

BOGOTA/ELDORADO CO

Latitude = 4.70 N

WMO No. 802220

Longitude = 74.13 W

Elevation = 8360 feet

Period of Record = 1973 to 1996

Average Pressure = 22.21 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	77	58	62	6.0	E
0.4% Occurrence	70	57	71	9.2	E
1.0% Occurrence	68	56	74	9.0	E
2.0% Occurrence	68	56	74	9.0	E
Mean Daily Range	19	-	-	-	-
97.5% Occurrence	41	41	50	0.6	N
99.0% Occurrence	39	39	47	0.7	VARIABLE
99.6% Occurrence	36	36	42	0.4	VARIABLE
Median of Extreme Lows	30	30	32	0.2	VARIABLE
	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	66	70	124	5.4	E
0.4% Occurrence	60	66	91	9.4	W
1.0% Occurrence	59	65	88	8.7	W
2.0% Occurrence	58	64	85	8.0	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	117	69	0.57	4.8	NNE
0.4% Occurrence	95	63	0.47	8.4	W
1.0% Occurrence	95	63	0.47	8.4	W
2.0% Occurrence	89	61	0.44	6.9	W
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		0	0	1	1

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
8	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 (#)
58.1	N/A	N/A	2

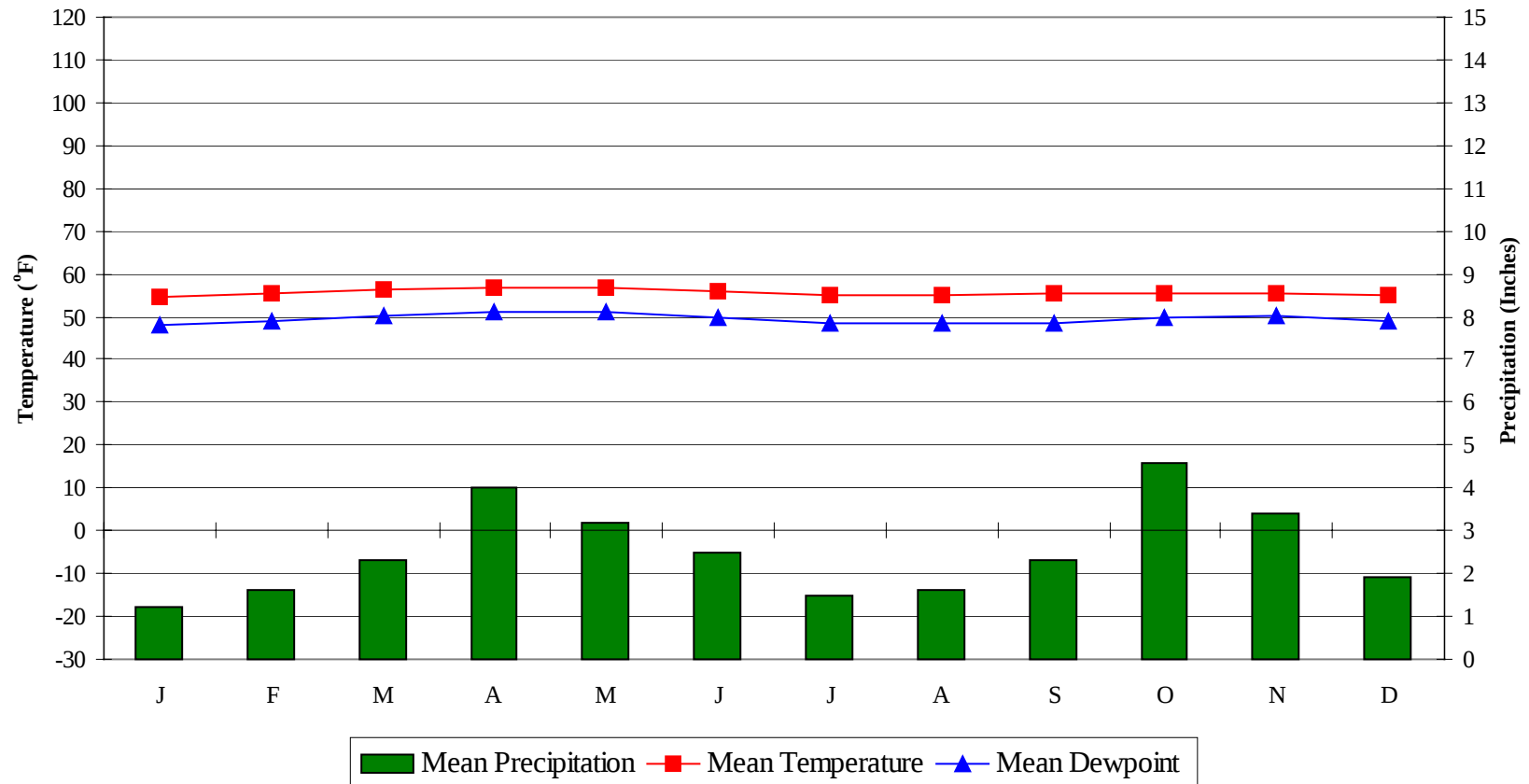
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

