BENSON RAF, UK	
Latitude = 51.62 N	WMO No. 036580
Longitude = 1.08 W	Elevation = 207 feet
Period of Record = 1973 to 1996	Average Pressure = 29.71 inches Hg

Design Criteria Data

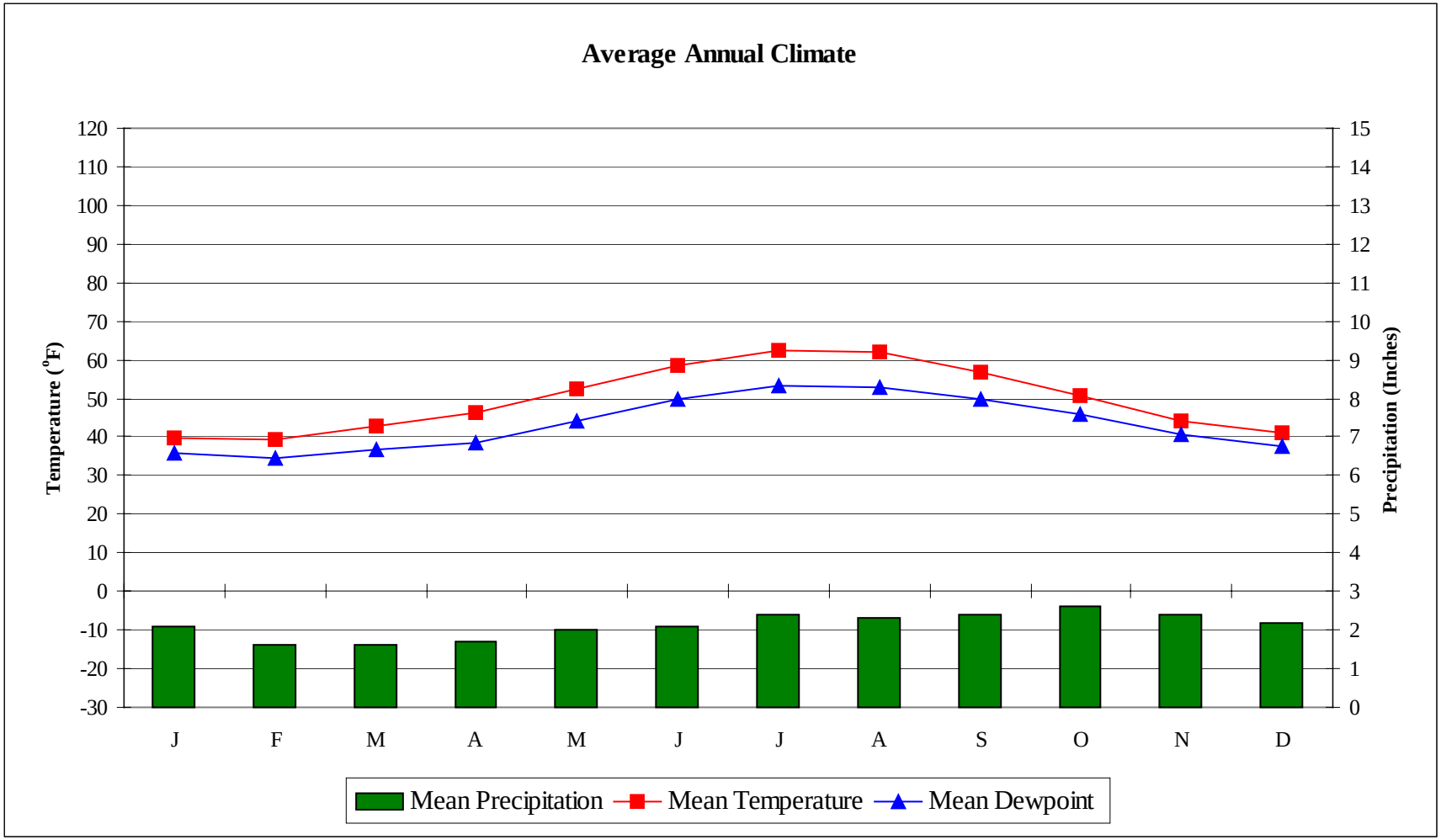
		Mean Coincident (Average) Values			
Dry Bulb Temperature (T)	**Design Value (^oF)**	Wet Bulb Temperature (^oF)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	84	65	63	8.9	E
0.4% Occurrence	81	65	66	8.9	S
1.0% Occurrence	77	63	66	8.4	E
2.0% Occurrence	73	62	64	8.9	W
Mean Daily Range	13	-	-	-	-
97.5% Occurrence	30	29	21	5.1	NNE
99.0% Occurrence	26	25	18	3.9	NNE
99.6% Occurrence	23	22	16	4.1	NNE
Median of Extreme Lows	19	18	13	2.6	NNE
		Mean Coincident (Average) Values			
Wet Bulb Temperature (T_{wb})	**Design Value (^oF)**	Dry Bulb Temperature (^oF)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	70	82	87	8.5	E
0.4% Occurrence	67	77	81	8.4	E
1.0% Occurrence	65	74	77	7.9	S
2.0% Occurrence	63	70	73	8.3	S
		Mean Coincident (Average) Values			
Humidity Ratio (HR)	**Design Value (gr/lb)**	Dry Bulb Temperature (^oF)	Vapor Pressure (in. Hg)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	96	75	0.65	6.2	SSW
0.4% Occurrence	86	70	0.57	8.4	SSW
1.0% Occurrence	81	67	0.54	9.1	S
2.0% Occurrence	77	66	0.52	8.2	S
Air Conditioning/		$T \geq 93^oF$	$T \geq 80^oF$	$T_{wb} \geq 73^oF$	$T_{wb} \geq 67^oF$
Humid Area Criteria	# of Hours	0	48	0	41

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^oF-RH 60% Latent + Sensible
7	N/A	N/A	0.0 + 0.0
Ground Water Temperature (^oF) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft^2)	Average Annual Freeze-Thaw Cycles (#)
52.3	N/A	N/A	28

