

RICHMOND/BYRD FIELD VA

Latitude = 37.50 N

WMO No. 724010

Longitude = 77.33 W

Elevation = 177 feet

Period of Record = 1973 to 1996

Average Pressure = 29.84 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	99	78	111	9.8	SSW
0.4% Occurrence	95	77	109	9.9	SW
1.0% Occurrence	92	76	108	9.5	SW
2.0% Occurrence	90	75	106	9.3	SW
Mean Daily Range	20	-	-	-	-
97.5% Occurrence	24	22	12	6.9	N
99.0% Occurrence	18	16	9	7.3	N
99.6% Occurrence	14	12	7	6.7	N
Median of Extreme Lows	8	7	5	7.4	W
	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	82	93	142	8.8	S
0.4% Occurrence	79	90	130	8.7	S
1.0% Occurrence	78	88	126	8.7	S
2.0% Occurrence	77	87	123	8.5	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	151	85	1.00	7.3	S
0.4% Occurrence	137	84	0.90	7.3	S
1.0% Occurrence	132	82	0.88	6.9	S
2.0% Occurrence	127	81	0.85	7.3	S
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		84	1026	880	2161

Other Site Data

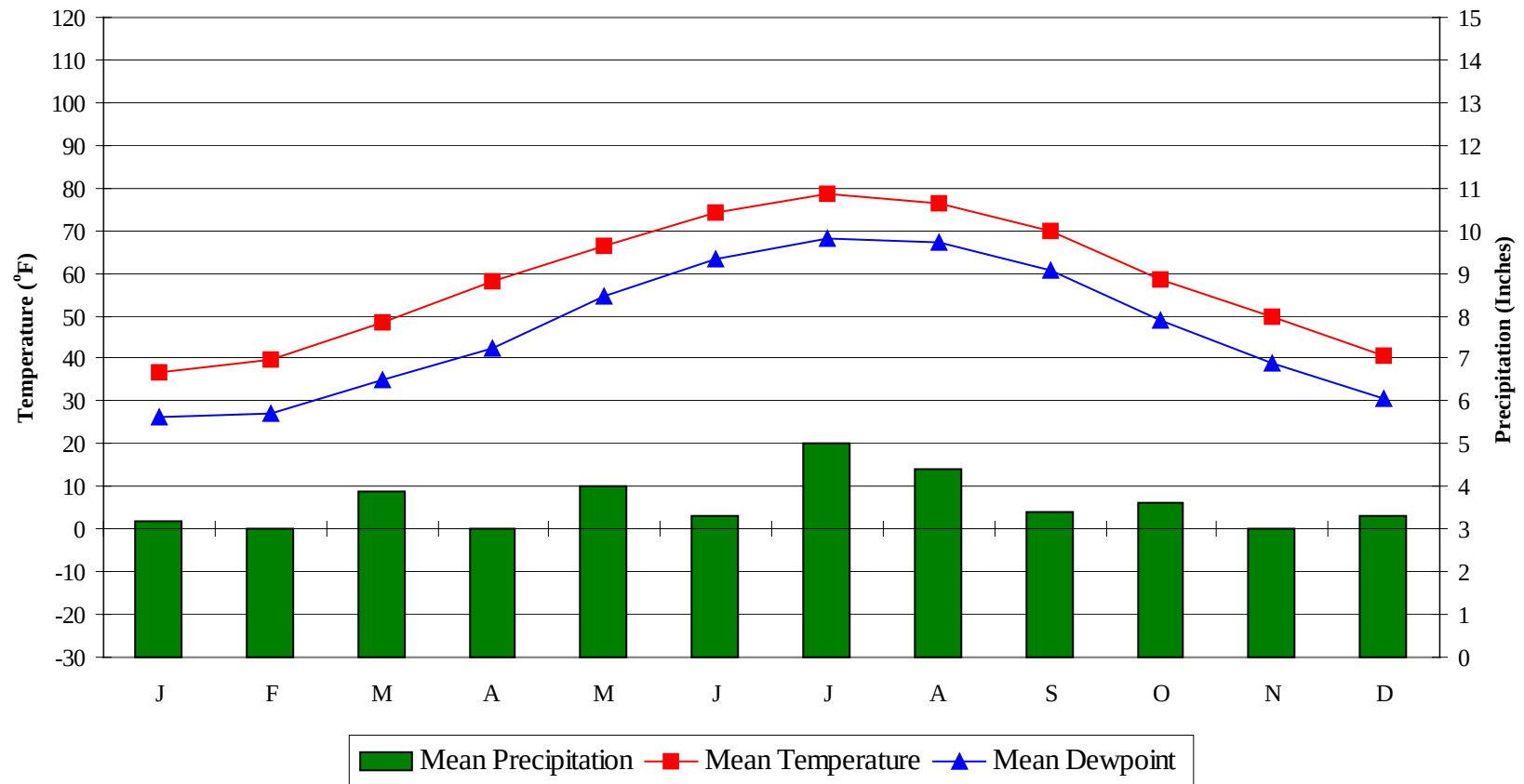
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
7	3.3	90	3.5 + 1.1
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
60.5	18	16	56

