

GHEDI, ITALY

Latitude = 45.42 N

Longitude = 10.28 E

Period of Record = 1973 to 1996

WMO No. 160880

Elevation = 302 feet

Average Pressure = 29.63 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	2.3	SW
0.4% Occurrence	90	74	102	2.3	WSW
1.0% Occurrence	88	73	100	2.2	W
2.0% Occurrence	86	72	97	2.4	W
Mean Daily Range	17	-	-	-	-
97.5% Occurrence	27	27	20	1.0	WNW
99.0% Occurrence	23	23	16	0.9	W
99.6% Occurrence	19	18	13	0.7	NW
Median of Extreme Lows	16	16	11	0.6	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	79	88	131	1.5	WSW
0.4% Occurrence	76	86	118	2.0	W
1.0% Occurrence	75	85	114	2.0	W
2.0% Occurrence	73	82	107	2.1	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	134	84	0.88	1.0	W
0.4% Occurrence	125	82	0.83	1.6	NE
1.0% Occurrence	118	81	0.78	1.5	W
2.0% Occurrence	111	79	0.74	1.8	NE
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		8	533	212	1084

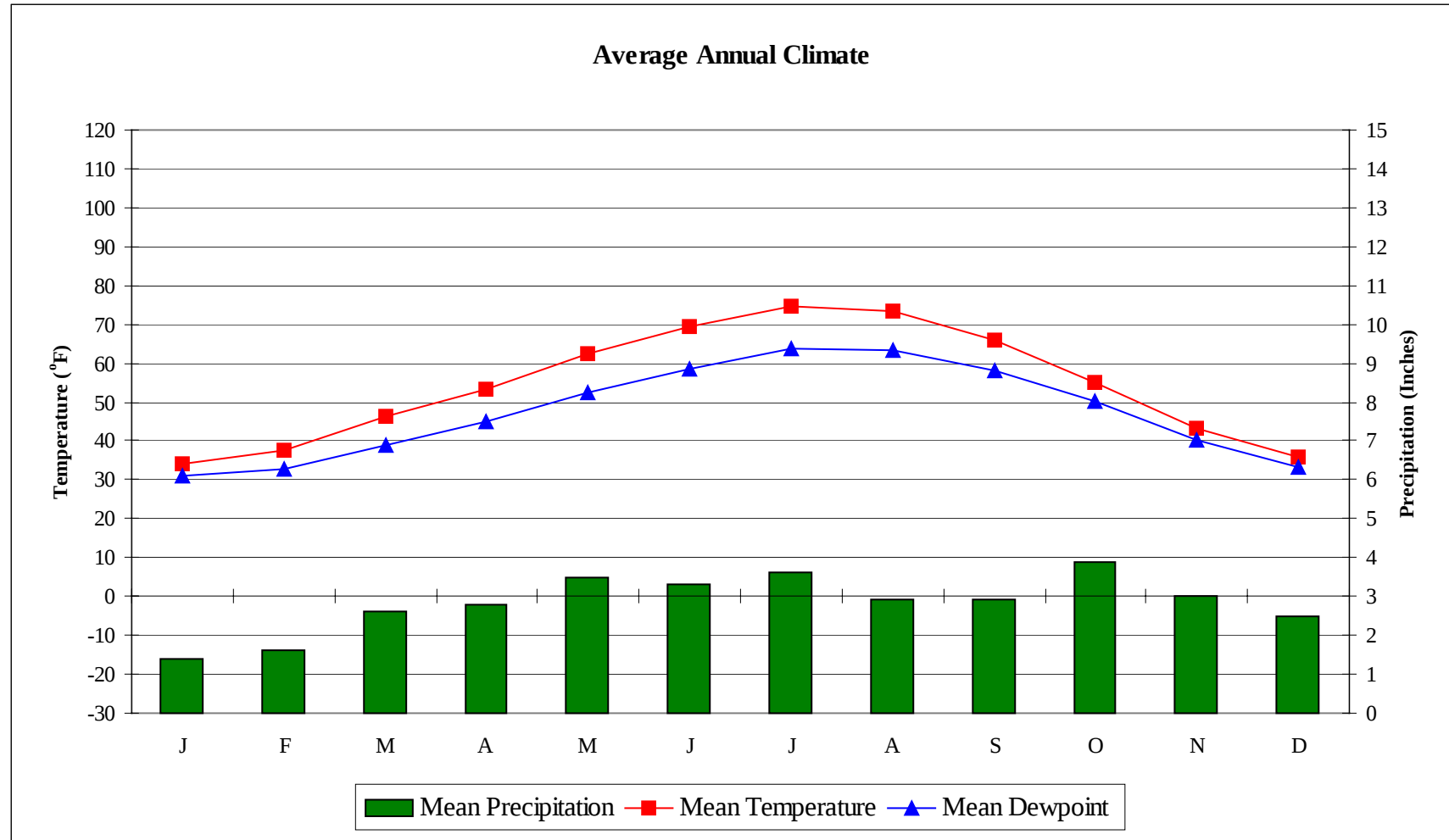
Other Site Data

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	1.3 + 0.5
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 (#)
56.7	N/A	N/A	60

