NAHA JP	
Latitude = 26.18 N	WMO No. 479300
Longitude =127.65 E	Elevation = 26 feet
Period of Record = 1973 to 1996	Average Pressure = 29.87 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	91	80	141	12.4	E
0.4% Occurrence	90	80	141	12.4	E
1.0% Occurrence	90	80	141	12.4	E
2.0% Occurrence	88	80	141	12.3	SSW
Mean Daily Range	7	-	-	-	-
97.5% Occurrence	57	51	44	13.9	N
99.0% Occurrence	55	48	40	15.1	N
99.6% Occurrence	54	48	40	15.1	N
Median of Extreme Lows	50	45	34	22.3	N
		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	83	87	158	12.4	SSW
0.4% Occurrence	82	87	154	12.6	SSW
1.0% Occurrence	82	87	154	12.6	SSW
2.0% Occurrence	81	85	151	12.2	SSW
		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	162	85	1.06	13.7	SSW
0.4% Occurrence	160	86	1.06	12.0	SSW
1.0% Occurrence	160	86	1.06	11.6	SSW
2.0% Occurrence	151	84	0.99	12.0	SSW
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	0	2661	3447	4959

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	11.9 + 2.4
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 (#)
76.0	N/A	N/A	0

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

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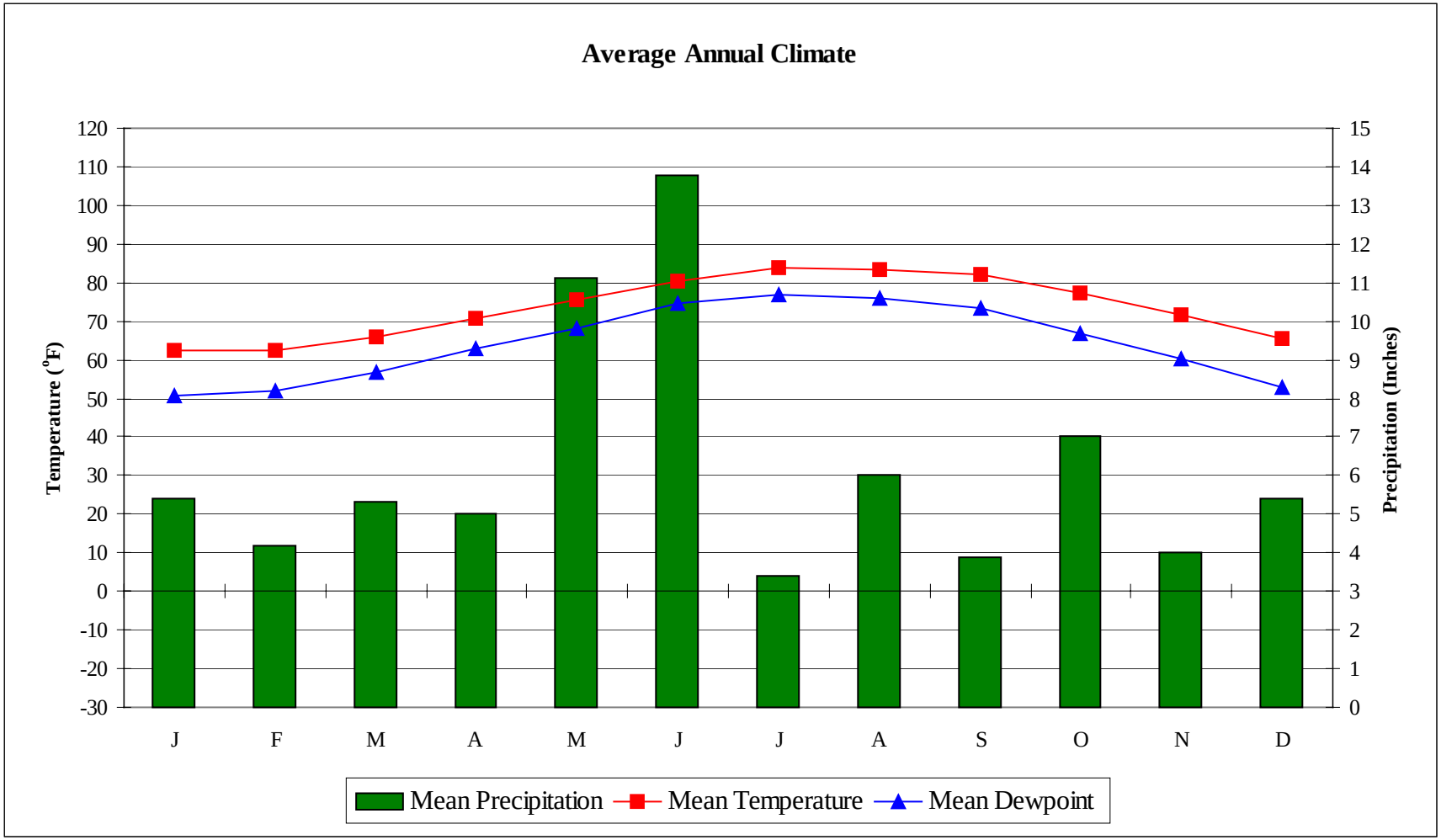
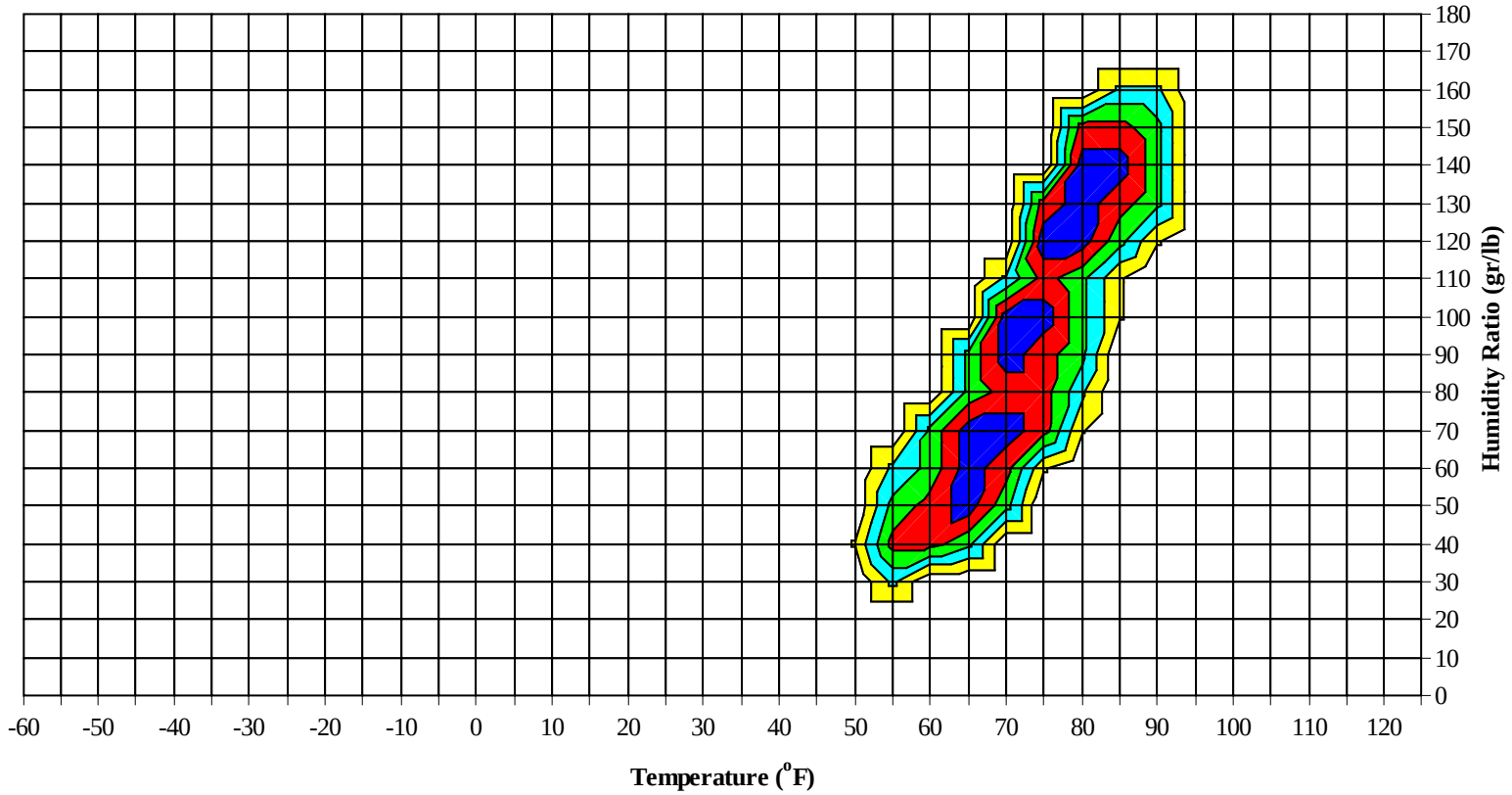


