

PORT COLUMBUS OH

Latitude = 40.00 N

Longitude = 82.88 W

Period of Record = 1973 to 1996

WMO No. 724280

Elevation = 817 feet

Average Pressure = 29.14 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	94	75	106	10.2	W
0.4% Occurrence	91	74	105	9.9	W
1.0% Occurrence	88	73	102	9.6	SW
2.0% Occurrence	86	72	98	9.3	SW
Mean Daily Range	18	-	-	-	-
97.5% Occurrence	13	11	7	9.0	W
99.0% Occurrence	6	5	5	8.6	W
99.6% Occurrence	0	-1	4	8.7	W
Median of Extreme Lows	-3	-4	3	8.9	WSW
	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	89	134	9.6	WSW
0.4% Occurrence	77	87	125	9.1	W
1.0% Occurrence	76	85	122	8.7	W
2.0% Occurrence	74	82	115	7.9	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	145	87	0.94	8.1	S
0.4% Occurrence	131	82	0.85	7.8	SW
1.0% Occurrence	125	82	0.82	6.1	S
2.0% Occurrence	118	79	0.77	7.1	S
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		15	640	320	1302

Other Site Data

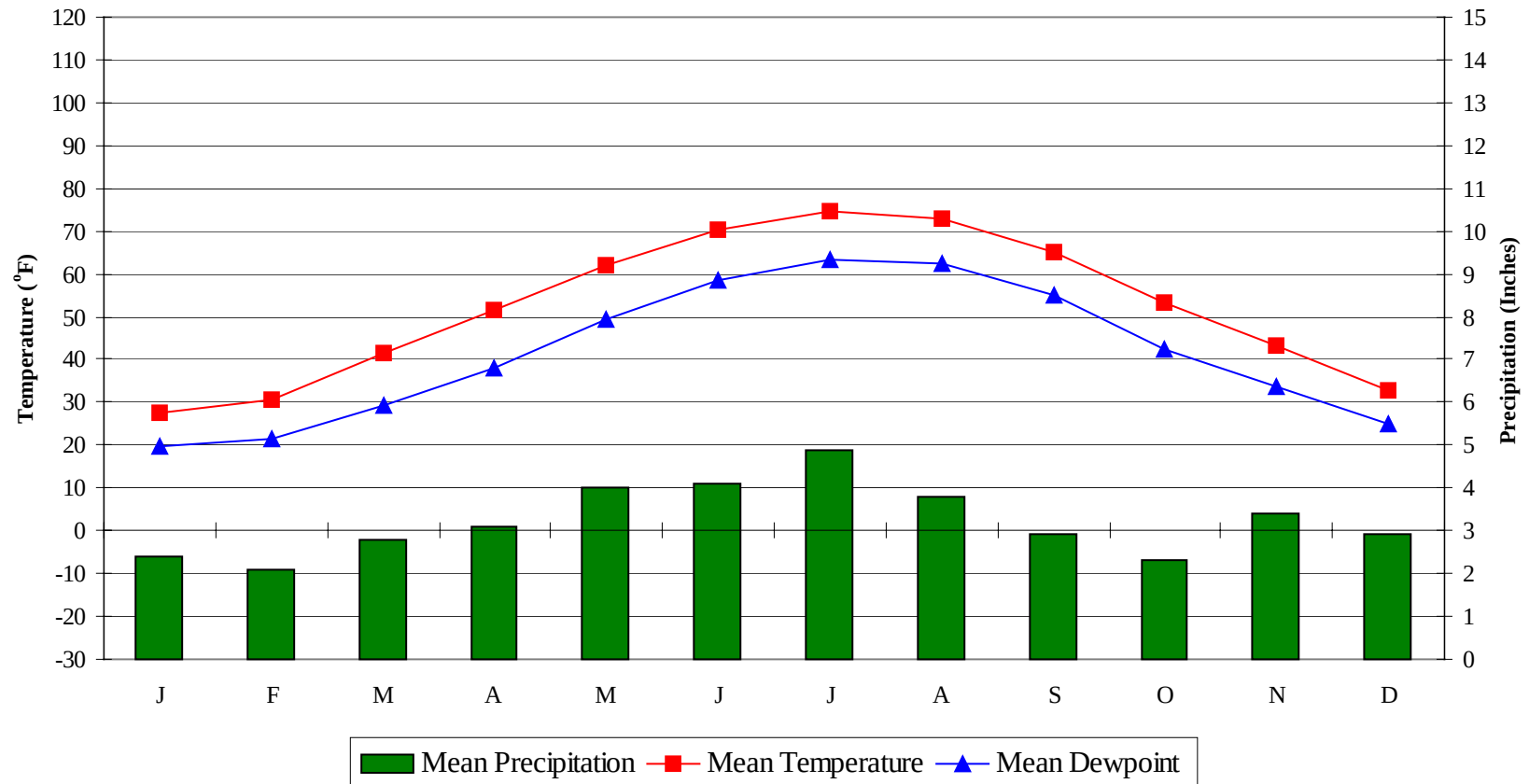
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
6	2.8	90	1.8 + 0.6
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
54.7	N/A	N/A	57

