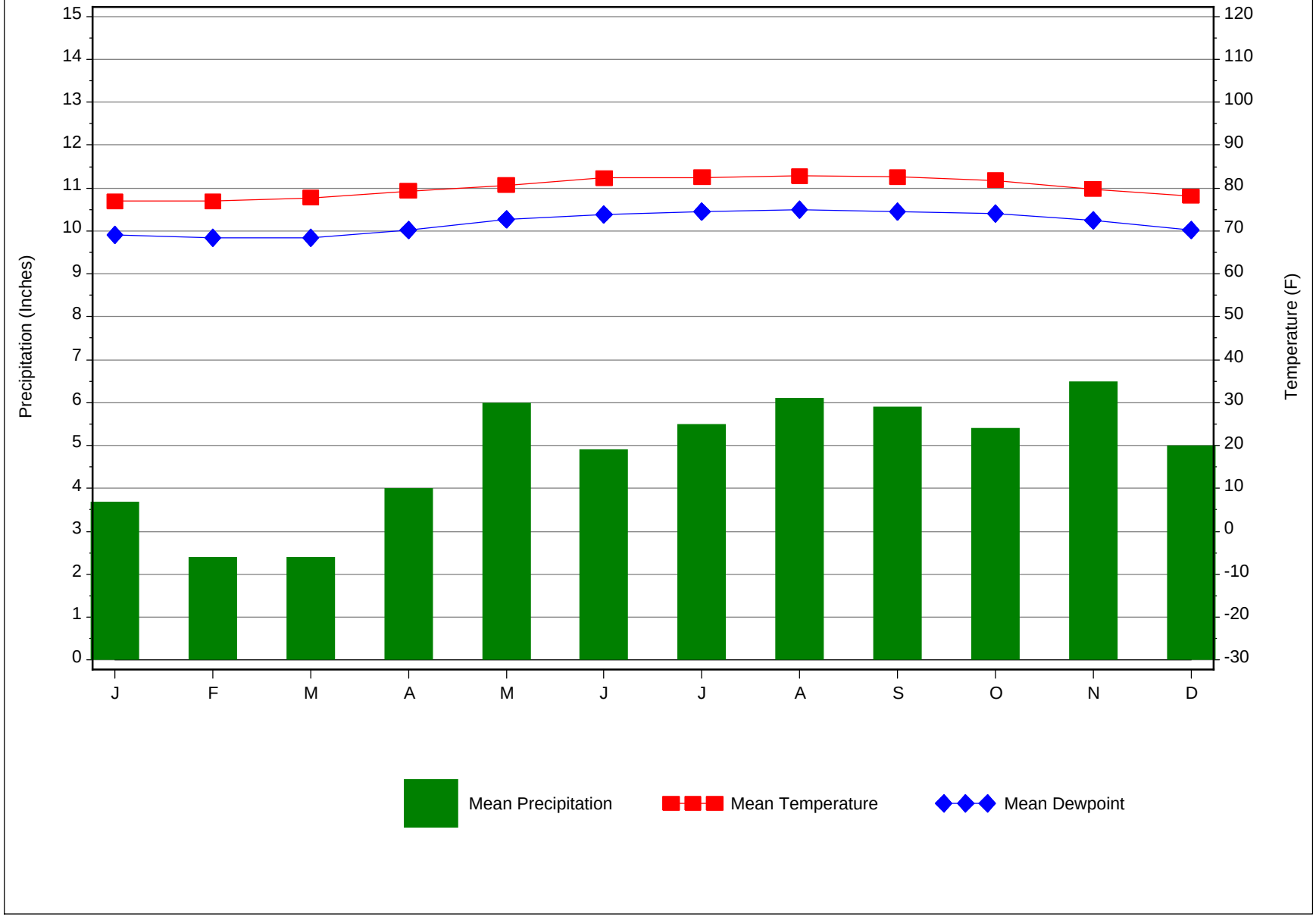
Air Conditioning/ Humid Area Criteria	**Threshold**	**T ≥ 93°F**	**T ≥ 80°F**	**Twb ≥ 73°F**	**Twb ≥ 67°F**
	# of Hours	11	4627	6426	8292

