

FORT DODGE IA

Latitude = 42.55 N

Longitude = 94.18 W

Period of Record = 1973 to 1996

WMO No. 725490

Elevation = 1165 feet

Average Pressure = 28.72 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	95	76	112	12.9	SSW
0.4% Occurrence	91	75	110	11.8	S
1.0% Occurrence	88	73	107	11.7	S
2.0% Occurrence	85	71	99	11.2	S
Mean Daily Range	17	-	-	-	-
97.5% Occurrence	-1	-2	4	10.1	N
99.0% Occurrence	-8	-9	2	9.1	NW
99.6% Occurrence	-13	-13	2	8.7	WNW
Median of Extreme Lows	-19	-19	1	9.6	WNW
	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	90	142	10.2	S
0.4% Occurrence	77	87	129	10.1	S
1.0% Occurrence	76	86	124	10.2	S
2.0% Occurrence	74	83	116	10.1	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	148	89	0.94	8.9	S
0.4% Occurrence	133	85	0.85	8.8	S
1.0% Occurrence	124	82	0.79	8.8	S
2.0% Occurrence	116	79	0.74	8.4	S
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		21	499	239	899

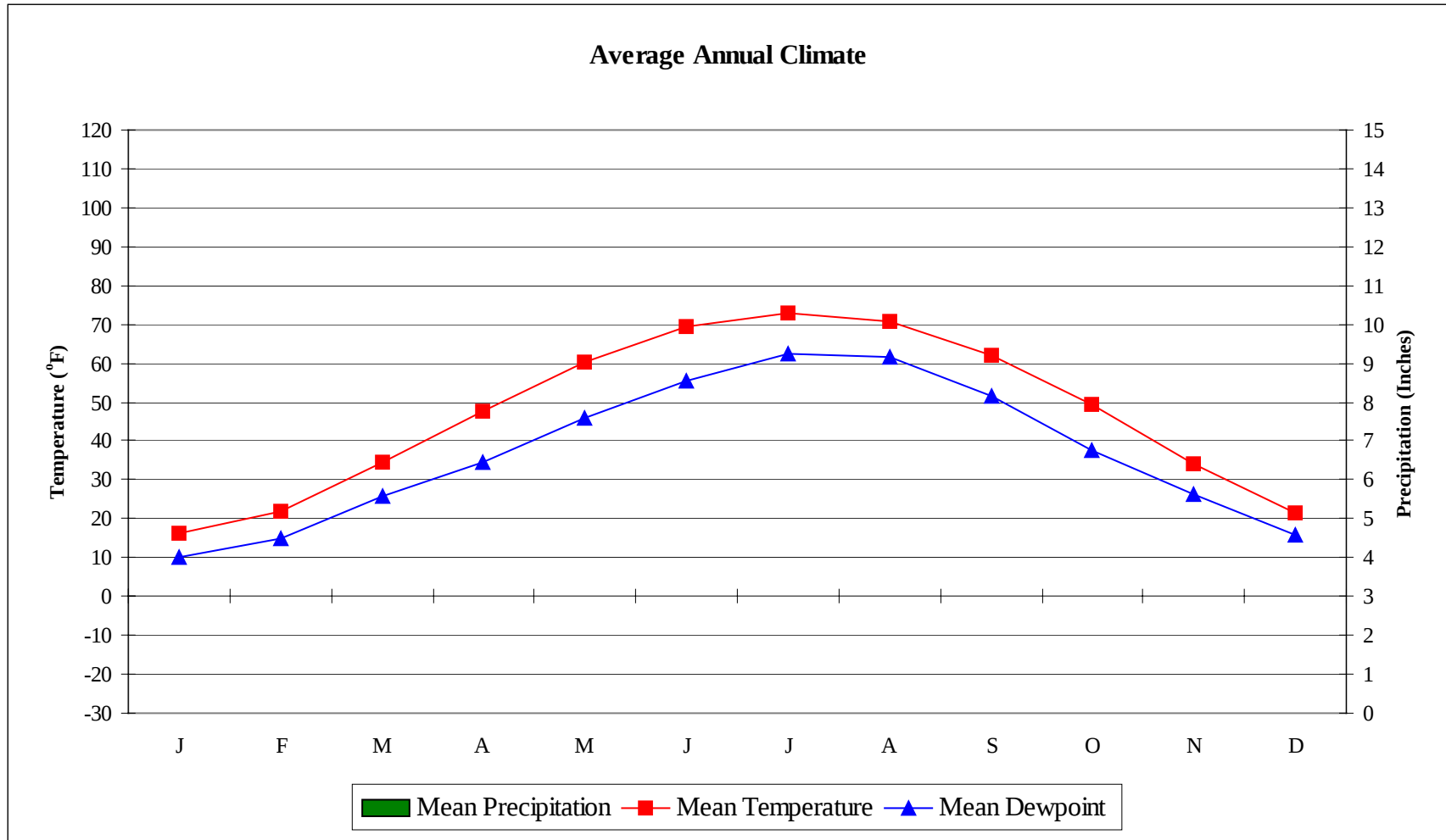
Other Site Data

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
5	3.5	90	0.9 + 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 (#)
49.2	N/A	N/A	58

