

HANSCOM AFB/BEDFORD MA

Latitude = 42.47 N

WMO No. 744900

Longitude = 71.28 W

Elevation = 135 feet

Period of Record = 1967 to 1996

Average Pressure = 29.82 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	92	76	112	11.2	W
0.4% Occurrence	91	76	109	11.6	W
1.0% Occurrence	88	74	103	11.3	WSW
2.0% Occurrence	86	72	98	10.3	W
Mean Daily Range	18	-	-	-	-
97.5% Occurrence	13	11	7	8.3	NNW
99.0% Occurrence	7	5	5	6.7	NW
99.6% Occurrence	2	1	4	6.6	NW
Median of Extreme Lows	-1	-2	3	6.5	WNW
	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	78	87	127	9.9	W
0.4% Occurrence	78	88	129	10.1	W
1.0% Occurrence	76	85	120	10.2	SW
2.0% Occurrence	74	82	112	9.9	WSW
	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	125	81	0.83	9.1	SW
0.4% Occurrence	133	87	0.88	11.8	SSW
1.0% Occurrence	124	83	0.82	10.7	W
2.0% Occurrence	117	81	0.77	11.3	SW
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		11	331	179	615

Other Site Data

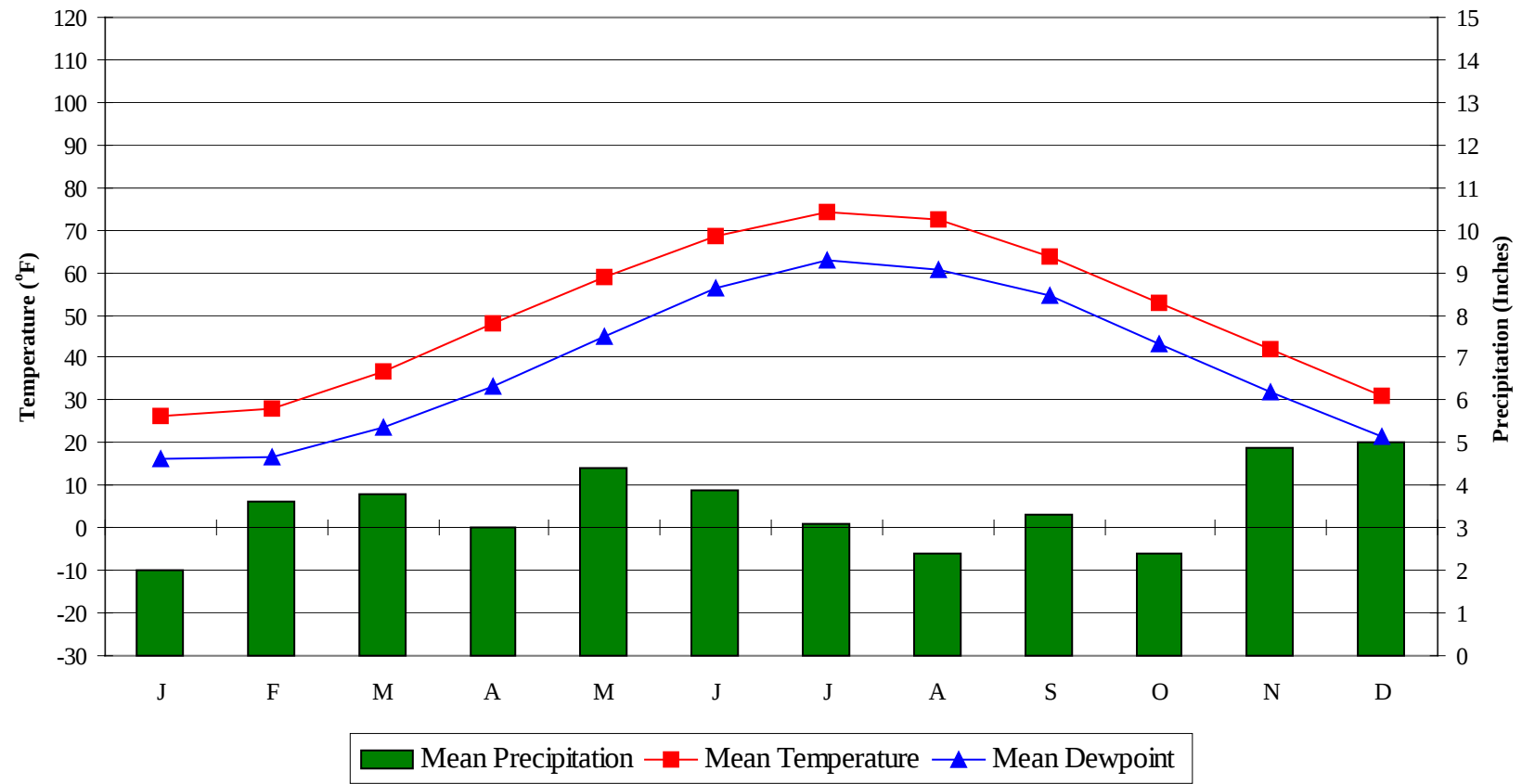
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
8	2.5	110	0.7 + 0.4
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
53.3	54	34	41