BOGOTA/ELDORADO

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Average Annual Climate

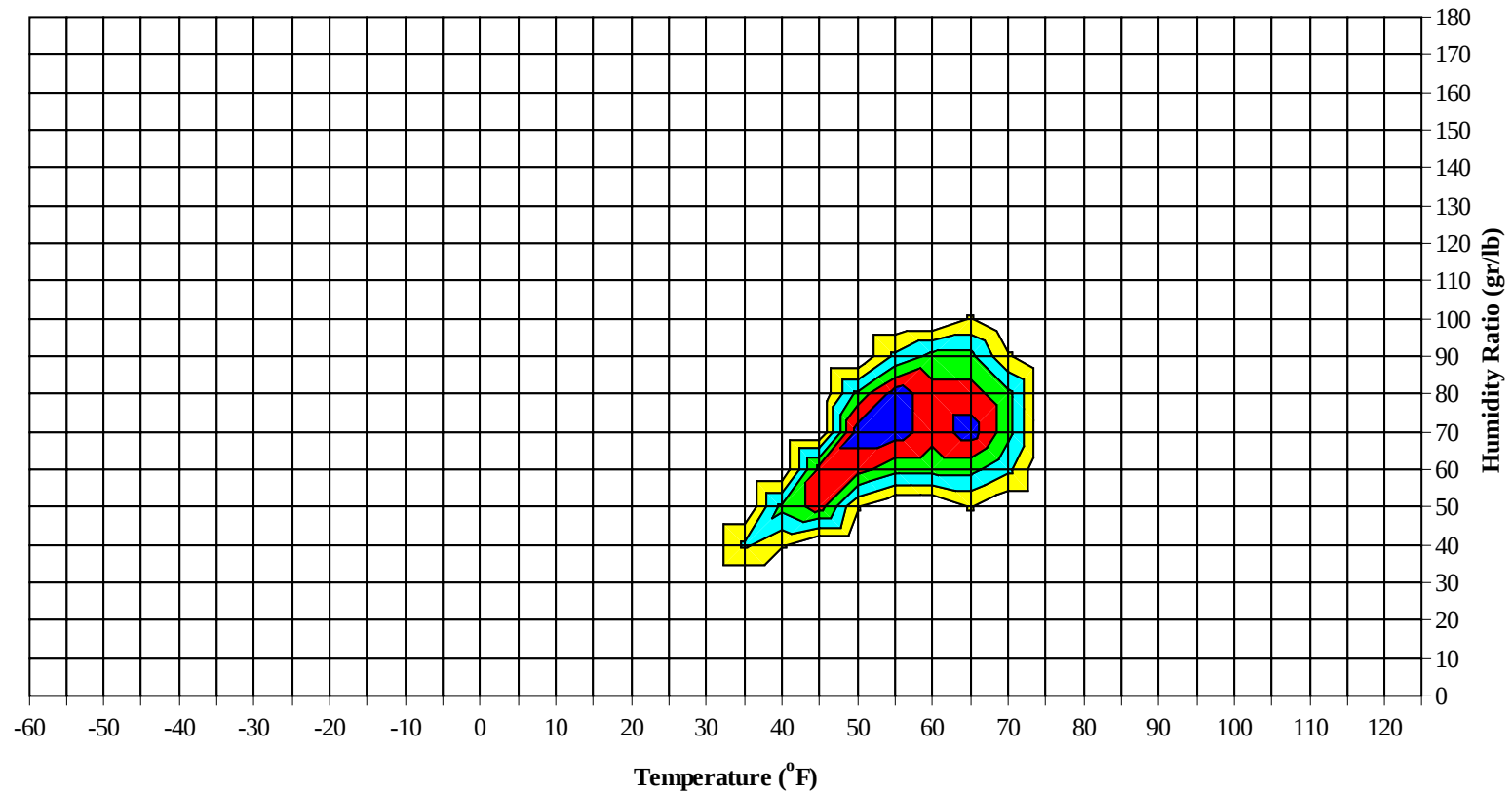


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Long Term Psychrometric Summary



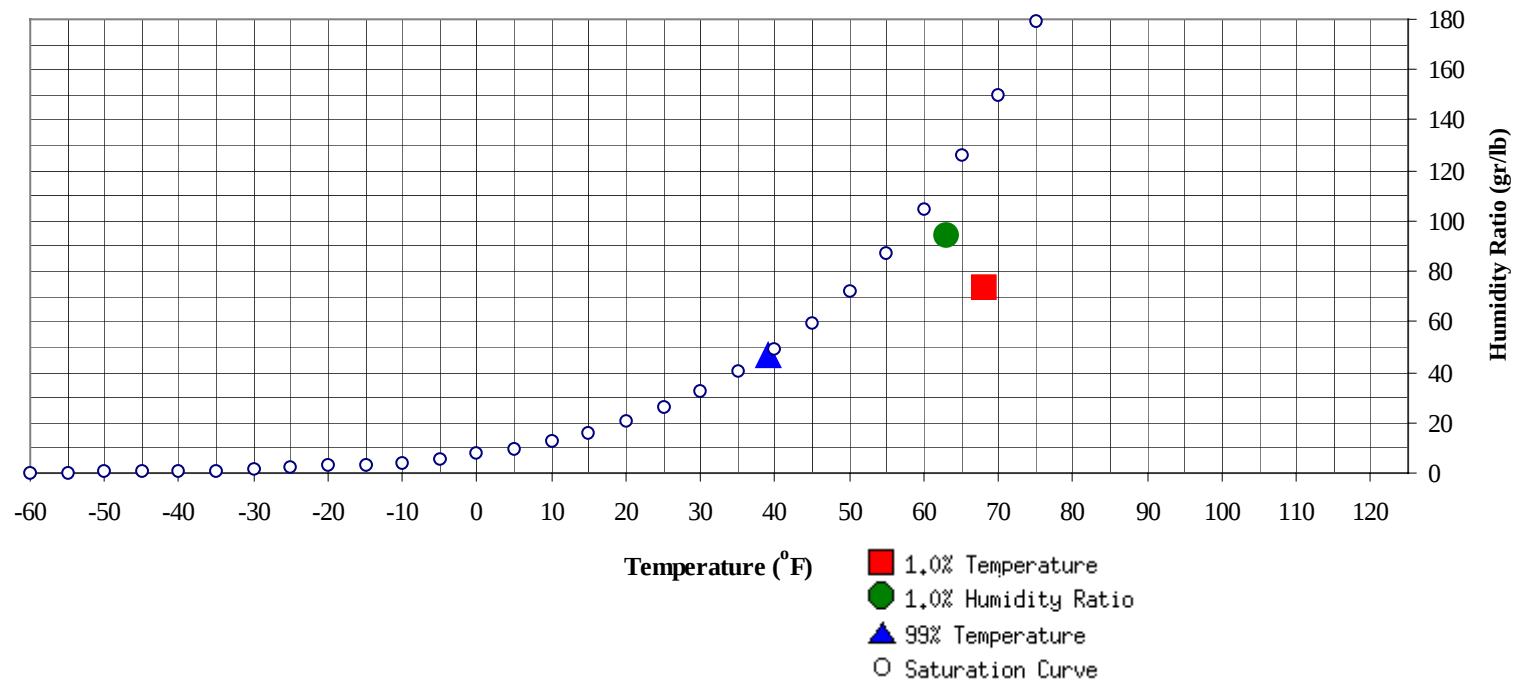
- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