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

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WMO No. 725490

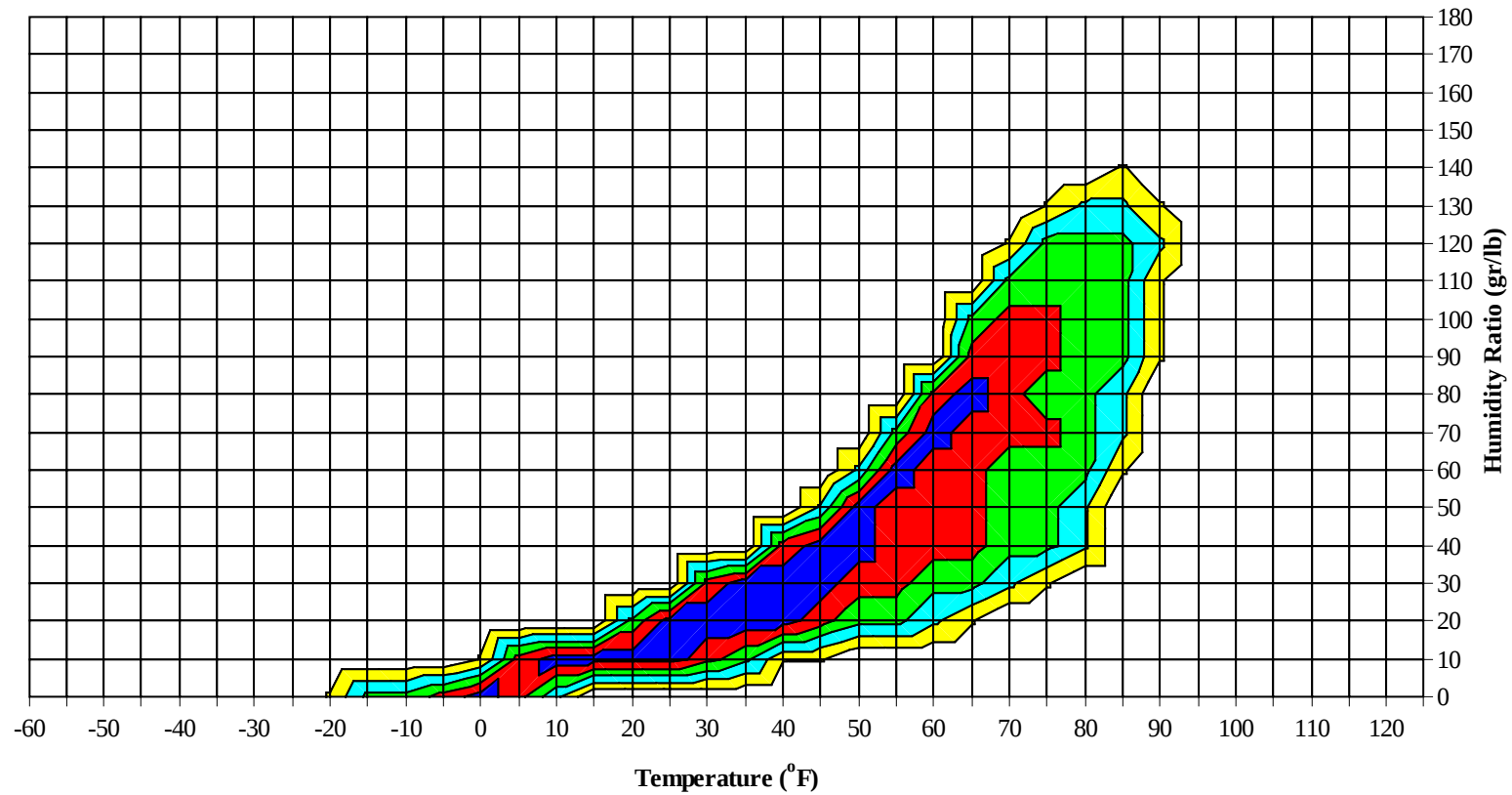


No Precipitation Data Available

FORT DODGE IA

WMO No. 725490