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

PORT COLUMBUS OH

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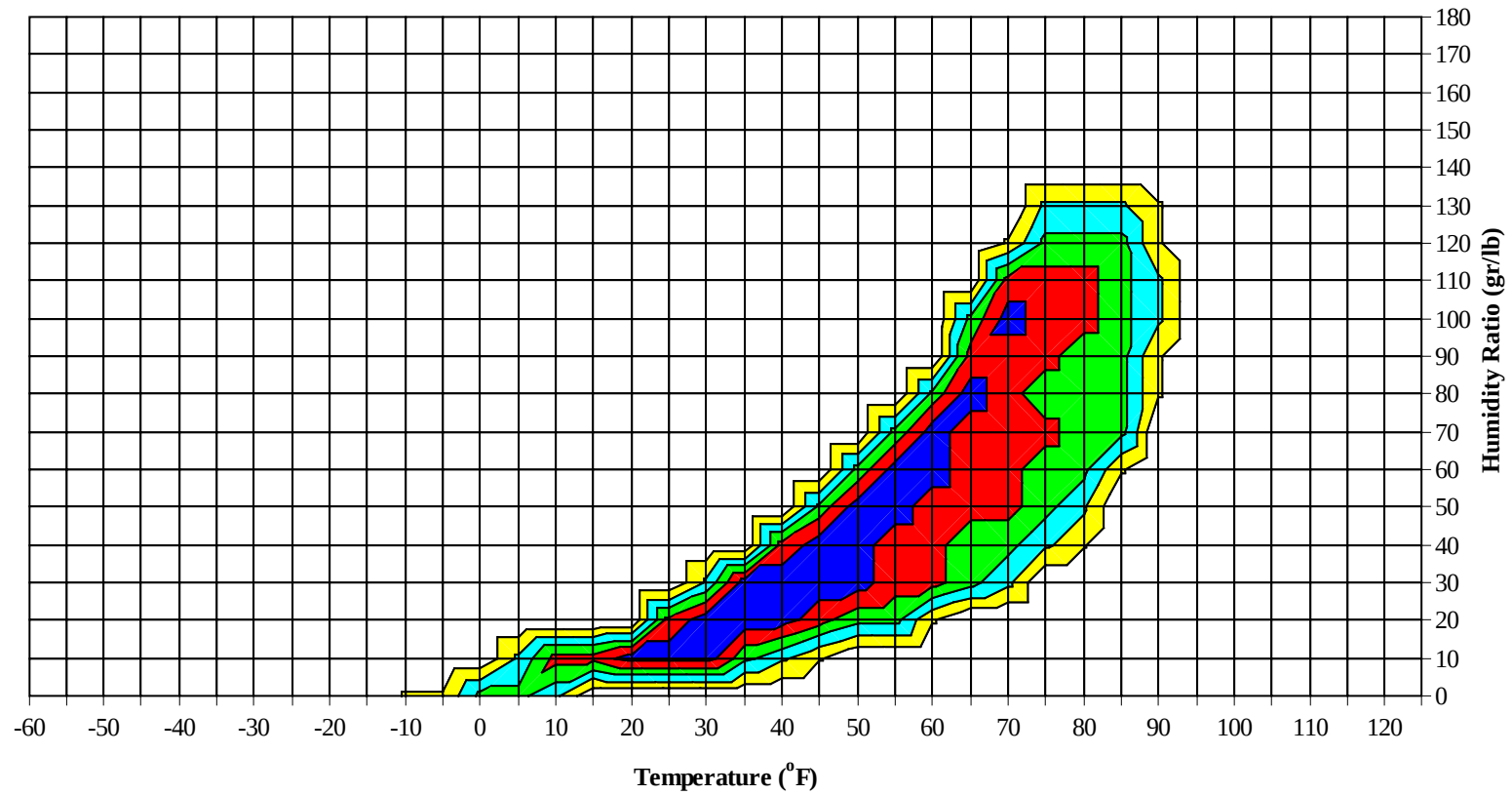
Average Annual Climate



PORT COLUMBUS OH

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Long Term Psychrometric Summary

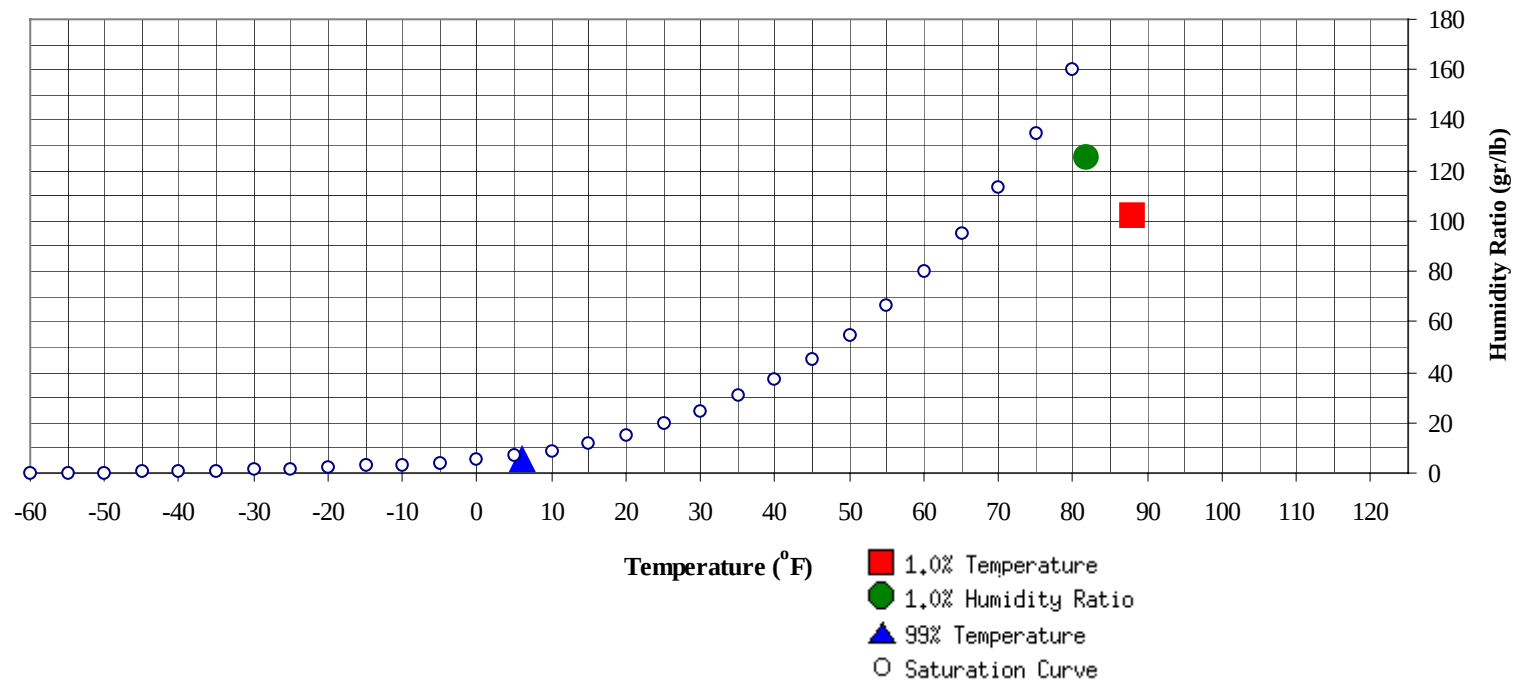


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

PORT COLUMBUS OH

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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	6	5.2	2.2		125.3	81.7	75.4	73	39.2

