

SHANNON, IRELAND

Latitude = 52.70 N

Longitude = 8.92 W

Period of Record = 1973 to 1996

WMO No. 039620

Elevation = 66 feet

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	78	66	75	7.9	ESE
0.4% Occurrence	75	65	74	8.6	ESE
1.0% Occurrence	72	63	71	8.6	ESE
2.0% Occurrence	68	61	68	9.4	W
Mean Daily Range	11	-	-	-	-
97.5% Occurrence	34	33	25	7.1	ESE
99.0% Occurrence	31	30	23	5.8	N
99.6% Occurrence	28	27	19	4.9	N
Median of Extreme Lows	25	24	16	5.8	N
	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	68	76	87	7.4	ESE
0.4% Occurrence	66	72	83	8.2	SSE
1.0% Occurrence	64	69	79	8.8	SSE
2.0% Occurrence	62	66	75	9.1	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	93	72	0.63	7.6	WSW
0.4% Occurrence	86	68	0.58	9.6	WSW
1.0% Occurrence	82	67	0.55	9.2	WSW
2.0% Occurrence	78	66	0.53	8.2	W
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		0	7	0	23

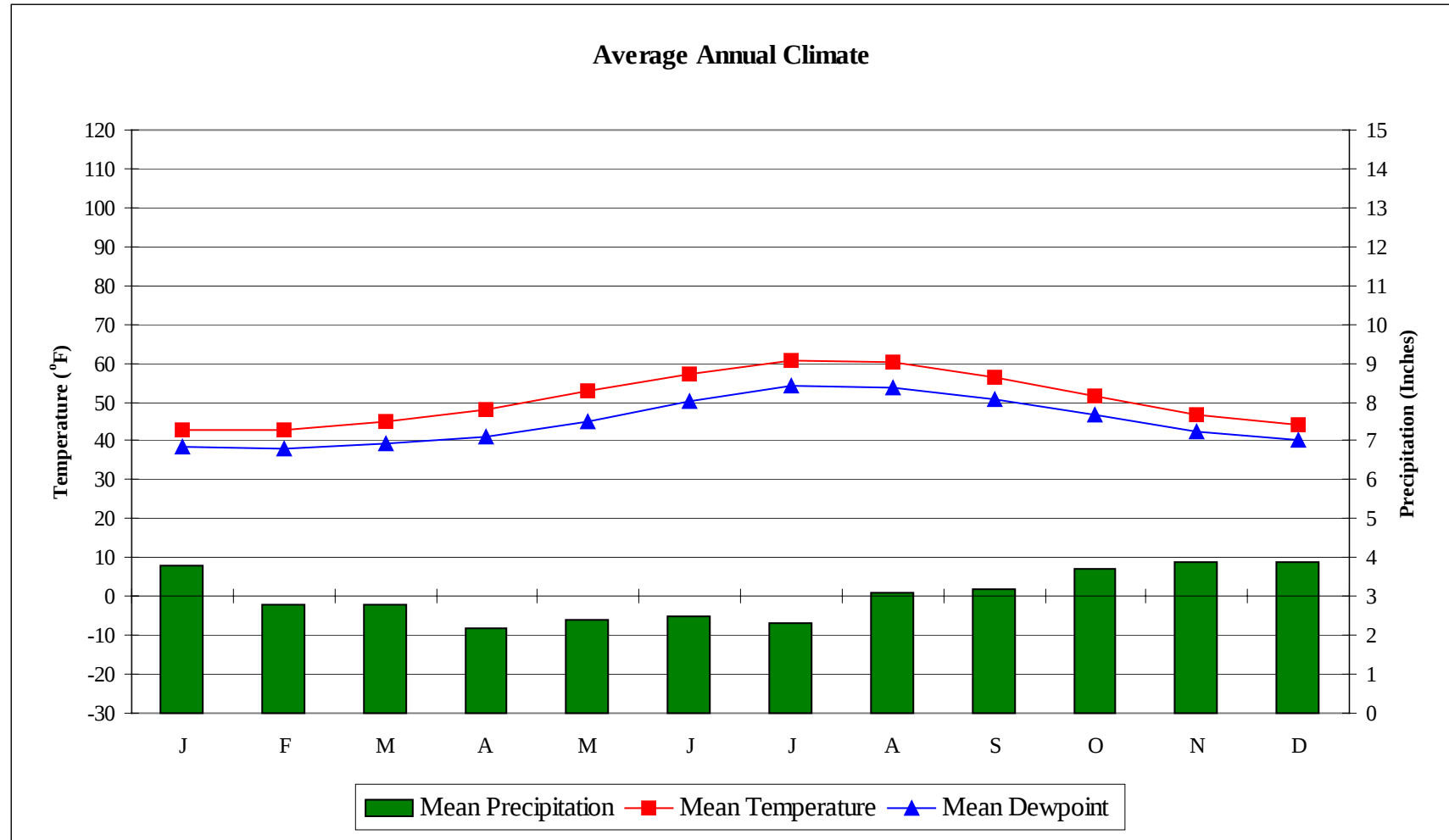
Other Site Data

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	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 (#)
53.2	N/A	N/A	11

