

PORTLAND ME

Latitude = 43.65 N

Longitude = 70.32 W

Period of Record = 1973 to 1996

WMO No. 726060

Elevation = 62 feet

Average Pressure = 29.89 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	93	75	101	12.9	W
0.4% Occurrence	87	71	91	11.1	W
1.0% Occurrence	84	70	88	10.8	S
2.0% Occurrence	80	68	83	10.2	S
Mean Daily Range	17	-	-	-	-
97.5% Occurrence	8	6	5	8.2	N
99.0% Occurrence	2	1	3	7.8	W
99.6% Occurrence	-2	-3	3	6.8	W
Median of Extreme Lows	-12	-12	2	4.9	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	77	88	120	10.4	S
0.4% Occurrence	74	82	111	9.6	S
1.0% Occurrence	72	80	104	9.3	S
2.0% Occurrence	70	77	98	8.8	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	125	84	0.82	9.3	S
0.4% Occurrence	115	79	0.77	8.3	S
1.0% Occurrence	108	76	0.72	8.2	S
2.0% Occurrence	103	74	0.69	7.8	S
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		4	209	74	495

Other Site Data

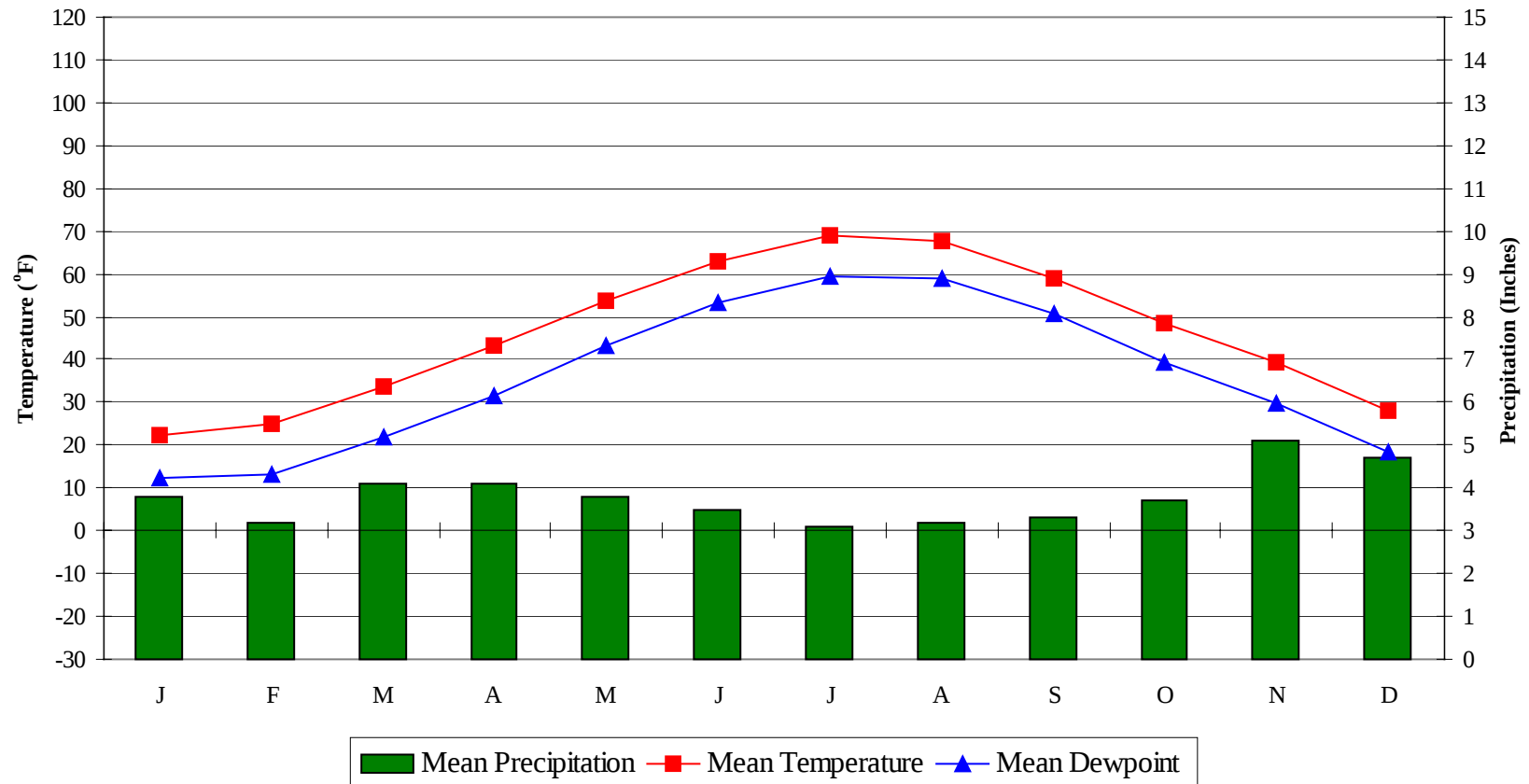
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
5	2.3	110	0.7 + 0.2
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
48.5	N/A	60	78

