TANGIER/BOUKHALF MC	
Latitude = 35.73 N	WMO No. 601010
Longitude = 5.90 W	Elevation = 69 feet
Period of Record = 1967 to 1996	Average Pressure = 29.95 inches Hg

Design Criteria Data

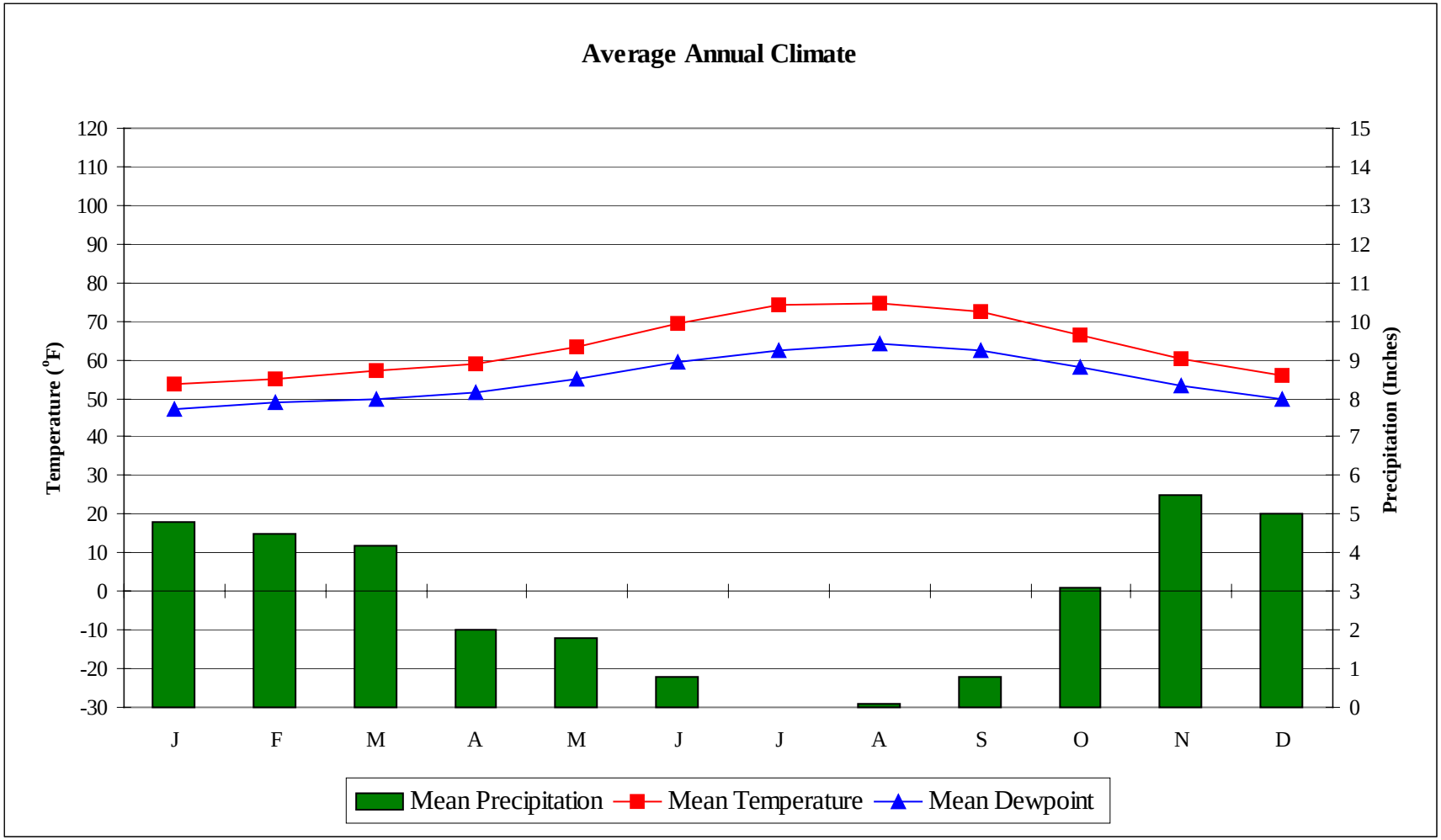
		Mean Coincident (Average) Values			
Dry Bulb Temperature (T)	**Design Value (^oF)**	Wet Bulb Temperature (^oF)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	99	72	73	16.8	E
0.4% Occurrence	91	71	82	22.0	E
1.0% Occurrence	88	71	87	22.4	E
2.0% Occurrence	86	71	88	22.0	E
Mean Daily Range	14	-	-	-	-
97.5% Occurrence	46	44	40	5.5	E
99.0% Occurrence	43	42	36	4.7	E
99.6% Occurrence	41	40	34	4.5	E
Median of Extreme Lows	36	35	28	4.3	E
		Mean Coincident (Average) Values			
Wet Bulb Temperature (T_{wb})	**Design Value (^oF)**	Dry Bulb Temperature (^oF)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	77	88	119	19.9	E
0.4% Occurrence	75	85	111	19.7	E
1.0% Occurrence	73	83	104	18.0	E
2.0% Occurrence	72	81	101	16.8	E
		Mean Coincident (Average) Values			
Humidity Ratio (HR)	**Design Value (gr/lb)**	Dry Bulb Temperature (^oF)	Vapor Pressure (in. Hg)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	131	86	0.88	20.8	E
0.4% Occurrence	117	80	0.78	15.0	E
1.0% Occurrence	110	78	0.74	13.0	E
2.0% Occurrence	104	76	0.69	12.5	E
Air Conditioning/		$T \geq 93^oF$	$T \geq 80^oF$	$T_{wb} \geq 73^oF$	$T_{wb} \geq 67^oF$
Humid Area Criteria	# of Hours	23	507	129	1420

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
9	N/A	N/A	1.3 + 0.5
Ground Water Temperature (^oF) 50 Foot Depth *	**Frost Depth 50 Year Recurrence (in.)**	**Ground Snow Load 50 Year Recurrence (lb/ft^2)**	**Average Annual Freeze-Thaw Cycles (#)**
66.1	N/A	N/A	0