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

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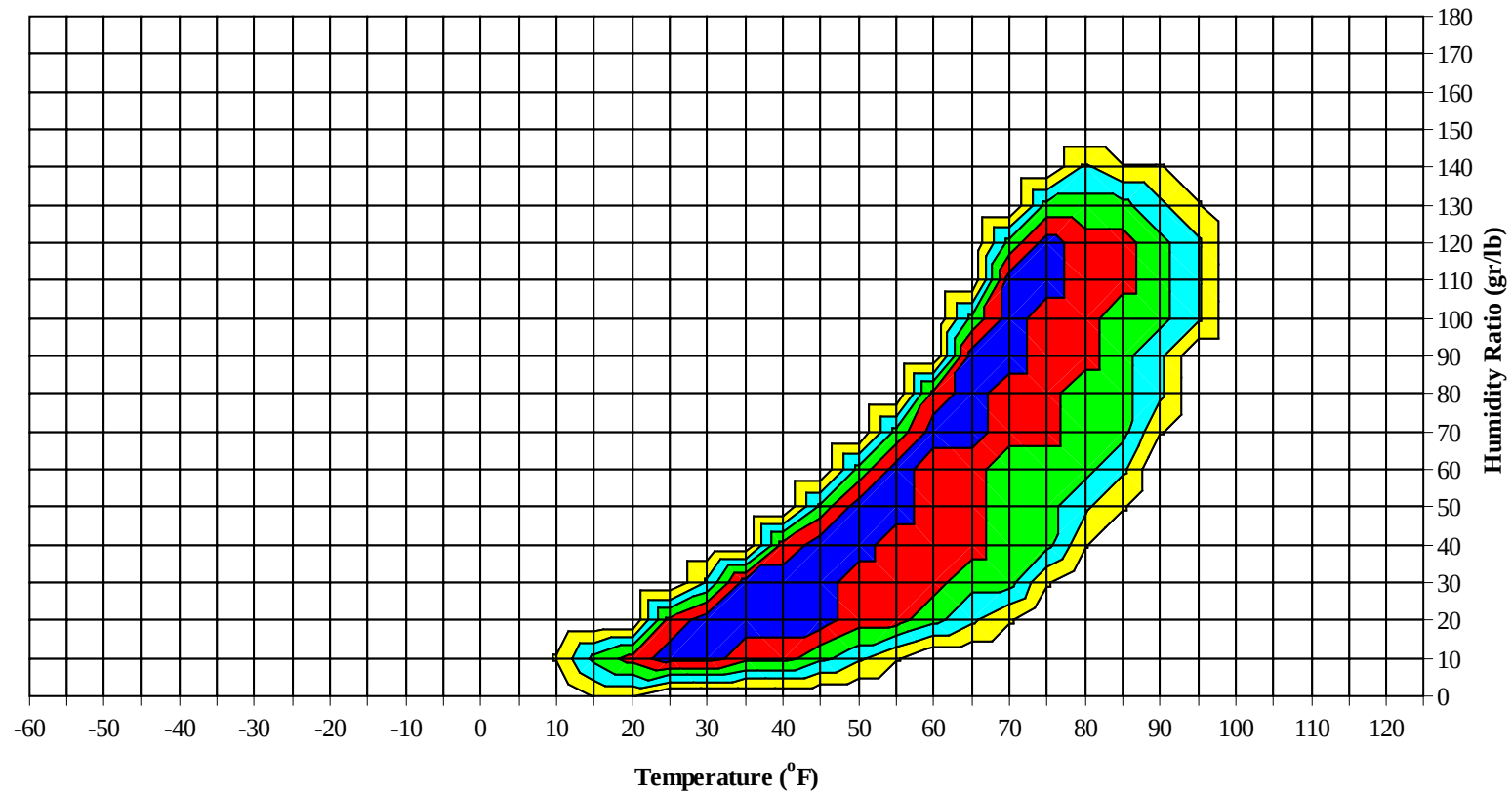
Average Annual Climate



RICHMOND/BYRD FIELD VA

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Long Term Psychrometric Summary

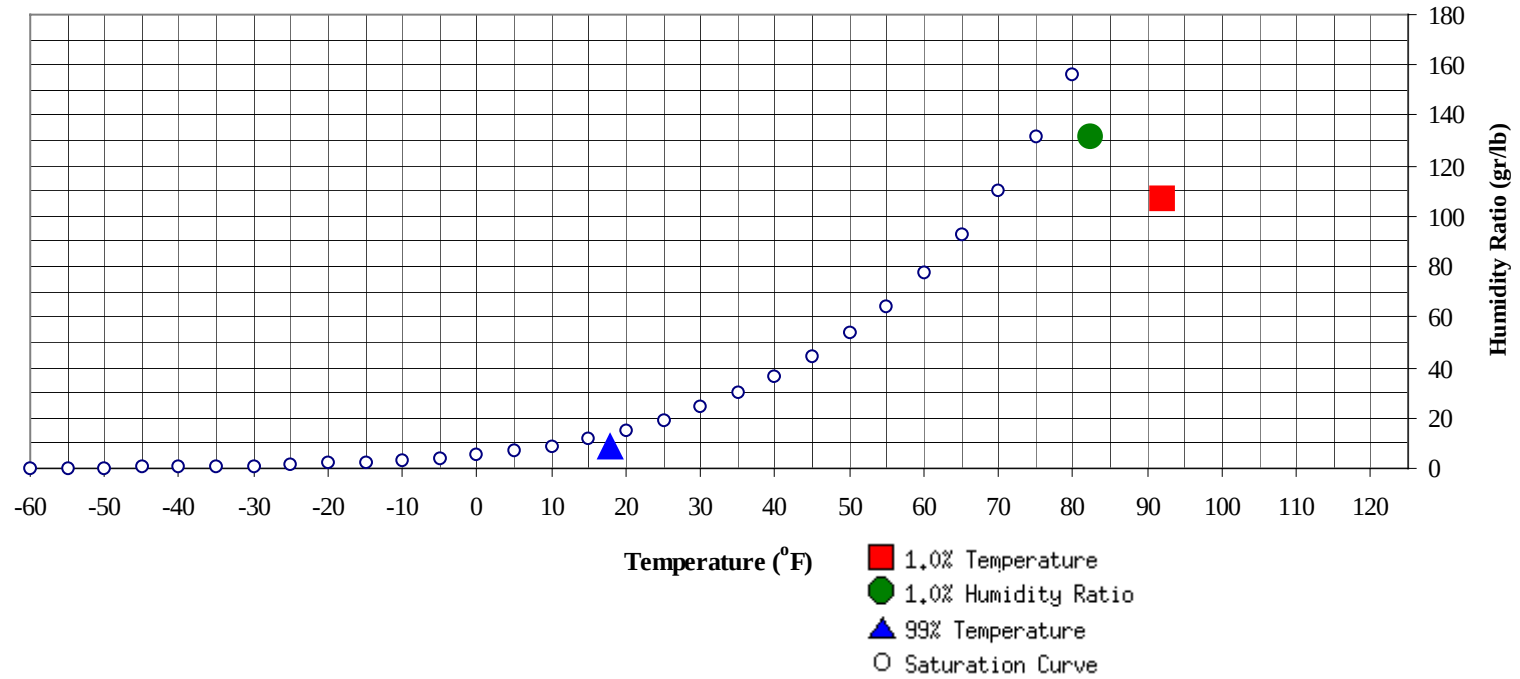


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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Psychrometric Summary of Peak Design Values