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	88	102.2	73.1	37.2

PORT COLUMBUS OH

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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		
95 / 99															
90 / 94															
85 / 89															
80 / 84												0	0	0	61.0
75 / 79												4	2	6	59.9
70 / 74							0	0	0	61.3		7	4	11	57.9
65 / 69		1	0	1	57.8		1	0	1	54.1	1	11	8	20	55.2
60 / 64	0	1	1	2	56.0	0	3	2	5	52.0	7	16	16	39	53.0
55 / 59	3	3	3	9	52.7	2	8	6	16	50.4	12	20	18	50	49.8
50 / 54	4	7	5	16	47.1	6	13	10	29	47.0	16	28	26	70	45.7
45 / 49	10	12	11	33	43.2	11	18	17	46	42.0	24	32	31	87	41.4
40 / 44	11	20	17	48	38.5	16	25	24	65	38.0	30	36	37	103	37.3
35 / 39	25	42	36	103	33.8	27	34	31	92	33.6	39	38	38	115	33.0
30 / 34	47	45	51	143	29.6	37	36	39	112	29.0	47	30	36	113	28.8
25 / 29	40	37	37	114	24.6	36	30	34	100	24.4	35	14	20	69	24.4
20 / 24	33	29	31	93	20.0	32	24	23	79	19.8	22	6	7	35	19.9
15 / 19	27	20	24	71	15.4	19	15	16	50	15.2	8	3	3	14	15.5
10 / 14	19	14	16	49	10.7	15	11	11	37	10.5	3	1	2	6	10.6
5 / 9	13	7	8	28	5.9	12	4	7	23	5.9	3	0	0	3	6.1
0 / 4	7	4	4	15	1.2	8	2	3	13	1.2	1	0		1	2.0
-5 / -1	5	2	2	9	-3.2	3	0	0	3	-3.1	0			0	-2.7
-10 / -6	2	2	2	6	-7.6	1	0		1	-6.5	0			0	-6.0
-15 / -11	1	1	1	3	-12.4	0			0	-12.0					
-20 / -16	1	0	0	1	-16.9										
-25 / -21	0			0	-20.6										

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.

PORT COLUMBUS OH

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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		
95 / 99												1	0	1	75.1
90 / 94							1	0	1	71.4		7	2	9	72.5
85 / 89		1	0	1	64.7		10	4	14	69.3	0	28	12	40	71.6
80 / 84		7	4	11	63.7	0	23	12	35	67.2	1	50	30	82	69.3
75 / 79		11	7	18	61.8	2	32	21	55	64.6	9	55	46	110	66.8
70 / 74	1	19	14	34	58.8	9	42	32	83	62.0	44	50	58	152	65.2
65 / 69	7	24	19	50	56.5	30	43	47	120	59.4	67	29	46	142	62.2
60 / 64	21	35	34	90	53.7	47	38	44	129	56.1	55	13	27	95	57.8
55 / 59	26	34	33	93	49.7	45	26	36	107	51.8	35	4	14	53	53.5
50 / 54	30	32	35	97	45.6	44	21	29	94	47.6	21	1	4	26	49.6
45 / 49	36	29	34	99	41.7	39	9	17	65	43.8	7		1	8	45.1
40 / 44	42	26	30	98	37.8	23	1	5	29	39.6	2			2	41.2
35 / 39	37	14	19	70	33.7	8		1	9	35.3	0			0	38.0
30 / 34	26	6	9	41	29.7	3		0	3	30.9					
25 / 29	12	1	2	15	25.1										
20 / 24	3	0	0	3	20.8										
15 / 19	0			0	15.9										
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															

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PORT COLUMBUS OH

WMO No. 724280

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		
95 / 99		3	1	4	75.2		1	0	1	74.5		0		0	68.7
90 / 94	0	17	7	24	75.1		12	3	15	75.4		2	1	3	73.4
85 / 89	1	44	23	68	73.0	0	36	15	51	73.1	0	11	4	15	71.9
80 / 84	5	69	45	119	70.5	1	65	37	103	70.5	0	30	13	43	69.1
75 / 79	25	62	58	145	68.8	17	60	56	133	68.7	2	41	25	68	66.6
70 / 74	78	40	65	183	67.3	64	49	67	180	66.9	26	55	47	128	64.9
65 / 69	73	11	36	120	63.6	77	19	41	137	63.6	44	42	49	135	61.7
60 / 64	43	1	11	55	59.1	52	5	20	77	59.1	44	32	43	119	57.3
55 / 59	18	0	2	20	54.6	24	0	7	31	54.6	46	17	31	94	53.2
50 / 54	5		0	5	50.5	12	0	2	14	50.5	41	7	17	65	49.2
45 / 49	0		0	0	45.9	2	0	0	2	46.1	23	1	7	31	44.7
40 / 44	0			0	42.0	0	0		0	41.3	11	0	2	13	40.6
35 / 39											3		1	4	36.3
30 / 34											0			0	32.7
25 / 29															
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															

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PORT COLUMBUS OH

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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		
95 / 99															
90 / 94															
85 / 89		0		0	68.0										
80 / 84	0	4	0	4	65.8										
75 / 79	0	14	4	18	63.2			0	1	62.2			0	0	64.0
70 / 74	2	22	12	36	61.0	0	5	2	7	60.5			0	0	62.6
65 / 69	10	33	23	66	58.7	1	12	7	20	58.2	0	1	0	1	59.2
60 / 64	20	42	36	98	55.1	12	18	15	45	55.8	2	5	4	11	56.3
55 / 59	32	44	40	116	51.1	16	25	21	62	51.7	5	9	7	21	52.9
50 / 54	39	41	48	128	47.0	20	31	26	77	46.9	9	13	10	32	48.2
45 / 49	47	29	41	117	43.0	28	34	34	96	42.4	12	19	14	45	42.8
40 / 44	42	13	27	82	39.0	33	38	38	109	37.8	18	33	26	77	38.4
35 / 39	33	4	13	50	34.8	41	40	43	124	33.4	38	48	50	137	34.0
30 / 34	16	1	4	21	30.8	41	25	34	100	29.4	55	46	55	157	29.5
25 / 29	5	0	1	6	26.1	31	8	15	54	25.0	40	32	32	104	24.8
20 / 24	1			1	21.2	13	2	4	19	20.7	27	18	23	68	20.2
15 / 19						4	0	1	5	16.4	18	11	12	41	15.2
10 / 14						0	0	0	0	11.5	12	6	8	26	10.7
5 / 9						0	0	0	0	5.4	5	4	3	12	6.1
0 / 4											3	1	2	6	1.4
-5 / -1											1	0	1	2	-3.2
-10 / -6											1	1	0	2	-7.8
-15 / -11											1	0	0	1	-11.6
-20 / -16											0			0	-16.2
-25 / -21															