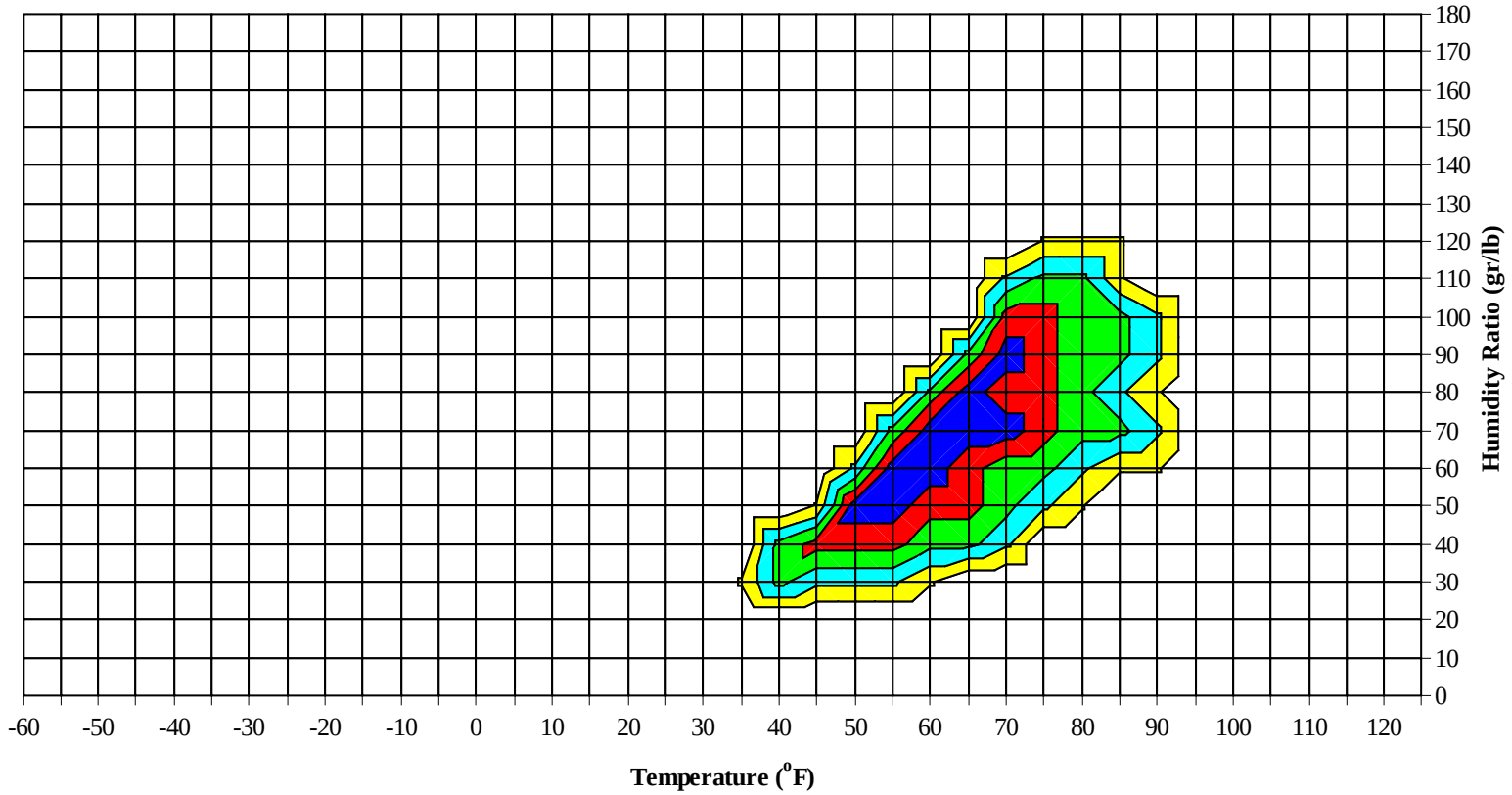
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

TANGIER/BOUKHALF MC WMO No. 601010



TANGIER/BOUKHALF MC WMO No. 601010

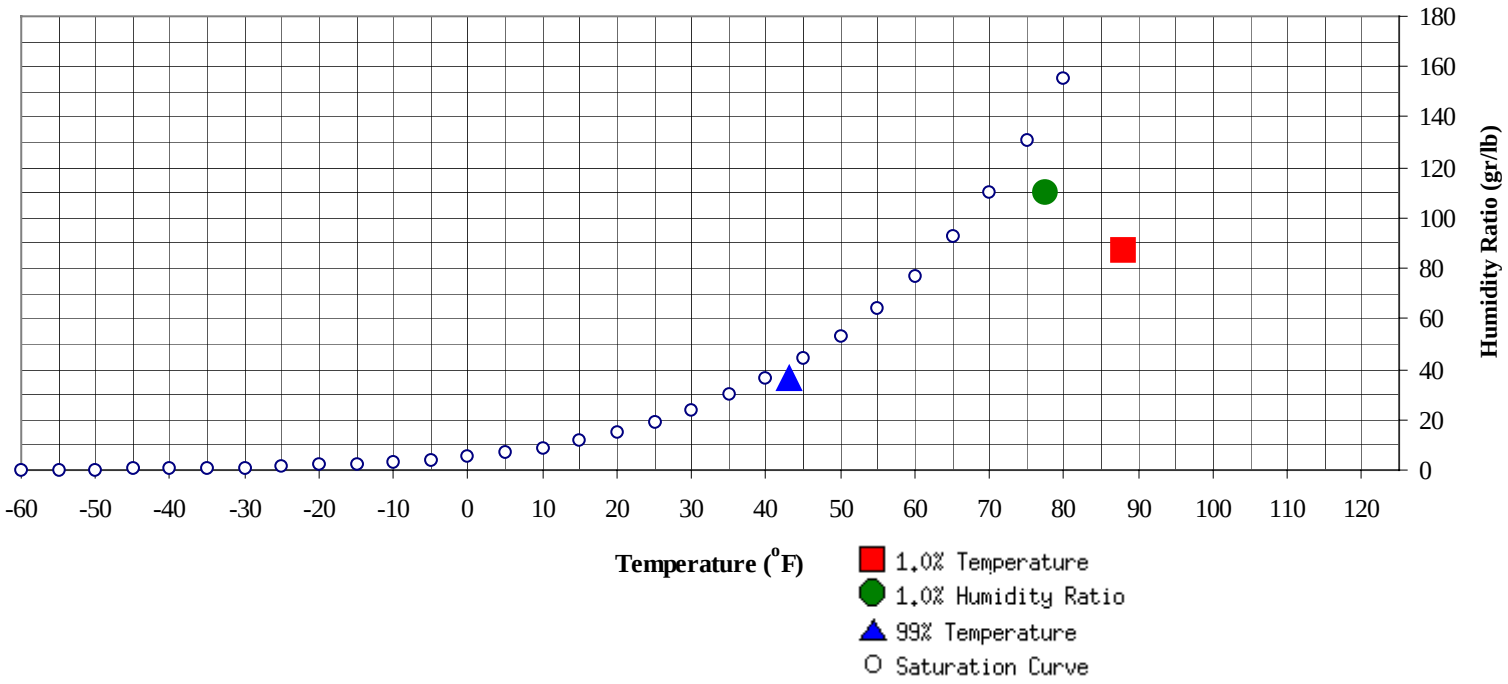
Long Term Psychrometric Summary



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

TANGIER/BOUKHALF **MC** WMO No. 601010

Psychrometric Summary of Peak Design Values



	(°F)	MCHR (gr/lb)	Enthalpy (btu/lb)
99% Dry Bulb	43	36.4	15.9

	(gr/lb)	MCDB (°F)	MCWB (°F)	MC Dewpt (°F)	Enthalpy (btu/lb)
1.0% Humidity Ratio	109.9	77.6	72.2	69.8	35.8

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	88	87.3	71.2	34.8

TANGIER/BOUKHALF MC WMO No. 601010

Dry-Bulb Temperature Hours For An Average Year (Sheet 1 of 5)

Period of Record = 1967 to 1996

Temperature Range (°F)	January Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)	February Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)	March Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)
105 / 109															
100 / 104															
95 / 99															
90 / 94															
85 / 89															
80 / 84							0		0	66.7					
75 / 79							0	0	0	64.5		2	0	2	64.4
70 / 74		0		0	58.2		3	0	3	60.4		15	2	17	61.0
65 / 69	0	5	1	6	58.9	0	14	1	15	58.6		36	8	43	59.2
60 / 64	5	83	16	104	56.1	5	80	26	112	56.9	6	107	51	164	56.7
55 / 59	54	102	102	258	53.1	68	86	105	260	53.3	98	74	123	295	53.3
50 / 54	82	40	85	207	49.4	84	33	66	183	49.5	91	13	51	155	49.9
45 / 49	64	14	34	111	45.0	47	7	20	74	45.2	43	2	13	57	45.6
40 / 44	30	3	9	42	40.8	15	1	4	19	41.0	9	0	1	10	41.2
35 / 39	11	1	2	14	36.8	5		1	6	37.1	1		0	1	37.3
30 / 34	1	0		1	31.5										

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.

