

GUANTANAMO BAY NAS CU

Latitude = 19.90 N

WMO No. 783670

Longitude = 75.13 W

Elevation = 75 feet

Period of Record = 1967 to 1996

Average Pressure = 29.85 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	95	79	124	12.4	ESE
0.4% Occurrence	93	78	124	12.5	SE
1.0% Occurrence	92	78	123	12.2	SE
2.0% Occurrence	91	77	120	11.7	SE
Mean Daily Range	14	-	-	-	-
97.5% Occurrence	69	65	84	5.8	N
99.0% Occurrence	67	63	78	6.2	N
99.6% Occurrence	65	61	72	7.2	N
Median of Extreme Lows	62	58	66	8.4	NNW
	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	84	92	161	12.5	SE
0.4% Occurrence	82	90	148	11.4	SE
1.0% Occurrence	81	89	143	11.0	SE
2.0% Occurrence	80	88	138	10.3	SE
	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	167	89	1.11	10.1	SE
0.4% Occurrence	151	89	1.00	10.2	SE
1.0% Occurrence	145	88	0.96	9.4	SE
2.0% Occurrence	141	87	0.94	9.0	SE
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		68	4516	4462	7653

Other Site Data

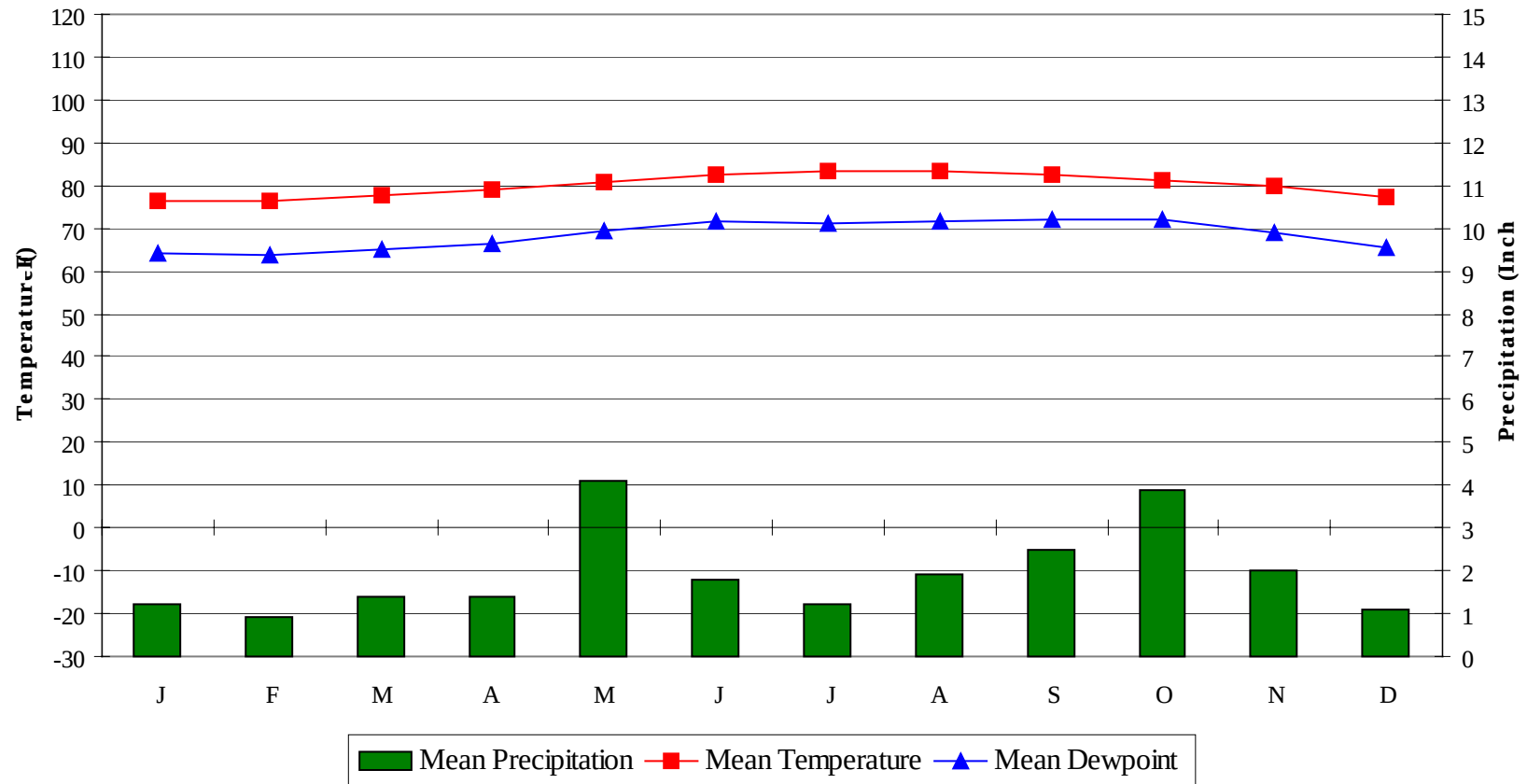
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
10	N/A	N/A	12.6 + 4.5
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
82.5	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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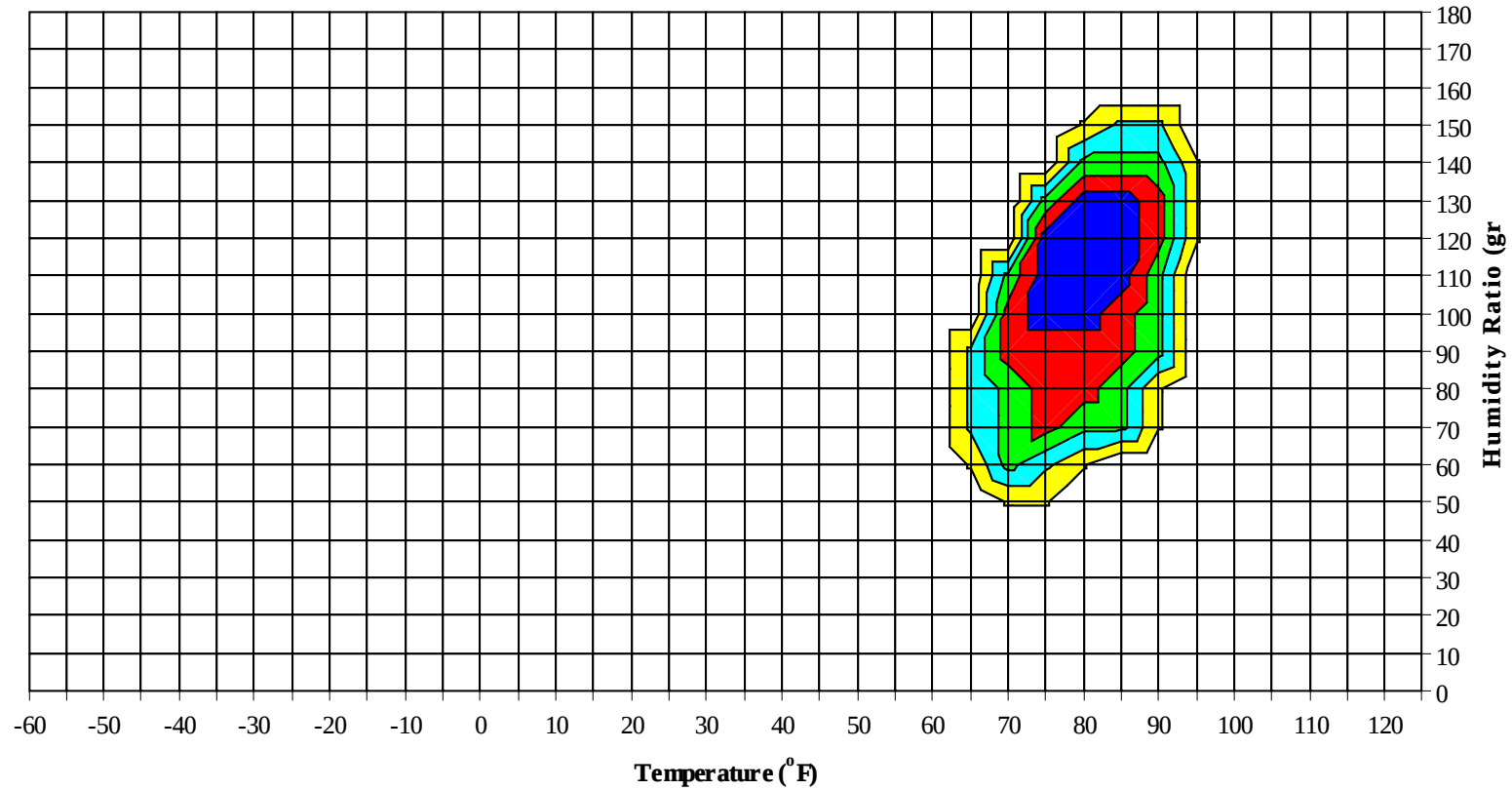
Average Annual Climate