Other Site Data

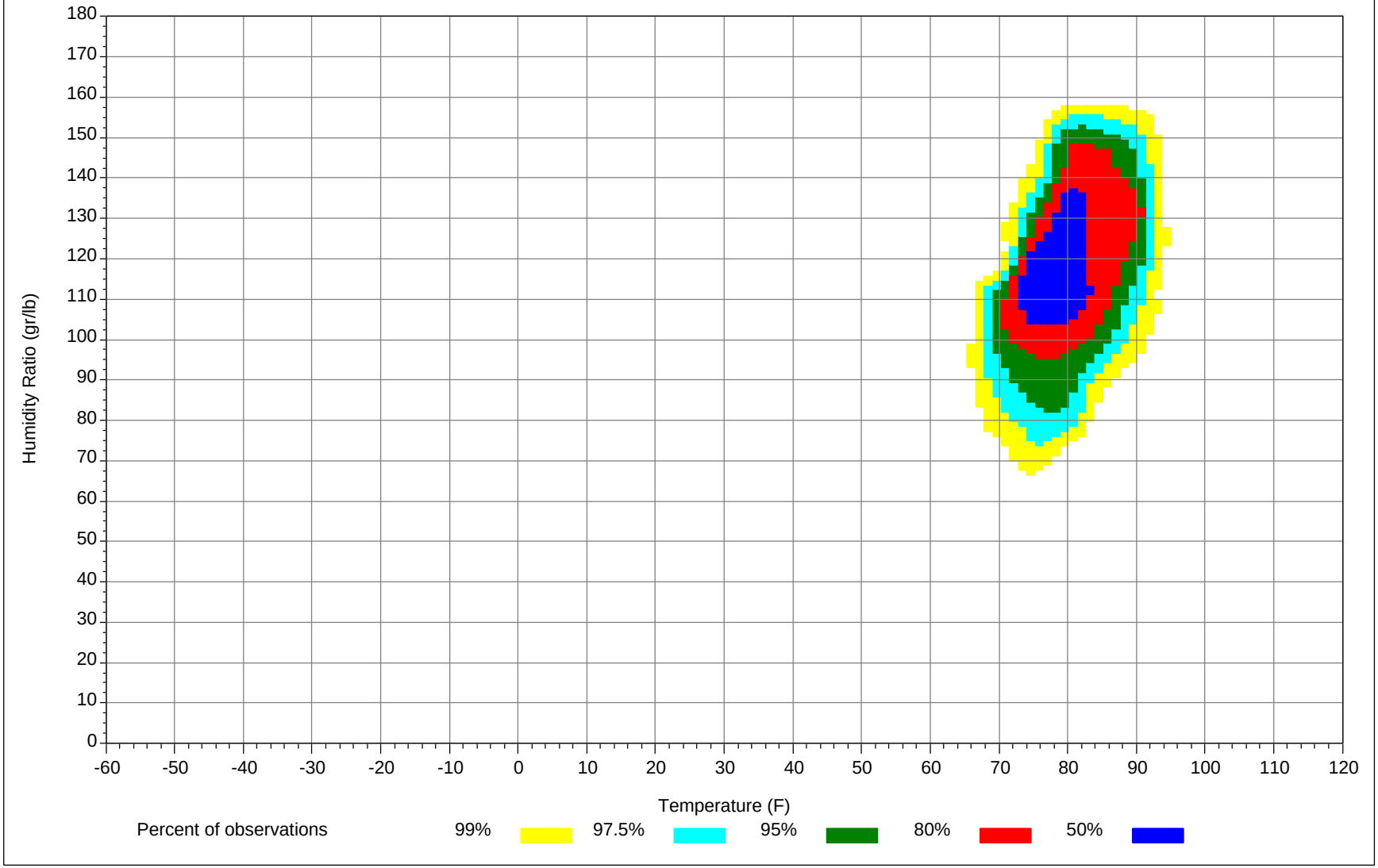
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
10	N/A	N/A	19.9 + 4.2
Ground Water Temperature (°F) 50 Foot Depth*	Frost Depth 50 Year Recurrence (in)	Ground Snow Load 50 Year Recurrence (lb/ft^2)	Average Annual Freeze-Thaw Cycles (#)
82.6	N/A	N/A	0