BOGOTA/ELDORADO

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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)
	39	46.7	16.6		94.5	63	59.1	57.2	29.8

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	68	73.8	56.4	27.8

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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		
85 / 89															
80 / 84														0	0 75.0
75 / 79				0	0 60.0		1		1	55.0		0	0	0	54.3
70 / 74		9	0	9	55.0	0	14	0	14	55.7		12	0	12	57.0
65 / 69		64	2	66	55.8	0	59	2	61	56.4	0	66	2	68	56.8
60 / 64	0	125	26	152	54.9	0	104	30	134	55.4	1	123	30	154	55.8
55 / 59	6	41	76	123	53.2	12	42	77	130	53.6	23	44	102	169	53.9
50 / 54	81	8	106	195	50.5	99	5	93	197	50.7	130	3	99	232	51.0
45 / 49	79	1	32	112	45.8	66	0	19	84	45.9	66	0	14	80	46.2
40 / 44	43	0	5	48	41.8	25		2	27	41.6	20	0	1	21	41.9
35 / 39	28		1	29	37.4	16		1	17	37.5	7	0	0	7	37.6
30 / 34	9			9	32.8	5			5	32.4	1	0		1	32.6
25 / 29	0			0	28.3	1			1	27.0	0			0	28.0

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.

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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		
85 / 89		0		0	79.0										
80 / 84		0		0	62.0										
75 / 79		0		0	59.0							0		0	68.0
70 / 74		6	0	6	57.8	0	4	0	4	58.2		2	0	2	58.7
65 / 69	0	60	2	62	57.1	0	49	2	51	57.0	0	29	1	30	56.1
60 / 64	1	126	29	156	56.2	1	143	32	176	55.8	1	150	28	179	55.0
55 / 59	32	45	112	189	54.3	32	49	112	193	54.0	25	56	91	172	53.2
50 / 54	149	3	91	243	51.3	157	2	95	254	51.1	148	3	112	262	50.4
45 / 49	46		7	53	46.4	46		8	54	46.4	55	0	9	64	46.3
40 / 44	8		0	8	42.0	9		0	9	42.1	10	0	0	10	42.1
35 / 39	3			3	38.0	2			2	38.3	1		0	1	38.2
30 / 34	0			0	32.0	0			0	34.0	0			0	32.0
25 / 29															

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		
85 / 89															
80 / 84	0	0		0	77.5		0		0	60.0					
75 / 79	0	0		0	71.5		0		0	66.5					
70 / 74	0	1	0	1	57.9		2	0	2	56.9		4	0	4	56.4
65 / 69	0	20	1	21	55.6		25	1	26	55.5	0	40	1	41	55.5
60 / 64	0	149	22	171	54.2	0	152	25	177	54.1	0	139	22	161	54.4
55 / 59	17	74	81	172	52.4	17	65	82	164	52.5	19	53	79	151	53.0
50 / 54	134	4	126	264	49.9	127	4	119	250	50.0	116	4	115	235	50.3
45 / 49	81	0	17	97	46.0	77	0	19	96	46.0	74	0	21	95	46.0
40 / 44	13		1	14	42.1	18	0	2	20	41.8	23	0	2	25	41.9
35 / 39	4		0	4	37.6	8		0	8	37.8	8	0	0	8	37.7
30 / 34	0		0	0	33.7	1			1	33.4	0			0	33.7
25 / 29															

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 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		0		0			0	0	0	64.5		0		0	60.0
70 / 74	0	2	0	2	57.0	0	4	0	4	57.3	0	7	0	7	55.8
65 / 69	0	37	0	37	56.4	0	44	0	44	56.6	0	56	1	57	56.2
60 / 64	1	146	16	163	55.3	0	140	15	155	55.9	0	134	19	153	55.4
55 / 59	21	59	91	170	53.7	22	50	91	162	54.1	16	46	80	141	53.6
50 / 54	136	4	124	264	50.8	132	3	118	252	51.1	99	6	117	222	50.7
45 / 49	67	0	16	83	46.2	61		16	77	46.3	78	0	28	106	46.1
40 / 44	16	0	1	17	41.9	19		1	20	42.0	28		4	32	41.8
35 / 39	7		0	7	37.8	7			7	38.0	21		0	21	37.4
30 / 34	0		0	0	33.6	0			0	32.7	5		0	5	32.5
25 / 29											0			0	28.3

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.