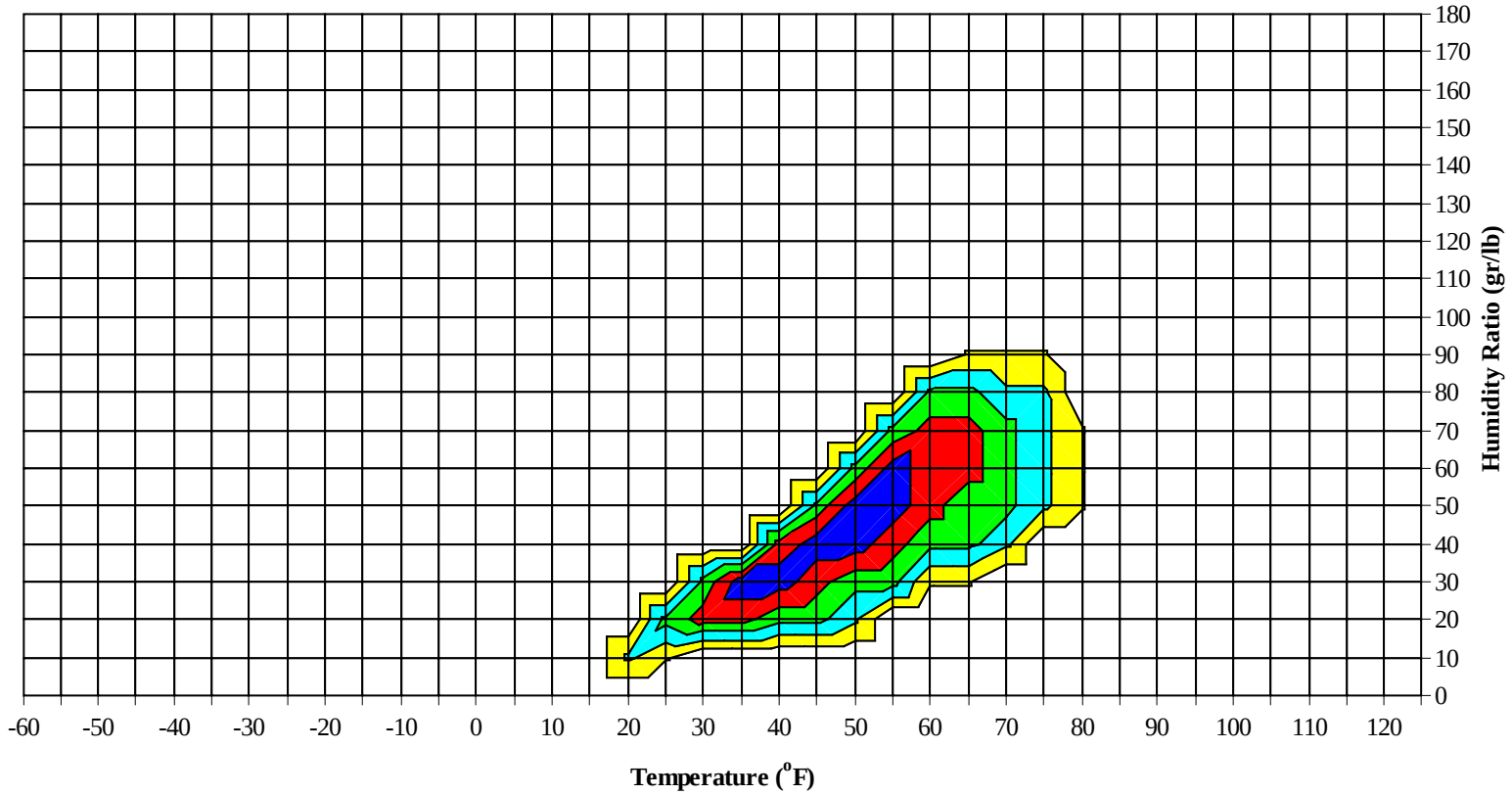
*Note: Temperatures at greater depths can be estimated by adding 1.5^oF per 100 feet additional depth.

BENSON RAF, UK WMO No. 036580



BENSON RAF, UK WMO No. 036580

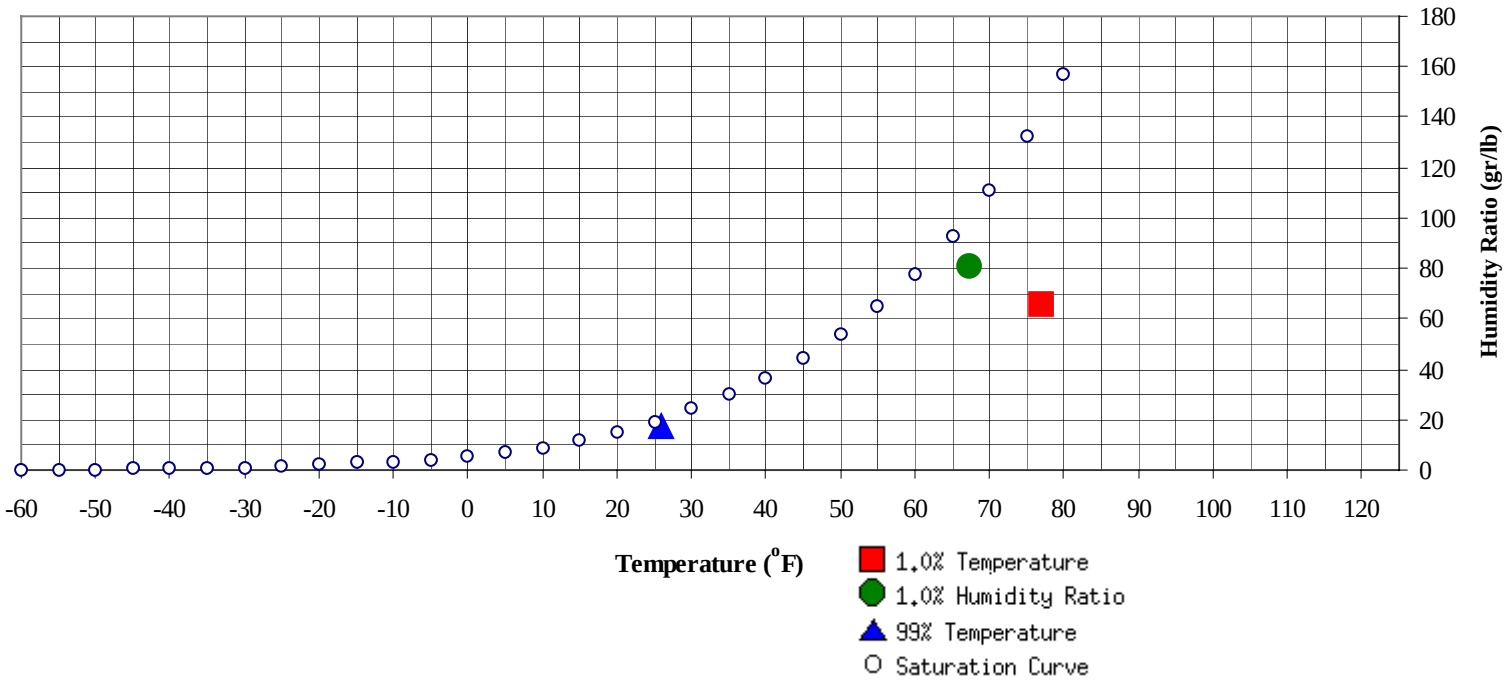
Long Term Psychrometric Summary



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

BENSON RAF, UK WMO No. 036580

Psychrometric Summary of Peak Design Values



	(°F)	MCHR (gr/lb)	Enthalpy (btu/lb)
99% Dry Bulb	26	17.7	9.0

	(gr/lb)	MCDB (°F)	MCWB (°F)	MC Dewpt (°F)	Enthalpy (btu/lb)
1.0% Humidity Ratio	81.2	67.2	63.3	61	28.8

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	77	66.1	63.6	28.8

BENSON RAF, UK WMO No. 036580

Dry-Bulb Temperature Hours For An Average Year (Sheet 1 of 5)

Period of Record = 1973 to 1996

Temperature Range (°F)	January Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)	February Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)	March Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)
95 / 99															
90 / 94															
85 / 89															
80 / 84															
75 / 79															
70 / 74															
65 / 69												0		0	53.5
60 / 64							0	0	0	54.7		3	0	3	51.6
55 / 59	0	1	0	1	51.7	0	2	1	3	51.4	0	14	3	17	49.8
50 / 54	13	27	17	56	48.7	6	24	10	40	47.9	14	61	31	106	47.3
45 / 49	49	68	56	173	44.6	36	59	51	145	44.2	44	79	72	196	43.4
40 / 44	50	56	56	163	40.1	44	51	50	144	39.7	62	56	66	184	39.5
35 / 39	61	55	56	172	35.6	54	50	54	157	35.3	72	28	54	154	35.5
30 / 34	48	29	45	122	31.3	53	29	41	123	30.9	44	6	19	69	31.2
25 / 29	17	9	13	38	26.2	23	8	14	45	26.2	11	1	3	15	26.5
20 / 24	6	3	4	13	21.6	8	1	2	11	21.8	1	0	0	1	21.6
15 / 19	3	1	1	5	16.9	2	0	1	3	17.0	0			0	19.0
10 / 14	1	0	0	1	12.3	0	0		0	13.7					
5 / 9	0	0	0	0	6.9										
0 / 4	0	0	0	0	2.2										

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.