NAHA **JP** WMO No. 479300

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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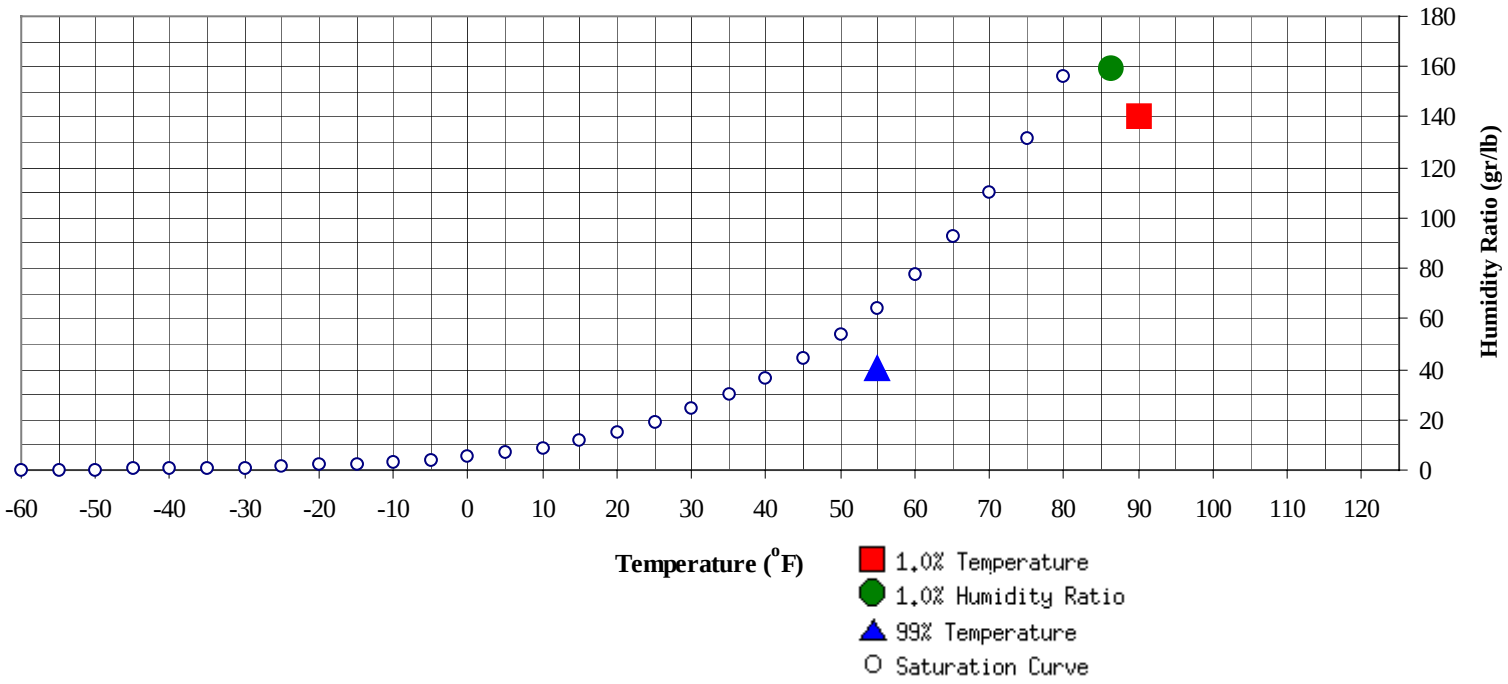
Psychrometric Summary of Peak Design Values



	(°F)	MCHR (gr/lb)	Enthalpy (btu/lb)
99% Dry Bulb	55	40.3	19.4

	(gr/lb)	MCDB (°F)	MCWB (°F)	MC Dewpt (°F)	Enthalpy (btu/lb)
1.0% Humidity Ratio	159.6	86.3	82	80.6	45.8

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	90	140.6	80.3	43.7

NAHA JP WMO No. 479300

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

Period of Record = 1973 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)
90 / 94															
85 / 89															
80 / 84												0		0	72.3
75 / 79	0	3	0	3	68.8		9	1	10	69.8	1	31	7	39	71.1
70 / 74	12	42	20	74	64.5	19	46	28	93	65.9	57	85	72	213	67.0
65 / 69	35	61	44	140	60.8	34	43	41	118	61.7	61	58	60	179	62.2
60 / 64	86	99	102	288	55.7	70	77	76	224	56.4	74	55	75	203	56.6
55 / 59	99	41	75	215	51.2	77	43	64	184	50.9	49	18	31	98	51.1
50 / 54	15	3	7	25	47.0	22	7	13	42	46.9	7	2	3	12	46.2
45 / 49	0	0		0	45.5	1	0	1	2	43.2	0	0	0	0	43.3

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.