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

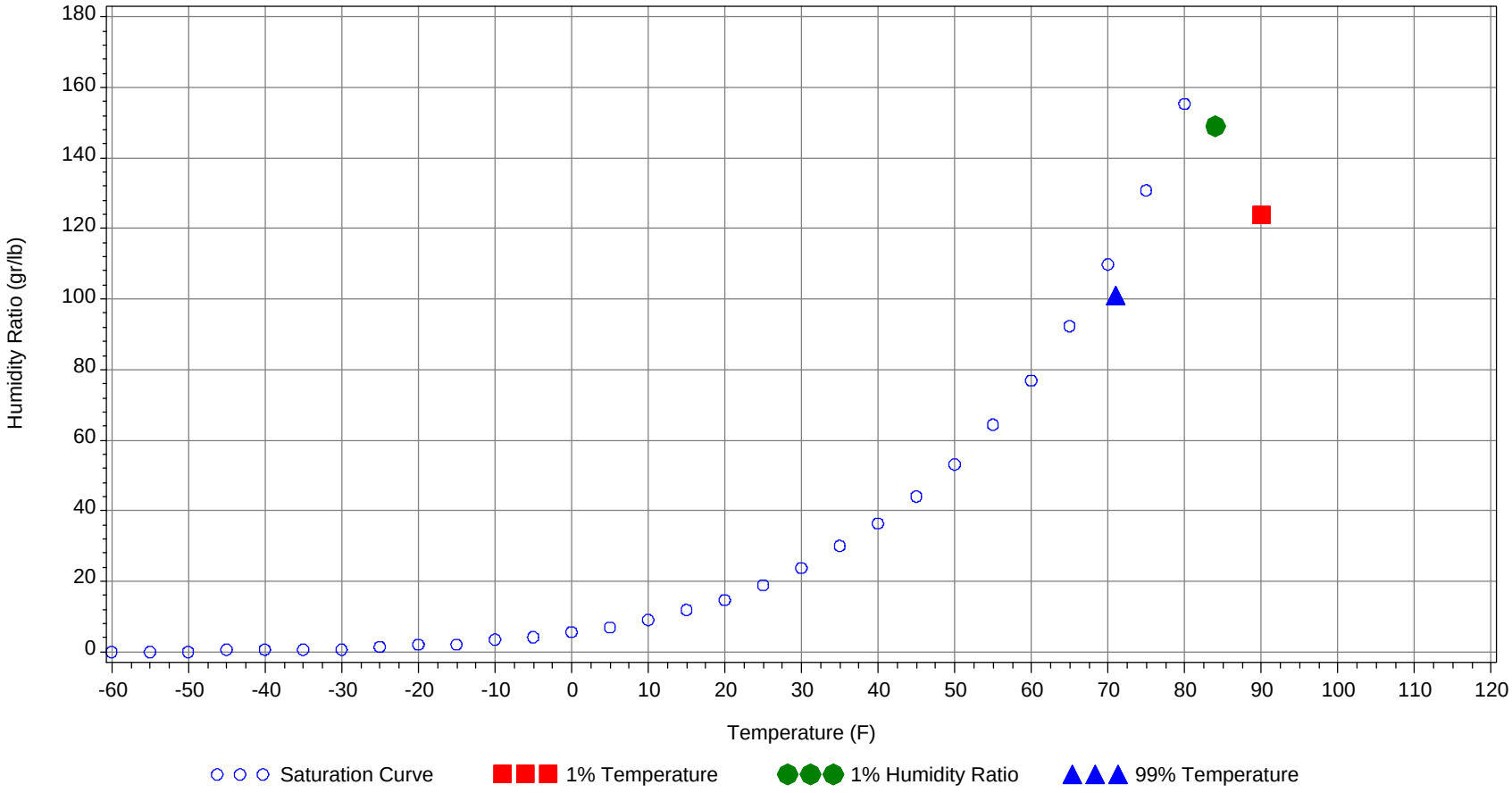
Average Annual Climate



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	90.0		78		124.0	41.1
99.0% Dry Bulb	71.0				101.0	32.8
1.0% Humidity Ratio	149.0	84.0	80.1	78.8		43.5

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**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
95/ 99															
90/ 94		0		0	72		1		1	74.2		4	0	4	73.3
85/ 89		13	1	14	73.8	0	17	1	18	73.3		32	2	34	73.8
80/ 84	0	156	28	184	73.1	0	136	30	166	72.7	1	158	44	203	72.7
75/ 79	83	72	173	328	71.6	67	64	147	278	71.1	109	50	173	332	71.1
70/ 74	158	6	46	210	69.8	151	6	45	202	69.4	134	4	29	167	69.4
65/ 69	6	0	0	6	66	5	0	0	5	66.1	4		0	4	65.2
60/ 64	0			0	62.2										

Caution: This summary reflects the typical distribtion of temperature in a typical year. It does not reflect the typical mositure 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**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
95/ 99							0		0	78		0		0	78.2
90/ 94		10	0	10	75.5		20	1	21	76.5		33	2	35	77.7
85/ 89	0	55	6	61	75.2	1	91	12	104	76.8	1	132	25	158	77.6
80/ 84	15	150	75	240	74	42	120	129	291	75.6	93	67	170	330	76.4
75/ 79	160	23	148	331	72.3	188	14	102	304	74	144	8	43	195	74.8
70/ 74	65	2	10	77	70	17	2	5	24	71.5	2	0	1	3	72.2
65/ 69	0		0	0	67.1	0			0	69					
60/ 64															

Caution: This summary reflects the typical distribtion of temperature in a typical year. It does not reflect the typical mositure 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

	July					August					September				
Temperature Range (°F)	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
95/ 99												0		0	79.5
90/ 94	0	25	1	26	78.4		30	1	31	78.7	0	35	2	37	78.5
85/ 89	2	154	28	184	78.2	2	153	31	186	78.4	2	137	23	162	78.3
80/ 84	118	60	182	360	76.8	128	57	185	370	77	110	58	179	347	76.8
75/ 79	127	9	37	173	75.1	117	9	31	157	75.4	126	9	36	171	75
70/ 74	2	1	0	3	72.1	1	0	1	2	72.3	3	1	1	5	72
65/ 69															
60/ 64															

Caution: This summary reflects the typical distribtion of temperature in a typical year. It does not reflect the typical mositure 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**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
95/ 99		0		0	77.7										
90/ 94		22	0	22	78		3		3	77.4		0		0	75.7
85/ 89	1	136	14	151	77.8		71	2	73	76.8		29	1	30	74.8
80/ 84	73	80	170	323	76.4	26	147	113	286	75.3	5	166	55	226	74.1
75/ 79	169	10	61	240	74.8	182	18	120	320	73.8	142	49	172	363	72.5
70/ 74	5	0	2	7	72.2	32	1	5	38	71.3	99	4	20	123	70.5
65/ 69						0			0	67	2		0	2	66.3
60/ 64															