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

PORTLAND ME

WMO No. 726060

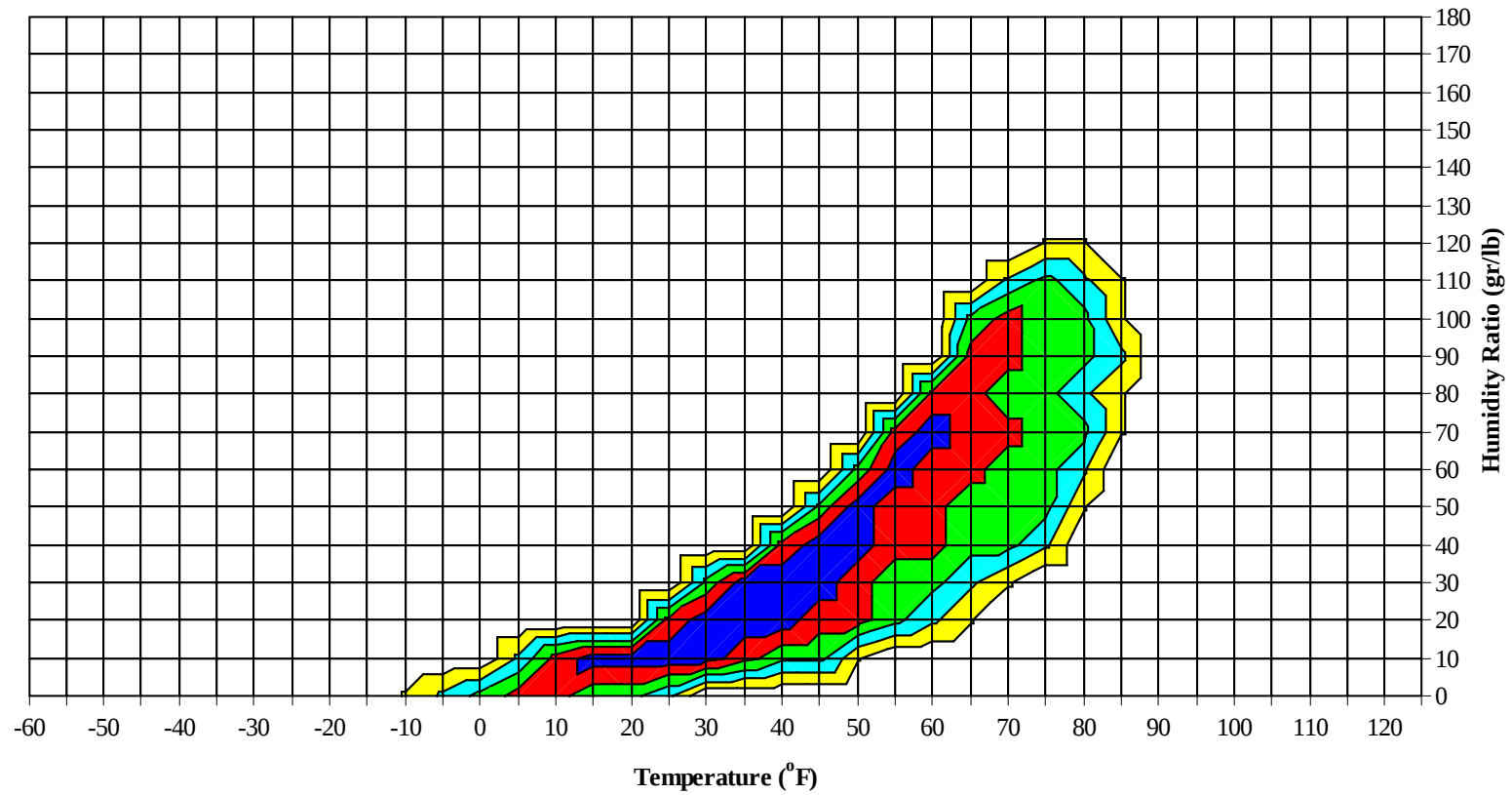
Average Annual Climate



PORTLAND ME

WMO No. 726060

Long Term Psychrometric Summary

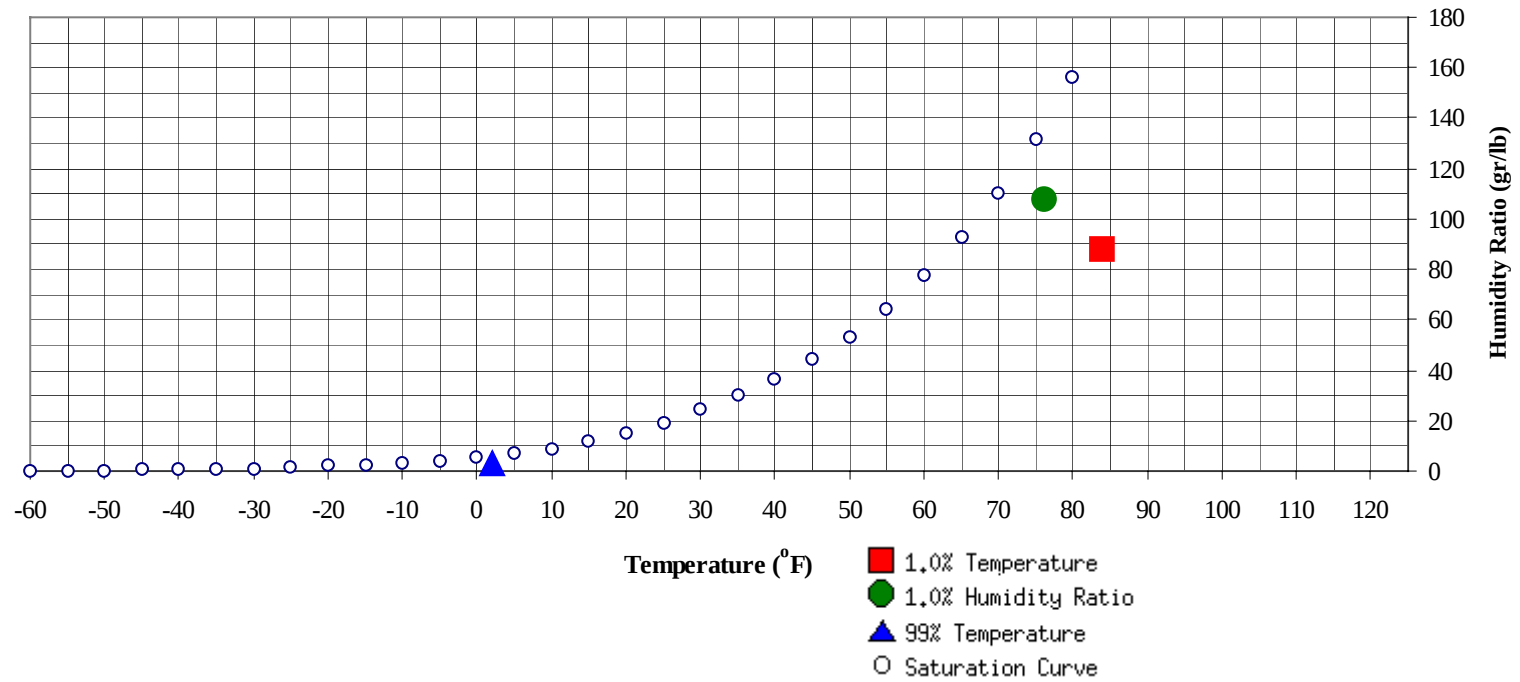


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

PORTLAND ME

WMO No. 726060

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	2	3.3	1.0		107.8	76.2	71.2	69.1	35.1

