

PRESTWICK, UK

Latitude = 55.50 N

Longitude = 4.58 W

Period of Record = 1973 to 1996

WMO No. 031350

Elevation = 66 feet

Average Pressure = 29.80 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	80	65	67	10.4	E
0.4% Occurrence	73	62	66	9.4	W
1.0% Occurrence	70	61	66	9.8	W
2.0% Occurrence	66	59	64	9.6	W
Mean Daily Range	11	-	-	-	-
97.5% Occurrence	30	29	21	5.4	E
99.0% Occurrence	27	26	19	4.6	E
99.6% Occurrence	23	22	15	4.8	ESE
Median of Extreme Lows	19	18	13	3.8	ESE
	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	67	75	83	8.8	W
0.4% Occurrence	64	70	77	8.5	W
1.0% Occurrence	62	67	73	8.7	W
2.0% Occurrence	60	64	69	9.5	W
	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	90	72	0.61	7.8	W
0.4% Occurrence	81	66	0.54	8.8	S
1.0% Occurrence	76	63	0.51	9.6	S
2.0% Occurrence	73	63	0.49	9.3	WSW
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		0	5	0	8

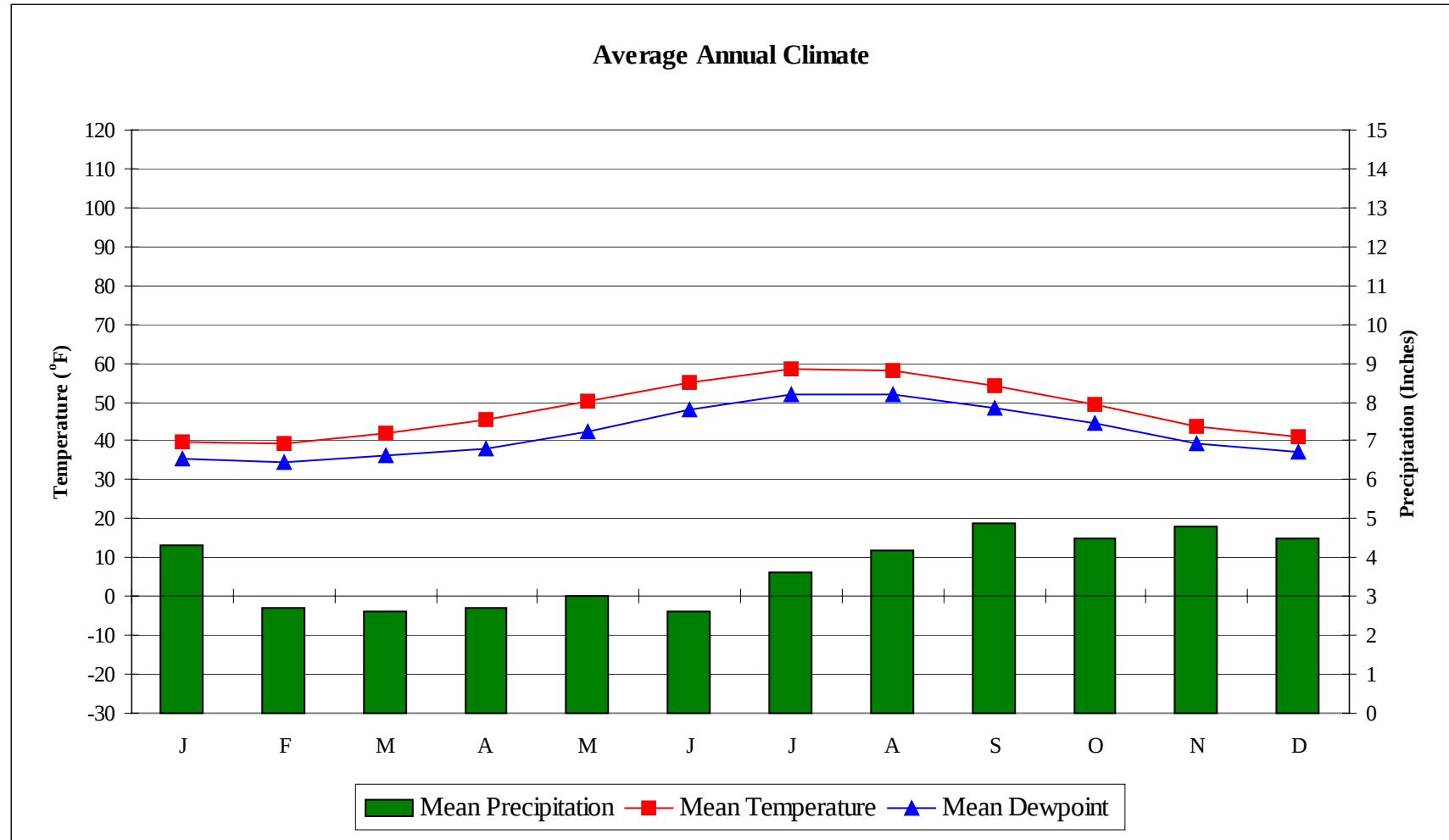
Other Site Data

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	N/A	N/A	0.0 + 0.0
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 (#)
50.6	N/A	N/A	38