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

SHANNON, IRELAND

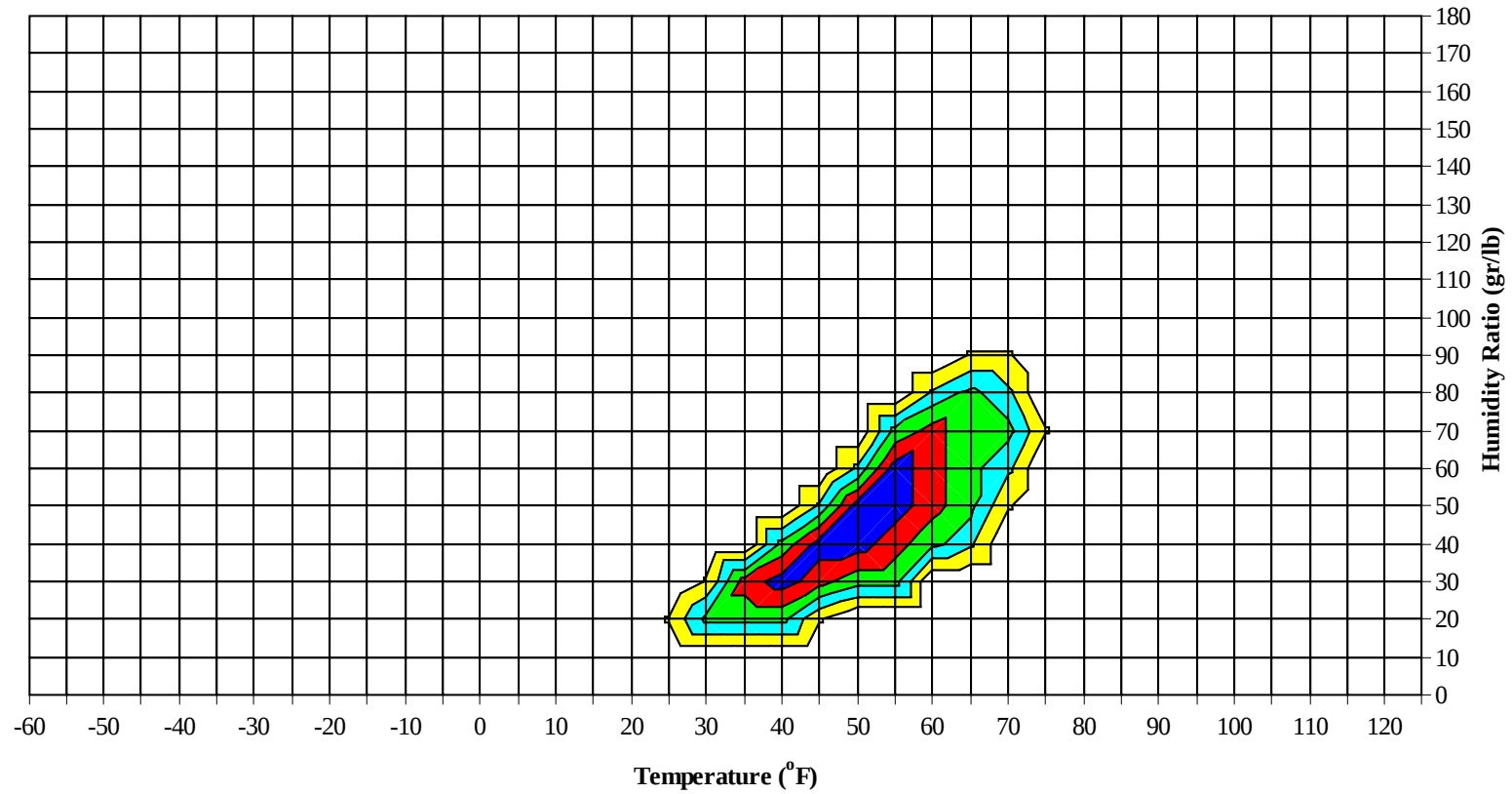
WMO No. 039620



SHANNON, IRELAND

WMO No. 039620

Long Term Psychrometric Summary

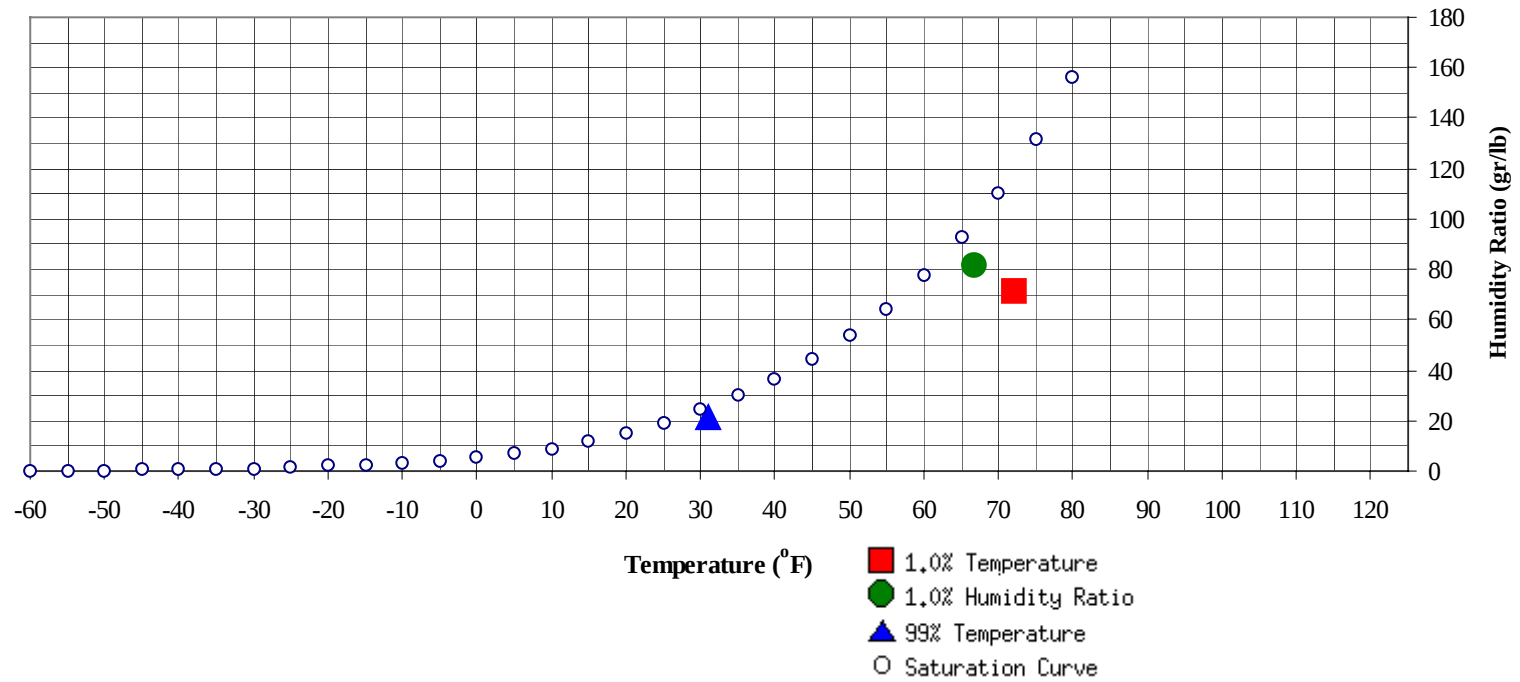


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

SHANNON, IRELAND

WMO No. 039620

Psychrometric Summary of Peak Design Values



	(°F)	MCHR	Enthalpy	1.0% Humidity Ratio	(gr/lb)	MCDB	MCWB	MC Dewpt	Enthalpy
		(gr/lb)	(btu/lb)			(°F)	(°F)	(°F)	(btu/lb)
99% Dry Bulb	31	21.8	10.8	Ratio	81.9	66.7	63.4	61.5	28.8

1.0% Dry Bulb	(°F)	MCHR	MCWB	Enthalpy
		(gr/lb)	(°F)	(btu/lb)
	72	71	63.1	28.4

SHANNON, IRELAND

WMO No. 039620

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		
85 / 89															
80 / 84															
75 / 79															
70 / 74															
65 / 69															
60 / 64												0		0	54.3
55 / 59	1	2	1	4	52.4	0	2	0	2	50.9	0	13	3	16	51.3
50 / 54	28	46	34	108	48.9	14	43	23	80	48.3	27	83	48	158	48.0
45 / 49	67	81	69	216	44.6	60	81	75	216	44.4	76	98	101	275	44.0
40 / 44	61	64	68	192	39.9	55	52	61	168	39.8	68	38	60	166	39.7
35 / 39	56	39	54	149	35.7	62	35	49	146	35.6	59	14	32	105	35.9
30 / 34	26	12	18	56	31.4	27	9	14	50	30.8	16	2	3	21	31.5
25 / 29	8	3	4	15	26.2	5	1	2	8	26.3	2	0		2	27.0
20 / 24	2	1	1	4	21.4	1			1	21.9					
15 / 19	0	0		0	18.3										

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.

SHANNON, IRELAND

WMO No. 039620

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		
85 / 89												0	0	0	70.0
80 / 84												1	1	2	68.2
75 / 79							1	0	1	64.5		4	2	6	64.6
70 / 74		1	0	1	59.1		6	2	8	60.4		11	7	18	61.1
65 / 69		3	1	4	57.3	0	11	7	18	57.3	1	29	15	45	59.1
60 / 64		11	5	16	54.0	1	38	21	60	54.4	11	81	50	142	56.4
55 / 59	1	44	22	67	50.6	18	96	62	176	51.5	86	94	102	282	53.4
50 / 54	37	101	78	216	47.8	94	79	98	271	48.7	109	19	57	185	49.9