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

GHEDI, ITALY

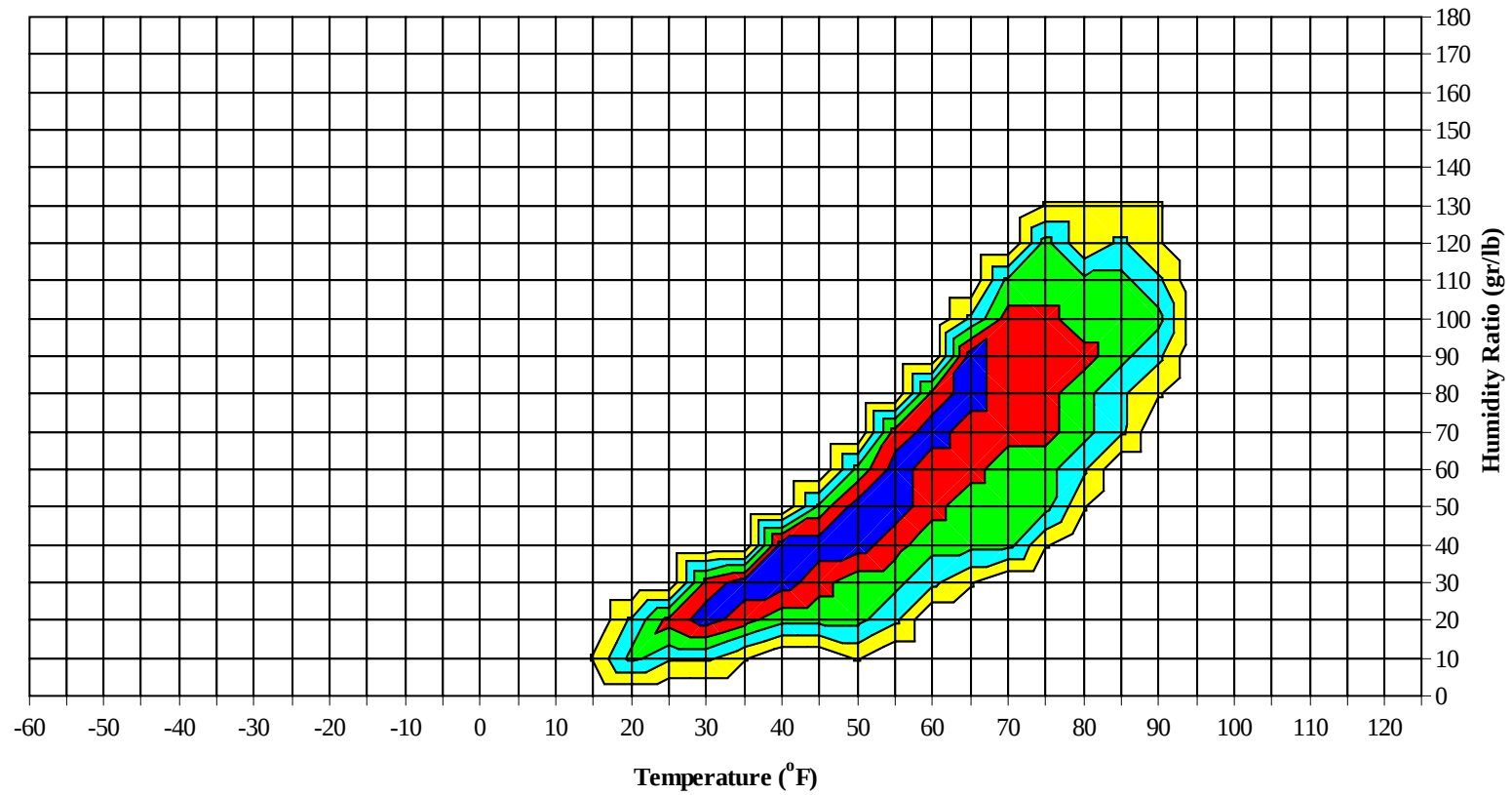
WMO No. 160880



GHEDI, ITALY

WMO No. 160880

Long Term Psychrometric Summary

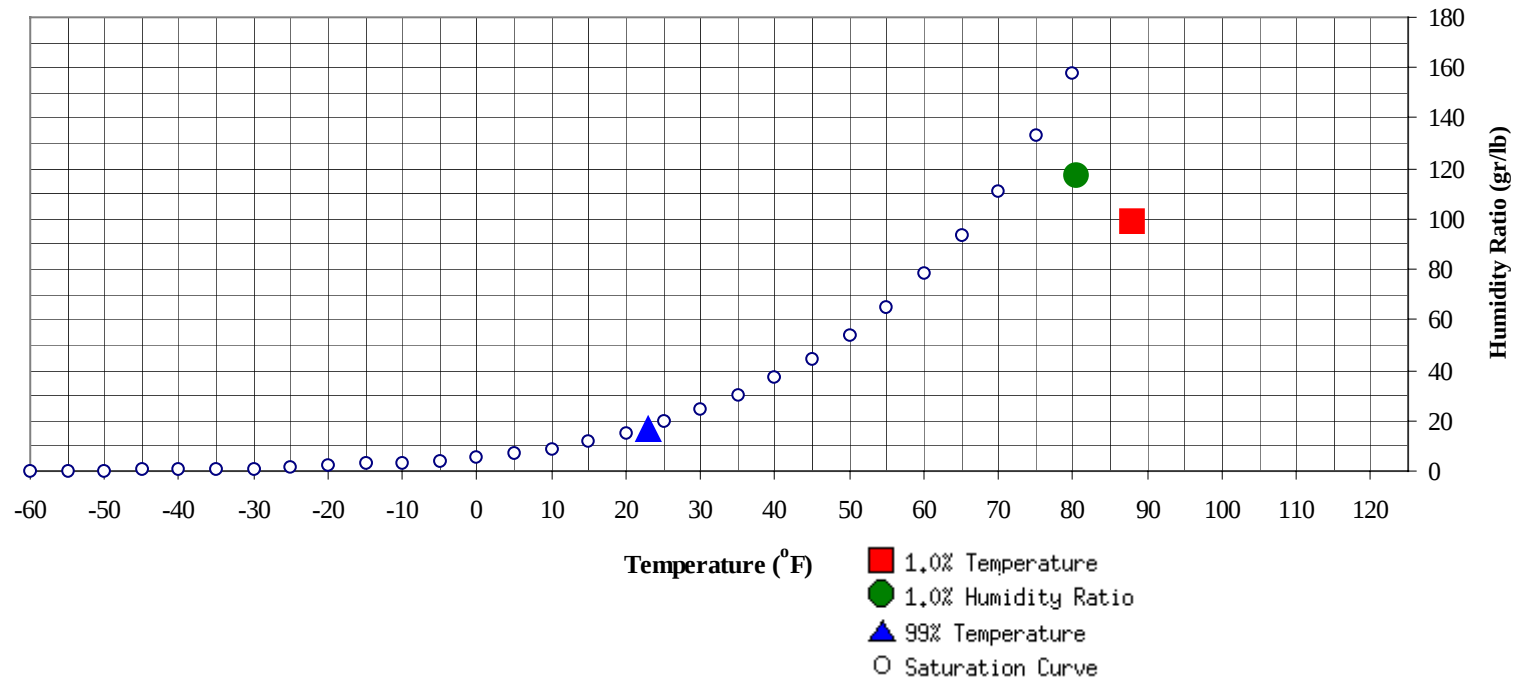


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

GHEDI, ITALY

WMO No. 160880

Psychrometric Summary of Peak Design Values



99% Dry Bulb	(°F)	MCHR (gr/lb)	Enthalpy (btu/lb)	1.0% Humidity Ratio	(gr/lb)	MCDB (°F)	MCWB (°F)	MC Dewpt (°F)	Enthalpy (btu/lb)
	23	16.3	8.0		117.6	80.5	74.2	71.6	37.7

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	88	99.5	73.1	36.8

GHEDI, ITALY

WMO No. 160880

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															
70 / 74							0	0	0	56.7		0	2	1	3 55.4
65 / 69							0	0	0	54.6		0	6	3	9 54.9
60 / 64		0		0	52.0		1	1	2	52.5		0	22	12	34 53.0
55 / 59		1	0	1	48.2		7	3	10	48.5		3	51	34	88 49.9
50 / 54	0	9	2	11	44.9	0	23	11	34	45.2	18	65	60	142	47.2
45 / 49	7	28	16	51	42.8	12	48	34	94	42.9	62	56	69	187	43.9
40 / 44	21	45	35	101	39.9	26	46	47	119	39.7	56	25	36	117	40.1
35 / 39	56	69	70	195	36.1	56	51	63	171	35.9	63	14	25	102	36.1
30 / 34	72	58	74	205	31.2	67	33	47	148	31.2	34	5	7	46	31.2
25 / 29	52	26	37	114	26.5	45	10	14	70	26.4	12	1	1	14	26.1
20 / 24	25	7	8	40	21.9	12	2	2	16	22.1	1		0	1	21.4
15 / 19	10	3	4	17	17.8	4	1	1	6	17.7	0			0	19.0
10 / 14	4	1	1	6	12.7	2	0	0	2	12.3					
5 / 9	1	0	1	2	7.2	0			0	8.5					
0 / 4	1	0		1	1.2										

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.

GHEDI, ITALY

WMO No. 160880

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	72.3
90 / 94							0	0	0	64.8		3	3	6	70.1
85 / 89							1	1	2	67.0		12	9	21	70.4
80 / 84							12	8	20	65.4	0	46	32	78	68.6
75 / 79		2	2	4	57.9	0	34	20	54	63.0	3	66	46	116	65.9
70 / 74		11	6	17	57.8	1	58	38	96	60.9	28	58	52	138	64.3
65 / 69		24	14	38	56.1	10	46	36	91	59.6	54	29	38	121	62.6
60 / 64	0	57	33	90	54.0	48	50	58	156	57.8	81	19	37	137	59.8
55 / 59	15	69	56	141	51.8	85	36	56	177	54.5	56	7	20	83	55.4
50 / 54	72	54	75	200	49.0	78	12	27	117	50.7	17	1	2	20	51.4