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

PRESTWICK, UK

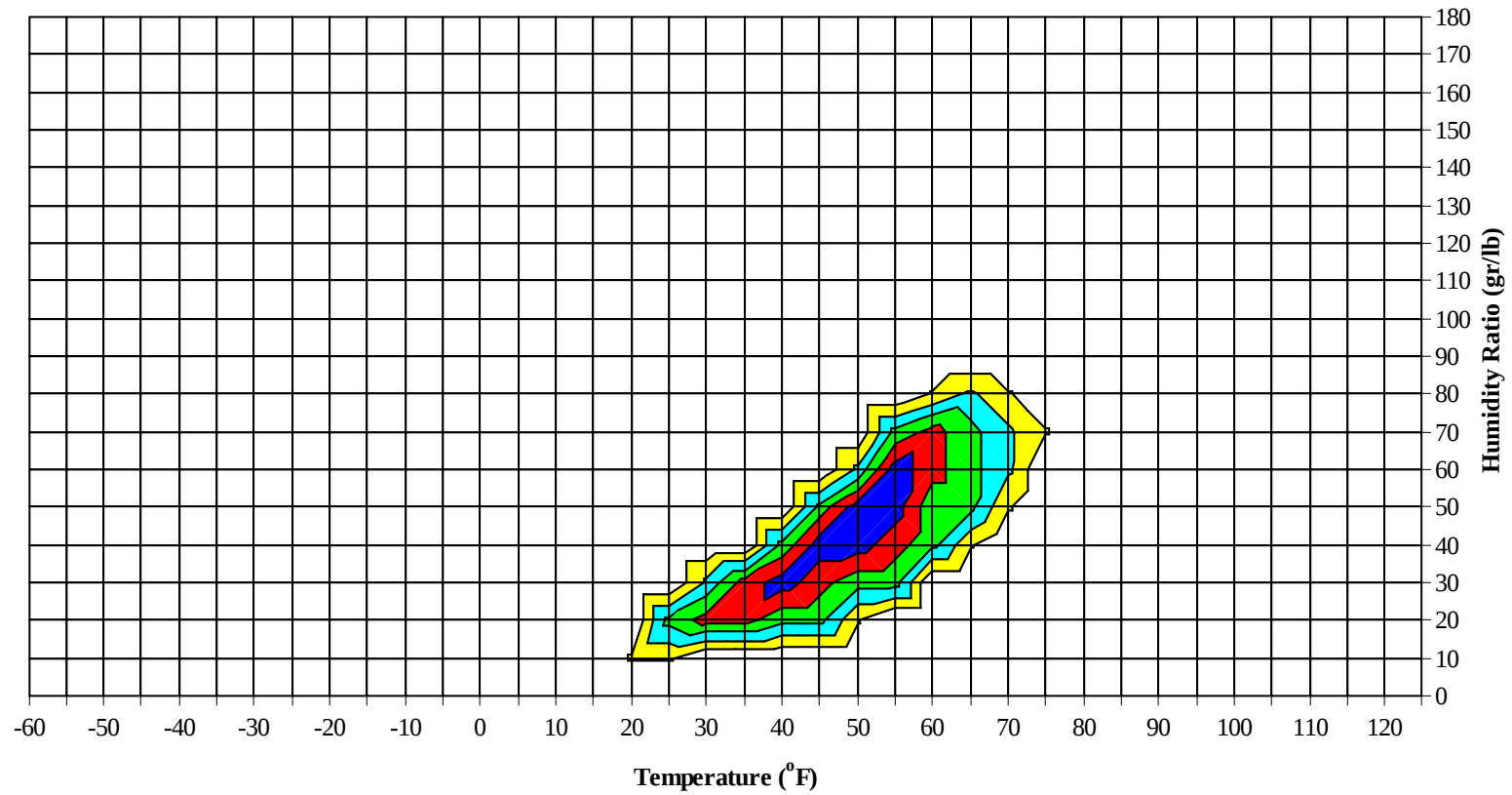
WMO No. 031350



PRESTWICK, UK

WMO No. 031350

Long Term Psychrometric Summary

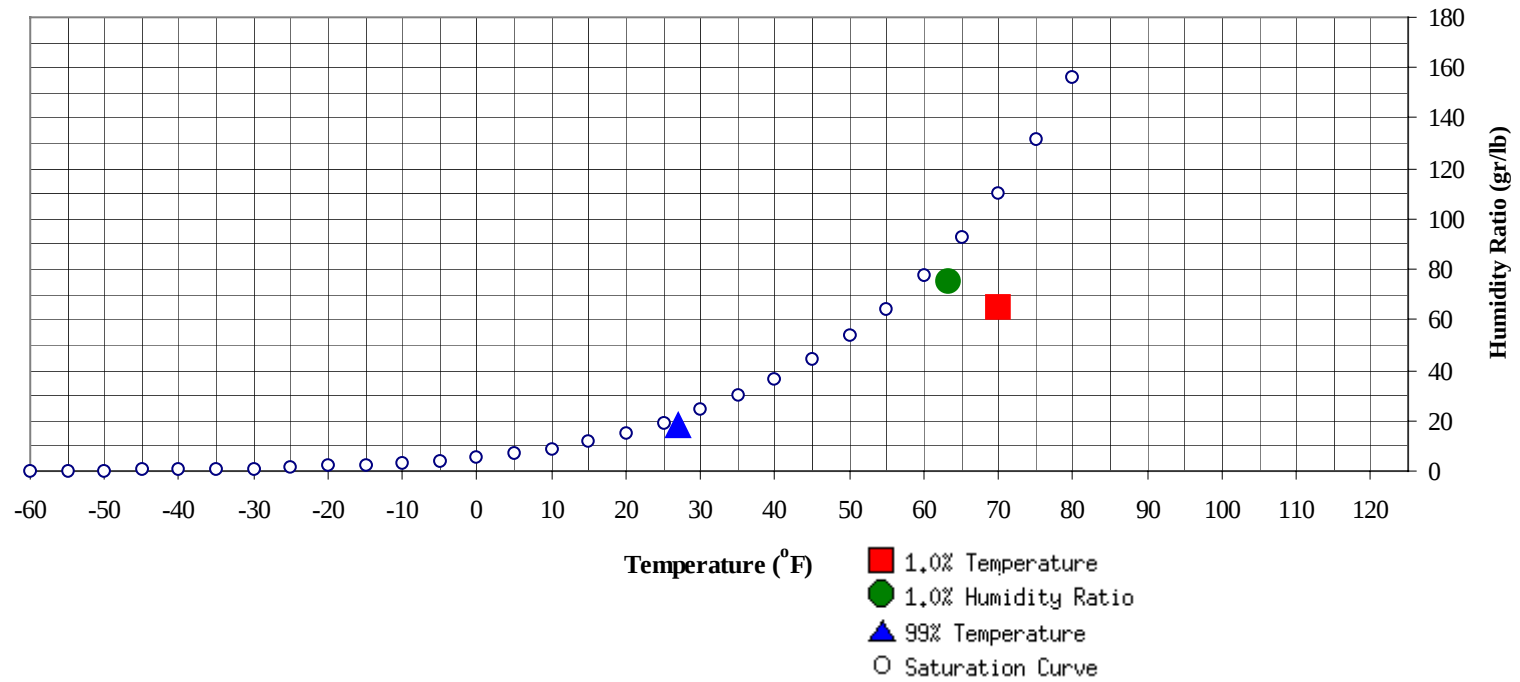


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

PRESTWICK, UK

WMO No. 031350

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	27	18.4	9.3		75.6	63.3	60.7	59.1	27.0

