

RICHARDS-GEBAUR AFB MO

Latitude = 38.85 N

WMO No. 724466

Longitude = 94.55 W

Elevation = 1093 feet

Period of Record = 1967 to 1996

Average Pressure = 28.82 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	101	75	96	7.8	SSW
0.4% Occurrence	97	75	98	8.7	S
1.0% Occurrence	94	75	108	9.1	S
2.0% Occurrence	91	75	107	9.2	S
Mean Daily Range	17	-	-	-	-
97.5% Occurrence	14	12	7	8.5	N
99.0% Occurrence	7	6	5	8.4	NNW
99.6% Occurrence	1	0	4	7.4	NW
Median of Extreme Lows	-5	-5	2	8.1	NNW
	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	80	91	142	8.8	S
0.4% Occurrence	79	91	135	8.7	S
1.0% Occurrence	78	90	130	8.8	S
2.0% Occurrence	76	88	121	8.9	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	147	88	0.94	7.9	S
0.4% Occurrence	138	88	0.88	10.6	SSW
1.0% Occurrence	132	86	0.85	7.9	S
2.0% Occurrence	127	85	0.82	8.2	S
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		130	1229	641	1722

Other Site Data

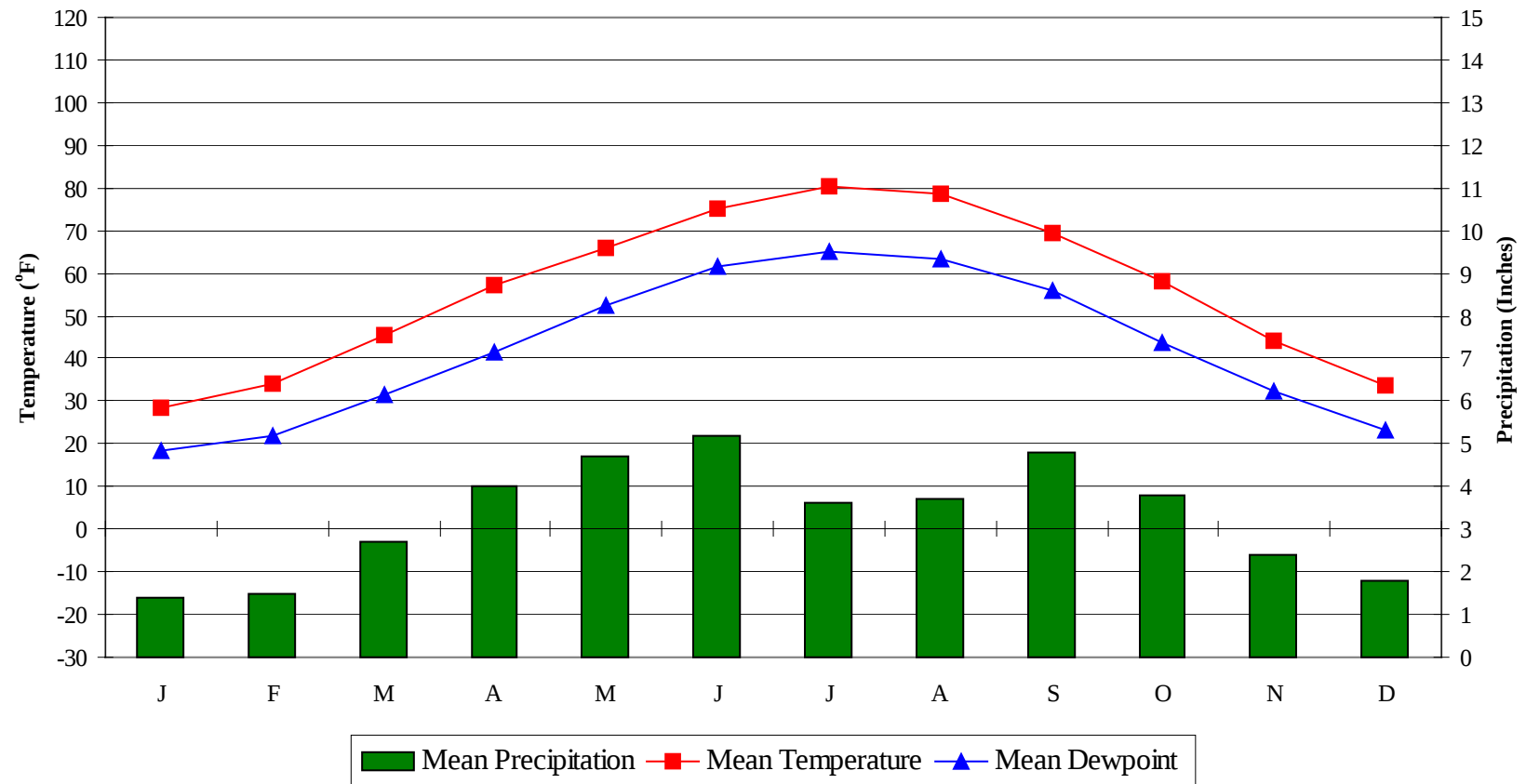
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
7	3.5	90	1.5 + 1.2
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
58.7	49	18	46