45 / 49	89	20	41	150	45.0	22	1	4	27	46.0	1			1	46.8
40 / 44	37	3	10	50	40.8	3		0	3	41.0					
35 / 39	22	1	3	26	36.8	1			1	37.9					
30 / 34	5	0	0	5	32.3										
25 / 29	0			0	27.0										
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															

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GHEDI, ITALY

WMO No. 160880

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	77.0										
95 / 99		0	1	1	79.2		0	0	0	74.7					
90 / 94	0	14	12	26	74.9		14	7	21	74.6		0		0	77.0
85 / 89	0	40	26	66	72.9		32	18	51	73.0		1	1	2	69.8
80 / 84	1	77	53	131	70.5	0	67	40	107	70.7	0	21	9	30	69.2
75 / 79	19	68	65	152	68.4	9	66	60	136	68.6	0	61	29	91	66.3
70 / 74	83	33	51	167	67.1	70	43	63	176	66.9	4	67	47	119	64.0
65 / 69	75	10	23	108	64.4	76	17	34	127	64.5	29	40	50	119	63.1
60 / 64	54	6	14	74	60.9	69	8	23	100	61.2	93	36	63	192	60.4
55 / 59	15	0	2	17	56.6	20	1	3	24	56.6	72	12	31	115	55.7
50 / 54	1	0		1	52.5	3		0	3	51.1	31	2	8	41	51.3
45 / 49						0			0	47.2	10		1	11	46.3
40 / 44						0			0		1			1	41.4
35 / 39											0			0	38.0
30 / 34															
25 / 29															
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															

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GHEDI, ITALY

WMO No. 160880

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	68.0										
75 / 79		5	1	6	65.4										
70 / 74	0	22	7	29	62.5										
65 / 69	1	30	12	43	60.2			0	0	54.0					
60 / 64	17	62	45	123	58.2	0	5	1	6	54.9		0	0	0	55.8
55 / 59	63	67	71	201	54.6	4	25	11	40	53.0		1	0	1	50.1
50 / 54	63	41	64	168	50.4	28	58	41	127	49.2	1	9	2	12	46.5
45 / 49	59	17	34	110	45.7	53	68	67	188	44.9	14	42	24	80	43.9
40 / 44	24	3	10	37	41.4	43	38	46	127	40.7	29	52	41	122	40.4
35 / 39	17	1	3	21	37.4	55	29	50	134	36.6	60	69	75	203	36.2
30 / 34	4	0	1	5	32.3	39	13	21	73	31.7	67	50	68	185	31.4
25 / 29	0			0	28.0	16	3	4	23	26.8	53	20	31	104	26.6
20 / 24						3	0	0	3	21.9	19	4	6	29	21.9
15 / 19						0			0	18.8	6	1	1	8	17.9
10 / 14												0		0	14.0
5 / 9															
0 / 4															

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.