	(°F)	MCHR (gr/lb)	Enthalpy (btu/lb)	1.0% Humidity Ratio	(gr/lb)	MCDB (°F)	MCWB (°F)	MC Dewpt (°F)	Enthalpy (btu/lb)
99% Dry Bulb	18	9	5.7		131.6	82.3	77	75	40.4

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	92	107.3	75.6	39.0

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

Period of Record = 1973 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													0	0	70.0
85 / 89												1	0	1	64.6
80 / 84							0	0	0	64.8		4	1	5	64.4
75 / 79		0	0	0	60.8		2	0	2	60.2		8	3	11	61.0
70 / 74	0	2	0	2	60.9		5	1	6	57.6	1	14	7	22	58.9
65 / 69	1	4	2	7	58.4	2	9	4	14	56.2	5	23	15	42	56.3
60 / 64	3	10	5	19	55.2	3	13	9	25	53.4	11	29	24	64	53.4
55 / 59	5	13	10	28	50.7	7	19	14	40	49.5	16	36	33	84	49.6
50 / 54	9	21	14	44	45.6	13	26	21	60	45.8	28	37	39	104	45.9
45 / 49	13	34	25	72	41.6	18	29	27	74	41.6	35	36	41	112	41.8
40 / 44	27	45	40	112	37.7	22	35	32	89	36.9	45	30	38	112	37.7
35 / 39	46	42	49	137	33.8	36	35	38	109	33.0	43	17	27	86	33.5
30 / 34	47	34	45	126	29.1	44	28	37	109	28.9	36	8	14	58	29.0
25 / 29	42	23	29	93	24.4	41	13	25	80	24.2	21	2	6	30	24.4
20 / 24	25	10	16	51	19.8	21	6	9	35	19.6	6	0	1	8	19.9
15 / 19	18	5	8	31	15.3	12	2	3	18	15.4	2	0	0	3	15.5
10 / 14	9	2	3	15	10.6	5	1	1	7	11.5		0	0	1	13.8
5 / 9	3	1	1	5	6.1	1	0	0	2	6.8					
0 / 4	1	0	0	2	1.1	0			0	1.4					
-5 / -1	0	0	0	0	-3.5	0			0	-2.2					
-10 / -6	0			0	-6.0	0			0	-5.0					

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 2 of 5)

Period of Record = 1973 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	66.8		1	0	1	75.5		6	1	7	77.2
90 / 94		3	1	4	67.1		5	1	6	72.9		25	6	31	74.8
85 / 89		8	2	10	65.4	0	21	6	27	70.3	0	50	18	68	72.7
80 / 84		14	5	19	64.0	0	39	15	54	68.1	5	65	35	104	70.5
75 / 79	0	23	12	35	61.5	4	47	28	78	65.5	27	49	54	129	68.8
70 / 74	4	33	24	61	58.9	19	51	44	114	63.6	73	28	62	163	67.4
65 / 69	15	38	32	85	56.8	50	39	54	142	61.4	66	12	39	116	63.9
60 / 64	30	38	39	107	54.0	56	25	43	124	57.5	40	3	18	61	59.2
55 / 59	36	35	38	108	50.5	48	13	32	93	53.5	22	1	6	28	54.8
50 / 54	45	25	40	111	46.5	41	6	18	65	49.1	8	0	2	10	51.0
45 / 49	45	14	28	86	42.5	24	1	7	31	44.9	1		0	1	46.4
40 / 44	35	5	14	54	38.5	6		1	7	40.3	0			0	44.0
35 / 39	20	1	5	27	34.3	1			1	36.6					
30 / 34	10	0	1	11	30.0	0			0	31.5					
25 / 29	1		0	1	25.2										
20 / 24	0			0	20.7										
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															

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

Period of Record = 1973 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		1	0	1	78.0		0	0	0	77.8					
95 / 99		18	3	21	77.5		8	1	9	77.5		3	0	3	75.4
90 / 94		0	46	14	76.2		33	7	40	76.4		11	2	13	74.9
85 / 89		1	68	30	74.4	0	63	20	84	74.8		28	6	34	72.8
80 / 84		16	65	51	73.0	7	69	41	117	72.8	1	47	17	65	70.8
75 / 79		61	34	68	72.0	41	44	70	155	71.4	11	55	37	103	68.8
70 / 74	104	13	60	178	69.7	104	21	72	197	69.5	54	50	60	164	67.1
65 / 69	46	2	16	65	65.1	64	6	28	99	65.0	53	27	49	129	63.3
60 / 64	16	0	3	19	59.9	24	1	7	32	60.4	53	13	39	105	59.3
55 / 59	4		0	5	55.8	7	0	1	9	55.8	37	4	19	59	54.7
50 / 54	0			0	52.8	2	0	1	2	50.9	21	1	8	30	50.0
45 / 49						0			0	47.1	10		3	13	45.8
40 / 44											2		0	2	41.6
35 / 39											0			0	37.2
30 / 34															
25 / 29															
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															

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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)			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		0		0	73.7										
85 / 89		4	0	4	70.7		0		0	66.9					
80 / 84	0	15	2	17	68.6		2	0	2	65.7					
75 / 79	1	27	6	34	65.7		9	1	10	63.8		1		1	63.5
70 / 74	6	42	20	67	63.0	1	20	6	27	62.0	1	5	1	7	63.5
65 / 69	18	46	35	99	60.4	9	28	17	55	60.0	2	7	4	14	59.6
60 / 64	34	49	44	128	56.6	14	31	24	69	55.8	6	14	11	31	56.6
55 / 59	39	34	45	119	52.5	22	32	29	82	50.9	8	23	10	41	50.7
50 / 54	46	18	45	109	48.6	30	40	38	108	46.6	15	33	25	73	46.7
45 / 49	44	9	30	83	44.4	34	38	41	113	42.4	22	43	33	99	42.0
40 / 44	35	2	16	53	40.2	41	23	37	101	38.4	35	44	47	125	37.9
35 / 39	18	0	4	22	35.9	36	10	27	73	33.9	43	37	45	125	33.5
30 / 34	6		1	8	31.1	34	3	16	52	29.8	48	21	39	107	29.1
25 / 29	1		0	2	26.7	17	1	5	23	25.4	37	12	21	71	24.5
20 / 24	0			0	24.0	3	0	0	3	21.2	18	4	8	30	20.0
15 / 19						1		0	1	17.6	8	2	3	13	15.5
10 / 14						0			0	14.0	4	1	1	6	10.9
5 / 9											2	0	0	2	6.2
0 / 4											0			0	3.0
-5 / -1															
-10 / -6															

