

CHICOPEE/WESTOVER ARB MA

Latitude = 42.20 N

WMO No. 744910

Longitude = 72.53 W

Elevation = 246 feet

Period of Record = 1967 to 1996

Average Pressure = 29.71 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	75	96	10.4	WSW
0.4% Occurrence	91	73	95	9.1	W
1.0% Occurrence	88	72	93	8.3	SSW
2.0% Occurrence	85	70	88	8.2	SSW
Mean Daily Range	19	-	-	-	-
97.5% Occurrence	12	10	6	6.5	N
99.0% Occurrence	6	5	5	4.5	N
99.6% Occurrence	1	0	4	3.5	WNW
Median of Extreme Lows	-9	-10	2	1.4	NE
	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	79	91	130	8.2	S
0.4% Occurrence	76	87	118	8.3	SSW
1.0% Occurrence	74	83	112	7.3	S
2.0% Occurrence	73	82	109	6.8	S
	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	133	88	0.88	6.7	SSW
0.4% Occurrence	123	81	0.82	5.8	S
1.0% Occurrence	116	80	0.77	7.3	S
2.0% Occurrence	111	78	0.74	5.5	S
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		17	502	192	907

Other Site Data

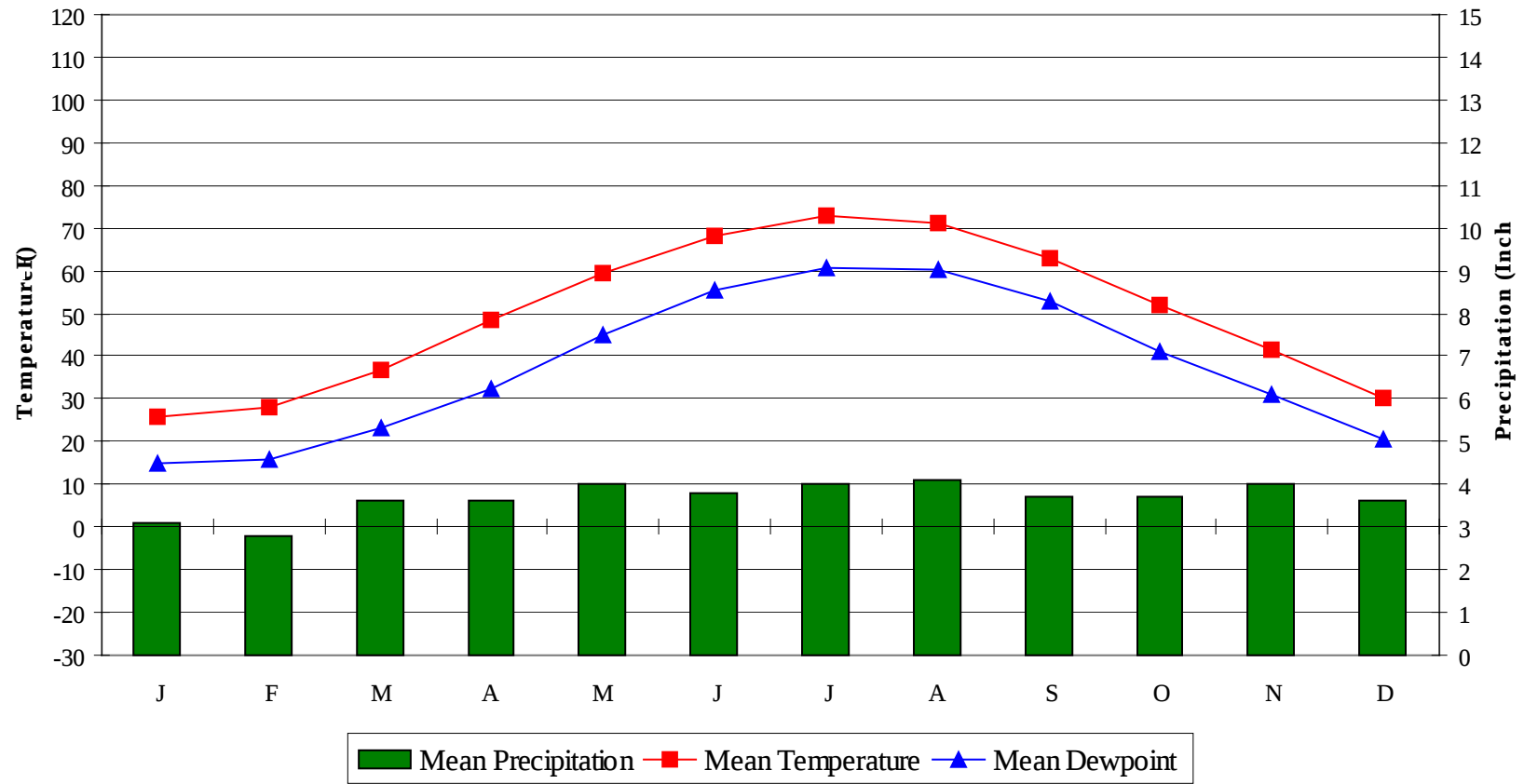
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
6	2.8	110	0.9 + 0.5
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
52.2	64	30	73