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	84	87.9	70	34.0

PORTLAND ME

WMO No. 726060

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															
85 / 89															
80 / 84															
75 / 79												0		0	57.3
70 / 74												0	0	0	56.8
65 / 69											0	1	0	1	54.8
60 / 64							0		0	48.0	0	3	0	3	50.3
55 / 59		1		1	50.4	0	1	0	1	47.5	1	6	1	8	47.2
50 / 54	1	2	1	4	48.7	0	3	1	4	44.8	1	12	5	18	44.3
45 / 49	2	6	5	13	44.3	2	9	3	14	42.0	5	32	12	49	40.9
40 / 44	5	18	10	33	38.2	9	20	12	41	37.8	18	52	33	103	37.3
35 / 39	17	31	27	75	33.9	19	37	32	88	33.4	51	63	73	187	33.6
30 / 34	34	37	34	105	29.3	26	40	38	104	28.8	61	38	55	154	29.0
25 / 29	26	41	35	102	24.0	29	37	38	104	23.9	41	20	33	94	23.9
20 / 24	30	37	39	106	19.5	31	33	35	99	19.1	28	13	18	59	19.2
15 / 19	36	32	35	103	15.0	31	22	30	83	14.6	19	5	11	35	14.7
10 / 14	33	22	29	84	10.2	28	11	20	59	10.1	14	2	5	21	10.2
5 / 9	28	12	18	58	5.6	23	6	10	39	5.6	7	0	1	8	5.8
0 / 4	20	5	10	35	0.9	14	2	4	20	0.9	2	0	0	2	1.0
-5 / -1	8	2	3	13	-3.2	6	1	2	9	-3.4	1			1	-2.9
-10 / -6	7	1	2	10	-7.4	4		1	5	-7.7					
-15 / -11	3	0	0	3	-12.2	2			2	-11.3					
-20 / -16	1			1	-16.7										
-25 / -21															

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.

PORTLAND ME

WMO No. 726060

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	0	71.7
90 / 94							0	0	0	68.6		3	0	3	71.9
85 / 89							3	0	3	66.0		7	2	9	70.0
80 / 84		1	0	1	62.6	0	5	1	6	65.1	1	19	4	24	67.5
75 / 79	0	2	0	2	58.0	0	9	2	11	62.7	4	34	10	48	64.5
70 / 74	0	3	1	4	56.2	2	17	5	24	59.8	10	51	22	83	62.2
65 / 69	0	5	2	7	54.4	5	30	12	47	56.6	26	49	40	115	60.0
60 / 64	1	15	5	21	50.4	13	47	22	82	53.5	52	36	60	148	57.5
55 / 59	3	27	9	39	47.8	32	58	42	133	50.9	71	30	63	164	54.2
50 / 54	13	48	23	84	44.6	59	47	69	175	48.3	51	8	32	91	50.2
45 / 49	31	62	52	144	41.8	74	25	66	165	44.6	20	2	7	29	45.4
40 / 44	62	50	68	181	38.3	42	5	24	71	40.3	5		0	5	41.0
35 / 39	60	19	52	130	34.0	17	0	4	21	34.9	0			0	36.9
30 / 34	46	6	23	75	29.4	5		0	5	30.7					
25 / 29	20	1	4	25	24.8	0		0	0	25.5					
20 / 24	4	0	2	6	19.0										
15 / 19	1	0	0	1	15.4										
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															

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.

PORTLAND ME

WMO No. 726060

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						0			0	79.0					
95 / 99		1	0	1	76.8	0			0	77.3		0		0	74.0
90 / 94		6	1	7	74.8	0	4	0	4	73.9		0		0	74.2
85 / 89	0	19	3	22	71.2	0	14	1	15	72.3		3	0	3	72.3
80 / 84	2	45	10	57	69.0	1	37	7	45	69.8	0	9	1	10	69.0
75 / 79	9	64	23	96	66.7	6	56	20	82	67.3	1	16	3	20	66.4
70 / 74	30	57	52	139	64.9	26	70	46	142	65.1	4	35	10	49	63.2
65 / 69	65	36	72	173	63.0	62	42	74	178	63.0	16	55	27	98	60.2
60 / 64	80	17	63	160	59.8	77	19	65	161	59.5	39	66	56	161	57.3
55 / 59	47	3	21	71	55.3	43	5	26	75	54.7	61	42	69	173	53.7
50 / 54	13	0	2	15	50.0	25	1	8	34	50.4	51	11	43	105	49.4
45 / 49	2		0	2	46.0	6	0	1	7	45.9	35	1	21	57	44.5
40 / 44						2		0	2	40.9	24	1	8	33	40.4
35 / 39											8		2	10	36.0
30 / 34											2		0	2	31.8
25 / 29											0			0	27.0
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															

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.

PORTLAND ME

WMO No. 726060

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															
85 / 89															
80 / 84		0		0	66.2										
75 / 79		2	0	2	63.6										
70 / 74	0	7	1	8	60.6		1		1	60.2					
65 / 69	0	16	2	18	57.6		2	1	3	57.0		0		0	58.5
60 / 64	6	37	11	54	55.2	1	6	1	8	54.1		1	0	1	53.5
55 / 59	21	55	36	112	52.4	7	15	8	30	52.2	0	2	1	3	51.0
50 / 54	41	65	56	162	47.8	14	34	21	69	47.7	3	7	4	14	48.4
45 / 49	46	44	55	145	42.9	23	51	36	110	42.9	4	13	8	25	43.8
40 / 44	49	17	46	112	38.6	35	52	39	126	38.0	14	28	17	59	38.3
35 / 39	44	5	26	75	34.5	41	40	49	130	33.3	25	48	35	108	33.8
30 / 34	29	0	12	41	30.1	53	24	49	126	29.0	48	49	55	152	29.0
25 / 29	12		2	14	26.1	41	9	25	75	24.7	40	40	45	125	24.3
20 / 24	1		0	1	21.0	17	3	8	28	20.3	36	26	31	93	19.7
15 / 19	0			0	15.7	7	1	4	12	15.8	28	16	21	65	15.0
10 / 14						2	0	0	2	11.3	20	11	17	48	10.3
5 / 9						0			0	6.8	16	4	9	29	5.9
0 / 4						0			0	4.0	9	1	4	14	1.0
-5 / -1											3	0	1	4	-2.8
-10 / -6											2	1	0	3	-7.0
-15 / -11											1		0	1	-12.2
-20 / -16											0			0	-17.2
-25 / -21											0			0	-20.0

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.