45 / 49	90	62	85	237	44.0	88	16	48	152	44.6	29	0	7	36	45.5
40 / 44	65	15	38	118	39.9	35	2	8	45	40.6	4		0	4	40.7
35 / 39	38	2	11	51	36.1	11	0	1	12	36.7					
30 / 34	9	0	0	9	31.5	1		0	1	32.3					
25 / 29	0	0		0	28.0										
20 / 24															
15 / 19															

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.

SHANNON, IRELAND

WMO No. 039620

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		
85 / 89		0	0	0	71.3		0		0	68.0					
80 / 84		1	1	2	69.6		2	1	3	67.3					
75 / 79		9	4	13	65.3		8	4	12	65.8		1	0	1	67.2
70 / 74	0	24	13	37	63.1	0	20	10	30	63.5		7	2	9	63.4
65 / 69	5	48	30	84	60.7	4	55	27	86	60.9	1	23	9	33	60.6
60 / 64	51	116	91	258	57.9	53	111	95	259	58.2	21	83	45	149	57.5
55 / 59	136	48	94	279	54.7	119	49	90	258	54.6	78	95	102	275	53.9
50 / 54	53	1	14	68	50.9	61	3	21	85	50.8	93	27	65	185	49.8
45 / 49	3		0	3	46.6	10	0	1	11	46.6	35	4	15	54	45.7
40 / 44						0			0	42.8	10	0	1	11	41.5
35 / 39											2			2	37.9
30 / 34															
25 / 29															
20 / 24															
15 / 19															

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.

SHANNON, IRELAND

WMO No. 039620

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		
85 / 89															
80 / 84															
75 / 79															
70 / 74															
65 / 69		2		2	59.9										
60 / 64	4	26	9	39	57.6	0	1	0	1	57.4					
55 / 59	47	87	63	197	54.0	14	29	17	60	53.9	5	7	5	17	53.2
50 / 54	79	91	90	260	49.4	55	80	65	200	49.6	42	56	45	143	49.6
45 / 49	75	33	65	173	45.0	70	76	74	220	44.6	65	82	73	220	44.7
40 / 44	27	6	17	50	40.9	51	34	52	137	40.3	60	58	66	184	40.2
35 / 39	12	2	4	18	36.7	32	14	27	73	36.3	51	33	44	128	36.1
30 / 34	4	0	0	4	32.0	15	5	6	26	31.5	19	10	14	43	31.4
25 / 29	0			0	28.0	3	1	0	4	27.3	6	2	2	10	26.9
20 / 24											0	0		0	22.6
15 / 19															

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.