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

CHICOPEE/WESTOVER ARB MA

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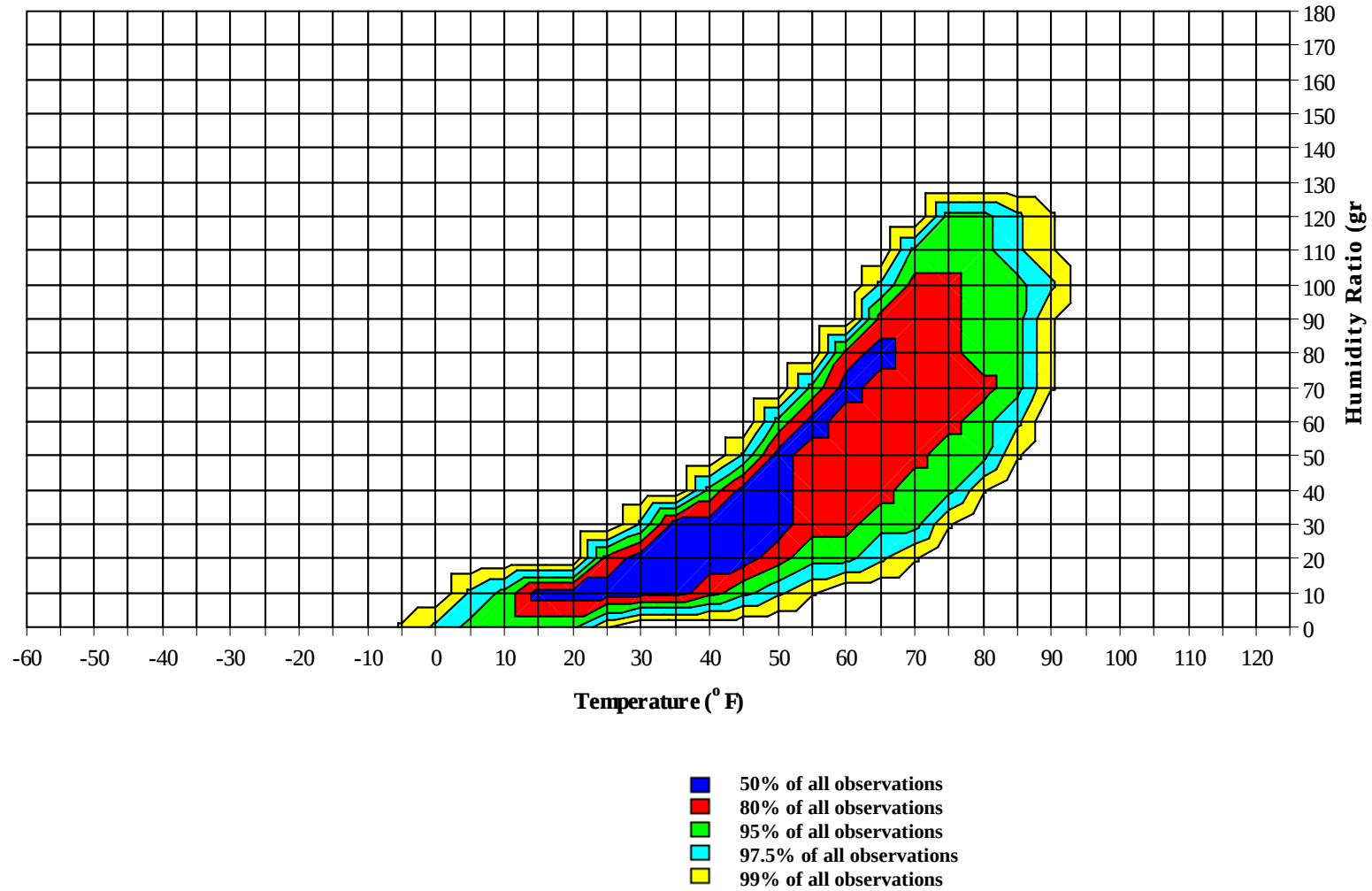
Average Annual Climate



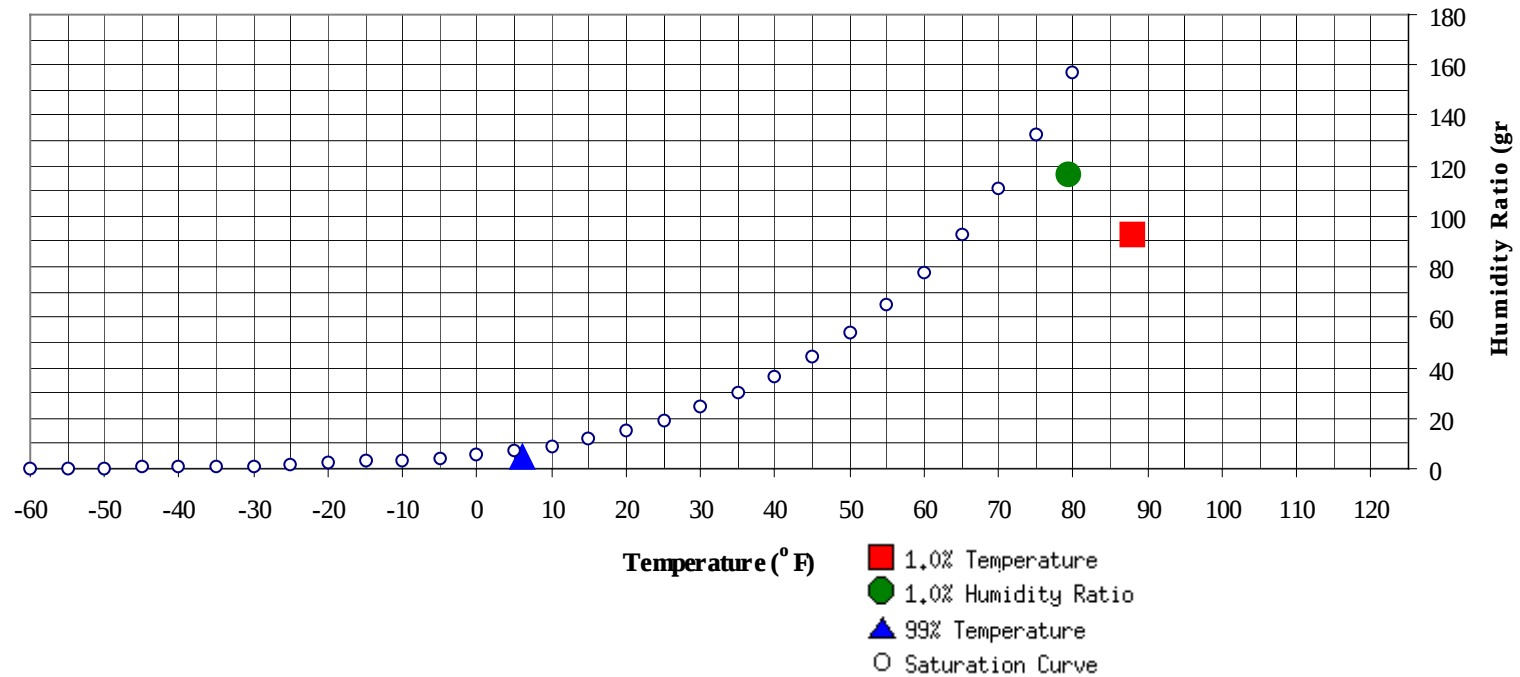
CHICOPEE/WESTOVER ARB MA

WMO No. 744910

Long Term Psychrometric Summary



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	6	4.7	2.2	Ratio	116.2	79.4	73.5	71.1	37.3