PORTLAND ME

WMO No. 726060

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

Period of Record = 1973 to 1996

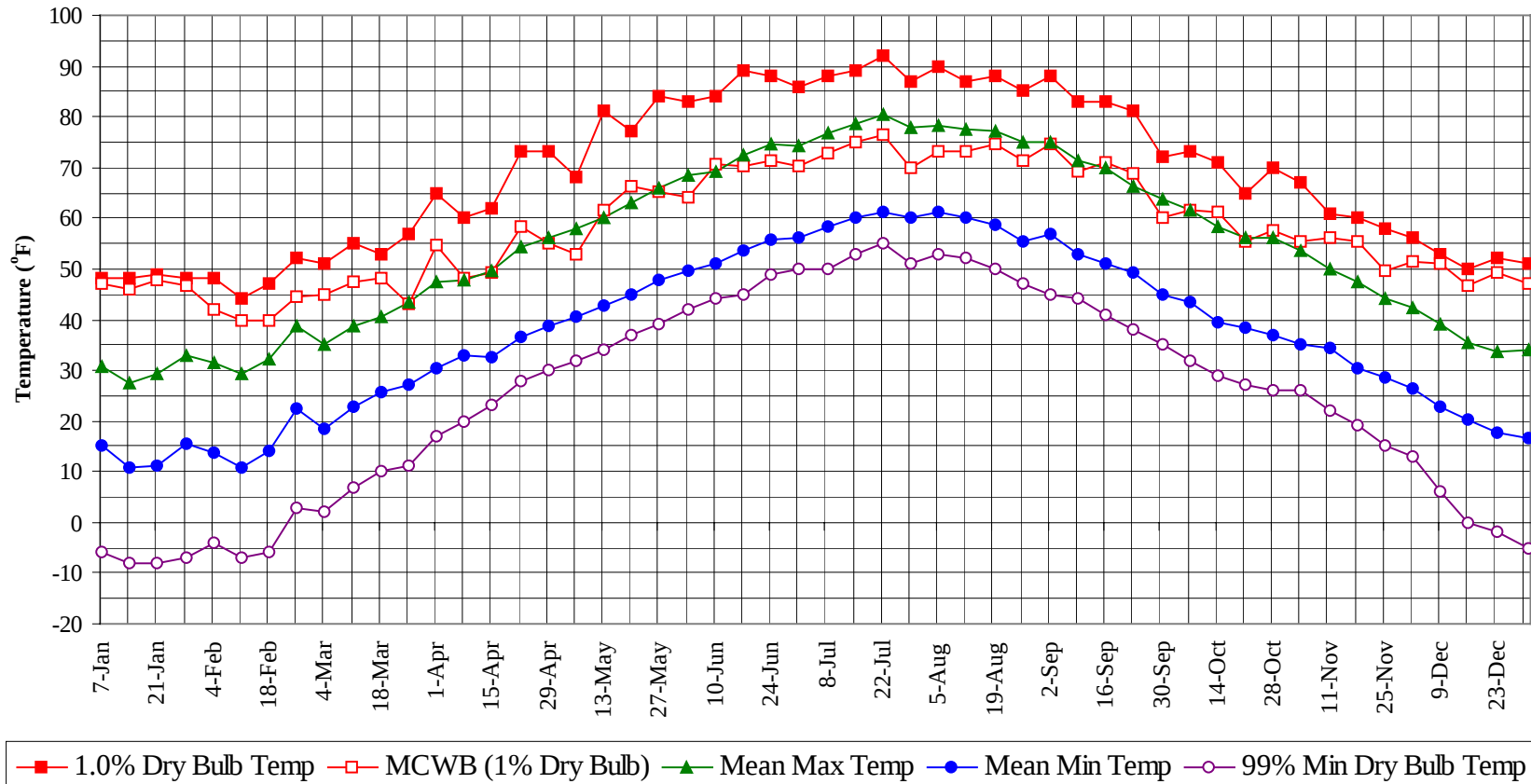
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
100 / 104		0		0	79.0
95 / 99		1	0	1	75.9
90 / 94	0	14	1	15	73.7
85 / 89	0	45	6	51	71.1
80 / 84	4	116	22	142	68.8
75 / 79	21	182	58	261	66.2
70 / 74	73	240	137	449	63.9
65 / 69	174	236	228	637	61.3
60 / 64	268	247	282	796	57.5
55 / 59	285	244	277	806	53.0
50 / 54	269	238	263	769	48.1
45 / 49	246	246	264	755	43.2
40 / 44	263	246	257	765	38.4
35 / 39	281	246	301	828	33.8
30 / 34	303	197	269	769	29.1
25 / 29	209	150	185	544	24.2
20 / 24	147	114	135	396	19.5
15 / 19	123	78	102	303	14.9
10 / 14	99	47	71	218	10.2
5 / 9	74	22	38	134	5.7
0 / 4	46	9	18	73	0.9
-5 / -1	17	3	6	26	-3.2
-10 / -6	13	1	3	17	-7.4
-15 / -11	5	0	1	6	-12.0
-20 / -16	1			1	-16.9
-25 / -21	0			0	-20.0

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.