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

HANSCOM AFB/BEDFORD MA

WMO No. 744900

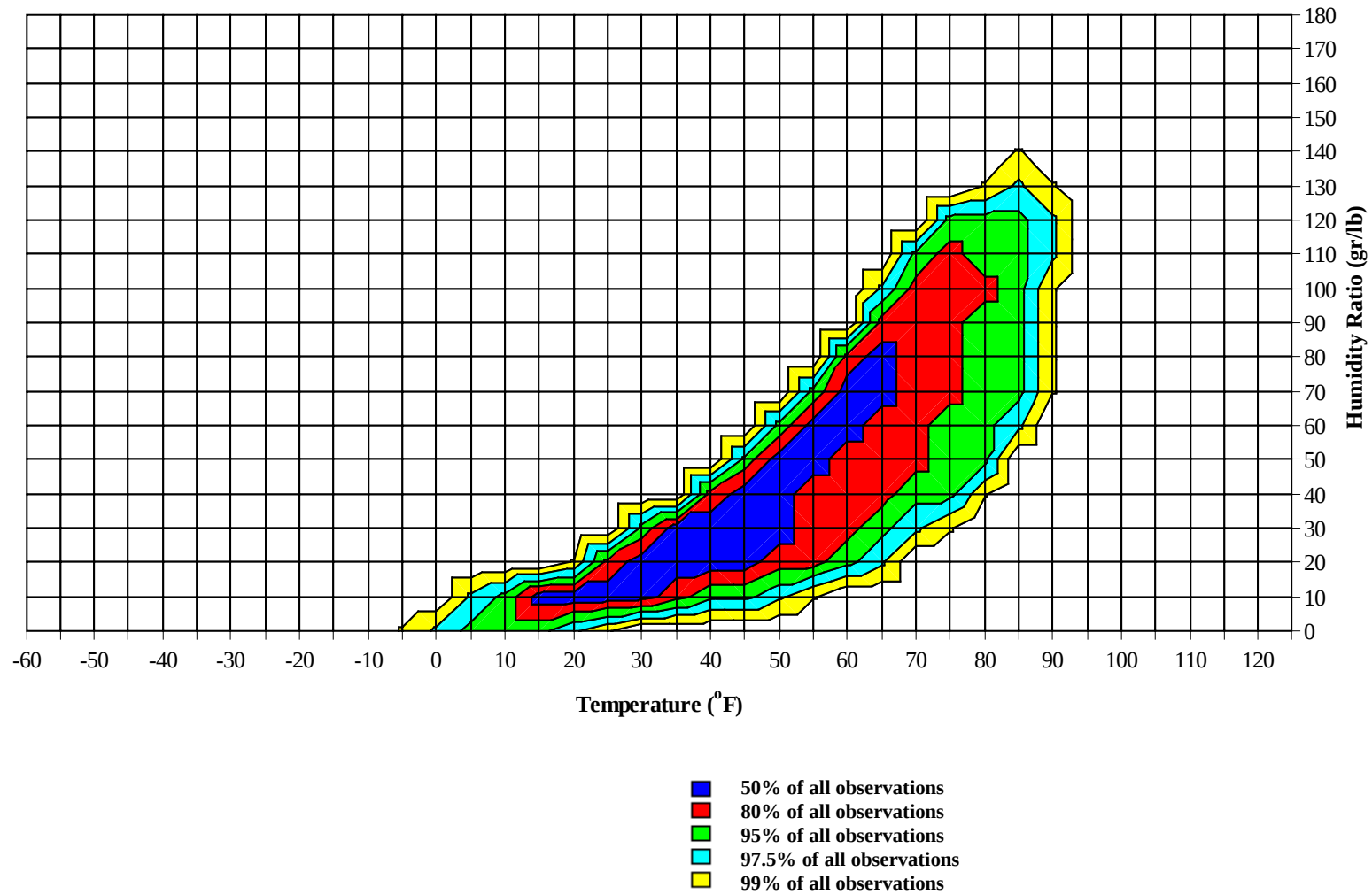
Average Annual Climate



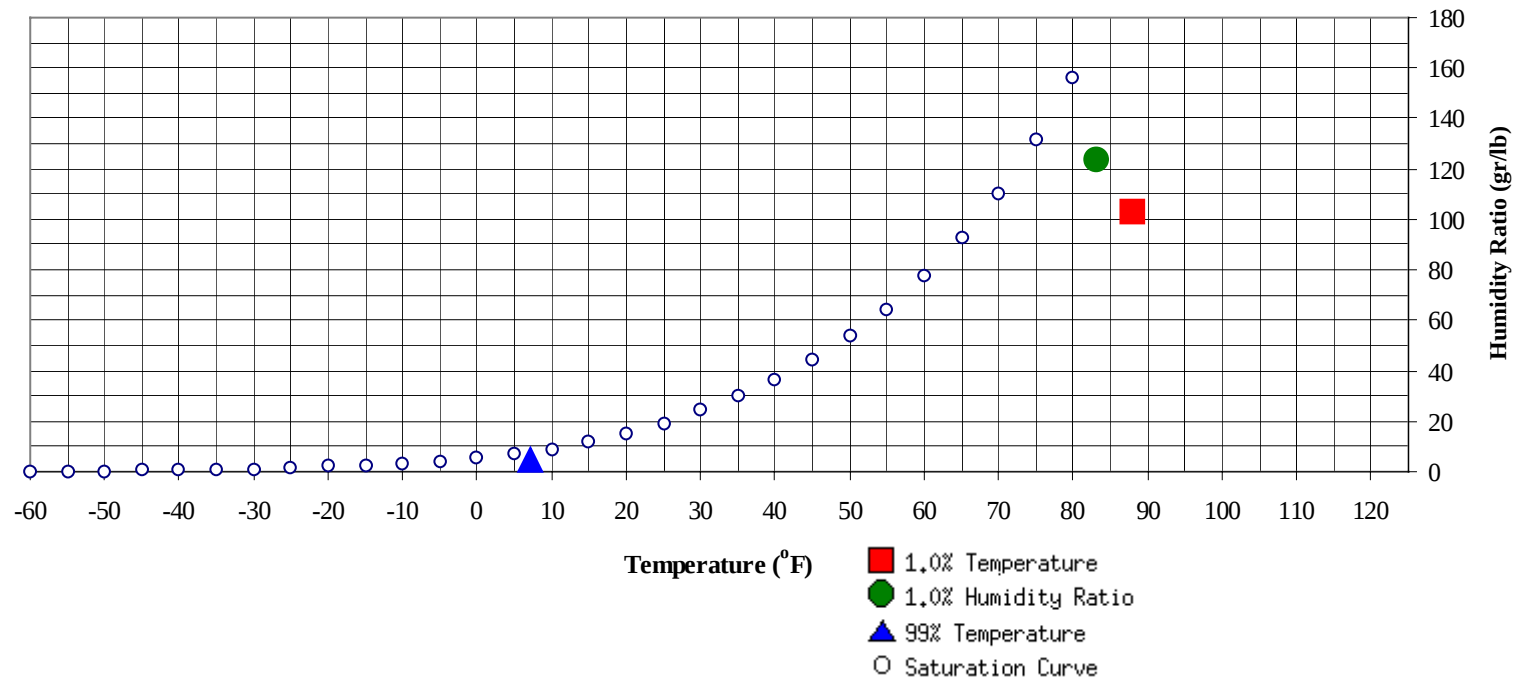
HANSCOM AFB/BEDFORD MA

WMO No. 744900

Long Term Psychrometric Summary



Psychrometric Summary of Peak Design Values



	(°F)	MCHR (gr/lb)	Enthalpy (btu/lb)	1.0% Humidity Ratio	(gr/lb)	MCDB (°F)	MCWB (°F)	MC Dewpt (°F)	Enthalpy (btu/lb)
99% Dry Bulb	7	4.8	2.4		123.9	83.1	75.9	73.1	39.4