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

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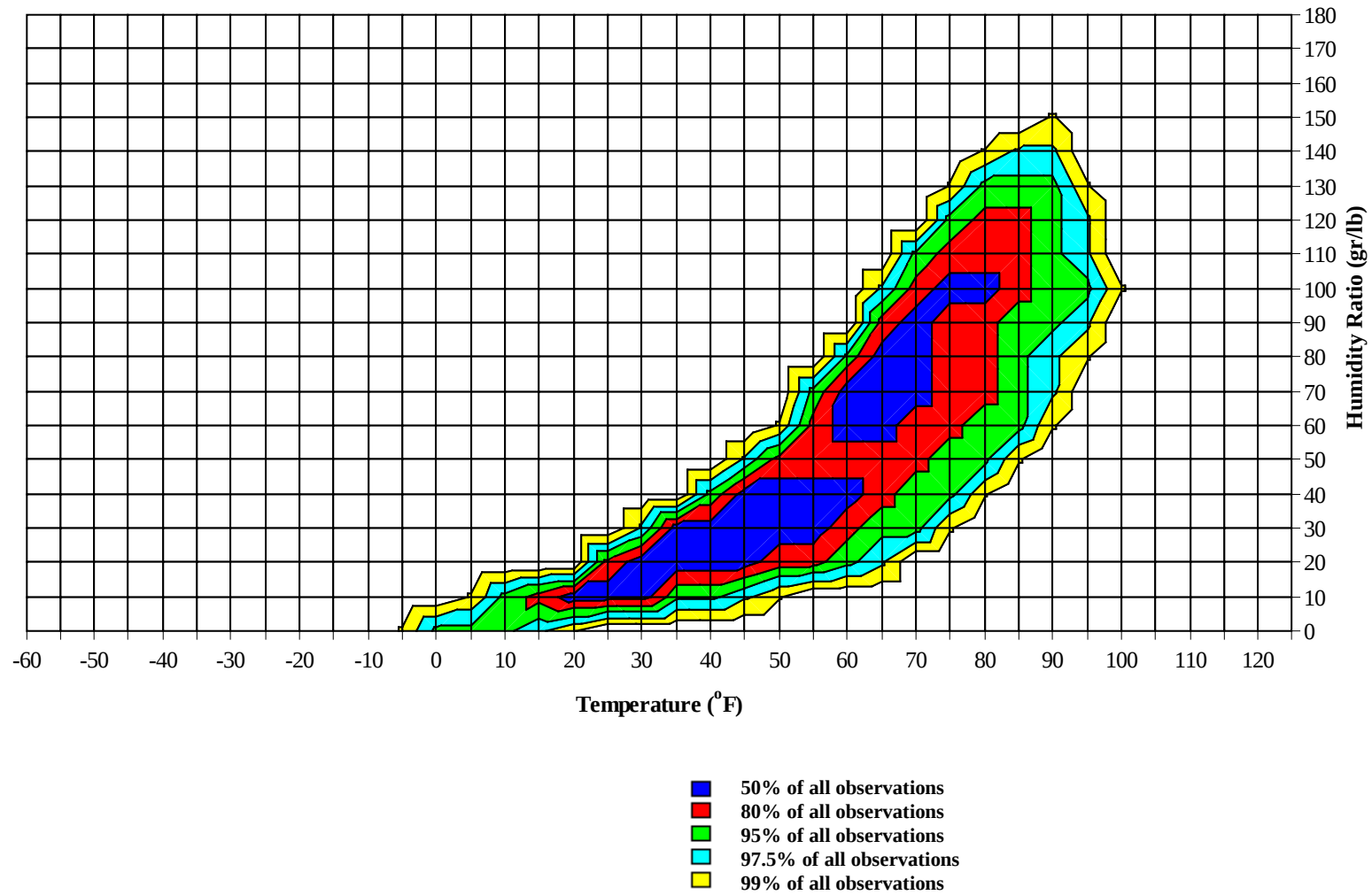
Average Annual Climate



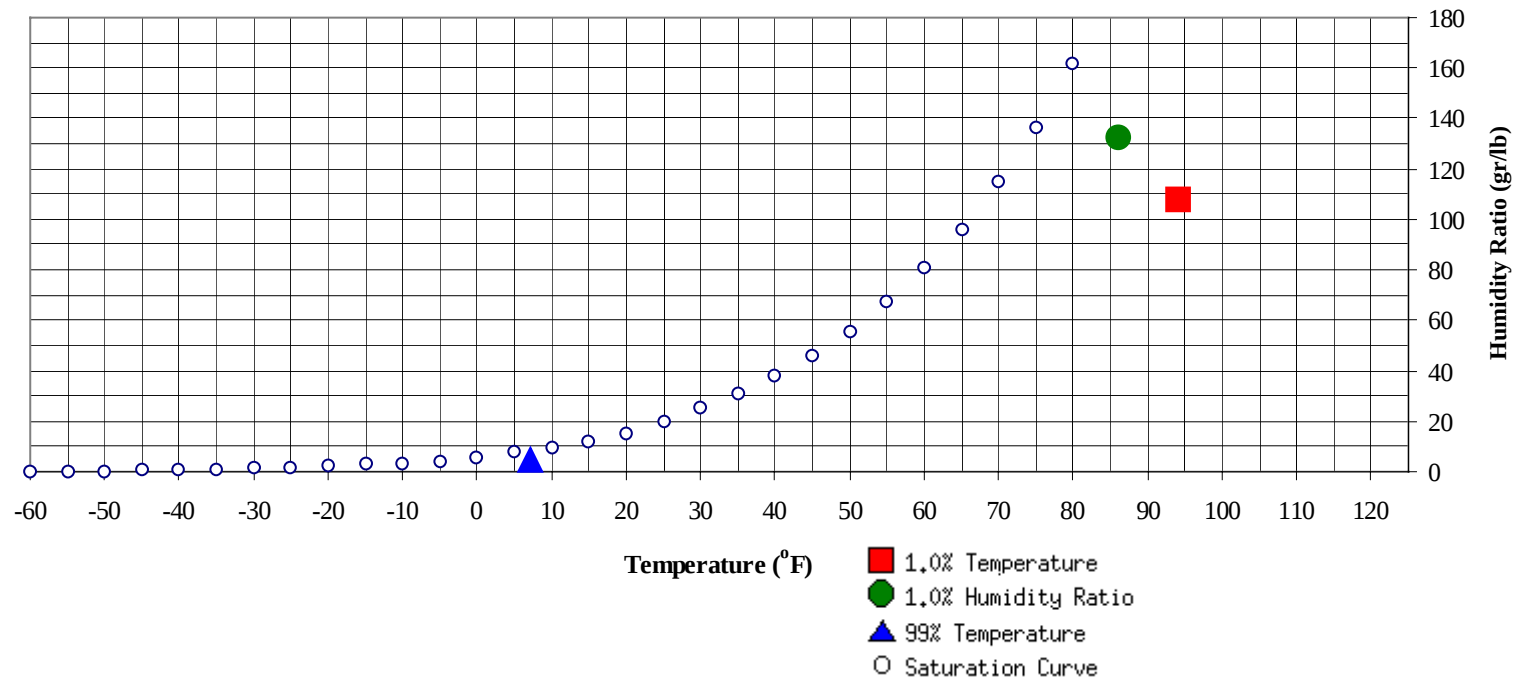
RICHARDS-GEBAUR AFB MO

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Long Term Psychrometric Summary



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	7	4.9	2.4		132.3	86.1	77.2	74	41.4