GHEDI, ITALY

WMO No. 160880

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

Period of Record = 1973 to 1996

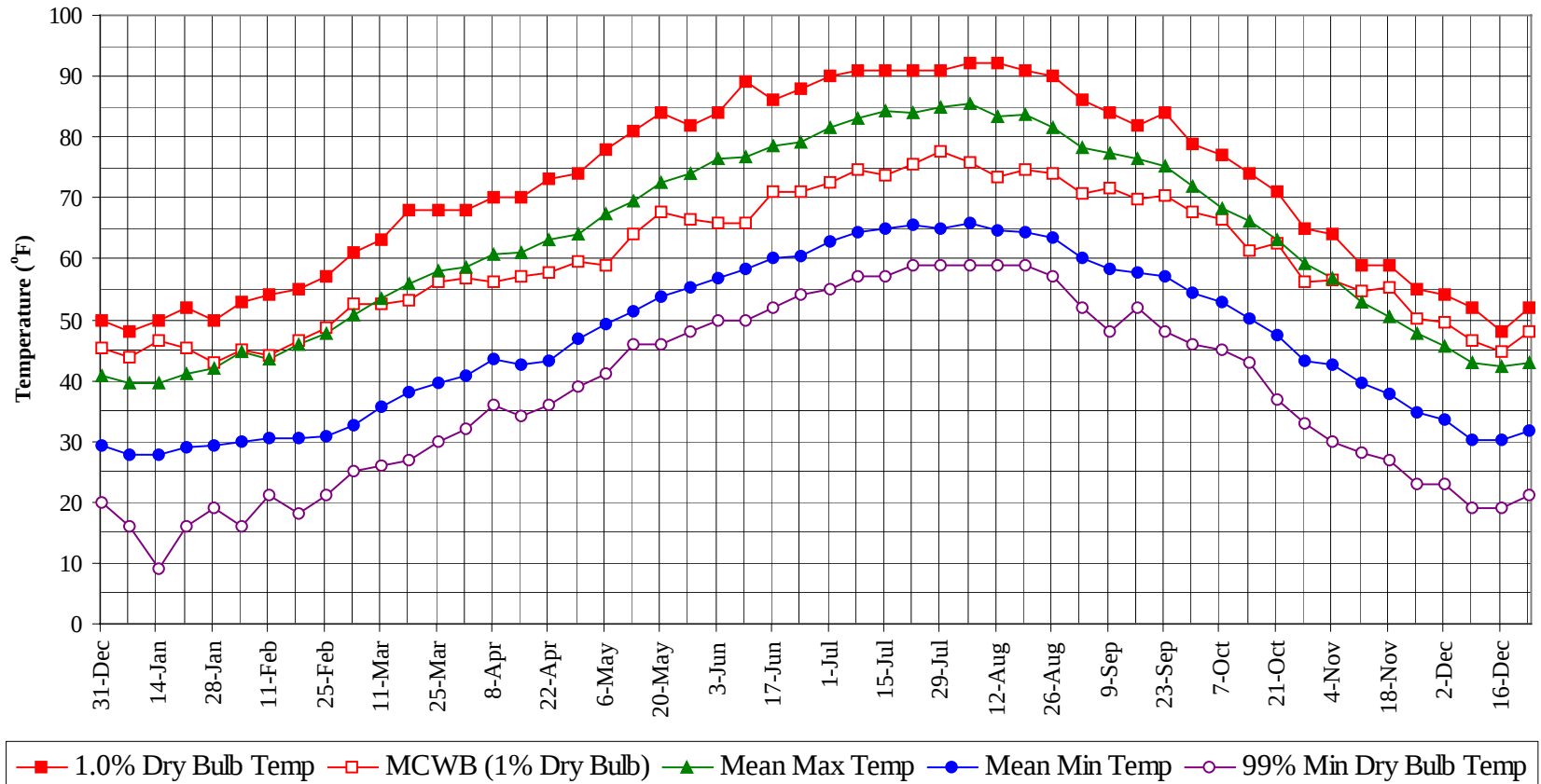
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
100 / 104	0			0	77.0
95 / 99	1			1	2
90 / 94	0	30	22	52	74.2
85 / 89	0	86	54	140	72.4
80 / 84	2	222	138	362	69.7
75 / 79	31	303	219	552	67.0
70 / 74	181	291	260	732	64.8
65 / 69	241	200	208	649	62.3
60 / 64	357	267	285	909	58.7
55 / 59	330	280	286	896	53.8
50 / 54	311	274	297	881	49.2
45 / 49	331	282	296	908	44.4
40 / 44	242	214	229	685	40.3
35 / 39	333	234	294	860	36.2
30 / 34	294	159	220	673	31.3
25 / 29	178	59	89	326	26.5
20 / 24	60	14	15	89	22.0
15 / 19	21	5	5	31	17.8
10 / 14	5	1	1	7	12.6
5 / 9	1	0	1	2	7.3
0 / 4	1	0		1	1.2

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.