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	88	103.2	73.7	37.3

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															
90 / 94															
85 / 89															
80 / 84												0		0	61.7
75 / 79												1	0	1	62.7
70 / 74												2	0	2	58.5
65 / 69	0	0	0	0	61.0		0		0	50.0	0	3	1	4	54.8
60 / 64	0	2	1	3	57.6		2	0	2	52.5	0	7	3	9	51.3
55 / 59	0	3	2	5	51.8	0	3	2	5	50.0	2	12	6	20	47.6
50 / 54	2	6	4	11	45.9	2	6	4	11	45.2	3	19	12	34	44.2
45 / 49	3	12	5	20	41.9	3	12	6	22	41.4	6	34	22	62	40.1
40 / 44	9	26	15	50	37.8	8	25	17	50	37.2	20	46	39	104	36.7
35 / 39	23	41	32	96	33.7	20	33	29	81	32.9	48	52	57	157	32.7
30 / 34	37	40	43	120	29.2	34	45	42	120	28.8	65	42	57	164	28.8
25 / 29	31	40	43	114	23.9	37	40	48	125	23.8	47	19	31	96	23.9
20 / 24	28	28	34	90	19.3	30	25	32	88	19.1	26	7	12	45	19.1
15 / 19	31	26	29	85	15.0	34	18	20	71	14.7	17	3	6	27	14.9
10 / 14	37	16	18	70	10.3	24	9	14	48	10.2	9	1	3	13	10.3
5 / 9	21	7	14	42	5.5	20	4	7	31	5.5	5	0	1	6	5.4
0 / 4	14	2	4	21	0.9	8	1	3	11	0.9	0			0	2.0
-5 / -1	9	1	3	13	-3.4	3	1	1	5	-3.3					
-10 / -6	5	0	1	5	-6.7	2		0	2	-7.9					
-15 / -11						2		0	2	-11.8					

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.

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												1	0	1	82.5
90 / 94		0		0	75.0		2	0	2	70.3		7	1	7	74.7
85 / 89		1	0	1	73.2		6	1	7	69.3	0	24	5	28	71.2
80 / 84		2	0	2	66.3	0	12	4	16	66.2	1	41	19	61	68.5
75 / 79	0	4	1	5	63.2	1	21	8	30	63.1	8	47	30	86	65.8
70 / 74	0	9	3	12	58.3	4	33	16	53	59.7	27	46	44	117	63.2
65 / 69	1	16	7	24	54.9	12	44	30	86	56.5	50	34	51	135	60.7
60 / 64	7	29	16	52	51.5	24	48	38	110	53.4	58	21	43	122	57.8
55 / 59	12	38	25	75	48.0	43	39	51	133	50.7	54	15	31	100	54.5
50 / 54	19	49	37	105	44.5	60	27	48	136	48.0	28	5	13	46	50.6
45 / 49	41	43	49	133	41.1	58	12	35	105	44.0	9	1	4	14	45.7
40 / 44	57	34	54	145	37.7	29	5	15	49	40.3	3	0	0	3	40.9
35 / 39	50	13	33	96	34.0	13	0	2	15	35.0					
30 / 34	35	3	13	51	29.4	3		0	3	31.5					
25 / 29	15	0	2	17	24.3										
20 / 24	3	0	0	3	20.2										
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															

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.

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	79.5										
95 / 99		4	0	4	78.4		1		1	75.1					
90 / 94		17	4	21	76.6		11	2	13	75.6		1		1	76.1
85 / 89	0	40	14	53	73.5	0	34	9	43	73.4		7	1	8	73.1
80 / 84	5	61	33	99	70.8	3	60	23	86	70.4	0	21	4	24	70.6
75 / 79	23	62	54	139	68.5	20	61	50	132	68.1	4	39	15	58	67.1
70 / 74	62	39	63	164	66.4	55	47	61	163	65.8	18	48	32	98	64.2
65 / 69	70	17	46	133	63.2	64	23	55	142	62.4	30	52	44	125	60.9
60 / 64	51	7	25	84	59.9	55	7	31	93	58.6	47	43	55	145	57.7
55 / 59	24	2	8	34	55.4	31	3	12	46	53.9	54	24	45	123	54.1
50 / 54	9	0	1	10	50.8	12	0	4	16	49.7	36	5	25	66	50.1
45 / 49	1			1	46.5	7		1	8	45.3	26	1	12	38	45.2
40 / 44						1		0	1	42.4	16	0	7	23	41.4
35 / 39						0			0	38.0	8		1	9	36.4
30 / 34											1		0	1	32.0
25 / 29											0			0	
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															

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.

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															
95 / 99															
90 / 94															
85 / 89		0		0	65.5										
80 / 84		3	0	3	66.9		0		0	62.5					
75 / 79	0	10	1	11	65.2		1		1	63.5					
70 / 74	0	21	7	28	63.5		4	0	4	62.1					
65 / 69	5	33	15	54	60.0	0	6	4	10	60.0		1		1	55.9
60 / 64	23	43	32	97	56.5	5	12	7	24	55.6	0	2	1	3	57.7
55 / 59	33	49	42	124	51.9	11	19	12	43	51.5	2	6	2	10	50.2
50 / 54	39	46	42	127	47.1	16	37	24	77	47.2	5	12	5	22	47.0
45 / 49	41	25	46	112	43.0	27	50	28	105	42.6	8	17	12	37	41.9
40 / 44	34	13	33	80	39.1	29	45	42	116	38.0	17	27	25	70	37.6
35 / 39	37	3	19	59	35.0	48	34	51	133	33.5	29	46	36	110	33.4
30 / 34	23	1	9	32	30.9	43	22	39	105	29.1	43	50	51	144	29.0
25 / 29	11	0	3	14	26.5	34	8	21	63	24.8	45	43	49	136	24.4
20 / 24	3		0	3	21.6	16	2	8	26	20.2	29	22	28	78	19.5
15 / 19						8	1	2	11	16.4	32	14	22	67	15.3
10 / 14						2	0	1	2	11.6	19	6	11	35	11.1
5 / 9						0		0	0	7.0	14	2	4	20	5.9
0 / 4						0			0	2.5	5	1	2	7	1.2
-5 / -1											2	0	1	2	-3.2
-10 / -6											0			0	
-15 / -11															

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.