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	94	107.8	75.5	39.5

RICHARDS-GEBAUR AFB MO

WMO No. 724466

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

Period of Record = 1967 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		
105 / 109															
100 / 104															
95 / 99															
90 / 94															
85 / 89												0		0	63.0
80 / 84												2	0	2	62.9
75 / 79							0		0	57.3		5	2	7	59.6
70 / 74		0		0	56.0		1	1	2	54.7		10	6	16	58.0
65 / 69		1	0	1	52.9		4	2	6	51.5		17	12	32	55.1
60 / 64	0	2	1	3	52.7	2	8	5	15	50.0	7	20	20	47	52.1
55 / 59	2	7	4	12	48.8	4	12	10	25	47.1	16	26	24	66	48.2
50 / 54	2	11	8	21	44.4	5	17	16	39	43.5	16	30	30	77	44.6
45 / 49	6	17	12	34	40.7	7	19	18	44	40.4	26	34	37	97	41.2
40 / 44	13	29	27	68	37.0	20	28	28	76	37.1	36	34	37	107	37.2
35 / 39	22	33	37	92	33.2	33	31	34	97	33.0	36	29	31	96	32.6
30 / 34	48	40	39	127	29.1	43	30	34	107	28.8	47	23	26	96	28.6
25 / 29	39	30	36	105	24.5	38	25	26	88	24.4	29	11	13	54	24.2
20 / 24	33	23	27	83	19.9	25	20	19	64	19.4	18	5	6	29	19.7
15 / 19	24	20	20	65	15.0	18	13	14	45	14.8	9	2	1	12	15.2
10 / 14	18	17	16	51	10.3	14	8	11	33	10.4	2	1	1	3	10.7
5 / 9	20	10	12	42	5.8	7	4	4	15	6.0	2	0	1	3	6.0
0 / 4	13	5	5	23	1.0	4	2	3	9	1.3	0	0	0	0	1.7
-5 / -1	6	2	3	10	-3.3	2	1	1	3	-2.7	0	0		0	-3.0
-10 / -6	4	2	1	6	-7.3	2	1	0	3	-7.4	0			0	-7.0
-15 / -11	0	0	0	0	-12.7	0			0						
-20 / -16	0	0		0	-16.5										
-25 / -21															

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.

RICHARDS-GEBAUR AFB MO

WMO No. 724466

Dry-Bulb Temperature Hours For An Average Year (Sheet 2 of 5)

Period of Record = 1967 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		
105 / 109															
100 / 104												0	0	0	76.0
95 / 99												2	1	3	75.3
90 / 94		0	0	0	66.8		1	0	1	70.6		16	7	23	75.5
85 / 89		3	1	4	67.6		8	2	10	70.4	0	41	25	66	73.3
80 / 84		8	4	11	66.0		24	15	39	68.5	6	59	48	113	70.4
75 / 79		18	11	29	62.6	3	44	32	79	65.1	32	52	55	139	67.5
70 / 74	5	26	20	51	59.8	15	51	46	112	62.1	63	38	49	150	65.1
65 / 69	13	32	30	76	56.8	43	47	55	146	59.3	66	23	32	121	61.8
60 / 64	25	38	40	103	52.9	61	36	45	143	55.8	45	9	15	69	57.9
55 / 59	36	35	41	112	49.5	55	22	28	105	51.7	21	2	5	28	54.0
50 / 54	41	32	34	108	45.7	39	11	16	66	47.4	6	0	1	7	50.0
45 / 49	43	23	29	95	41.9	21	5	6	31	43.4	2		0	2	46.5
40 / 44	38	14	16	68	37.9	9	0	2	11	38.8					
35 / 39	22	8	9	38	33.6	1		0	1	33.3					
30 / 34	12	3	4	18	29.9	0			0	29.2					
25 / 29	3	1	1	5	25.2										
20 / 24	2	0	0	2	20.3										
15 / 19	0			0	15.0										
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															

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RICHARDS-GEBAUR AFB MO

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

Period of Record = 1967 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		
105 / 109		2	1	3	74.0		1	0	1	74.4					
100 / 104		5	2	7	75.5		3	1	4	75.6		0		0	74.1
95 / 99		14	8	22	75.2		13	5	18	75.1		2	0	2	74.0
90 / 94	0	41	24	65	75.0	0	31	17	47	74.5		9	3	12	73.5
85 / 89	4	62	49	116	73.4	2	49	35	86	73.0		21	10	31	71.8
80 / 84	21	59	63	143	71.2	11	60	55	126	70.8	1	38	26	65	69.3
75 / 79	66	37	52	155	69.0	45	45	60	150	68.4	9	45	39	93	66.3
70 / 74	85	20	32	137	66.4	82	31	47	160	65.8	30	44	46	119	63.7
65 / 69	46	6	12	64	62.4	65	11	20	96	62.0	48	35	41	123	60.3
60 / 64	21	2	4	27	57.9	33	4	7	43	58.4	51	26	39	115	56.2
55 / 59	4	0	1	5	53.4	9	0	2	11	54.1	48	13	22	82	52.2
50 / 54	0			0	50.9	2		0	2	49.9	33	6	12	51	47.7
45 / 49											16	2	2	21	43.9
40 / 44											3	0	1	4	39.1
35 / 39											1		0	1	34.9
30 / 34															
25 / 29															
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															

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RICHARDS-GEBAUR AFB MO

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Dry-Bulb Temperature Hours For An Average Year (Sheet 4 of 5)

Period of Record = 1967 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		
105 / 109															
100 / 104															
95 / 99															
90 / 94		1		1	65.8										
85 / 89		3	1	4	66.4										
80 / 84		11	3	13	66.2		1		1	62.4					
75 / 79	0	20	10	30	63.5		1	0	1	60.5					
70 / 74	3	32	23	57	60.8		6	1	7	59.8		0		0	61.5
65 / 69	15	36	34	86	57.9	2	13	6	22	57.7	0	2	1	3	58.5
60 / 64	29	41	41	111	54.2	7	20	14	42	53.9	4	6	4	13	54.3
55 / 59	39	40	40	119	50.1	11	28	23	62	49.8	2	9	5	15	49.1
50 / 54	43	34	38	115	46.0	18	31	29	77	45.2	2	16	11	29	44.0
45 / 49	48	19	32	99	42.0	23	33	35	91	41.5	7	22	21	51	40.7
40 / 44	35	9	18	62	38.1	38	34	42	113	37.4	16	32	30	78	37.0
35 / 39	26	3	7	36	34.1	50	34	38	122	33.4	37	43	44	125	33.1
30 / 34	8	1	1	9	29.4	39	22	28	90	28.8	59	46	56	161	29.3
25 / 29	2	0	0	2	25.4	29	10	14	53	24.2	50	28	31	109	24.3
20 / 24	0			0	20.0	14	4	6	25	20.2	30	19	21	70	19.7
15 / 19						5	1	2	9	14.6	21	10	10	41	15.2
10 / 14						2	1	2	4	10.2	9	7	6	22	10.4
5 / 9						2	0		2	5.3	5	4	4	13	5.7
0 / 4											4	2	3	9	1.1
-5 / -1											0	1	1	2	-3.3
-10 / -6											2	1	0	3	-7.6
-15 / -11											0	0	0	0	-11.9
-20 / -16											0	0		0	-18.0
-25 / -21											0			0	-21.0

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.

