HILO HI	
Latitude = 19.72 N	WMO No. 912850
Longitude =155.00 W	Elevation = 36 feet
Period of Record = 1973 to 1996	Average Pressure = 29.95 inches Hg

Design Criteria Data

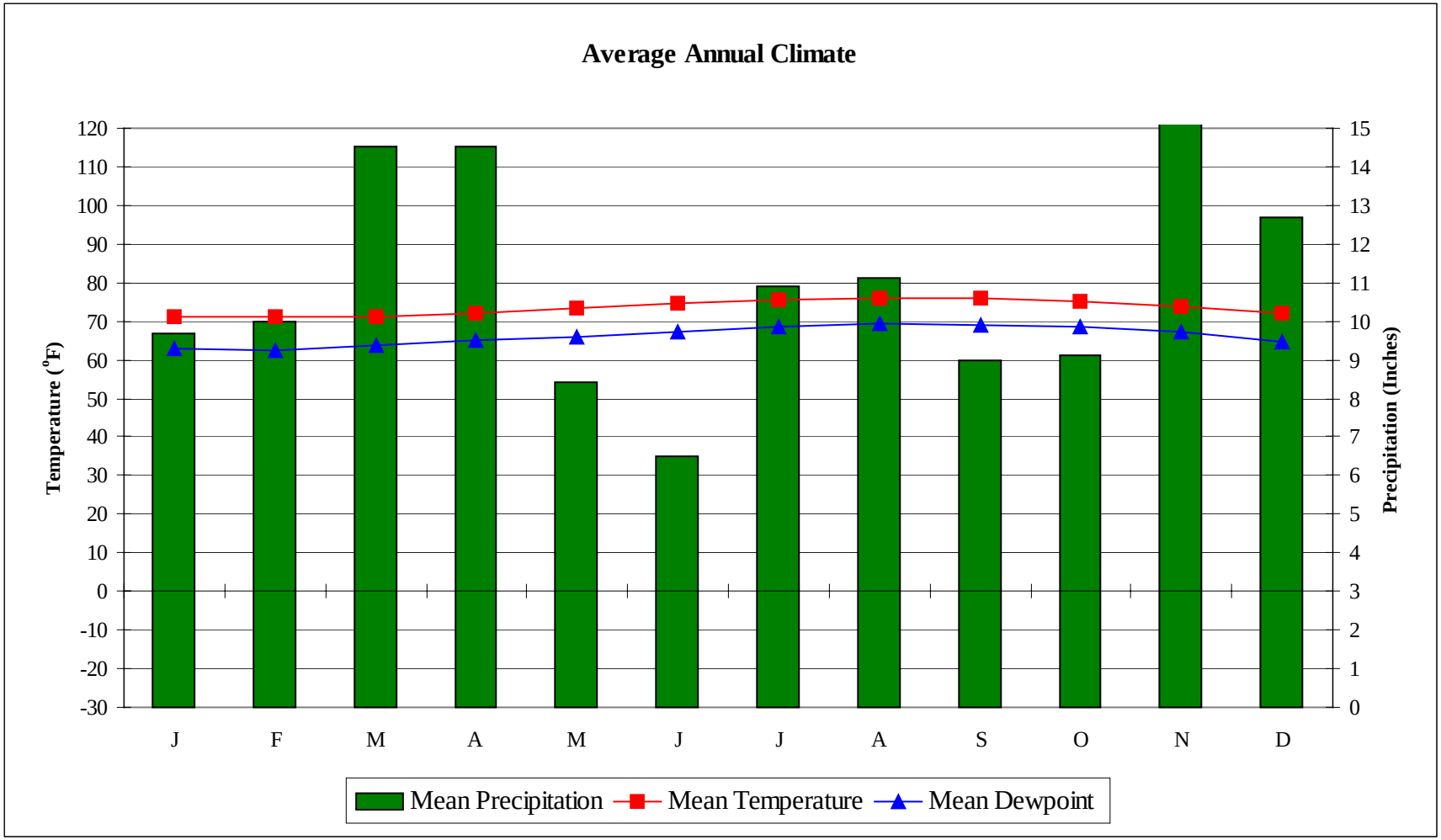
		Mean Coincident (Average) Values			
Dry Bulb Temperature (T)	**Design Value (^oF)**	Wet Bulb Temperature (^oF)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	89	75	107	13.0	E
0.4% Occurrence	86	74	110	11.0	E
1.0% Occurrence	85	74	110	10.6	E
2.0% Occurrence	84	74	109	10.3	E
Mean Daily Range	13	-	-	-	-
97.5% Occurrence	64	61	74	6.2	SW
99.0% Occurrence	63	60	70	6.2	SW
99.6% Occurrence	61	57	63	6.2	SW
Median of Extreme Lows	58	54	55	6.0	SW
		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	79	84	136	10.6	E
0.4% Occurrence	77	82	127	9.4	E
1.0% Occurrence	76	81	123	8.9	E
2.0% Occurrence	75	81	119	8.6	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	144	85	0.96	15.0	NE
0.4% Occurrence	132	79	0.88	7.7	E
1.0% Occurrence	127	79	0.85	7.5	E
2.0% Occurrence	124	78	0.82	7.8	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	0	1391	1314	6324

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	6.8	105	9.3 + 1.2
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	0	0	0