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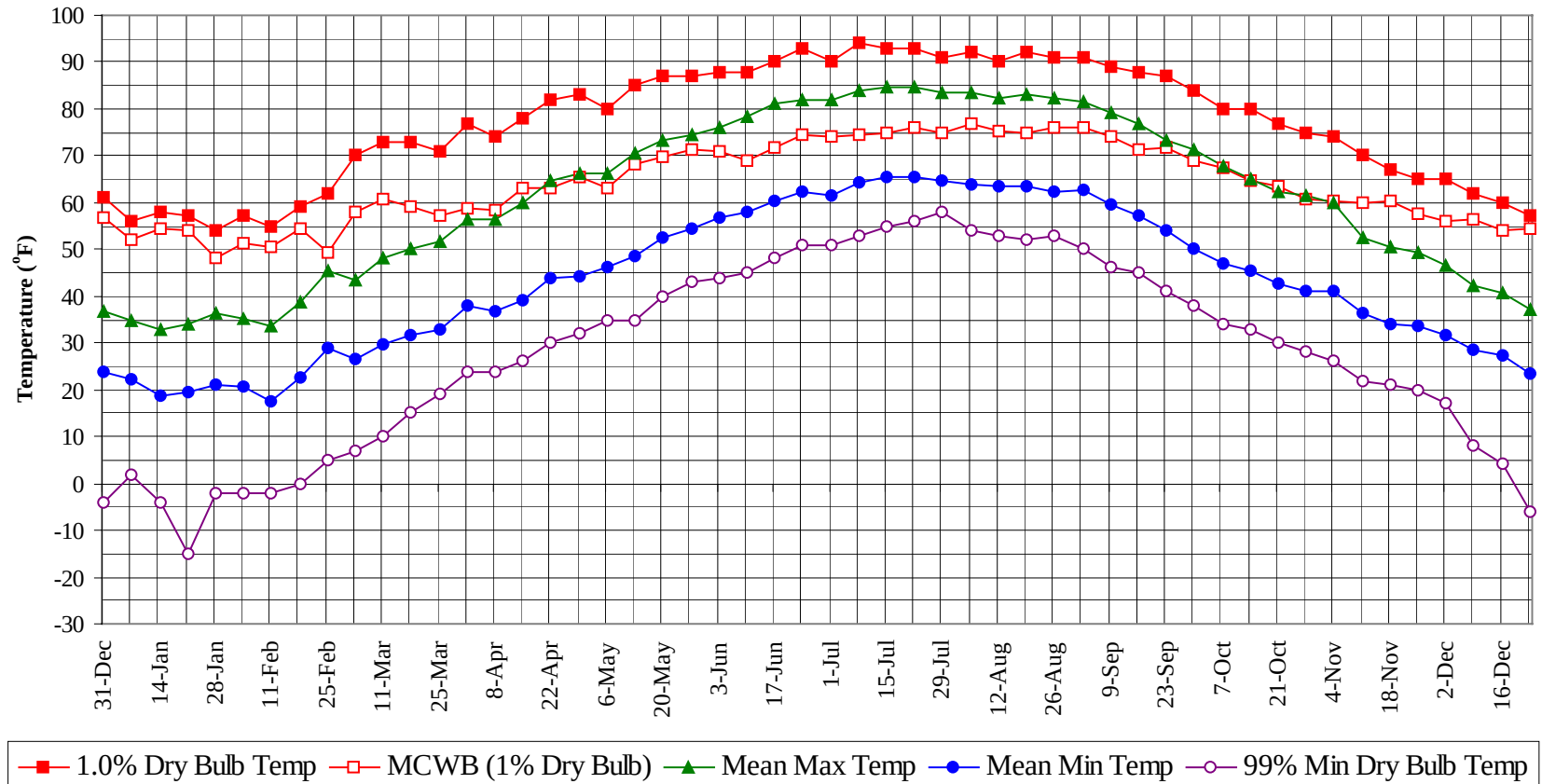
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)