RICHARDS-GEBAUR AFB MO

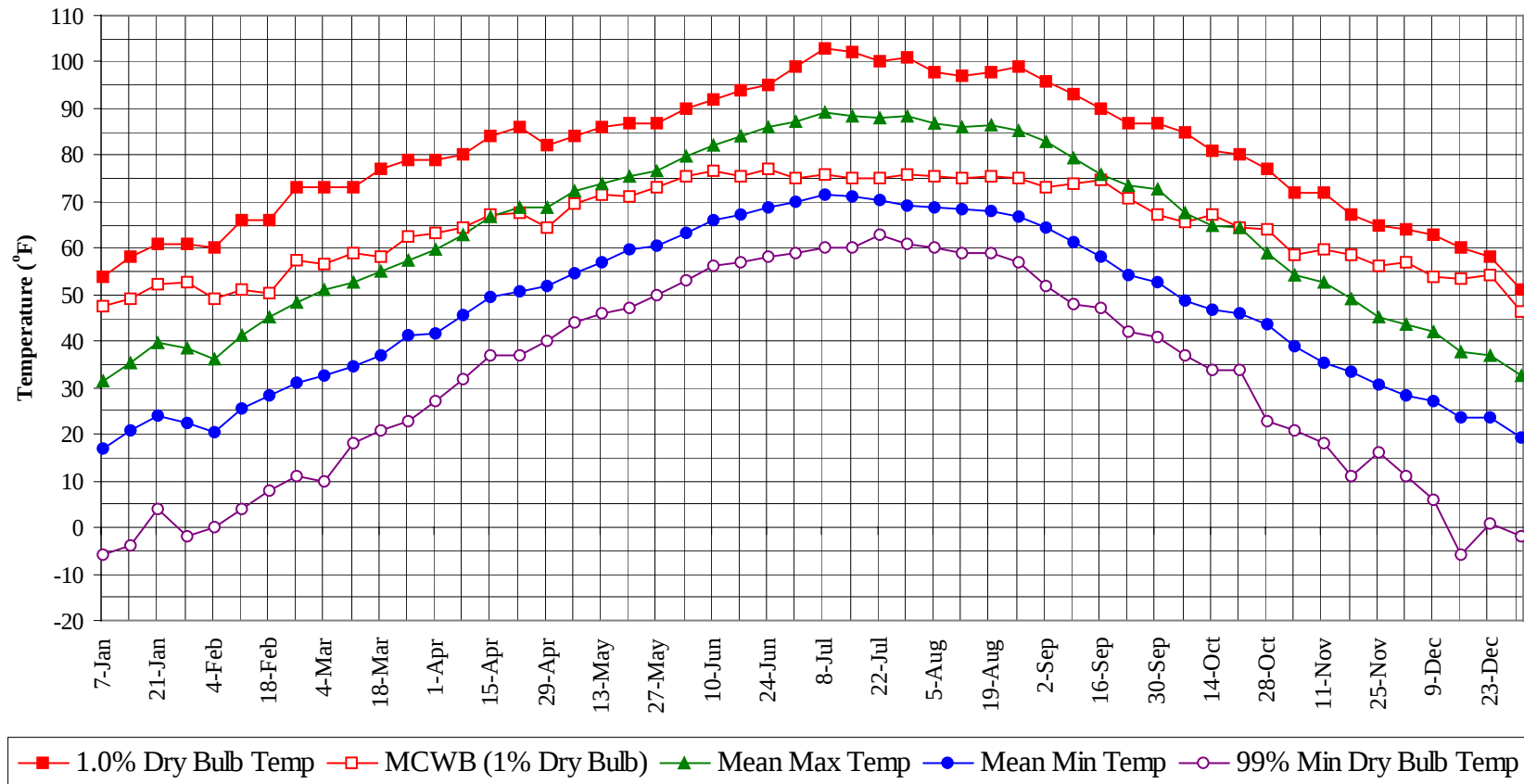
WMO No. 724466

Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)**Period of Record = 1967 to 1996**