BOGOTA/ELDORADO CO WMO No. 802220
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		0		0	79.0
80 / 84	0	0	0	0	70.4
75 / 79	0	2	0	2	59.0
70 / 74	0	65	1	66	56.5
65 / 69	1	547	14	562	56.4
60 / 64	7	1632	293	1932	55.2
55 / 59	244	626	1075	1944	53.5
50 / 54	1511	46	1313	2870	50.6
45 / 49	792	2	203	998	46.1
40 / 44	228	0	19	247	41.9
35 / 39	113	0	3	116	37.6
30 / 34	22	0	0	22	32.7
25 / 29	2			2	27.3

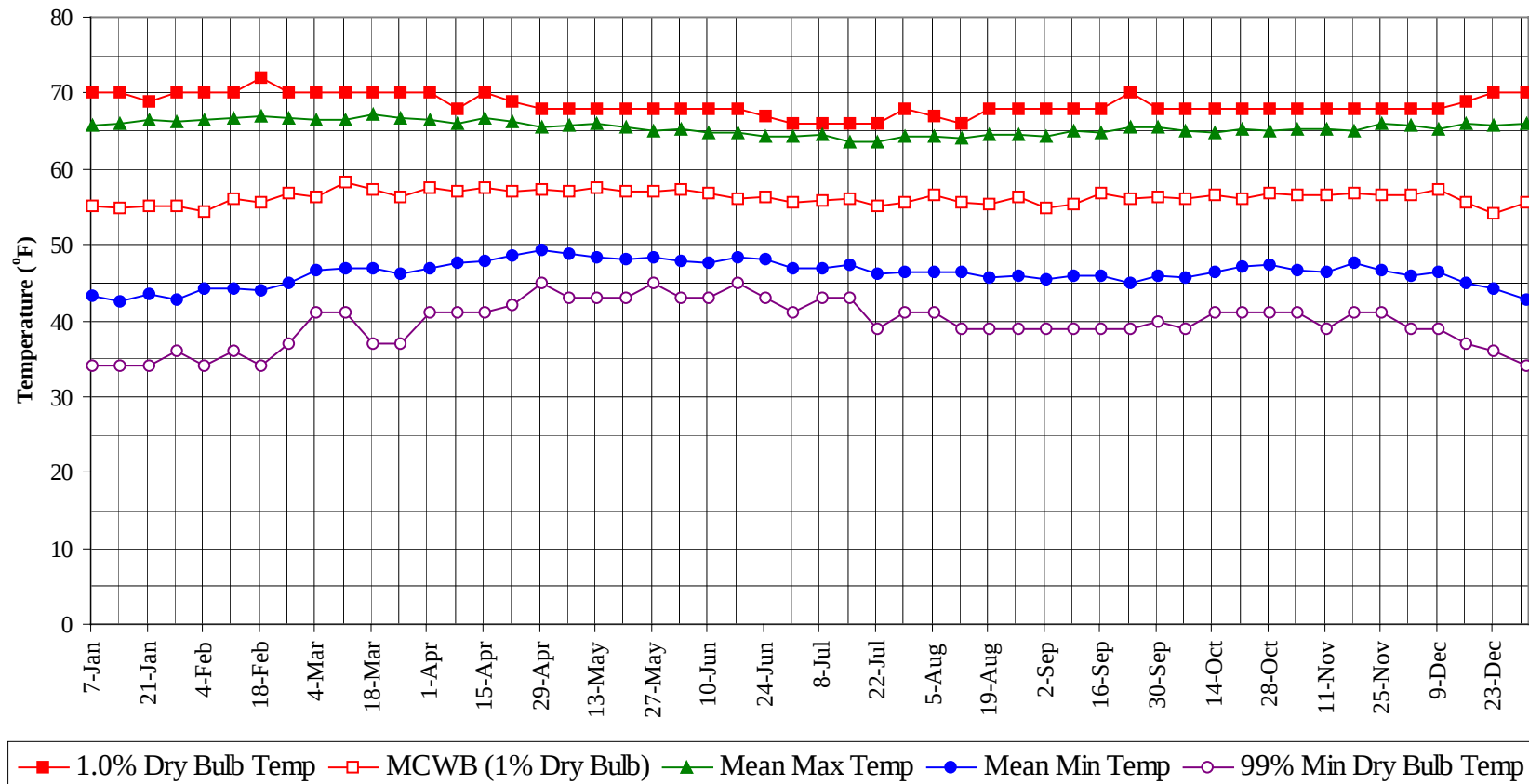
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BOGOTA/ELDORADO