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RICHMOND/BYRD FIELD VA

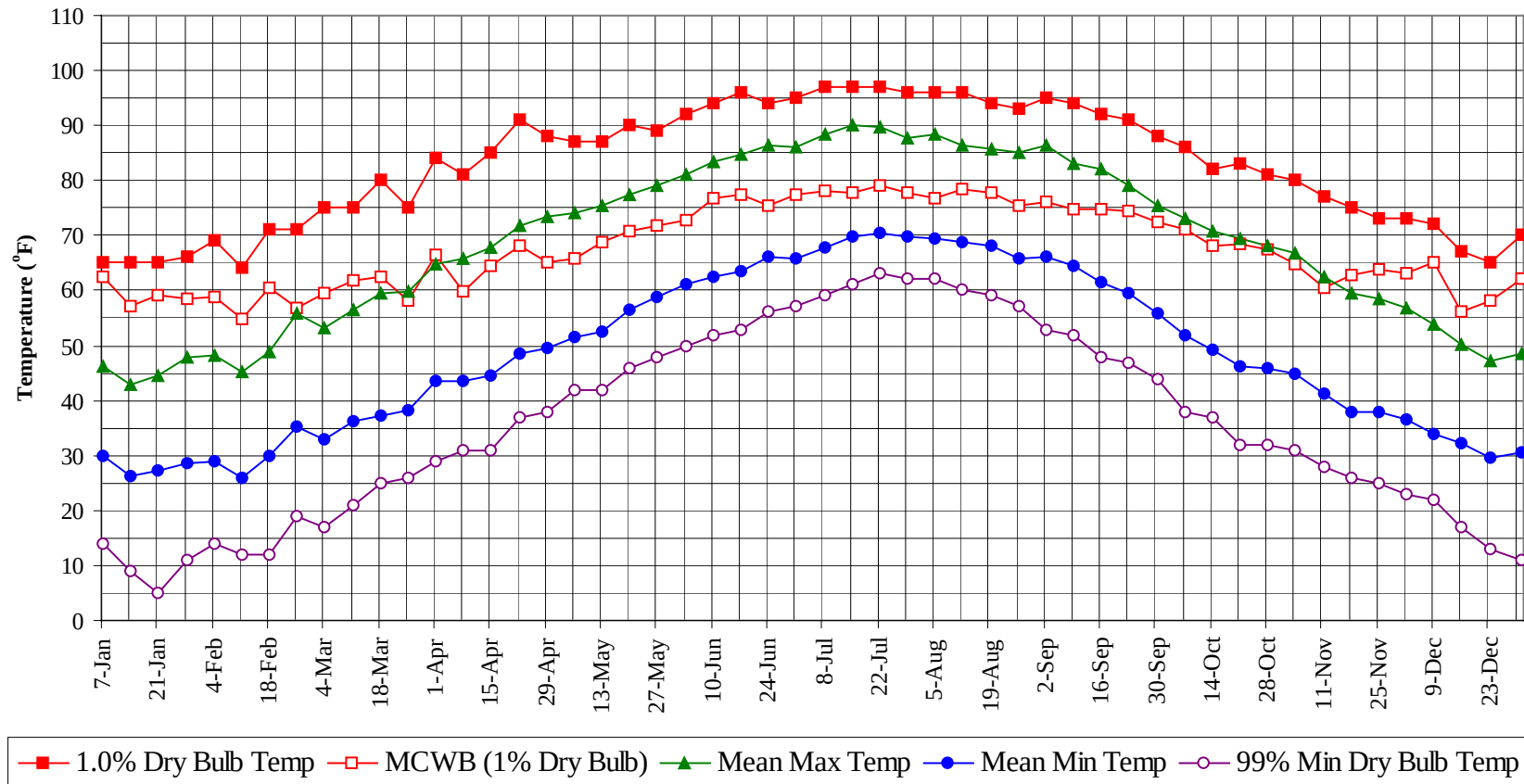
WMO No. 724010

Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)**Period of Record = 1973 to 1996**