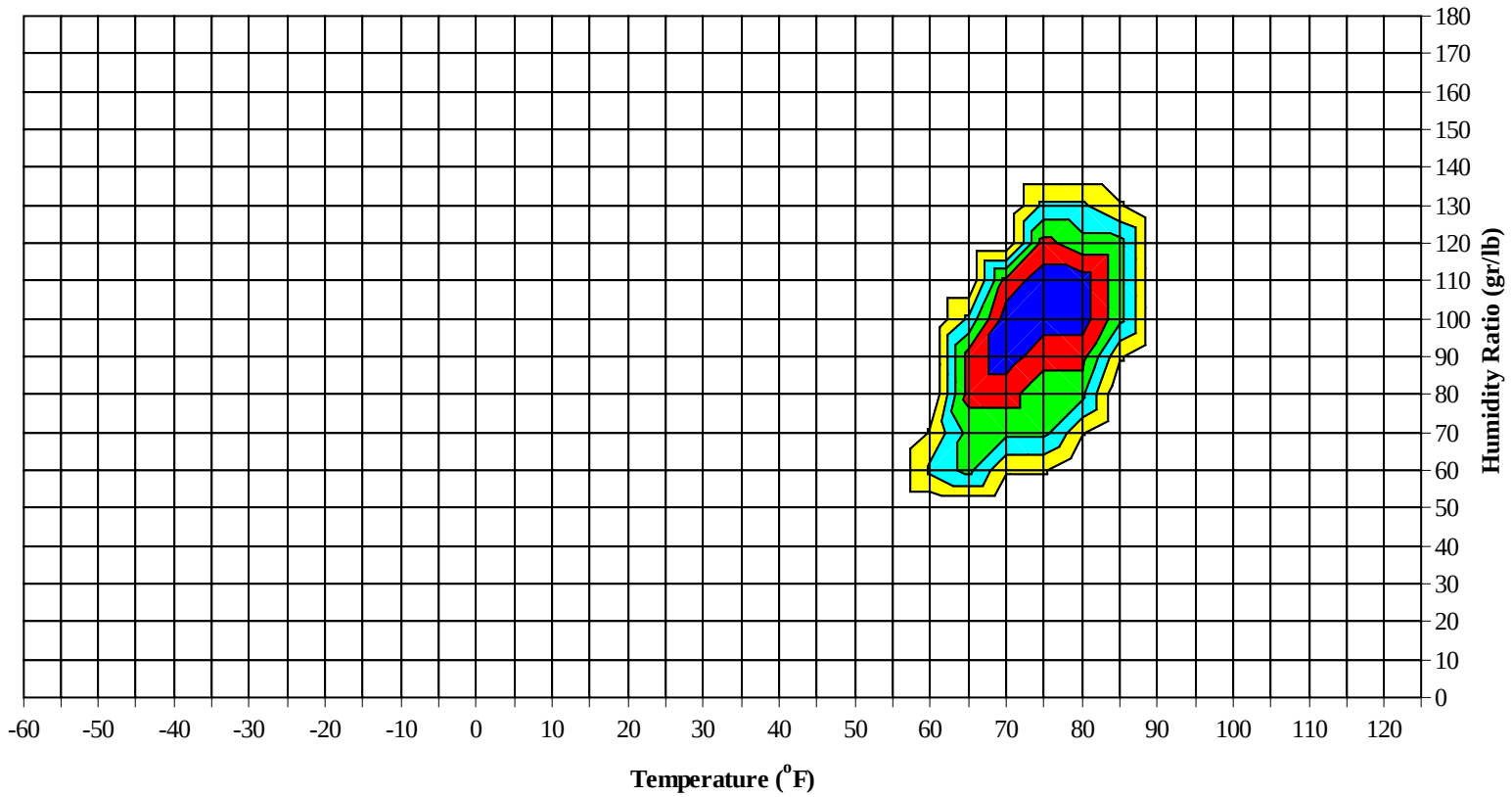
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

HILO HI WMO No. 912850



HILO HI WMO No. 912850

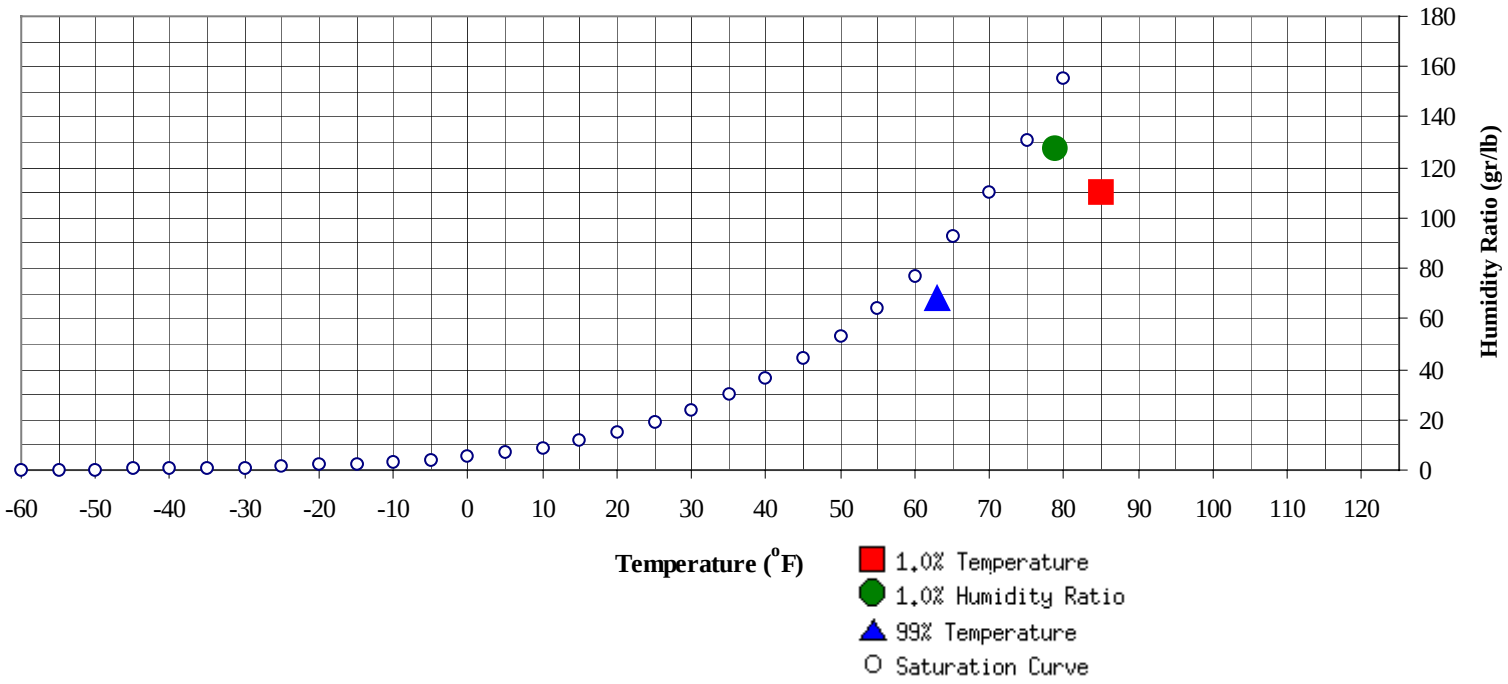
Long Term Psychrometric Summary



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

HILO HI WMO No. 912850

Psychrometric Summary of Peak Design Values



	(°F)	MCHR (gr/lb)	Enthalpy (btu/lb)
99% Dry Bulb	63	68.3	25.7

		MCDB (°F)	MCWB (°F)	MC Dewpt (°F)	Enthalpy (btu/lb)
1.0% Humidity Ratio	127.4	78.8	75.3	74	38.9

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	85	110.4	74.3	37.7

HILO HI WMO No. 912850

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		0		0	72.0		0		0	69.5					
85 / 89		4		4	70.8		4	0	4	70.8		2	0	2	70.9
80 / 84		51	2	53	70.5	0	48	2	50	70.4		46	2	48	70.0
75 / 79	1	119	31	151	68.8	0	104	28	132	68.4	1	119	32	152	68.8
70 / 74	35	59	112	206	67.1	25	53	102	180	66.6	45	67	120	231	67.1
65 / 69	146	14	94	254	63.8	137	14	86	237	63.8	162	14	92	268	64.4
60 / 64	63	0	10	73	58.6	59	0	6	65	59.0	39	0	2	41	59.7
55 / 59	3		0	3	53.5	3		0	3	54.0	1			1	54.3
50 / 54	0			0	49.8										

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.