TANGIER/BOUKHALF MC WMO No. 601010

Dry-Bulb Temperature Hours For An Average Year (Sheet 2 of 5)

Period of Record = 1967 to 1996

Temperature Range (°F)	April Hour Group (LST) 01 To 08	April 09 To 16	April 17 To 00	April Total Obs	April MCWB (°F)	May Hour Group (LST) 01 To 08	May 09 To 16	May 17 To 00	May Total Obs	May MCWB (°F)	June Hour Group (LST) 01 To 08	June 09 To 16	June 17 To 00	June Total Obs	June MCWB (°F)
105 / 109															
100 / 104															
95 / 99												0		0	75.0
90 / 94							0	0	0	66.5		3	1	4	69.2
85 / 89							1	0	1	65.7		8	2	10	68.1
80 / 84		0	0	0	67.2		7	1	8	64.5	0	32	11	42	67.2
75 / 79		6	1	7	62.4	0	23	7	30	64.0	5	47	29	81	66.3
70 / 74	0	27	6	33	61.0	4	66	23	94	62.4	33	111	68	212	64.4
65 / 69	1	48	18	67	59.8	13	82	50	145	60.8	62	33	68	163	62.6
60 / 64	24	109	71	204	57.0	87	62	106	256	58.5	97	7	53	157	60.2
55 / 59	109	44	106	259	53.8	95	6	49	149	55.2	38	0	8	46	56.2
50 / 54	74	6	32	113	50.3	40	1	11	52	51.1	5		0	5	52.0
45 / 49	29	0	6	35	45.8	8		1	9	46.3	0		0	0	47.3
40 / 44	3	0	0	3	41.5	0			0	42.0					
35 / 39	0			0	37.0										
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.

TANGIER/BOUKHALF MC WMO No. 601010

Dry-Bulb Temperature Hours For An Average Year (Sheet 3 of 5)

Period of Record = 1967 to 1996

Temperature Range (°F)	July Hour Group (LST) 01 To 08	July 09 To 16	July 17 To 00	July Total Obs	July MCWB (°F)	August Hour Group (LST) 01 To 08	August 09 To 16	August 17 To 00	August Total Obs	August MCWB (°F)	September Hour Group (LST) 01 To 08	September 09 To 16	September 17 To 00	September Total Obs	September MCWB (°F)
105 / 109							0	0	0	73.0					
100 / 104		1		1	70.9		0	0	0	77.3		0		0	78.0
95 / 99		4	1	5	71.3		3	1	4	70.6		1	0	1	72.0
90 / 94		22	6	28	70.4	0	18	3	21	71.6		6	1	7	71.1
85 / 89	0	29	11	39	70.4	0	33	11	43	71.7		21	3	24	71.3
80 / 84	3	51	32	87	69.5	3	52	34	90	70.6	0	49	17	66	70.0
75 / 79	36	81	65	183	68.1	36	104	77	217	69.0	18	87	53	157	68.5
70 / 74	79	57	82	219	66.1	87	37	83	207	67.2	81	64	92	237	66.3
65 / 69	69	3	37	109	64.4	75	2	32	110	64.7	62	11	50	123	63.5
60 / 64	49	0	13	62	60.9	40		7	47	61.0	57	1	21	78	60.3
55 / 59	11		1	12	56.7	6		0	6	56.7	22	0	4	26	55.6
50 / 54											1		0	1	51.6
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.

TANGIER/BOUKHALF MC WMO No. 601010

Dry-Bulb Temperature Hours For An Average Year (Sheet 4 of 5)

Period of Record = 1967 to 1996

Temperature Range (°F)	October					November					December				
	Hour Group (LST)				MCWB	Hour Group (LST)				MCWB	Hour Group (LST)				MCWB
	01 To 08	09 To 16	17 To 00	Total Obs	(°F)	01 To 08	09 To 16	17 To 00	Total Obs	(°F)	01 To 08	09 To 16	17 To 00	Total Obs	(°F)
105 / 109															
100 / 104															
95 / 99															
90 / 94		0	0	0	67.3										
85 / 89		1	0	1	67.5		0		0	65.0					
80 / 84		14	1	15	68.1		1	0	1	62.6					
75 / 79	1	50	9	60	66.0	0	6	1	7	63.3		0		0	61.0
70 / 74	15	94	50	159	64.3	0	43	5	48	62.3	0	2	0	2	60.8
65 / 69	53	53	77	183	62.3	9	60	23	92	61.0	1	25	3	29	59.4
60 / 64	105	30	82	217	59.5	66	87	95	247	58.3	25	106	47	178	57.6
55 / 59	53	4	24	81	55.1	86	36	79	201	54.4	82	81	109	272	53.6
50 / 54	18	1	5	24	50.4	52	7	29	88	50.4	72	26	62	160	49.6
45 / 49	3		0	3	46.2	22	1	7	30	45.6	43	7	23	72	45.1
40 / 44						4	0	1	5	40.6	18	1	4	23	40.6
35 / 39						1		0	1	37.4	6	0	1	7	36.5
30 / 34											0			0	32.0

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.