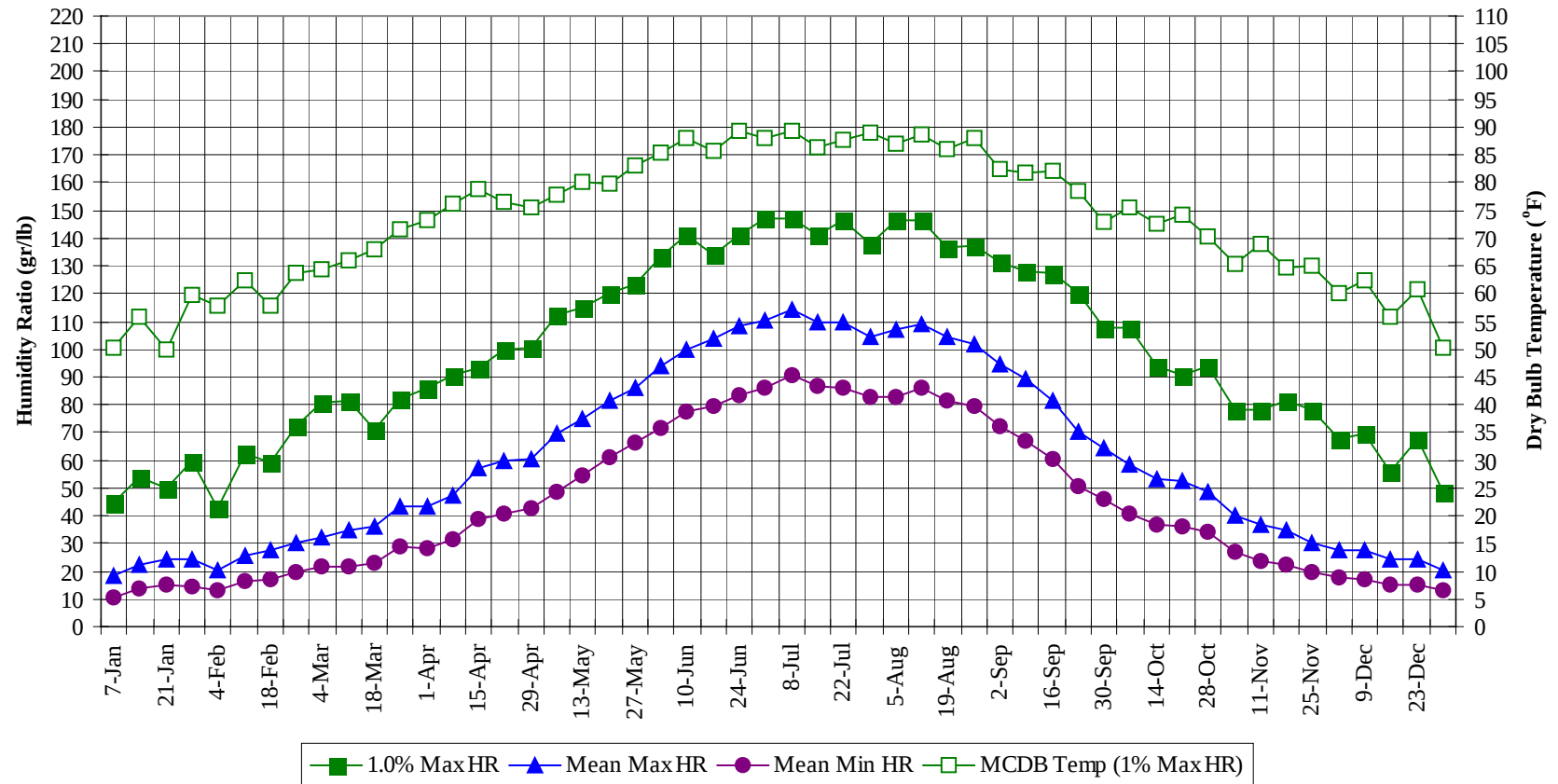
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
105 / 109		2	1	3	74.1
100 / 104		9	4	13	75.5
95 / 99		31	13	45	75.1
90 / 94	0	99	48	147	74.7
85 / 89	7	188	119	313	72.8
80 / 84	44	262	205	512	70.2
75 / 79	166	271	253	690	67.0
70 / 74	308	259	262	830	63.7
65 / 69	328	228	240	796	59.5
60 / 64	303	212	231	746	54.9
55 / 59	258	191	206	655	50.3
50 / 54	214	187	197	598	45.6
45 / 49	196	172	198	565	41.5
40 / 44	199	179	204	582	37.4
35 / 39	210	178	209	598	33.2
30 / 34	232	163	195	590	29.0
25 / 29	166	103	128	397	24.4
20 / 24	109	70	82	261	19.7
15 / 19	72	46	48	167	15.0
10 / 14	44	33	37	114	10.3
5 / 9	33	17	21	71	5.8
0 / 4	16	10	11	37	1.1
-5 / -1	7	4	5	15	-3.2
-10 / -6	7	2	2	11	-7.4
-15 / -11	2	1	0	2	-12.3
-20 / -16	0	0		0	-17.5
-25 / -21	0			0	-21.0

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Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary



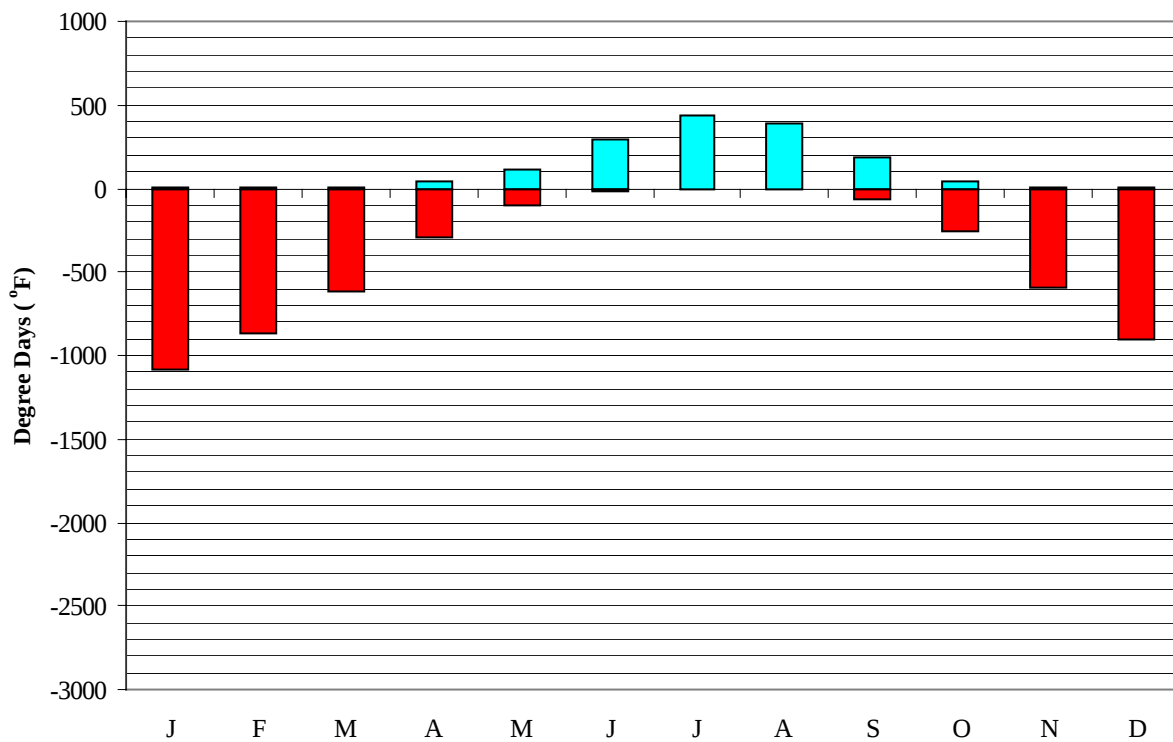
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Long Term Dry Bulb Temperature and Humidity Summary