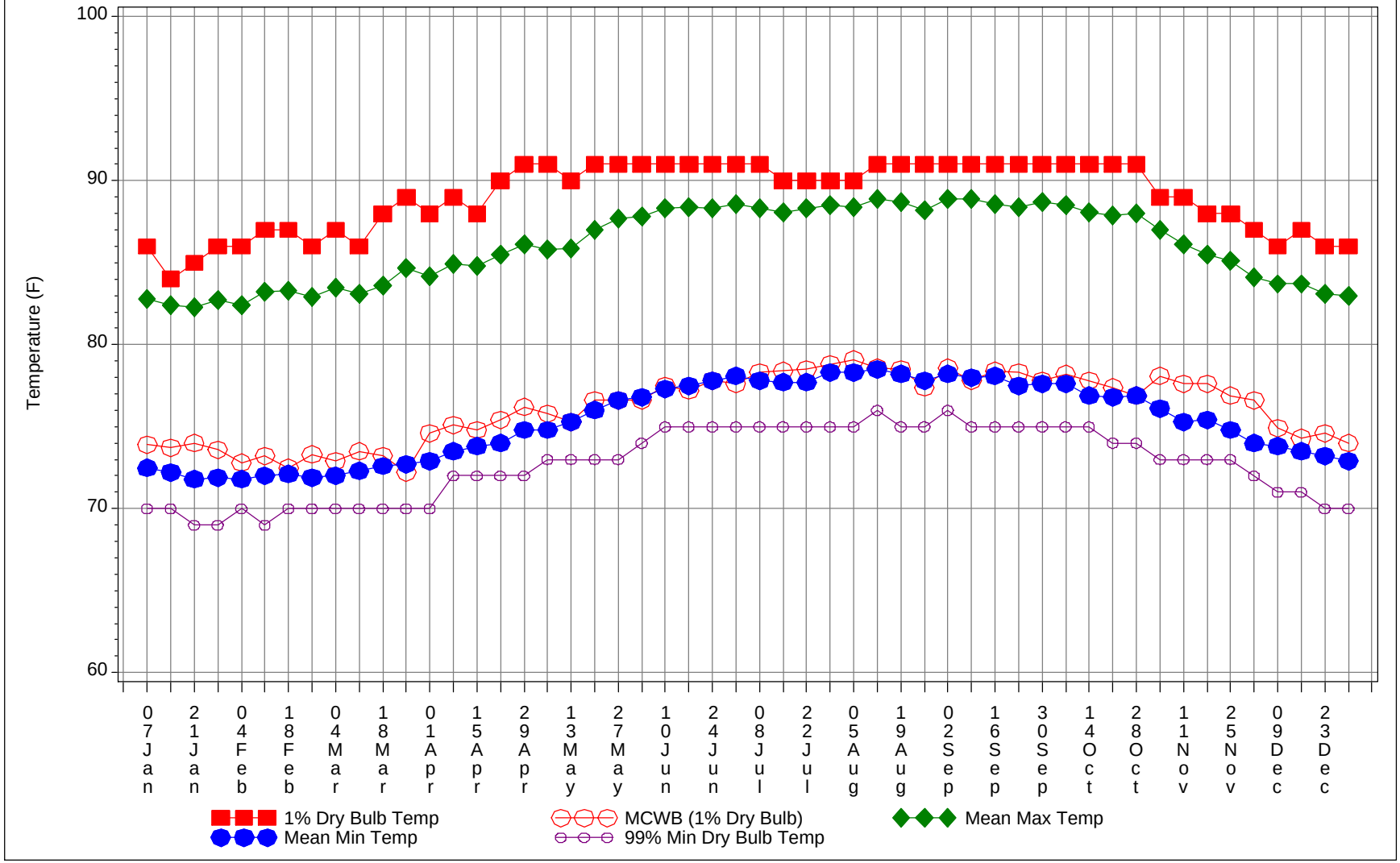
Caution: This summary reflects the typical distribtion of temperature in a typical year. It does not reflect the typical mositure distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary and the ventilation and infiltration load pages in this manual.

Dry-Bulb Temperature Hours For An Average Year

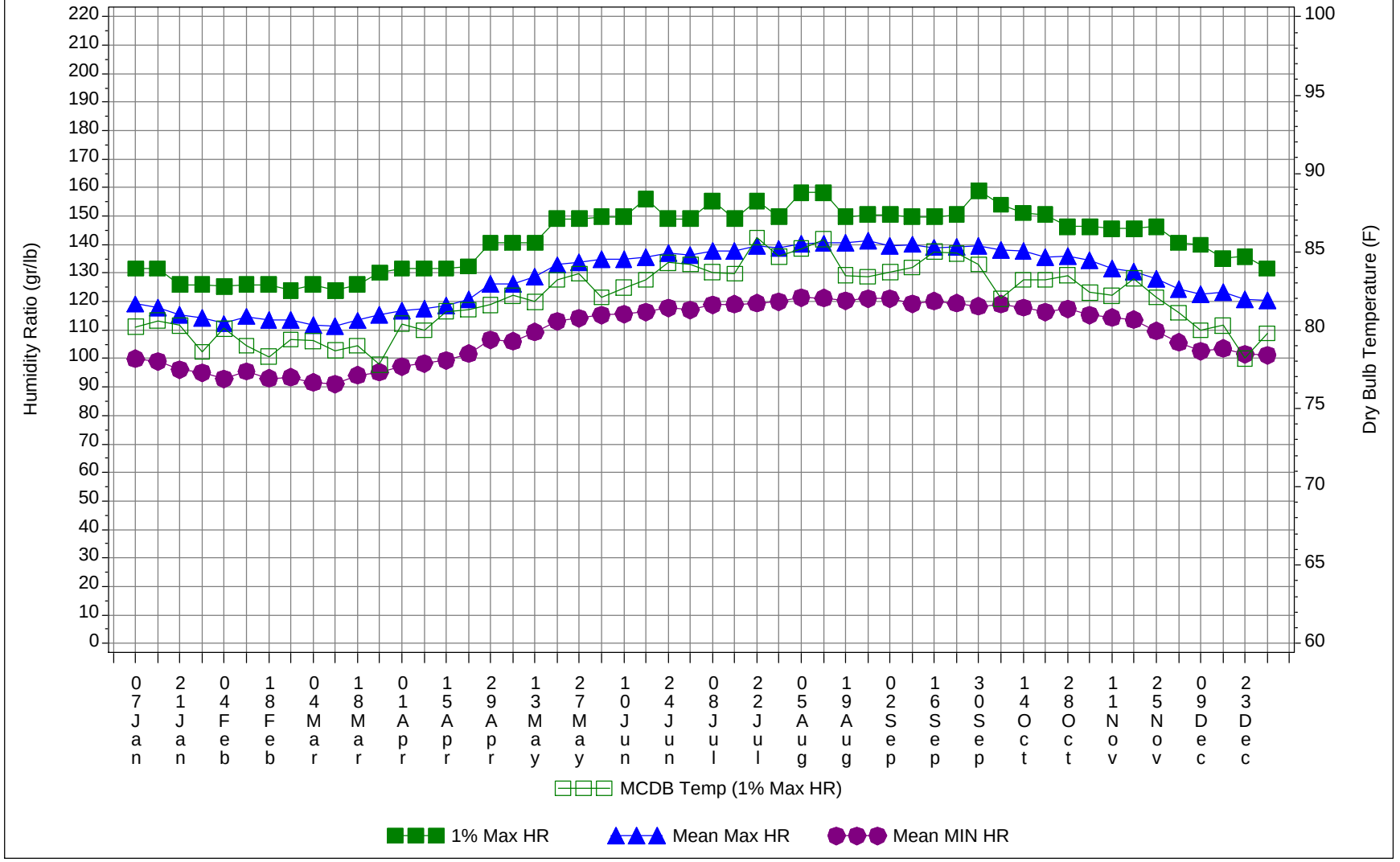
	Annual				
Temperature Range (°F)	**01 To 08 LST**	**09 To 16 LST**	**17 to 00 LST**	**Total Obs**	**MCWB (°F)**
95/ 99		0		0	78.4
90/ 94	0	182	7	189	77.8
85/ 89	8	1014	145	1167	77.4
80/ 84	606	1359	1353	3318	75.5
75/ 79	1611	338	1249	3198	73.1
70/ 74	677	26	166	869	69.9
65/ 69	18	0	1	19	65.9
60/ 64	0			0	62.2