HANSCOM AFB/BEDFORD MA

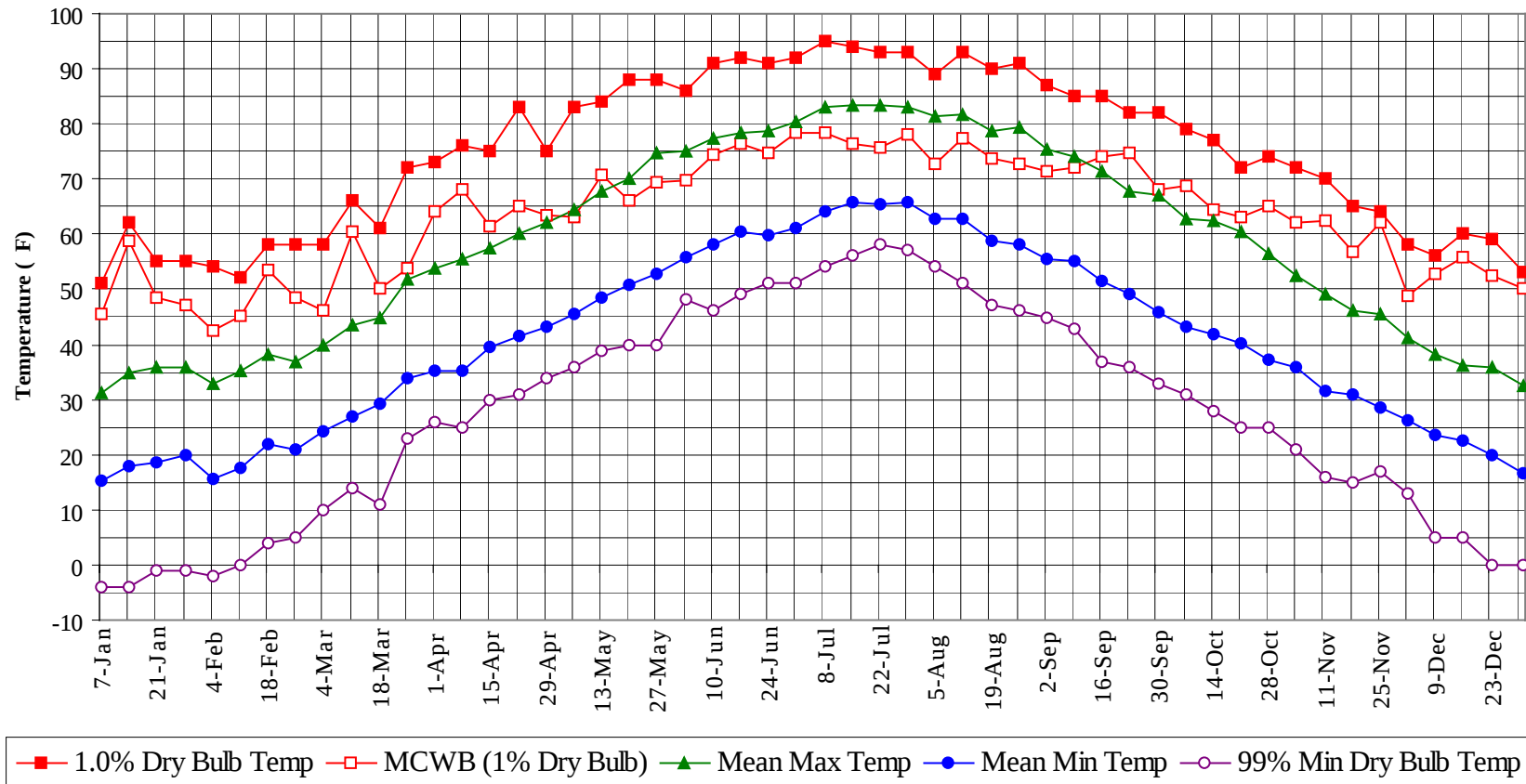
WMO No. 744900

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

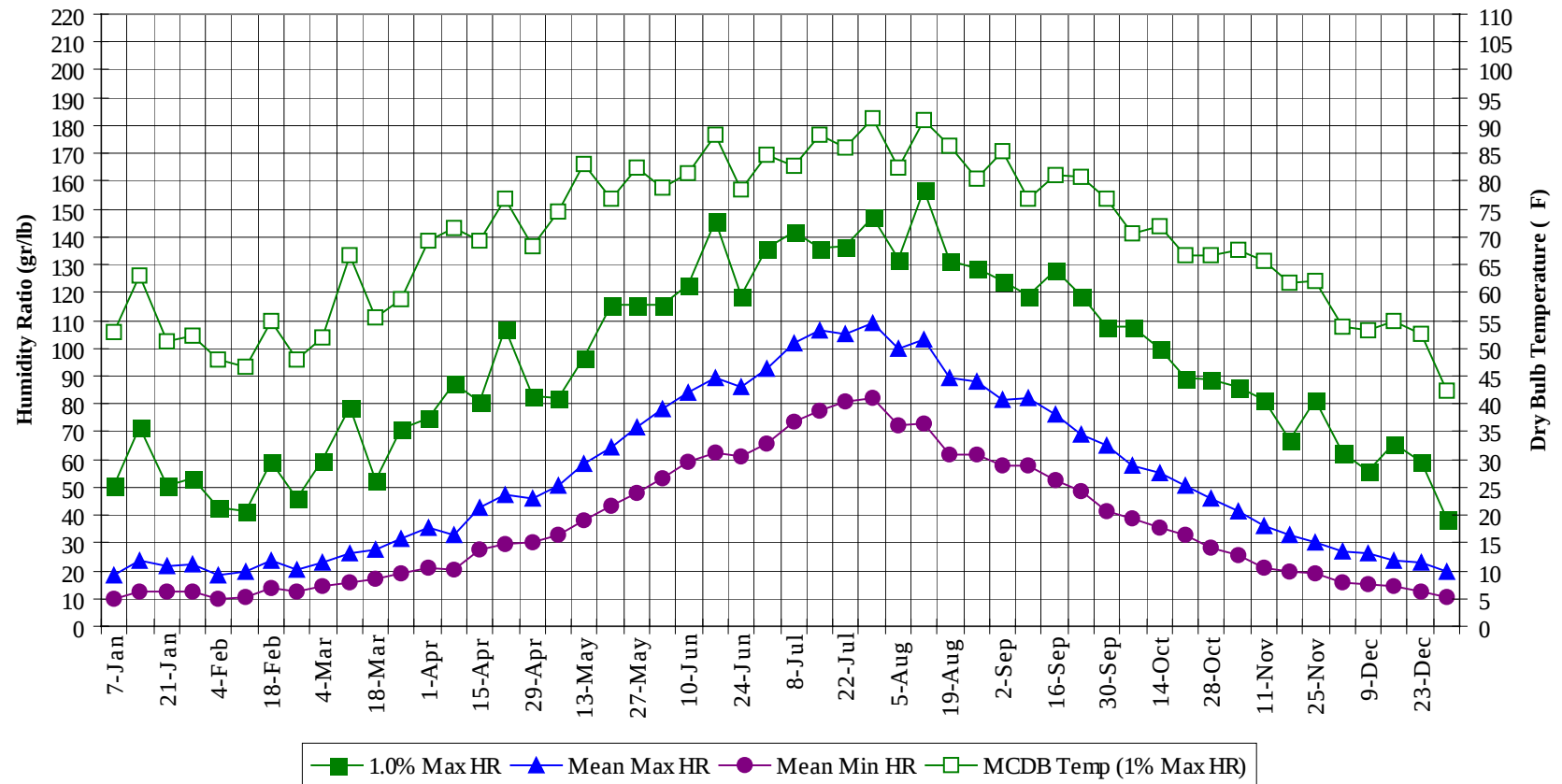
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
100 / 104		0		0	79.5
95 / 99		6	0	6	78.5
90 / 94		38	7	45	75.7
85 / 89	1	115	30	146	72.8
80 / 84	10	206	82	298	69.8
75 / 79	63	254	159	476	67.2
70 / 74	182	256	224	661	64.3
65 / 69	256	233	251	740	60.6
60 / 64	291	224	250	765	56.5
55 / 59	284	213	236	733	52.0
50 / 54	243	211	214	668	47.2
45 / 49	236	204	219	659	42.4
40 / 44	222	217	246	685	38.0
35 / 39	263	215	261	739	33.5
30 / 34	264	196	257	718	29.1
25 / 29	198	144	201	543	24.1
20 / 24	121	81	116	318	19.3
15 / 19	108	59	81	248	15.0
10 / 14	80	30	46	156	10.5
5 / 9	54	12	26	92	5.6
0 / 4	24	4	8	37	0.9
-5 / -1	13	2	4	18	-3.3
-10 / -6	6	0	1	7	-7.0
-15 / -11	1		0	1	-11.8

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.

Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary



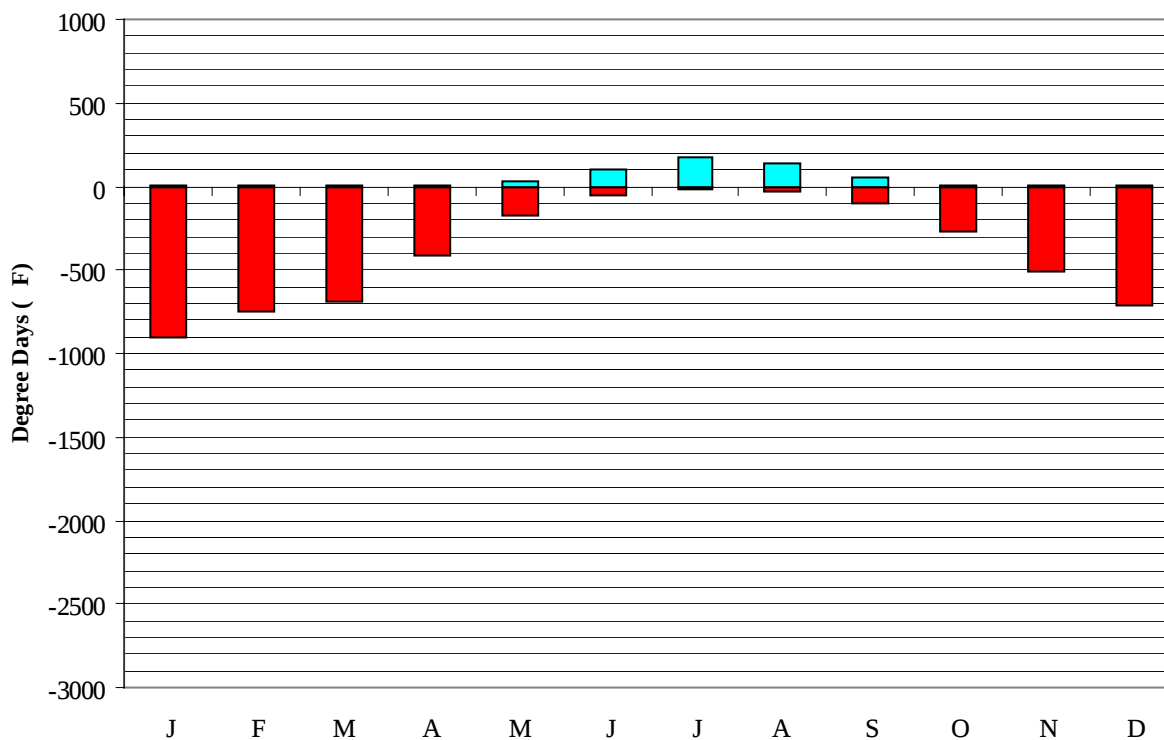
HANSCOM AFB/BEDFORD MA

WMO No. 744900

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	51.0	45.5	31.3	15.3	-4.0	50.4	53.0	18.7	9.9
14-Jan	62.0	58.7	34.9	18.0	-4.0	71.4	63.1	23.4	12.8
21-Jan	55.0	48.6	35.8	18.7	-1.0	50.4	51.3	21.9	12.3
28-Jan	55.0	47.0	35.8	19.9	-1.0	53.2	52.3	22.3	12.5
4-Feb	54.0	42.5	32.9	15.5	-2.0	42.7	48.0	18.1	9.8
11-Feb	52.0	45.3	35.0	17.7	0.0	41.3	46.7	19.7	10.2
18-Feb	58.0	53.5	38.2	21.8	4.0	58.8	55.0	23.7	13.6
25-Feb	58.0	48.5	36.9	20.8	5.0	46.2	48.0	20.4	12.2
4-Mar	58.0	46.3	39.8	24.1	10.0	59.5	52.0	22.8	14.2
11-Mar	66.0	60.3	43.4	27.0	14.0	79.1	66.5	26.5	16.0
18-Mar	61.0	50.3	44.8	29.2	11.0	52.5	55.3	27.3	17.2
25-Mar	72.0	53.7	51.7	33.9	23.0	70.7	58.8	31.4	19.3
1-Apr	73.0	64.0	53.8	35.2	26.0	74.9	69.3	35.7	21.0
8-Apr	76.0	68.0	55.4	35.3	25.0	87.5	71.7	32.8	20.2
15-Apr	75.0	61.6	57.5	39.6	30.0	80.5	69.1	42.5	27.7
22-Apr	83.0	65.0	60.2	41.7	31.0	107.1	77.0	47.2	29.3
29-Apr	75.0	63.6	62.1	43.1	34.0	82.6	68.3	46.2	30.4
6-May	83.0	63.0	64.4	45.5	36.0	81.9	74.4	50.7	33.1
13-May	84.0	70.7	67.6	48.4	39.0	96.6	83.0	58.4	38.4
20-May	88.0	66.0	70.1	50.8	40.0	115.5	77.0	64.6	43.2
27-May	88.0	69.4	74.7	52.9	40.0	115.5	82.4	71.6	47.8
3-Jun	86.0	69.8	75.1	55.8	48.0	115.5	78.7	78.1	53.4
10-Jun	91.0	74.4	77.4	58.1	46.0	122.5	81.5	84.2	59.2
17-Jun	92.0	76.3	78.2	60.4	49.0	145.6	88.2	89.5	62.4
24-Jun	91.0	74.8	78.7	59.6	51.0	119.0	78.4	86.1	61.4
1-Jul	92.0	78.3	80.3	61.1	51.0	135.8	84.9	92.9	65.4