BENSON RAF, UK WMO No. 036580

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)				MCWB	Hour Group (LST)				MCWB	Hour Group (LST)				MCWB
	01 To 08	09 To 16	17 To 00	Total Obs	(°F)	01 To 08	09 To 16	17 To 00	Total Obs	(°F)	01 To 08	09 To 16	17 To 00	Total Obs	(°F)
95 / 99															
90 / 94												0	0	0	68.3
85 / 89												1	0	1	66.3
80 / 84							0	0	0	64.3		5	2	7	65.4
75 / 79							5	1	6	61.8	0	14	6	20	63.7
70 / 74		2	0	2	55.9		13	5	18	59.4	1	28	15	44	61.2
65 / 69		5	2	7	54.9	0	19	9	28	56.8	4	37	25	66	58.5
60 / 64		17	6	23	52.8	3	43	25	71	54.0	18	69	50	136	56.0
55 / 59	2	39	21	62	50.0	17	74	52	142	51.1	66	64	75	204	53.3
50 / 54	21	71	50	141	46.8	65	67	76	207	48.4	90	22	51	163	49.9
45 / 49	61	69	73	203	43.3	98	25	58	181	44.7	48	1	15	64	45.7
40 / 44	71	30	54	155	39.7	40	4	17	61	40.6	12	0	1	13	41.4
35 / 39	54	7	26	87	35.8	19	0	5	24	36.6	2	0	0	2	37.1
30 / 34	25	1	8	34	31.5	6		0	6	31.7					
25 / 29	5		0	5	26.7	1			1	26.5					
20 / 24	1			1	22.3										
15 / 19	0			0	18.0										
10 / 14															
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.

BENSON RAF, UK WMO No. 036580

Dry-Bulb Temperature Hours For An Average Year (Sheet 3 of 5)

Period of Record = 1973 to 1996

Temperature Range (°F)	July Hour Group (LST) 01 To 08	July 09 To 16	July 17 To 00	July Total Obs	July MCWB (°F)	August Hour Group (LST) 01 To 08	August 09 To 16	August 17 To 00	August Total Obs	August MCWB (°F)	September Hour Group (LST) 01 To 08	September 09 To 16	September 17 To 00	September Total Obs	September MCWB (°F)
95 / 99							0		0	66.0					
90 / 94		1	0	1	67.9		1	0	1	67.8					
85 / 89		3	1	4	66.2		2	1	3	65.4					
80 / 84		11	4	15	65.2		10	3	13	64.6		0	0	0	65.5
75 / 79		28	14	41	63.6	0	24	9	33	63.1		5	1	6	63.1
70 / 74	1	49	30	80	61.6	1	48	26	75	61.2		17	5	22	61.0
65 / 69	9	63	43	115	59.5	6	61	40	108	59.0	0	41	13	54	58.7
60 / 64	54	67	75	196	57.5	51	75	79	205	57.4	20	80	54	154	56.8
55 / 59	105	26	63	193	54.5	106	25	66	197	54.7	70	69	81	221	53.8
50 / 54	62	1	18	81	50.6	58	2	20	80	50.6	78	24	60	161	50.0
45 / 49	15	0	1	16	46.4	22	0	3	25	46.3	48	4	22	74	45.9
40 / 44	2			2	42.7	4	0	0	4	42.3	17	0	4	21	41.6
35 / 39							0		0	33.5	7	0	0	7	37.3
30 / 34											1		0	1	32.9
25 / 29															
20 / 24															
15 / 19															
10 / 14															
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.

BENSON RAF, UK WMO No. 036580

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)				MCWB	Hour Group (LST)				MCWB	Hour Group (LST)				MCWB
	01 To 08	09 To 16	17 To 00	Total Obs	(°F)	01 To 08	09 To 16	17 To 00	Total Obs	(°F)	01 To 08	09 To 16	17 To 00	Total Obs	(°F)
95 / 99															
90 / 94															
85 / 89															
80 / 84															
75 / 79		0		0	62.0										
70 / 74		2	0	2	61.8										
65 / 69	0	6	1	7	59.1										
60 / 64	6	34	12	52	57.1		3	0	3	56.8					
55 / 59	37	78	52	168	53.6	13	30	17	60	53.9	4	8	4	16	53.1
50 / 54	66	77	75	218	49.5	42	58	46	145	49.7	28	38	31	97	49.4
45 / 49	67	39	69	174	45.0	50	66	57	173	44.8	46	60	51	157	44.7
40 / 44	38	8	26	72	41.1	51	42	51	143	40.2	46	54	53	153	40.1
35 / 39	25	3	10	38	36.9	41	26	39	106	35.9	61	51	58	170	35.8
30 / 34	9	1	1	11	32.4	29	12	23	63	31.4	38	26	36	101	31.5
25 / 29	1		1	2	26.4	14	3	7	24	26.8	16	8	12	36	26.3
20 / 24	0			0	24.0	2	0	1	3	22.5	7	2	3	12	22.1
15 / 19						0	0		0	18.2	2	1	0	3	17.7
10 / 14											0	0	0	0	11.9
5 / 9											0		0	0	5.7
0 / 4											0		0	0	2.5

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.

BENSON RAF, UK WMO No. 036580

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) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)
95 / 99		0		0	66.0
90 / 94		3	1	4	68.0
85 / 89		6	2	8	65.9
80 / 84		27	9	36	65.0
75 / 79	0	76	32	108	63.3
70 / 74	3	157	79	239	61.1
65 / 69	20	232	133	384	58.8
60 / 64	150	390	300	840	56.7
55 / 59	424	432	438	1294	53.4
50 / 54	544	471	486	1501	49.1
45 / 49	583	470	527	1581	44.5
40 / 44	435	298	377	1111	40.1
35 / 39	392	220	300	912	35.7
30 / 34	250	103	172	525	31.3
25 / 29	87	27	49	163	26.4
20 / 24	25	6	10	41	21.9
15 / 19	7	2	2	11	17.2
10 / 14	1	1	0	2	12.3
5 / 9	0	0	1	1	6.4
0 / 4	0	0	0	0	2.3

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.