TANGIER/BOUKHALF MC WMO No. 601010

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

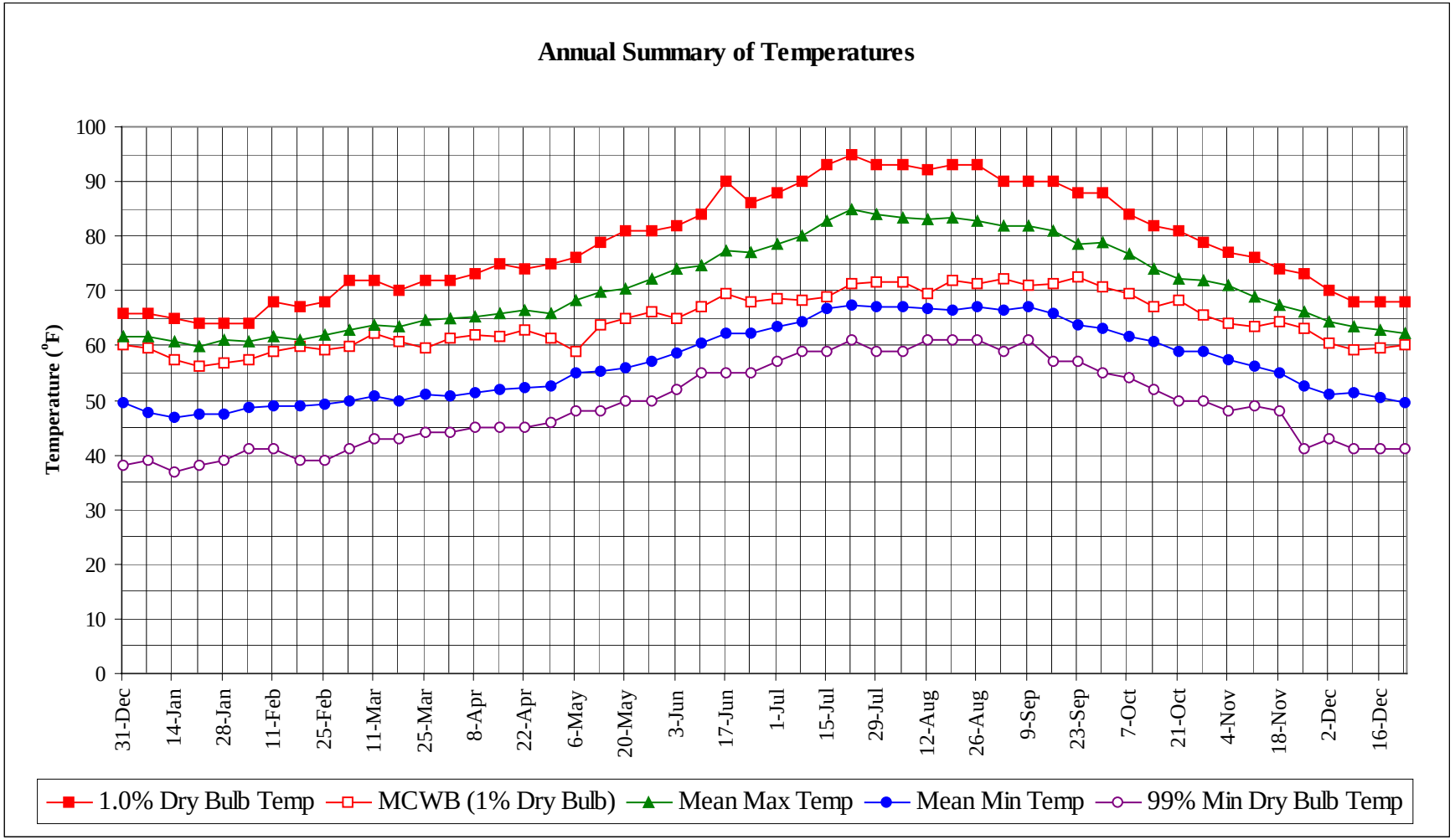
Period of Record = 1967 to 1996

Annual Totals

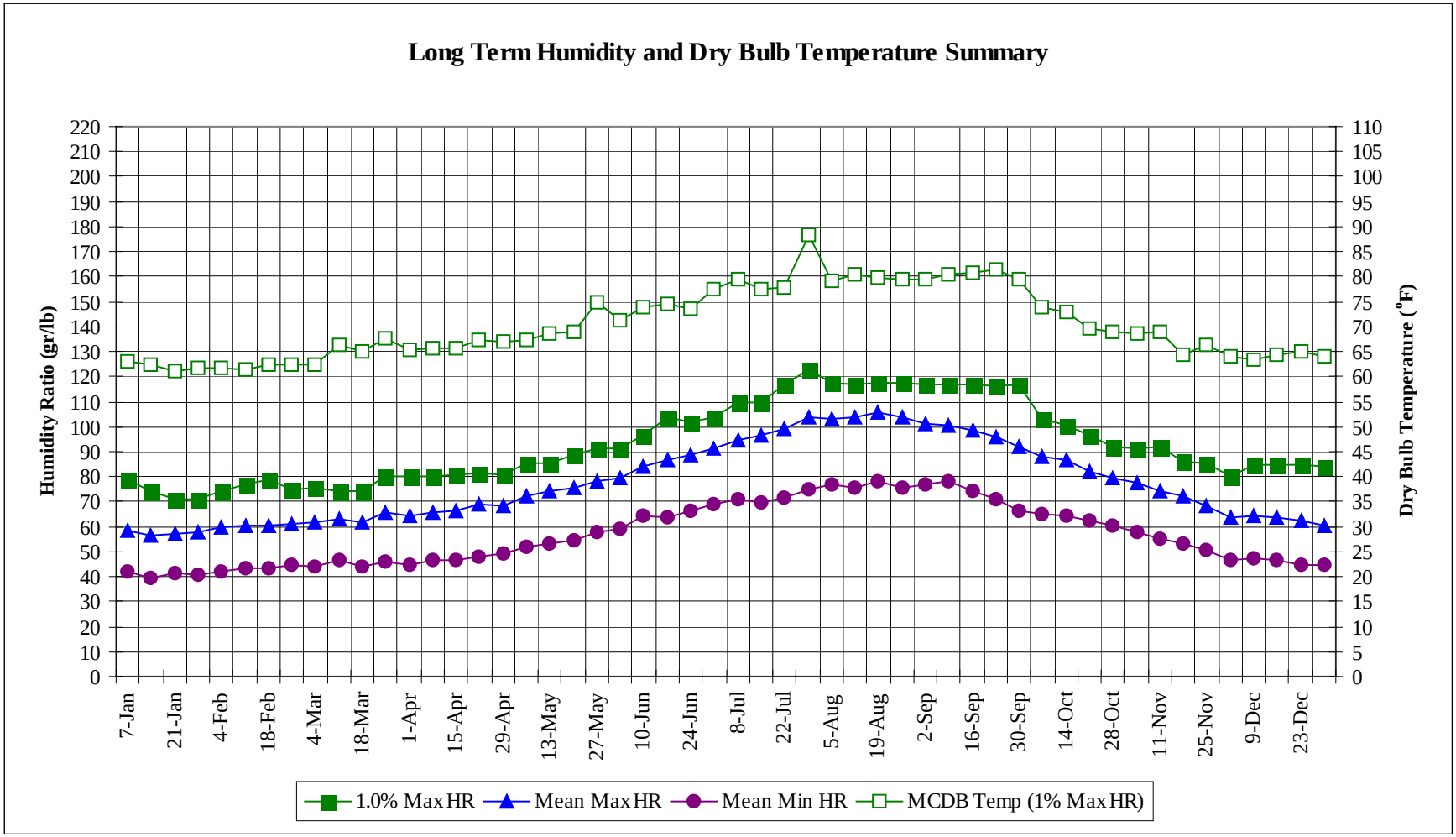
Temperature Range (°F)	Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)
105 / 109		0	0	0	73.0
100 / 104		1	0	1	72.9
95 / 99		8	2	10	71.2
90 / 94	0	51	11	61	70.8
85 / 89	0	95	27	123	70.7
80 / 84	7	209	98	314	69.4
75 / 79	98	412	243	753	67.8
70 / 74	302	520	414	1237	65.1
65 / 69	349	371	370	1089	62.2
60 / 64	570	665	587	1821	58.3
55 / 59	720	427	705	1853	53.9
50 / 54	516	126	338	980	49.9
45 / 49	253	30	103	385	45.3
40 / 44	78	5	19	102	40.9
35 / 39	26	1	4	31	36.9
30 / 34	1	0		1	31.5

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.