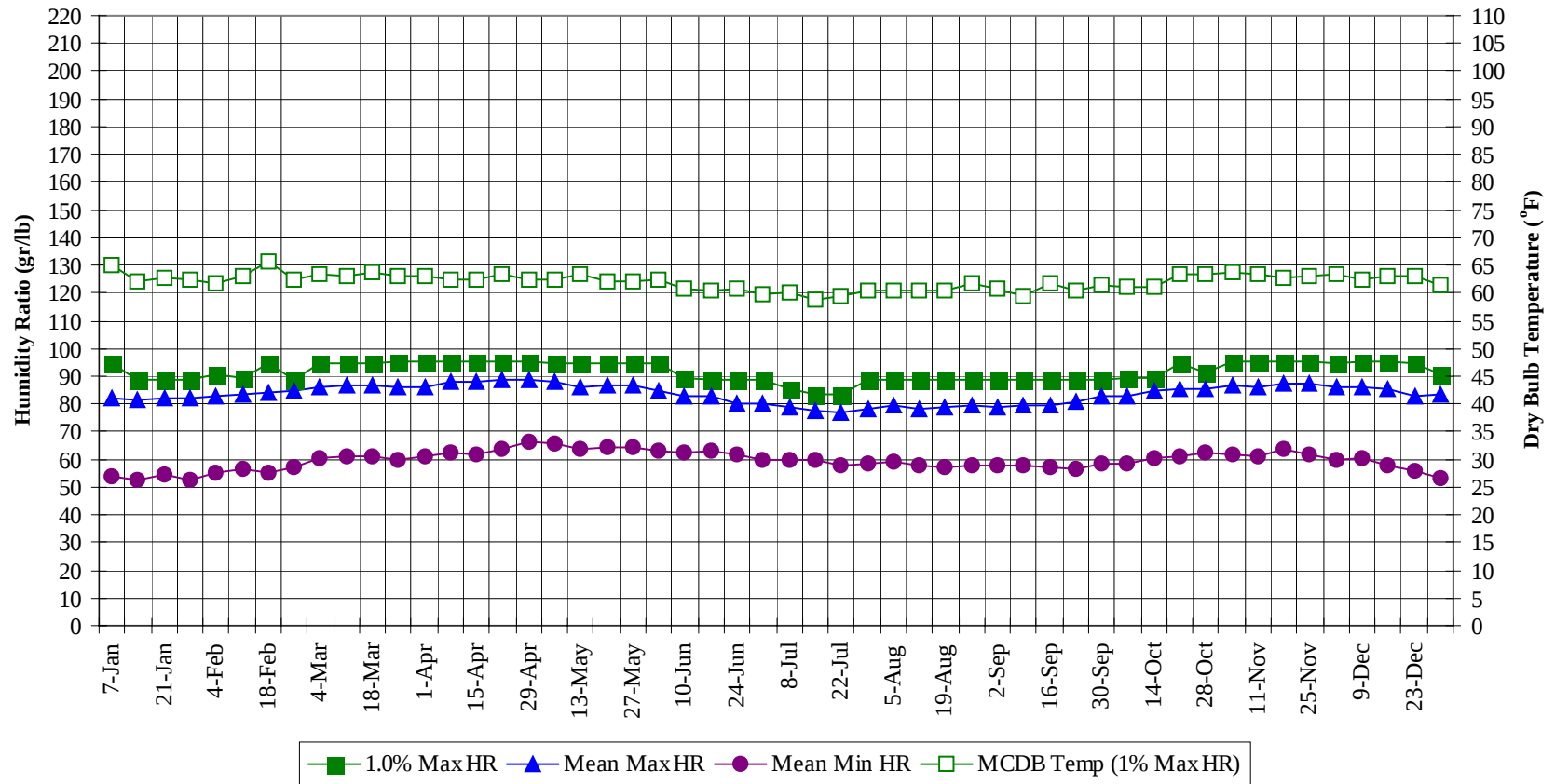
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Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary



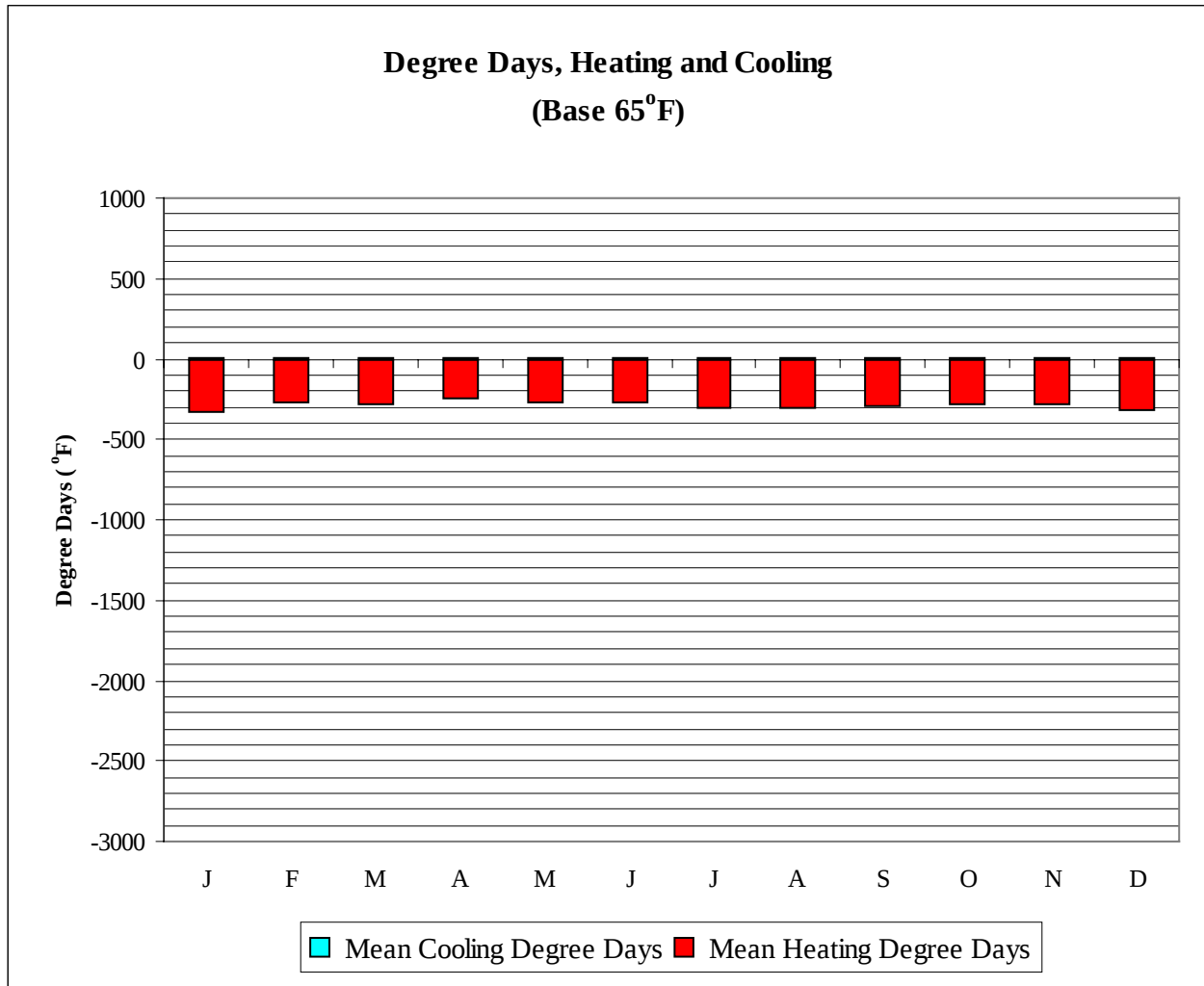
BOGOTA/ELDORADO**CO****WMO No. 802220****Long Term Dry Bulb Temperature and Humidity Summary**