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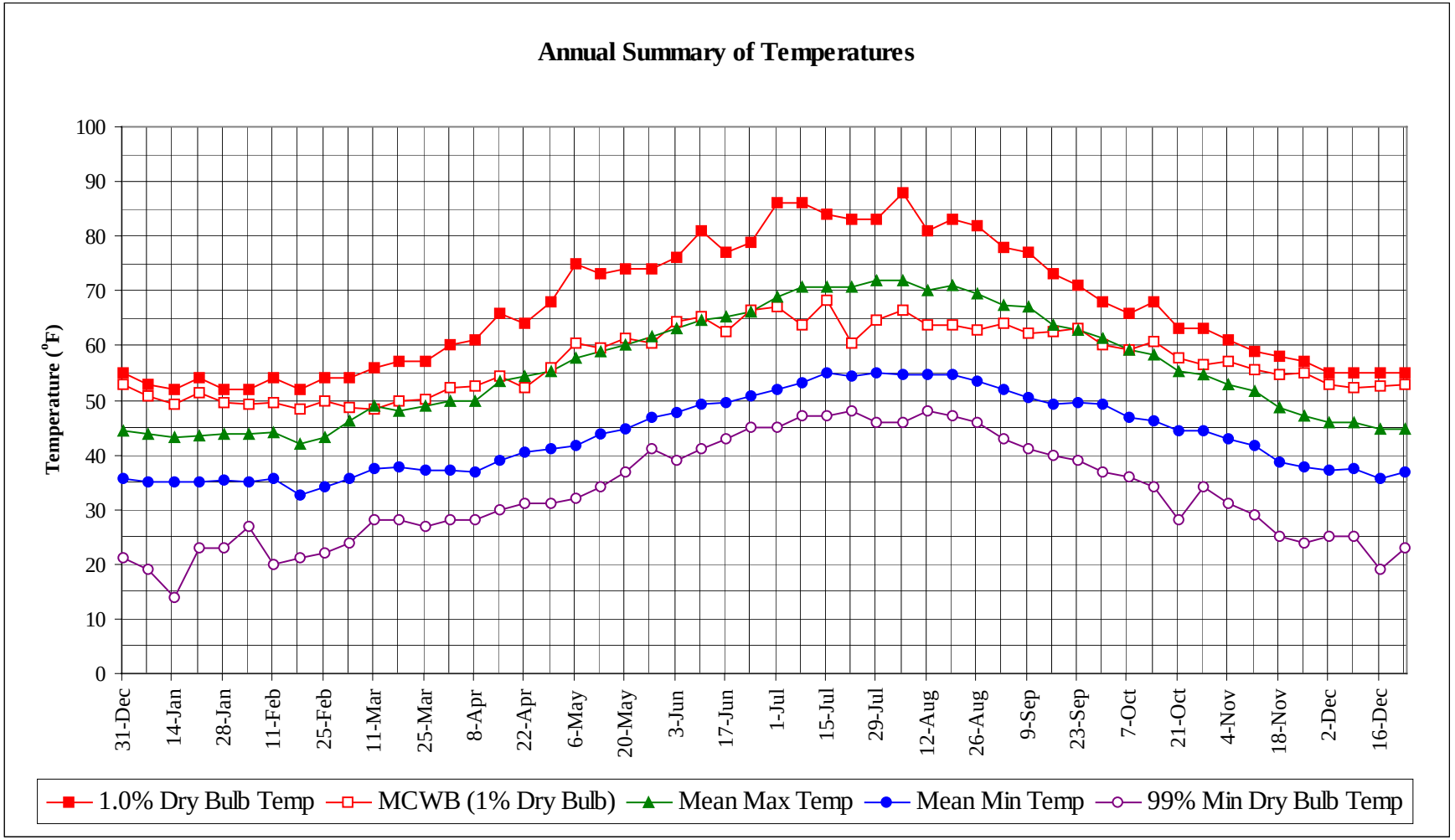

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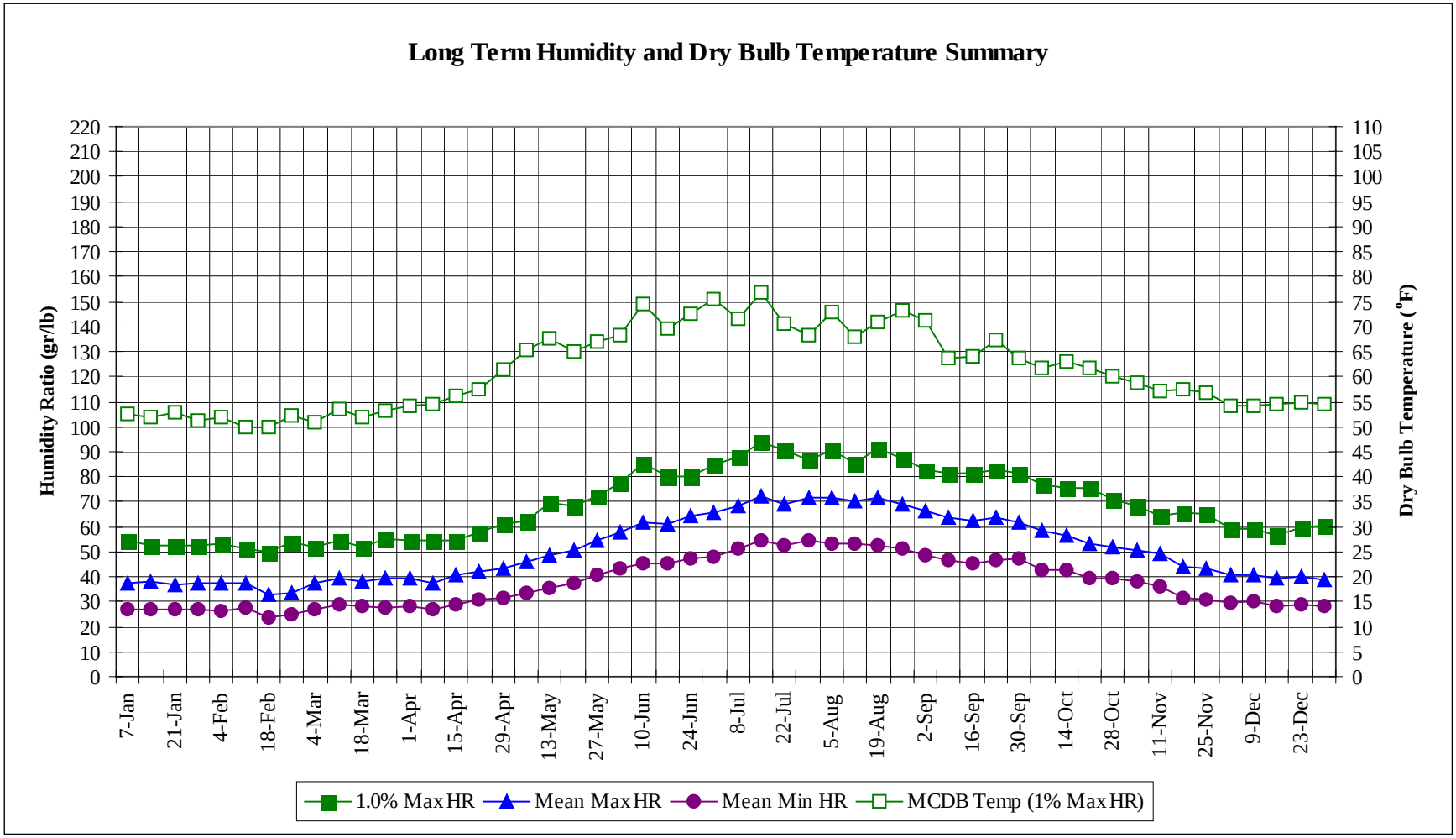
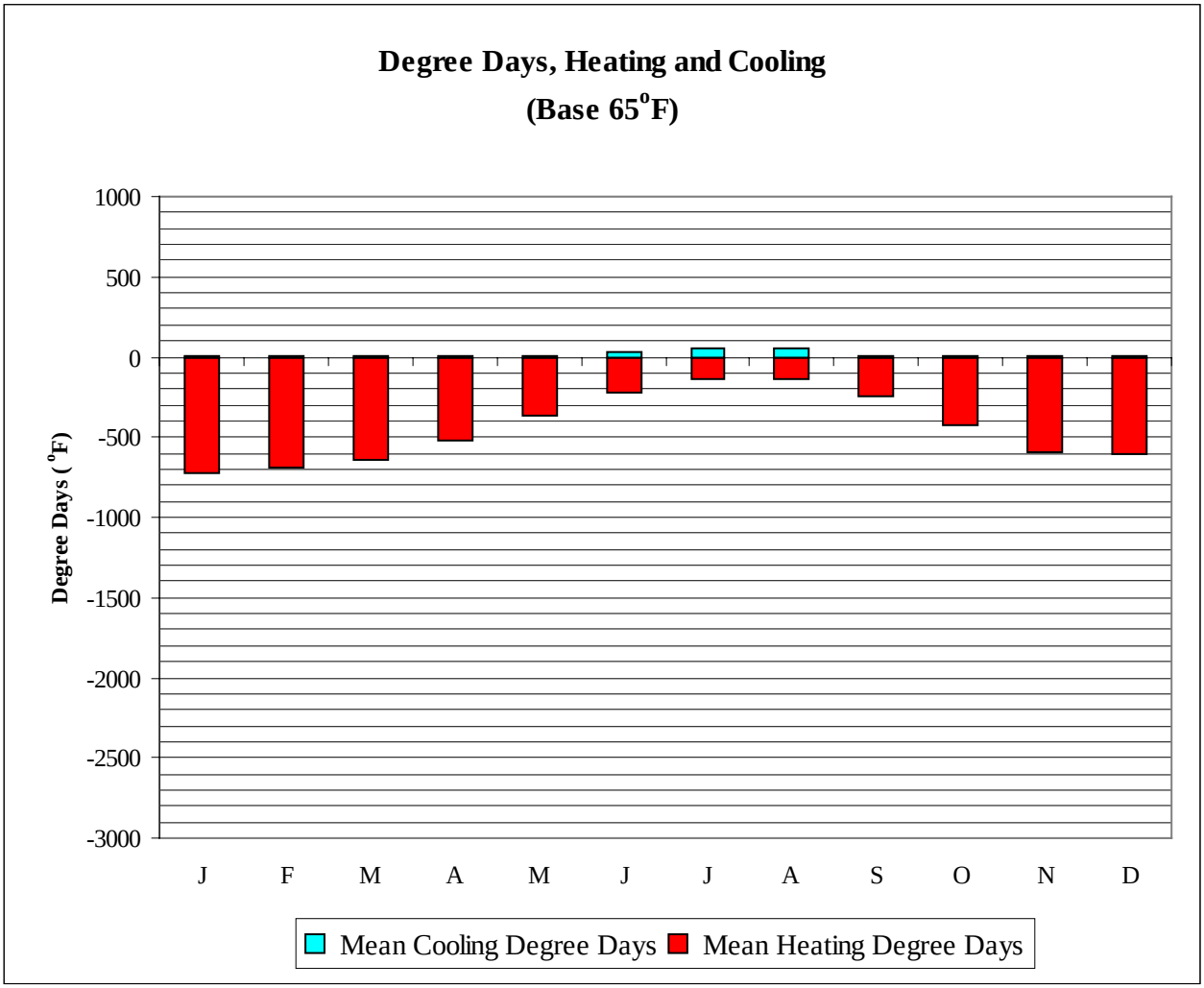