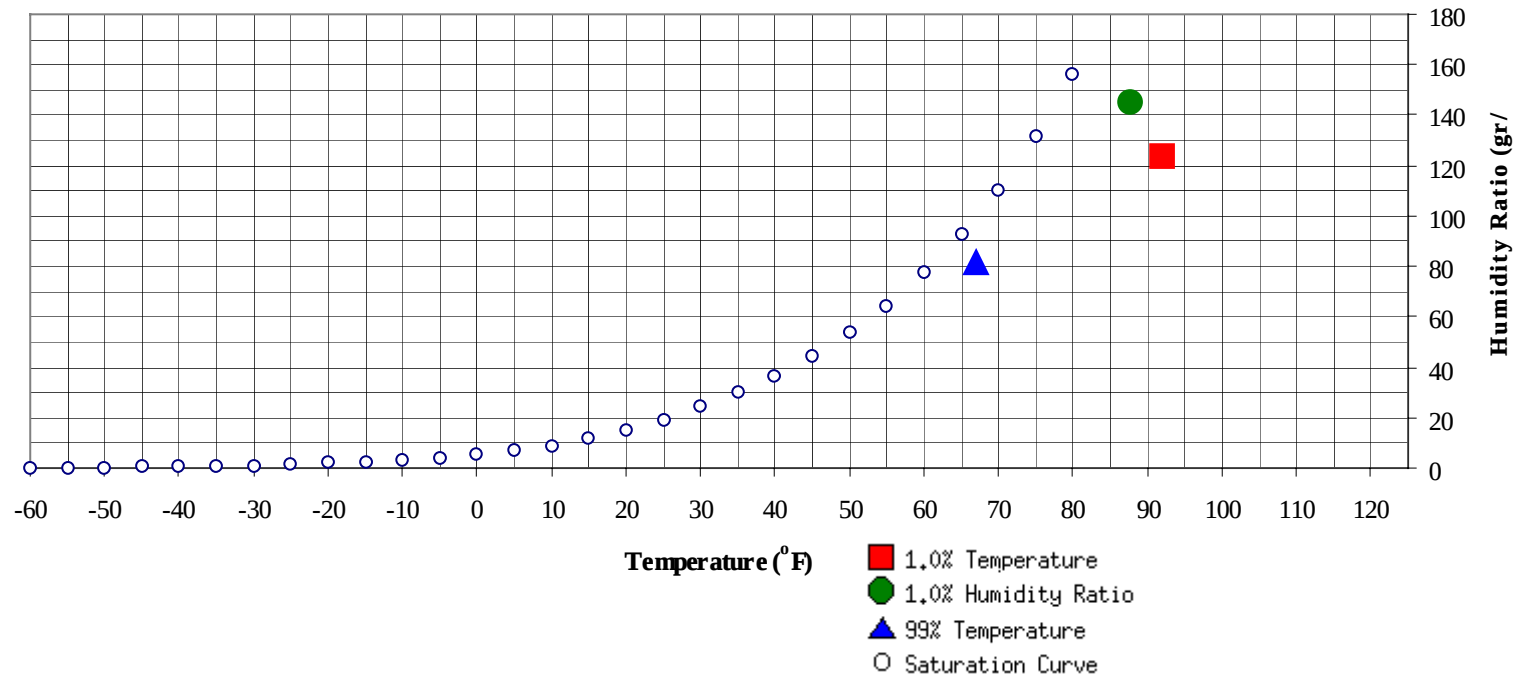
GUANTANAMO BAY NAS CU

WMO No. 783670

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

Psychrometric Summary of Peak Design Values

	(°F)	MCHR	Enthalpy	1.0% Humidity	(gr/lb)	MCDB	MCWB	MC Dewpt	Enthalpy
		(gr/lb)	(btu/lb)			(°F)	(°F)	(°F)	(btu/lb)
99% Dry Bulb	67	81.7	28.8	Ratio	144.9	87.6	80.3	77.8	43.8

	(°F)	MCHR	MCWB	Enthalpy
		(gr/lb)	(°F)	(btu/lb)
1.0% Dry Bulb	92	123.7	78.2	41.6

GUANTANAMO BAY NAS CU

WMO No. 783670

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

Period of Record = 1967 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		
100 / 104															
95 / 99		0		0	73.0										
90 / 94		2		2	72.5		2		2	71.9		2		2	73.9
85 / 89		62	1	63	72.4	0	50	1	51	72.2	0	72	2	73	72.8
80 / 84	1	118	54	172	71.1	1	115	49	165	70.9	4	135	80	219	71.5
75 / 79	15	48	117	180	68.9	22	45	113	180	68.8	53	33	125	210	69.3
70 / 74	160	15	69	244	66.3	138	11	52	202	66.0	153	6	39	198	66.3
65 / 69	66	1	6	74	63.5	53	1	8	62	62.9	37	0	3	40	63.4
60 / 64	7	0	0	7	58.4	9		1	10	58.6	2		0	3	59.6
55 / 59	0			0	55.0	0			0	55.3					

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.

GUANTANAMO BAY NAS CU

WMO No. 783670

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

Period of Record = 1967 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		
100 / 104															
95 / 99		0		0	73.0		0		0	78.3	0	1	0	1	77.5
90 / 94		6	0	6	74.2	0	28	0	29	76.5	0	74	3	78	77.5
85 / 89	0	104	6	111	73.5	2	126	16	144	75.4	4	122	50	176	76.7
80 / 84	13	109	101	223	72.3	34	83	132	248	74.1	58	36	139	234	75.0
75 / 79	94	17	108	220	69.7	154	9	89	252	71.4	166	4	45	215	72.4
70 / 74	117	2	25	144	67.1	58	2	11	70	69.0	13	0	2	15	71.0
65 / 69	16	0	1	17	64.3	1		0	1	63.7					
60 / 64	0			0	60.3										
55 / 59															

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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WMO No. 783670

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

Period of Record = 1967 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		
100 / 104		0		0	82.0										
95 / 99		3		3	79.0		4	0	5	80.3		3	0	3	80.0
90 / 94		0	107	9	77.3	0	101	8	109	78.1	0	83	3	87	78.1
85 / 89		5	120	74	76.5	4	114	68	186	76.9	1	115	46	163	77.0
80 / 84		73	17	136	74.3	65	24	134	222	74.7	44	34	129	207	75.0
75 / 79		162	1	28	72.1	168	4	38	210	72.6	182	5	60	246	72.9
70 / 74		8	0	1	70.8	11	0	1	12	71.1	13	0	1	14	71.0
65 / 69								0	0						
60 / 64															
55 / 59															

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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)			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		
100 / 104		0	0	0	82.3										
95 / 99	0	1	0	1	79.9		0		0	78.3		0		0	80.0
90 / 94	0	59	1	61	77.7	0	33	0	34	76.2	0	8	0	8	73.5
85 / 89	0	122	28	150	76.9	0	109	9	118	75.2	0	81	3	84	73.3
80 / 84	22	55	125	203	75.2	7	80	97	184	73.7	2	110	63	175	71.8
75 / 79	195	10	90	295	73.0	131	16	118	265	71.4	42	39	119	201	69.5
70 / 74	30	1	4	34	70.8	98	1	16	114	69.0	158	8	57	222	67.1
65 / 69	0		0	0	68.0	5		0	5	65.3	40	1	6	47	63.7
60 / 64											6		1	7	59.6
55 / 59											0			0	54.0