Long Term Psychrometric Summary

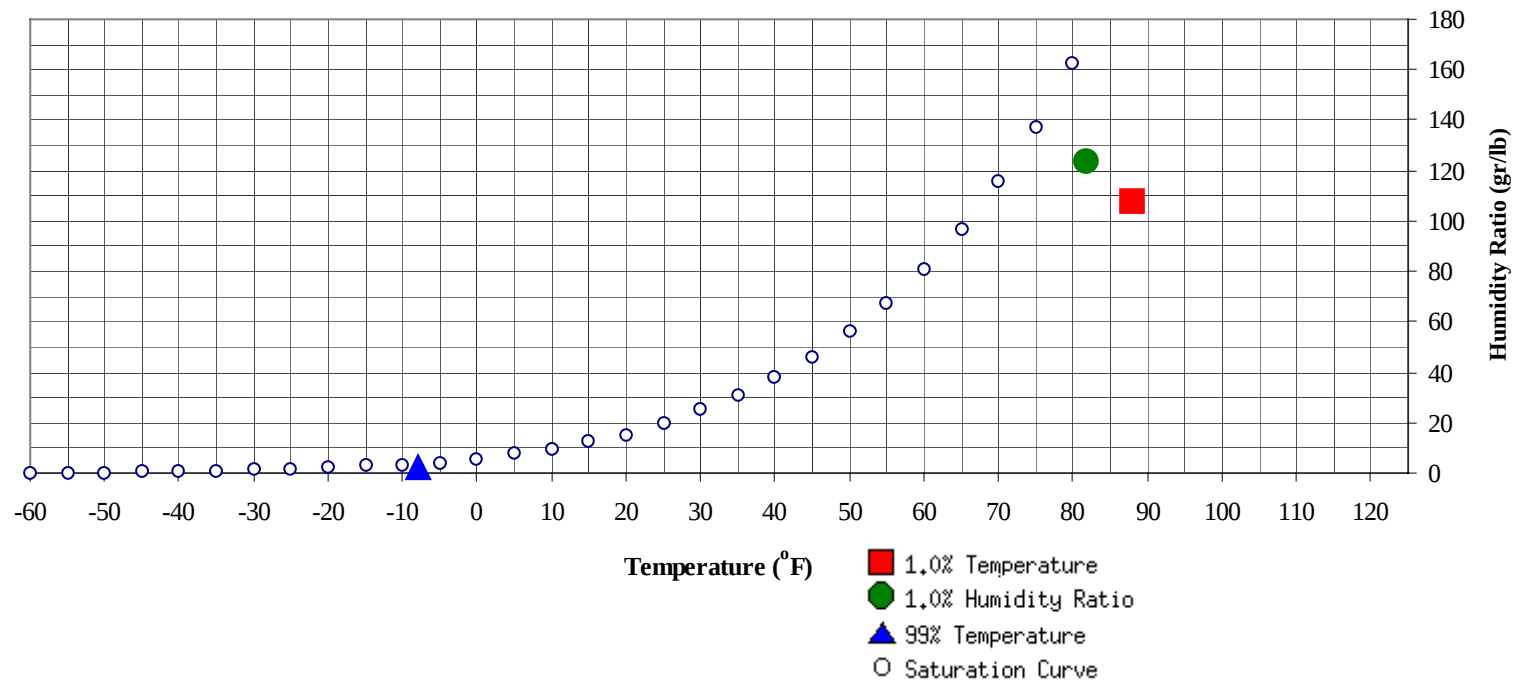


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

FORT DODGE IA

WMO No. 725490

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)
	-8	2.4	-1.6		123.9	81.7	74.7	72	39.0