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	47.5	31.5	16.8	-6.0	44.8	50.3	18.1	10.7
14-Jan	58.0	49.3	35.3	20.7	-4.0	53.9	55.8	22.3	13.9
21-Jan	61.0	52.3	39.8	23.9	4.0	49.7	49.9	24.6	15.2
28-Jan	61.0	52.8	38.5	22.3	-2.0	59.5	59.7	24.4	14.6
4-Feb	60.0	49.3	36.0	20.5	0.0	42.7	57.8	20.6	13.0
11-Feb	66.0	51.2	41.4	25.6	4.0	62.3	62.5	25.5	16.4
18-Feb	66.0	50.4	45.1	28.4	8.0	58.8	57.8	27.3	17.3
25-Feb	73.0	57.3	48.5	31.2	11.0	72.1	63.6	30.5	19.5
4-Mar	73.0	56.4	51.2	32.8	10.0	80.5	64.5	32.4	21.5
11-Mar	73.0	59.0	52.5	34.5	18.0	81.2	66.1	34.6	21.6
18-Mar	77.0	58.2	55.2	37.1	21.0	70.7	68.1	36.2	23.1
25-Mar	79.0	62.4	57.4	41.2	23.0	81.9	71.5	43.3	29.0
1-Apr	79.0	63.1	59.8	41.5	27.0	86.1	73.3	43.2	28.2
8-Apr	80.0	64.4	62.8	45.7	32.0	90.3	76.1	47.0	31.7
15-Apr	84.0	67.3	66.8	49.4	37.0	93.1	78.9	57.2	38.5
22-Apr	86.0	67.7	68.8	50.8	37.0	100.1	76.4	59.5	40.7
29-Apr	82.0	64.3	68.7	51.9	40.0	100.8	75.5	60.4	43.0
6-May	84.0	69.4	72.1	54.4	44.0	112.0	77.7	69.7	48.6
13-May	86.0	71.3	74.0	57.1	46.0	114.8	80.3	74.7	54.8
20-May	87.0	71.3	75.6	59.6	47.0	120.4	79.8	81.5	61.2
27-May	87.0	73.2	76.5	60.6	50.0	123.2	83.0	86.0	66.3
3-Jun	90.0	75.4	79.8	63.4	53.0	133.0	85.3	94.0	71.4
10-Jun	92.0	76.5	82.1	65.9	56.0	141.4	88.0	99.5	77.3
17-Jun	94.0	75.3	83.9	67.1	57.0	133.7	85.8	103.6	79.6
24-Jun	95.0	77.1	86.0	68.7	58.0	141.4	89.5	108.4	83.6
1-Jul	99.0	75.1	87.1	69.8	59.0	147.0	87.9	110.0	86.3
8-Jul	103.0	75.7	89.2	71.5	60.0	147.0	89.3	114.6	90.4
15-Jul	102.0	75.0	88.5	71.0	60.0	141.4	86.3	110.0	86.9
22-Jul	100.0	75.0	88.2	70.5	63.0	146.3	87.8	109.5	85.9
29-Jul	101.0	75.7	88.2	69.3	61.0	137.9	89.1	104.6	82.5
5-Aug	98.0	75.3	86.7	68.9	60.0	146.3	87.1	106.9	82.7
12-Aug	97.0	75.1	86.0	68.5	59.0	146.3	88.6	109.0	86.2
19-Aug	98.0	75.4	86.3	68.0	59.0	136.5	86.0	104.6	81.6
26-Aug	99.0	75.1	85.1	66.9	57.0	137.2	88.2	101.6	79.2
2-Sep	96.0	73.1	82.9	64.4	52.0	131.6	82.3	94.5	72.0
9-Sep	93.0	73.9	79.2	61.2	48.0	128.1	81.7	89.2	67.1
16-Sep	90.0	74.6	75.8	58.3	47.0	127.4	82.2	81.7	60.5
23-Sep	87.0	70.7	73.6	54.3	42.0	120.4	78.5	70.1	50.8
30-Sep	87.0	67.2	72.9	52.8	41.0	107.8	73.0	64.3	46.0
7-Oct	85.0	65.7	67.7	48.9	37.0	107.8	75.4	58.7	40.9
14-Oct	81.0	67.0	64.8	46.7	34.0	93.8	72.5	53.1	36.5
21-Oct	80.0	64.3	64.3	46.1	34.0	90.3	74.1	52.7	36.1
28-Oct	77.0	64.1	59.1	43.7	23.0	93.8	70.3	48.7	34.3
4-Nov	72.0	58.7	54.2	38.8	21.0	78.4	65.2	40.2	27.0
11-Nov	72.0	59.6	52.7	35.6	18.0	78.4	69.1	36.7	23.7
18-Nov	67.0	58.6	49.2	33.5	11.0	81.2	64.8	34.8	22.3
25-Nov	65.0	56.0	45.3	30.6	16.0	78.4	65.0	30.5	19.7
2-Dec	64.0	56.9	43.7	28.4	11.0	67.9	60.3	27.8	17.6
9-Dec	63.0	53.9	42.1	27.2	6.0	69.3	62.3	27.5	17.2
16-Dec	60.0	53.6	37.6	23.5	-6.0	56.0	55.7	24.0	14.8
23-Dec	58.0	54.1	37.0	23.7	1.0	67.9	60.8	24.4	15.4
31-Dec	51.0	46.4	32.7	19.3	-2.0	48.3	50.4	20.4	12.9

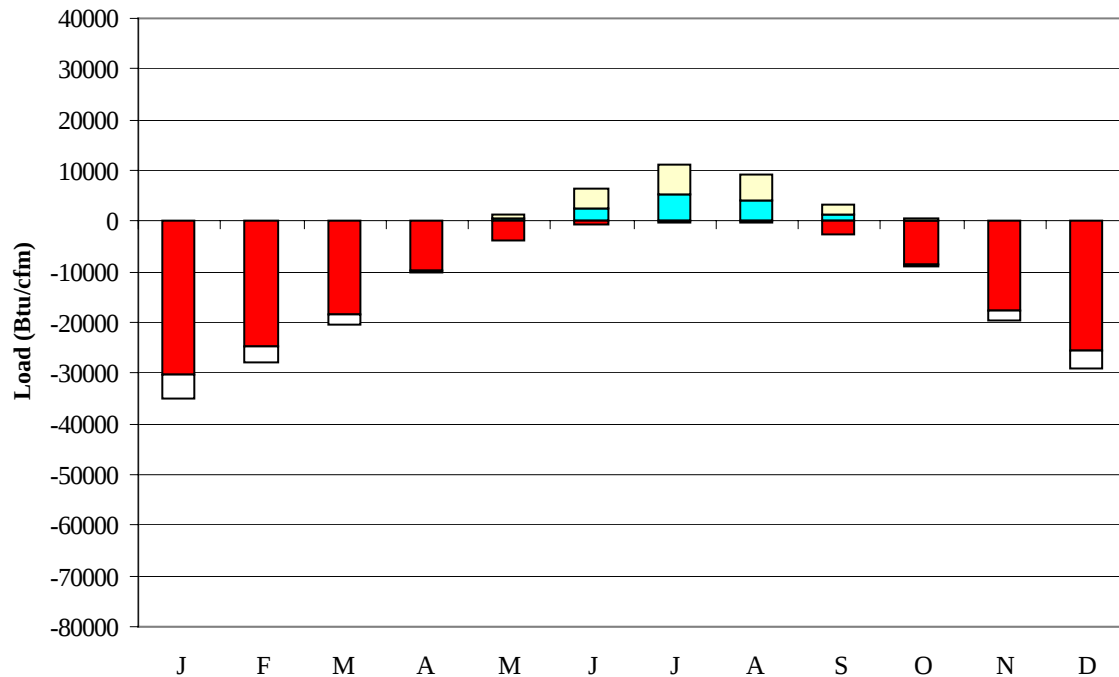
Degree Days, Heating and Cooling (Base 65°F)