SHANNON, IRELAND

WMO No. 039620

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

Period of Record = 1973 to 1996

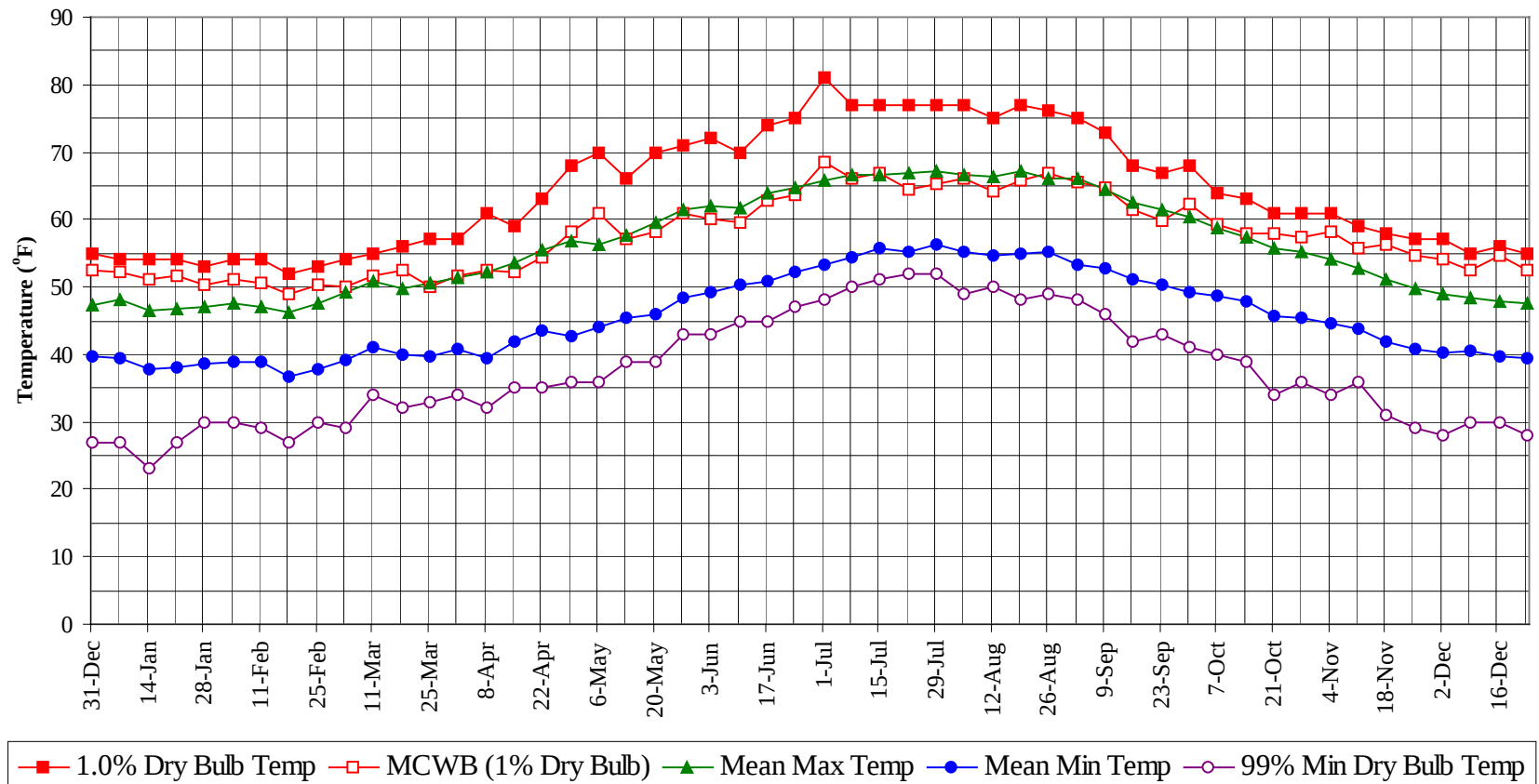
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
85 / 89		1	0	1	70.5
80 / 84		4	2	6	68.4
75 / 79		22	11	33	65.4
70 / 74	1	69	34	104	62.7
65 / 69	11	171	89	271	60.2
60 / 64	142	467	316	925	57.4
55 / 59	505	566	561	1633	53.6
50 / 54	691	630	638	1959	49.2
45 / 49	668	533	611	1812	44.5
40 / 44	436	269	371	1077	40.1
35 / 39	322	140	222	684	35.9
30 / 34	117	38	56	211	31.3
25 / 29	24	7	8	39	26.6
20 / 24	3	1	1	5	21.6
15 / 19	0	0		0	18.3

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.