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	70	65.2	60.9	27.0

PRESTWICK, UK

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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		
90 / 94															
85 / 89															
80 / 84															
75 / 79															
70 / 74															
65 / 69															
60 / 64															
55 / 59		0	0	0	51.8		0		0	50.1		3	0	3	48.7
50 / 54	11	14	12	37	48.5	5	11	7	23	47.8	8	32	15	55	47.6
45 / 49	52	63	57	172	44.4	38	66	46	150	44.0	47	101	71	218	43.5
40 / 44	58	65	59	182	39.8	51	63	57	171	39.7	74	76	82	231	39.4
35 / 39	59	70	63	192	35.3	57	59	62	178	35.1	70	32	60	162	35.4
30 / 34	42	26	41	109	31.3	43	21	37	101	30.8	36	5	18	59	31.1
25 / 29	15	7	11	33	26.2	21	4	13	38	26.0	12	0	2	14	26.5
20 / 24	6	2	4	12	21.7	6	1	1	8	21.6	1	0	0	1	22.1
15 / 19	2	1	1	4	17.3	2	0	0	2	17.4	0			0	17.7
10 / 14	1	0	0	1	11.4	0		0	0	11.0					
5 / 9	0			0	8.0	0			0	8.5					

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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WMO No. 031350

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	09	17			01	09	17			01	09	17		
	To 08	To 16	To 00			To 08	To 16	To 00			To 08	To 16	To 00		
90 / 94															
85 / 89											0 0 0 62.7				
80 / 84											1 0 1 63.0				
75 / 79						1 0 1 60.9					4 1 5 63.0				
70 / 74	0 0 53.5					6 1 7 58.0					0 9 4 13 61.1				
65 / 69	2 0 2 53.9					0 9 4 13 56.1					1 19 8 28 59.0				
60 / 64	5 2 7 52.0					1 26 11 38 53.4					8 58 32 98 56.0				
55 / 59	1	23	7	31	49.7	12	79	40	131	50.7	47	100	80	228	52.8
50 / 54	13	80	41	135	46.9	56	88	84	228	47.8	109	45	87	241	49.6
45 / 49	72	90	92	255	43.5	93	35	75	203	44.2	56	4	23	84	45.4
40 / 44	70	32	62	164	39.5	50	4	24	78	40.2	14	0	4	18	41.2
35 / 39	54	7	29	90	35.6	28	1	7	36	36.3	4		0	4	37.2
30 / 34	25	0	6	31	31.4	8		1	9	31.8	0			0	33.2
25 / 29	5		0	5	26.7	0			0	27.9					
20 / 24	0			0	23.0										
15 / 19															
10 / 14															
5 / 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.

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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		
90 / 94		0		0	69.0										
85 / 89		0		0			0		0	64.5					
80 / 84		2	0	2	64.6		2	0	2	66.5					
75 / 79		7	2	9	64.7		6	1	7	63.4		0	0	0	64.3
70 / 74	0	18	8	26	62.3	0	13	5	18	62.3		1	0	1	63.3
65 / 69	3	36	17	56	60.0	2	28	11	41	60.4	0	8	2	10	60.1
60 / 64	28	90	58	176	57.3	24	104	60	188	57.5	8	51	21	80	57.2
55 / 59	103	87	115	304	54.2	103	88	115	305	54.2	55	123	87	265	53.5
50 / 54	91	9	44	144	50.7	85	8	48	141	50.6	102	51	90	244	49.7
45 / 49	19	0	4	23	46.2	26	0	7	33	46.1	45	6	29	80	45.4
40 / 44	4		0	4	41.9	7		1	8	41.7	16	0	9	25	41.2
35 / 39	0			0	38.6	1			1	37.9	11	0	2	13	36.9
30 / 34											2		0	2	32.4
25 / 29															
20 / 24															
15 / 19															
10 / 14															
5 / 9															

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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		
90 / 94															
85 / 89															
80 / 84															
75 / 79															
70 / 74		0		0	62.3										
65 / 69		1	0	1	60.6										
60 / 64	2	14	4	20	57.2		0	0	0	58.0					
55 / 59	28	66	35	129	53.4	7	12	6	25	53.3	1	1	1	3	53.0
50 / 54	74	100	90	264	49.2	38	57	42	137	49.1	23	28	25	76	49.1
45 / 49	77	53	74	204	44.5	71	85	76	231	44.1	57	68	62	187	44.7
40 / 44	32	11	28	71	40.6	48	49	51	148	39.9	56	64	55	175	39.8
35 / 39	19	3	13	35	36.5	36	27	37	100	35.7	58	57	57	172	35.8
30 / 34	13	1	5	19	31.4	24	9	22	55	31.2	31	21	32	84	31.3
25 / 29	2	0	0	2	26.6	14	2	7	23	26.5	14	7	10	31	26.3
20 / 24	0			0	23.0	2	0	0	2	22.3	5	2	3	10	21.8
15 / 19						0		0	0	18.8	3	1	2	6	17.6
10 / 14											1	0	0	1	12.5
5 / 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.