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	70.0	55.1	65.8	43.2	34.0	94.5	65.0	82.2	53.5
14-Jan	70.0	55.0	65.9	42.5	34.0	88.9	61.9	81.5	52.8
21-Jan	69.0	55.1	66.5	43.5	34.0	88.9	62.8	82.1	54.2
28-Jan	70.0	55.2	66.3	42.7	36.0	88.9	62.4	82.1	52.8
4-Feb	70.0	54.4	66.5	44.2	34.0	90.3	61.8	83.1	55.5
11-Feb	70.0	56.0	66.7	44.3	36.0	89.6	62.9	83.7	56.5
18-Feb	72.0	55.5	66.9	44.0	34.0	94.5	65.7	84.4	55.5
25-Feb	70.0	56.7	66.6	45.0	37.0	88.9	62.4	84.4	57.4
4-Mar	70.0	56.4	66.5	46.7	41.0	94.5	63.2	86.2	60.1
11-Mar	70.0	58.3	66.4	46.8	41.0	94.5	63.1	87.0	61.0
18-Mar	70.0	57.3	67.1	46.8	37.0	94.5	63.8	86.7	60.9
25-Mar	70.0	56.3	66.8	46.1	37.0	95.2	63.0	86.1	59.7
1-Apr	70.0	57.5	66.4	46.9	41.0	95.2	63.0	86.4	61.0
8-Apr	68.0	57.2	66.1	47.5	41.0	95.2	62.4	87.8	62.2
15-Apr	70.0	57.5	66.6	47.9	41.0	95.2	62.4	87.7	62.0
22-Apr	69.0	57.0	66.3	48.5	42.0	95.2	63.3	88.8	64.0
29-Apr	68.0	57.3	65.6	49.4	45.0	95.2	62.4	88.7	66.3
6-May	68.0	57.2	65.6	48.8	43.0	94.5	62.5	88.2	65.6
13-May	68.0	57.4	65.9	48.3	43.0	94.5	63.3	86.1	63.7
20-May	68.0	57.1	65.5	48.2	43.0	94.5	62.1	86.8	64.3
27-May	68.0	56.9	65.0	48.4	45.0	94.5	62.2	86.4	64.1
3-Jun	68.0	57.2	65.2	47.9	43.0	94.5	62.4	84.8	63.3
10-Jun	68.0	56.7	64.7	47.7	43.0	89.6	60.9	83.0	62.6
17-Jun	68.0	56.1	64.8	48.3	45.0	88.9	60.5	82.8	62.9
24-Jun	67.0	56.4	64.2	48.0	43.0	88.9	60.9	80.3	61.8
1-Jul	66.0	55.7	64.3	46.9	41.0	88.9	59.7	80.3	60.1
8-Jul	66.0	55.9	64.5	46.9	43.0	85.4	60.3	78.9	59.5
15-Jul	66.0	56.0	63.6	47.4	43.0	83.3	58.8	77.8	59.8
22-Jul	66.0	55.1	63.6	46.1	39.0	83.3	59.4	77.1	57.9
29-Jul	68.0	55.7	64.2	46.4	41.0	88.9	60.5	78.2	58.2
5-Aug	67.0	56.5	64.3	46.5	41.0	88.9	60.5	79.2	58.9
12-Aug	66.0	55.7	64.1	46.4	39.0	88.9	60.4	78.5	57.9
19-Aug	68.0	55.3	64.5	45.7	39.0	88.9	60.4	78.6	57.0
26-Aug	68.0	56.2	64.6	46.0	39.0	88.9	61.6	79.3	57.8
2-Sep	68.0	55.0	64.3	45.6	39.0	88.9	60.6	78.7	57.7
9-Sep	68.0	55.3	65.1	45.8	39.0	88.9	59.5	79.7	58.0
16-Sep	68.0	56.7	64.8	45.8	39.0	88.9	61.6	79.6	57.4
23-Sep	70.0	56.0	65.5	44.9	39.0	88.9	60.5	80.8	56.7
30-Sep	68.0	56.3	65.6	45.8	40.0	88.9	61.2	82.5	58.6
7-Oct	68.0	56.2	65.1	45.8	39.0	89.6	61.0	82.9	58.2
14-Oct	68.0	56.5	64.8	46.5	41.0	89.6	61.1	84.4	60.3
21-Oct	68.0	56.1	65.2	47.1	41.0	94.5	63.2	85.5	61.0
28-Oct	68.0	56.7	64.9	47.4	41.0	91.0	63.3	85.2	62.4
4-Nov	68.0	56.6	65.3	46.8	41.0	95.2	63.7	86.5	61.6
11-Nov	68.0	56.7	65.4	46.5	39.0	95.2	63.4	86.3	60.9
18-Nov	68.0	56.9	65.0	47.7	41.0	95.2	62.9	87.2	63.7
25-Nov	68.0	56.4	65.9	46.7	41.0	95.2	63.1	87.2	61.5
2-Dec	68.0	56.5	65.6	45.9	39.0	94.5	63.4	86.2	59.9
9-Dec	68.0	57.3	65.2	46.3	39.0	95.2	62.3	86.3	60.4
16-Dec	69.0	55.6	66.1	45.0	37.0	95.2	63.2	85.5	58.0
23-Dec	70.0	54.1	65.8	44.3	36.0	94.5	62.9	83.0	55.7
31-Dec	70.0	55.5	66.0	42.9	34.0	90.3	61.5	83.1	53.5