	(°F)	MCHR	MCWB	Enthalpy
		(gr/lb)	(°F)	(btu/lb)
1.0% Dry Bulb	88	92.8	71.9	35.7

CHICOPEE/WESTOVER ARB MA

WMO No. 744910

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	62.9
75 / 79												1	0	1	59.0
70 / 74							0		0	59.0		2	0	2	56.5
65 / 69							1	0	1	53.0	0	3	2	5	54.4
60 / 64		1	0	1	54.9		1	0	1	51.8	0	7	4	11	51.4
55 / 59	1	2	1	4	52.9	0	3	1	4	50.0	1	12	8	21	48.2
50 / 54	2	4	3	9	47.5	1	5	4	10	45.9	4	21	14	39	44.4
45 / 49	1	7	4	12	41.9	3	13	7	23	41.0	10	36	26	73	40.4
40 / 44	7	22	13	43	37.2	9	25	18	52	36.8	25	49	40	114	36.5
35 / 39	27	37	34	98	33.3	22	35	31	88	32.7	43	49	54	146	32.6
30 / 34	41	46	42	129	28.9	36	46	44	126	28.5	60	37	51	148	28.4
25 / 29	35	43	45	123	23.7	35	37	43	115	23.7	48	18	30	96	23.7
20 / 24	31	34	38	103	19.3	33	28	32	93	18.9	27	9	12	48	19.3
15 / 19	31	26	28	86	14.8	28	16	22	66	14.7	17	3	6	25	14.9
10 / 14	26	17	21	64	10.3	22	9	11	42	10.0	9	1	2	12	10.2
5 / 9	17	7	12	37	5.5	17	4	7	29	5.6	4	0	0	4	6.4
0 / 4	11	3	5	19	1.0	9	1	3	13	1.2	0		0	0	1.9
-5 / -1	6	1	2	9	-3.1	5	0	1	6	-3.2	0			0	-2.5
-10 / -6	5	0	0	5	-7.7	3	0		3	-6.9	0			0	-7.0
-15 / -11	2	0		2	-11.9	1			1	-11.9					
-20 / -16	1			1	-16.1	0			0	-16.9					

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.

CHICOPEE/WESTOVER ARB MA WMO No. 744910

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												0		0	75.0
95 / 99							0		0	64.0		1	0	1	73.1
90 / 94		1	0	1	65.8		2	0	2	68.8		8	2	10	72.2
85 / 89		1	0	1	65.2		6	2	8	67.2		16	5	21	70.1
80 / 84		3	1	4	61.9	0	13	5	18	65.6	1	38	16	55	67.4
75 / 79	0	5	2	7	59.5	1	22	11	35	62.4	4	51	31	85	65.1
70 / 74	0	9	4	13	56.4	4	38	21	62	59.3	19	52	46	117	63.1
65 / 69	1	20	10	30	53.3	11	47	33	91	56.4	53	36	53	142	61.3
60 / 64	5	28	19	52	50.4	27	49	45	121	53.9	60	24	40	124	57.9
55 / 59	13	37	30	80	47.8	44	35	49	128	51.1	53	12	30	95	54.4
50 / 54	24	43	38	105	44.4	58	23	41	122	47.7	31	3	13	47	50.1
45 / 49	40	44	47	132	40.8	51	9	26	86	43.8	14	0	3	17	45.7
40 / 44	54	31	43	128	37.3	31	3	11	44	39.8	5		1	6	41.5
35 / 39	42	13	28	82	33.4	14	1	3	18	35.5	1		0	1	37.1
30 / 34	37	3	13	54	29.2	6		1	7	30.8					
25 / 29	18	1	4	22	24.9	1		0	1	26.6					
20 / 24	5	1	1	7	20.5										
15 / 19	1	0	0	1	16.3										
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															

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CHICOPEE/WESTOVER ARB MA WMO No. 744910

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	73.2										
95 / 99		3	0	3	75.9		1	0	1	76.4		0		0	73.8
90 / 94		14	3	17	74.2		9	1	10	74.4		3	0	3	74.5
85 / 89	0	37	12	49	71.3	0	29	8	37	72.1		5	1	6	72.2
80 / 84	5	61	31	97	69.2	2	59	22	84	69.3	0	18	4	22	69.2
75 / 79	16	64	50	130	67.1	11	62	44	117	67.4	4	36	15	55	66.4
70 / 74	53	44	62	159	65.9	47	51	60	158	65.7	14	50	31	95	63.6
65 / 69	71	19	47	137	63.2	58	23	52	133	62.9	31	51	45	127	60.5
60 / 64	52	6	26	84	59.5	60	11	34	105	59.3	40	43	47	131	57.0
55 / 59	31	2	12	45	55.4	40	3	17	59	55.2	48	24	44	116	53.4
50 / 54	16	0	4	20	51.3	18	0	7	25	50.8	39	8	27	74	49.4
45 / 49	5		0	5	46.7	10	0	2	12	46.1	27	2	15	44	45.1
40 / 44	0			0	42.5	4		0	4	42.1	20	0	8	28	40.8
35 / 39						0		0	0	37.5	12		2	14	36.2
30 / 34											5		0	5	31.8
25 / 29											0		0	0	28.3
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															

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CHICOPEE/WESTOVER ARB MA WMO No. 744910

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	67.3										
80 / 84		2	0	2	65.4										
75 / 79		7	1	8	63.9		1		1	65.2					
70 / 74	1	19	5	25	61.8		3	1	3	61.4		0		0	61.0
65 / 69	5	31	15	50	59.1	0	6	2	8	59.7		1	0	1	59.7
60 / 64	16	42	30	88	55.6	5	10	7	22	56.1	1	1	1	3	56.5
55 / 59	27	50	40	117	51.2	9	19	12	40	51.3	1	3	2	7	52.4
50 / 54	41	51	47	138	46.8	14	35	23	73	46.9	3	9	6	17	46.7
45 / 49	42	29	45	116	42.6	26	47	33	106	42.1	8	15	9	32	41.9
40 / 44	43	14	32	89	38.5	35	49	44	128	37.6	13	30	20	62	37.3
35 / 39	31	4	19	54	34.5	41	40	49	129	33.1	27	49	41	117	33.2
30 / 34	27	1	11	39	30.4	51	22	43	116	29.3	52	56	62	171	29.0
25 / 29	14	0	3	17	26.1	34	7	19	60	24.8	45	39	44	128	24.1
20 / 24	2		0	2	21.3	14	2	6	22	20.5	33	22	27	83	19.5
15 / 19	0		0	0	17.8	8	1	2	11	16.5	24	14	20	58	15.2
10 / 14						1	0	0	1	11.9	18	6	11	35	10.7
5 / 9						0			0	9.0	12	2	4	17	6.0
0 / 4											6	1	1	8	1.7
-5 / -1											4	0	0	4	-2.8
-10 / -6											1		0	1	-6.7
-15 / -11											0			0	-12.1
-20 / -16															