HILO HI WMO No. 912850

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															
85 / 89		1		1	73.3	0	6	0	6	73.8		6		6	73.4
80 / 84	0	53	1	54	71.1	1	86	5	92	71.7	1	134	14	149	72.1
75 / 79	4	125	40	169	69.5	13	116	65	194	70.1	17	86	89	192	70.9
70 / 74	59	53	129	241	67.9	91	36	139	266	68.3	132	14	127	273	68.9
65 / 69	159	8	69	236	65.0	134	3	39	176	65.3	89	0	10	99	65.4
60 / 64	18	0	1	19	60.3	9		0	9	60.7	1			1	60.4
55 / 59	0			0	56.0	0			0	55.0					
50 / 54															

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.

HILO HI WMO No. 912850

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												0		0	77.3
85 / 89		11	0	11	75.0		18	0	18	75.5		25	0	25	75.0
80 / 84	2	145	23	169	73.0	2	159	28	189	73.7	2	156	24	182	73.7
75 / 79	28	78	106	212	71.9	34	62	115	211	72.5	29	50	107	186	72.4
70 / 74	165	14	117	296	69.5	167	9	102	278	69.7	151	9	105	265	69.4
65 / 69	53	0	3	56	65.4	45	0	3	48	65.1	58		4	62	64.5
60 / 64	0			0	60.8	0			0	58.0	0			0	60.0
55 / 59											0			0	59.0
50 / 54															

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.

HILO HI WMO No. 912850

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		0		0	76.0		0		0	77.0		0		0	70.5
85 / 89		17	0	17	74.7		3		3	74.4		3		3	73.0
80 / 84	1	138	11	150	73.4	0	96	3	99	72.8		63	1	64	71.4
75 / 79	18	79	91	188	72.0	9	107	61	177	71.3	1	122	36	159	69.7
70 / 74	158	14	138	310	69.3	119	33	148	301	69.1	62	53	136	251	67.8
65 / 69	70	0	8	78	64.9	104	1	28	133	64.5	148	6	71	225	64.2
60 / 64	1			1	59.6	8	0	0	8	59.2	36		4	40	59.1
55 / 59						0			0	57.0	1			1	54.1
50 / 54															

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.

HILO HI WMO No. 912850

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

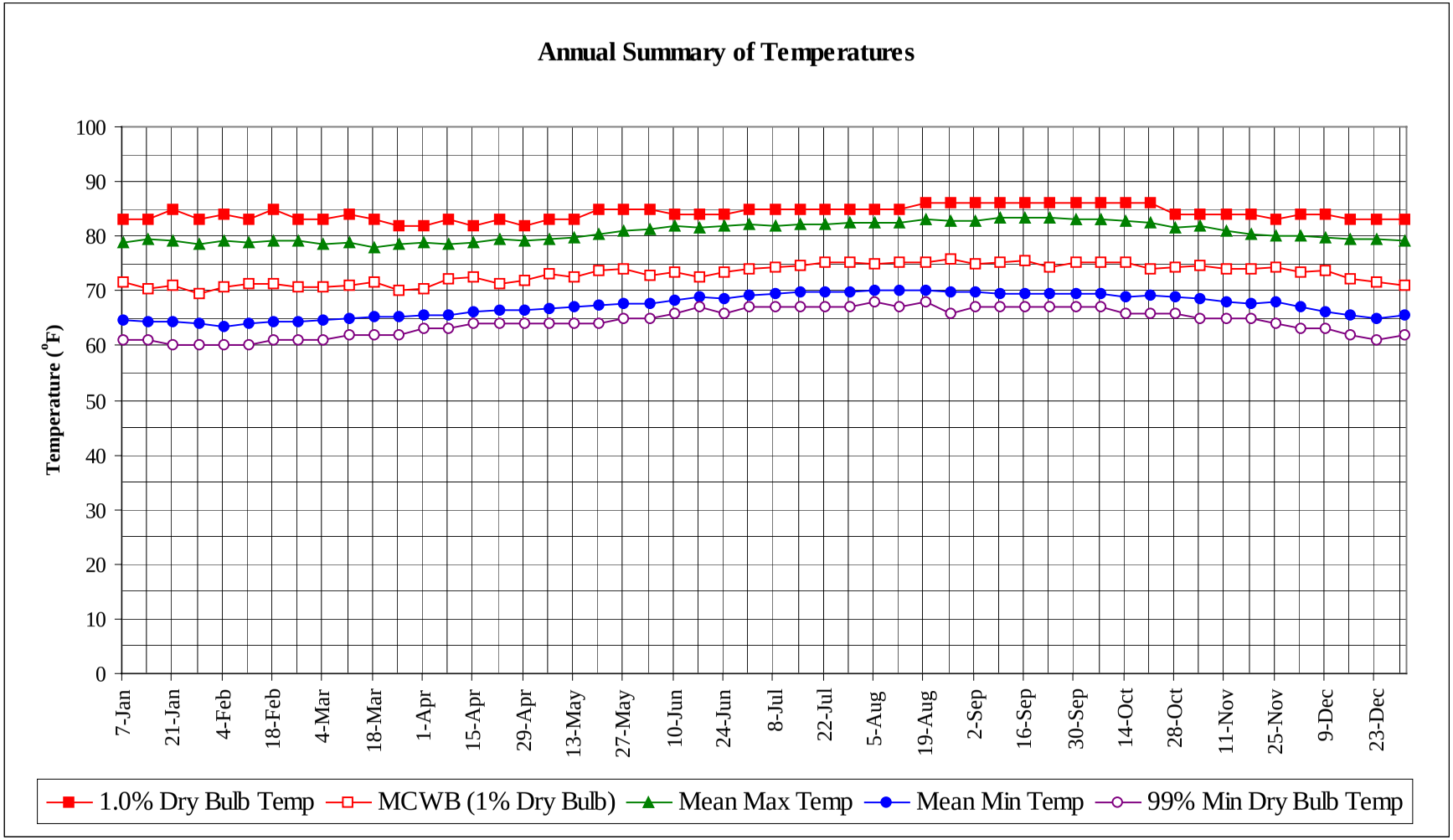
Period of Record = 1973 to 1996

Annual Totals

Temperature Range (°F)	Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)
90 / 94		1		1	72.8
85 / 89	0	99	1	100	74.4
80 / 84	10	1175	116	1301	72.6
75 / 79	157	1167	802	2126	70.7
70 / 74	1205	416	1472	3093	68.5
65 / 69	1305	60	506	1871	64.5
60 / 64	234	1	23	258	59.2
55 / 59	9		0	9	53.9
50 / 54	0			0	49.8

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.