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WMO No. 031350

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

Period of Record = 1973 to 1996

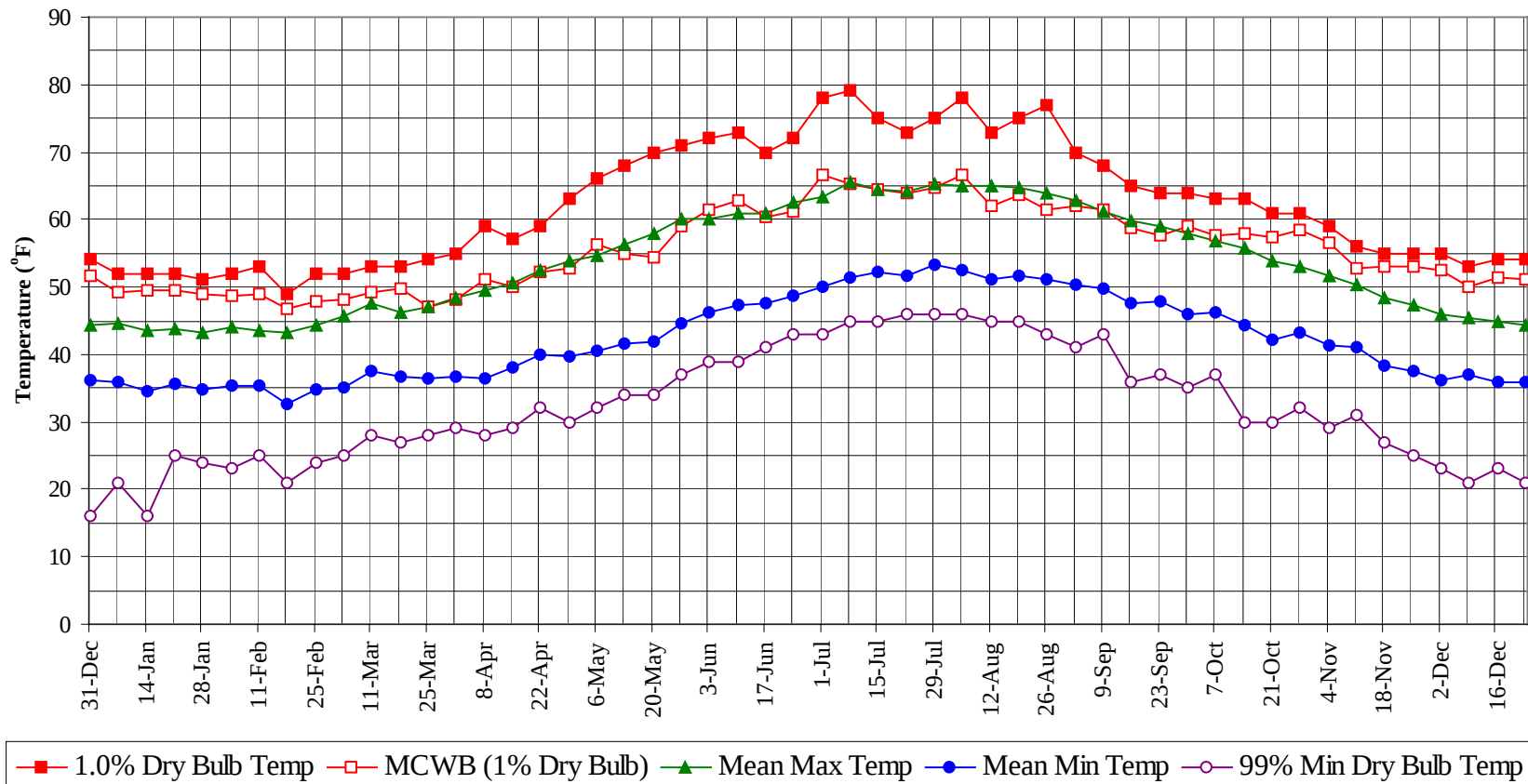
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
90 / 94	0			0	69.0
85 / 89	0			0	63.4
80 / 84	4			1	65.1
75 / 79	18			5	63.7
70 / 74	1	48	19	68	61.6
65 / 69	6	103	43	152	59.5
60 / 64	72	348	189	609	56.8
55 / 59	356	579	487	1421	53.3
50 / 54	613	524	585	1722	49.1
45 / 49	656	570	612	1837	44.3
40 / 44	480	364	429	1273	39.8
35 / 39	397	254	330	981	35.6
30 / 34	226	82	163	470	31.2
25 / 29	83	20	44	147	26.3
20 / 24	21	5	9	35	21.8
15 / 19	7	1	4	12	17.5
10 / 14	2	0	1	3	11.9
5 / 9	0			0	8.3
</					

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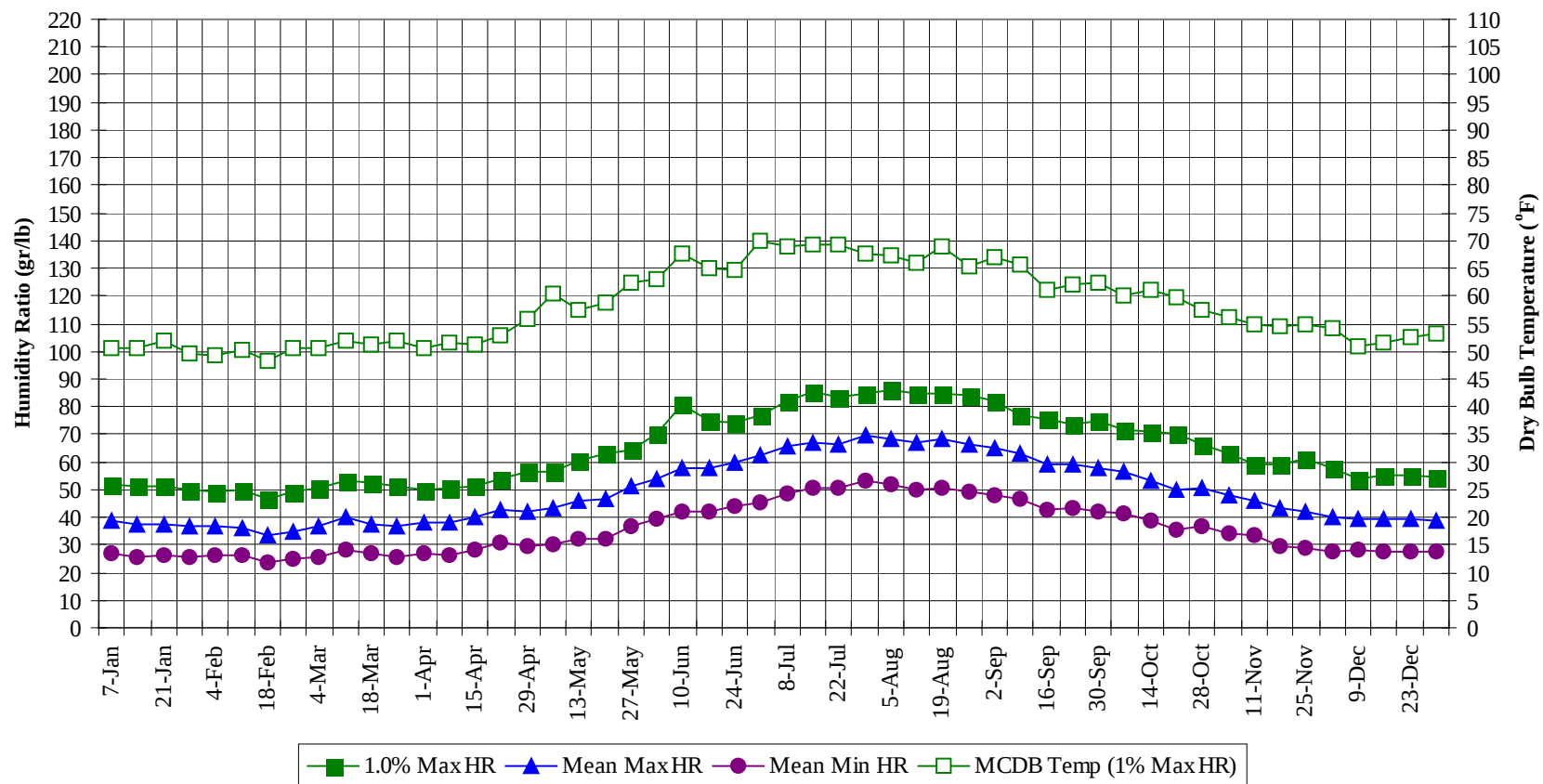
Annual Summary of Temperatures