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	88	108	73.3	38.1

FORT DODGE IA

WMO No. 725490

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												1	0	1	61.3
75 / 79												1	0	1	59.4
70 / 74												2	1	3	56.7
65 / 69							0		0	51.3		4	2	6	53.9
60 / 64		0		0	46.0		2	0	2	47.6	1	8	5	14	51.7
55 / 59		0	0	0	47.7		2	1	3	46.1	4	14	9	27	48.6
50 / 54		2	1	3	42.9	0	4	2	6	44.0	5	17	13	36	45.6
45 / 49	0	3	1	4	40.4	1	10	4	15	40.7	10	26	20	56	41.7
40 / 44	0	8	4	12	36.8	3	16	10	30	37.2	21	33	31	85	37.8
35 / 39	8	17	14	40	33.4	13	26	25	64	33.8	37	44	42	122	33.9
30 / 34	26	33	33	93	30.0	39	36	44	120	30.0	63	42	54	159	29.9
25 / 29	28	34	31	94	25.2	32	30	30	91	25.3	40	26	30	97	25.0
20 / 24	32	33	30	95	20.7	30	27	27	83	20.4	23	13	16	52	20.3
15 / 19	30	30	27	88	15.7	22	21	18	61	15.6	18	8	10	36	15.8
10 / 14	23	23	25	72	10.9	19	18	17	54	10.7	9	7	7	23	10.7
5 / 9	26	22	26	75	6.0	18	13	17	48	5.9	7	3	4	14	6.3
0 / 4	25	18	19	63	1.1	21	9	12	42	1.2	6	1	2	9	1.4
-5 / -1	15	12	13	40	-3.1	7	5	6	18	-3.0	1		1	2	-2.6
-10 / -6	16	8	12	36	-7.6	9	4	5	18	-7.4	2		0	2	-7.3
-15 / -11	10	3	6	19	-12.2	6	2	3	11	-12.0			0	0	-11.0
-20 / -16	4	2	2	8	-17.1	3	1	1	5	-16.7					
-25 / -21	2	0	1	3	-21.3	1	0	0	1	-20.7					
-30 / -26	0			0		0			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.

FORT DODGE IA

WMO No. 725490

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	09	17			01	09	17			01	09	17		
	To 08	To 16	To 00			To 08	To 16	To 00			To 08	To 16	To 00		
100 / 104											0 0 73.3				
95 / 99											2 1 3 73.3				
90 / 94	0 0 61.1					1 1 66.1					9 2 11 72.9				
85 / 89	1 0 1 63.0					7 2 9 67.3					0 25 10 35 70.5				
80 / 84	6 2 8 61.6					17 7 24 64.3					1 46 23 70 67.5				
75 / 79	0	8	5	13	60.5	1	32	16	50	61.5	11	54	37	102	65.2
70 / 74	0	11	6	17	56.8	4	39	27	70	59.5	29	46	47	122	62.9
65 / 69	3	19	11	33	53.8	19	43	39	101	57.4	57	34	54	145	60.7
60 / 64	8	27	18	54	51.3	41	41	45	127	54.8	67	18	39	124	57.2
55 / 59	11	33	28	73	48.3	47	29	43	119	51.1	41	5	18	63	52.7
50 / 54	23	32	33	89	45.1	50	25	34	109	47.3	24	2	7	33	48.7
45 / 49	37	34	40	111	41.9	45	11	24	80	43.5	8	0	2	10	44.7
40 / 44	46	29	36	111	38.3	26	3	8	37	39.1	2	0	0	2	40.8
35 / 39	45	24	30	99	34.2	10	1	2	13	33.9					
30 / 34	44	9	21	74	29.9	4	0	0	4	29.7					
25 / 29	14	5	6	25	25.1	0			0	24.8					
20 / 24	6	2	2	10	20.5										
15 / 19	2	0	1	3	16.1										
10 / 14	0	0	0	0	11.2										
5 / 9	0			0	9.0										
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															
-30 / -26															