SHANNON, IRELAND

WMO No. 039620

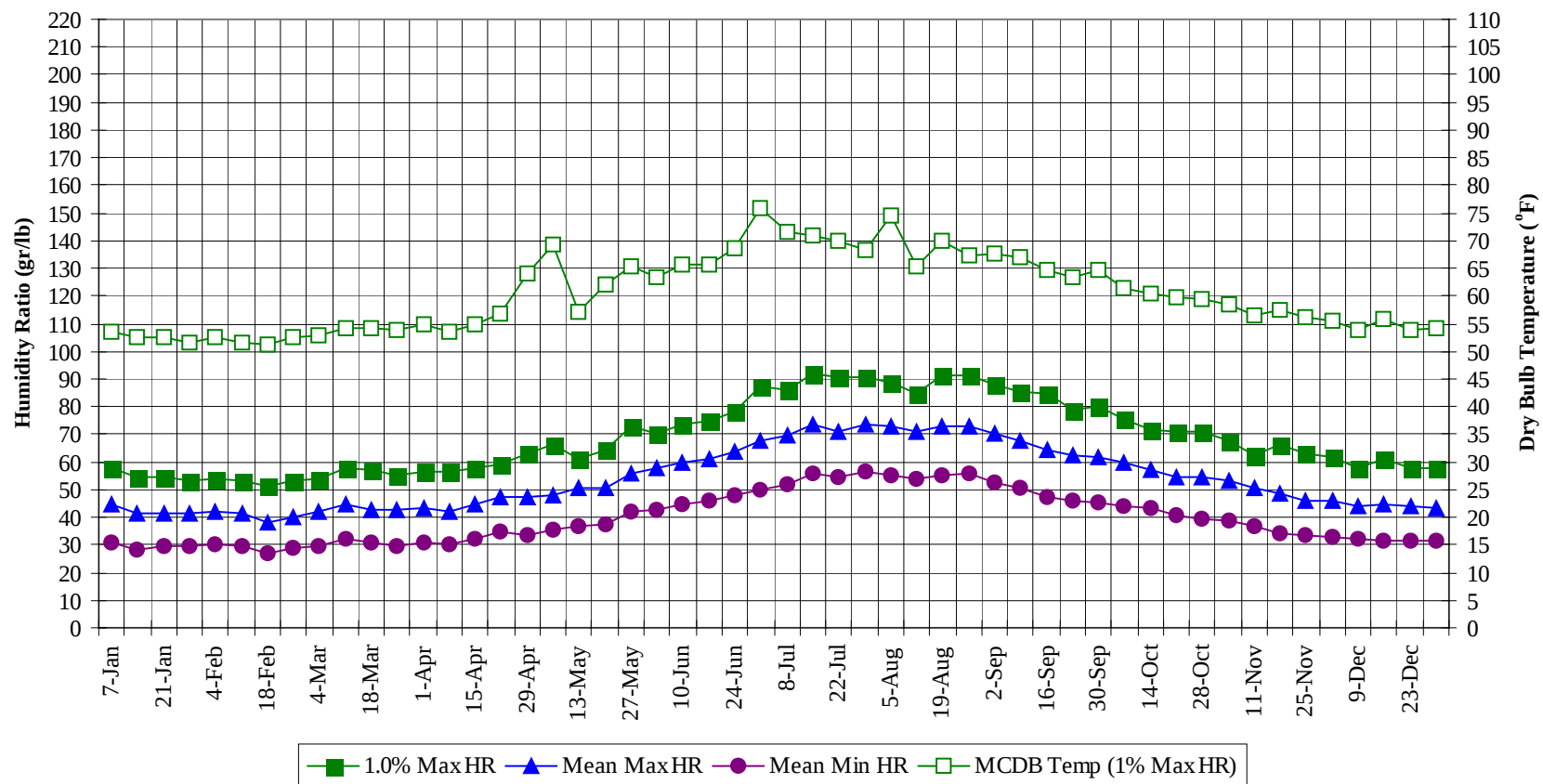
Annual Summary of Temperatures



SHANNON, IRELAND

WMO No. 039620

Long Term Humidity and Dry Bulb Temperature Summary

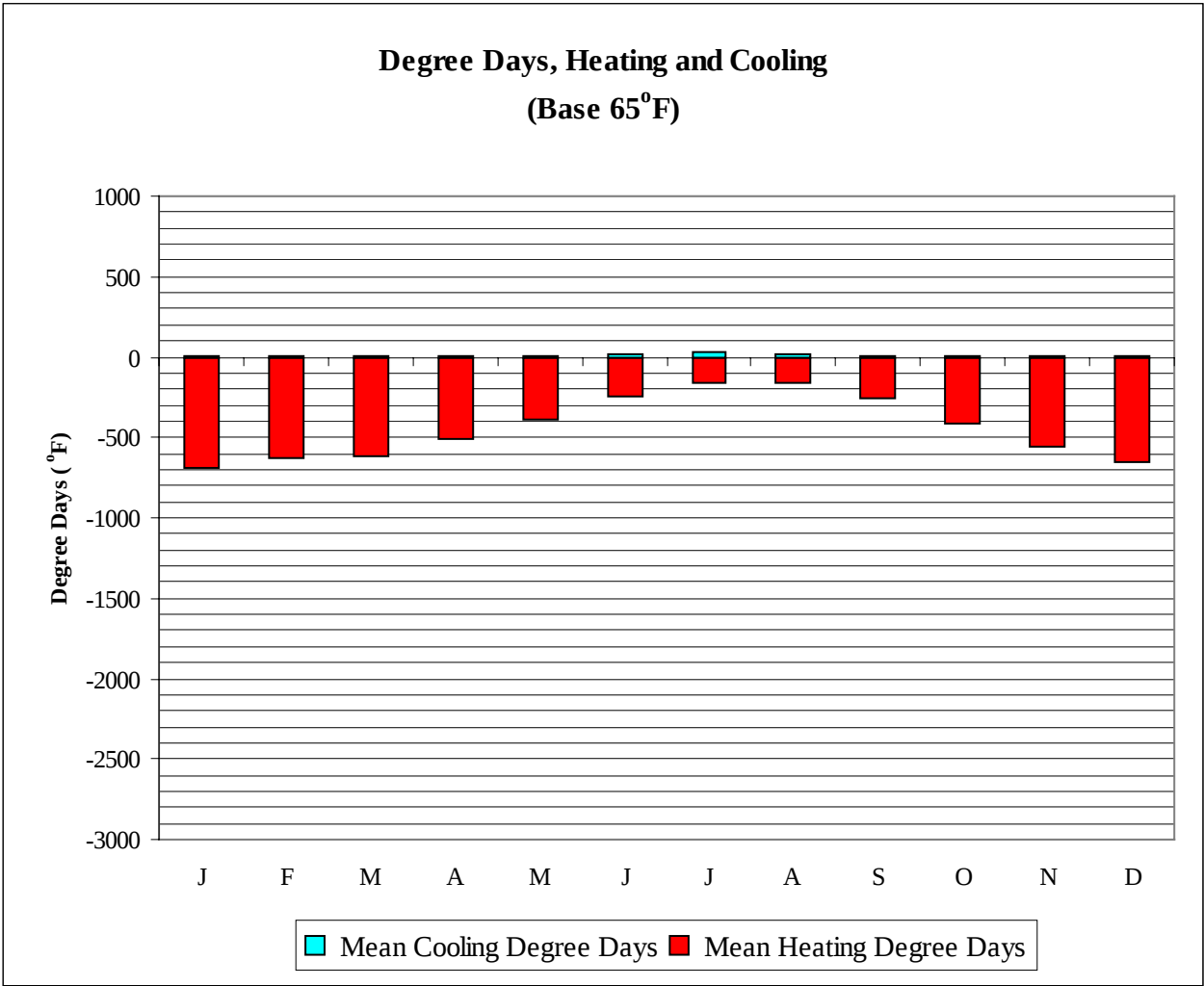


SHANNON, IRELAND

WMO No. 039620

Long Term Dry Bulb Temperature and Humidity Summary

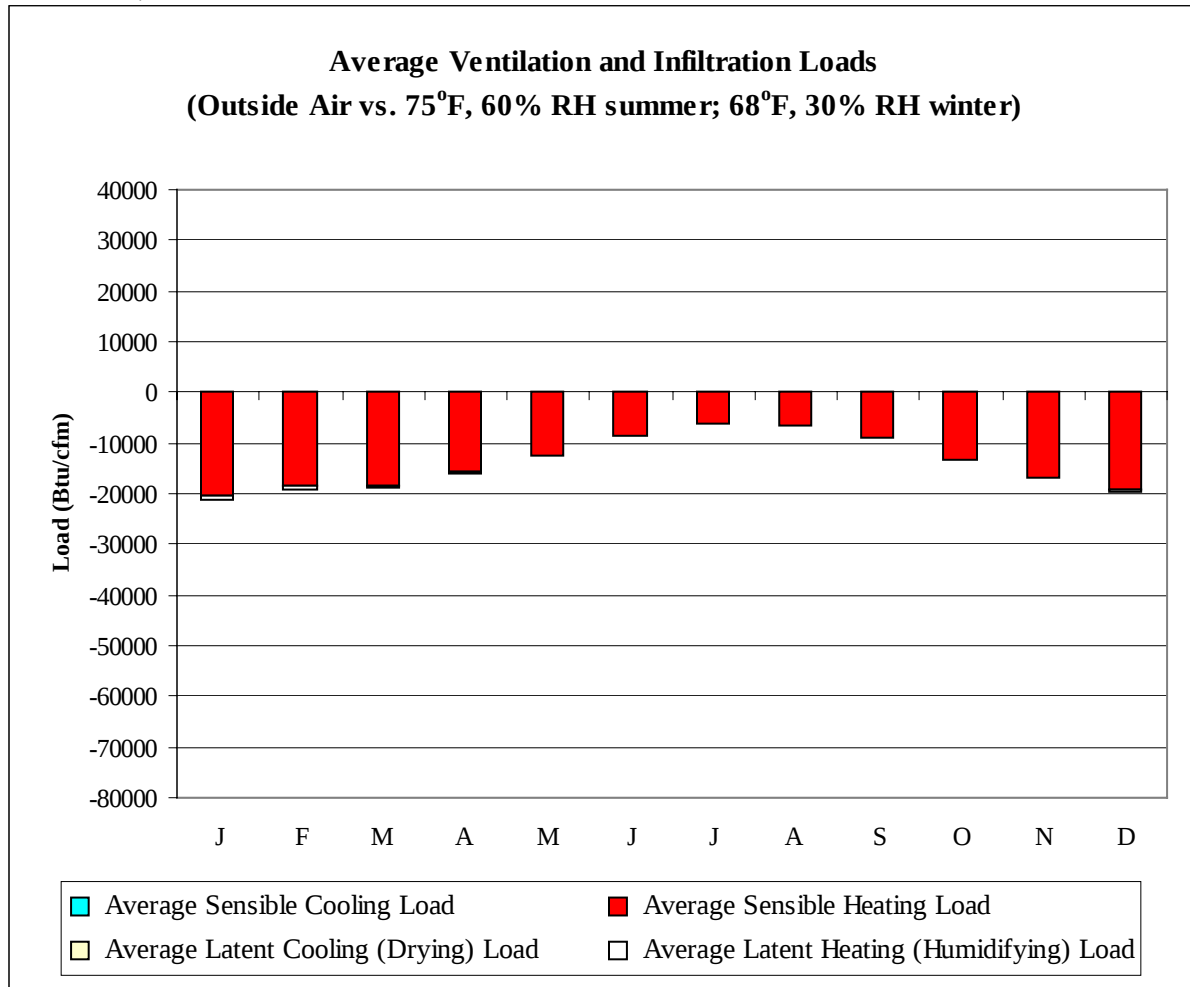
Week Ending	1.0% Temp (°F)	MCWB @ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB @ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	54.0	52.1	48.1	39.5	27.0	58.1	53.7	44.6	31.1
14-Jan	54.0	51.2	46.5	37.7	23.0	54.6	52.5	41.5	28.6
21-Jan	54.0	51.6	46.7	38.1	27.0	54.6	52.4	41.4	29.3
28-Jan	53.0	50.3	47.0	38.6	30.0	53.2	51.5	41.6	29.5
4-Feb	54.0	51.2	47.6	38.9	30.0	53.9	52.5	42.1	30.1
11-Feb	54.0	50.6	47.1	38.8	29.0	53.2	51.7	41.4	29.8
18-Feb	52.0	48.9	46.1	36.8	27.0	51.1	51.2	38.3	27.1
25-Feb	53.0	50.3	47.6	37.9	30.0	53.2	52.4	40.2	28.8
4-Mar	54.0	50.1	49.2	39.0	29.0	53.9	52.9	41.7	29.9
11-Mar	55.0	51.7	50.9	41.2	34.0	58.1	54.1	44.9	31.9
18-Mar	56.0	52.4	49.9	39.9	32.0	57.4	54.3	42.5	30.8
25-Mar	57.0	50.0	50.6	39.8	33.0	55.3	53.7	42.8	29.7
1-Apr	57.0	51.8	51.4	40.7	34.0	56.7	54.8	43.1	30.8
8-Apr	61.0	52.4	52.3	39.5	32.0	56.7	53.7	42.1	30.0