NAHA JP WMO No. 479300

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

Period of Record = 1973 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)
90 / 94												3	0	3	80.7
85 / 89							2	0	2	78.5	1	66	11	79	80.2
80 / 84		16	1	17	75.5	4	73	19	96	76.2	101	114	126	341	78.0
75 / 79	29	84	49	162	72.0	104	124	127	356	72.2	107	49	87	242	73.9
70 / 74	100	96	109	305	66.8	115	43	90	248	67.2	29	7	15	51	68.8
65 / 69	62	30	51	143	61.6	20	5	9	34	62.9	2	1	1	4	65.5
60 / 64	41	13	25	79	56.6	4	1	3	8	59.5	0		0	0	62.1
55 / 59	8	2	4	14	52.0										
50 / 54	0			0	48.0										
45 / 49															

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 3 of 5)

Period of Record = 1973 to 1996

	July					August					September				
	Hour Group (LST)				MCWB	Hour Group (LST)				MCWB	Hour Group (LST)				MCWB
Temperature Range (°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)	01 To 08	09 To 16	17 To 00	Total Obs	(°F)
90 / 94		45	4	49	80.6		35	3	38	80.1		9	0	9	79.6
85 / 89	9	140	57	206	79.7	6	133	44	183	79.1	1	93	15	109	78.5
80 / 84	207	55	173	434	78.2	204	72	188	464	77.7	130	123	170	423	76.3
75 / 79	32	8	14	54	75.4	38	8	13	59	75.6	105	14	54	173	73.0
70 / 74	0	1	0	1	70.9		0	0	0	71.7	4	1	1	6	67.9
65 / 69											0			0	65.5
60 / 64															
55 / 59															
50 / 54															
45 / 49															

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 4 of 5)

Period of Record = 1973 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)
90 / 94															
85 / 89		15	0	15	77.3		0		0	77.6					
80 / 84	16	122	50	188	74.1	0	24	2	26	73.4		0		0	73.3
75 / 79	148	94	146	388	70.5	30	95	56	181	69.4	2	22	4	28	68.8
70 / 74	76	17	49	142	65.1	116	88	111	315	64.7	27	83	44	154	63.6
65 / 69	7	1	3	11	60.7	58	25	45	129	60.0	58	71	76	206	59.7
60 / 64	1		0	1	59.1	33	9	24	66	55.7	115	58	95	268	55.4
55 / 59						2	0	1	3	51.8	43	14	28	85	51.1
50 / 54											2	0	1	3	48.8
45 / 49															

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 5 of 5)

Period of Record = 1973 to 1996

Annual Totals

Temperature Range (°F)	Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)
90 / 94		90	6	96	80.3
85 / 89	16	447	126	590	79.3
80 / 84	659	597	725	1981	77.1
75 / 79	597	539	557	1693	71.9
70 / 74	554	507	541	1603	65.9
65 / 69	338	296	334	967	61.0
60 / 64	428	314	402	1144	56.0
55 / 59	280	117	204	601	51.1
50 / 54	47	12	24	83	46.9
45 / 49	1	0	1	2	43.3

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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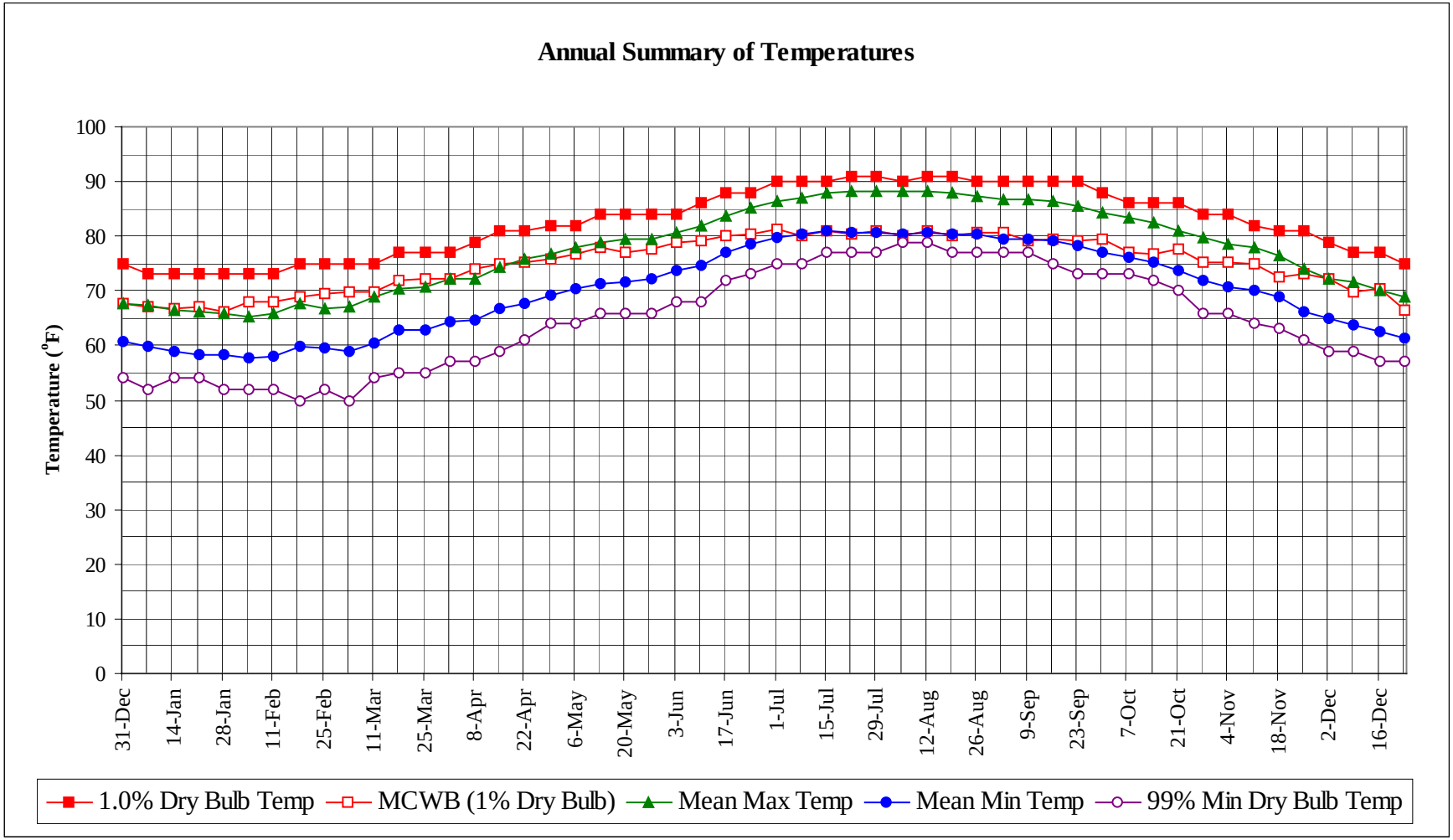