Caution: This summary reflects the typical distribtion of temperature in a typical year. It does not reflect the typical mositure 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



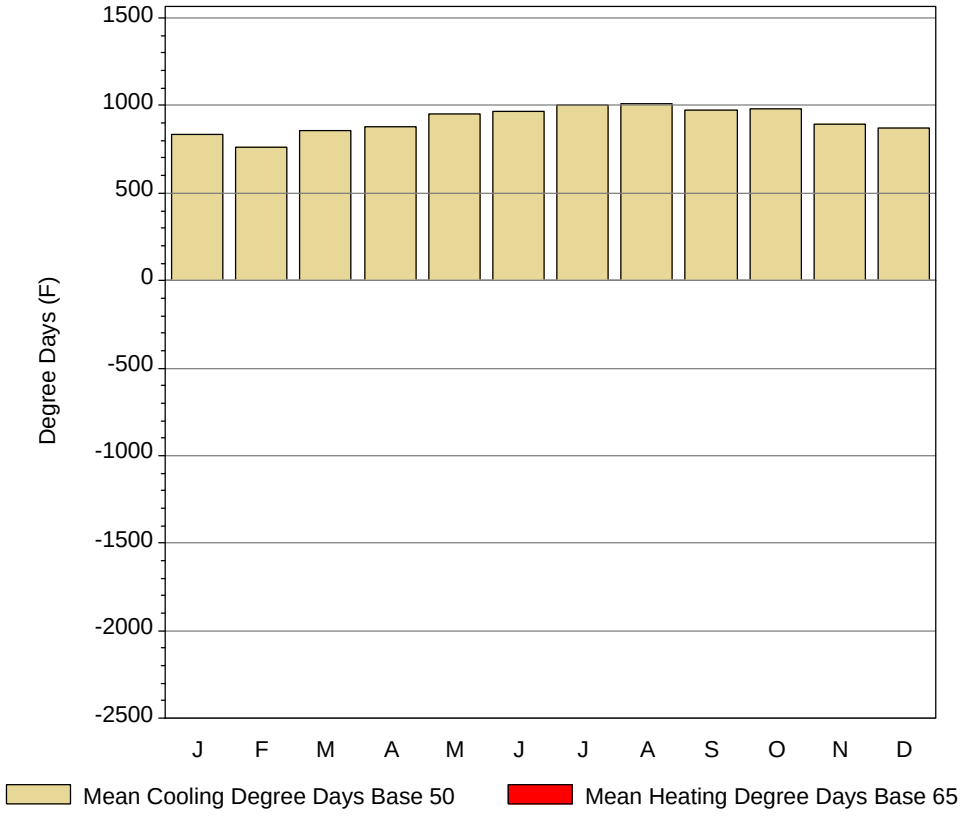
Long Term Humidity and Dry Bulb Temperature Summary