PRESTWICK, UK

WMO No. 031350

Long Term Humidity and Dry Bulb Temperature Summary

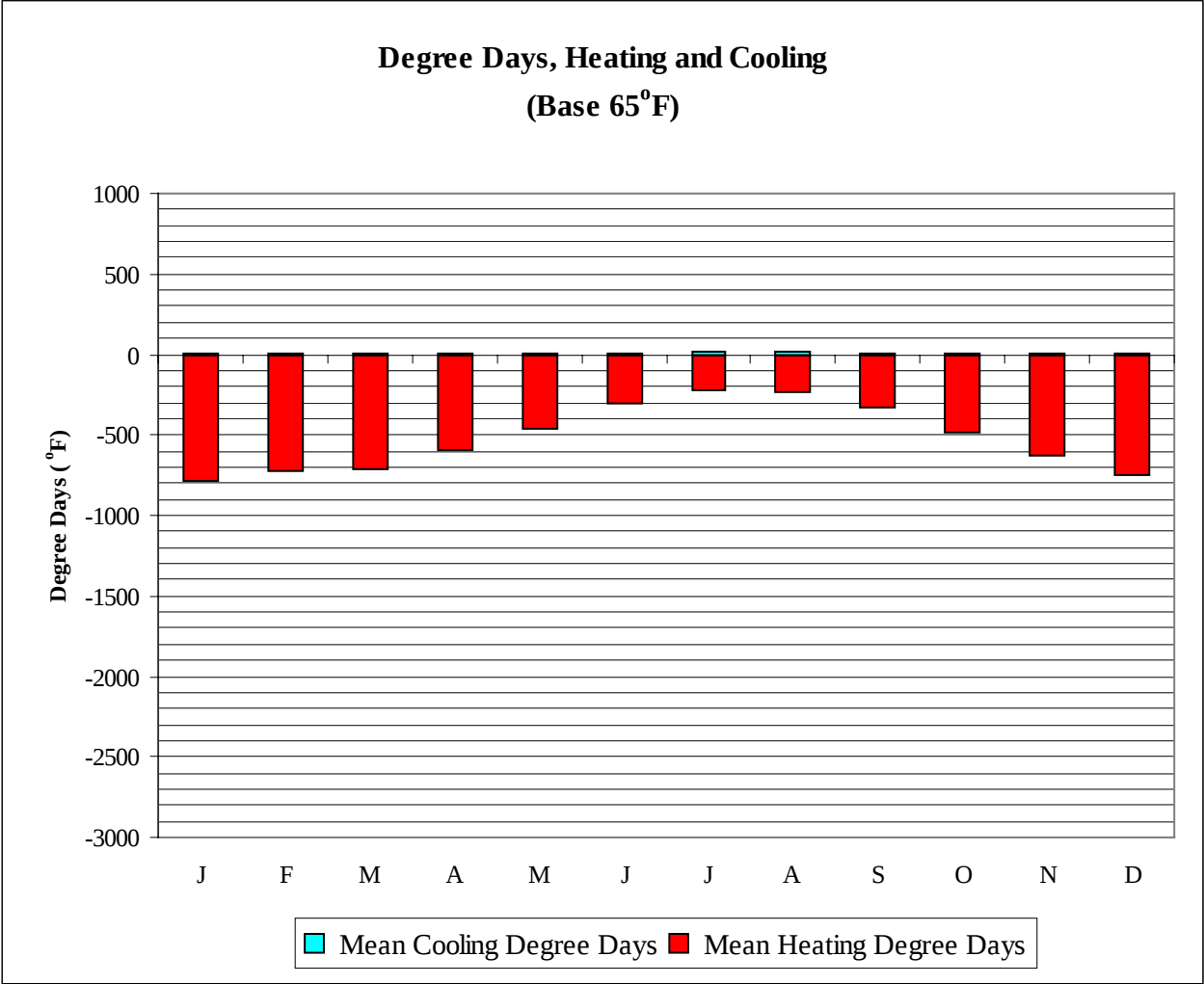


PRESTWICK, UK

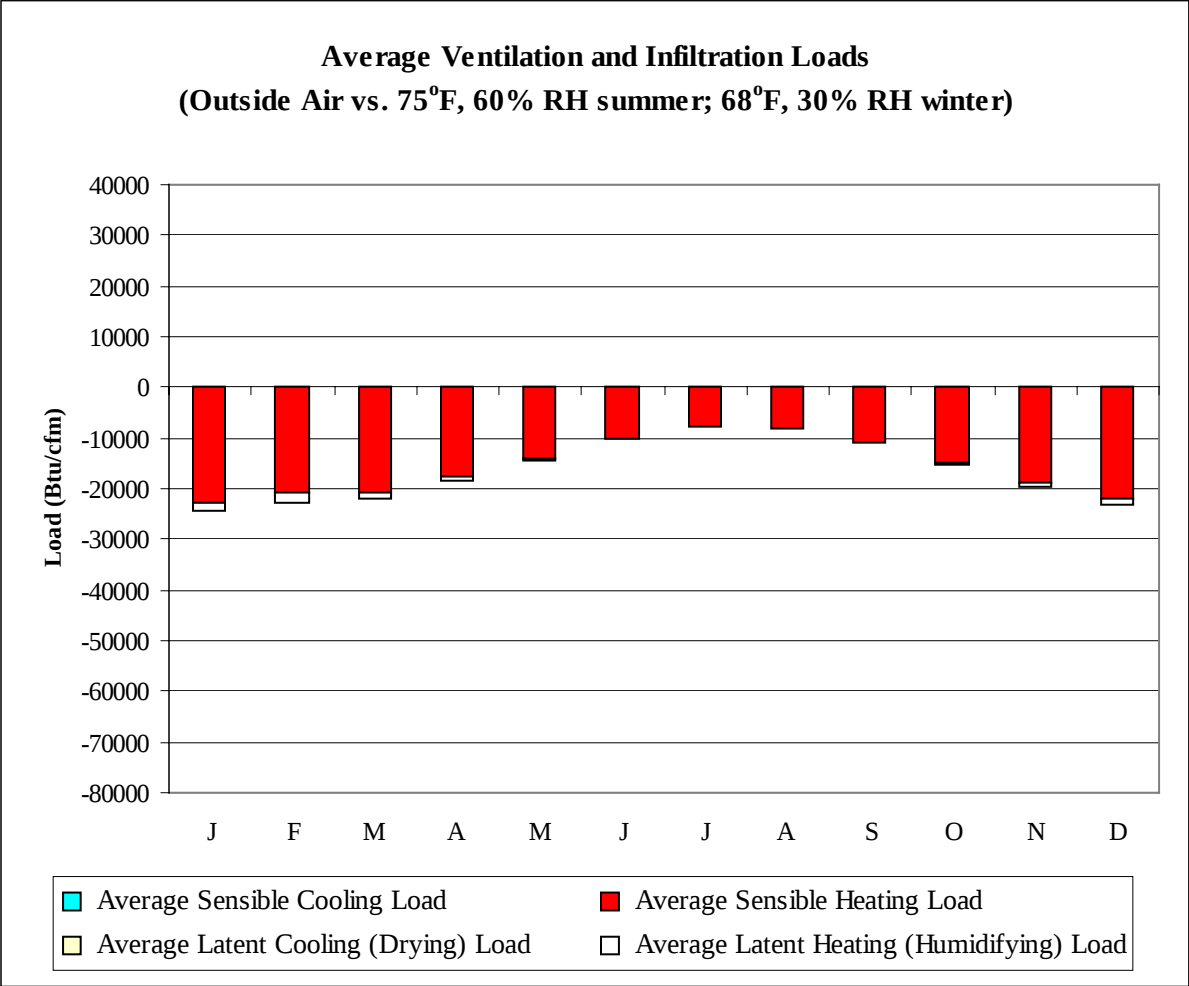
WMO No. 031350

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	52.0	49.1	44.5	35.8	21.0	51.8	50.6	38.8	27.1
14-Jan	52.0	49.4	43.6	34.4	16.0	51.1	50.6	37.5	25.5
21-Jan	52.0	49.5	43.7	35.7	25.0	51.1	51.8	37.2	26.5
28-Jan	51.0	48.9	43.3	34.9	24.0	49.7	49.4	36.6	25.7
4-Feb	52.0	48.8	44.0	35.4	23.0	49.0	49.3	36.8	26.1
11-Feb	53.0	48.9	43.4	35.4	25.0	49.7	50.2	35.8	26.1
18-Feb	49.0	46.7	43.3	32.7	21.0	46.9	48.3	33.8	23.6
25-Feb	52.0	47.9	44.3	34.9	24.0	49.0	50.6	35.0	25.2
4-Mar	52.0	48.2	45.7	35.1	25.0	50.4	50.5	36.8	25.8
11-Mar	53.0	49.2	47.5	37.6	28.0	53.2	51.9	39.8	28.5
18-Mar	53.0	49.7	46.3	36.7	27.0	52.5	51.1	37.5	27.1
25-Mar	54.0	47.1	47.1	36.4	28.0	51.1	51.8	36.8	25.8
1-Apr	55.0	48.1	48.3	36.8	29.0	49.7	50.6	38.3	26.8
8-Apr	59.0	51.2	49.4	36.5	28.0	50.4	51.4	37.9	26.5
15-Apr	57.0	50.0	50.7	38.1	29.0	51.1	51.2	40.0	28.1
22-Apr	59.0	52.1	52.6	39.8	32.0	53.9	53.0	42.9	30.6