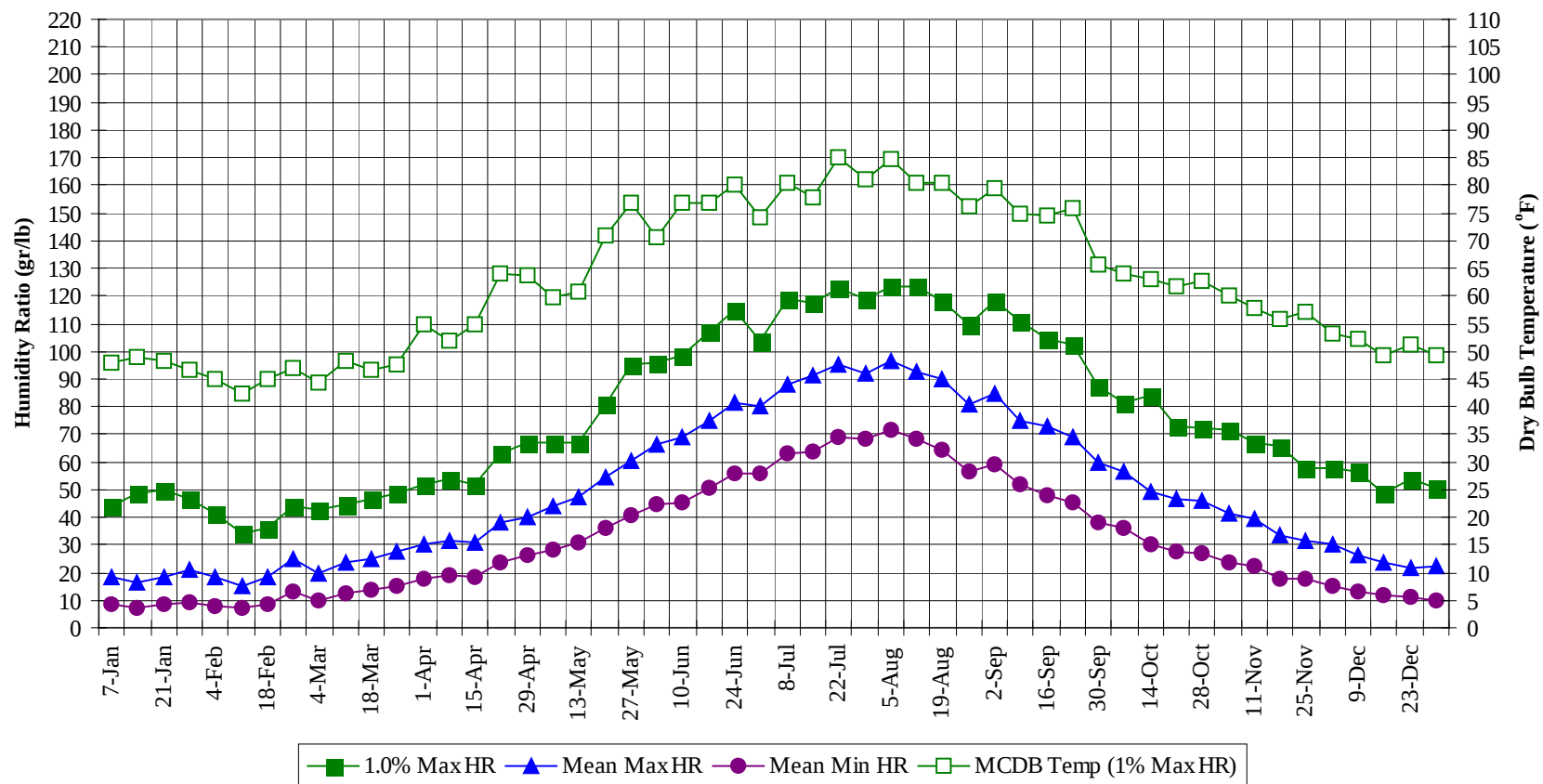
PORTLAND ME

WMO No. 726060

Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary

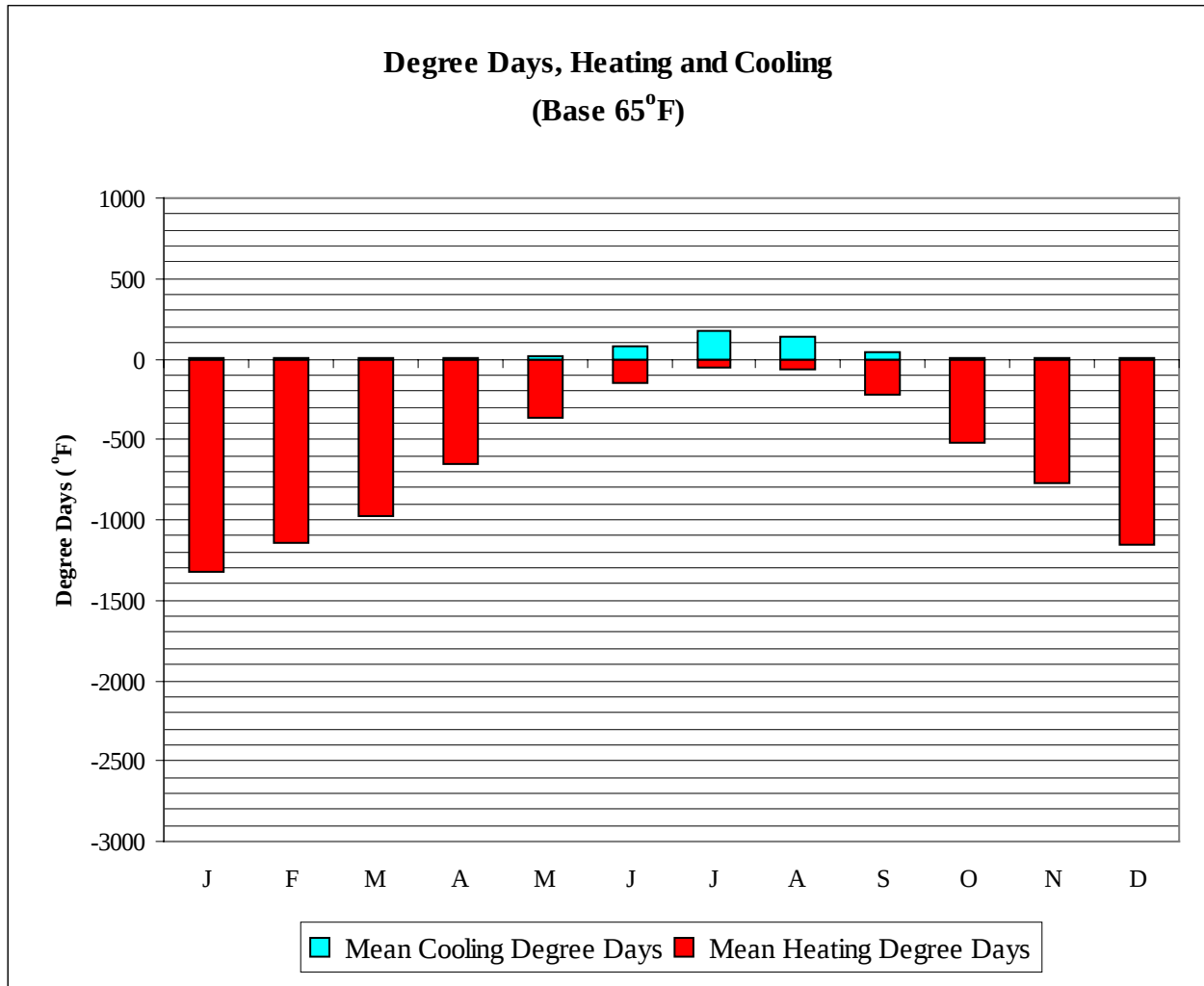


PORTLAND**ME****WMO No. 726060****Long Term Dry Bulb Temperature and Humidity Summary**