Long Term Humidity and Dry Bulb Temperature Summary

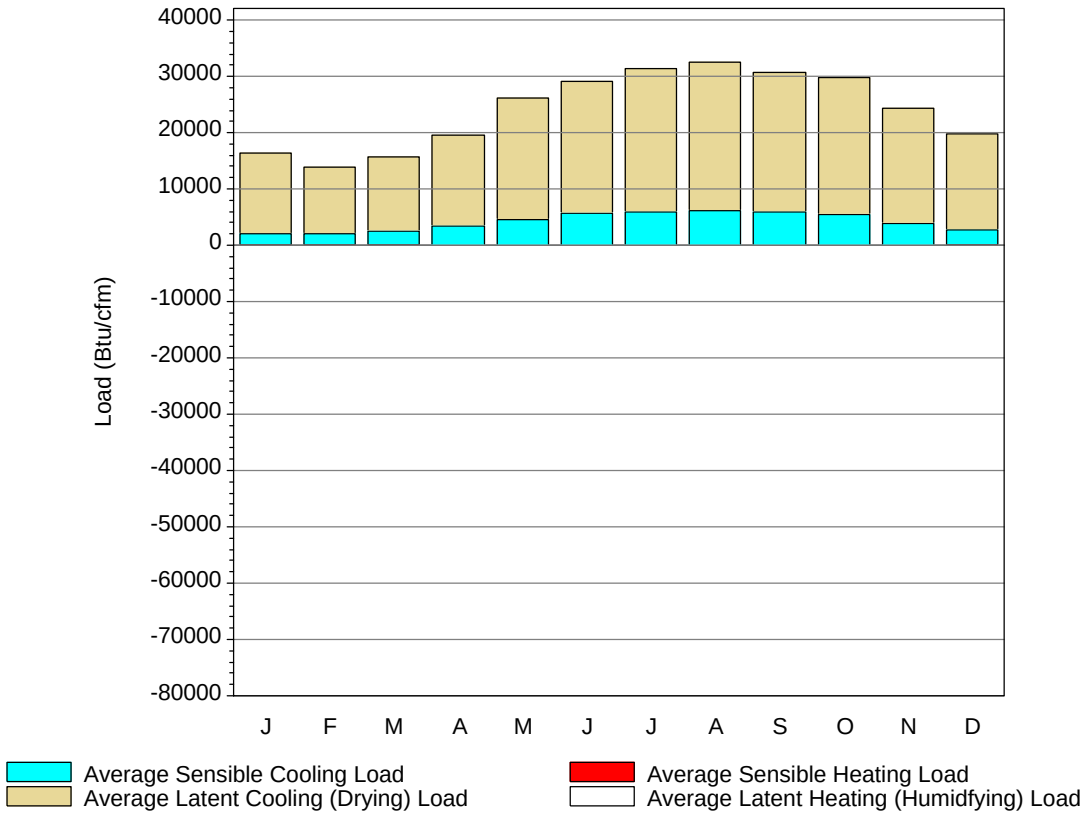
Week Ending	1.0% Temp (°F)	MCWB@ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB@ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	86	73.9	82.8	72.5	70	131.6	80.2	119.2	99.9
14-Jan	84	73.7	82.4	72.2	70	131.6	80.6	117.8	99
21-Jan	85	74	82.3	71.8	69	126	80.3	115.5	96.2
28-Jan	86	73.6	82.7	71.9	69	126	78.6	114.3	95
4-Feb	86	72.8	82.4	71.8	70	125.3	80.1	112.3	92.9
11-Feb	87	73.2	83.2	72	69	126	79	114.8	95.5
18-Feb	87	72.5	83.3	72.1	70	126	78.3	113.6	93.1
25-Feb	86	73.3	82.9	71.9	70	123.9	79.4	113.7	93.4
4-Mar	87	72.9	83.5	72	70	126	79.3	111.8	91.6
11-Mar	86	73.5	83.1	72.3	70	123.9	78.7	111.5	91
18-Mar	88	73.2	83.6	72.6	70	126	79	113.4	94.1
25-Mar	89	72.2	84.7	72.7	70	130.2	77.8	115.5	95.2
1-Apr	88	74.6	84.2	72.9	70	131.6	80.4	116.9	97.2
8-Apr	89	75.1	84.9	73.5	72	131.6	80	117.4	98.3
15-Apr	88	74.8	84.8	73.8	72	131.6	81.2	118.6	99.4
22-Apr	90	75.4	85.5	74	72	132.3	81.3	120.7	101.7
29-Apr	91	76.2	86.1	74.8	72	140.7	81.6	126.2	106.6
6-May	91	75.8	85.8	74.8	73	140.7	82.2	126.3	106
13-May	90	75.3	85.9	75.3	73	140.7	81.8	128.6	109.3
20-May	91	76.6	87	76	73	149.1	83.2	132.9	113.1
27-May	91	76.6	87.7	76.6	73	149.1	83.6	133.7	114.2
4-Jun	91	76.6	87.8	76.8	74	149.8	82.1	134.9	115.3
10-Jun	91	77.5	88.3	77.3	75	149.8	82.7	135	115.6
17-Jun	91	77.2	88.4	77.5	75	156.1	83.2	135.7	116.4
24-Jun	91	77.8	88.3	77.8	75	149.1	84.3	137.1	117.8
1-Jul	91	77.6	88.6	78.1	75	149.1	84.2	136.4	117.1
8-Jul	91	78.3	88.3	77.8	75	155.4	83.7	137.8	118.9
15-Jul	90	78.4	88.1	77.7	75	149.1	83.6	137.9	119.1
22-Jul	90	78.5	88.3	77.7	75	155.4	85.9	139.6	119.5
29-Jul	90	78.8	88.5	78.3	75	149.8	84.7	138.7	120
5-Aug	90	79.1	88.4	78.3	75	158.2	85.2	140.2	121.4
12-Aug	91	78.6	88.9	78.5	76	158.2	85.8	140.5	121.3
19-Aug	91	78.5	88.7	78.2	75	149.8	83.5	140.7	120.4
26-Aug	91	77.4	88.2	77.8	75	150.5	83.4	141.5	121.1
2-Sep	91	78.6	88.9	78.2	76	150.5	83.7	139.7	121.1
9-Sep	91	77.8	88.9	78	75	149.8	84	140.1	119.2
16-Sep	91	78.4	88.6	78.1	75	149.8	85	139	120.1
23-Sep	91	78.3	88.4	77.5	75	150.5	84.9	139.3	119.5
30-Sep	91	77.8	88.7	77.6	75	158.9	84.2	139.5	118.3
7-Oct	91	78.2	88.5	77.6	75	154	82	138.2	119
14-Oct	91	77.8	88.1	76.9	75	151.2	83.2	137.7	117.9
21-Oct	91	77.4	87.9	76.8	74	150.5	83.2	135.7	116.4
28-Oct	91	76.9	88	76.9	74	146.3	83.5	136.1	117.5
4-Nov	89	78.1	87	76.1	73	146.3	82.4	134.5	115.2
11-Nov	89	77.6	86.1	75.3	73	145.6	82.2	131.7	114.4
18-Nov	88	77.6	85.5	75.4	73	145.6	83.3	130.6	113.6
25-Nov	88	76.9	85.1	74.8	73	146.3	82.1	127.9	109.7
2-Dec	87	76.6	84.1	74	72	140.7	81.1	124.4	105.7
9-Dec	86	74.9	83.7	73.8	71	140	80	122.5	102.7
16-Dec	87	74.3	83.7	73.5	71	135.1	80.3	123.4	103.5
23-Dec	86	74.6	83.1	73.2	70	135.8	78.2	120.8	101.5
31-Dec	86	74	83	72.9	70	131.6	79.8	120.3	101.1