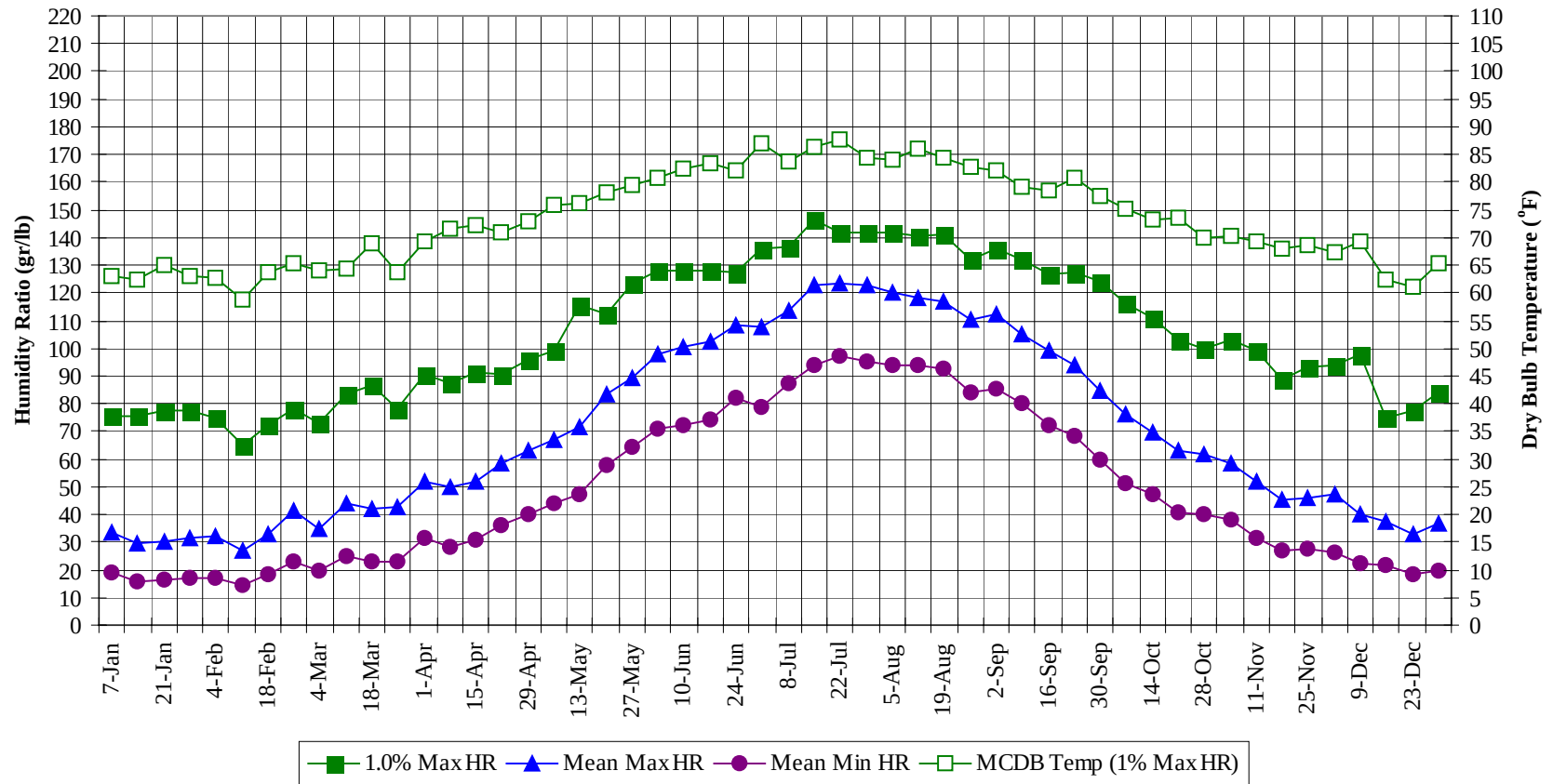
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
100 / 104		2	0	2	78.0
95 / 99		35	5	40	77.2
90 / 94	0	122	30	153	75.5
85 / 89	2	240	82	324	73.3
80 / 84	29	318	165	512	71.0
75 / 79	143	296	276	715	69.0
70 / 74	362	284	355	1001	66.5
65 / 69	326	242	292	860	61.6
60 / 64	288	228	267	784	56.7
55 / 59	250	212	236	698	51.8
50 / 54	258	209	252	719	47.1
45 / 49	248	205	236	688	42.5
40 / 44	249	185	228	662	38.1
35 / 39	245	145	196	586	33.6
30 / 34	226	96	154	477	29.2
25 / 29	164	52	87	303	24.5
20 / 24	73	21	35	129	19.8
15 / 19	42	9	15	66	15.4
10 / 14	19	4	6	28	10.9
5 / 9	6	1	2	9	6.2
0 / 4	1	0	0	2	1.2
-5 / -1	0	0	0	0	-2.9
-10 / -6	0			0	-5.8

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Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary



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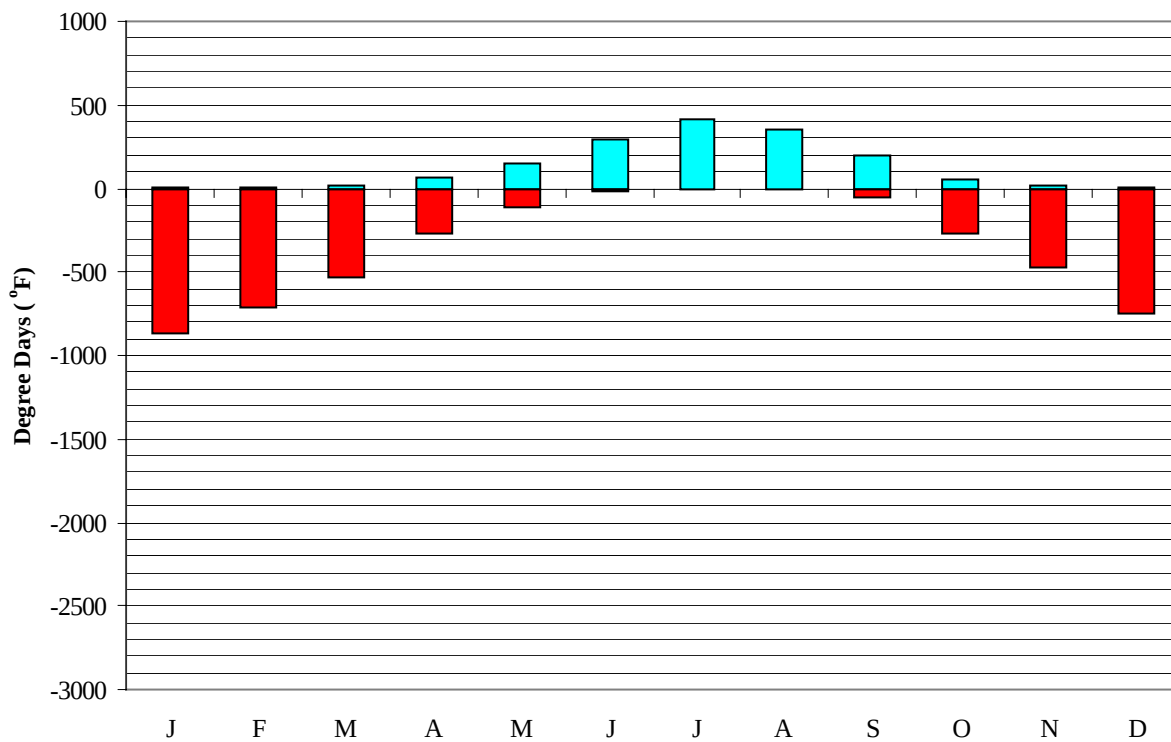
Long Term Dry Bulb Temperature and Humidity Summary