HILO HI WMO No. 912850



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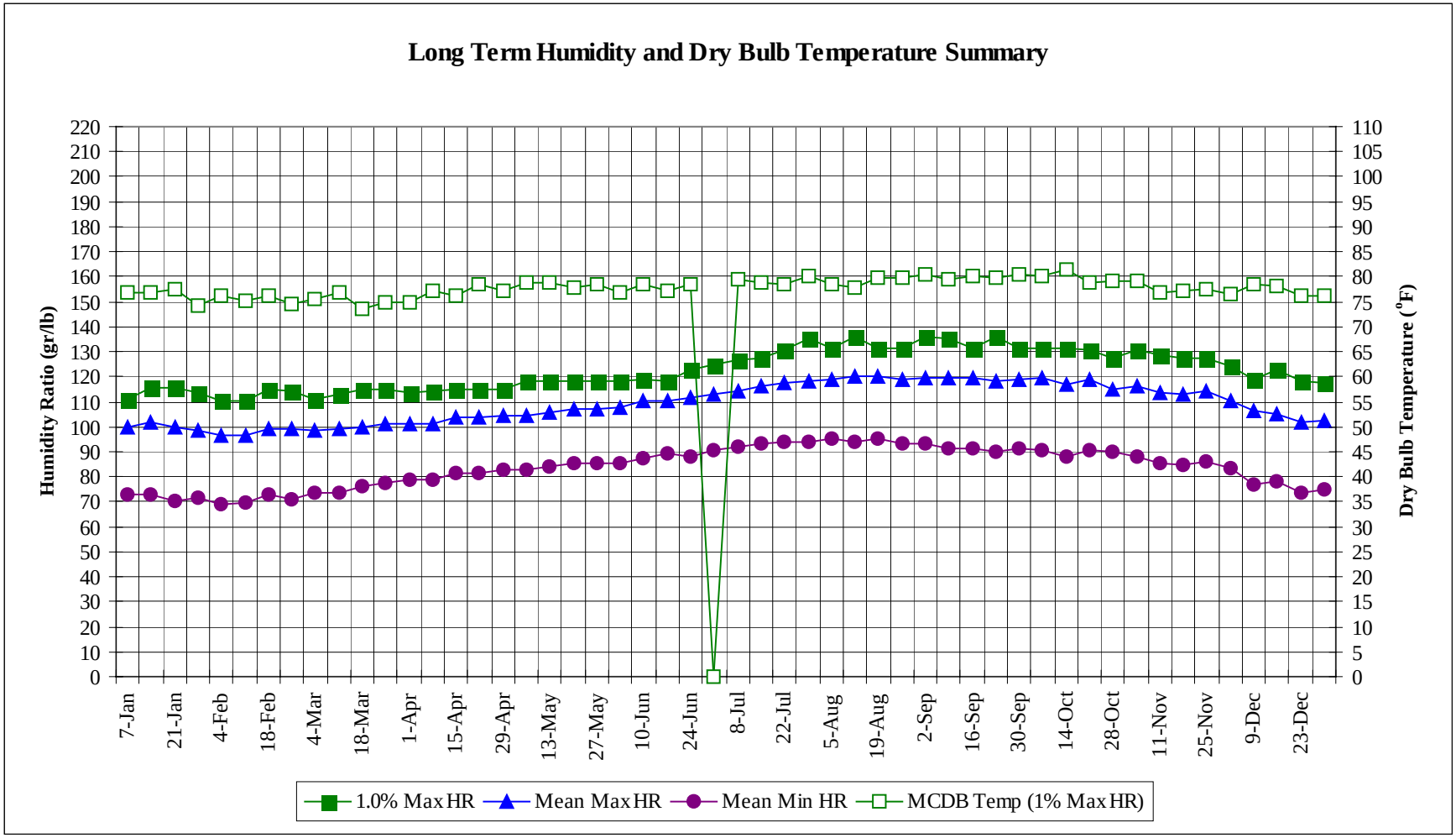
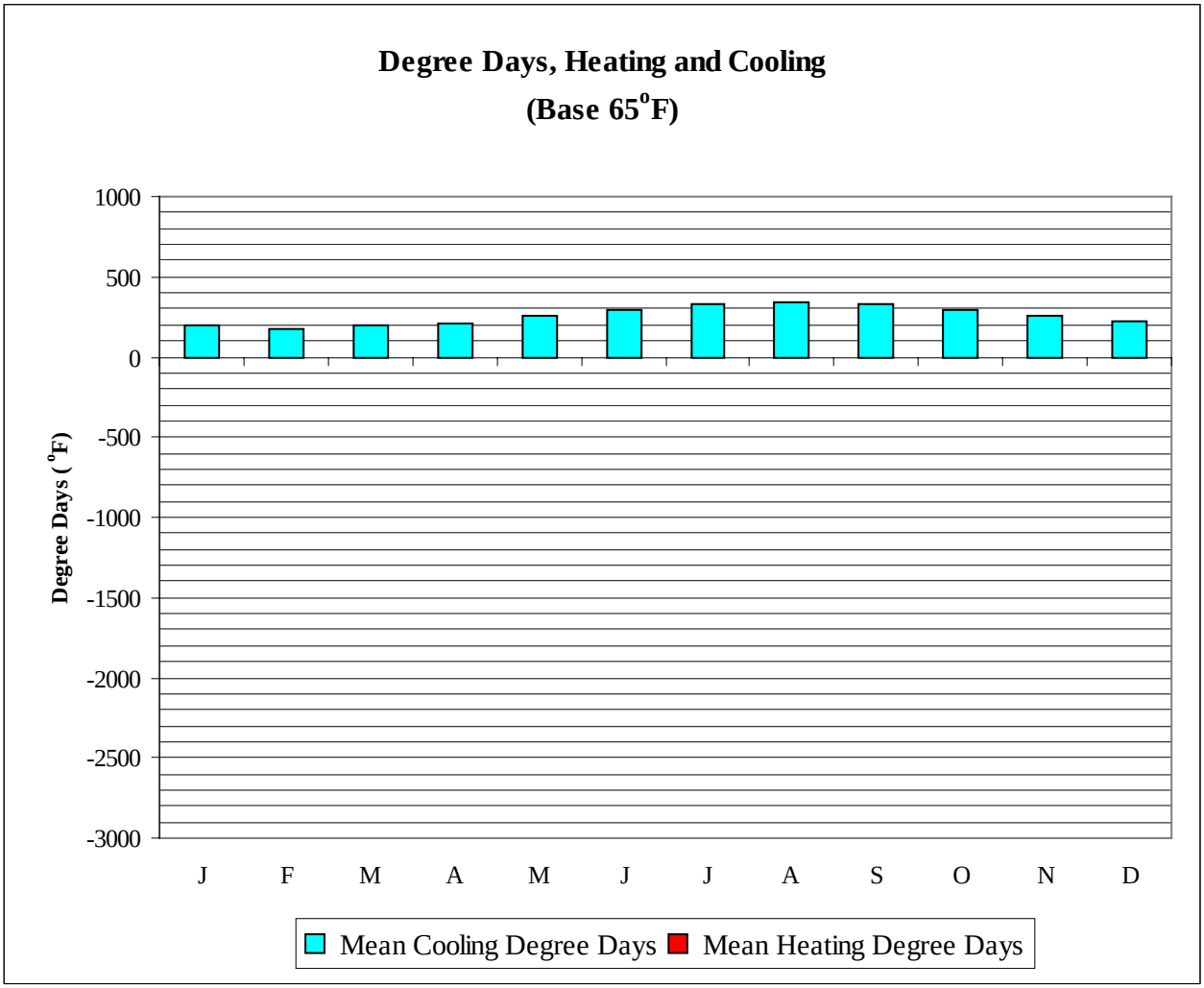