TANGIER/BOUKHALF MC WMO No. 601010



TANGIER/BOUKHALF MC WMO No. 601010

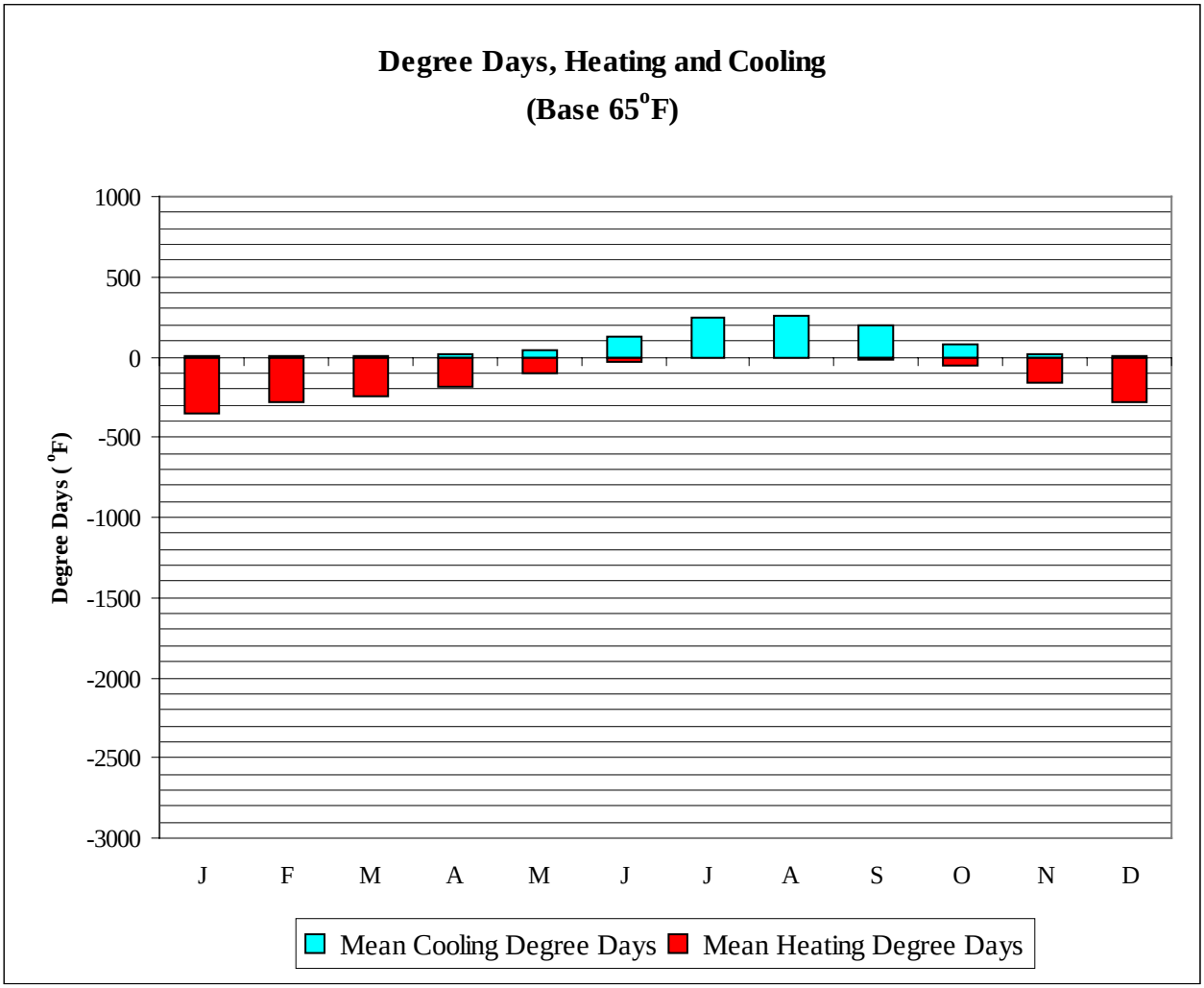


TANGIER/BOUKHALF MC WMO No. 601010

Long Term Dry Bulb Temperature and Humidity Summary

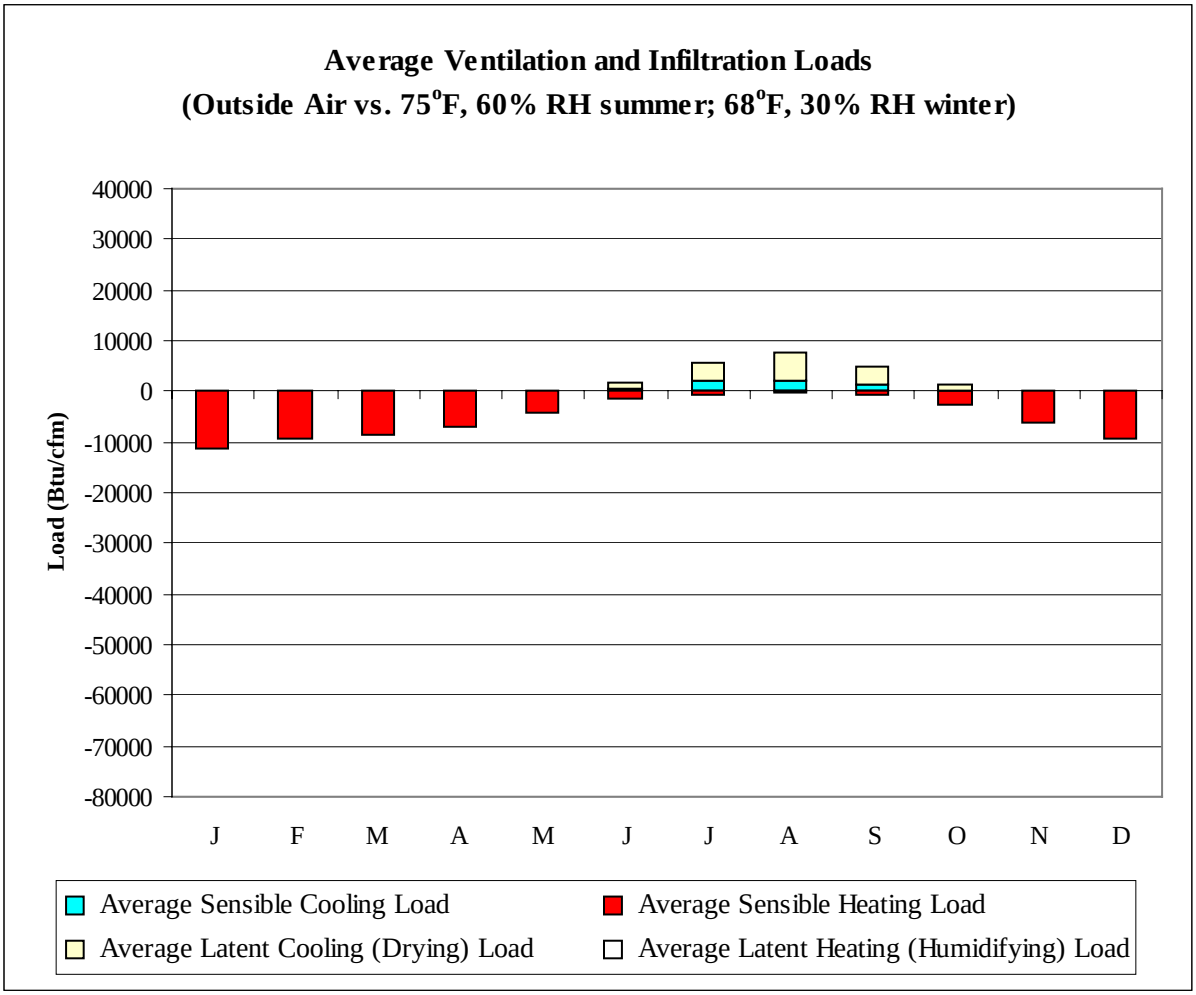
Week Ending	1.0% Temp (°F)	MCWB @ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB @ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	66.0	59.6	61.5	47.7	39.0	79.1	63.1	58.6	42.1
14-Jan	65.0	57.3	60.6	46.7	37.0	74.2	62.2	56.5	39.5
21-Jan	64.0	56.2	60.0	47.3	38.0	70.7	61.1	57.2	41.3
28-Jan	64.0	56.8	61.0	47.3	39.0	70.7	61.6	58.0	40.8
4-Feb	64.0	57.5	60.7	48.6	41.0	74.2	61.8	59.5	42.3
11-Feb	68.0	58.8	61.7	48.8	41.0	77.0	61.3	60.3	43.5
18-Feb	67.0	59.8	61.1	48.9	39.0	79.1	62.4	60.2	43.2
25-Feb	68.0	59.3	61.9	49.2	39.0	74.9	62.4	61.3	44.7
4-Mar	72.0	59.9	62.8	50.0	41.0	75.6	62.2	61.6	44.0
11-Mar	72.0	62.2	63.8	50.7	43.0	74.2	66.3	63.2	46.3
18-Mar	70.0	60.8	63.6	49.9	43.0	74.2	64.9	61.5	44.1
25-Mar	72.0	59.6	64.7	51.0	44.0	79.8	67.8	65.6	45.8
1-Apr	72.0	61.4	65.0	50.8	44.0	79.8	65.5	64.2	44.7
8-Apr	73.0	61.9	65.3	51.5	45.0	79.8	65.6	65.4	46.5
15-Apr	75.0	61.8	65.8	52.0	45.0	80.5	65.7	66.4	46.4
22-Apr	74.0	62.9	66.5	52.2	45.0	81.2	67.4	68.6	47.9
29-Apr	75.0	61.3	66.0	52.6	46.0	80.5	66.9	68.1	49.3
6-May	76.0	58.9	68.3	54.9	48.0	85.4	67.4	72.0	51.9
13-May	79.0	63.7	69.8	55.2	48.0	85.4	68.8	74.1	53.2
20-May	81.0	64.8	70.5	56.0	50.0	88.9	69.0	75.4	54.8
27-May	81.0	66.1	72.1	57.1	50.0	91.0	74.9	78.4	57.6
3-Jun	82.0	65.1	73.9	58.7	52.0	91.0	71.2	79.7	59.0
10-Jun	84.0	67.2	74.7	60.4	55.0	96.6	73.7	83.9	64.2
17-Jun	90.0	69.6	77.2	62.1	55.0	103.6	74.6	86.6	63.7
24-Jun	86.0	67.8	77.0	62.3	55.0	101.5	73.5	88.4	66.6
1-Jul	88.0	68.4	78.6	63.5	57.0	103.6	77.6	91.0	69.2
8-Jul	90.0	68.4	80.2	64.4	59.0	109.9	79.5	94.4	70.6
15-Jul	93.0	68.8	82.8	66.9	59.0	109.9	77.6	96.4	69.7
22-Jul	95.0	71.2	84.8	67.3	61.0	116.9	78.0	99.4	71.8
29-Jul	93.0	71.7	83.9	67.1	59.0	122.5	88.3	104.0	74.7
5-Aug	93.0	71.7	83.3	67.0	59.0	117.6	79.1	103.4	76.7
12-Aug	92.0	69.5	83.2	66.7	61.0	116.9	80.4	103.7	75.4
19-Aug	93.0	71.9	83.5	66.5	61.0	117.6	79.8	105.9	77.9
26-Aug	93.0	71.2	82.8	67.1	61.0	117.6	79.6	103.8	75.4
2-Sep	90.0	72.1	81.8	66.6	59.0	116.9	79.4	101.3	76.6
9-Sep	90.0	70.9	81.9	67.0	61.0	116.9	80.6	100.6	78.1
16-Sep	90.0	71.4	81.1	65.8	57.0	116.9	80.9	98.8	74.1
23-Sep	88.0	72.5	78.6	63.8	57.0	116.2	81.5	95.9	71.2
30-Sep	88.0	70.7	78.9	63.1	55.0	116.9	79.5	91.8	66.2
7-Oct	84.0	69.4	76.6	61.6	54.0	102.9	73.9	88.1	64.8
14-Oct	82.0	67.0	74.1	60.9	52.0	100.8	73.0	86.8	64.6
21-Oct	81.0	68.2	72.3	59.0	50.0	96.6	69.5	82.4	62.3
28-Oct	79.0	65.5	72.1	59.0	50.0	91.7	69.1	79.7	60.2
4-Nov	77.0	64.0	71.0	57.3	48.0	91.0	68.8	77.3	58.0
11-Nov	76.0	63.3	68.9	56.2	49.0	91.7	68.8	74.4	55.0
18-Nov	74.0	64.3	67.5	55.1	48.0	86.1	64.4	72.5	53.5
25-Nov	73.0	63.3	66.2	52.7	41.0	85.4	66.4	68.2	50.4
2-Dec	70.0	60.3	64.4	51.0	43.0	79.8	64.1	63.9	46.6
9-Dec	68.0	59.1	63.4	51.4	41.0	84.7	63.5	64.5	47.5
16-Dec	68.0	59.4	63.0	50.6	41.0	84.7	64.3	63.8	46.6
23-Dec	68.0	60.2	62.2	49.6	41.0	84.7	65.0	62.1	44.9
31-Dec	66.0	60.2	61.8	49.4	38.0	84.0	64.0	60.7	44.6