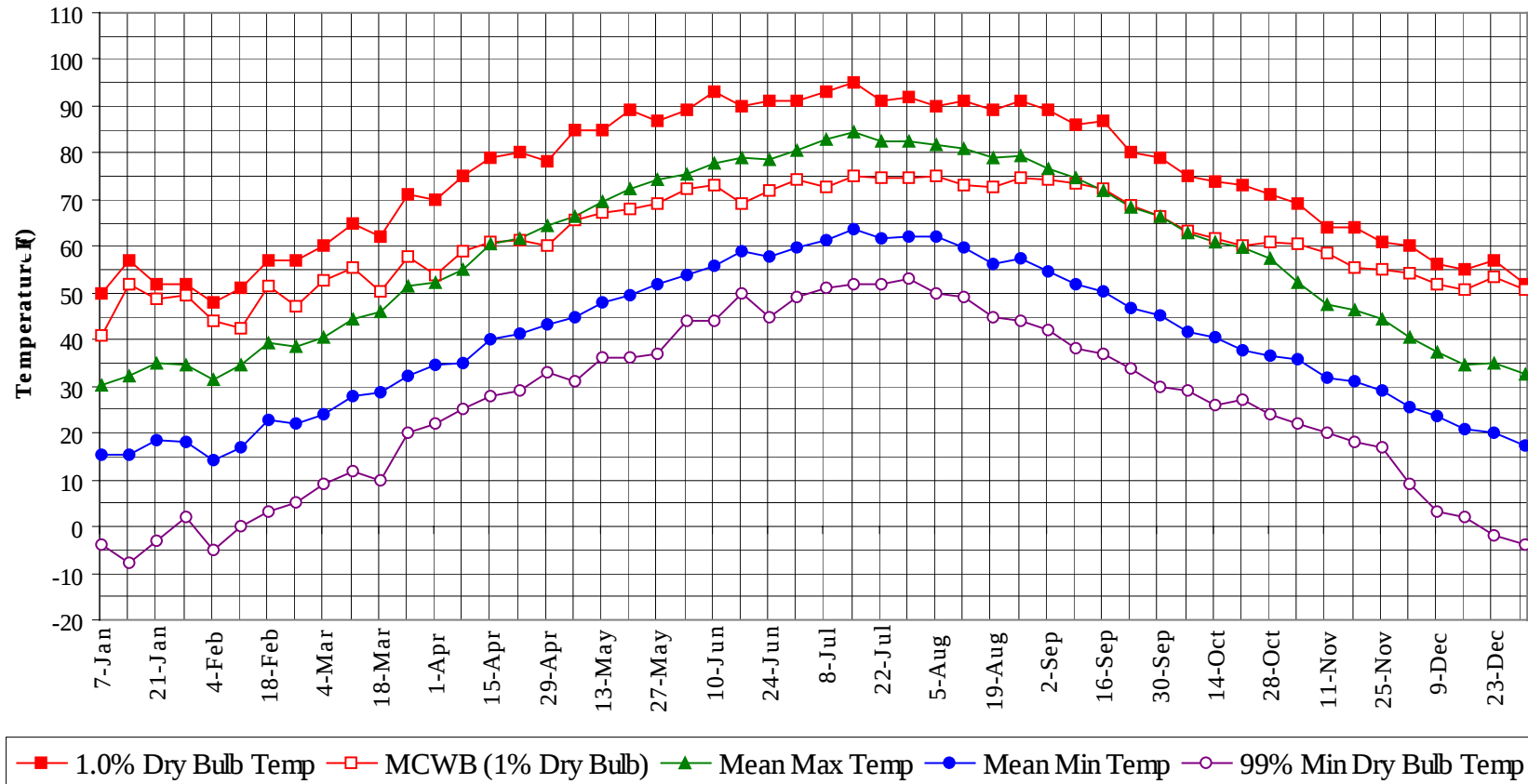
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CHICOPEE/WESTOVER ARB MA WMO No. 744910
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)
Period of Record = 1967 to 1996