8-Jul	95.0	78.5	83.1	64.1	54.0	142.1	82.7	101.8	73.5
15-Jul	94.0	76.5	83.5	65.7	56.0	135.8	88.3	106.6	77.7
22-Jul	93.0	75.9	83.4	65.4	58.0	136.5	86.0	105.4	80.6
29-Jul	93.0	78.2	82.9	65.7	57.0	147.0	91.3	108.8	81.9
5-Aug	89.0	72.8	81.4	62.7	54.0	132.3	82.4	99.7	72.0
12-Aug	93.0	77.3	81.7	62.7	51.0	156.8	91.0	103.0	72.6
19-Aug	90.0	73.9	78.8	58.7	47.0	131.6	86.5	89.1	61.9
26-Aug	91.0	72.7	79.2	58.2	46.0	128.8	80.4	88.0	61.9
2-Sep	87.0	71.3	75.4	55.5	45.0	123.9	85.3	81.1	57.5
9-Sep	85.0	72.2	74.0	55.1	43.0	119.0	76.8	81.8	57.8
16-Sep	85.0	74.2	71.4	51.4	37.0	128.1	81.0	76.1	52.5
23-Sep	82.0	74.7	67.9	49.1	36.0	119.0	80.8	68.7	48.5
30-Sep	82.0	68.2	67.0	45.8	33.0	107.8	77.0	65.0	41.2
7-Oct	79.0	68.7	62.9	43.1	31.0	107.8	70.6	57.9	38.8
14-Oct	77.0	64.3	62.5	41.8	28.0	100.1	71.8	55.4	35.4
21-Oct	72.0	63.2	60.4	40.1	25.0	89.6	66.6	50.6	33.1
28-Oct	74.0	65.0	56.5	37.3	25.0	88.9	66.5	46.1	28.4
4-Nov	72.0	62.0	52.5	36.0	21.0	86.1	67.7	41.4	25.6
11-Nov	70.0	62.5	49.2	31.7	16.0	81.2	65.8	36.3	21.2
18-Nov	65.0	56.8	46.2	30.9	15.0	67.2	61.7	32.9	19.7
25-Nov	64.0	62.0	45.4	28.7	17.0	81.2	61.9	30.4	18.7
2-Dec	58.0	48.7	41.1	26.1	13.0	62.3	53.8	26.7	15.5
9-Dec	56.0	52.7	38.2	23.7	5.0	56.0	53.3	26.1	15.0
16-Dec	60.0	55.8	36.2	22.5	5.0	65.8	55.0	23.3	14.3
23-Dec	59.0	52.6	35.7	20.0	0.0	58.8	52.7	22.7	12.5
31-Dec	53.0	50.0	32.6	16.5	0.0	38.5	42.5	19.4	10.4

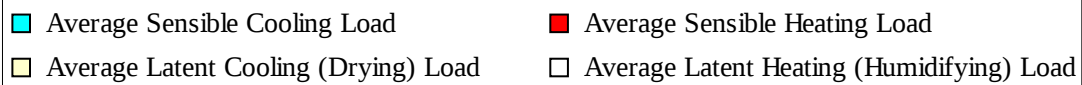
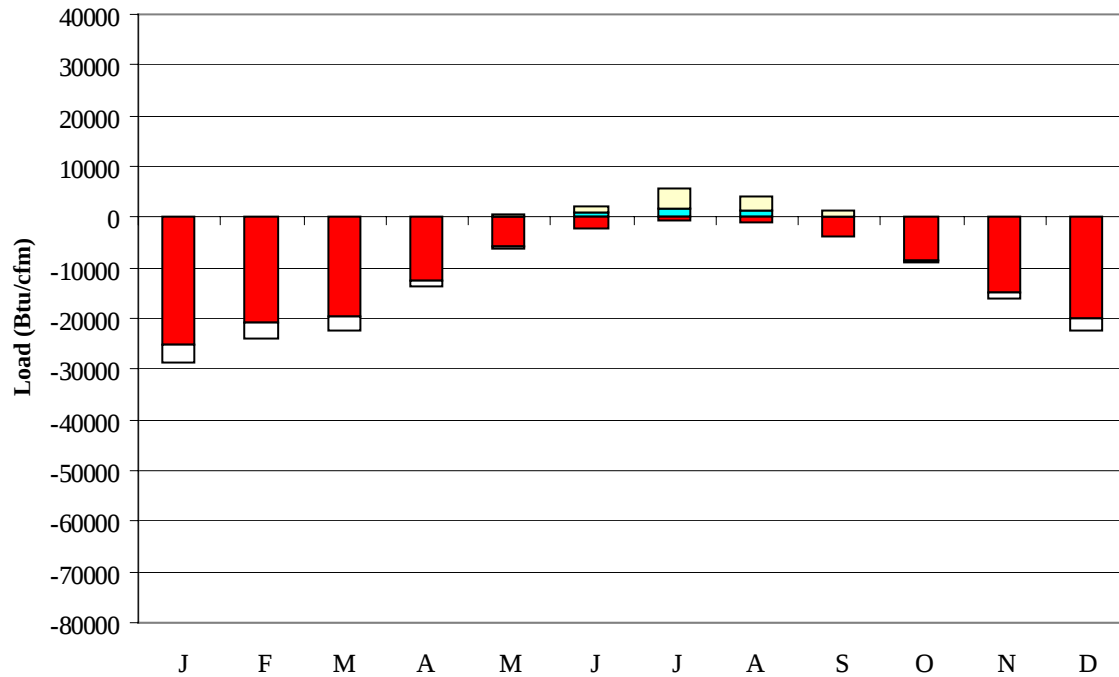
Degree Days, Heating and Cooling (Base 65°F)