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	65.0	62.5	46.2	30.0	14.0	75.6	62.9	33.6	18.8
14-Jan	65.0	57.2	43.0	26.1	9.0	75.6	62.4	29.8	16.0
21-Jan	65.0	59.0	44.7	27.1	5.0	77.7	65.1	30.1	16.6
28-Jan	66.0	58.6	47.9	28.6	11.0	77.7	63.1	31.8	16.9
4-Feb	69.0	58.9	48.1	28.9	14.0	74.9	62.6	32.0	17.1
11-Feb	64.0	54.9	45.3	26.0	12.0	65.1	58.7	27.1	14.6
18-Feb	71.0	60.4	48.9	29.8	12.0	72.1	63.6	33.0	18.7
25-Feb	71.0	56.8	55.9	35.4	19.0	78.4	65.5	41.6	23.0
4-Mar	75.0	59.4	53.1	33.0	17.0	72.8	63.9	34.8	19.8
11-Mar	75.0	61.9	56.6	36.3	21.0	83.3	64.2	44.0	25.0
18-Mar	80.0	62.3	59.5	37.3	25.0	86.8	68.9	42.1	23.0
25-Mar	75.0	58.2	60.0	38.1	26.0	78.4	63.7	42.4	23.1
1-Apr	84.0	66.4	64.7	43.5	29.0	90.3	69.4	52.2	31.8
8-Apr	81.0	59.9	65.8	43.6	31.0	87.5	71.7	49.7	28.4
15-Apr	85.0	64.4	67.7	44.4	31.0	91.0	72.4	52.1	31.1
22-Apr	91.0	68.0	71.8	48.6	37.0	90.3	70.8	58.3	36.4
29-Apr	88.0	65.1	73.3	49.6	38.0	95.9	73.0	63.2	40.2
6-May	87.0	65.9	74.1	51.5	42.0	99.4	75.9	67.2	43.9
13-May	87.0	69.0	75.6	52.5	42.0	115.5	76.3	71.9	47.0
20-May	90.0	70.9	77.4	56.5	46.0	112.0	78.2	83.1	58.1
27-May	89.0	71.6	79.1	59.0	48.0	123.2	79.4	89.6	64.7
3-Jun	92.0	72.8	81.1	61.2	50.0	128.1	80.7	98.0	70.8
10-Jun	94.0	76.9	83.4	62.5	52.0	128.1	82.5	100.3	72.2
17-Jun	96.0	77.5	84.8	63.6	53.0	128.1	83.4	102.4	74.3
24-Jun	94.0	75.6	86.3	66.1	56.0	127.4	82.2	108.6	82.2
1-Jul	95.0	77.3	86.2	65.8	57.0	135.8	87.1	107.6	79.1
8-Jul	97.0	78.1	88.3	67.7	59.0	136.5	83.7	113.6	87.4
15-Jul	97.0	77.7	89.9	69.9	61.0	146.3	86.3	122.8	94.1
22-Jul	97.0	79.1	89.9	70.5	63.0	142.1	87.6	123.7	97.5
29-Jul	96.0	77.7	87.7	69.6	62.0	142.1	84.5	122.5	95.4
5-Aug	96.0	76.7	88.5	69.4	62.0	142.1	83.9	120.1	94.2
12-Aug	96.0	78.3	86.5	68.7	60.0	140.7	85.9	118.5	93.8
19-Aug	94.0	77.7	85.8	68.2	59.0	141.4	84.5	116.8	92.5
26-Aug	93.0	75.4	85.0	65.7	57.0	132.3	82.7	110.3	83.8
2-Sep	95.0	76.2	86.5	66.1	53.0	135.8	82.2	112.1	85.6
9-Sep	94.0	74.7	83.2	64.4	52.0	132.3	79.1	105.0	80.4
16-Sep	92.0	74.6	82.2	61.6	48.0	126.7	78.4	99.1	72.3
23-Sep	91.0	74.4	79.1	59.6	47.0	127.4	80.9	94.2	68.1
30-Sep	88.0	72.6	75.4	55.9	44.0	123.9	77.4	84.6	59.8
7-Oct	86.0	71.0	73.0	52.0	38.0	116.2	75.1	76.1	51.5
14-Oct	82.0	68.3	70.8	49.1	37.0	111.3	73.4	69.5	47.0
21-Oct	83.0	68.4	69.6	46.2	32.0	102.9	73.7	63.2	40.8
28-Oct	81.0	67.6	68.0	46.0	32.0	100.1	70.1	61.8	40.0
4-Nov	80.0	64.9	66.7	45.0	31.0	102.9	70.4	58.3	38.2
11-Nov	77.0	60.5	62.4	41.2	28.0	99.4	69.4	52.2	31.5
18-Nov	75.0	62.8	59.4	37.8	26.0	88.9	68.0	45.3	27.1
25-Nov	73.0	63.9	58.4	38.0	25.0	93.1	68.8	46.2	27.9
2-Dec	73.0	63.3	56.8	36.5	23.0	93.8	67.4	47.5	26.2
9-Dec	72.0	65.2	53.7	34.0	22.0	98.0	69.2	40.1	22.2
16-Dec	67.0	56.0	50.3	32.4	17.0	74.9	62.3	37.6	21.8
23-Dec	65.0	58.3	47.1	29.5	13.0	77.7	61.1	33.2	18.3
31-Dec	70.0	62.3	48.5	30.5	11.0	84.0	65.3	36.5	19.9