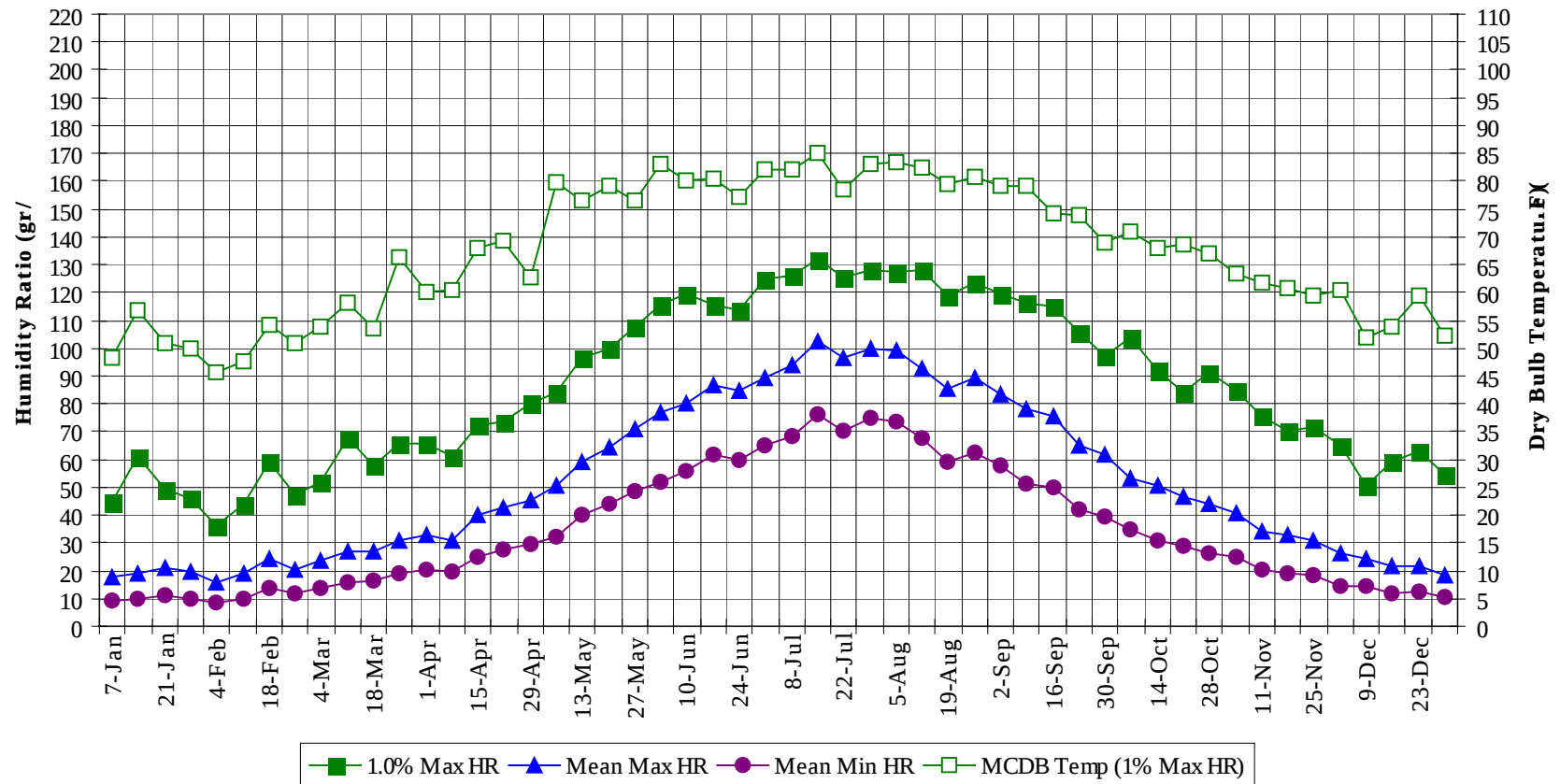
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
100 / 104		0		0	73.8
95 / 99		4	1	5	75.2
90 / 94		35	7	42	73.4
85 / 89	0	94	28	122	71.0
80 / 84	7	193	77	277	68.5
75 / 79	36	247	149	431	66.1
70 / 74	141	265	223	630	63.8
65 / 69	236	237	251	724	60.5
60 / 64	273	223	247	743	56.3
55 / 59	274	202	241	717	52.0
50 / 54	254	201	219	675	47.1
45 / 49	239	201	216	657	42.2
40 / 44	243	223	231	697	37.6
35 / 39	253	229	268	749	33.2
30 / 34	306	214	277	797	28.9
25 / 29	223	144	197	565	24.0
20 / 24	145	95	122	363	19.3
15 / 19	108	61	80	249	14.9
10 / 14	74	33	49	156	10.3
5 / 9	50	14	24	88	5.7
0 / 4	27	4	10	41	1.2
-5 / -1	15	1	3	19	-3.0
-10 / -6	9	0	1	10	-7.3
-15 / -11	4	0		4	-11.9
-20 / -16	1			1	-16.3

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Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary



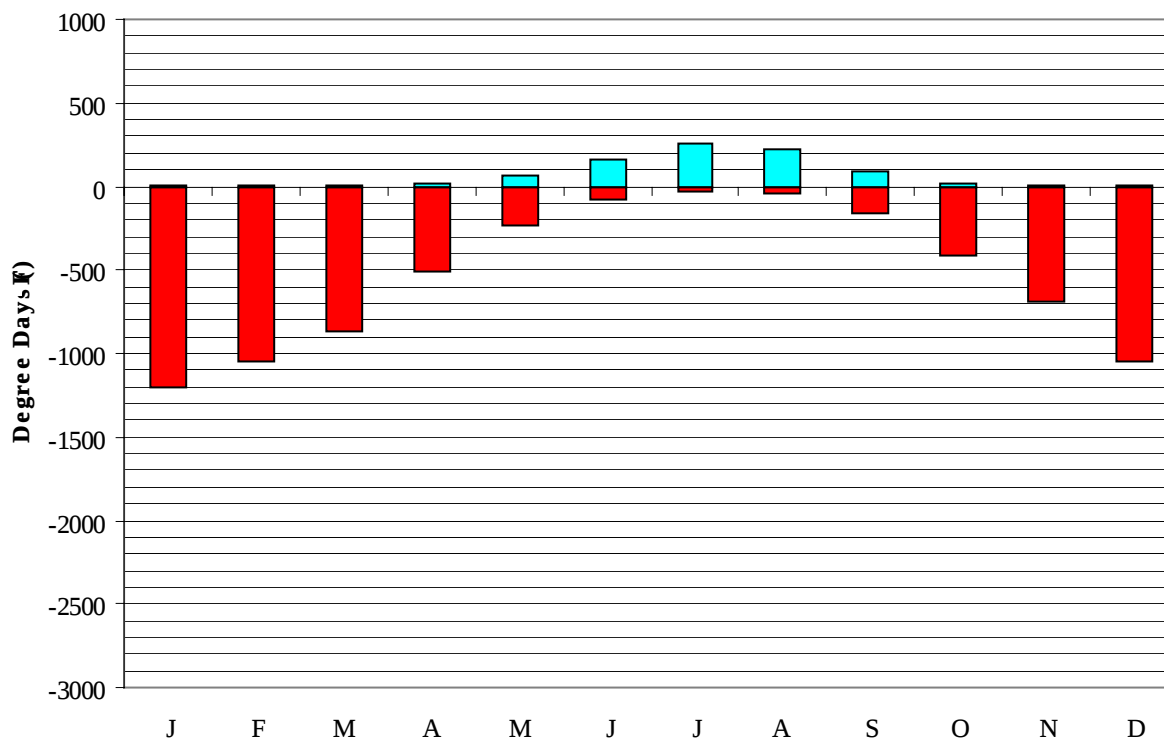
CHICOPEE/WESTOVER ARB MA

WMO No. 744910

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	50.0	40.8	30.2	15.2	-4.0	44.8	48.4	17.6	9.1
14-Jan	57.0	51.8	32.1	15.3	-8.0	60.9	56.7	19.4	9.9
21-Jan	52.0	48.7	35.0	18.5	-3.0	49.0	50.9	21.2	11.1
28-Jan	52.0	49.5	34.4	18.1	2.0	46.2	49.8	19.6	10.2
4-Feb	48.0	44.2	31.3	14.0	-5.0	36.4	45.6	15.8	8.3
11-Feb	51.0	42.3	34.6	17.1	0.0	44.1	47.6	18.8	9.9
18-Feb	57.0	51.7	39.3	23.0	3.0	58.8	54.3	24.1	14.0
25-Feb	57.0	47.3	38.5	22.0	5.0	47.6	51.0	20.1	11.6
4-Mar	60.0	52.5	40.4	24.2	9.0	51.8	54.0	23.4	13.6
11-Mar	65.0	55.4	44.4	27.8	12.0	67.9	58.0	27.1	15.8
18-Mar	62.0	50.4	46.2	28.7	10.0	58.1	53.6	26.9	16.2
25-Mar	71.0	57.6	51.6	32.3	20.0	65.8	66.2	30.9	18.8
1-Apr	70.0	53.7	52.4	34.7	22.0	65.8	59.9	33.0	20.4
8-Apr	75.0	58.8	55.0	35.2	25.0	60.9	60.4	31.1	19.4
15-Apr	79.0	60.8	60.4	40.0	28.0	72.1	67.9	39.8	25.1
22-Apr	80.0	61.3	61.8	41.1	29.0	73.5	69.2	42.5	27.7
29-Apr	78.0	60.2	64.4	43.2	33.0	79.8	62.6	45.3	29.7
6-May	85.0	65.6	66.6	44.6	31.0	84.0	79.6	50.8	32.4
13-May	85.0	67.0	69.7	48.1	36.0	96.6	76.6	59.1	39.8
20-May	89.0	67.8	72.3	49.6	36.0	100.1	79.3	64.4	43.7
27-May	87.0	69.3	74.4	51.8	37.0	107.8	76.6	71.3	48.8
3-Jun	89.0	72.2	75.4	54.0	44.0	115.5	83.1	76.6	51.7
10-Jun	93.0	73.1	77.9	55.7	44.0	119.7	80.1	79.9	55.9
17-Jun	90.0	69.3	78.9	58.9	50.0	115.5	80.4	86.9	61.8
24-Jun	91.0	71.9	78.5	57.8	45.0	113.4	77.3	84.6	59.8
1-Jul	91.0	74.2	80.5	59.9	49.0	124.6	82.1	89.6	64.8
8-Jul	93.0	72.6	82.9	61.4	51.0	126.0	82.1	93.8	68.0
15-Jul	95.0	75.0	84.3	63.5	52.0	132.3	85.0	102.8	75.9
22-Jul	91.0	74.8	82.5	61.6	52.0	125.3	78.4	96.4	70.3
29-Jul	92.0	74.5	82.6	62.3	53.0	128.1	83.0	100.0	74.7
5-Aug	90.0	75.2	81.8	62.1	50.0	127.4	83.2	99.2	73.6
12-Aug	91.0	73.0	81.1	59.7	49.0	128.1	82.4	92.9	67.7
19-Aug	89.0	72.8	79.2	56.1	45.0	119.0	79.5	85.5	59.0
26-Aug	91.0	74.5	79.3	57.3	44.0	123.2	80.8	89.6	62.6
2-Sep	89.0	74.2	76.5	54.7	42.0	119.7	79.3	83.1	57.9
9-Sep	86.0	73.7	74.6	51.7	38.0	116.2	79.1	77.9	51.1
16-Sep	87.0	72.3	71.8	50.4	37.0	115.2	74.3	75.7	50.2
23-Sep	80.0	68.6	68.2	46.6	34.0	105.7	74.0	64.9	42.0
30-Sep	79.0	66.3	66.6	45.3	30.0	97.3	69.0	61.5	39.3
7-Oct	75.0	63.2	62.8	41.5	29.0	103.6	70.9	53.0	34.7
14-Oct	74.0	61.7	61.0	40.4	26.0	91.7	68.0	50.4	31.2
21-Oct	73.0	60.2	59.6	37.9	27.0	84.0	68.6	46.4	28.6
28-Oct	71.0	60.8	57.4	36.5	24.0	91.0	67.1	43.8	26.0
4-Nov	69.0	60.3	52.4	35.7	22.0	84.7	63.3	40.6	25.0
11-Nov	64.0	58.5	47.7	32.0	20.0	75.6	61.7	33.9	20.2
18-Nov	64.0	55.3	46.3	30.9	18.0	70.0	60.8	32.6	19.3
25-Nov	61.0	55.2	44.2	29.1	17.0	71.4	59.4	30.8	18.1
2-Dec	60.0	54.3	40.3	25.5	9.0	65.1	60.5	26.1	14.4
9-Dec	56.0	51.7	37.4	23.5	3.0	50.4	51.9	24.3	14.3
16-Dec	55.0	50.9	34.8	20.7	2.0	58.8	53.8	21.4	12.1
23-Dec	57.0	53.4	35.1	20.2	-2.0	63.0	59.3	22.0	12.3
31-Dec	52.0	50.7	32.6	17.2	-4.0	54.6	52.3	18.7	10.2

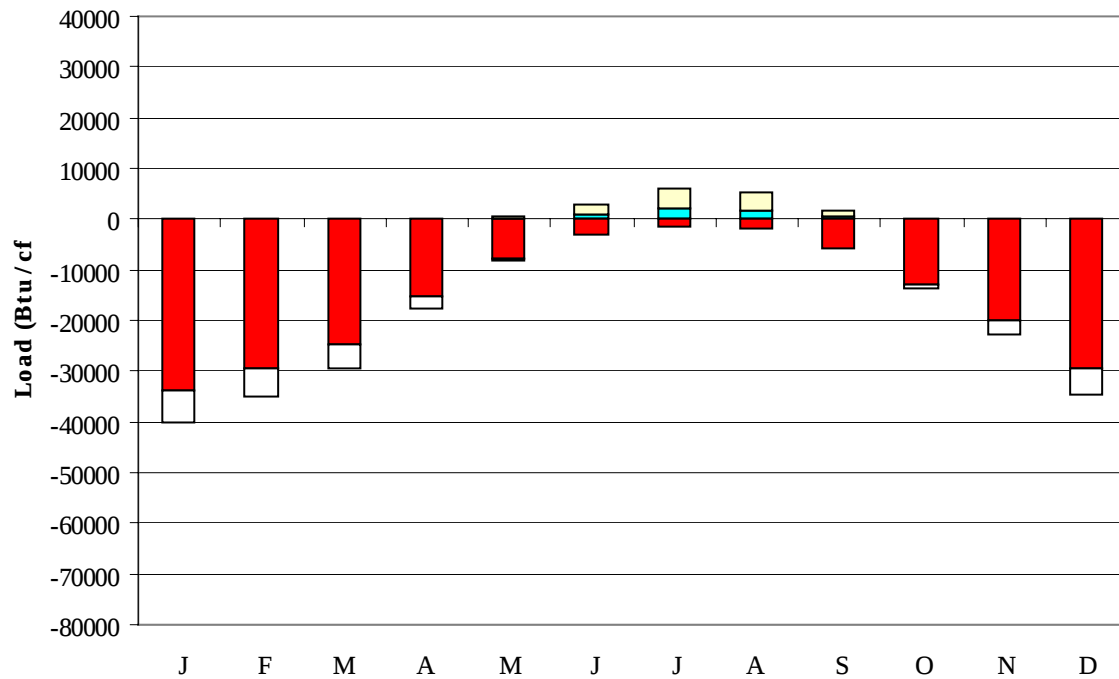
Degree Days, Heating and Cooling
(Base 65°F)