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FORT DODGE IA

WMO No. 725490

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	79.8		1	0	1	75.2					
95 / 99		3	1	4	76.9		2	1	3	75.6		0		0	72.0
90 / 94		16	5	21	75.9	0	9	3	12	76.6		2	0	2	73.5
85 / 89	0	36	16	52	73.7	0	24	10	34	74.6		10	2	12	71.5
80 / 84	4	60	36	100	70.9	2	47	24	74	71.5	0	22	8	30	68.6
75 / 79	25	64	50	138	68.4	13	62	44	119	68.8	3	34	19	56	65.9
70 / 74	52	45	56	154	66.1	43	56	58	157	66.4	13	40	31	85	63.3
65 / 69	73	18	49	140	63.2	68	34	54	155	63.0	29	45	38	112	60.1
60 / 64	57	5	27	89	59.3	59	12	32	103	59.1	42	41	43	127	56.6
55 / 59	30	1	7	38	55.2	38	2	17	57	54.8	48	25	42	115	52.6
50 / 54	6		1	7	50.8	17	0	5	23	50.2	44	13	27	85	48.5
45 / 49	1			1	46.7	6		0	6	46.3	30	6	17	53	43.9
40 / 44						1		0	1	42.1	19	2	7	28	39.7
35 / 39											9	0	3	12	35.8
30 / 34											2		1	3	30.4
25 / 29											0			0	27.2
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															
-30 / -26															

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FORT DODGE IA

WMO No. 725490

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		0		0	65.3										
80 / 84		3	0	3	63.6										
75 / 79		7	2	9	61.9										
70 / 74	0	14	5	19	59.0		0		0	57.0					
65 / 69	3	24	10	38	56.4	0	3	0	3	56.2					
60 / 64	10	38	26	74	53.7	0	7	3	10	54.0		0		0	54.0
55 / 59	21	43	35	99	50.0	5	14	9	28	50.9	0	2	0	2	51.5
50 / 54	34	46	43	122	46.2	7	22	13	43	46.3	1	2	0	3	45.9
45 / 49	46	36	49	131	42.6	14	24	20	59	42.2	1	4	2	7	41.4
40 / 44	47	21	35	103	38.2	18	29	27	75	37.9	2	9	5	16	37.8
35 / 39	41	11	26	77	34.0	31	39	35	105	33.7	9	25	18	52	34.0
30 / 34	29	5	12	46	30.0	54	43	54	151	29.9	42	52	48	142	30.1
25 / 29	14	2	5	21	25.3	42	28	34	105	25.2	44	44	46	134	25.4
20 / 24	3	0	0	3	20.9	31	14	19	64	20.6	40	31	37	109	20.7
15 / 19	0			0	17.0	18	8	11	37	15.8	30	23	26	79	15.9
10 / 14						10	5	8	23	11.2	21	19	20	60	10.9
5 / 9						4	3	3	10	6.7	16	16	13	45	6.2
0 / 4						3	1	2	6	0.7	15	11	14	40	1.2
-5 / -1						1	0	0	1	-2.3	11	6	8	25	-3.0
-10 / -6						0		0	0	-6.9	7	3	6	16	-7.2
-15 / -11						0			0	-10.0	4	2	2	8	-12.2
-20 / -16											3	1	1	5	-16.8
-25 / -21											1		0	1	-20.5
-30 / -26															