HILO HI WMO No. 912850

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	83.0	71.5	78.7	64.8	61.0	111.3	77.0	99.9	72.7
14-Jan	83.0	70.5	79.5	64.3	61.0	115.5	76.9	101.8	72.8
21-Jan	85.0	71.0	79.0	64.5	60.0	115.5	77.4	99.6	70.4
28-Jan	83.0	69.6	78.6	64.1	60.0	113.4	74.1	98.4	71.5
4-Feb	84.0	70.7	79.1	63.4	60.0	110.6	76.1	96.7	69.1
11-Feb	83.0	71.4	78.9	64.0	60.0	110.6	75.1	96.4	69.5
18-Feb	85.0	71.3	79.3	64.4	61.0	114.8	76.2	99.0	73.1
25-Feb	83.0	70.7	79.1	64.3	61.0	114.1	74.7	99.2	70.8
4-Mar	83.0	70.6	78.4	64.7	61.0	111.3	75.7	98.5	73.4
11-Mar	84.0	71.1	78.8	64.9	62.0	112.7	77.0	99.2	73.4
18-Mar	83.0	71.5	78.1	65.3	62.0	114.8	73.5	99.9	76.4
25-Mar	82.0	70.0	78.4	65.3	62.0	114.8	74.9	100.9	77.6
1-Apr	82.0	70.5	78.8	65.6	63.0	113.4	74.9	101.4	78.6
8-Apr	83.0	72.2	78.5	65.5	63.0	114.1	77.0	101.4	78.9
15-Apr	82.0	72.4	78.8	66.3	64.0	114.8	76.1	103.6	81.3
22-Apr	83.0	71.4	79.4	66.3	64.0	114.8	78.5	103.9	81.5
29-Apr	82.0	71.9	79.2	66.6	64.0	114.8	77.3	104.5	83.1
6-May	83.0	73.0	79.6	66.9	64.0	118.3	78.8	104.1	82.7
13-May	83.0	72.6	79.8	66.9	64.0	118.3	78.9	105.5	84.4
20-May	85.0	73.7	80.4	67.4	64.0	118.3	77.9	107.1	85.3
27-May	85.0	74.0	80.8	67.6	65.0	118.3	78.5	107.1	85.4
3-Jun	85.0	72.9	81.2	67.7	65.0	118.3	76.7	107.7	85.7
10-Jun	84.0	73.4	81.8	68.3	66.0	119.0	78.6	110.4	87.5
17-Jun	84.0	72.6	81.7	68.8	67.0	118.3	77.3	110.6	89.1
24-Jun	84.0	73.3	81.9	68.5	66.0	122.5	78.4	112.0	88.1
1-Jul	85.0	73.9	82.1	69.1	67.0	125.0	.	113.0	90.8
8-Jul	85.0	74.4	81.8	69.4	67.0	126.7	79.5	114.4	92.0
15-Jul	85.0	74.7	82.1	69.7	67.0	127.4	78.8	116.2	93.0
22-Jul	85.0	75.2	82.3	69.7	67.0	130.9	78.6	117.7	94.2
29-Jul	85.0	75.2	82.6	69.9	67.0	135.1	80.3	118.3	94.1
5-Aug	85.0	75.0	82.5	70.1	68.0	131.6	78.6	118.9	95.4
12-Aug	85.0	75.2	82.5	70.0	67.0	135.8	77.8	120.1	94.2
19-Aug	86.0	75.2	83.0	70.0	68.0	131.6	79.7	120.1	95.5
26-Aug	86.0	75.9	82.9	69.9	66.0	131.6	79.8	119.0	93.4
2-Sep	86.0	74.9	82.8	69.9	67.0	135.8	80.3	119.6	93.5
9-Sep	86.0	75.2	83.4	69.6	67.0	135.1	79.5	119.4	91.4
16-Sep	86.0	75.4	83.3	69.6	67.0	131.6	80.2	119.6	91.1
23-Sep	86.0	74.3	83.3	69.4	67.0	135.8	79.7	118.3	90.2
30-Sep	86.0	75.2	83.2	69.4	67.0	131.6	80.5	119.1	91.2
7-Oct	86.0	75.2	83.0	69.4	67.0	131.6	80.2	119.7	90.9
14-Oct	86.0	75.4	82.8	68.9	66.0	131.6	81.4	117.1	88.1
21-Oct	86.0	74.1	82.4	69.3	66.0	130.9	78.9	118.6	90.8
28-Oct	84.0	74.4	81.5	68.9	66.0	127.4	79.0	115.0	90.2
4-Nov	84.0	74.6	82.0	68.6	65.0	130.9	79.2	116.2	87.8
11-Nov	84.0	74.1	81.0	67.9	65.0	128.8	77.0	113.9	85.1
18-Nov	84.0	74.0	80.4	67.8	65.0	127.4	77.0	112.8	84.7
25-Nov	83.0	74.2	80.2	67.9	64.0	127.4	77.5	114.3	85.9
2-Dec	84.0	73.5	80.1	67.0	63.0	123.9	76.4	110.5	83.5
9-Dec	84.0	73.6	79.9	66.0	63.0	119.0	78.6	106.3	77.0
16-Dec	83.0	72.1	79.4	65.7	62.0	122.5	78.2	105.2	78.0
23-Dec	83.0	71.7	79.3	65.0	61.0	118.3	76.2	101.7	73.5
31-Dec	83.0	70.9	79.2	65.4	62.0	117.6	76.3	102.6	75.2

HILO HI WMO No. 912850



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	193	7
FEB	177	6
MAR	199	3
APR	213	1
MAY	260	1
JUN	293	0
JUL	326	0
AUG	341	0
SEP	328	0
OCT	299	0
NOV	258	1
DEC	217	3
ANN	3103	22