29-Apr	63.0	52.7	53.8	39.6	30.0	56.7	55.8	41.9	29.6
6-May	66.0	56.2	54.6	40.5	32.0	56.7	60.5	43.2	30.5
13-May	68.0	54.8	56.2	41.6	34.0	60.2	57.4	45.9	32.1
20-May	70.0	54.4	58.0	41.9	34.0	63.0	58.6	46.6	32.3
27-May	71.0	59.1	60.0	44.5	37.0	64.4	62.5	51.1	37.0
3-Jun	72.0	61.5	60.1	46.2	39.0	70.0	63.0	54.0	39.5
10-Jun	73.0	62.9	60.9	47.3	39.0	80.5	67.6	57.6	41.9
17-Jun	70.0	60.3	60.8	47.7	41.0	74.9	65.0	58.0	42.3
24-Jun	72.0	61.1	62.6	48.6	43.0	74.2	64.7	59.8	44.0
1-Jul	78.0	66.5	63.3	50.0	43.0	77.0	70.0	62.3	45.3
8-Jul	79.0	65.2	65.5	51.4	45.0	81.9	68.9	65.9	48.6
15-Jul	75.0	64.6	64.5	52.2	45.0	85.4	69.4	67.3	50.5
22-Jul	73.0	63.8	64.3	51.8	46.0	83.3	69.1	66.4	50.4
29-Jul	75.0	64.6	65.2	53.3	46.0	84.7	67.8	69.4	52.9
5-Aug	78.0	66.5	64.9	52.5	46.0	86.1	67.2	68.3	51.7
12-Aug	73.0	62.0	64.9	51.2	45.0	84.7	65.9	67.2	49.9
19-Aug	75.0	63.7	64.8	51.7	45.0	84.7	68.9	68.2	50.4
26-Aug	77.0	61.5	64.0	51.2	43.0	84.0	65.5	66.2	49.4
2-Sep	70.0	61.9	62.8	50.2	41.0	81.9	66.9	64.7	48.2
9-Sep	68.0	61.6	61.2	49.7	43.0	77.0	65.7	63.1	46.5