GHEDI, ITALY

WMO No. 160880

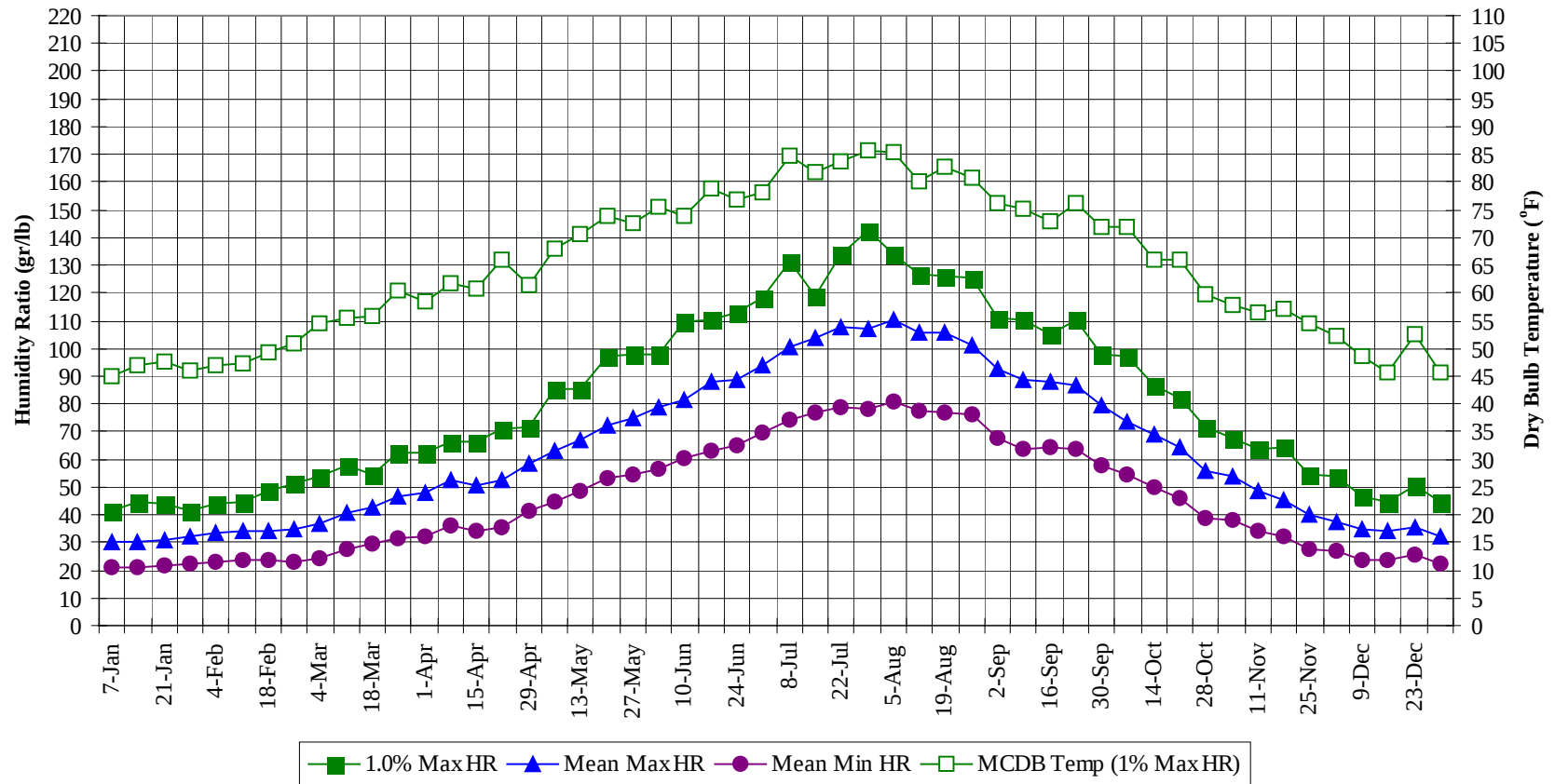
Annual Summary of Temperatures



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Long Term Humidity and Dry Bulb Temperature Summary



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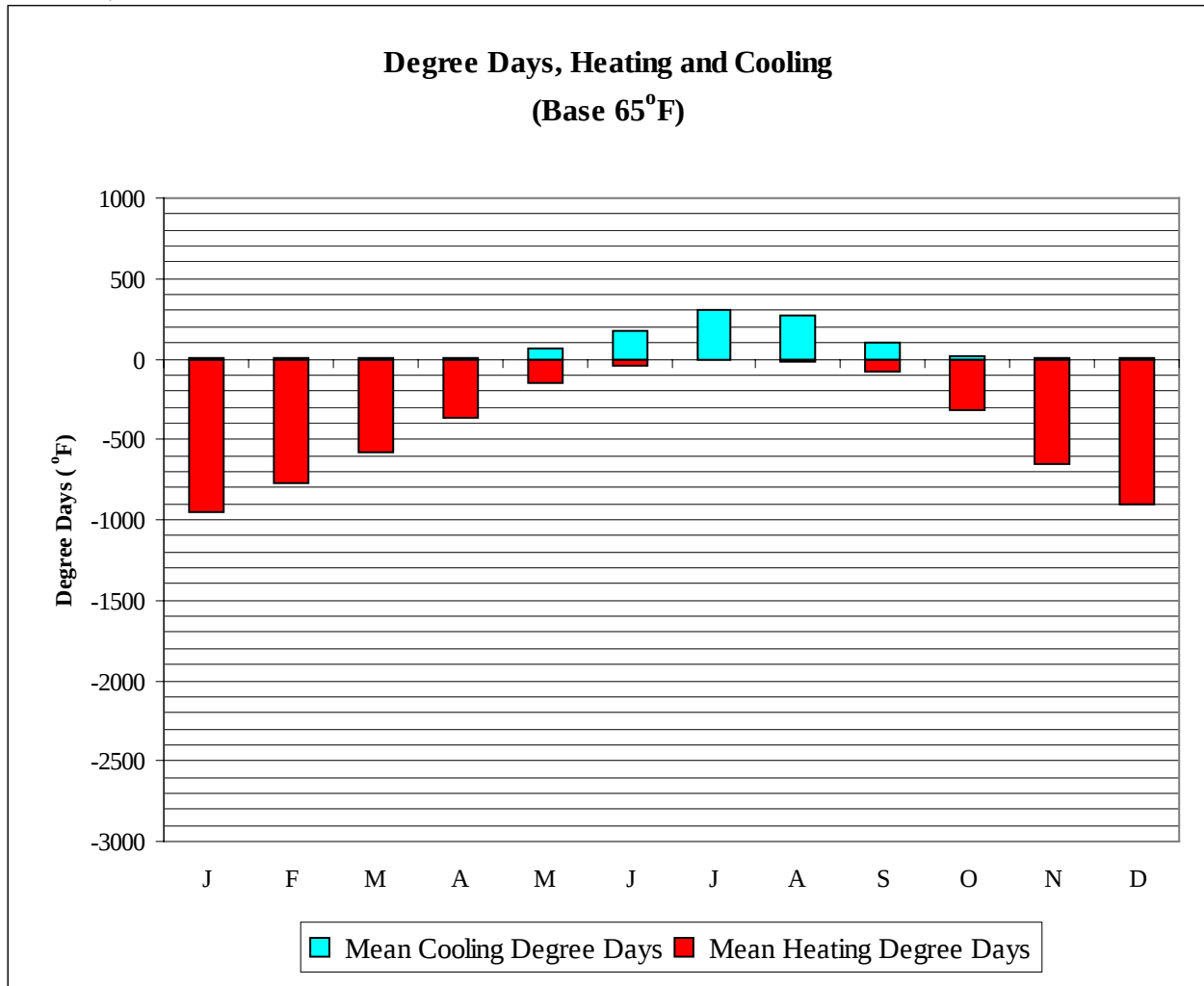
WMO No. 160880