BENSON RAF, UK WMO No. 036580

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	53.0	50.8	43.9	35.1	19.0	54.6	52.5	37.6	27.1
14-Jan	52.0	49.3	43.3	35.0	14.0	52.5	51.9	37.8	27.0
21-Jan	54.0	51.4	43.4	35.0	23.0	52.5	53.0	36.9	27.0
28-Jan	52.0	49.5	43.8	35.2	23.0	52.5	51.1	37.5	26.8
4-Feb	52.0	49.3	43.8	35.1	27.0	53.2	52.0	37.1	26.5
11-Feb	54.0	49.6	44.2	35.8	20.0	51.1	50.0	37.1	27.4
18-Feb	52.0	48.4	41.9	32.6	21.0	49.7	49.8	33.0	23.8
25-Feb	54.0	49.8	43.3	34.0	22.0	53.9	52.2	33.7	24.8
4-Mar	54.0	48.6	46.4	35.7	24.0	51.8	50.9	37.4	26.6
11-Mar	56.0	48.2	49.0	37.6	28.0	54.6	53.5	39.1	29.1
18-Mar	57.0	50.0	48.0	37.7	28.0	51.8	51.9	38.3	28.5
25-Mar	57.0	50.1	49.1	37.3	27.0	55.3	53.2	39.3	27.4
1-Apr	60.0	52.2	49.9	37.2	28.0	54.6	54.3	39.1	28.0
8-Apr	61.0	52.5	49.8	36.7	28.0	54.6	54.6	37.2	27.2
15-Apr	66.0	54.3	53.5	39.0	30.0	54.6	56.1	40.8	29.0
22-Apr	64.0	52.2	54.4	40.5	31.0	58.1	57.3	42.3	31.0
29-Apr	68.0	55.9	55.3	41.0	31.0	60.9	61.3	43.4	31.5
6-May	75.0	60.3	57.7	41.7	32.0	62.3	65.2	46.3	33.3
13-May	73.0	59.6	58.8	43.7	34.0	69.3	67.8	48.8	35.5
20-May	74.0	61.4	60.1	44.6	37.0	68.6	64.9	50.6	37.4
27-May	74.0	60.5	61.7	46.9	41.0	72.1	67.1	54.6	40.7
3-Jun	76.0	64.5	63.1	47.8	39.0	77.7	68.4	57.8	43.0
10-Jun	81.0	65.4	64.8	49.3	41.0	85.4	74.4	61.5	45.4
17-Jun	77.0	62.6	65.4	49.6	43.0	79.8	69.7	60.8	45.3
24-Jun	79.0	66.5	66.3	50.8	45.0	79.8	72.6	64.2	47.6
1-Jul	86.0	67.2	68.8	52.0	45.0	84.7	75.7	65.4	48.2
8-Jul	86.0	63.8	70.8	53.2	47.0	88.2	71.5	68.5	51.3
15-Jul	84.0	68.4	70.8	54.9	47.0	93.8	76.8	72.5	54.5
22-Jul	83.0	60.4	70.6	54.3	48.0	90.3	70.6	69.0	52.8
29-Jul	83.0	64.8	72.0	54.9	46.0	86.8	68.3	71.6	54.2
5-Aug	88.0	66.6	71.9	54.8	46.0	90.3	72.9	71.4	53.3
12-Aug	81.0	63.9	70.1	54.8	48.0	85.4	68.1	70.0	53.0
19-Aug	83.0	63.8	71.0	54.8	47.0	91.0	71.1	71.4	52.8
26-Aug	82.0	62.9	69.4	53.5	46.0	87.5	73.3	69.2	51.4
2-Sep	78.0	64.0	67.3	51.9	43.0	82.6	71.2	66.4	48.8
9-Sep	77.0	62.3	66.9	50.4	41.0	81.2	63.8	63.6	46.4
16-Sep	73.0	62.4	63.7	49.3	40.0	81.2	64.2	62.1	45.5
23-Sep	71.0	63.0	62.8	49.5	39.0	82.6	67.3	63.4	46.9
30-Sep	68.0	60.0	61.5	49.1	37.0	81.2	63.7	61.9	47.1
7-Oct	66.0	59.2	59.3	46.7	36.0	77.0	61.7	58.7	42.8
14-Oct	68.0	60.7	58.2	46.2	34.0	75.6	63.1	56.4	42.9
21-Oct	63.0	57.7	55.3	44.3	28.0	75.6	61.8	53.4	39.3
28-Oct	63.0	56.4	54.8	44.5	34.0	70.7	60.0	52.2	39.1
4-Nov	61.0	57.1	53.0	42.9	31.0	68.6	58.8	50.6	37.8
11-Nov	59.0	55.7	51.6	41.8	29.0	64.4	57.2	49.0	36.2
18-Nov	58.0	54.7	48.5	38.8	25.0	65.8	57.4	43.9	31.4
25-Nov	57.0	55.0	47.1	37.7	24.0	65.1	56.9	43.0	30.7
2-Dec	55.0	52.7	46.0	37.1	25.0	58.8	54.2	40.8	29.7
9-Dec	55.0	52.2	45.8	37.4	25.0	58.8	54.3	40.9	30.0
16-Dec	55.0	52.6	44.8	35.7	19.0	56.7	54.5	39.7	28.2
23-Dec	55.0	53.0	44.8	36.8	23.0	59.5	54.9	40.0	28.8
31-Dec	55.0	52.9	44.4	35.7	21.0	60.2	54.6	39.0	28.0