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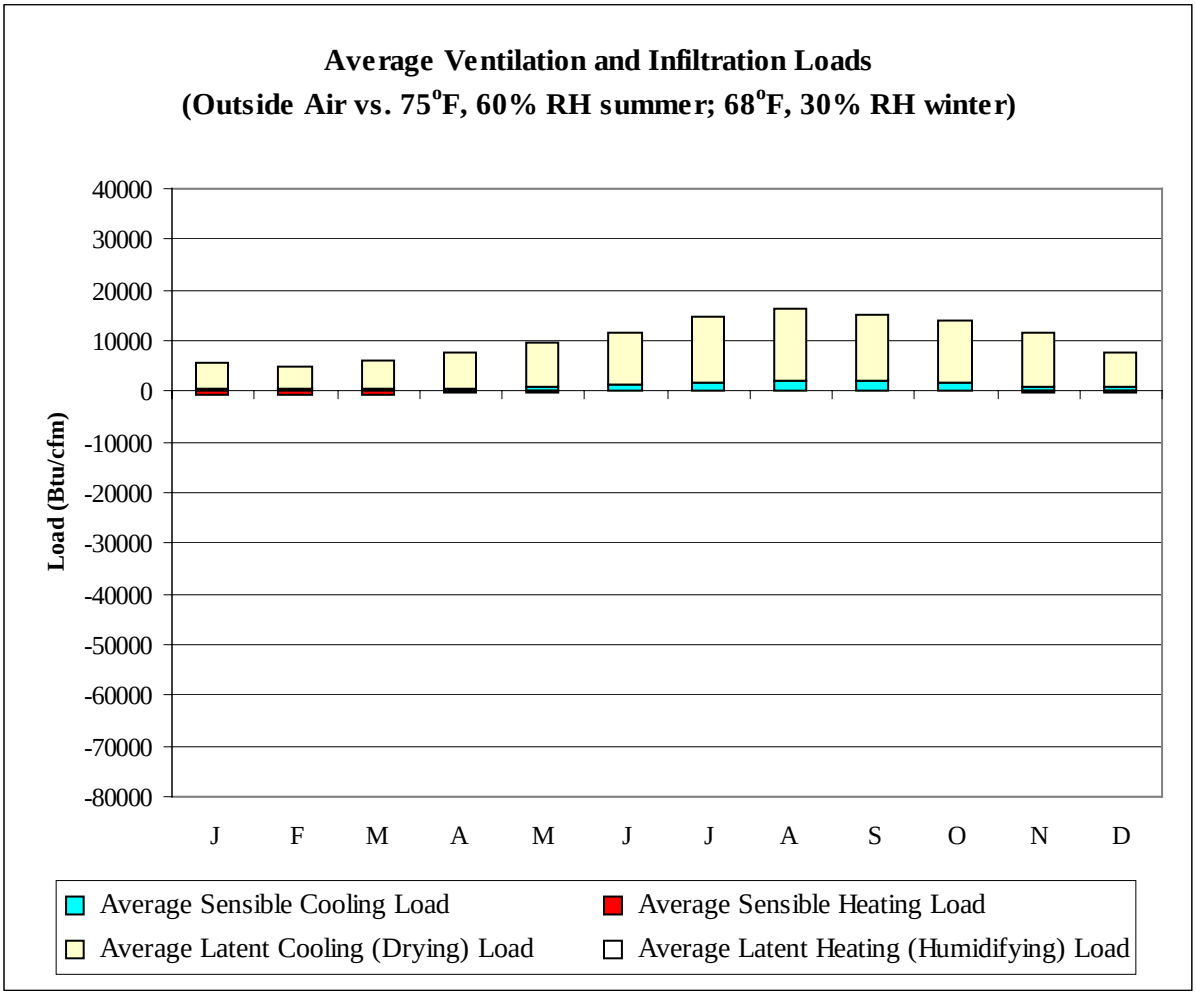


	Average Sensible Cooling Load (Btu/cfm)	Average Sensible Heating Load (Btu/cfm)	Average Latent Cooling Load (Btu/cfm)	Average Latent Heating Load (Btu/cfm)
JAN	673	-702	5074	0
FEB	640	-656	4244	0
MAR	619	-494	5506	0
APR	691	-284	6938	0
MAY	1073	-155	8684	0
JUN	1483	-41	10202	0
JUL	1722	-18	13151	0
AUG	1967	-18	14331	0
SEP	1985	-22	13319	0
OCT	1556	-35	12324	0
NOV	1037	-138	10499	0
DEC	752	-417	6796	0
ANN	14198	-2980	111068	0

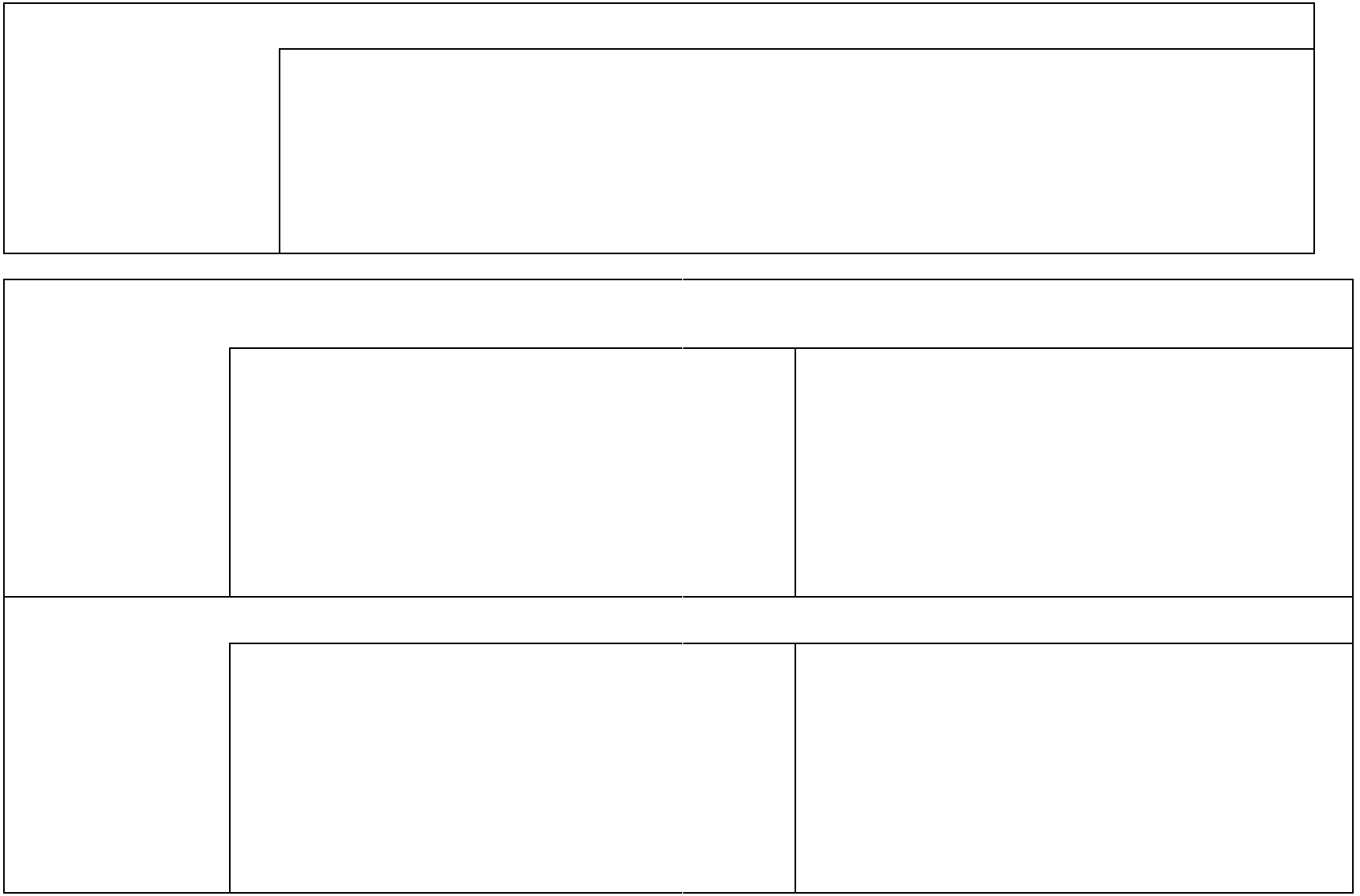
Average Annual Solar Radiation – Nearest Available Site