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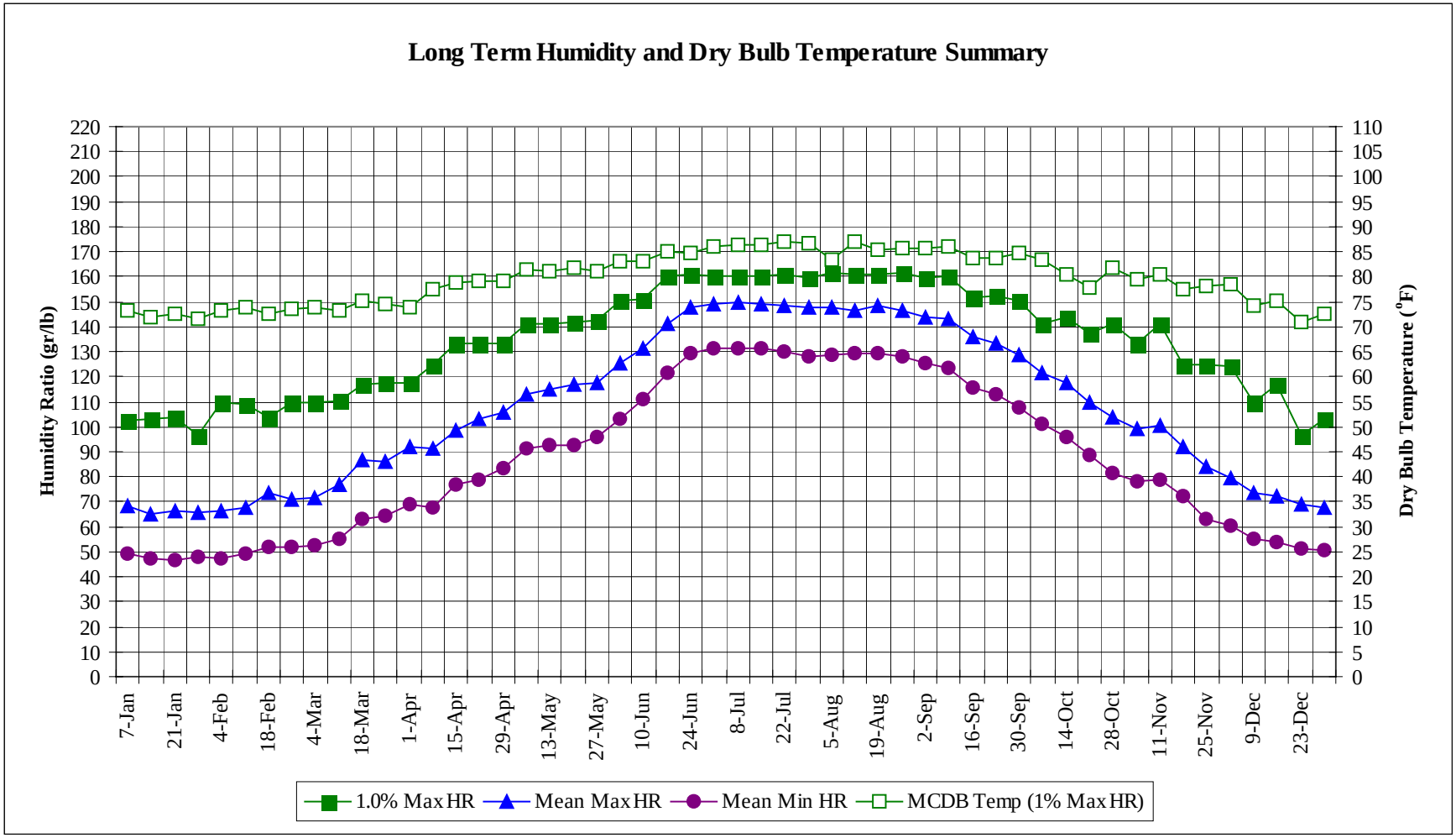