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	832.6	367.6	0
FEB	761.2	337.2	0
MAR	859.1	394.1	0
APR	877.9	427.9	0
MAY	952.7	487.7	0
JUN	968.7	518.7	0
JUL	1006.1	541.1	0
AUG	1014.4	549.4	0
SEP	976.6	526.6	0
OCT	982.3	517.3	0
NOV	893.6	443.6	0
DEC	870.3	405.3	0
ANN	10995.5	5516.5	0

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	2076	-3	14310	0
FEB	1983	-1	11838	0
MAR	2609	-1	13170	0
APR	3483	0	16029	0
MAY	4651	0	21601	0
JUN	5674	0	23443	0
JUL	5995	0	25482	0
AUG	6208	0	26331	0
SEP	5879	0	24775	0
OCT	5386	0	24459	0
NOV	3794	0	20468	0
DEC	2770	-1	16948	0
ANN	50508	-6	238854	0

Station Information		Shading Geometry in Dimensionless Units	
City, State, WBAN	SANJUAN, PR 11641	Window:	1.000
Lat, Lon, Elev	18.43N 66.00W 62ft	Overhang:	1.078
Press, Stn_Type	14.7psia Primary	Vert Gap:	0.200

AVERAGE INCIDENT SOLAR RADIATION (Btu/sq.ft./day) Percentage Uncertainty = 9

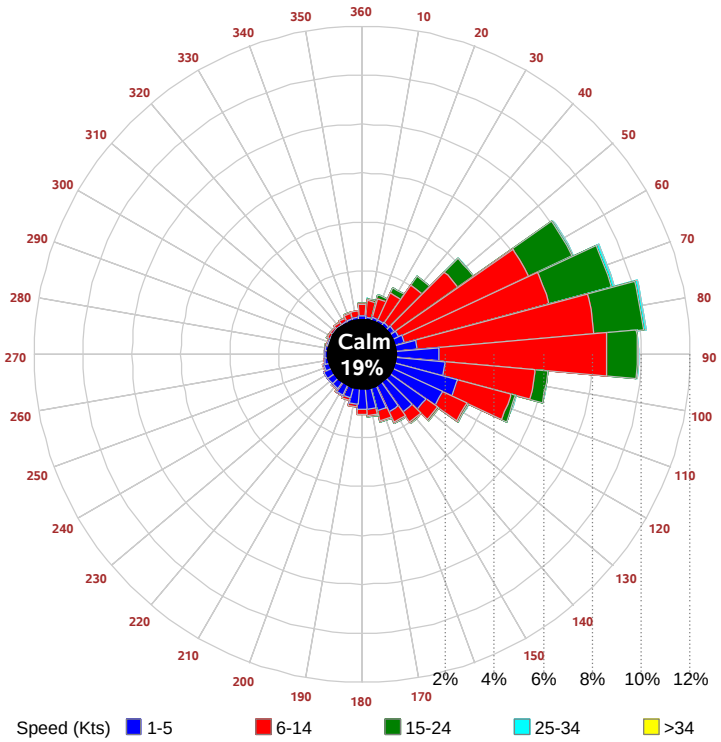
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ.	Global	1360	1550	1810	1930	1830	1920	1930	1890	1750	1560	1370	1250	1680
	Std.Dev.	51	50	77	95	182	127	81	91	91	89	88	65	43
	Minimum	1260	1480	1640	1730	1400	1670	1750	1660	1500	1370	1160	1080	1560
	Maximum	1460	1670	1950	2070	2080	2150	2060	2070	1930	1710	1550	1430	1750
	Diffuse	570	640	710	770	850	840	820	800	770	710	610	570	720
Clear Day	Global	1690	1940	2240	2440	2500	2500	2490	2440	2280	2020	1740	1610	2160
NORTH	Global	360	400	430	490	640	810	740	540	450	410	370	350	500
	Diffuse	360	400	430	470	520	560	540	480	440	410	370	350	440
Clear Day	Global	320	350	380	450	730	970	870	520	390	360	320	310	500
EAST	Global	770	860	980	1040	990	1030	1010	1010	990	900	780	710	920
	Diffuse	450	500	560	590	600	610	610	600	570	530	470	430	540
Clear Day	Global	990	1110	1230	1310	1320	1300	1290	1290	1250	1150	1010	950	1180
SOUTH	Global	1350	1230	990	640	480	470	470	530	780	1060	1240	1300	880
	Diffuse	580	580	560	500	470	470	470	480	530	580	580	570	530
Clear Day	Global	1850	1630	1200	650	410	410	410	500	960	1480	1790	1890	1100
WEST	Global	780	880	980	1000	920	950	970	960	880	820	750	710	880
	Diffuse	450	500	560	590	600	600	600	590	560	520	470	430	540
Clear Day	Global	990	1110	1230	1310	1320	1300	1290	1290	1250	1150	1010	950	1180

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	970	1120	1320	1410	1330	1400	1410	1380	1280	1130	980	890	1220
NORTH	Unshaded	250	270	300	330	390	470	430	350	310	290	260	240	320
	Shaded	190	210	240	250	270	300	290	260	240	220	190	180	240
EAST	Unshaded	540	610	690	740	700	730	720	720	710	640	550	490	650
	Shaded	330	370	420	440	410	430	420	420	410	380	330	300	390
SOUTH	Unshaded	960	830	590	380	330	330	330	340	460	690	870	930	590
	Shaded	320	280	280	270	250	260	250	260	270	270	290	330	280
WEST	Unshaded	540	620	700	710	650	670	690	680	620	580	530	500	620
	Shaded	330	370	410	420	380	390	400	400	370	350	320	300	370