Period of Record = 1973 to 1996

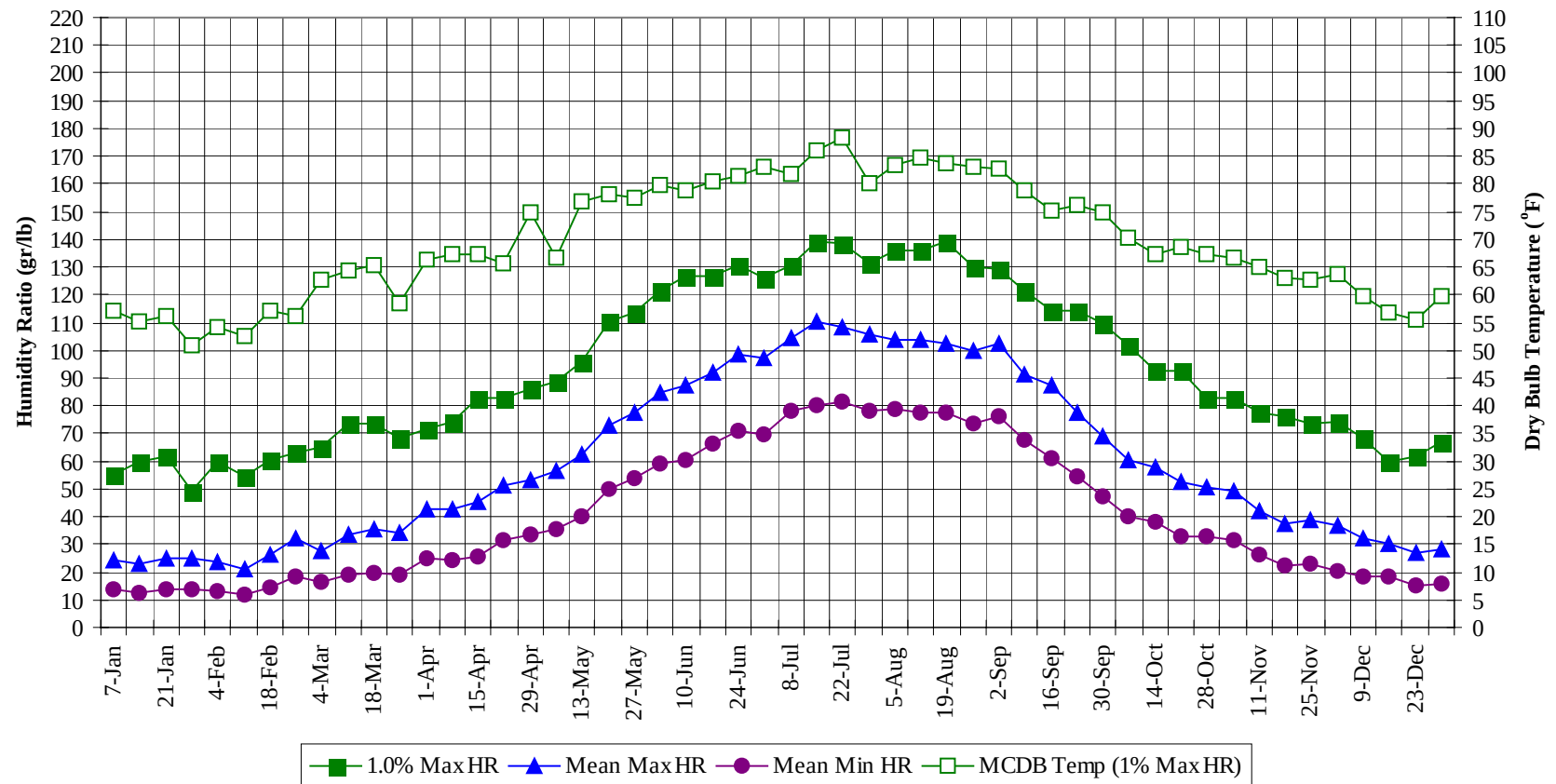
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
95 / 99		5	2	7	74.9
90 / 94	0	39	13	52	74.5
85 / 89	1	131	58	190	72.3
80 / 84	8	247	141	396	69.6
75 / 79	54	280	217	551	67.2
70 / 74	223	291	299	813	65.1
65 / 69	308	226	275	809	61.2
60 / 64	303	211	253	767	56.4
55 / 59	262	191	218	671	51.8
50 / 54	246	195	213	654	47.2
45 / 49	238	186	209	633	42.6
40 / 44	227	195	208	630	38.2
35 / 39	253	220	232	705	33.7
30 / 34	273	190	228	691	29.3
25 / 29	199	123	141	463	24.7
20 / 24	130	80	88	299	20.0
15 / 19	76	49	56	181	15.3
10 / 14	49	33	37	119	10.6
5 / 9	34	16	19	69	5.9
0 / 4	19	7	8	34	1.2
-5 / -1	9	2	3	14	-3.2
-10 / -6	5	3	2	10	-7.5
-15 / -11	3	1	1	5	-12.2
-20 / -16	1	0	0	1	-16.9
-25 / -21	0			0	-20.6

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Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary



PORT COLUMBUS OH

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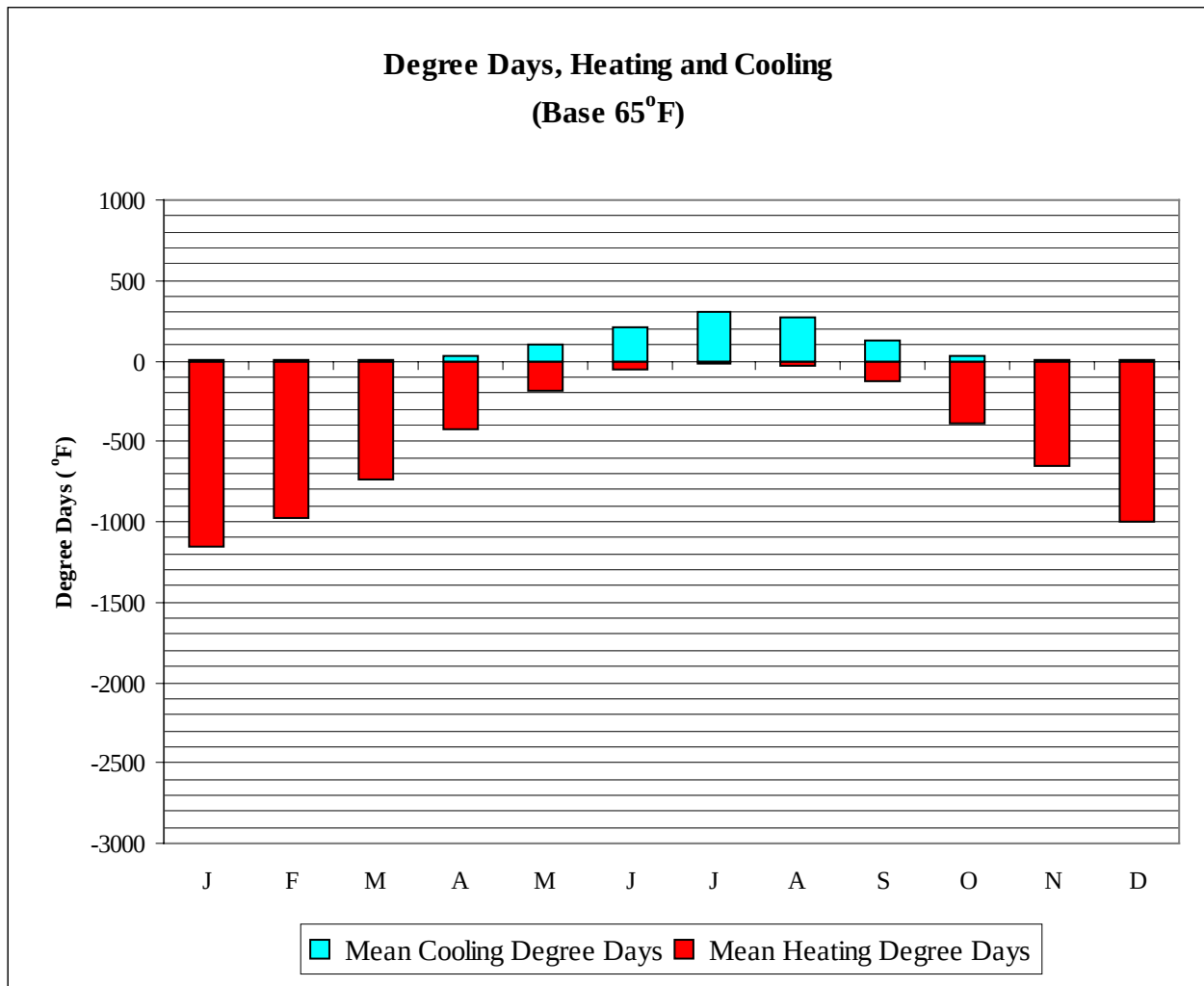
Long Term Dry Bulb Temperature and Humidity Summary