NAHA JP WMO No. 479300

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	73.0	67.1	67.4	59.7	52.0	102.2	73.1	68.2	49.6
14-Jan	73.0	66.8	66.5	58.8	54.0	102.9	71.9	65.3	47.5
21-Jan	73.0	67.2	66.2	58.3	54.0	103.6	72.6	66.2	46.9
28-Jan	73.0	66.3	65.8	58.2	52.0	96.6	71.4	65.7	47.8
4-Feb	73.0	67.9	65.3	57.7	52.0	109.9	73.2	66.1	47.2
11-Feb	73.0	68.0	65.8	58.2	52.0	109.2	73.8	67.7	49.0
18-Feb	75.0	68.8	67.6	59.7	50.0	103.6	72.5	73.4	52.1
25-Feb	75.0	69.4	66.7	59.4	52.0	109.9	73.4	70.9	51.7
4-Mar	75.0	69.7	67.0	59.1	50.0	109.9	74.0	71.5	52.3
11-Mar	75.0	69.7	68.8	60.5	54.0	110.6	73.1	76.7	55.1
18-Mar	77.0	71.9	70.3	62.9	55.0	116.9	75.1	86.9	63.1
25-Mar	77.0	72.1	70.6	62.9	55.0	117.6	74.6	85.8	64.4
1-Apr	77.0	72.1	72.2	64.3	57.0	117.6	73.8	91.9	68.9
8-Apr	79.0	74.2	72.4	64.8	57.0	124.6	77.5	91.3	67.8
15-Apr	81.0	74.9	74.3	66.7	59.0	133.0	78.8	98.8	76.8
22-Apr	81.0	75.2	75.7	67.7	61.0	133.0	79.2	102.8	78.6
29-Apr	82.0	75.9	76.8	69.2	64.0	133.0	79.2	105.9	83.6
6-May	82.0	76.9	78.0	70.4	64.0	141.4	81.4	112.9	91.2
13-May	84.0	78.0	78.9	71.3	66.0	141.4	81.0	114.8	92.6
20-May	84.0	77.2	79.4	71.8	66.0	142.1	81.7	116.9	92.9
27-May	84.0	77.6	79.5	72.2	66.0	142.8	81.0	117.4	95.9
3-Jun	84.0	78.9	80.6	73.8	68.0	150.5	83.0	125.5	103.3
10-Jun	86.0	79.2	81.9	74.6	68.0	151.2	83.1	131.3	110.7
17-Jun	88.0	80.2	83.7	77.1	72.0	160.3	84.9	141.5	121.8
24-Jun	88.0	80.4	85.1	78.6	73.0	161.0	84.8	147.8	129.3
1-Jul	90.0	81.2	86.5	79.9	75.0	160.3	86.2	148.8	131.5
8-Jul	90.0	80.1	87.1	80.3	75.0	160.3	86.4	150.0	131.4
15-Jul	90.0	81.0	88.0	81.0	77.0	160.3	86.4	149.3	131.7
22-Jul	91.0	80.3	88.2	80.8	77.0	161.0	87.1	148.6	130.1
29-Jul	91.0	80.9	88.2	80.7	77.0	159.6	86.7	147.5	127.8
5-Aug	90.0	80.0	88.1	80.4	79.0	161.7	83.5	147.7	128.7
12-Aug	91.0	81.0	88.2	80.7	79.0	161.0	87.0	146.8	129.1
19-Aug	91.0	80.2	87.8	80.5	77.0	161.0	85.2	148.3	129.1
26-Aug	90.0	80.5	87.3	80.4	77.0	161.7	85.6	146.4	127.8
2-Sep	90.0	80.8	86.6	79.4	77.0	159.6	85.7	143.9	125.3
9-Sep	90.0	79.2	86.6	79.6	77.0	160.3	86.0	143.4	123.3
16-Sep	90.0	79.4	86.4	79.1	75.0	151.9	83.9	136.2	115.8
23-Sep	90.0	79.2	85.6	78.2	73.0	152.6	83.7	133.4	113.0
30-Sep	88.0	79.3	84.3	77.1	73.0	150.5	84.6	128.8	107.7
7-Oct	86.0	77.1	83.5	76.1	73.0	141.4	83.4	121.5	101.0
14-Oct	86.0	76.7	82.5	75.2	72.0	143.5	80.3	117.5	95.9
21-Oct	86.0	77.6	81.1	73.7	70.0	137.2	77.9	109.5	88.5
28-Oct	84.0	75.2	79.7	71.9	66.0	141.4	81.7	103.8	81.7
4-Nov	84.0	75.3	78.4	70.6	66.0	133.0	79.3	99.1	78.3
11-Nov	82.0	74.8	77.9	70.2	64.0	141.4	80.3	100.2	78.6
18-Nov	81.0	72.6	76.4	68.8	63.0	124.6	77.6	91.9	72.3
25-Nov	81.0	73.2	73.9	66.2	61.0	124.6	78.3	83.9	63.1
2-Dec	79.0	72.2	72.4	65.1	59.0	123.9	78.4	79.3	60.1
9-Dec	77.0	69.8	71.5	63.7	59.0	109.9	74.1	73.6	55.2
16-Dec	77.0	70.5	70.2	62.5	57.0	116.9	75.1	72.3	53.9
23-Dec	75.0	66.4	69.0	61.4	57.0	96.6	71.0	68.8	51.0
31-Dec	75.0	67.8	67.7	60.6	54.0	102.9	72.4	67.6	50.3

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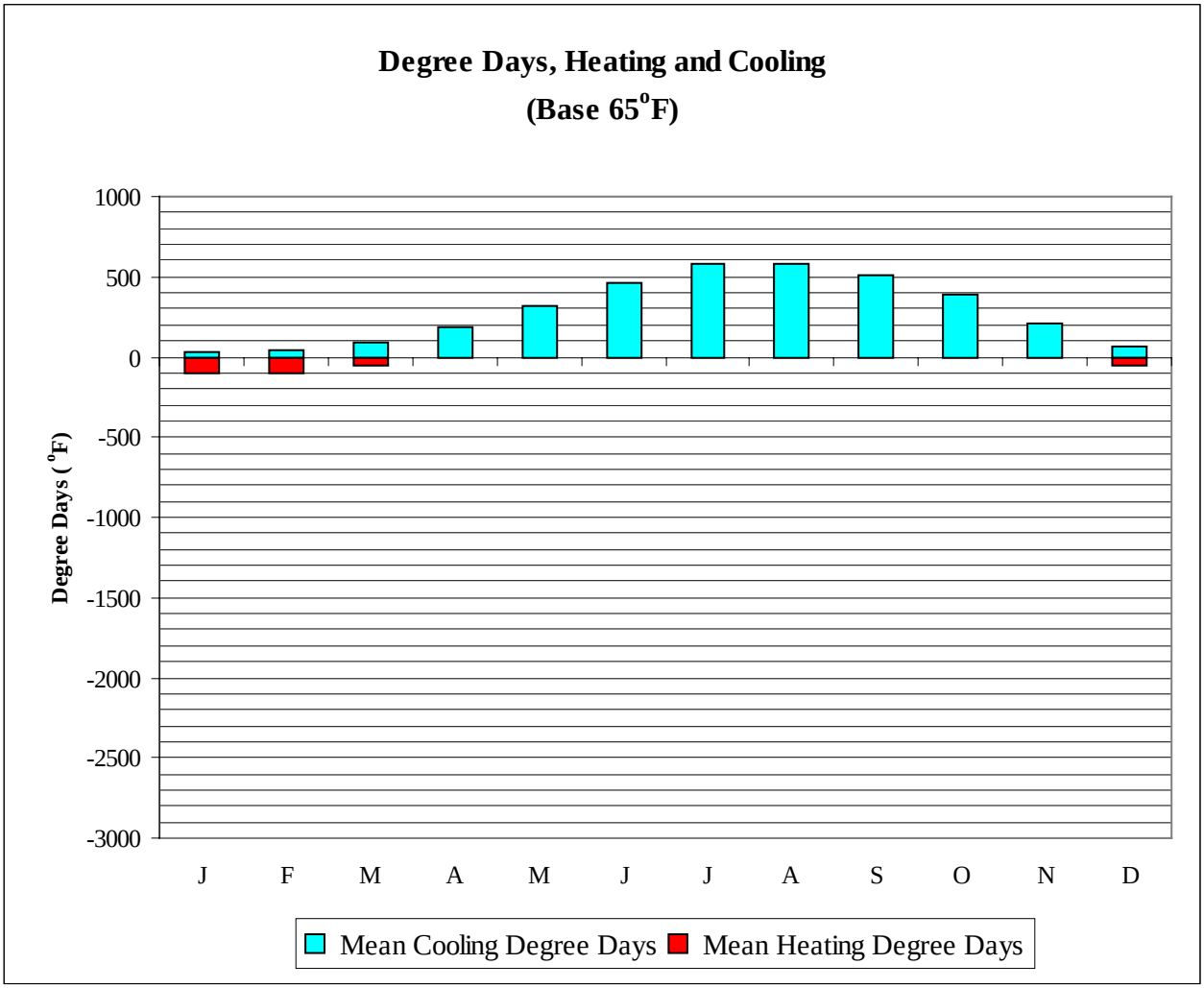

	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	31	107
FEB	37	105
MAR	88	55
APR	186	10
MAY	318	0
JUN	458	0
JUL	586	0
AUG	576	0
SEP	505	0
OCT	386	0
NOV	206	5
DEC	70	48
ANN	3446	330