BOGOTA/ELDORADO

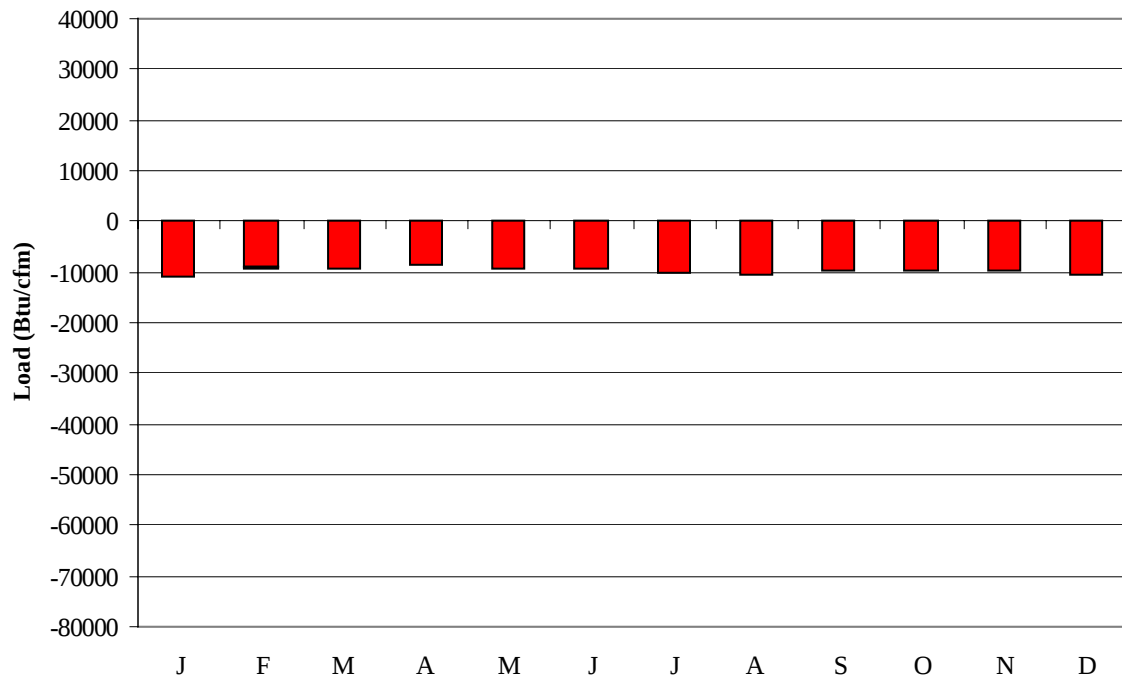
CO

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	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	6	329
FEB	7	273
MAR	7	278
APR	5	251
MAY	4	264
JUN	2	270
JUL	1	300
AUG	2	308
SEP	3	295
OCT	3	286
NOV	3	284
DEC	5	312
ANN	48	3450

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	-10802	1	-32
FEB	1	-9125	2	-36
MAR	1	-9470	0	-7
APR	1	-8682	2	-1
MAY	0	-9166	1	0
JUN	0	-9275	0	-2
JUL	1	-10144	1	-1
AUG	0	-10344	1	-3
SEP	0	-9903	0	-3
OCT	0	-9668	2	-3
NOV	0	-9578	1	-2
DEC	0	-10360	1	-30
ANN	4	-116517	12	-120