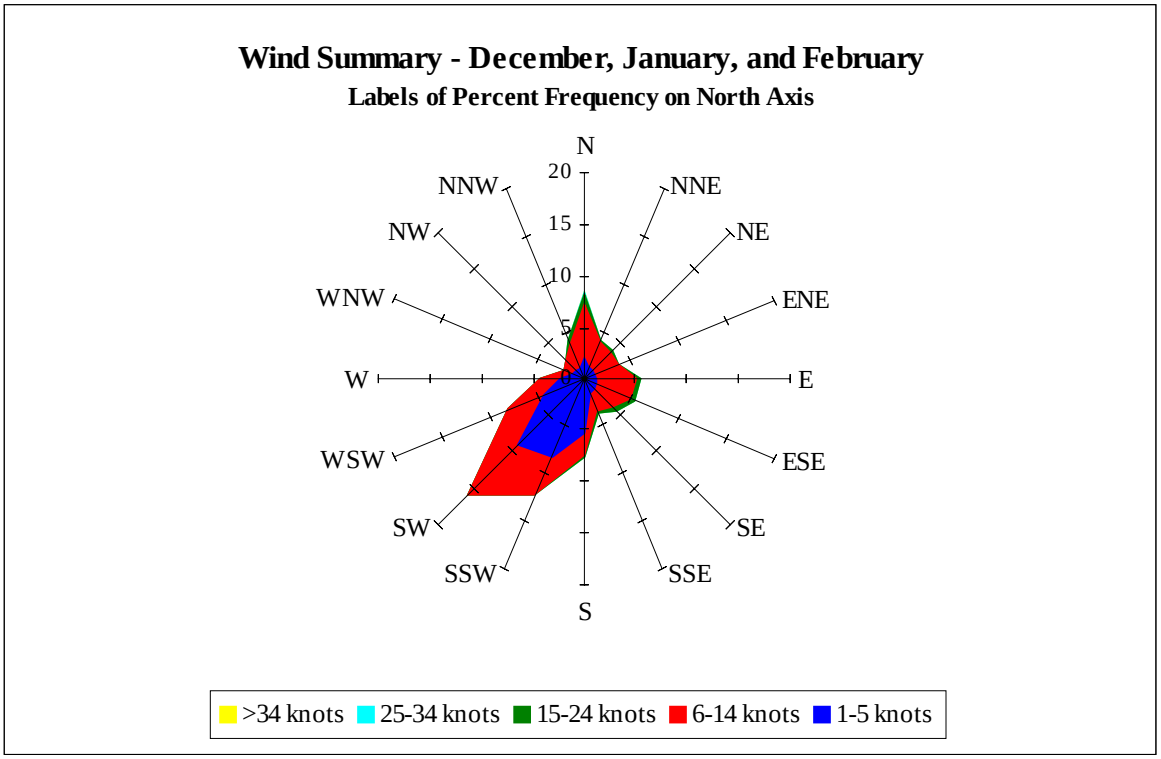
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

No Solar Radiation
Data Available

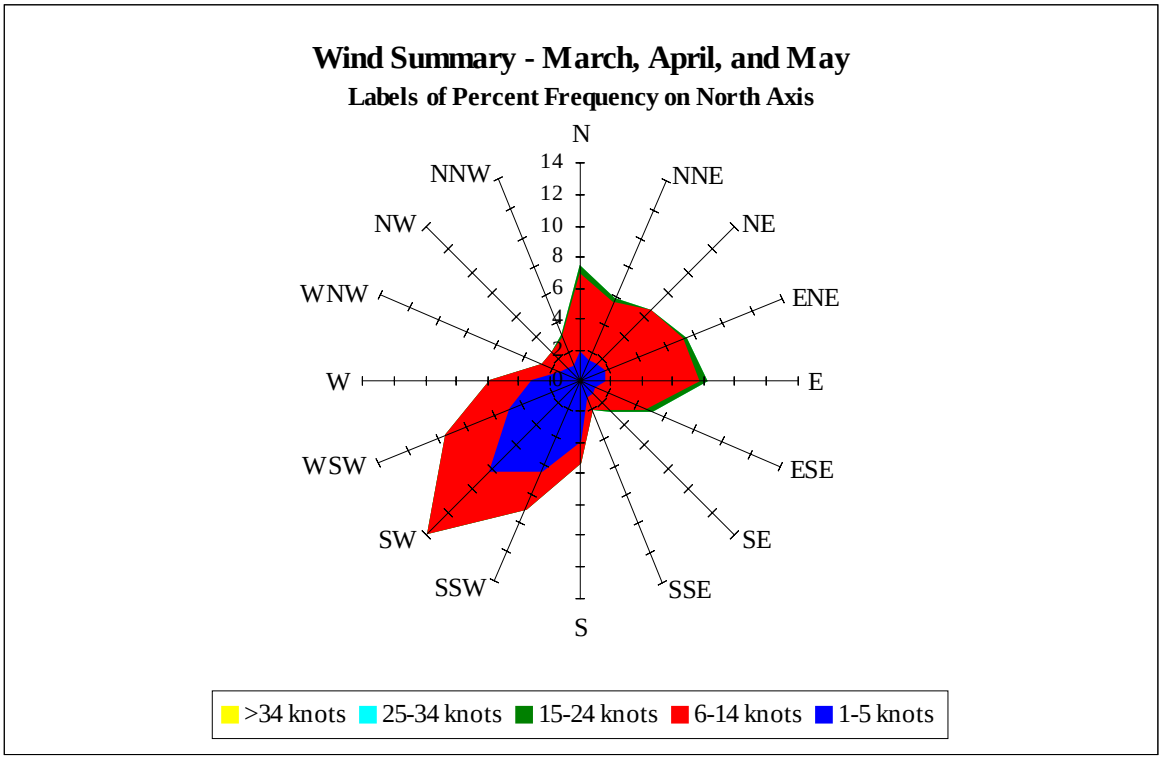
Average Annual Solar Heat and Illumination – Nearest Available Site