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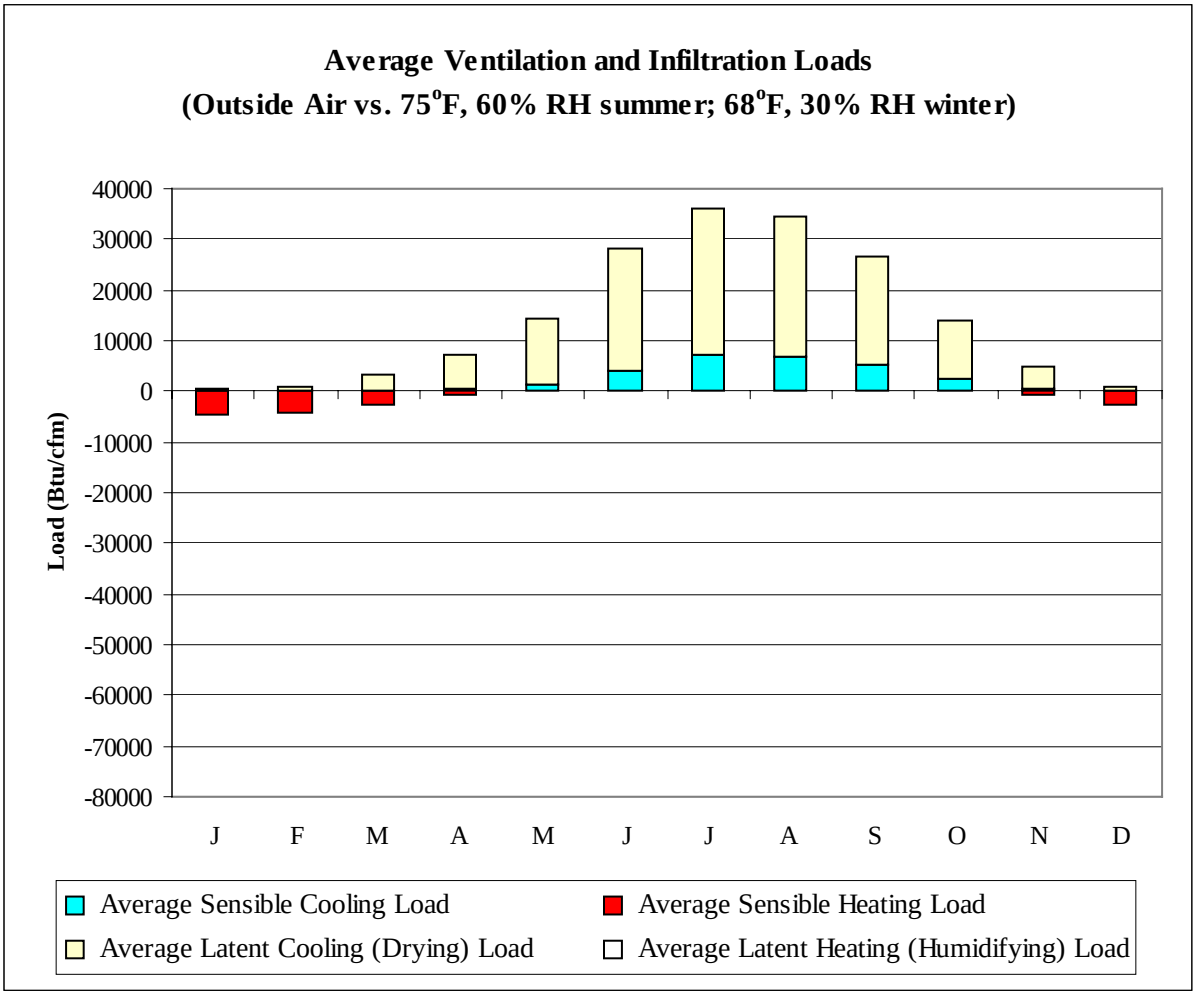


	Average Sensible Cooling Load (Btu/cfm)	Average Sensible Heating Load (Btu/cfm)	Average Latent Cooling Load (Btu/cfm)	Average Latent Heating Load (Btu/cfm)
JAN	2	-4661	528	-5
FEB	5	-4331	940	-8
MAR	33	-2649	3118	-8
APR	351	-704	6865	0
MAY	1382	-56	12896	0
JUN	4266	-3	23829	0
JUL	7160	0	28823	0
AUG	6886	0	27431	0
SEP	5346	0	21400	0
OCT	2477	-10	11421	0
NOV	471	-467	4467	0
DEC	28	-2636	1006	-1
ANN	28407	-15517	142724	-22

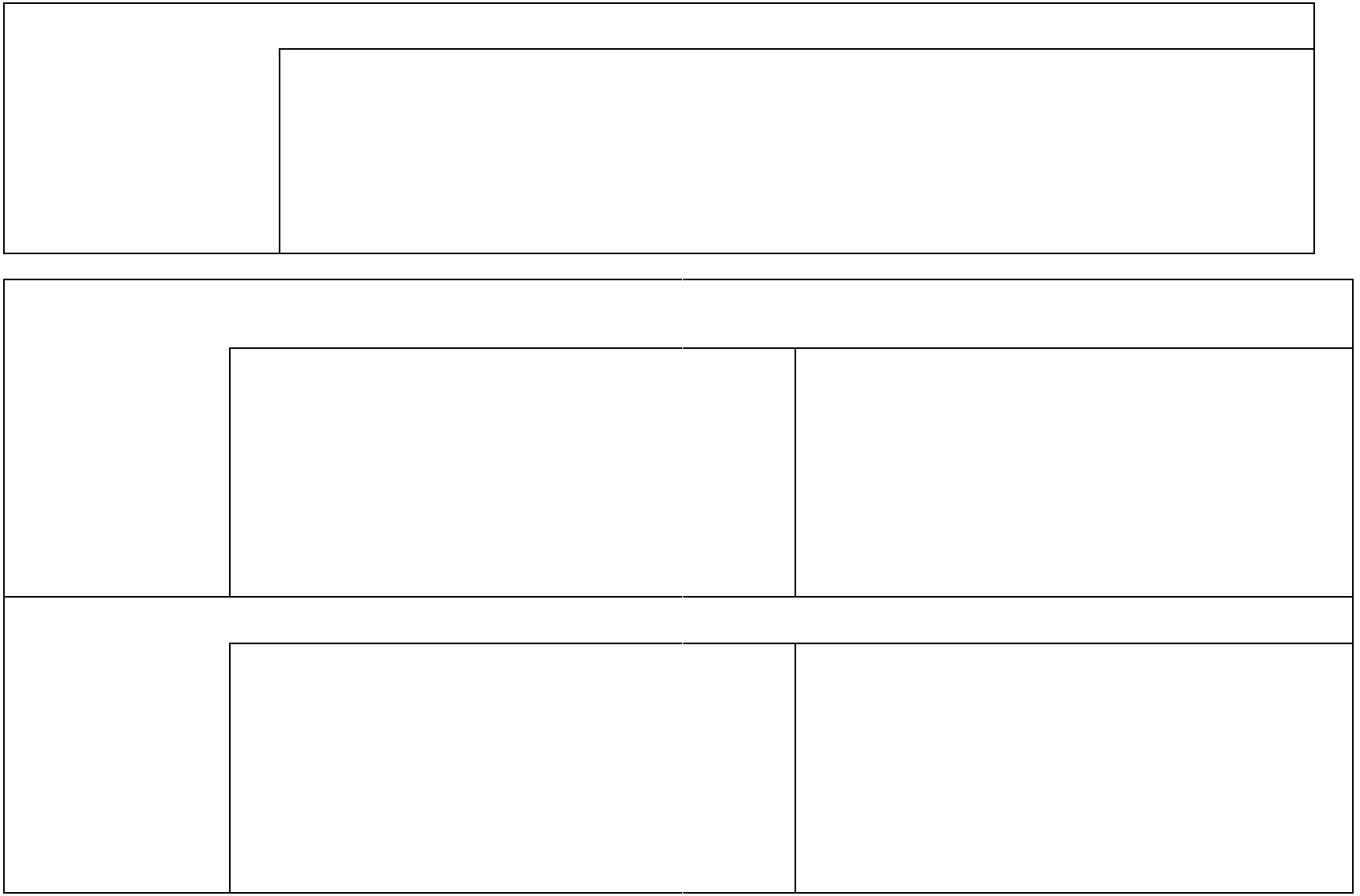
Average Annual Solar Radiation – Nearest Available Site