■ Mean Cooling Degree Days ■ Mean Heating Degree Days

	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	1206
FEB	0	1051
MAR	1	869
APR	13	503
MAY	63	235
JUN	160	76
JUL	254	29
AUG	216	46
SEP	85	160
OCT	14	412
NOV	1	686
DEC	0	1048
ANN	807	6321

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



■ Average Sensible Cooling Load ■ Average Sensible Heating Load
■ Average Latent Cooling (Drying) Load ■ Average Latent Heating (Humidifying) Load

	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	-33628	0	-6390
FEB	0	-29433	0	-5741
MAR	3	-24916	1	-4494
APR	60	-15224	2	-2373
MAY	325	-7899	266	-427
JUN	1039	-3012	1731	-14
JUL	2032	-1307	3976	0
AUG	1570	-1935	3663	-1
SEP	410	-5616	1364	-74
OCT	26	-12817	138	-934
NOV	0	-20015	25	-2638
DEC	0	-29516	0	-5110
ANN	5465	-185318	11166	-28196

Average Annual Solar Radiation – Nearest Available Site

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

City: HARTFORD
 State: CT
 WBAN No: 14740
 Lat(N): 41.93
 Long(W): 72.68
 Elev(ft): 180

Stn Type: Secondary
 SHADING GEOMETRY IN DIMENSIONLESS UNITS

Window: 1
 Overhang: 0.589
 Vert Gap: 0.327

AVERAGE INCIDENT SOLAR RADIATION (Btu/sq.ft./day), Percentage Uncertainty = 11		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ	Global	590	850	1160	1470	1720	1870	1860	1630	1300	940	580	480	1210
	Std Dev	44	74	74	109	128	146	110	81	93	66	48	35	30
	Minimum	530	690	980	1260	1460	1500	1620	1480	1150	820	490	400	1140
	Maximum	690	1010	1290	1710	1980	2160	2060	1760	1500	1130	670	540	1270
	Diffuse	320	430	580	720	860	920	900	790	620	440	320	270	600
Clear Day	Global	800	1150	1640	2140	2470	2590	2510	2210	1760	1250	840	690	1670
NORTH	Global	190	260	350	440	540	610	580	480	380	280	190	160	370
	Diffuse	190	260	350	430	500	540	530	470	380	280	190	160	360
Clear Day	Global	180	240	330	430	580	670	620	480	360	260	190	160	380
EAST	Global	400	550	710	860	960	1030	1020	940	780	590	380	330	710
	Diffuse	240	330	430	520	600	640	640	570	460	340	240	200	430
Clear Day	Global	620	820	1090	1300	1420	1450	1410	1310	1120	860	630	540	1050
SOUTH	Global	980	1090	1060	960	850	810	850	940	1050	1080	850	820	940
	Diffuse	360	440	500	550	590	600	600	580	520	440	340	300	480
Clear Day	Global	1780	1890	1800	1470	1160	1020	1060	1300	1620	1790	1730	1680	1520
WEST	Global	400	550	710	850	950	1020	1020	930	780	600	380	320	710
	Diffuse	240	330	430	520	610	650	650	580	470	340	240	200	440
Clear Day	Global	620	820	1090	1300	1420	1450	1410	1310	1120	860	630	540	1050

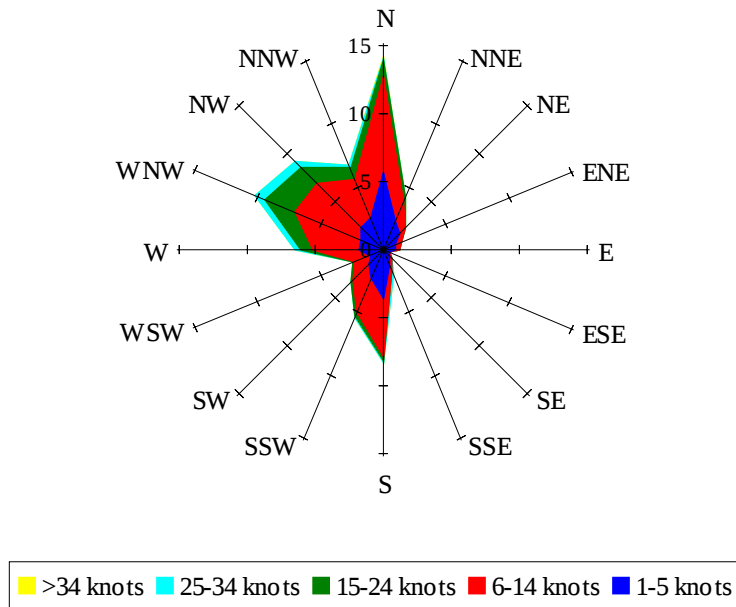
Average Annual Solar Heat and Illumination – Nearest Available Site

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

AVERAGE TRANSMITTED SOLAR RADIATION (Btu/sq.ft./day) FOR DOUBLE GLAZING, Percentage Uncertainty = 11		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ	Unshaded	380	570	810	1050	1240	1350	1340	1170	930	650	390	300	850
NORTH	Unshaded	130	180	240	300	360	400	390	330	260	190	140	110	250
	Shaded	110	160	210	260	310	350	340	280	230	170	120	96	220
EAST	Unshaded	280	390	500	610	680	730	720	660	550	420	260	220	500
	Shaded	240	340	430	510	560	600	590	550	470	360	230	190	420
SOUTH	Unshaded	730	810	740	630	540	510	530	610	720	780	640	620	650
	Shaded	710	740	570	400	350	360	360	380	510	680	610	600	520
WEST	Unshaded	270	380	500	600	670	720	720	660	550	420	260	220	500
	Shaded	240	330	430	500	550	600	600	550	470	360	230	190	420