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	56.0	52.1	34.7	22.2	2.0	55.3	57.2	24.1	14.0
14-Jan	58.0	54.6	33.0	18.5	-4.0	59.5	55.2	23.0	12.2
21-Jan	57.0	54.2	34.1	19.4	-15.0	61.6	56.3	25.0	13.7
28-Jan	54.0	48.0	36.2	21.2	-2.0	49.0	50.8	25.0	13.5
4-Feb	57.0	51.3	35.2	20.8	-2.0	59.5	54.0	23.7	13.2
11-Feb	55.0	50.7	33.5	17.6	-2.0	54.6	52.5	21.2	11.6
18-Feb	59.0	54.6	38.6	22.6	0.0	60.2	57.3	26.6	14.8
25-Feb	62.0	49.2	45.4	28.8	5.0	63.0	56.0	32.4	18.6
4-Mar	70.0	57.9	43.5	26.7	7.0	65.1	62.9	27.9	16.4
11-Mar	73.0	60.8	48.2	29.8	10.0	73.5	64.3	33.6	19.1
18-Mar	73.0	59.0	50.2	31.8	15.0	73.5	65.5	35.3	19.5
25-Mar	71.0	57.2	51.9	32.7	19.0	68.6	58.6	34.0	19.3
1-Apr	77.0	58.9	56.4	38.0	24.0	71.4	66.2	42.6	25.2
8-Apr	74.0	58.4	56.4	36.8	24.0	74.2	67.4	42.6	24.6
15-Apr	78.0	63.1	60.0	39.1	26.0	82.6	67.3	45.5	25.6
22-Apr	82.0	63.2	64.5	43.9	30.0	82.6	65.7	51.3	31.8
29-Apr	83.0	65.3	66.2	44.1	32.0	86.1	74.8	53.3	33.2
6-May	80.0	63.2	66.3	46.1	35.0	88.9	66.8	56.4	35.2
13-May	85.0	68.2	70.7	48.7	35.0	95.9	77.0	62.1	39.9
20-May	87.0	70.0	73.4	52.4	40.0	110.6	78.3	73.0	49.9
27-May	87.0	71.3	74.6	54.4	43.0	113.4	77.6	77.4	53.8
3-Jun	88.0	71.1	76.2	56.7	44.0	121.8	79.9	84.7	59.1
10-Jun	88.0	69.0	78.5	58.1	45.0	126.7	78.8	87.5	60.6
17-Jun	90.0	71.7	81.0	60.4	48.0	126.7	80.5	91.9	66.1
24-Jun	93.0	74.6	81.8	62.3	51.0	130.9	81.5	98.6	70.7
1-Jul	90.0	74.0	82.1	61.7	51.0	126.0	82.9	97.0	69.8
8-Jul	94.0	74.5	84.0	64.1	53.0	130.9	81.7	104.6	78.3
15-Jul	93.0	75.1	84.8	65.4	55.0	139.3	86.1	110.2	80.0
22-Jul	93.0	76.0	84.7	65.3	56.0	138.6	88.3	108.5	81.5
29-Jul	91.0	74.7	83.7	64.8	58.0	131.6	80.2	105.8	78.4
5-Aug	92.0	76.7	83.6	64.0	54.0	135.8	83.4	104.0	78.6
12-Aug	90.0	75.2	82.5	63.6	53.0	135.8	84.7	103.5	77.5
19-Aug	92.0	75.1	83.2	63.6	52.0	139.3	83.6	102.7	77.6
26-Aug	91.0	76.2	82.1	62.2	53.0	130.2	83.1	99.7	73.6
2-Sep	91.0	75.9	81.5	62.5	50.0	129.5	82.8	102.6	76.0
9-Sep	89.0	74.1	79.4	59.4	46.0	121.8	78.7	91.6	67.9
16-Sep	88.0	71.4	76.8	57.2	45.0	114.1	75.2	87.3	61.3
23-Sep	87.0	71.7	73.1	54.0	41.0	114.1	76.3	77.4	54.6
30-Sep	84.0	69.1	71.2	50.2	38.0	109.9	74.9	68.7	47.6
7-Oct	80.0	67.4	67.8	46.8	34.0	101.5	70.2	60.7	40.3
14-Oct	80.0	64.6	65.2	45.3	33.0	92.4	67.3	57.5	38.2
21-Oct	77.0	63.6	62.3	42.6	30.0	92.4	68.7	52.5	33.1
28-Oct	75.0	60.8	61.4	41.2	28.0	82.6	67.2	50.6	33.0
4-Nov	74.0	60.3	60.1	41.2	26.0	82.6	66.6	49.3	31.3
11-Nov	70.0	59.9	52.6	36.5	22.0	77.7	65.1	42.0	26.0
18-Nov	67.0	60.4	50.6	33.9	21.0	76.3	63.1	37.5	22.3
25-Nov	65.0	57.5	49.2	33.7	20.0	73.5	62.8	38.8	23.2
2-Dec	65.0	55.8	46.4	31.8	17.0	74.2	63.6	37.0	20.6
9-Dec	62.0	56.3	42.4	28.4	8.0	68.6	59.9	31.9	18.5
16-Dec	60.0	54.0	40.8	27.4	4.0	59.5	56.9	30.4	18.1
23-Dec	57.0	54.3	37.2	23.4	-6.0	61.6	55.5	27.0	15.0
31-Dec	61.0	56.9	37.0	23.8	-4.0	67.2	59.7	28.3	15.9