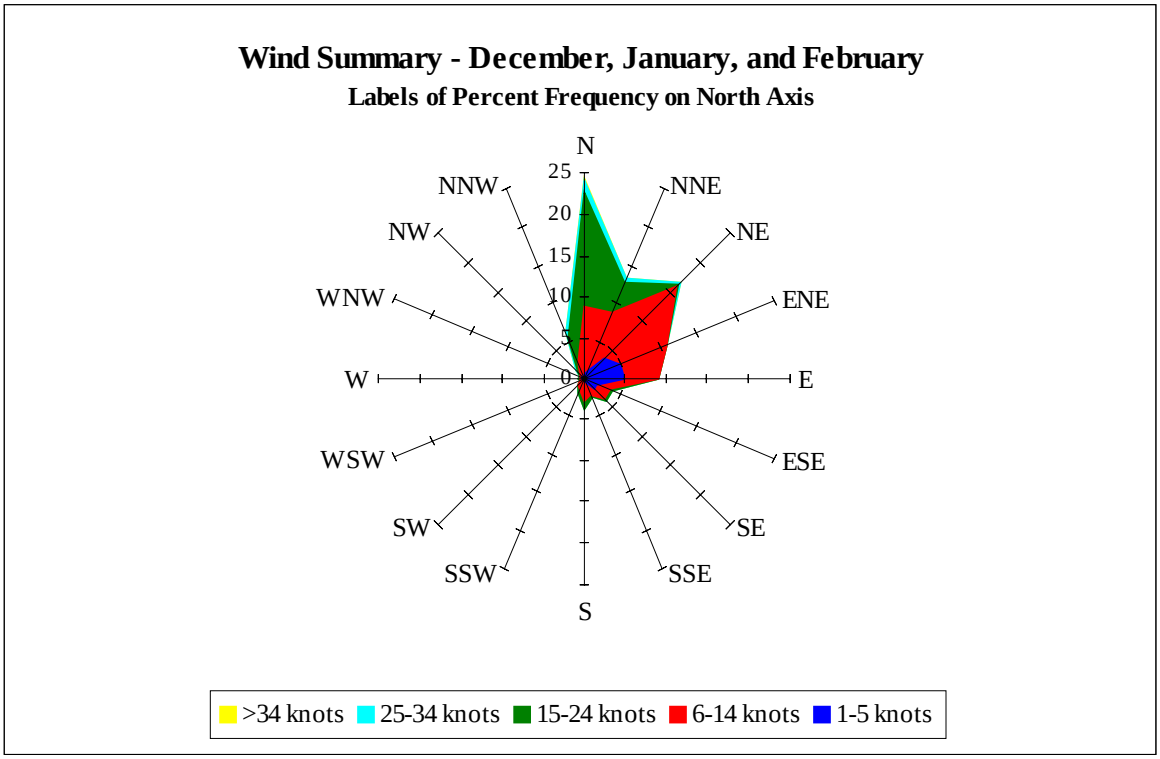
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

No Solar Radiation
Data Available

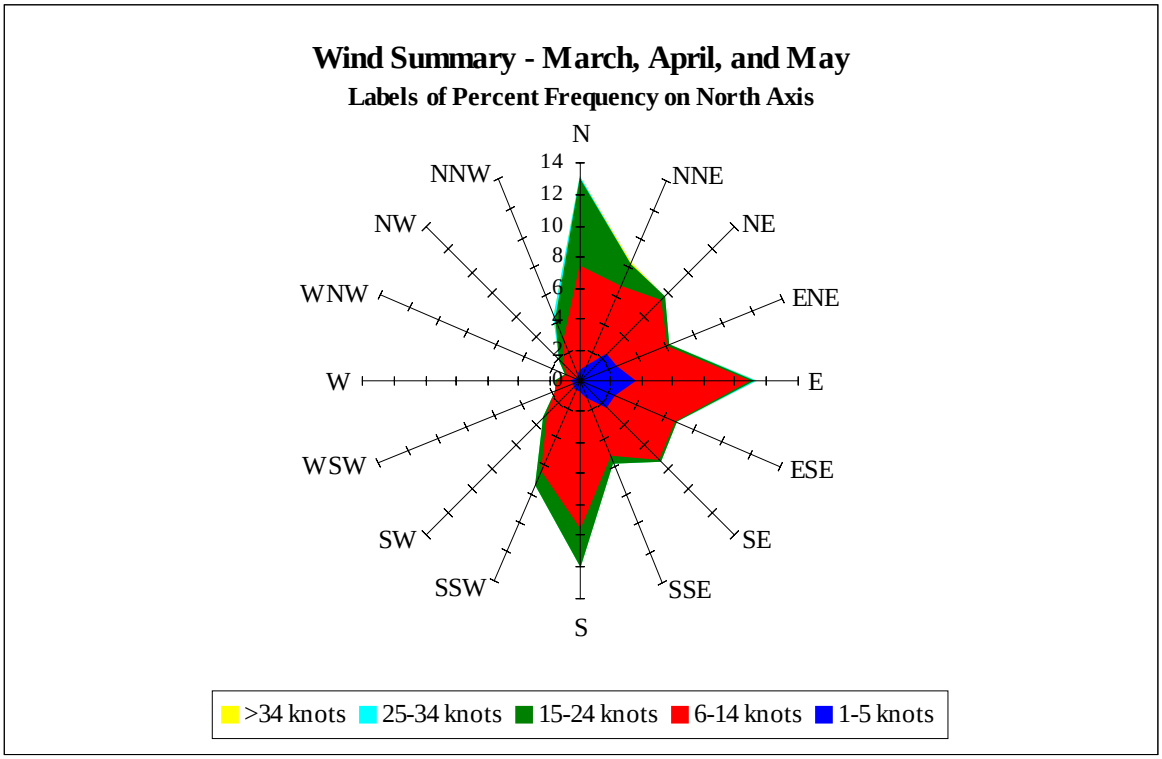
Average Annual Solar Heat and Illumination – Nearest Available Site