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	48.0	47.0	30.8	15.0	-6.0	44.1	48.1	18.5	8.8
14-Jan	48.0	45.9	27.5	10.8	-8.0	48.3	49.0	16.7	7.4
21-Jan	49.0	47.8	29.2	11.3	-8.0	49.7	48.3	18.5	8.6
28-Jan	48.0	46.5	33.0	15.4	-7.0	46.9	46.6	20.8	9.4
4-Feb	48.0	42.1	31.6	13.8	-4.0	41.3	45.1	18.2	8.0
11-Feb	44.0	39.9	29.2	10.9	-7.0	34.3	42.3	15.2	7.0
18-Feb	47.0	39.9	32.4	14.2	-6.0	36.4	45.1	18.3	8.7
25-Feb	52.0	44.5	38.6	22.3	3.0	44.1	46.9	25.0	13.0
4-Mar	51.0	44.8	35.0	18.5	2.0	42.7	44.2	19.5	10.0
11-Mar	55.0	47.6	38.7	22.9	7.0	44.8	48.3	23.9	12.7
18-Mar	53.0	48.0	40.5	25.6	10.0	46.9	46.5	25.2	13.8
25-Mar	57.0	43.1	43.3	27.0	11.0	48.3	47.5	27.3	15.0
1-Apr	65.0	54.6	47.4	30.3	17.0	51.8	55.0	30.2	17.5
8-Apr	60.0	48.1	47.6	32.9	20.0	53.9	51.9	31.5	19.2
15-Apr	62.0	49.3	49.5	32.6	23.0	51.8	55.0	31.0	18.2
22-Apr	73.0	58.3	54.5	36.5	28.0	63.0	64.2	38.4	23.5
29-Apr	73.0	55.1	56.1	38.6	30.0	67.2	63.7	40.0	26.0
6-May	68.0	52.9	57.9	40.6	32.0	67.2	59.6	44.0	28.3
13-May	81.0	61.6	60.0	42.6	34.0	67.2	60.9	47.1	30.6
20-May	77.0	66.3	62.9	44.9	37.0	80.5	71.0	54.2	35.9
27-May	84.0	65.2	65.9	47.8	39.0	95.2	76.8	60.3	40.7
3-Jun	83.0	64.0	68.5	49.7	42.0	95.9	70.6	66.6	44.6
10-Jun	84.0	70.8	69.1	51.2	44.0	98.7	76.8	68.8	45.6
17-Jun	89.0	70.2	72.4	53.4	45.0	107.1	76.9	74.7	50.5
24-Jun	88.0	71.3	74.7	55.8	49.0	114.8	80.1	81.3	55.7
1-Jul	86.0	70.2	74.1	56.2	50.0	103.6	74.2	79.9	55.7
8-Jul	88.0	72.7	77.0	58.2	50.0	119.0	80.5	88.1	62.8
15-Jul	89.0	75.0	78.6	60.1	53.0	117.6	77.7	91.2	63.7
22-Jul	92.0	76.4	80.5	61.3	55.0	122.5	85.0	95.1	69.3
29-Jul	87.0	69.9	78.0	60.0	51.0	119.0	81.1	92.0	68.0
5-Aug	90.0	73.2	78.4	61.2	53.0	123.2	84.9	96.4	71.7
12-Aug	87.0	73.2	77.4	60.2	52.0	123.2	80.6	92.8	68.4
19-Aug	88.0	74.5	77.2	58.9	50.0	118.3	80.6	89.9	64.5
26-Aug	85.0	71.3	74.9	55.4	47.0	109.9	76.2	80.9	56.3
2-Sep	88.0	74.8	74.9	56.8	45.0	118.3	79.6	84.6	58.9
9-Sep	83.0	69.3	71.3	52.8	44.0	111.3	74.9	75.1	51.9
16-Sep	83.0	71.1	69.7	51.0	41.0	104.3	74.6	73.0	48.2
23-Sep	81.0	68.7	66.3	49.1	38.0	102.2	76.0	68.9	45.3
30-Sep	72.0	60.2	63.7	44.9	35.0	87.5	65.6	59.7	38.0
7-Oct	73.0	61.7	61.6	43.6	32.0	81.2	64.1	56.6	36.2
14-Oct	71.0	61.1	58.1	39.5	29.0	84.0	63.1	49.2	30.3
21-Oct	65.0	55.5	56.3	38.3	27.0	72.8	61.6	46.8	27.8
28-Oct	70.0	57.7	56.3	36.9	26.0	72.1	62.8	45.9	26.8
4-Nov	67.0	55.2	53.7	35.2	26.0	71.4	60.0	41.2	23.4
11-Nov	61.0	56.0	50.0	34.4	22.0	67.2	57.7	39.5	22.5
18-Nov	60.0	55.4	47.3	30.5	19.0	65.8	55.9	33.6	17.9
25-Nov	58.0	49.6	44.1	28.7	15.0	58.1	57.2	31.4	17.4
2-Dec	56.0	51.3	42.4	26.5	13.0	58.1	53.1	30.1	15.4
9-Dec	53.0	50.9	38.9	22.7	6.0	56.7	52.2	26.3	12.8
16-Dec	50.0	46.8	35.3	20.4	0.0	48.3	49.2	23.5	12.1
23-Dec	52.0	49.2	33.7	17.7	-2.0	53.9	51.1	21.8	11.0
31-Dec	51.0	47.1	34.0	16.8	-5.0	50.4	49.4	22.3	10.1