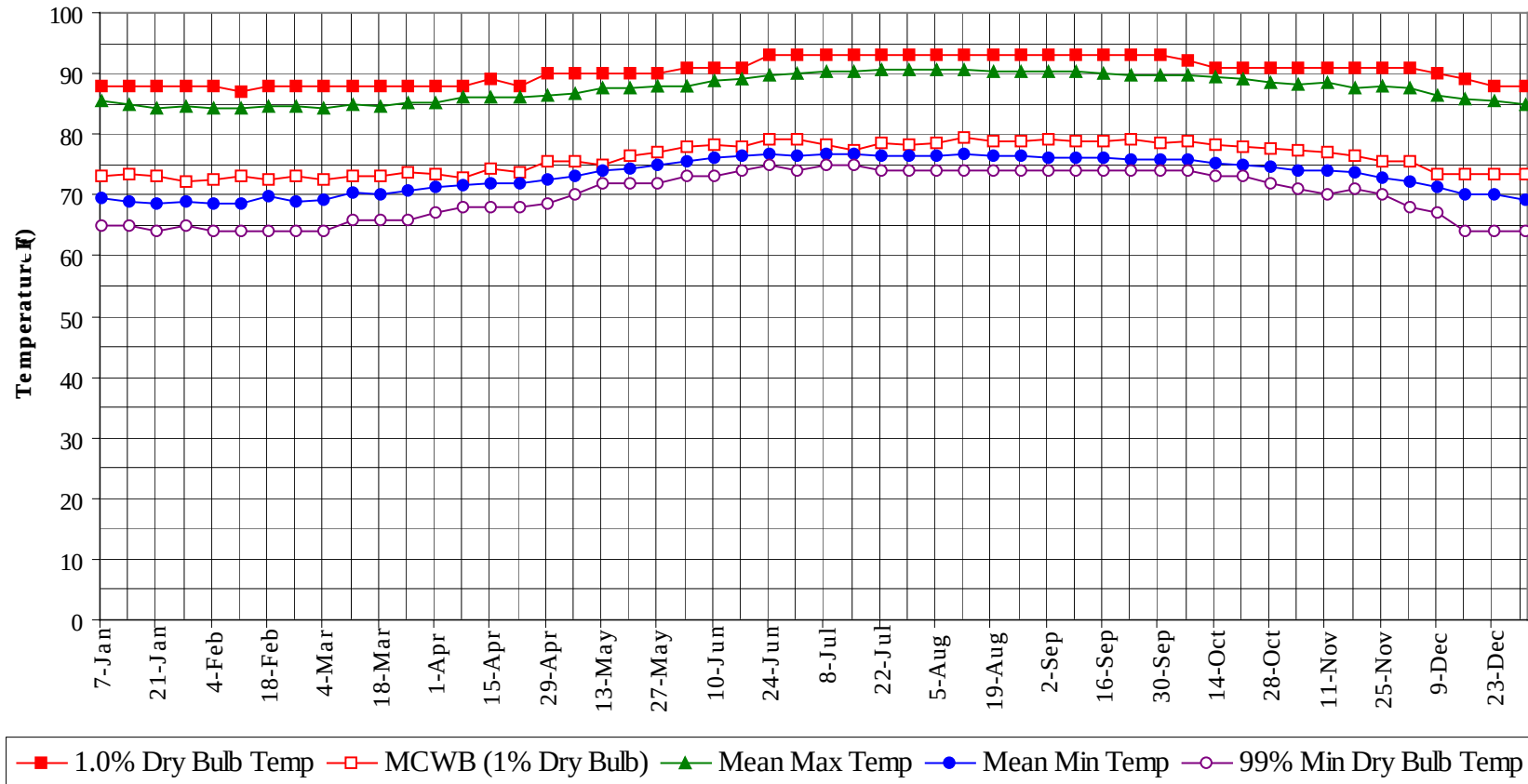
Caution: This summary reflects the typical distribution of temperature in a typical year. It does not reflect the typical moisture distribution. Because wet bulb temperatures are averaged, this summary understates the annual moisture load. For accurate moisture load data, see the long-term humidity summary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

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Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)
Period of Record = 1967 to 1996