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FORT DODGE IA

WMO No. 725490

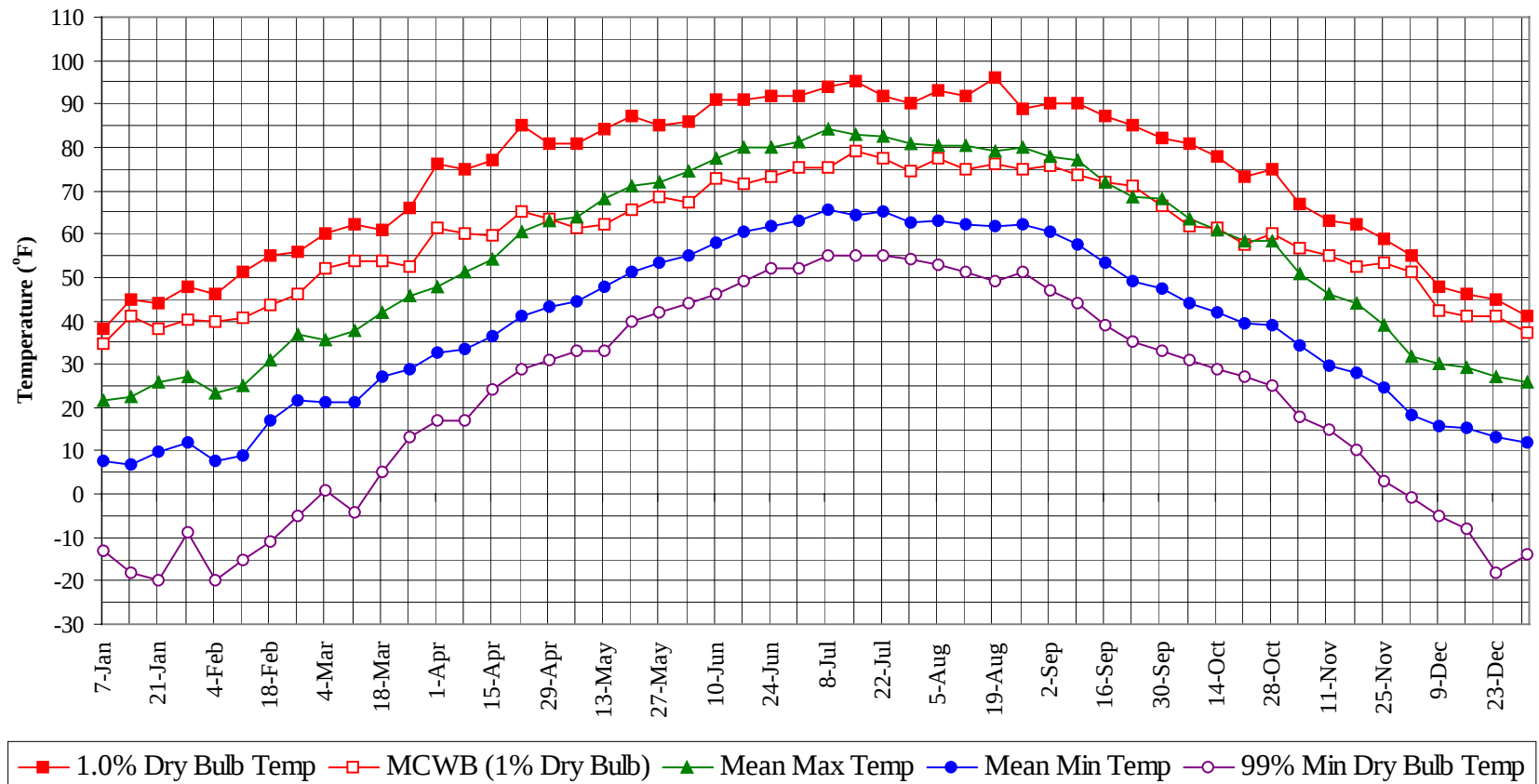
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)