PORT COLUMBUS

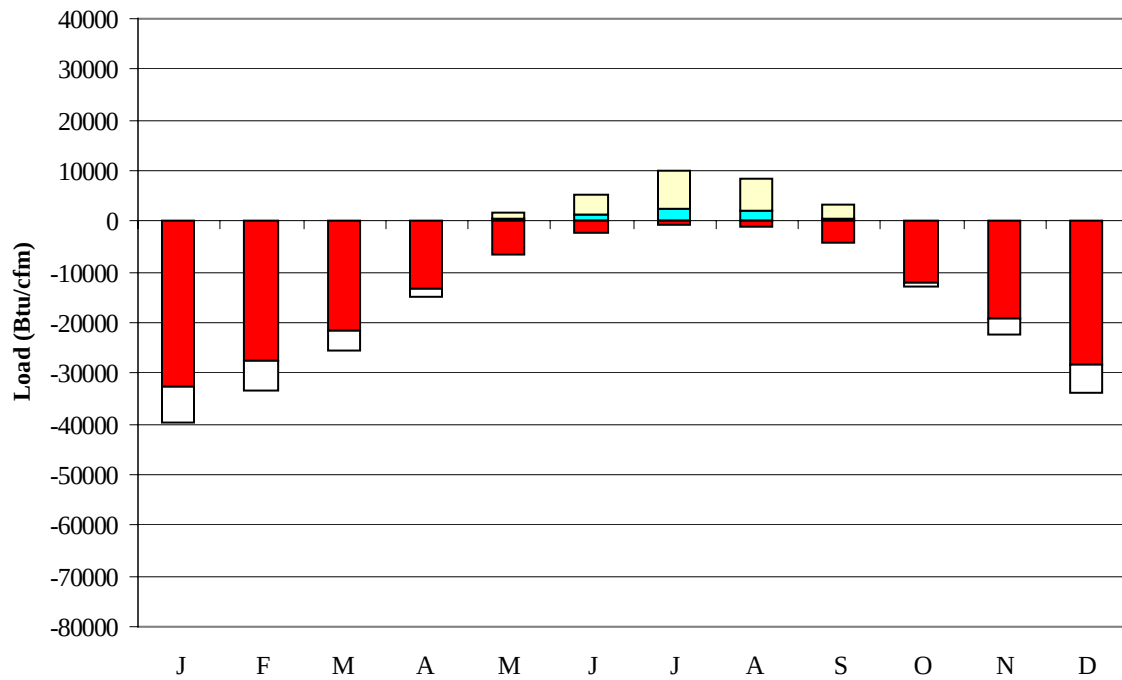
OH

WMO No. 724280



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	1160
FEB	0	971
MAR	8	738
APR	30	430
MAY	97	190
JUN	214	50
JUL	311	15
AUG	267	27
SEP	127	120
OCT	26	384
NOV	4	657
DEC	0	998
ANN	1084	5740

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	Average Sensible Heating Load	Average Latent Cooling Load	Average Latent Heating Load
	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)
JAN	0	-32490	0	-7095
FEB	0	-27353	0	-6115
MAR	11	-21444	2	-4264
APR	121	-13184	30	-1815
MAY	547	-6511	1082	-251
JUN	1488	-2043	3906	-5
JUL	2503	-790	7540	0
AUG	1940	-1234	6560	-1
SEP	671	-4358	2489	-35
OCT	58	-12068	182	-810
NOV	2	-19313	9	-2966
DEC	0	-28278	0	-5556
ANN	7341	-169066	21800	-28913

Average Annual Solar Radiation – Nearest Available Site

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

City: COLUMBUS
 State: OH
 WBAN No: 14821
 Lat(N): 40
 Long(W): 82.88
 Elev(ft): 833

Stn Type: Secondary

SHADING GEOMETRY IN DIMENSIONLESS UNITS

Window: 1

Overhang: 0.534

Vert Gap: 0.321

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	570	800	1100	1460	1740	1900	1860	1670	1360	990	600	470	1210
	Std Dev	50	67	71	127	144	121	102	98	98	78	69	40	33
	Minimum	490	690	980	1180	1460	1620	1710	1430	1210	830	450	390	1150
	Maximum	670	1020	1260	1680	2020	2240	2070	1880	1530	1250	740	550	1280
	Diffuse	360	480	620	750	860	900	890	790	630	460	360	310	620
Clear Day	Global	880	1230	1710	2190	2500	2620	2530	2260	1830	1340	930	770	1740
NORTH	Global	200	270	350	440	550	610	590	490	380	290	210	170	380
	Diffuse	200	270	350	430	500	540	530	470	380	290	210	170	360
Clear Day	Global	190	250	330	430	580	670	620	470	360	270	200	170	380
EAST	Global	360	500	660	850	990	1060	1060	970	820	630	380	300	720
	Diffuse	240	330	430	520	600	640	640	570	470	350	250	210	440
Clear Day	Global	660	870	1110	1320	1420	1440	1420	1320	1140	900	680	590	1070
SOUTH	Global	780	900	920	900	820	770	810	920	1050	1090	780	650	870
	Diffuse	350	420	490	540	580	590	590	580	530	440	340	300	480
Clear Day	Global	1840	1920	1790	1420	1090	940	990	1250	1600	1810	1800	1760	1520
WEST	Global	360	500	640	820	950	1020	1010	950	810	620	380	290	700
	Diffuse	240	330	430	530	610	650	640	580	480	360	250	210	440
Clear Day	Global	660	870	1110	1320	1420	1440	1420	1320	1140	900	680	590	1070

Average Annual Solar Heat and Illumination – Nearest Available Site

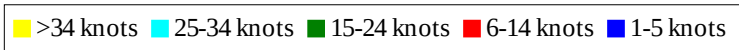
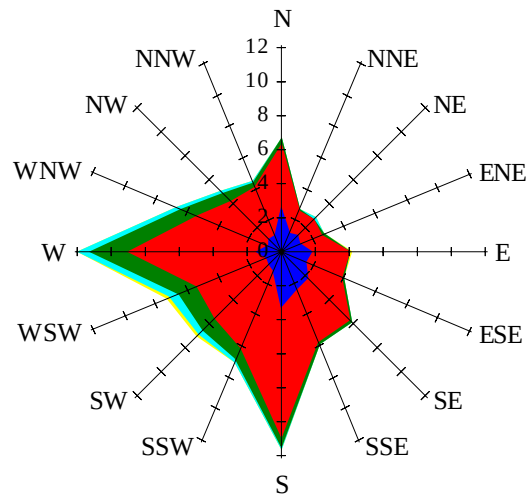
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

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	550	770	1050	1260	1380	1350	1200	970	690	400	310	860
NORTH	Unshaded	140	190	250	300	360	400	390	330	270	200	140	120	260
	Shaded	120	160	210	270	320	360	340	290	240	180	120	100	230
EAST	Unshaded	250	350	470	610	710	760	760	690	580	440	270	200	510
	Shaded	220	300	400	520	600	640	640	590	500	390	230	180	440
SOUTH	Unshaded	580	650	640	590	520	480	500	590	710	790	580	490	590
	Shaded	560	600	510	400	350	360	360	380	510	690	550	470	480
WEST	Unshaded	250	350	450	580	670	730	720	680	570	440	260	200	490
	Shaded	220	310	390	500	580	620	610	580	500	380	230	180	430