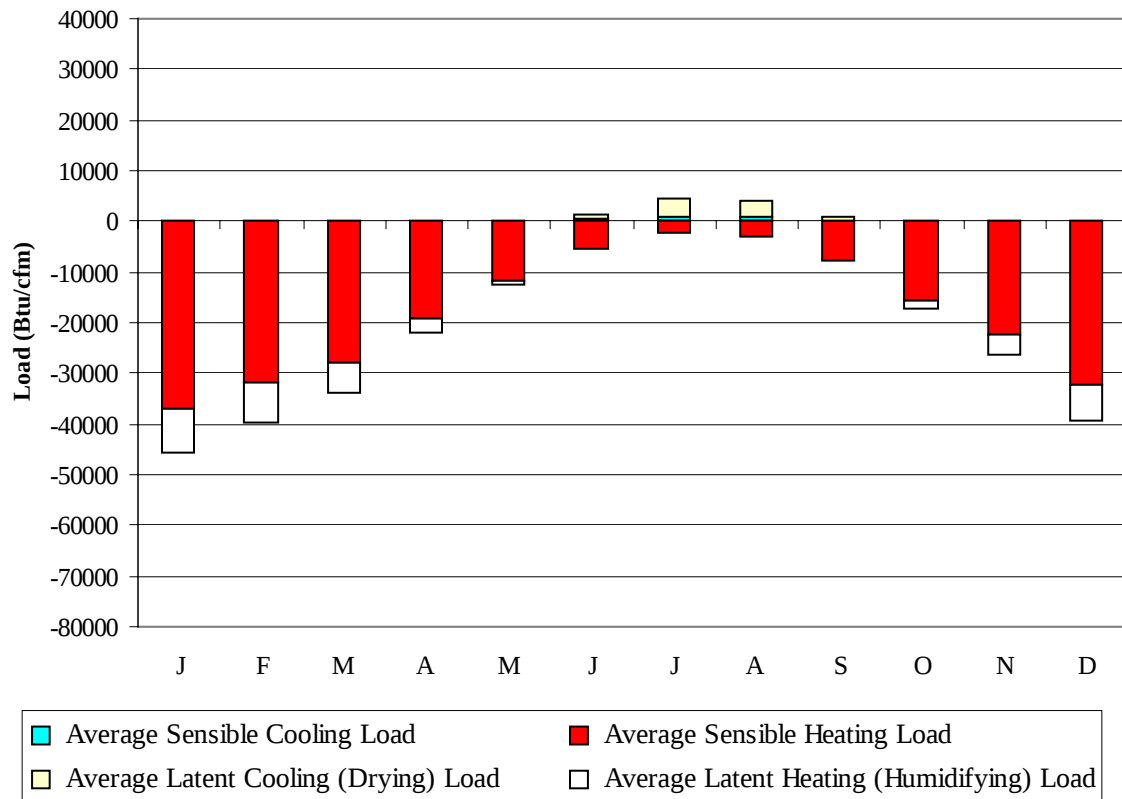
PORTLAND ME

WMO No. 726060



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	1329
FEB	0	1139
MAR	0	976
APR	3	651
MAY	22	371
JUN	82	147
JUL	168	50
AUG	142	66
SEP	40	221
OCT	4	517
NOV	0	775
DEC	0	1150
ANN	462	7392

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 Load	Average Latent Heating Load
	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)
JAN	0	-36860	0	-8872
FEB	0	-31712	0	-7833
MAR	0	-27707	0	-5992
APR	8	-19154	0	-2937
MAY	105	-11806	86	-552
JUN	412	-5384	851	-22
JUL	979	-2331	3358	-1
AUG	733	-2873	3303	-5
SEP	145	-7624	713	-126
OCT	4	-15758	23	-1463
NOV	0	-22411	0	-3860
DEC	0	-32221	0	-7225
ANN	2386	-215841	8334	-38888

Average Annual Solar Radiation – Nearest Available Site

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

City: PORTLAND
 State: ME
 WBAN No: 14764
 Lat(N): 43.65
 Long(W): 70.32
 Elev(ft): 62

Stn Type: Secondary
 SHADING GEOMETRY IN DIMENSIONLESS UNITS
 Window: 1
 Overhang: 0.639
 Vert Gap: 0.33

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	880	1220	1490	1760	1930	1910	1700	1340	930	570	480	1230
	Std Dev	43	75	99	123	136	157	118	90	81	58	46	37	35
	Minimum	520	700	980	1290	1470	1630	1700	1530	1220	790	430	390	1180
	Maximum	690	1040	1420	1700	2080	2260	2120	1880	1520	1090	650	560	1320
	Diffuse	290	420	580	680	790	840	800	690	550	400	290	250	550
Clear Day	Global	760	1120	1640	2160	2520	2650	2560	2240	1760	1220	800	640	1670
NORTH	Global	180	260	350	430	540	620	580	470	360	260	180	150	370
	Diffuse	180	260	350	420	490	530	510	450	360	260	180	150	350
Clear Day	Global	160	230	310	410	580	690	630	460	330	240	160	140	360
EAST	Global	430	600	780	910	1010	1090	1070	1000	830	620	390	340	760
	Diffuse	230	330	440	510	580	620	610	540	440	320	220	190	420
Clear Day	Global	620	850	1130	1370	1500	1540	1500	1380	1160	880	620	530	1090
SOUTH	Global	1100	1240	1180	1000	900	850	890	1020	1140	1150	920	940	1030
	Diffuse	350	450	520	530	570	580	580	550	500	410	310	300	470
Clear Day	Global	1830	1980	1900	1540	1210	1050	1100	1360	1700	1880	1790	1720	1580
WEST	Global	430	610	770	880	1000	1080	1070	1000	840	610	390	340	750
	Diffuse	230	330	440	510	590	630	620	550	450	330	220	190	430
Clear Day	Global	620	850	1130	1370	1500	1540	1500	1380	1160	880	620	530	1090

Average Annual Solar Heat and Illumination – Nearest Available Site

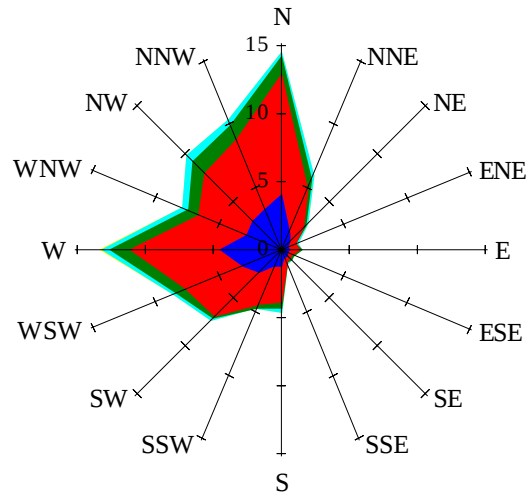
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

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	370	590	850	1060	1270	1400	1380	1220	950	630	370	290	870
NORTH	Unshaded	130	180	240	290	360	410	380	310	250	180	120	110	250
	Shaded	110	150	210	250	310	350	330	270	220	160	110	90	210
EAST	Unshaded	290	420	560	650	720	770	760	710	590	440	270	230	540
	Shaded	260	360	470	540	590	630	620	580	500	370	240	200	450
SOUTH	Unshaded	830	910	830	670	570	530	560	660	790	830	690	710	710
	Shaded	810	840	630	400	340	350	340	370	530	720	660	690	560
WEST	Unshaded	290	420	540	630	710	770	760	720	600	430	270	230	530
	Shaded	260	370	460	520	580	620	620	590	500	370	230	200	440