■ Mean Cooling Degree Days
 ■ Mean Heating Degree Days

	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	1083
FEB	1	866
MAR	11	617
APR	45	298
MAY	117	99
JUN	299	14
JUL	441	3
AUG	390	5
SEP	185	68
OCT	47	257
NOV	4	597
DEC	0	905
ANN	1540	4812

Average Ventilation and Infiltration Loads
(Outside Air vs. 75°F, 60% RH summer; 68°F, 30% RH winter)



	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	-30381	0	-4472
FEB	0	-24604	0	-3474
MAR	25	-18291	4	-2203
APR	178	-9579	117	-723
MAY	543	-3785	890	-92
JUN	2653	-705	3936	0
JUL	5243	-181	5787	0
AUG	4194	-333	5026	0
SEP	1431	-2654	2003	-41
OCT	187	-8433	178	-516
NOV	6	-17617	14	-1849
DEC	0	-25708	0	-3333
ANN	14460	-142271	17955	-16703

Average Annual Solar Radiation – Nearest Available Site

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

City: KANSAS CITY
 State: MO
 WBAN No: 3947
 Lat(N): 39.3
 Long(W): 94.72
 Elev(ft): 1034

Stn Type: Secondary
 SHADING GEOMETRY IN DIMENSIONLESS UNITS

Window: 1
 Overhang: 0.514
 Vert Gap: 0.317

AVERAGE INCIDENT SOLAR RADIATION (Btu/sq.ft./day), Percentage Uncertainty = 9		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ	Global	700	940	1240	1610	1870	2050	2080	1830	1460	1120	740	590	1360
	Std Dev	57	71	114	112	128	127	144	129	130	107	73	53	42
	Minimum	560	790	980	1330	1560	1750	1800	1550	1060	930	590	490	1280
	Maximum	820	1100	1410	1870	2130	2360	2350	2040	1760	1390	890	700	1490
	Diffuse	300	420	560	680	790	810	760	680	560	410	320	280	550
Clear Day	Global	940	1280	1760	2230	2530	2640	2560	2290	1870	1390	990	820	1780
NORTH	Global	200	270	350	440	550	630	600	480	380	290	210	180	380
	Diffuse	200	270	350	430	500	530	510	450	370	290	210	180	360
Clear Day	Global	190	240	320	420	580	680	630	460	350	270	200	160	380
EAST	Global	480	610	760	940	1040	1110	1130	1040	880	730	500	400	800
	Diffuse	240	330	430	520	590	630	620	550	460	350	260	220	430
Clear Day	Global	700	900	1140	1350	1450	1470	1440	1350	1180	950	740	630	1110
SOUTH	Global	1170	1170	1100	990	850	780	840	980	1130	1280	1120	1030	1040
	Diffuse	350	420	490	530	560	560	560	550	500	430	350	320	470
Clear Day	Global	1940	1980	1800	1400	1060	910	960	1220	1610	1870	1900	1870	1540
WEST	Global	480	610	760	940	1070	1160	1190	1080	910	730	500	420	820
	Diffuse	250	330	430	530	600	640	630	570	470	360	260	220	440
Clear Day	Global	700	900	1140	1350	1450	1470	1440	1350	1180	950	740	630	1110

Average Annual Solar Heat and Illumination – Nearest Available Site

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

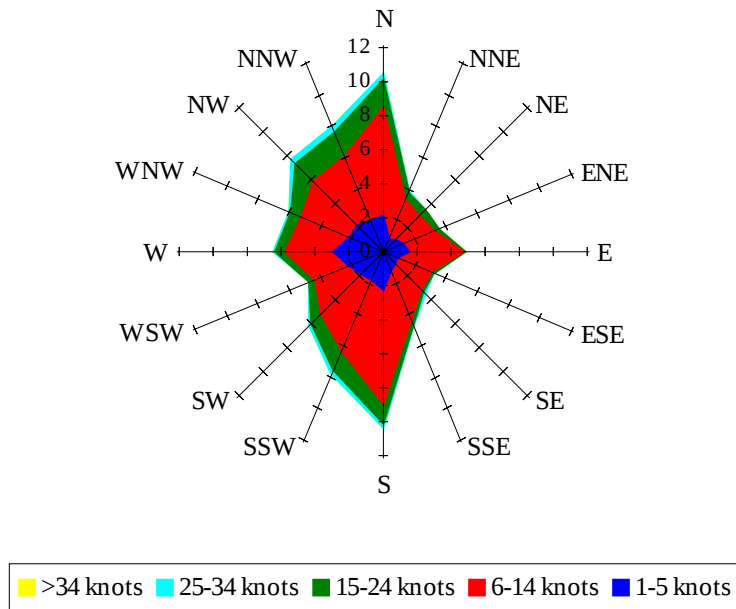
AVERAGE TRANSMITTED SOLAR RADIATION (Btu/sq.ft./day) FOR DOUBLE GLAZING, Percentage Uncertainty = 9		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ	Unshaded	450	640	880	1160	1350	1490	1520	1330	1050	780	490	380	960
NORTH	Unshaded	140	190	240	300	360	410	390	320	260	200	150	120	260
	Shaded	120	170	220	270	320	360	350	290	230	180	130	110	230
EAST	Unshaded	330	430	540	670	740	790	810	740	620	510	350	280	570
	Shaded	300	380	470	580	630	680	700	650	550	460	310	250	500
SOUTH	Unshaded	880	850	760	640	520	470	500	610	760	920	840	780	710
	Shaded	860	790	610	420	350	350	380	550	810	810	760	590	590
WEST	Unshaded	330	430	540	670	760	830	850	780	650	510	350	280	580
	Shaded	300	380	470	580	660	710	740	680	570	460	320	260	510