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

No Solar Radiation
Data Available

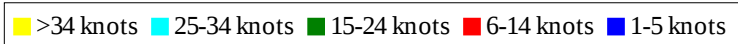
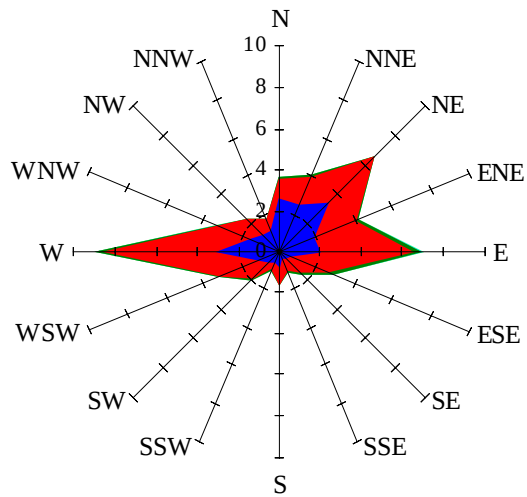


Average Annual Solar Heat and Illumination – Nearest Available Site

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

Wind Summary - December, January, and February

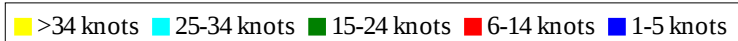
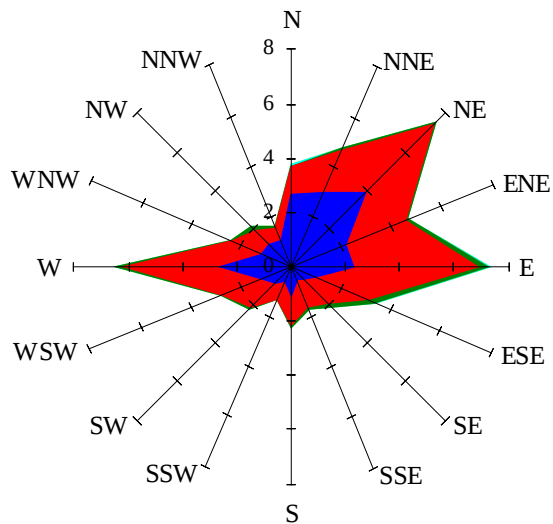
Labels of Percent Frequency on North Axis



Percent Calm = 46.03

Wind Summary - March, April, and May

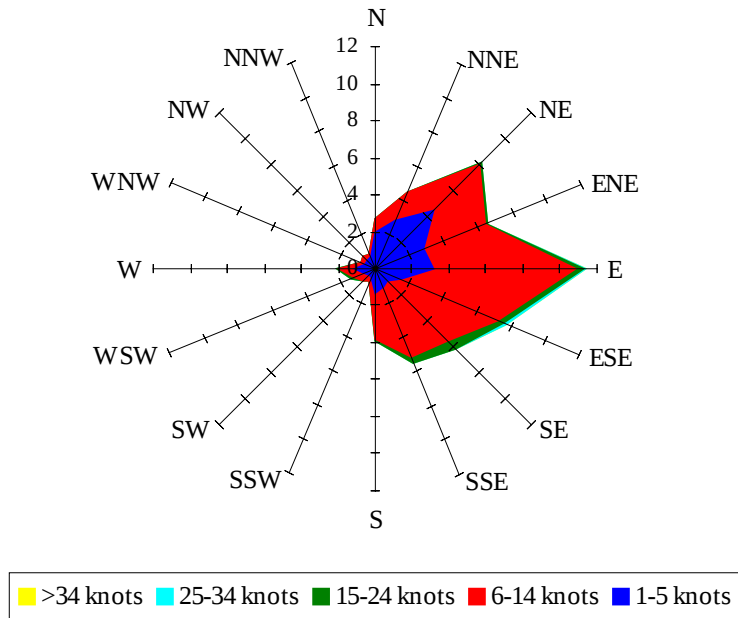
Labels of Percent Frequency on North Axis



Percent Calm = 44.32

Wind Summary - June, July, and August

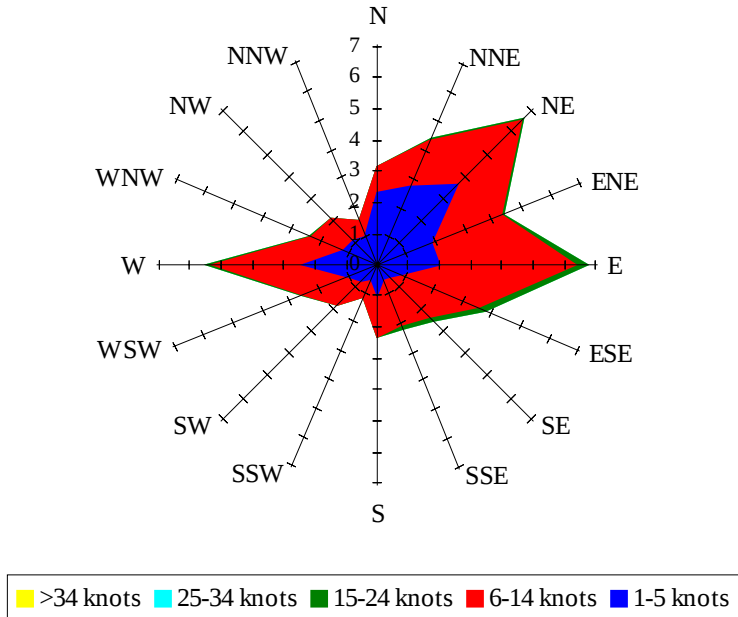
Labels of Percent Frequency on North Axis



Percent Calm = 36.11

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 47.21