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	44	72	76	55	18	56	87	99	90	62
	M.Cloudy	27	46	48	36	12	35	56	69	63	41
NORTH	M.Clear	10	14	14	12	6	13	16	16	16	14
	M.Cloudy	11	16	17	13	5	13	17	19	19	14
EAST	M.Clear	75	49	14	12	6	83	66	21	16	14
	M.Cloudy	29	28	17	13	5	36	39	22	19	14
SOUTH	M.Clear	50	82	87	63	20	13	41	53	44	19
	M.Cloudy	22	40	43	30	9	13	28	39	33	16
WEST	M.Clear	10	14	32	71	55	12	16	16	58	81
	M.Cloudy	11	16	23	33	18	13	17	19	40	43
M.Clear	(% hrs)	36	34	31	30	32	36	32	29	28	29
		Sept					Dec				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	34	67	79	69	38	15	36	37	18	0
	M.Cloudy	20	41	53	47	24	9	23	23	12	0
NORTH	M.Clear	9	14	15	14	10	5	9	9	6	0
	M.Cloudy	8	14	17	15	9	4	9	9	5	0
EAST	M.Clear	71	63	18	14	10	38	30	9	6	0
	M.Cloudy	25	33	18	15	9	12	15	9	5	0
SOUTH	M.Clear	29	65	79	67	33	41	81	83	47	0
	M.Cloudy	14	33	46	39	17	12	30	31	15	0
WEST	M.Clear	9	14	15	58	72	5	9	27	41	0
	M.Cloudy	8	14	17	35	30	4	9	14	14	0
M.Clear	(% hrs)	42	41	38	37	40	35	36	34	34	36

Wind Summary - December, January, and February

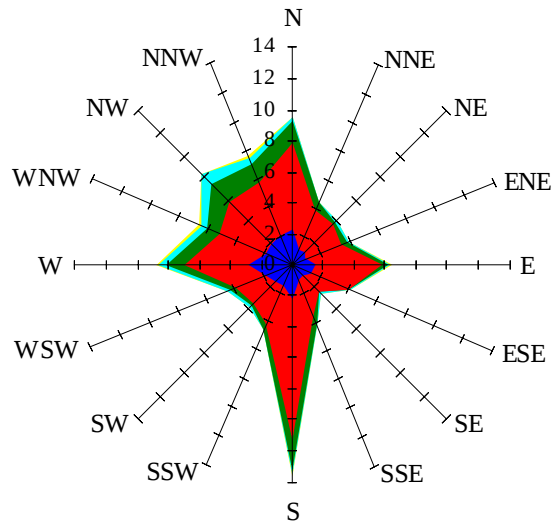
Labels of Percent Frequency on North Axis



Percent Calm = 5.79

Wind Summary - March, April, and May

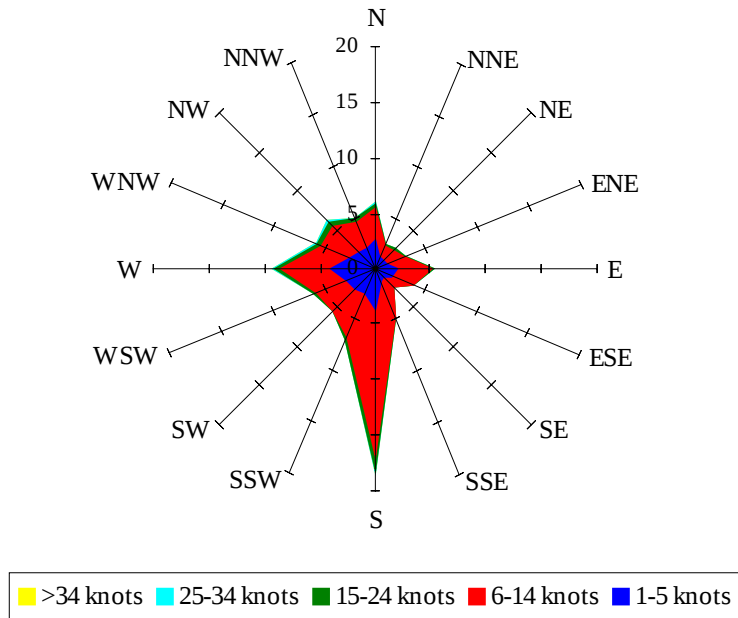
Labels of Percent Frequency on North Axis



Percent Calm = 5.15

Wind Summary - June, July, and August

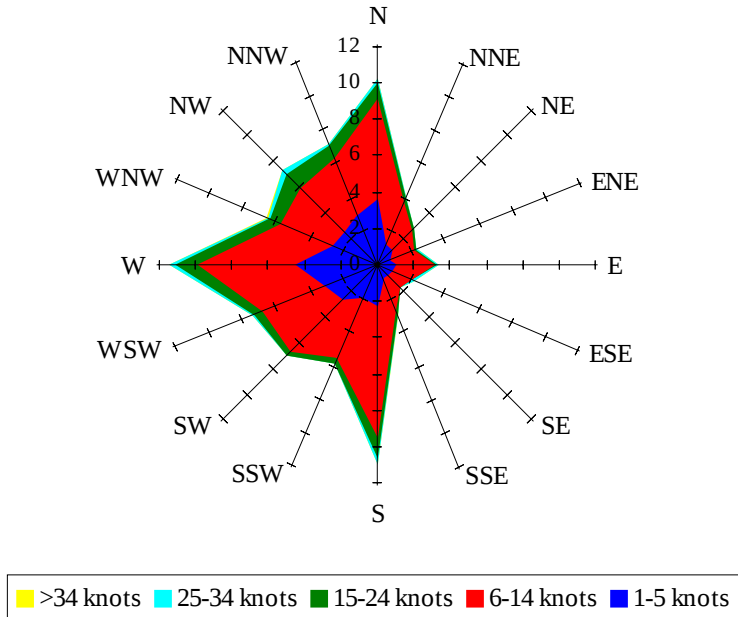
Labels of Percent Frequency on North Axis



Percent Calm = 7.87

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 7.91