BENSON RAF, UK WMO No. 036580



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	728
FEB	0	690
MAR	0	643
APR	1	517
MAY	9	365
JUN	29	221
JUL	58	132
AUG	48	140
SEP	11	250
OCT	1	421
NOV	0	589
DEC	0	608
ANN	156	5304

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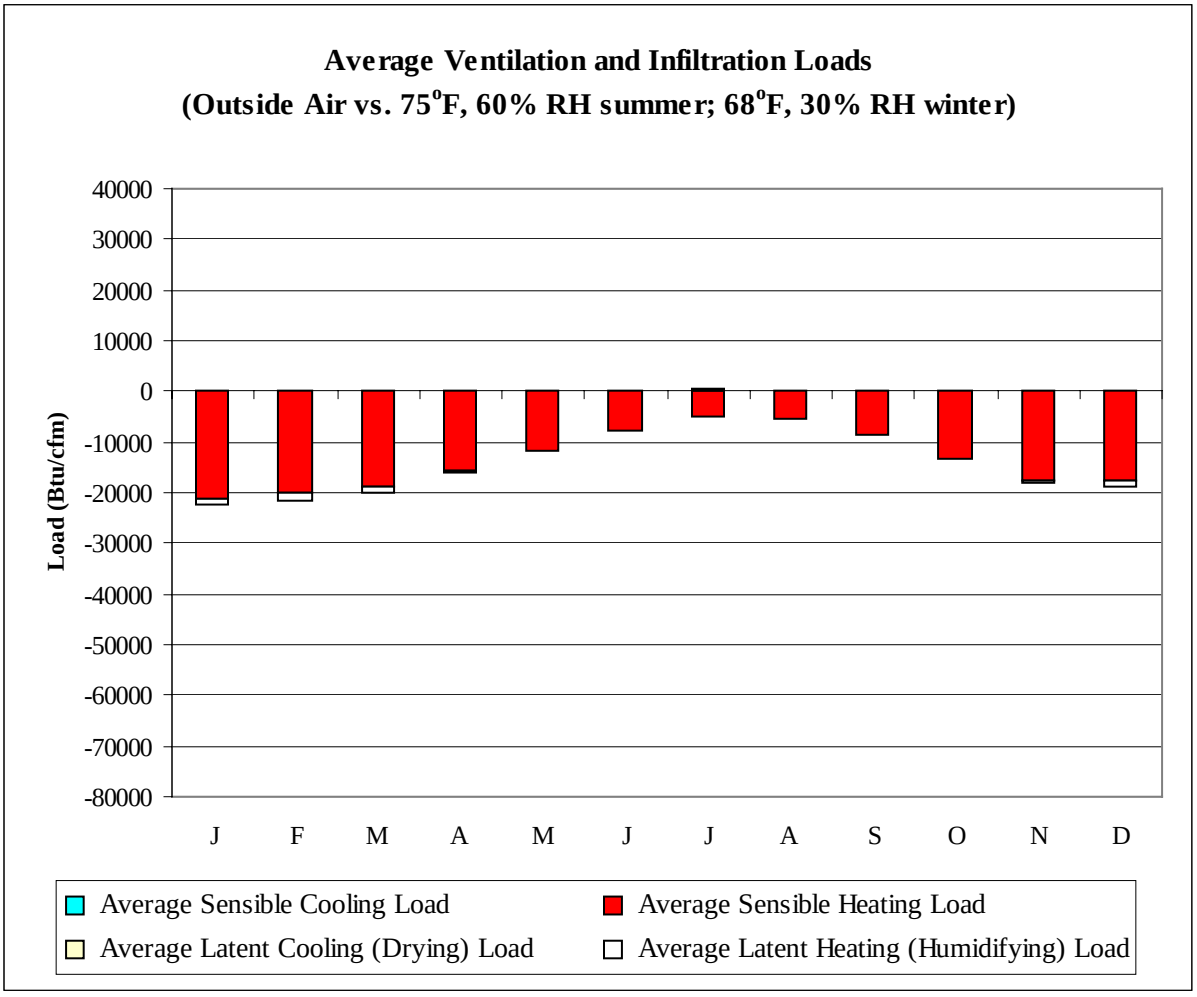


	Average Sensible Cooling Load (Btu/cfm)	Average Sensible Heating Load (Btu/cfm)	Average Latent Cooling Load (Btu/cfm)	Average Latent Heating Load (Btu/cfm)
JAN	0	-21097	0	-1260
FEB	0	-19977	0	-1473
MAR	0	-18927	0	-966
APR	0	-15530	0	-631
MAY	11	-11534	1	-138
JUN	97	-7631	41	-7
JUL	217	-5080	164	0
AUG	177	-5308	104	0
SEP	10	-8514	27	-5
OCT	0	-13160	1	-80
NOV	0	-17479	0	-592
DEC	0	-17736	0	-934
ANN	512	-161973	338	-6086