RICHMOND/BYRD FIELD VA

WMO No. 724010

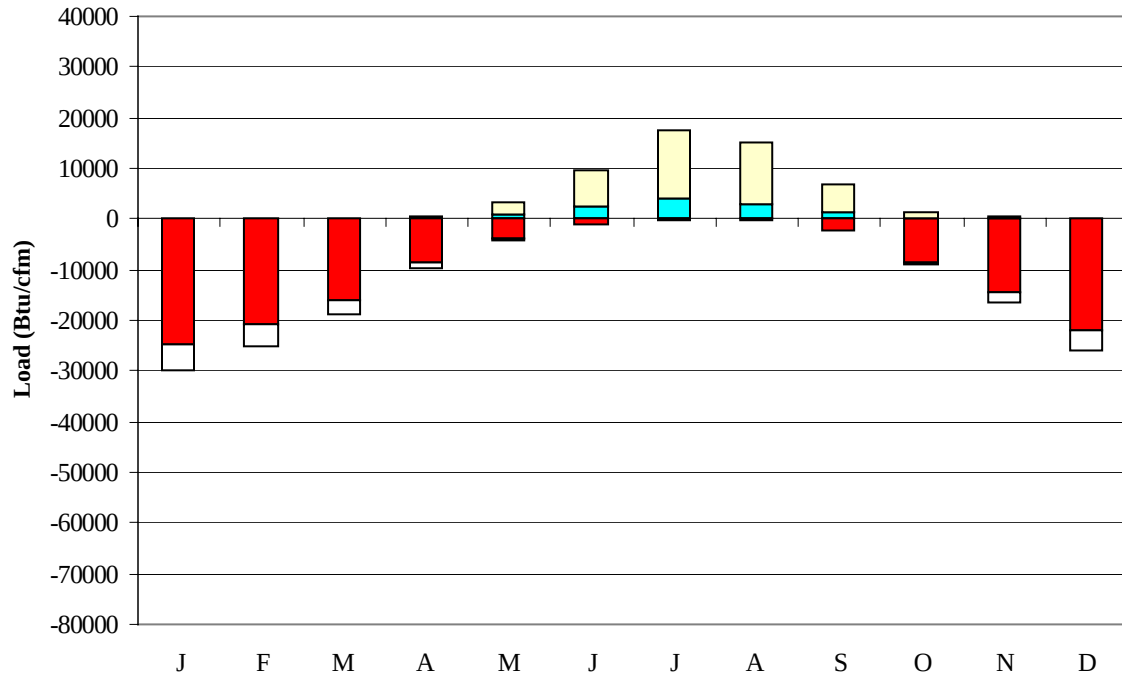
Degree Days, Heating and Cooling
(Base 65°F)



■ Mean Cooling Degree Days ■ Mean Heating Degree Days

	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	1	870
FEB	4	714
MAR	19	529
APR	66	269
MAY	148	108
JUN	295	21
JUL	414	3
AUG	352	7
SEP	199	57
OCT	58	264
NOV	18	478
DEC	3	754
ANN	1577	4074

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	-24919	14	-4883
FEB	4	-20633	6	-4328
MAR	69	-15920	65	-2763
APR	378	-8739	206	-1003
MAY	951	-4009	2385	-89
JUN	2513	-972	7004	0
JUL	4076	-206	13320	0
AUG	3085	-412	11853	0
SEP	1347	-2277	5520	-2
OCT	233	-8678	1011	-329
NOV	32	-14490	308	-1860
DEC	1	-21914	65	-3884
ANN	12689	-123169	41757	-19141

Average Annual Solar Radiation – Nearest Available Site

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

City: RICHMOND
 State: VA
 WBAN No: 13740
 Lat(N): 37.5
 Long(W): 77.33
 Elev(ft): 164

Stn Type: Secondary
 SHADING GEOMETRY IN DIMENSIONLESS UNITS

Window: 1
 Overhang: 0.463
 Vert Gap: 0.306

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	710	960	1300	1640	1840	1980	1900	1720	1430	1110	790	630	1340
	Std Dev	53	84	85	124	86	117	132	103	81	87	66	43	34
	Minimum	620	770	1080	1410	1680	1730	1660	1500	1270	900	640	560	1270
	Maximum	800	1120	1440	1940	2050	2150	2130	1910	1610	1280	920	740	1410
	Diffuse	330	430	560	710	840	900	890	800	650	470	340	300	600
Clear Day	Global	1000	1350	1800	2240	2510	2590	2520	2270	1880	1420	1040	890	1790
NORTH	Global	210	280	360	450	550	620	580	490	390	310	230	190	390
	Diffuse	210	280	360	440	510	540	520	470	390	310	230	190	370
Clear Day	Global	200	250	330	430	580	680	620	480	370	290	210	180	390
EAST	Global	470	620	790	950	1020	1080	1040	970	850	700	520	430	790
	Diffuse	260	340	430	540	610	650	630	580	490	380	280	240	450
Clear Day	Global	740	930	1150	1330	1410	1410	1380	1300	1150	940	750	660	1100
SOUTH	Global	1090	1140	1110	970	810	750	770	900	1050	1190	1140	1030	1000
	Diffuse	360	430	490	550	570	580	580	540	470	380	340	340	490
Clear Day	Global	1950	1970	1750	1340	1000	860	910	1160	1530	1790	1870	1880	1500
WEST	Global	480	610	790	940	1000	1060	1010	950	840	690	520	430	780
	Diffuse	260	340	440	540	620	650	640	590	500	380	280	240	460
Clear Day	Global	740	930	1150	1330	1410	1410	1380	1300	1150	940	750	660	1100

Average Annual Solar Heat and Illumination – Nearest Available Site

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

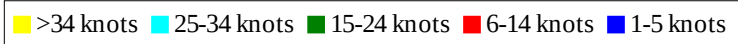
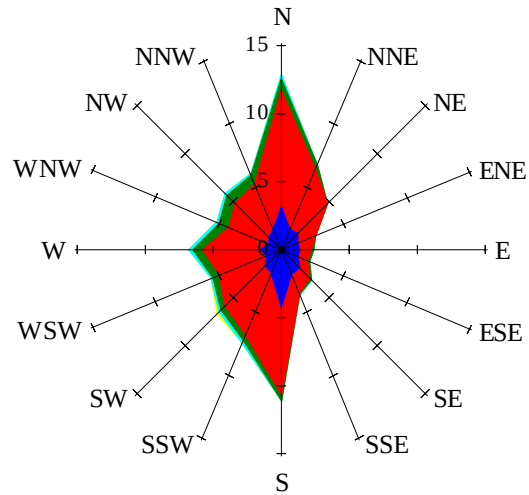
AVERAGE TRANSMITTED SOLAR RADIATION (Btu/sq.ft./day) FOR DOUBLE GLAZING, Percentage Uncertainty = 9														
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ NORTH	Unshaded	470	660	920	1180	1340	1440	1380	1250	1030	780	530	410	950
	Unshaded	150	190	250	310	360	410	380	330	270	210	160	130	260
	Shaded	130	170	220	280	330	360	350	300	250	190	140	120	240
EAST	Unshaded	330	440	560	680	720	770	730	690	600	490	360	290	550
	Shaded	300	390	500	600	630	670	640	600	530	440	330	270	490
SOUTH	Unshaded	820	830	760	620	500	460	470	570	710	850	850	780	680
	Shaded	800	780	620	430	360	360	360	390	530	760	820	760	580
WEST	Unshaded	330	430	560	660	710	750	710	670	590	490	360	290	550
	Shaded	310	390	500	580	620	650	620	590	530	440	330	270	490