15-Apr	59.0	52.2	53.5	41.8	35.0	58.1	54.7	44.5	32.3
22-Apr	63.0	54.4	55.5	43.6	35.0	58.8	56.8	47.4	35.0
29-Apr	68.0	58.1	56.7	42.7	36.0	63.0	64.1	47.3	33.5
6-May	70.0	61.0	56.4	44.0	36.0	66.5	69.2	47.8	35.2
13-May	66.0	57.2	57.7	45.4	39.0	60.9	57.2	50.8	36.7
20-May	70.0	58.3	59.5	45.8	39.0	64.4	62.1	50.6	37.3
27-May	71.0	60.8	61.4	48.3	43.0	72.8	65.5	55.6	41.9
3-Jun	72.0	60.0	62.0	49.2	43.0	70.0	63.5	57.7	42.5
10-Jun	70.0	59.6	61.8	50.4	45.0	73.5	65.7	59.7	44.8
17-Jun	74.0	62.9	63.8	51.0	45.0	74.9	65.6	61.4	45.8
24-Jun	75.0	63.7	64.8	52.2	47.0	78.4	68.5	63.9	47.9
1-Jul	81.0	68.6	65.7	53.2	48.0	87.5	76.0	67.4	50.1
8-Jul	77.0	66.1	66.6	54.5	50.0	86.1	71.6	69.5	52.2
15-Jul	77.0	66.9	66.6	55.7	51.0	91.7	70.8	73.4	56.0
22-Jul	77.0	64.4	66.8	55.3	52.0	90.3	70.0	71.0	54.4
29-Jul	77.0	65.3	67.2	56.2	52.0	90.3	68.2	73.3	56.7
5-Aug	77.0	66.2	66.8	55.2	49.0	88.9	74.7	72.7	54.9
12-Aug	75.0	64.1	66.4	54.6	50.0	84.7	65.4	71.0	53.6
19-Aug	77.0	65.7	67.3	54.8	48.0	91.0	69.8	73.1	54.9
26-Aug	76.0	66.8	66.1	55.2	49.0	91.0	67.3	73.0	55.9
2-Sep	75.0	65.5	66.0	53.4	48.0	88.2	67.6	70.0	52.3
9-Sep	73.0	64.6	64.4	52.8	46.0	85.4	67.0	67.7	50.7
16-Sep	68.0	61.4	62.5	51.1	42.0	84.7	64.7	64.2	47.4
23-Sep	67.0	59.9	61.4	50.3	43.0	79.1	63.5	62.2	46.2