Long Term Dry Bulb Temperature and Humidity Summary

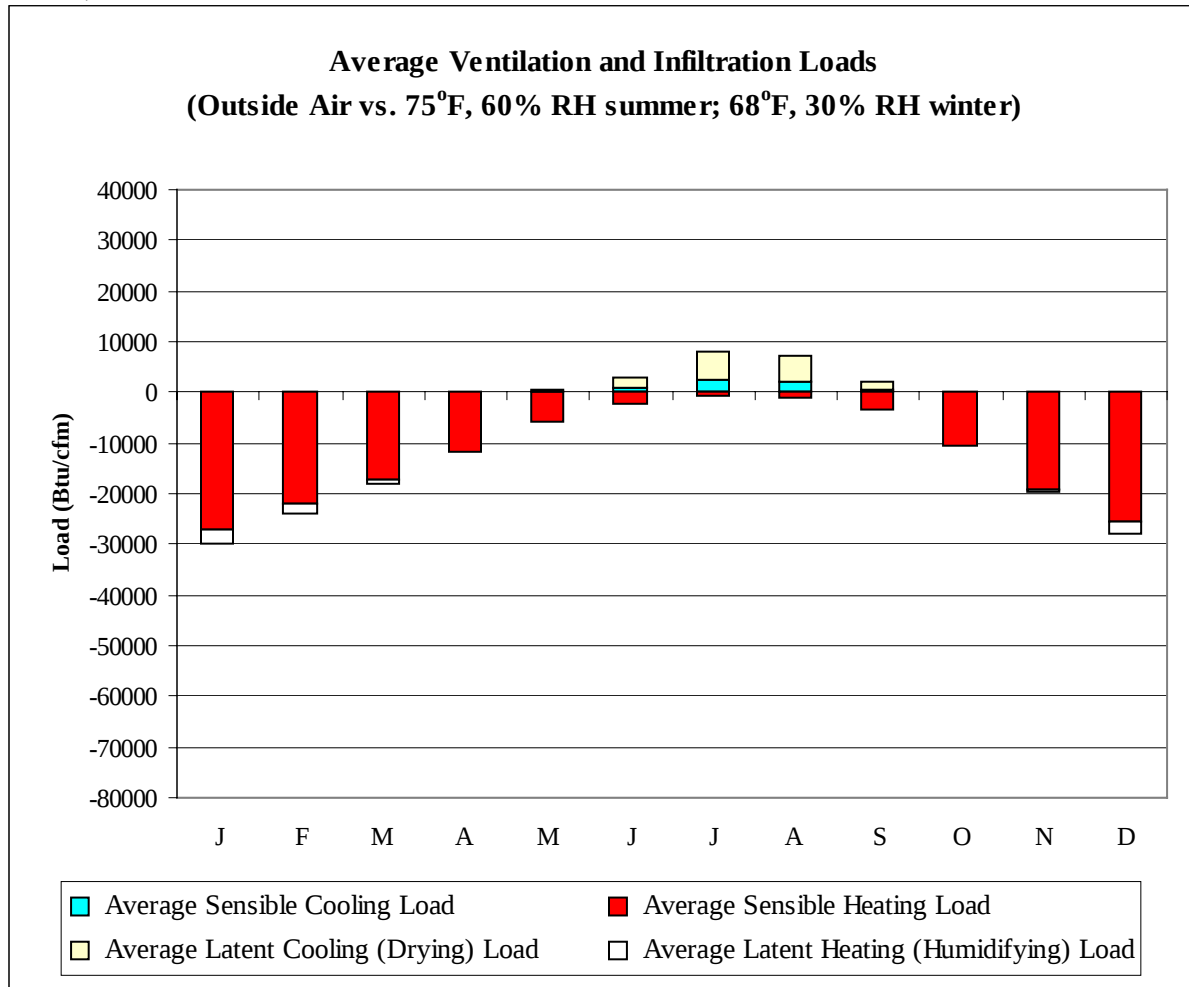
Week Ending	1.0% Temp (°F)	MCWB @ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB @ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	48.0	43.8	39.6	27.7	16.0	41.3	45.1	30.0	20.8
14-Jan	50.0	46.7	39.6	27.7	9.0	44.8	47.0	30.2	21.2
21-Jan	52.0	45.2	41.0	29.0	16.0	44.1	47.5	30.9	21.8
28-Jan	50.0	42.8	42.0	29.3	19.0	41.3	45.8	32.2	22.2
4-Feb	53.0	45.0	44.7	29.8	16.0	44.1	46.8	33.7	22.7
11-Feb	54.0	44.2	43.4	30.6	21.0	44.8	47.2	34.3	23.3
18-Feb	55.0	46.4	46.0	30.6	18.0	48.3	49.2	34.4	23.7
25-Feb	57.0	48.7	47.7	30.9	21.0	51.1	51.0	34.5	22.9
4-Mar	61.0	52.6	50.8	32.5	25.0	53.9	54.6	36.8	24.1
11-Mar	63.0	52.6	53.4	35.7	26.0	58.1	55.6	40.7	27.7
18-Mar	68.0	53.2	55.8	38.1	27.0	54.6	55.9	42.9	29.7
25-Mar	68.0	56.3	58.1	39.5	30.0	62.3	60.6	46.5	31.6
1-Apr	68.0	56.7	58.8	40.8	32.0	62.3	58.5	48.0	32.4
8-Apr	70.0	56.2	60.7	43.5	36.0	66.5	61.7	52.8	36.4
15-Apr	70.0	57.2	61.0	42.5	34.0	66.5	60.8	50.6	34.3
22-Apr	73.0	57.6	63.3	43.3	36.0	70.7	66.0	52.5	35.6
29-Apr	74.0	59.4	64.1	46.8	39.0	71.4	61.5	58.1	41.6
6-May	78.0	59.0	67.3	49.4	41.0	85.4	68.1	63.3	44.9
13-May	81.0	64.0	69.5	51.5	46.0	85.4	70.6	67.1	48.7
20-May	84.0	67.8	72.4	53.9	46.0	97.3	73.8	72.4	53.0
27-May	82.0	66.5	73.9	55.2	48.0	98.0	72.4	75.1	54.5
3-Jun	84.0	66.0	76.4	56.9	50.0	98.0	75.5	78.8	56.8
10-Jun	89.0	66.0	76.7	58.2	50.0	109.9	73.8	81.6	60.5
17-Jun	86.0	71.1	78.7	60.0	52.0	110.6	78.7	88.1	63.3
24-Jun	88.0	70.9	79.1	60.4	54.0	112.7	76.9	88.8	65.3
1-Jul	90.0	72.5	81.7	62.7	55.0	118.3	78.3	94.2	69.5