■ Mean Cooling Degree Days
 ■ Mean Heating Degree Days

	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	903
FEB	0	743
MAR	1	690
APR	6	413
MAY	33	179
JUN	101	56
JUL	169	15
AUG	143	25
SEP	51	101
OCT	11	270
NOV	2	507
DEC	0	707
ANN	517	4609

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	0	-25246	0	-3351
FEB	0	-20820	0	-2995
MAR	3	-19770	4	-2702
APR	31	-12500	65	-1287
MAY	197	-5983	213	-210
JUN	932	-2241	1285	-12
JUL	1876	-751	3660	-4
AUG	1253	-1105	2668	-13
SEP	274	-3655	882	-18
OCT	31	-8455	132	-403
NOV	2	-14792	19	-1418
DEC	0	-19943	4	-2521
ANN	4599	-135261	8932	-14934

Average Annual Solar Radiation – Nearest Available Site

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

City: BOSTON
 State: MA
 WBAN No: 14739
 Lat(N): 42.37
 Long(W): 71.03
 Elev(ft): 16

Stn Type: Primary
 SHADING GEOMETRY IN DIMENSIONLESS UNITS

Window: 1
 Overhang: 0.602
 Vert Gap: 0.329

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	590	850	1180	1490	1780	1940	1920	1700	1350	950	600	480	1240
	Std Dev	42	80	91	122	129	134	120	99	80	63	48	37	33
	Minimum	480	680	1000	1280	1530	1670	1660	1510	1230	850	480	390	1160
	Maximum	700	1060	1390	1710	2040	2230	2090	1890	1500	1100	690	560	1300
	Diffuse	280	400	550	700	830	900	870	760	590	420	300	240	570
Clear Day	Global	770	1120	1610	2120	2460	2580	2490	2190	1740	1220	820	660	1650
NORTH	Global	180	250	340	430	540	620	580	480	370	270	190	150	370
	Diffuse	180	250	340	420	500	540	530	460	370	270	190	150	350
Clear Day	Global	170	240	320	430	570	670	620	470	350	260	180	150	370
EAST	Global	410	560	740	890	1000	1080	1060	990	830	620	400	340	740
	Diffuse	220	310	420	520	600	640	630	570	460	340	230	190	430
Clear Day	Global	600	810	1070	1300	1410	1450	1410	1300	1100	850	610	520	1040
SOUTH	Global	1040	1150	1110	980	880	840	880	990	1120	1140	930	900	1000
	Diffuse	330	420	490	540	580	600	600	580	520	430	320	290	480
Clear Day	Global	1740	1870	1790	1480	1170	1020	1070	1310	1620	1780	1710	1640	1510
WEST	Global	410	570	730	870	990	1050	1060	960	810	610	400	340	730
	Diffuse	220	310	420	520	600	650	640	580	460	340	230	190	430
Clear Day	Global	600	810	1070	1300	1410	1450	1410	1300	1100	850	610	520	1040

Average Annual Solar Heat and Illumination – Nearest Available Site

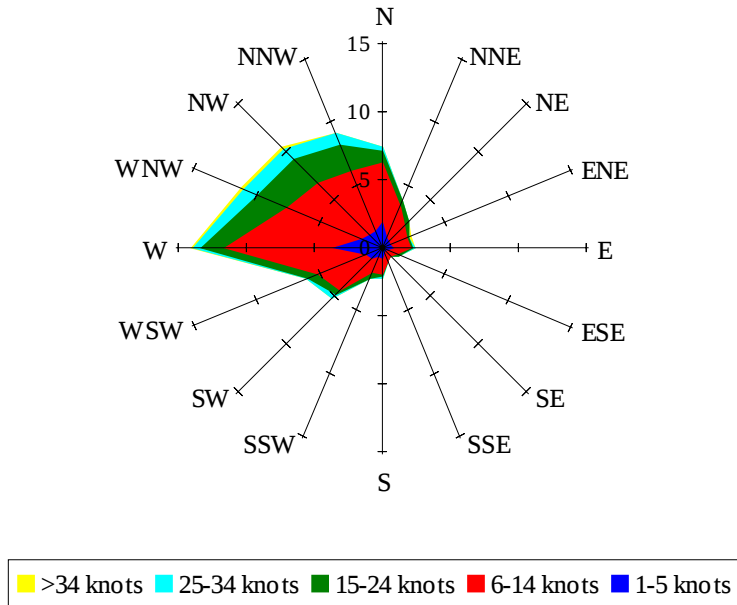
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

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	370	580	830	1070	1290	1410	1390	1220	960	660	390	300	870
NORTH	Unshaded	130	170	240	290	360	410	390	330	260	190	130	110	250
	Shaded	110	150	200	260	310	350	340	290	230	160	110	92	220
EAST	Unshaded	280	390	520	640	710	770	750	700	590	440	280	230	530
	Shaded	250	340	440	530	590	630	620	580	490	380	240	200	440
SOUTH	Unshaded	780	850	780	650	560	520	550	640	760	830	700	680	690
	Shaded	760	780	600	410	350	360	360	380	530	720	670	660	550
WEST	Unshaded	280	390	520	620	700	750	750	680	570	430	270	230	520
	Shaded	250	340	440	520	580	610	620	570	490	370	240	200	440