30-Sep	68.0	62.3	60.3	49.3	41.0	79.8	64.8	61.6	45.5
7-Oct	64.0	59.4	58.7	48.8	40.0	75.6	61.3	60.0	43.7
14-Oct	63.0	57.8	57.3	47.8	39.0	71.4	60.5	57.3	43.3
21-Oct	61.0	58.0	55.6	45.7	34.0	70.7	59.8	54.6	40.5
28-Oct	61.0	57.3	55.1	45.4	36.0	70.7	59.3	54.3	39.4
4-Nov	61.0	58.2	54.1	44.6	34.0	67.9	58.4	53.4	38.5
11-Nov	59.0	55.6	52.6	43.7	36.0	62.3	56.6	50.5	37.1
18-Nov	58.0	56.3	51.1	41.9	31.0	66.5	57.3	48.5	34.4
25-Nov	57.0	54.7	49.9	40.9	29.0	63.0	56.1	46.2	33.4
2-Dec	57.0	54.0	49.0	40.3	28.0	61.6	55.6	46.0	32.9
9-Dec	55.0	52.5	48.5	40.4	30.0	58.1	53.9	44.3	32.4
16-Dec	56.0	54.7	48.0	39.7	30.0	60.9	55.8	44.4	31.8
23-Dec	55.0	52.5	47.7	39.5	28.0	58.1	53.8	44.1	31.4
31-Dec	55.0	52.6	47.3	39.6	27.0	58.1	54.1	43.5	31.8



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	690
FEB	0	629
MAR	0	615
APR	0	509
MAY	4	386
JUN	12	240
JUL	24	158
AUG	21	166
SEP	5	262
OCT	0	419
NOV	0	552
DEC	0	648
ANN	66	5274

SHANNON, IRELAND

WMO No. 039620



	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	-20296	0	-848
FEB	0	-18498	0	-856
MAR	0	-18347	0	-535
APR	0	-15528	0	-342
MAY	1	-12360	1	-74
JUN	29	-8400	29	-3
JUL	44	-6175	198	0
AUG	36	-6440	245	0
SEP	2	-9030	52	-1
OCT	0	-13273	0	-46
NOV	0	-16646	0	-283
DEC	0	-19203	0	-533
ANN	112	-164196	525	-3521