8-Jul	91.0	74.7	83.2	64.2	57.0	131.6	84.7	100.6	74.1
15-Jul	91.0	73.8	84.3	64.9	57.0	119.0	81.8	103.9	76.8
22-Jul	91.0	75.6	84.1	65.7	59.0	133.7	83.7	108.0	78.9
29-Jul	91.0	77.6	84.9	65.1	59.0	142.8	85.6	107.1	78.2
5-Aug	92.0	75.8	85.6	66.0	59.0	133.7	85.3	110.4	81.1
12-Aug	92.0	73.3	83.3	64.5	59.0	126.7	80.0	105.6	77.5
19-Aug	91.0	74.7	83.8	64.5	59.0	126.0	82.6	105.9	77.0
26-Aug	90.0	73.9	81.7	63.4	57.0	125.3	80.6	101.3	75.9
2-Sep	86.0	70.6	78.2	60.2	52.0	111.3	76.1	92.6	67.8
9-Sep	84.0	71.5	77.2	58.2	48.0	110.6	75.3	88.7	63.5
16-Sep	82.0	69.7	76.4	57.7	52.0	105.0	72.7	87.8	64.1
23-Sep	84.0	70.4	75.3	57.1	48.0	110.6	76.2	86.7	64.0
30-Sep	79.0	67.8	72.0	54.5	46.0	98.0	71.8	79.6	57.6
7-Oct	77.0	66.4	68.3	52.8	45.0	97.3	71.9	73.8	54.3
14-Oct	74.0	61.3	66.3	50.2	43.0	86.8	65.9	69.2	50.0
21-Oct	71.0	62.5	63.2	47.6	37.0	81.9	66.1	64.6	45.7
28-Oct	65.0	56.3	59.1	43.2	33.0	71.4	59.7	55.5	38.6
4-Nov	64.0	56.5	56.8	42.6	30.0	67.9	57.9	54.1	38.0
11-Nov	59.0	54.8	52.8	39.7	28.0	63.7	56.6	48.8	34.3
18-Nov	59.0	55.3	50.5	37.9	27.0	64.4	57.0	45.6	32.1
25-Nov	55.0	50.1	47.6	34.8	23.0	54.6	54.4	40.1	27.9
2-Dec	54.0	49.5	45.7	33.6	23.0	53.9	52.1	37.7	26.7
9-Dec	52.0	46.7	43.0	30.1	19.0	46.9	48.8	34.5	23.6
16-Dec	48.0	44.6	42.4	30.3	19.0	44.8	45.6	34.3	23.7
23-Dec	52.0	48.1	43.0	31.7	21.0	50.4	52.4	35.4	25.3
31-Dec	50.0	45.2	40.7	29.2	20.0	44.8	45.7	32.0	22.1

GHEDI, ITALY

WMO No. 160880



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	955
FEB	0	768
MAR	1	576
APR	8	365
MAY	71	154
JUN	178	46
JUL	311	10
AUG	270	15
SEP	105	81
OCT	13	318
NOV	0	648
DEC	0	900
ANN	957	4836