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	39	73	84	68	30	44	82	101	95	68
	M.Cloudy	22	45	51	43	18	28	57	74	73	48
NORTH	M.Clear	10	14	15	13	8	20	17	17	17	16
	M.Cloudy	9	15	17	15	8	14	18	20	19	16
EAST	M.Clear	74	59	15	13	8	73	74	34	17	16
	M.Cloudy	27	32	17	15	8	33	45	30	19	16
SOUTH	M.Clear	37	70	80	65	29	12	28	43	39	20
	M.Cloudy	17	36	41	34	13	11	23	35	33	18
WEST	M.Clear	10	14	20	65	68	12	17	17	50	76
	M.Cloudy	9	15	19	34	25	11	18	20	39	46
M.Clear	(% hrs)	38	36	34	34	37	40	40	33	27	33

		Sept					Dec				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	26	67	86	79	49	15	43	50	33	4
	M.Cloudy	15	41	59	55	32	9	25	30	20	3
NORTH	M.Clear	8	15	17	16	13	5	10	11	9	2
	M.Cloudy	7	15	18	18	12	4	10	11	8	2
EAST	M.Clear	58	71	32	16	13	42	41	11	9	2
	M.Cloudy	20	36	26	18	12	12	19	11	8	2
SOUTH	M.Clear	18	54	72	66	38	37	80	88	66	10
	M.Cloudy	9	29	45	42	22	11	30	35	23	3
WEST	M.Clear	8	15	17	51	71	5	10	20	49	14
	M.Cloudy	7	15	18	34	35	4	10	14	19	4
M.Clear	(% hrs)	43	43	36	34	38	35	35	35	35	37

Wind Summary - December, January, and February

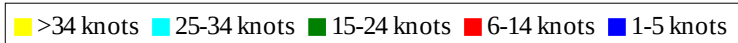
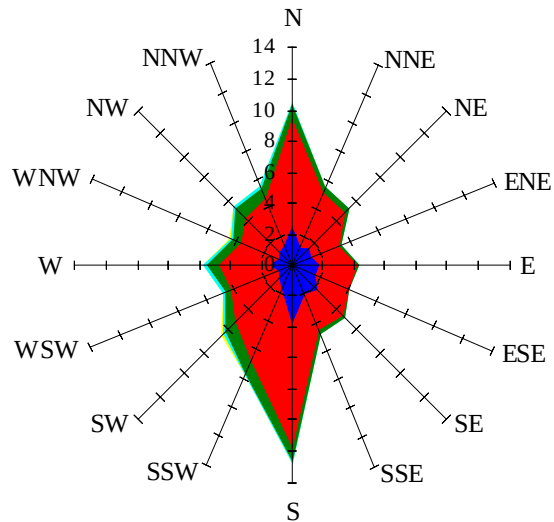
Labels of Percent Frequency on North Axis



Percent Calm = 8.36

Wind Summary - March, April, and May

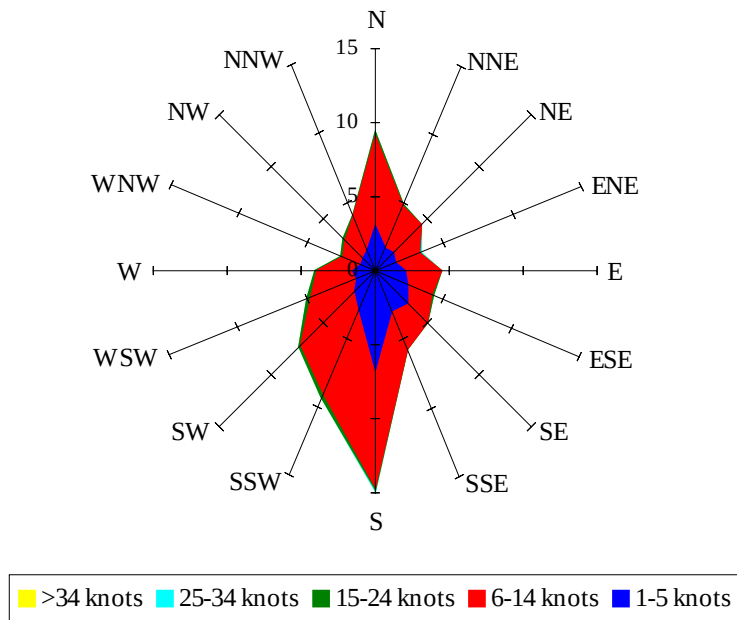
Labels of Percent Frequency on North Axis



Percent Calm = 6.29

Wind Summary - June, July, and August

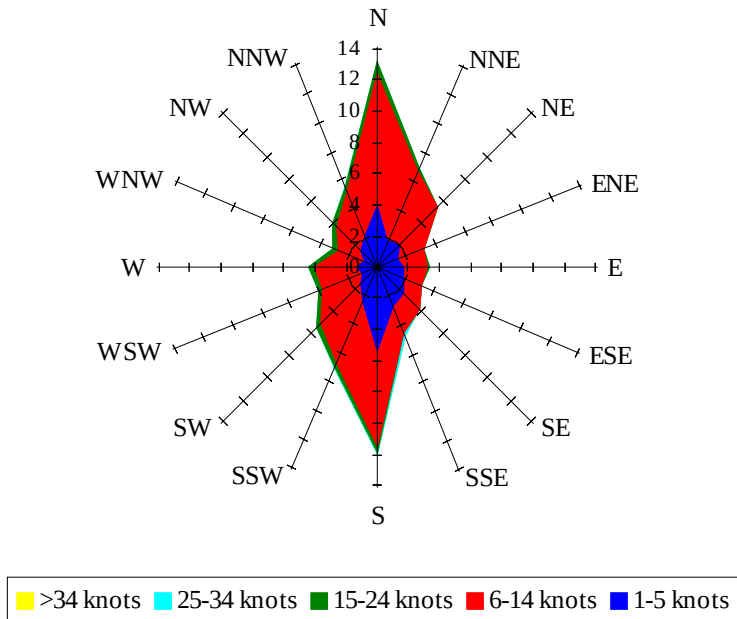
Labels of Percent Frequency on North Axis



Percent Calm = 8.99

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 11.70