TANGIER/BOUKHALF MC WMO No. 601010



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	348
FEB	1	278
MAR	6	247
APR	12	190
MAY	45	99
JUN	127	25
JUL	249	7
AUG	256	4
SEP	193	13
OCT	81	54
NOV	18	160
DEC	2	276
ANN	990	1701

TANGIER/BOUKHALF MC WMO No. 601010

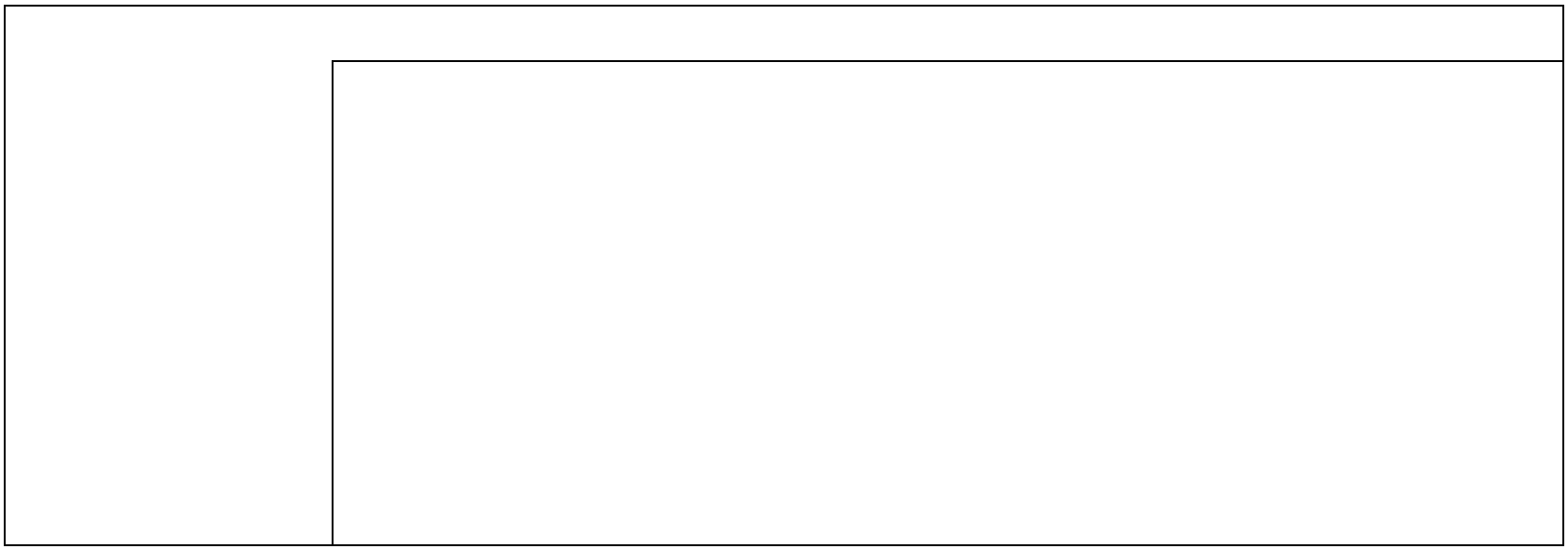


	Average Sensible Cooling Load (Btu/cfm)	Average Sensible Heating Load (Btu/cfm)	Average Latent Cooling Load (Btu/cfm)	Average Latent Heating Load (Btu/cfm)
JAN	0	-11402	4	-58
FEB	1	-9362	3	-26
MAR	2	-8673	10	-13
APR	10	-7046	31	-3
MAY	110	-4298	191	-1
JUN	575	-1463	1223	0
JUL	2039	-469	3806	0
AUG	2022	-334	5557	0
SEP	1199	-758	3803	-1
OCT	195	-2644	951	0
NOV	18	-6129	144	-4
DEC	0	-9491	42	-30
ANN	6171	-62069	15765	-136