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

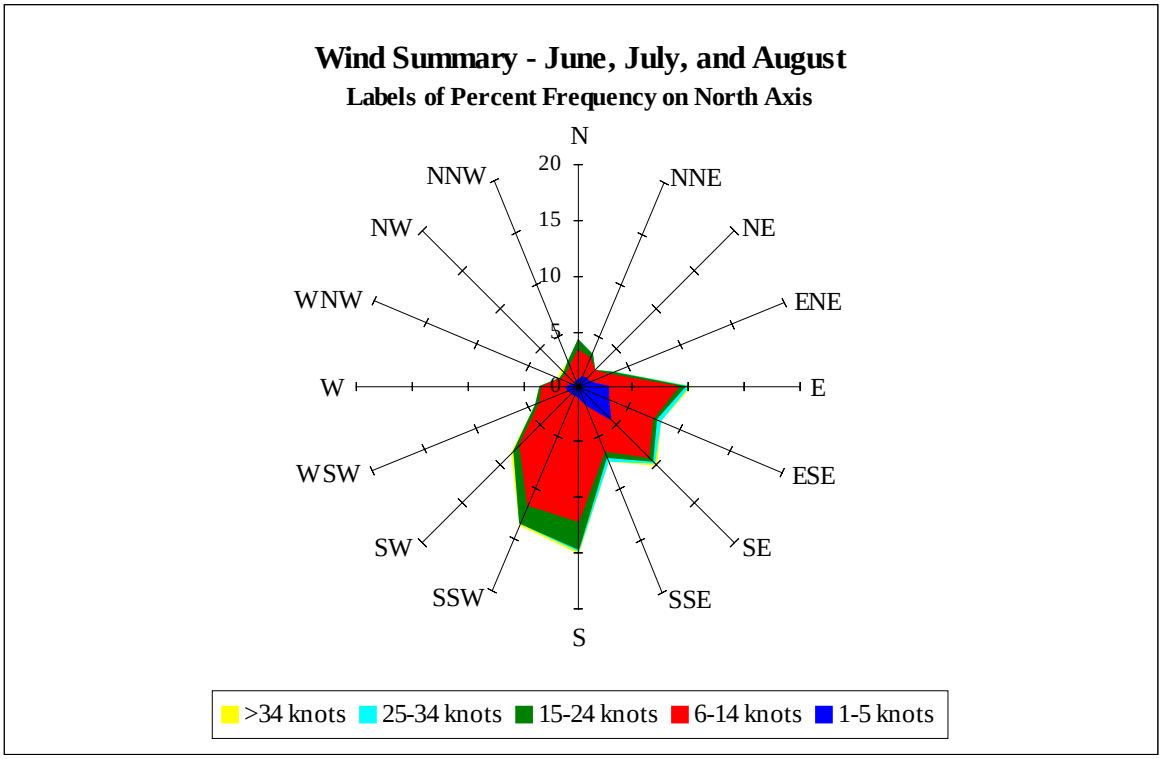




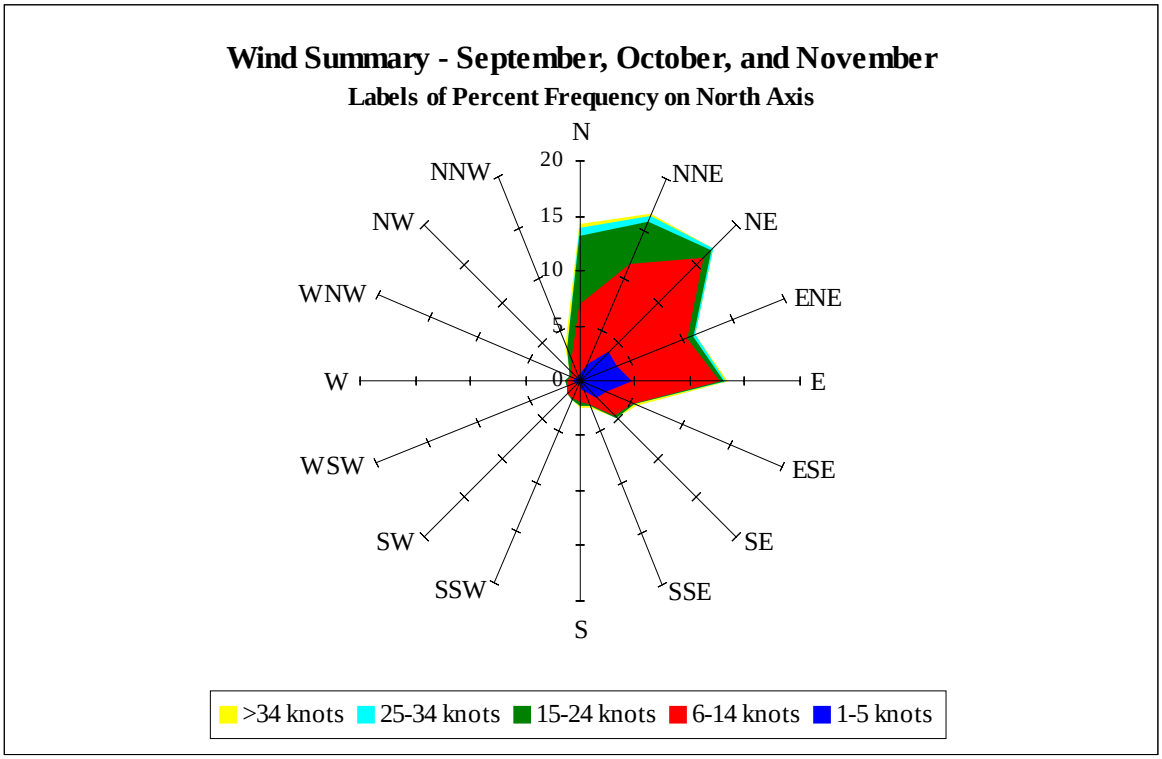
Percent Calm = 1.40



Percent Calm = 1.46



Percent Calm = 1.45



Percent Calm = 1.83