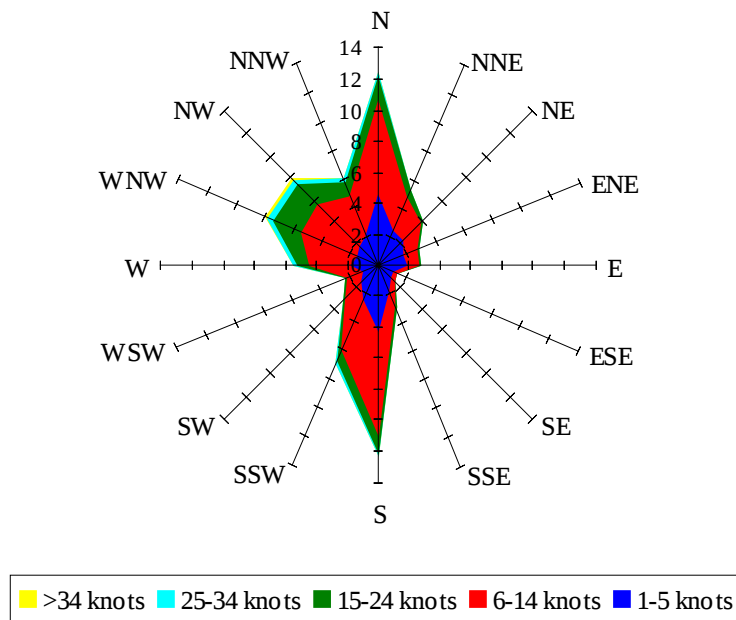
AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 11											
		March					June				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	40	70	77	58	20	51	84	99	90	62
	M.Cloudy	24	43	47	36	13	32	55	70	65	42
NORTH	M.Clear	10	14	15	13	7	15	17	17	17	15
	M.Cloudy	10	15	16	13	6	13	18	19	19	15
EAST	M.Clear	70	51	15	13	7	77	68	26	17	15
	M.Cloudy	25	28	16	13	6	34	40	24	19	15
SOUTH	M.Clear	42	75	83	62	21	13	37	51	44	20
	M.Cloudy	18	36	41	30	9	12	27	37	33	17
WEST	M.Clear	10	14	28	67	53	13	17	17	55	76
	M.Cloudy	10	15	21	32	18	12	18	19	39	41
M.Clear	(% hrs)	34	31	27	29	32	33	32	24	25	26
		Sept					Dec				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	30	65	80	71	39	14	37	40	21	0
	M.Cloudy	18	39	53	48	25	9	22	24	13	0
NORTH	M.Clear	9	14	16	15	11	5	9	10	7	0
	M.Cloudy	8	14	17	16	10	4	9	10	6	0
EAST	M.Clear	63	64	23	15	11	34	32	10	7	0
	M.Cloudy	21	31	20	16	10	10	15	10	6	0
SOUTH	M.Clear	24	60	76	66	33	34	76	81	49	0
	M.Cloudy	11	29	44	38	17	10	27	29	16	0
WEST	M.Clear	9	14	16	55	67	5	9	24	41	0
	M.Cloudy	8	14	17	33	29	4	9	13	14	0
M.Clear	(% hrs)	40	41	34	33	37	31	29	28	30	31

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



Percent Calm = 22.68

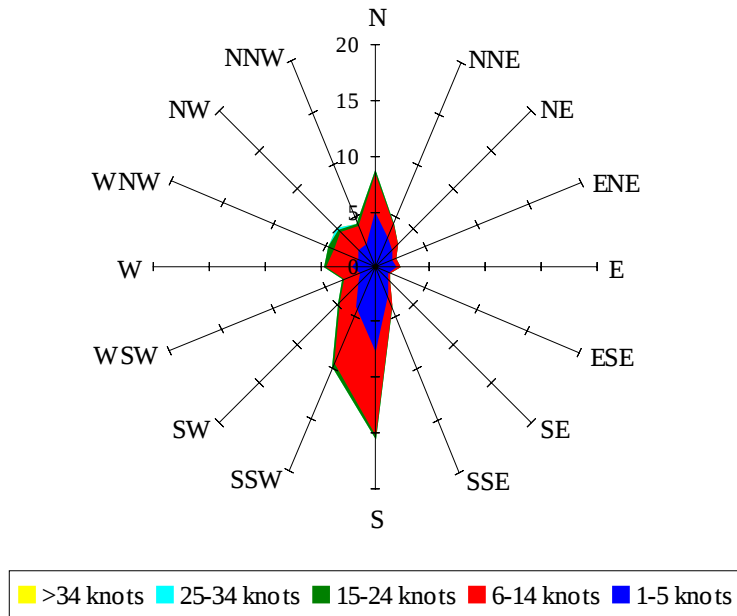
Wind Summary - March, April, and May **Labels of Percent Frequency on North Axis**



Percent Calm = 16.32

Wind Summary - June, July, and August

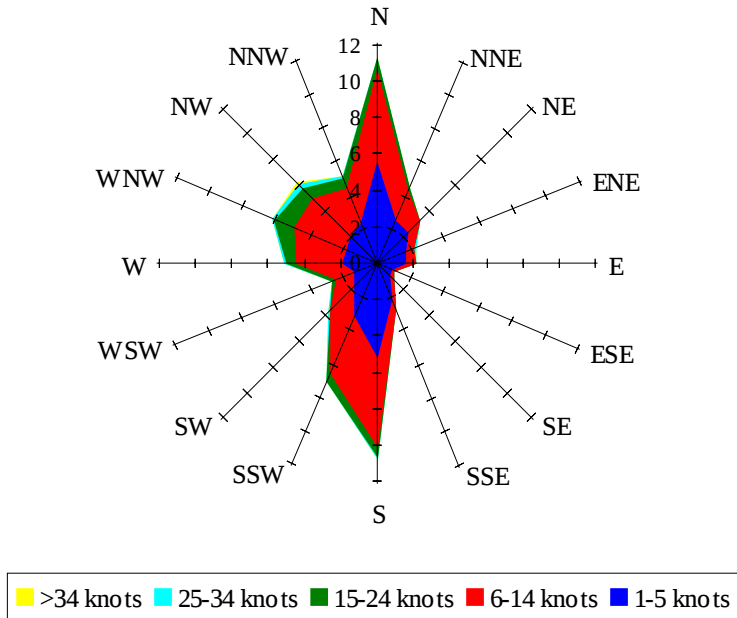
Labels of Percent Frequency on North Axis



Percent Calm = 22.69

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 25.91