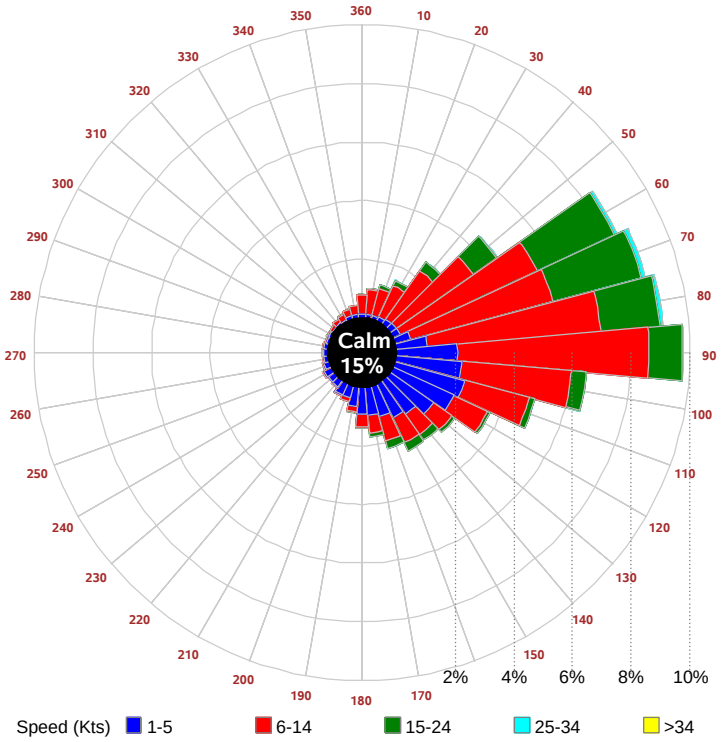
AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS Percentage Uncertainty = 9											
				March					June		
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	40	84	101	86	43	54	92	106	89	49
	M.Cloudy	30	67	80	68	31	42	72	84	69	35
NORTH	M.Clear	12	18	18	18	12	31	30	26	30	30
	M.Cloudy	11	19	20	19	12	24	27	25	27	21
EAST	M.Clear	70	67	19	18	12	74	62	16	18	14
	M.Cloudy	40	52	21	19	12	49	49	18	19	13
SOUTH	M.Clear	24	47	56	48	26	14	18	16	18	14
	M.Cloudy	17	38	45	39	18	14	19	18	19	13
WEST	M.Clear	12	18	18	65	72	14	18	19	65	71
	M.Cloudy	11	19	20	50	39	14	19	20	49	41
M.Clear	(% hrs)	49	43	48	49	51	37	30	29	28	27

				Sept					Dec		
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	49	90	103	84	40	29	66	78	61	21
	M.Cloudy	38	71	80	63	27	21	51	62	47	15
NORTH	M.Clear	14	18	18	18	12	10	16	17	15	8
	M.Cloudy	14	19	20	19	11	9	17	19	16	7
EAST	M.Clear	75	64	18	18	12	52	52	17	15	8
	M.Cloudy	48	50	20	19	11	28	38	19	16	7
SOUTH	M.Clear	22	41	46	38	18	38	70	79	66	31
	M.Cloudy	19	35	39	31	13	22	49	58	45	16
WEST	M.Clear	14	18	23	70	69	10	16	21	56	45
	M.Cloudy	14	19	23	49	34	9	17	21	39	22
M.Clear	(% hrs)	42	35	31	26	21	40	35	39	40	44

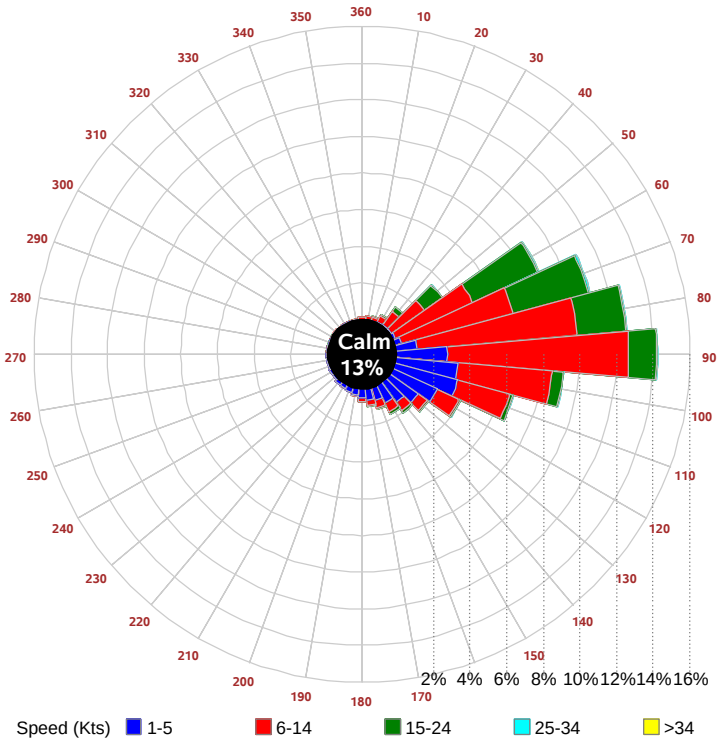
Wind Summary - December, January, and February



Wind Summary - March, April, and May



Wind Summary - June, July, and August



Wind Summary - September, October, and November