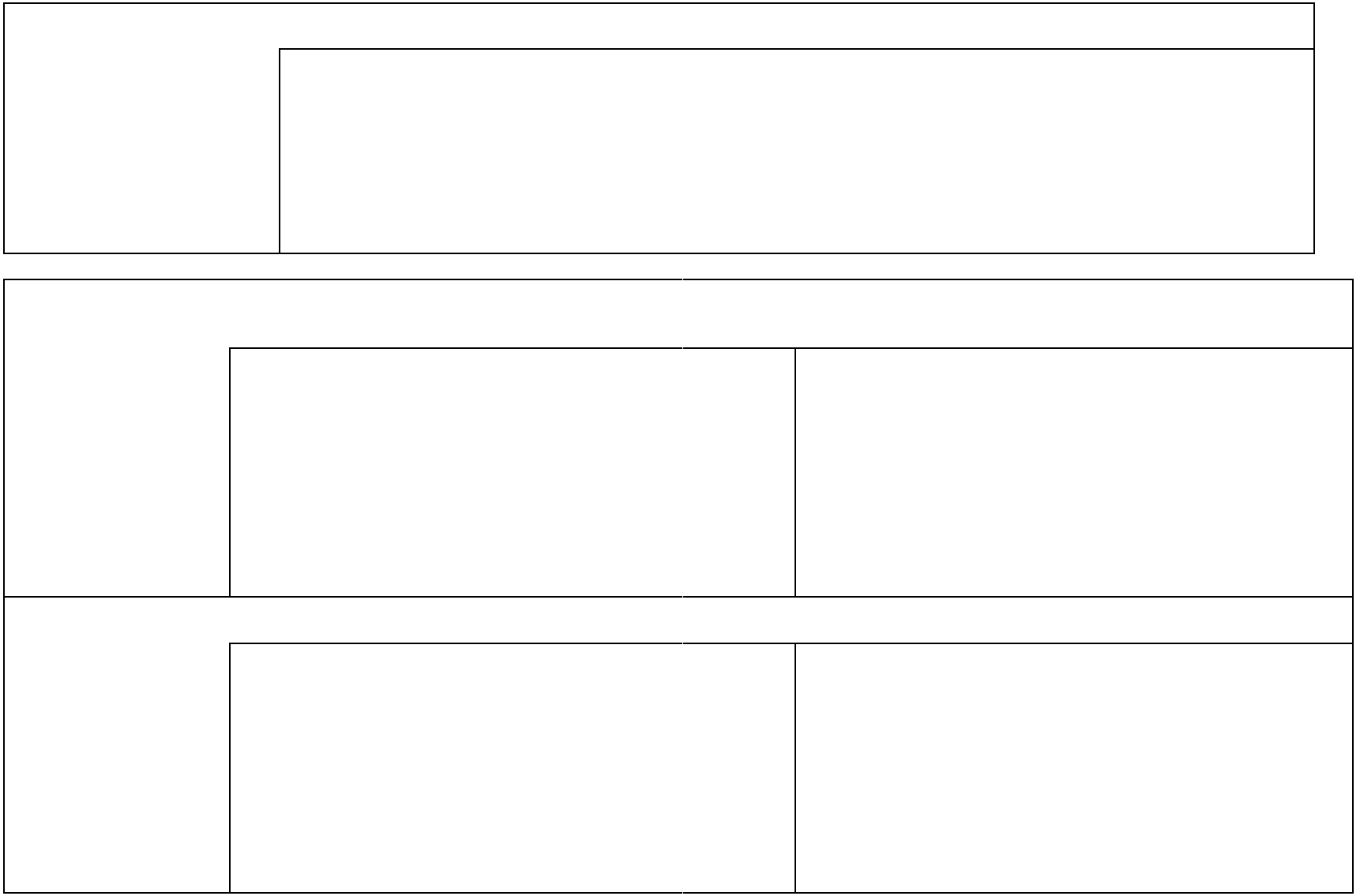
Average Annual Solar Radiation – Nearest Available Site

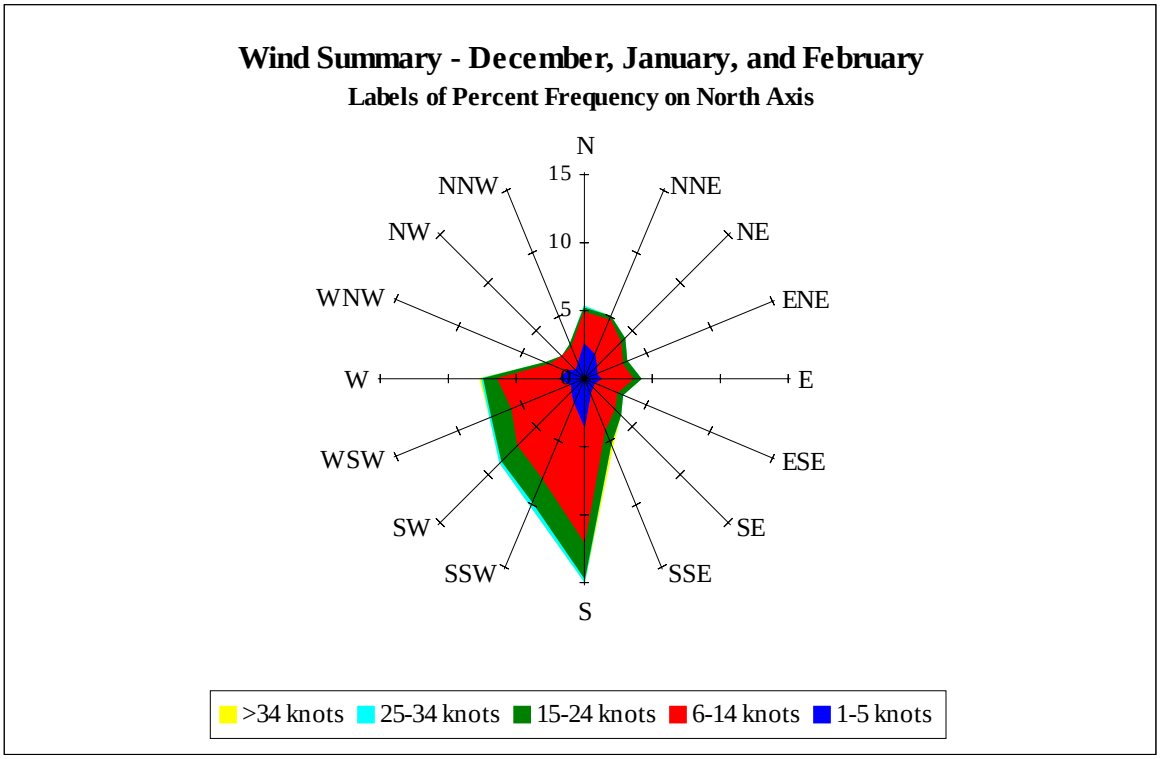
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

No Solar Radiation
Data Available

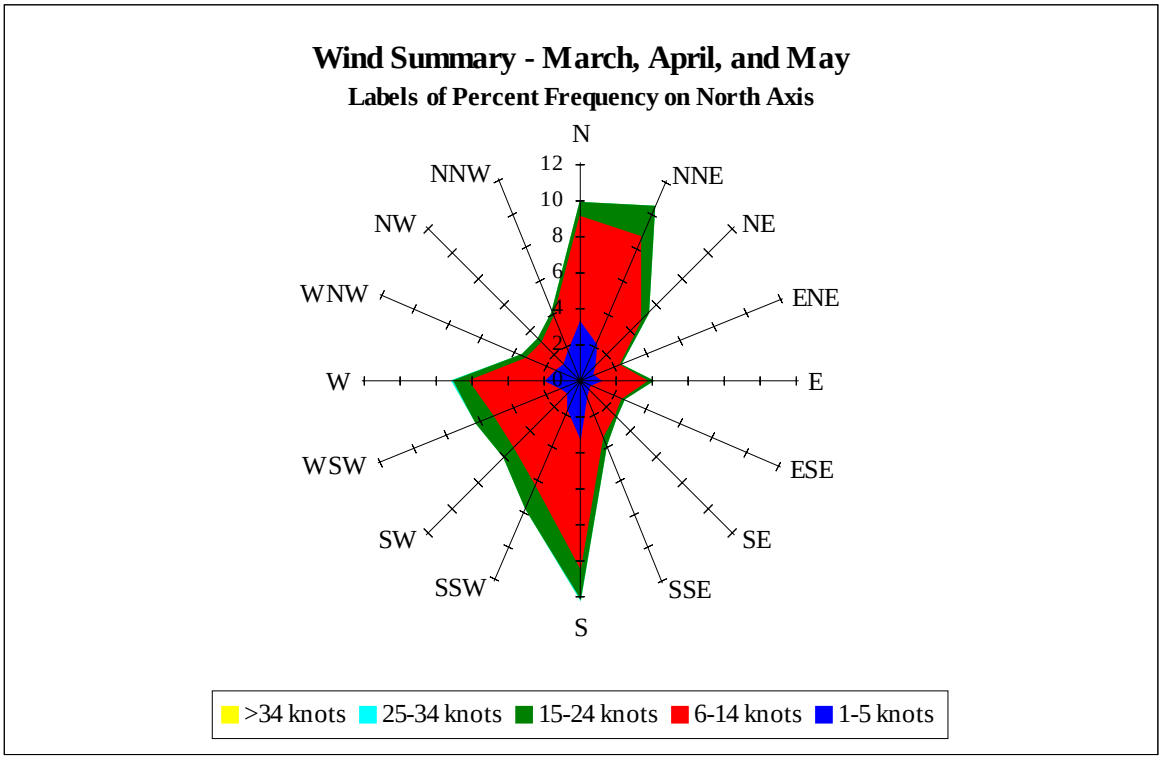
Average Annual Solar Heat and Illumination – Nearest Available Site