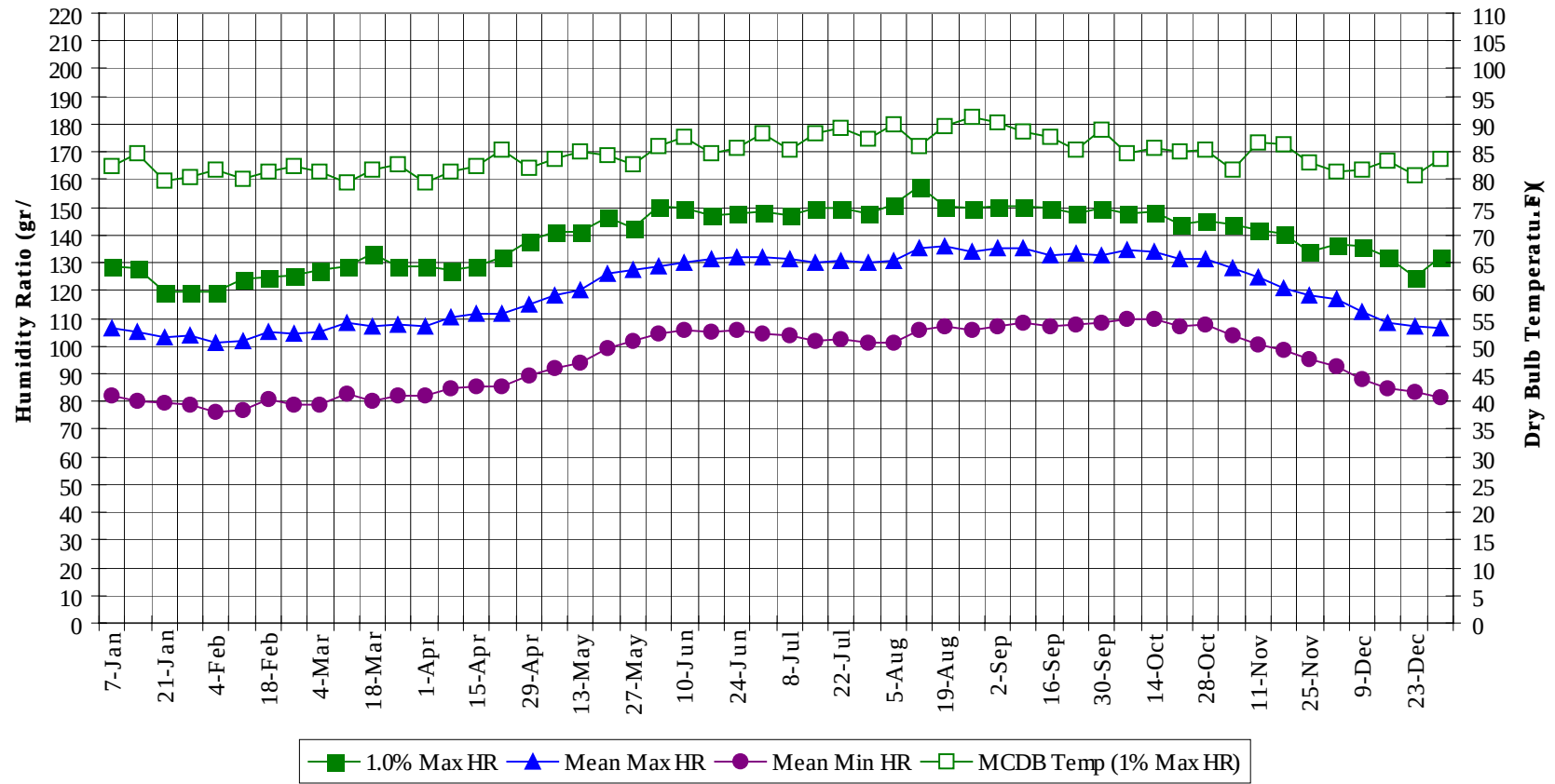
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
100 / 104		0	0	0	82.3
95 / 99	0	12	0	13	79.5
90 / 94	1	507	25	533	77.4
85 / 89	18	1198	305	1520	75.6
80 / 84	325	916	1240	2481	73.4
75 / 79	1385	230	1050	2665	71.1
70 / 74	956	46	275	1277	67.2
65 / 69	217	3	24	244	63.5
60 / 64	25	0	2	27	58.9
55 / 59	0			0	55.0

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.

Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary



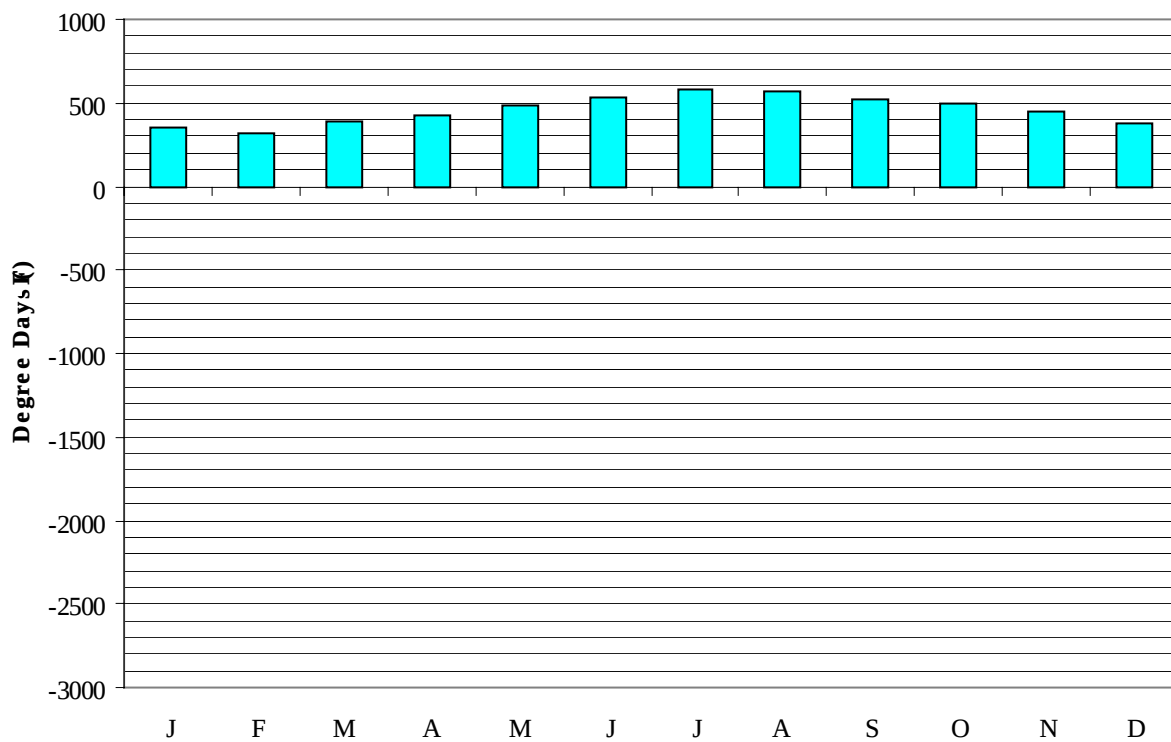
GUANTANAMO BAY NAS CU

WMO No. 783670

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	88.0	73.1	85.4	69.4	65.0	128.8	82.3	106.5	82.4
14-Jan	88.0	73.3	85.0	69.0	65.0	128.1	84.6	105.2	80.1
21-Jan	88.0	73.1	84.4	68.7	64.0	119.7	79.8	103.1	79.2
28-Jan	88.0	72.2	84.6	68.9	65.0	119.7	80.5	103.6	78.9
4-Feb	88.0	72.6	84.4	68.5	64.0	119.7	81.7	100.9	75.9
11-Feb	87.0	73.0	84.2	68.6	64.0	123.9	80.2	101.9	76.8
18-Feb	88.0	72.4	84.6	69.7	64.0	124.6	81.3	105.3	80.9
25-Feb	88.0	73.0	84.6	69.0	64.0	125.3	82.4	104.6	78.7
4-Mar	88.0	72.4	84.4	69.2	64.0	127.4	81.3	104.9	78.8
11-Mar	88.0	73.2	84.8	70.3	66.0	128.8	79.6	108.2	83.0
18-Mar	88.0	73.1	84.7	70.2	66.0	133.0	81.7	107.1	80.3
25-Mar	88.0	73.8	85.3	70.7	66.0	128.8	82.8	107.9	82.4
1-Apr	88.0	73.5	85.3	71.2	67.0	128.8	79.6	106.8	82.4
8-Apr	88.0	72.9	86.1	71.6	68.0	127.4	81.6	110.4	84.9
15-Apr	89.0	74.4	86.3	71.9	68.0	128.8	82.3	111.6	85.7
22-Apr	88.0	73.9	86.0	71.9	68.0	132.3	85.3	111.7	85.5
29-Apr	90.0	75.4	86.4	72.6	68.5	137.9	82.0	114.8	89.3
6-May	90.0	75.6	86.8	73.2	70.0	141.4	83.8	118.3	91.9
13-May	90.0	74.8	87.6	73.9	72.0	141.4	85.1	120.1	93.6
20-May	90.0	76.5	87.6	74.3	72.0	146.3	84.5	126.1	99.0
27-May	90.0	77.2	87.8	75.1	72.0	142.8	82.8	127.6	102.1
3-Jun	91.0	78.0	87.9	75.6	73.0	150.5	86.1	128.9	104.5
10-Jun	91.0	78.2	88.9	76.2	73.0	149.8	87.8	130.0	105.7
17-Jun	91.0	77.8	89.1	76.4	74.0	147.0	84.9	131.1	105.3
24-Jun	93.0	79.1	89.7	76.7	75.0	147.7	85.7	131.9	105.6
1-Jul	93.0	79.2	90.0	76.4	74.0	148.4	88.3	132.2	104.1
8-Jul	93.0	78.1	90.5	76.7	75.0	147.0	85.4	131.3	103.8
15-Jul	93.0	77.2	90.5	76.8	75.0	149.8	88.2	130.1	101.9
22-Jul	93.0	78.5	90.5	76.6	74.0	149.8	89.5	130.9	102.5
29-Jul	93.0	78.2	90.5	76.5	74.0	147.7	87.3	130.0	101.2
5-Aug	93.0	78.6	90.5	76.6	74.0	151.2	89.8	130.5	101.2
12-Aug	93.0	79.6	90.6	76.7	74.0	157.5	85.9	135.4	105.5
19-Aug	93.0	79.0	90.4	76.5	74.0	150.5	89.7	135.7	106.8
26-Aug	93.0	78.9	90.2	76.3	74.0	149.8	91.2	134.2	105.8
2-Sep	93.0	79.0	90.3	76.0	74.0	150.5	90.4	135.0	106.8
9-Sep	93.0	78.9	90.2	76.2	74.0	150.5	88.7	135.2	108.2
16-Sep	93.0	79.0	90.1	76.2	74.0	149.8	87.6	132.6	106.8
23-Sep	93.0	79.0	89.6	75.7	74.0	147.7	85.3	133.5	107.6
30-Sep	93.0	78.7	89.6	75.8	74.0	149.8	89.0	132.9	108.5
7-Oct	92.0	78.8	89.8	75.8	74.0	147.7	84.8	134.6	110.0
14-Oct	91.0	78.2	89.3	75.3	73.0	148.4	85.6	134.2	109.4
21-Oct	91.0	77.9	89.2	74.9	73.0	143.5	84.9	131.4	107.4
28-Oct	91.0	77.8	88.4	74.7	72.0	144.9	85.4	131.2	107.6
4-Nov	91.0	77.5	88.3	74.1	71.0	143.5	81.6	127.9	103.9
11-Nov	91.0	77.2	88.6	73.9	70.0	142.1	86.7	124.8	100.5
18-Nov	91.0	76.3	87.7	73.6	71.0	140.7	86.5	120.7	98.5
25-Nov	91.0	75.5	87.9	72.8	70.0	133.7	83.0	118.2	95.1
2-Dec	91.0	75.6	87.5	72.2	68.0	136.5	81.5	117.0	92.8
9-Dec	90.0	73.5	86.4	71.3	67.0	135.8	81.8	112.5	88.3
16-Dec	89.0	73.4	85.9	70.2	64.0	132.3	83.5	108.2	84.5
23-Dec	88.0	73.3	85.5	69.9	64.0	124.6	80.7	107.0	83.3
31-Dec	88.0	73.4	85.0	69.3	64.0	132.3	83.7	106.1	81.4