16-Sep	65.0	58.8	59.9	47.5	36.0	75.6	61.2	59.1	42.8
23-Sep	64.0	57.6	59.0	47.7	37.0	73.5	62.0	58.9	43.4
30-Sep	64.0	59.1	57.9	46.0	35.0	74.9	62.5	57.5	42.0
7-Oct	63.0	57.7	56.8	46.3	37.0	71.4	60.1	56.7	41.1
14-Oct	63.0	57.9	55.7	44.3	30.0	70.7	61.0	53.0	38.7
21-Oct	61.0	57.4	53.8	42.2	30.0	70.0	59.6	50.2	35.6
28-Oct	61.0	58.3	53.0	43.3	32.0	66.5	57.5	50.3	36.7
4-Nov	59.0	56.5	51.6	41.3	29.0	63.0	56.1	47.8	34.0
11-Nov	56.0	52.8	50.2	41.1	31.0	58.8	54.8	46.1	33.3
18-Nov	55.0	52.9	48.4	38.3	27.0	58.8	54.4	43.1	29.8
25-Nov	55.0	53.0	47.4	37.5	25.0	60.9	54.9	42.0	28.8
2-Dec	55.0	52.6	45.9	36.2	23.0	58.1	54.1	39.9	27.6
9-Dec	53.0	49.9	45.5	36.9	21.0	53.9	51.0	39.6	28.3
16-Dec	54.0	51.4	45.0	36.0	23.0	55.3	51.7	39.6	27.8
23-Dec	54.0	51.2	44.3	36.0	21.0	55.3	52.5	39.3	27.3
31-Dec	54.0	51.7	44.2	36.1	16.0	54.6	53.3	38.7	27.7



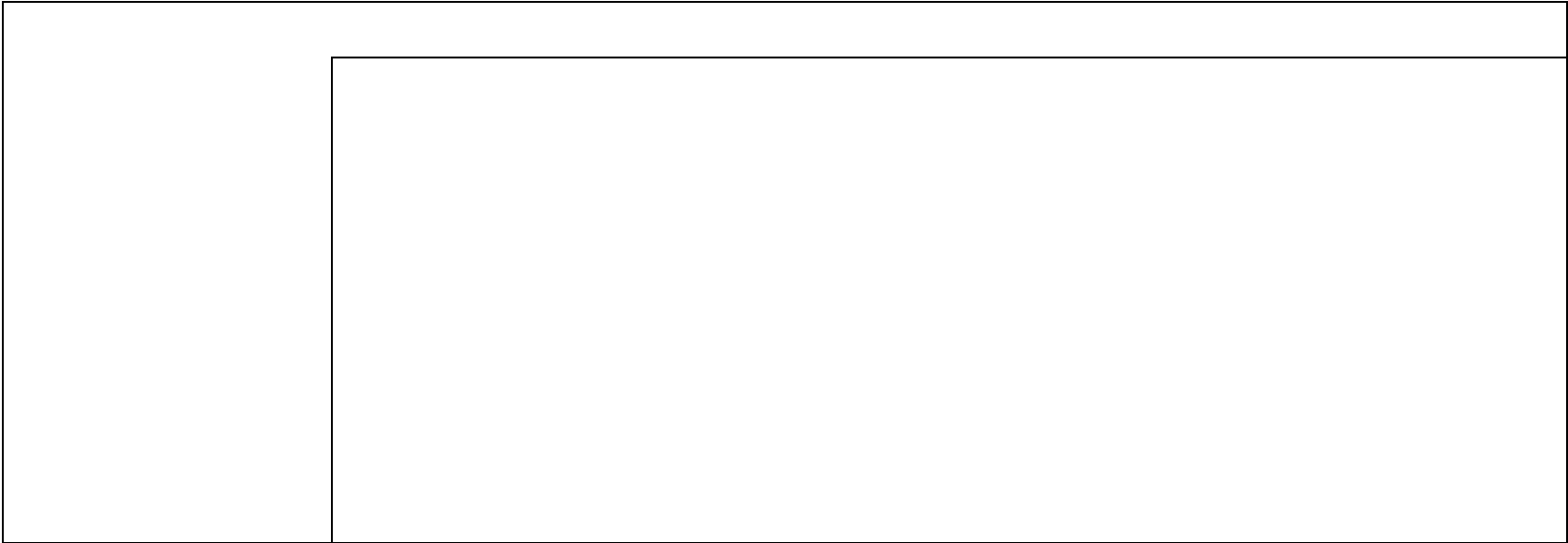
	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	781
FEB	0	722
MAR	0	713
APR	0	593
MAY	3	456
JUN	8	303
JUL	17	217
AUG	13	230
SEP	1	332
OCT	0	482
NOV	0	634
DEC	0	749
ANN	43	6212