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

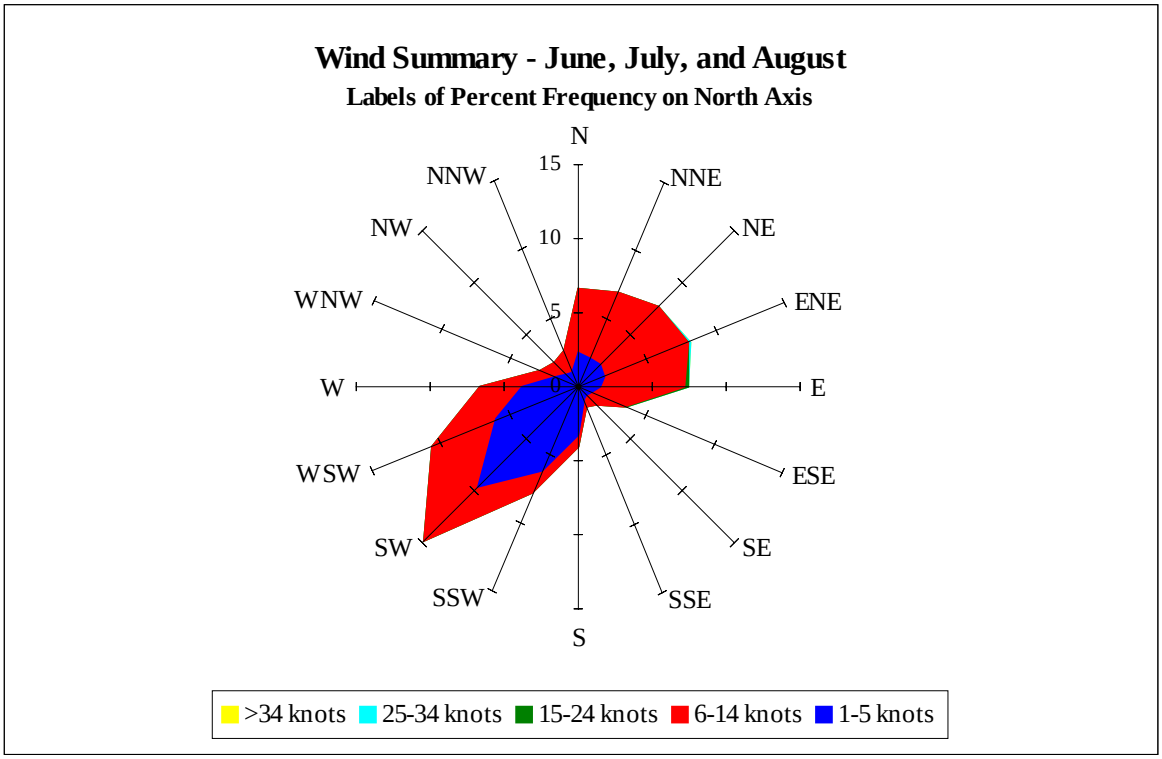




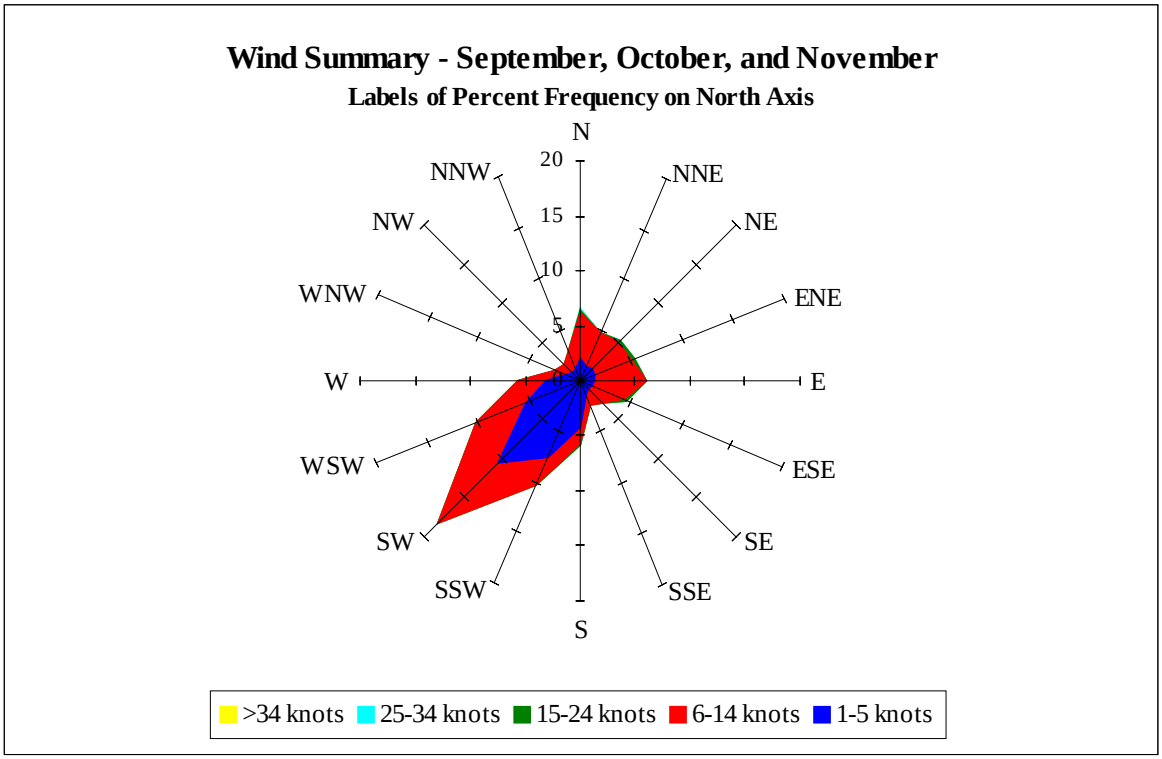
Percent Calm = 4.80



Percent Calm = 4.16



Percent Calm = 4.96



Percent Calm = 5.07