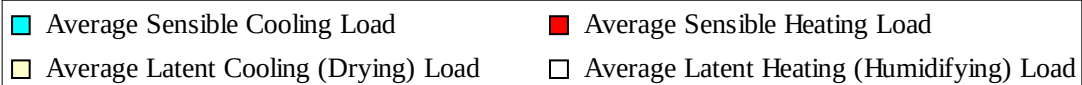
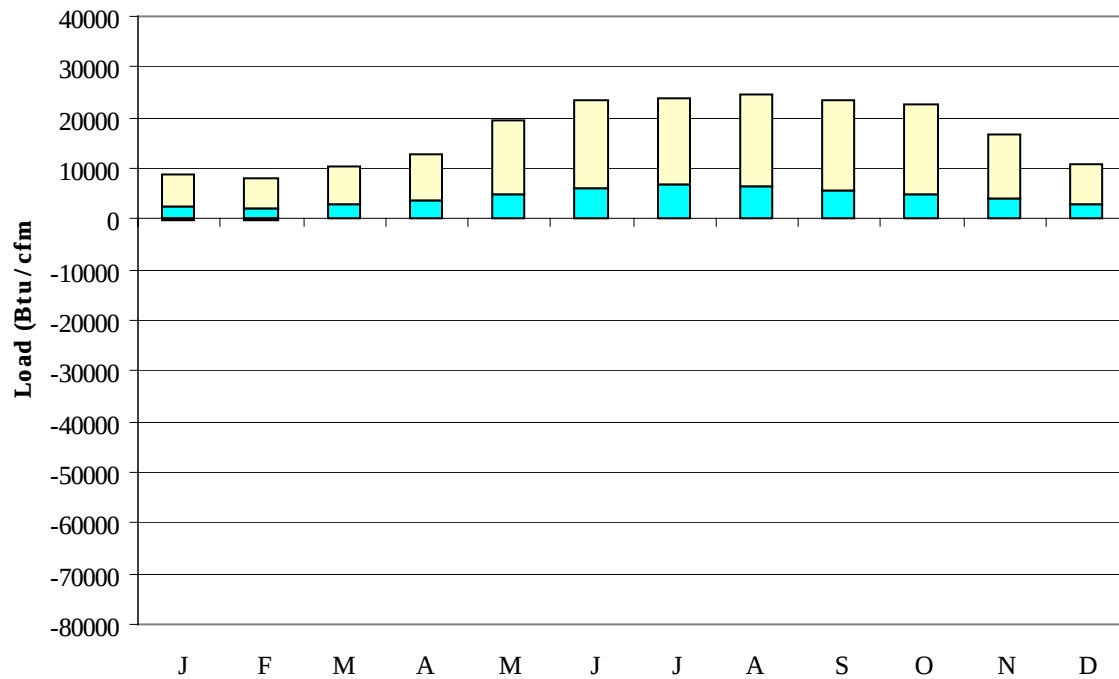
Degree Days, Heating and Cooling
(Base 65°F)



■ Mean Cooling Degree Days ■ Mean Heating Degree Days

	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	350	1
FEB	323	1
MAR	388	0
APR	421	0
MAY	489	0
JUN	532	0
JUL	576	0
AUG	564	0
SEP	523	0
OCT	493	0
NOV	445	0
DEC	378	1
ANN	5482	3

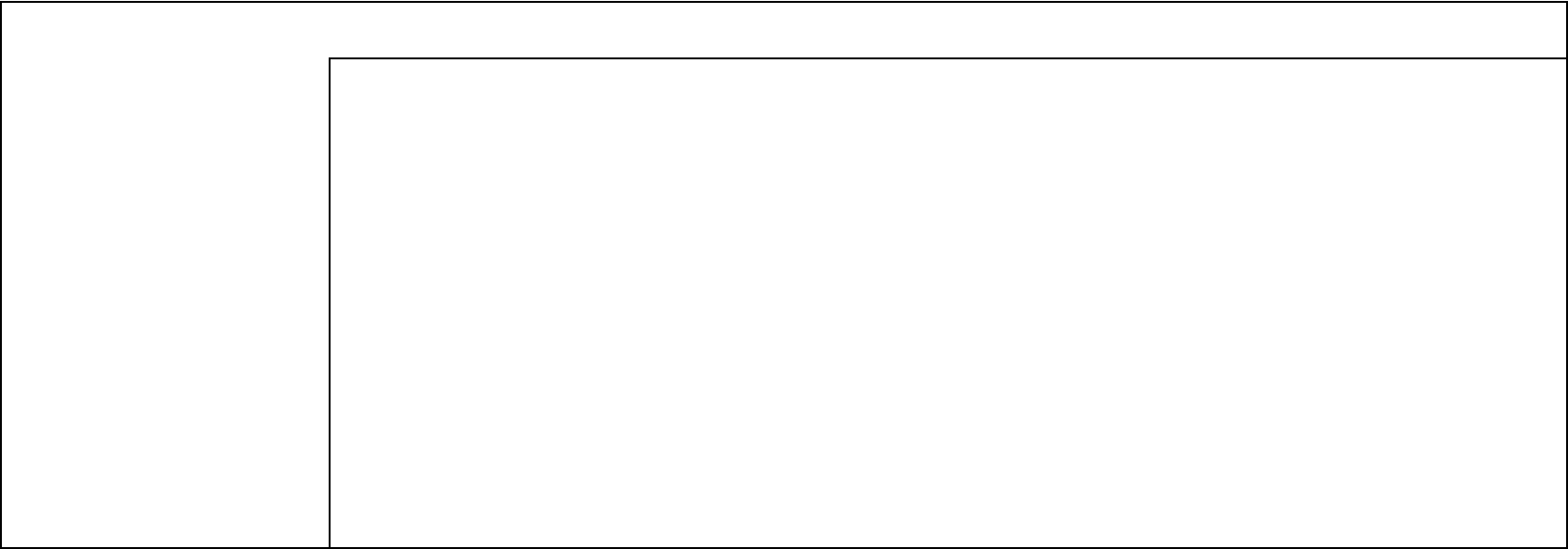
Average Ventilation and Infiltration Loads
(Outside Air vs. 75°F, 60% RH summer; 68°F, 30% RH winter)