	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	-22655	0	-1584
FEB	0	-20918	0	-1693
MAR	0	-20898	0	-1192
APR	0	-17703	0	-789
MAY	1	-14178	0	-266
JUN	13	-10070	9	-12
JUL	31	-7826	60	0
AUG	28	-8215	72	0
SEP	0	-10929	5	-20
OCT	0	-14897	0	-180
NOV	0	-18777	0	-762
DEC	0	-21809	0	-1230
ANN	73	-188875	146	-7728

Average Annual Solar Radiation – Nearest Available Site
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

No Solar Radiation
Data Available

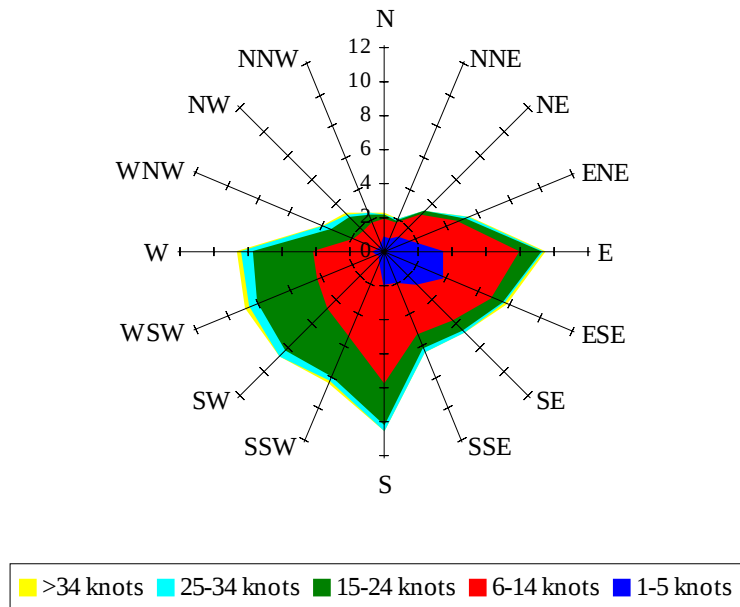


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

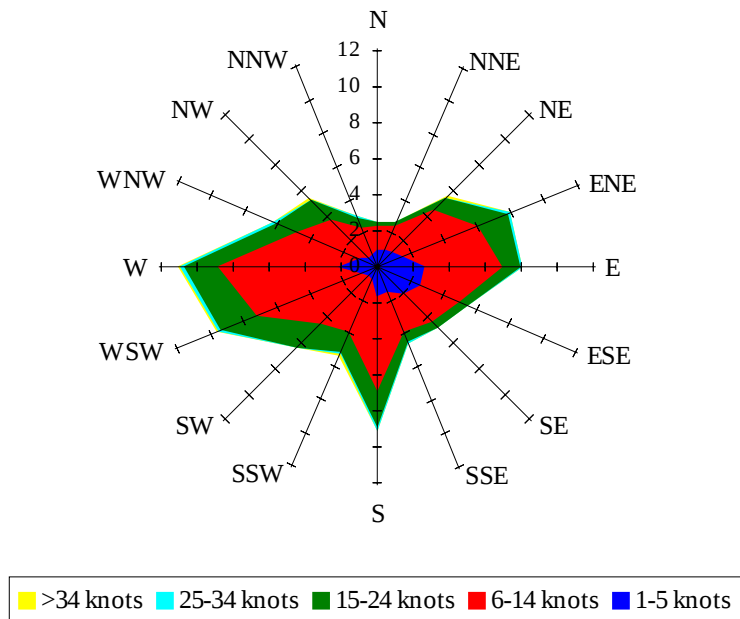
Labels of Percent Frequency on North Axis



Percent Calm = 3.64

Wind Summary - March, April, and May

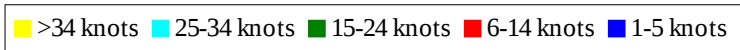
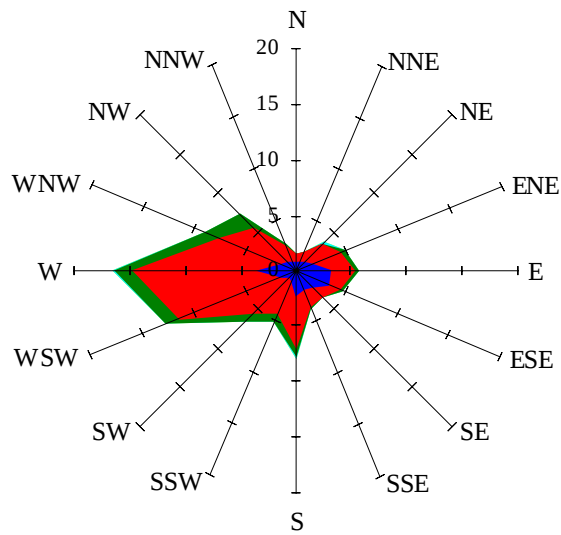
Labels of Percent Frequency on North Axis



Percent Calm = 3.88

Wind Summary - June, July, and August

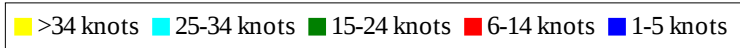
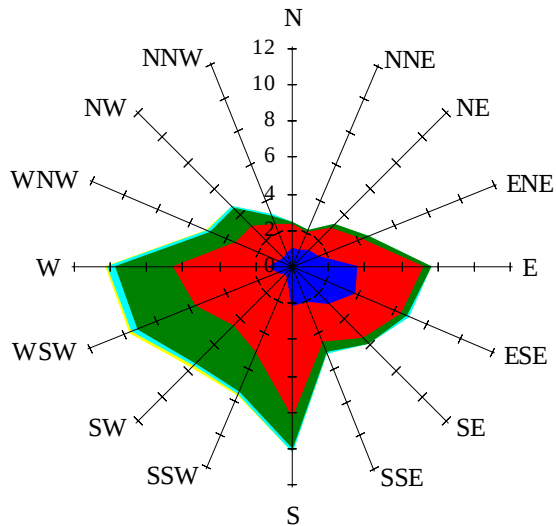
Labels of Percent Frequency on North Axis



Percent Calm = 4.83

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 4.56