Average Annual Solar Radiation – Nearest Available Site

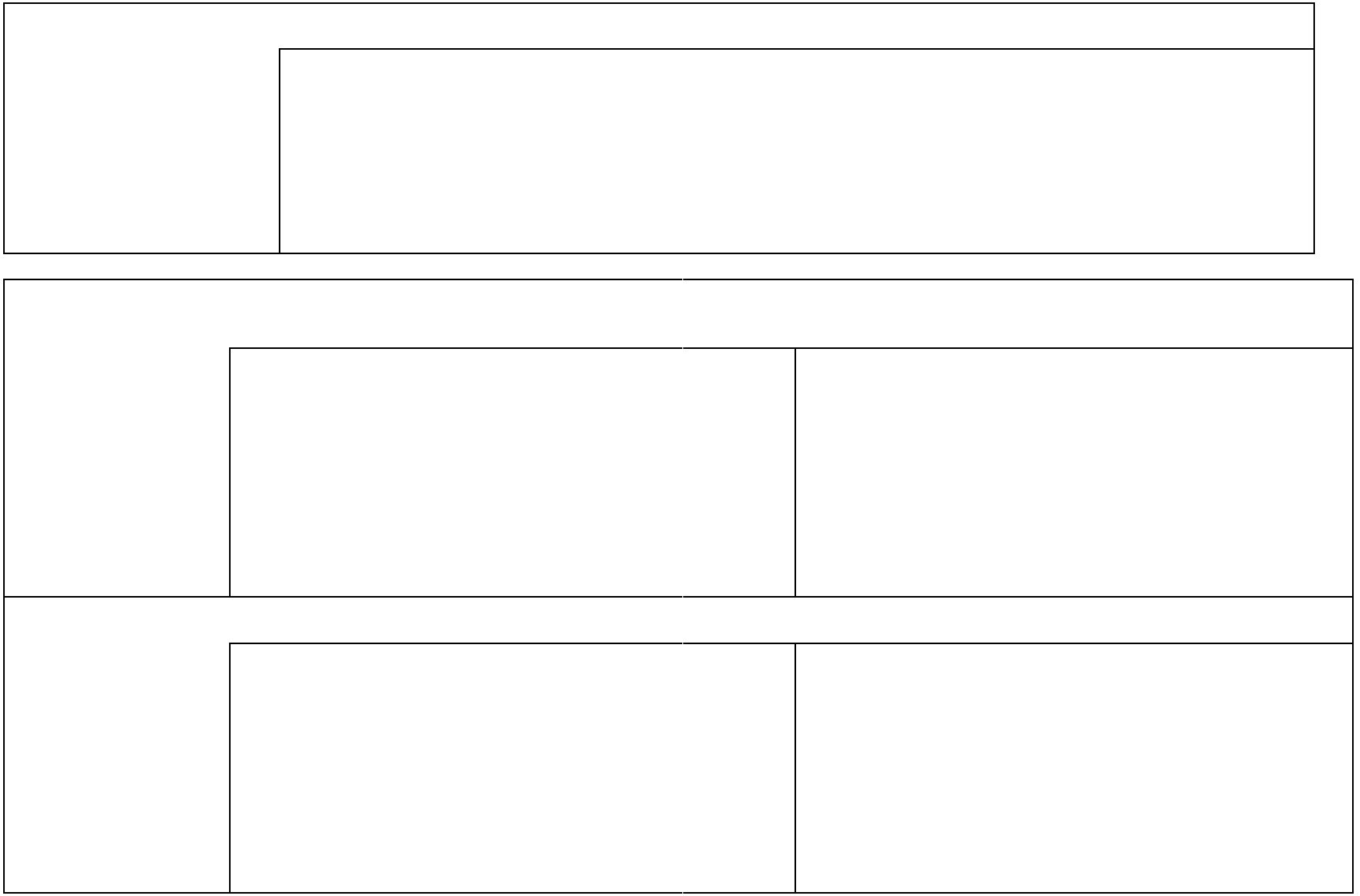
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