	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	-27169	0	-2600
FEB	0	-22100	0	-1890
MAR	0	-17308	0	-900
APR	4	-11660	1	-175
MAY	239	-5664	212	-16
JUN	1033	-2075	1849	-5
JUL	2411	-622	5745	0
AUG	1956	-881	5434	-1
SEP	368	-3380	1663	-10
OCT	8	-10452	118	-40
NOV	0	-19111	0	-664
DEC	0	-25712	0	-1993
ANN	6019	-146134	15022	-8294

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

No Solar Radiation
Data Available

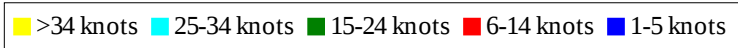
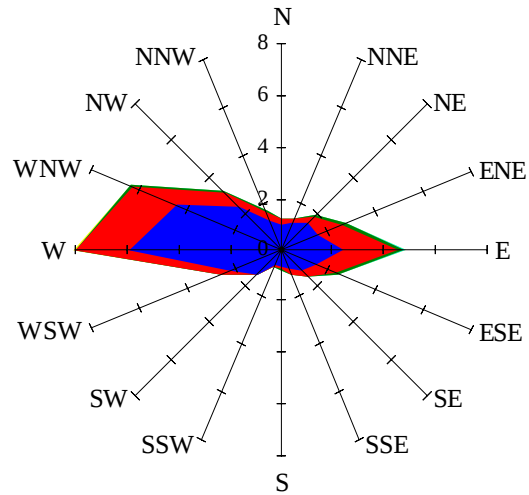


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

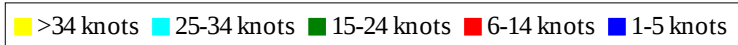
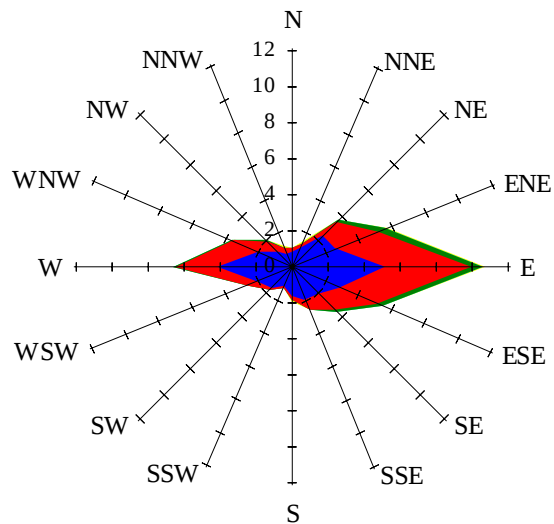
Labels of Percent Frequency on North Axis



Percent Calm = 59.26

Wind Summary - March, April, and May

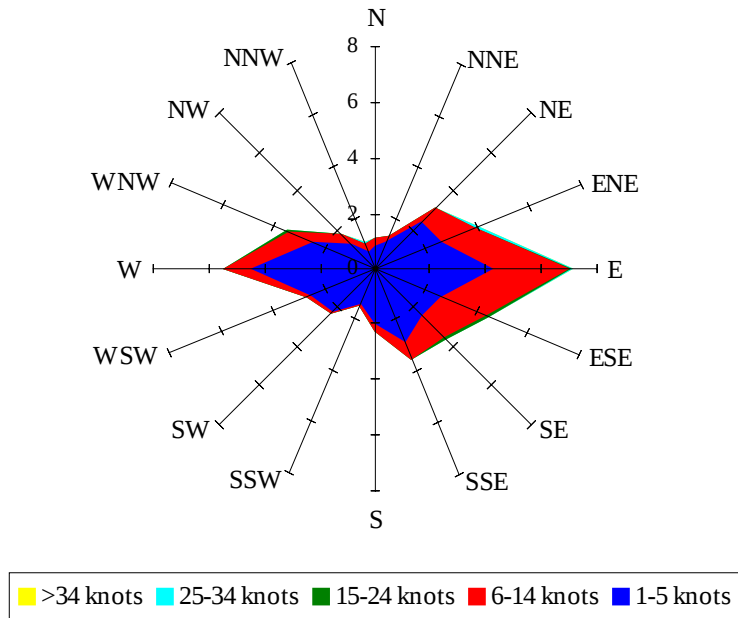
Labels of Percent Frequency on North Axis



Percent Calm = 46.07

Wind Summary - June, July, and August

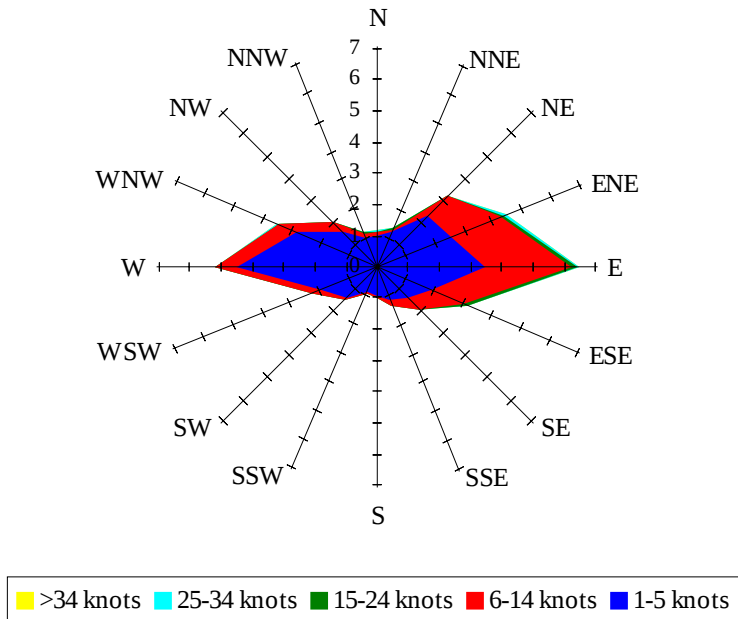
Labels of Percent Frequency on North Axis



Percent Calm = 52.02

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 60.29