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	28	64	79	68	35	37	76	97	97	75
	M.Cloudy	16	37	46	41	21	23	48	68	69	50
NORTH	M.Clear	8	13	15	14	9	20	16	17	17	16
	M.Cloudy	7	14	17	15	9	12	16	19	19	16
EAST	M.Clear	64	63	20	14	9	68	77	43	17	16
	M.Cloudy	18	28	18	15	9	27	41	33	19	16
SOUTH	M.Clear	28	65	81	70	35	11	27	45	45	27
	M.Cloudy	11	29	36	32	15	9	21	34	35	22
WEST	M.Clear	8	13	15	57	68	11	16	17	41	74
	M.Cloudy	7	14	17	28	23	9	16	19	32	44
M.Clear	(% hrs)	26	24	22	21	20	42	39	30	23	26
		Sept					Dec				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	17	57	81	80	55	7	34	45	32	5
	M.Cloudy	10	33	53	53	34	4	19	25	19	4
NORTH	M.Clear	6	13	16	16	13	3	9	11	9	3
	M.Cloudy	5	13	17	17	13	2	8	10	8	2
EAST	M.Clear	47	72	40	16	13	22	42	11	9	3
	M.Cloudy	14	31	28	17	13	5	14	10	8	2
SOUTH	M.Clear	12	49	72	71	46	18	69	85	66	15
	M.Cloudy	6	23	42	42	25	4	19	25	19	4
WEST	M.Clear	6	13	16	42	71	3	9	12	42	19
	M.Cloudy	5	13	17	29	34	2	8	11	14	4
M.Clear	(% hrs)	43	44	35	31	35	19	18	18	19	18

Wind Summary - December, January, and February

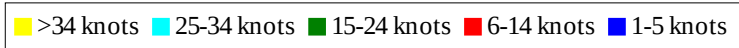
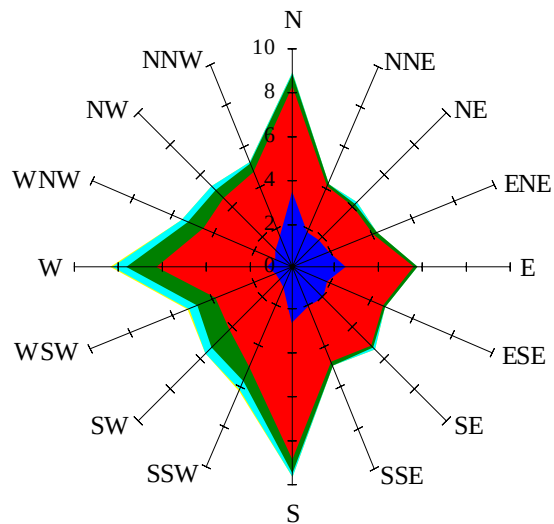
Labels of Percent Frequency on North Axis



Percent Calm = 5.83

Wind Summary - March, April, and May

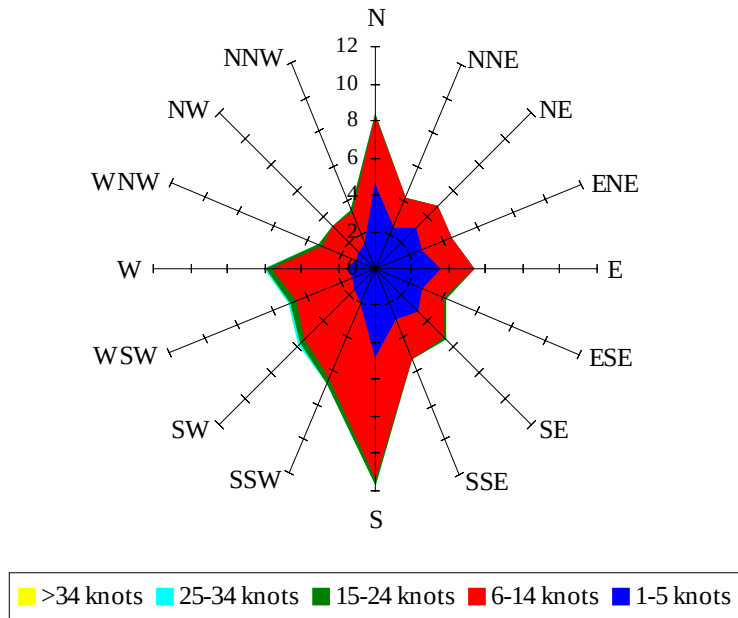
Labels of Percent Frequency on North Axis



Percent Calm = 7.94

Wind Summary - June, July, and August

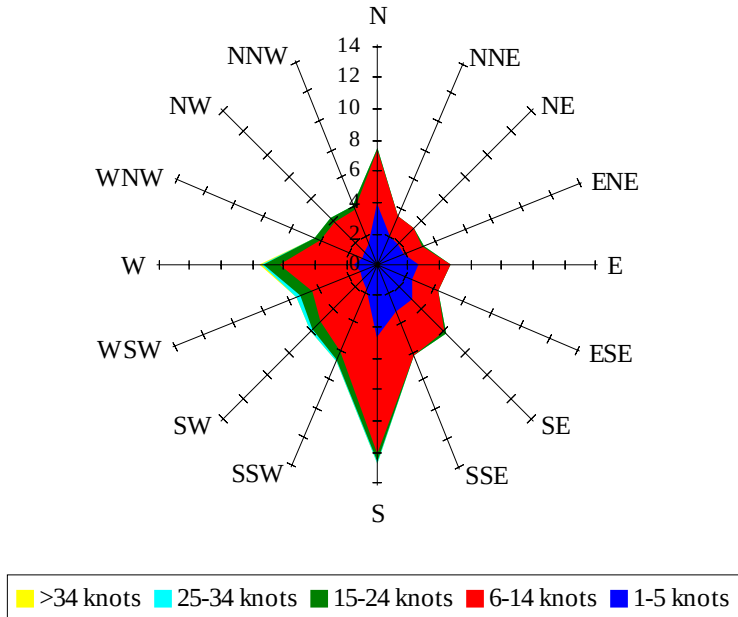
Labels of Percent Frequency on North Axis



Percent Calm = 13.67

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 11.63