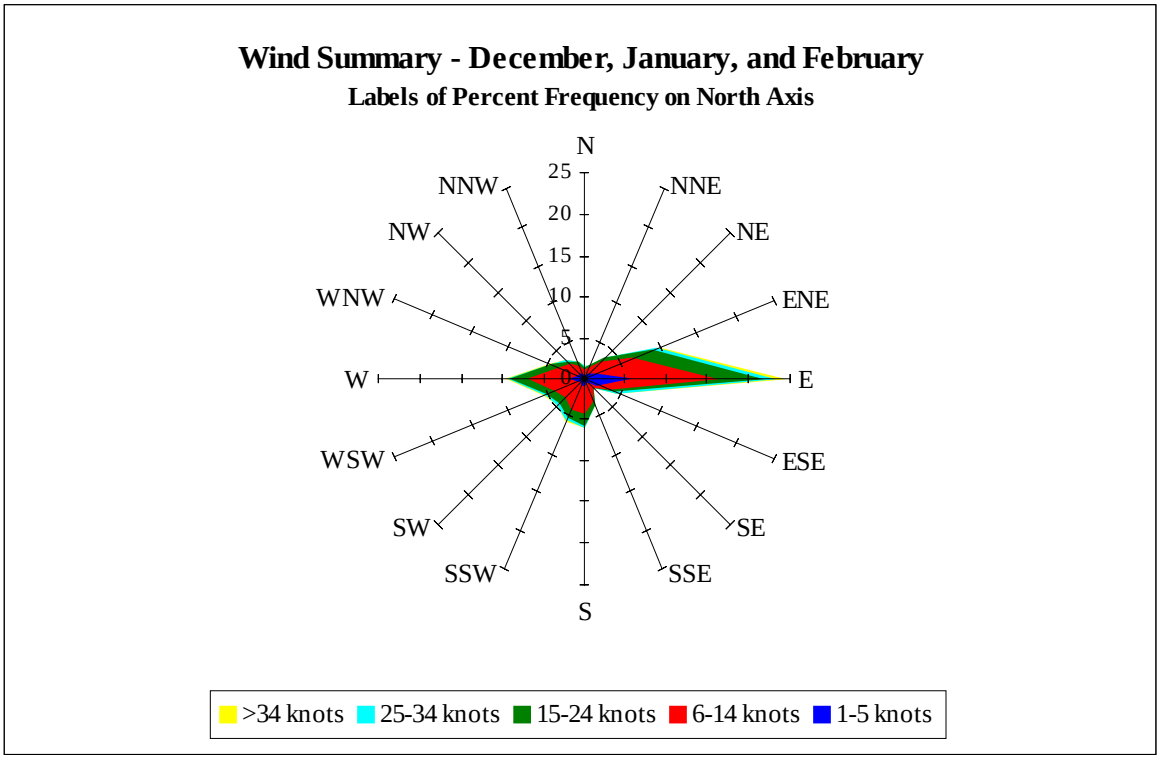
No Solar Radiation
Data Available



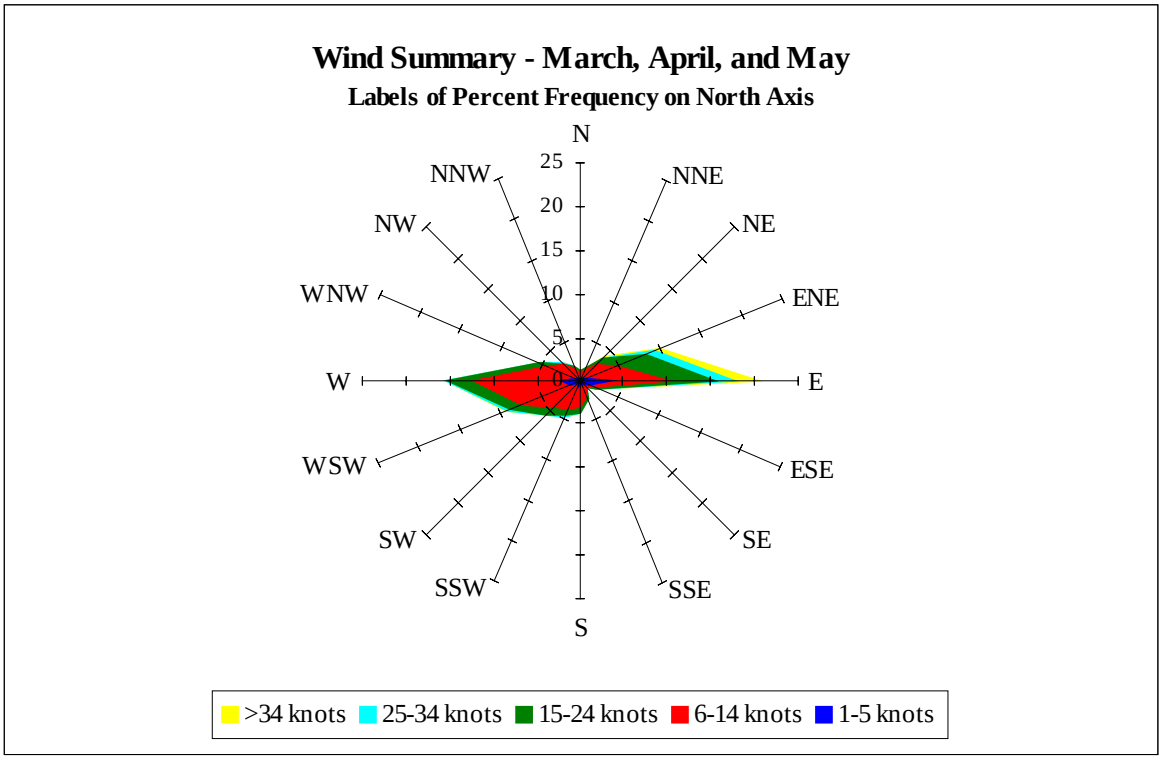
Average Annual Solar Heat and Illumination – Nearest Available Site

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

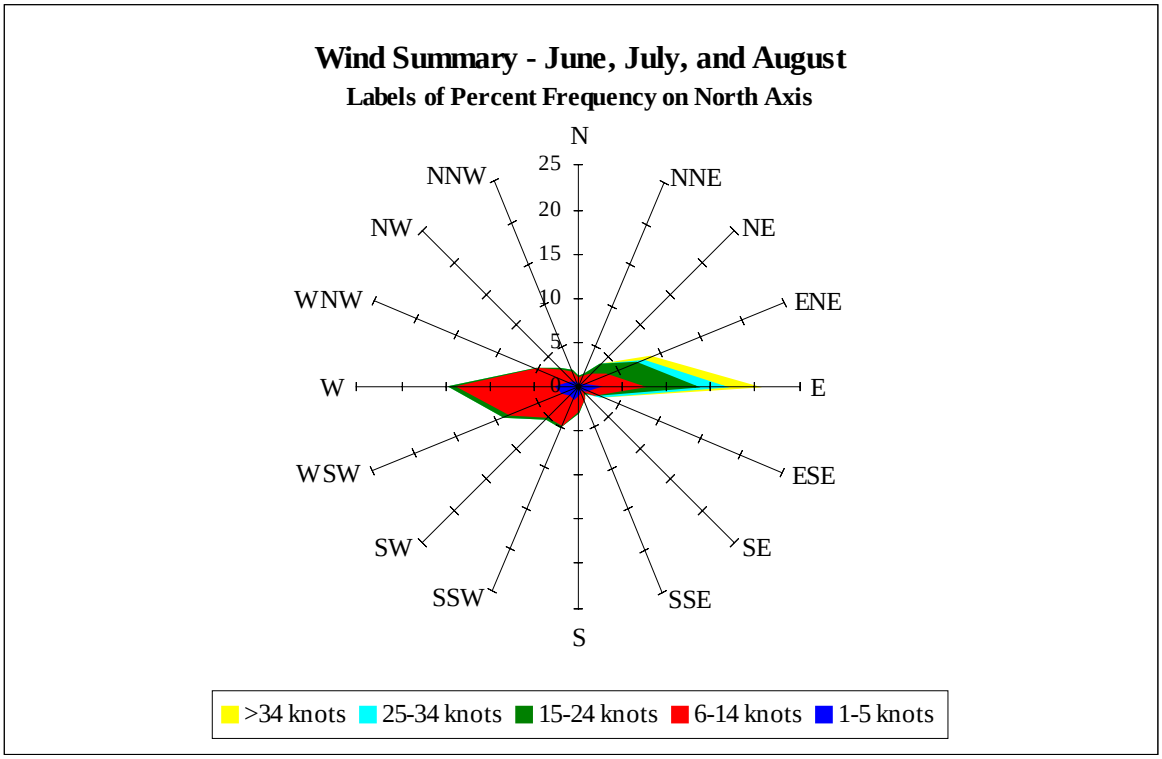




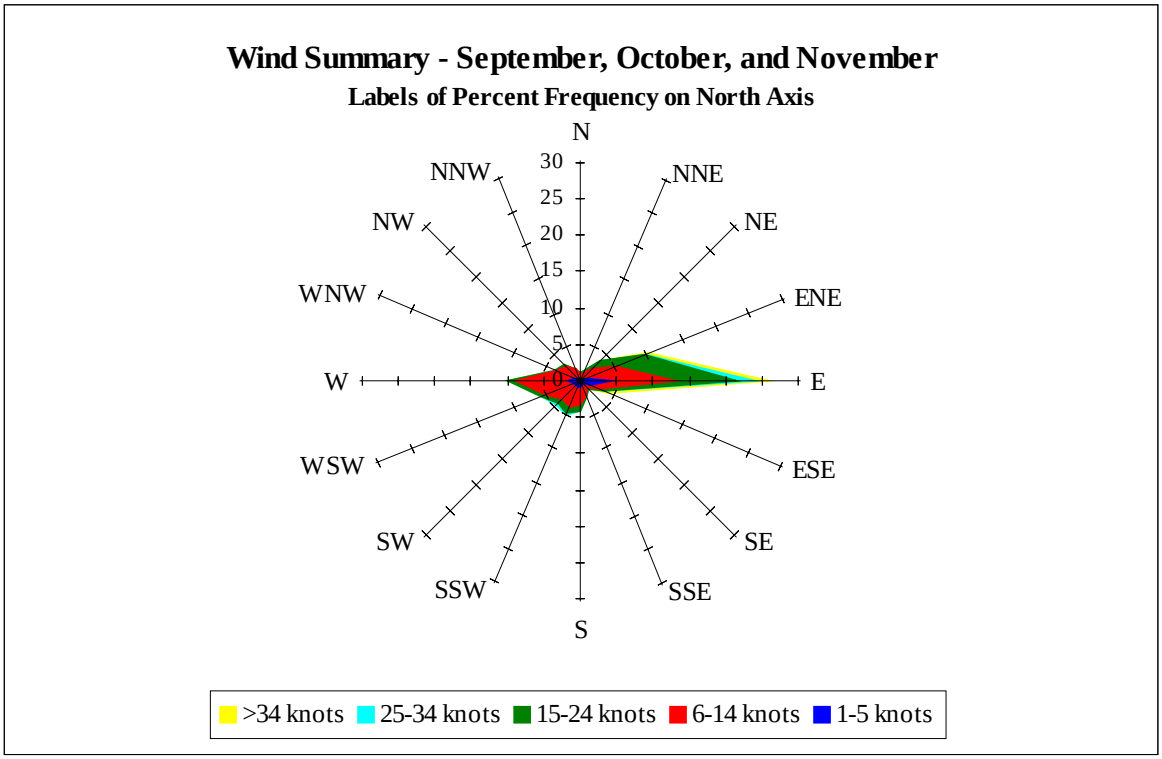
Percent Calm = 10.53



Percent Calm = 9.84



Percent Calm = 12.67



Percent Calm = 11.57