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	43	71	76	56	18	54	86	99	90	61
	M.Cloudy	24	44	48	35	11	34	56	70	64	42
NORTH	M.Clear	10	14	15	12	6	14	17	17	17	15
	M.Cloudy	10	15	16	13	5	13	18	19	19	14
EAST	M.Clear	72	49	15	12	6	79	67	23	17	15
	M.Cloudy	26	28	16	13	5	36	40	23	19	14
SOUTH	M.Clear	46	78	83	60	19	13	39	52	44	19
	M.Cloudy	19	38	42	30	8	13	28	38	33	16
WEST	M.Clear	10	14	31	68	52	13	17	17	58	77
	M.Cloudy	10	15	22	32	16	13	18	19	40	42
M.Clear	(% hrs)	37	34	32	32	35	39	39	32	30	32

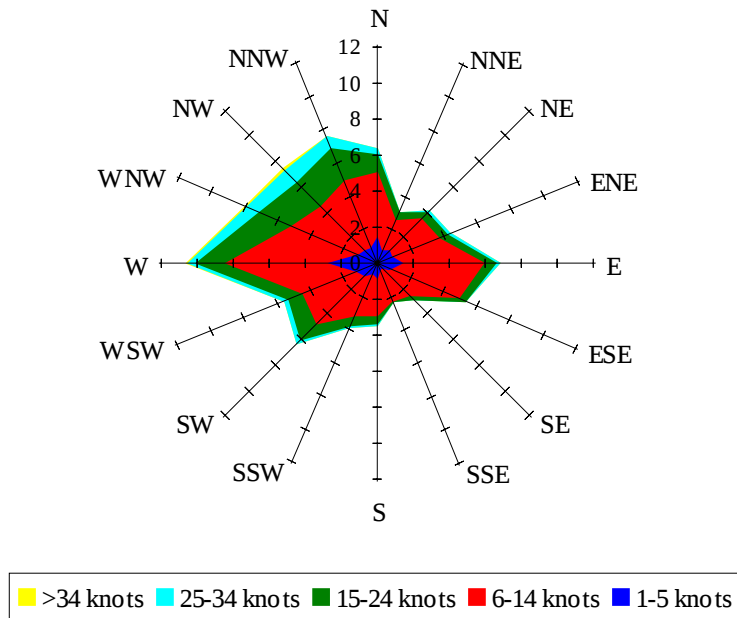
		Sept					Dec				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	32	67	81	70	38	15	37	39	19	0
	M.Cloudy	19	42	54	46	24	9	22	23	12	0
NORTH	M.Clear	9	14	16	15	11	5	9	10	6	0
	M.Cloudy	8	15	17	16	10	4	9	9	5	0
EAST	M.Clear	66	63	20	15	11	38	31	10	6	0
	M.Cloudy	24	33	19	16	10	11	15	9	5	0
SOUTH	M.Clear	27	62	78	65	32	39	78	80	47	0
	M.Cloudy	13	32	45	37	17	11	28	29	15	0
WEST	M.Clear	9	14	16	57	67	5	9	25	41	0
	M.Cloudy	8	15	17	34	29	4	9	14	13	0
M.Clear	(% hrs)	44	46	40	40	41	35	35	35	35	37

Wind Summary - December, January, and February **Labels of Percent Frequency on North Axis**



Percent Calm = 18.93

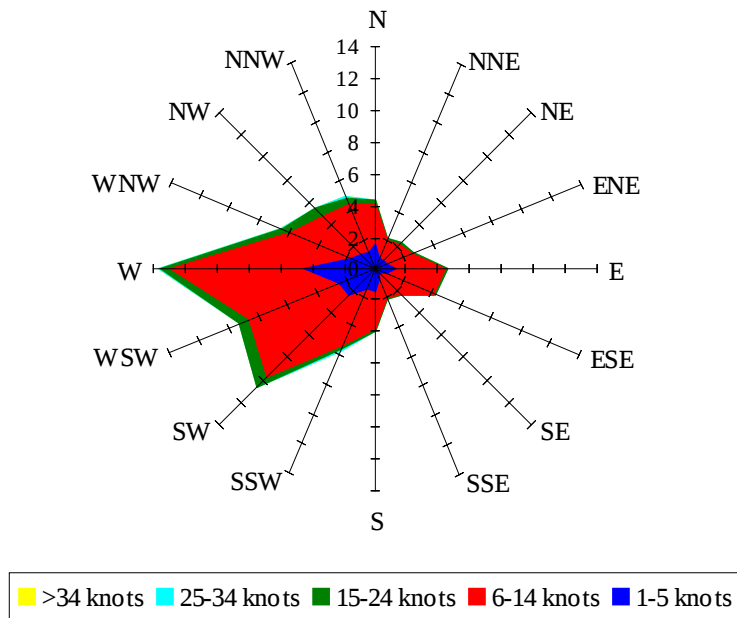
Wind Summary - March, April, and May **Labels of Percent Frequency on North Axis**



Percent Calm = 13.12

Wind Summary - June, July, and August

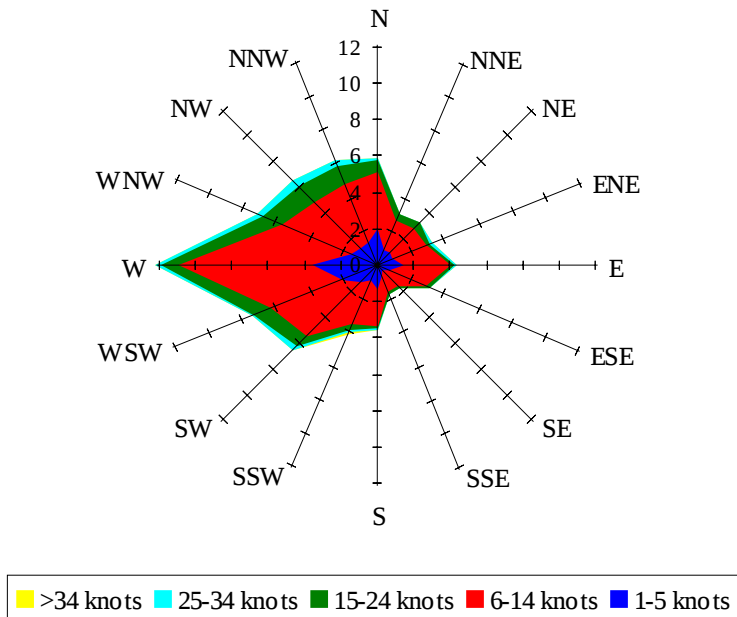
Labels of Percent Frequency on North Axis



Percent Calm = 15.94

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 21.55