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

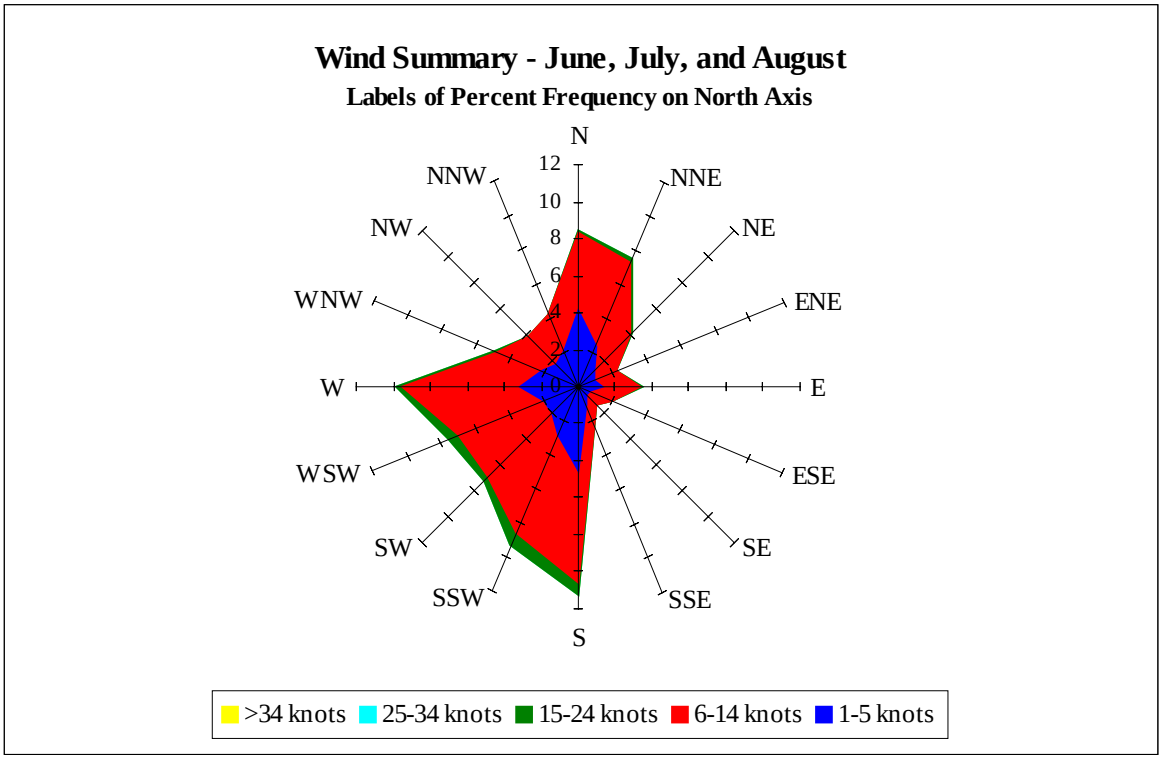




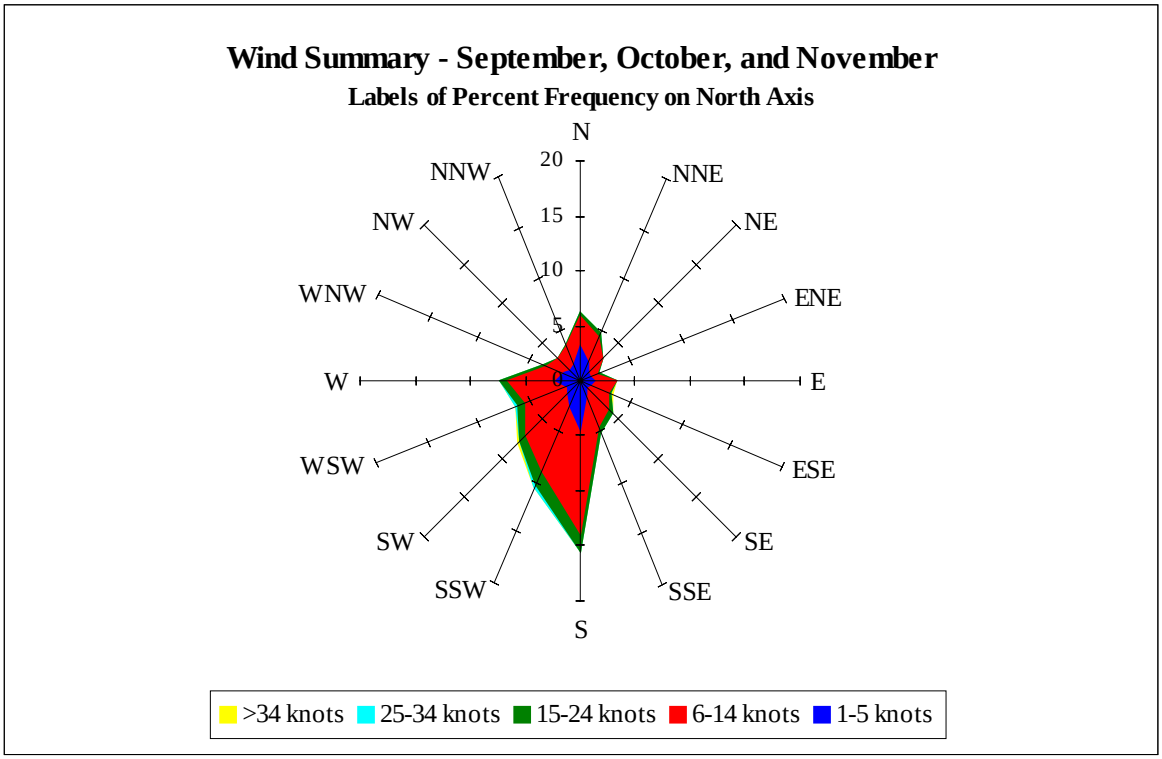
Percent Calm = 9.99



Percent Calm = 9.02



Percent Calm = 10.37



Percent Calm = 11.90