AVERAGE INCIDENT ILLUMINANCE (klux-hr) FOR MOSTLY CLEAR AND MOSTLY CLOUDY CONDITIONS, Percentage Uncertainty = 9		March					June				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	34	69	82	68	32	42	81	101	98	73
	M.Cloudy	20	42	51	42	20	27	55	70	72	53
NORTH	M.Clear	9	13	15	13	9	20	16	17	17	16
	M.Cloudy	8	15	17	15	8	14	17	19	19	16
EAST	M.Clear	73	62	15	13	9	75	76	38	17	16
	M.Cloudy	24	31	17	15	8	35	46	30	19	16
SOUTH	M.Clear	35	70	83	69	33	11	28	45	43	24
	M.Cloudy	15	34	43	34	15	10	23	35	35	21
WEST	M.Clear	9	13	16	63	71	11	16	17	46	78
	M.Cloudy	8	15	17	32	26	10	17	19	37	50
M.Clear	(% hrs)	34	32	31	30	32	39	40	39	38	41

		Sept					Dec				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	23	63	85	81	53	11	39	48	33	4
	M.Cloudy	13	37	53	53	34	7	23	29	20	3
NORTH	M.Clear	7	13	16	15	12	4	9	10	8	2
	M.Cloudy	6	14	17	17	13	3	9	11	8	2
EAST	M.Clear	61	73	35	15	12	36	43	10	8	2
	M.Cloudy	18	34	25	17	13	9	18	11	8	2
SOUTH	M.Clear	17	53	75	71	43	30	79	92	70	13
	M.Cloudy	8	27	41	41	25	8	27	34	24	4
WEST	M.Clear	7	13	16	48	75	4	9	16	49	18
	M.Cloudy	6	14	17	31	37	3	9	13	18	5
M.Clear	(% hrs)	46	47	47	46	47	35	36	35	36	37

Wind Summary - December, January, and February

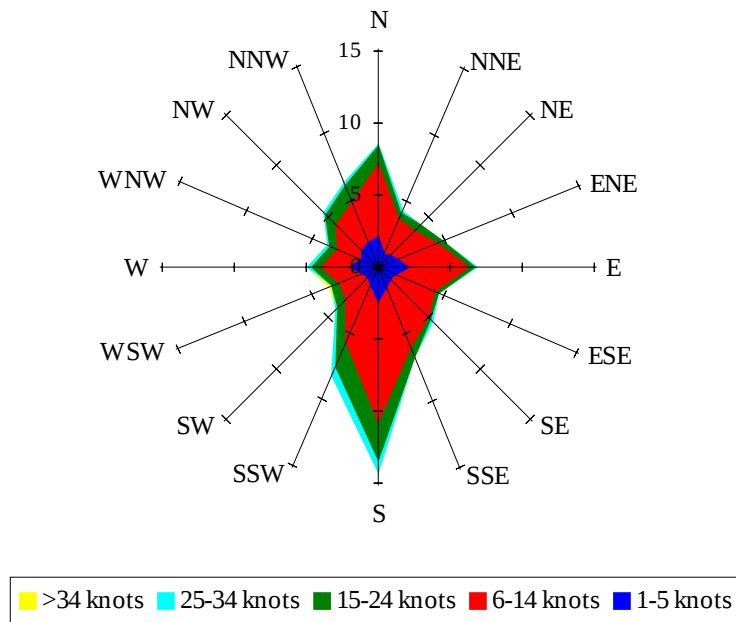
Labels of Percent Frequency on North Axis



Percent Calm = 6.26

Wind Summary - March, April, and May

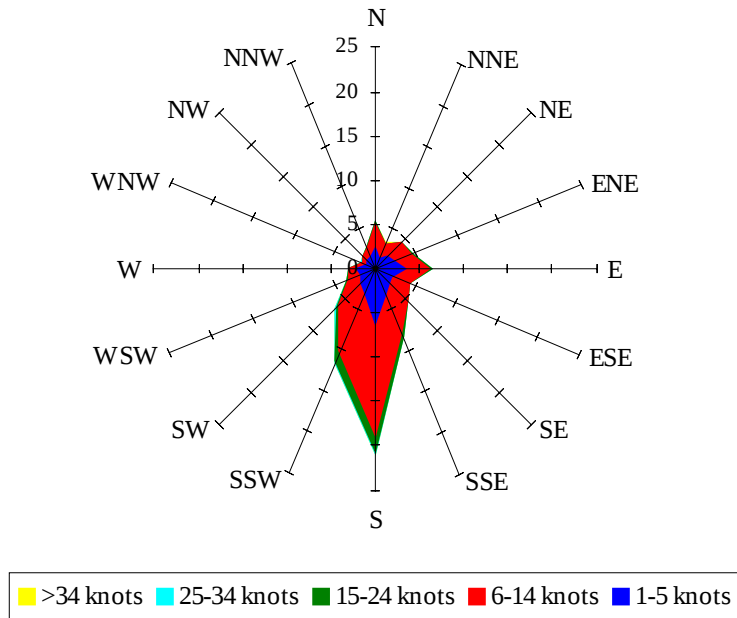
Labels of Percent Frequency on North Axis



Percent Calm = 5.54

Wind Summary - June, July, and August

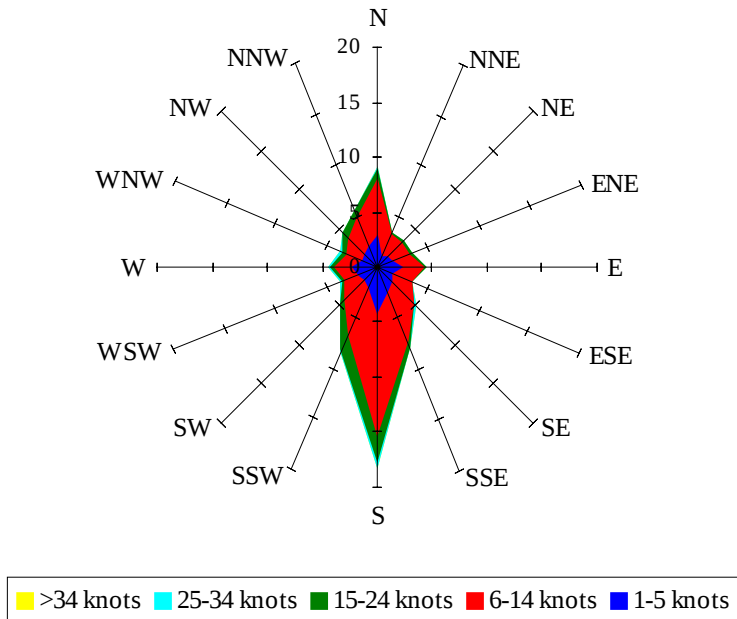
Labels of Percent Frequency on North Axis



Percent Calm = 7.97

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 7.99