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

No Solar Radiation
Data Available

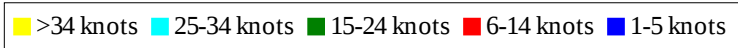
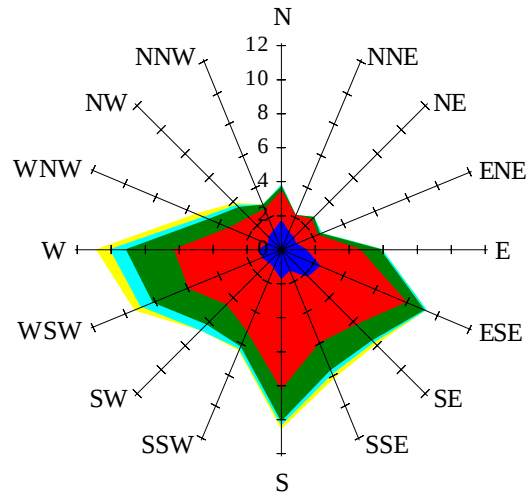


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

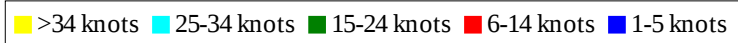
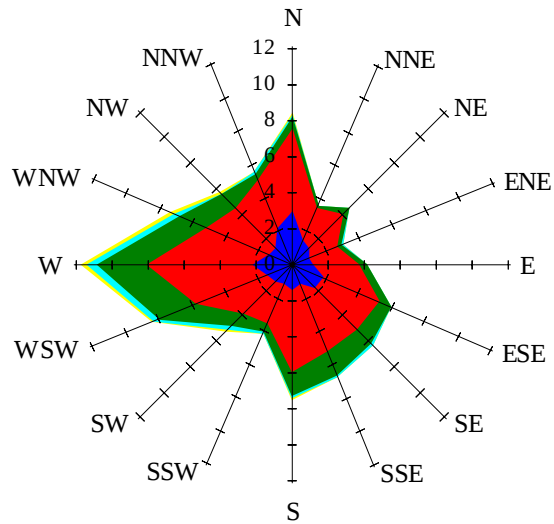
Labels of Percent Frequency on North Axis



Percent Calm = 3.11

Wind Summary - March, April, and May

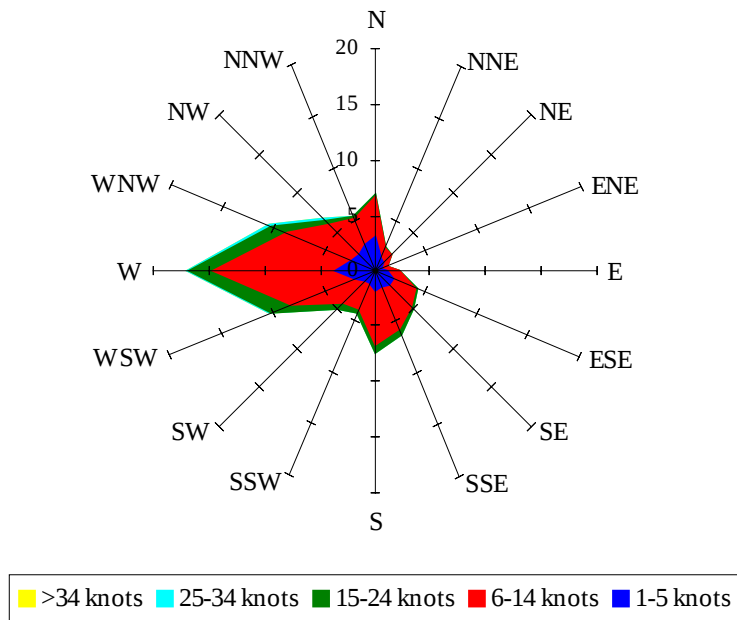
Labels of Percent Frequency on North Axis



Percent Calm = 3.40

Wind Summary - June, July, and August

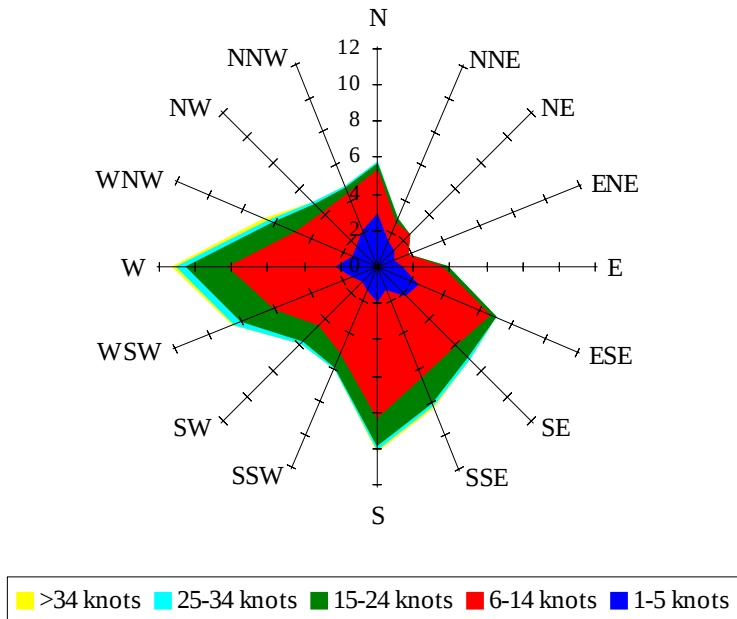
Labels of Percent Frequency on North Axis



Percent Calm = 3.96

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 3.22