	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	2469	-83	6320	0
FEB	2283	-95	5618	0
MAR	2997	-35	7561	0
APR	3666	-9	9015	0
MAY	4808	0	14595	0
JUN	6026	0	17258	0
JUL	6913	0	16963	0
AUG	6616	0	17860	0
SEP	5827	0	17498	0
OCT	5064	0	17560	0
NOV	4063	-1	12797	0
DEC	2895	-61	8087	0
ANN	53627	-284	151132	0

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

No Solar Radiation
Data Available

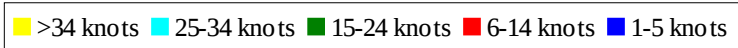
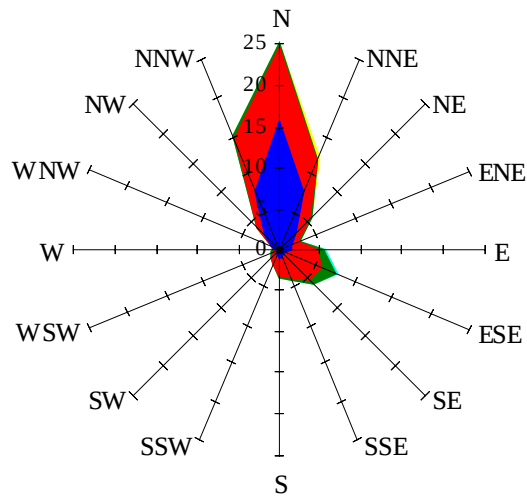


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

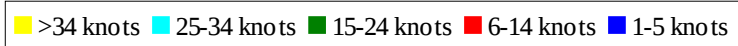
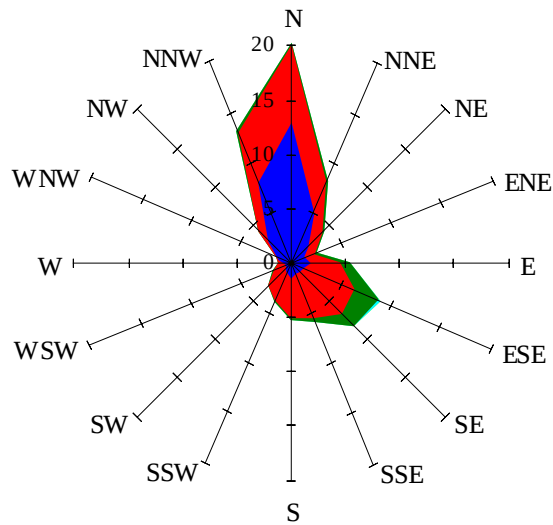
Labels of Percent Frequency on North Axis



Percent Calm = 3.86

Wind Summary - March, April, and May

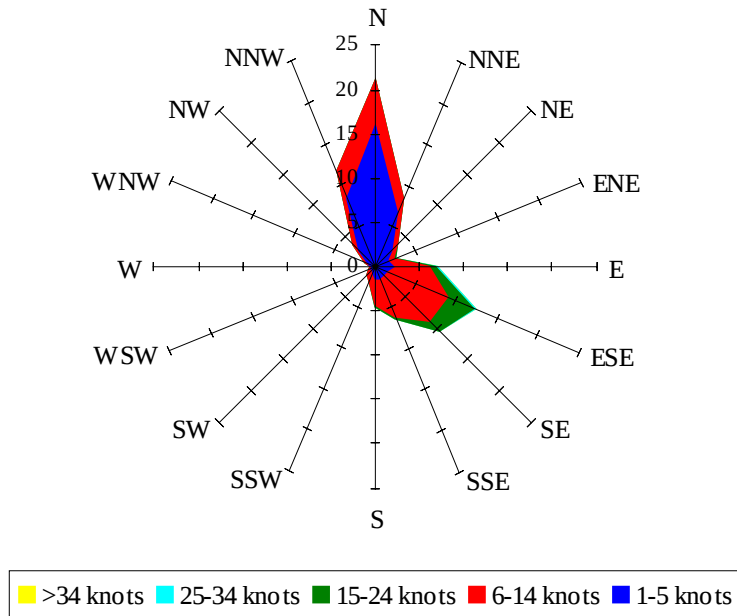
Labels of Percent Frequency on North Axis



Percent Calm = 3.88

Wind Summary - June, July, and August

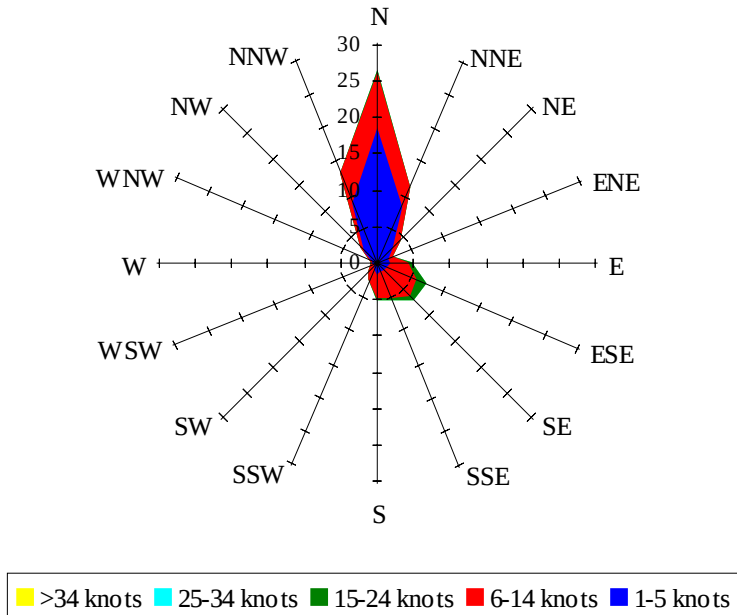
Labels of Percent Frequency on North Axis



Percent Calm = 4.25

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 4.84