Period of Record = 1973 to 1996

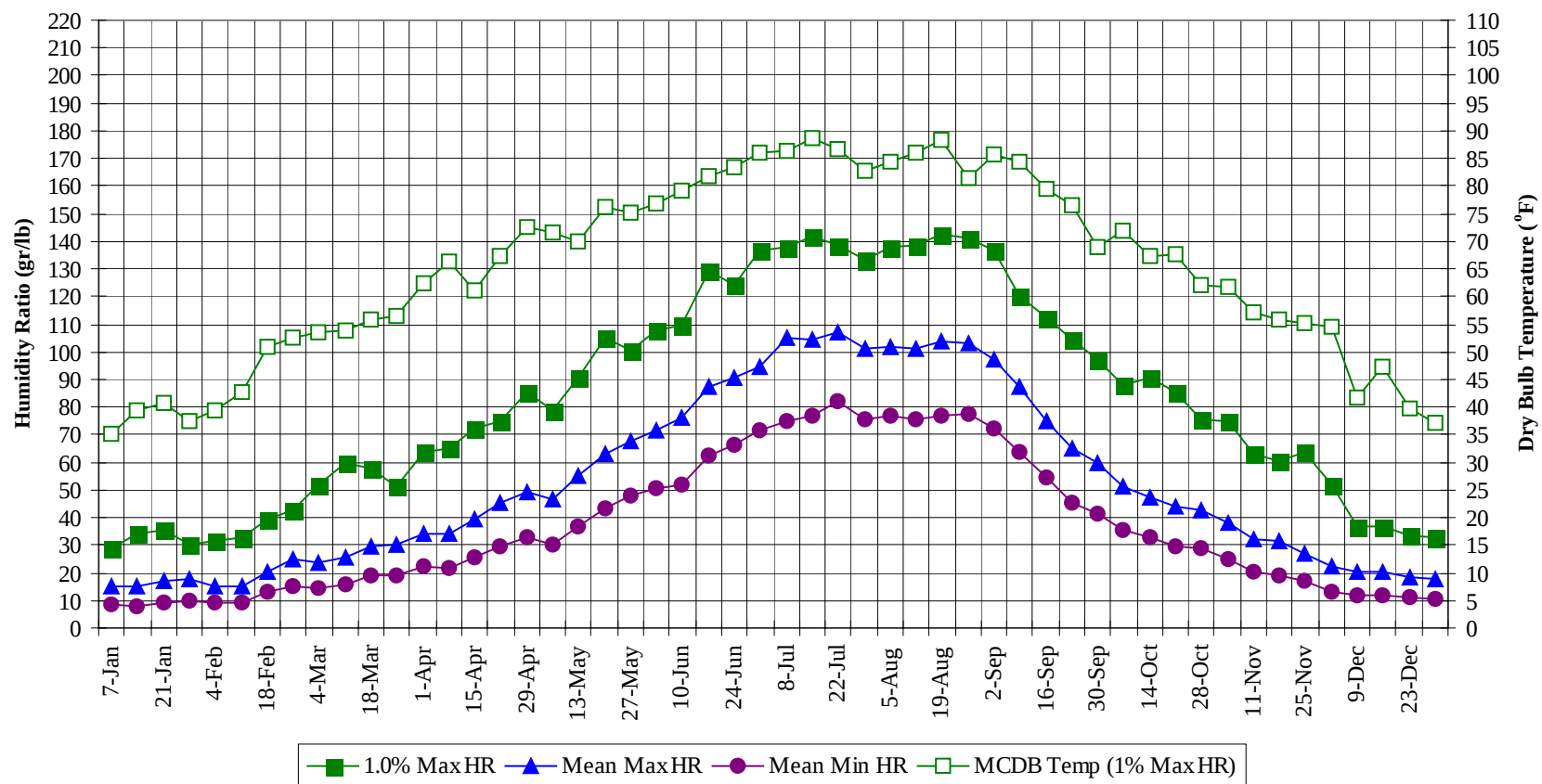
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
100 / 104		1	0	1	75.5
95 / 99		8	2	10	75.5
90 / 94	0	37	11	48	75.0
85 / 89	0	102	41	143	72.4
80 / 84	7	202	100	309	69.2
75 / 79	53	261	172	486	66.5
70 / 74	142	253	230	625	63.8
65 / 69	251	224	257	732	60.4
60 / 64	282	200	238	719	56.2
55 / 59	245	168	208	621	51.5
50 / 54	211	164	180	555	46.9
45 / 49	198	152	179	528	42.6
40 / 44	186	149	165	499	38.2
35 / 39	202	184	195	581	33.9
30 / 34	303	220	269	793	30.0
25 / 29	217	170	184	571	25.2
20 / 24	166	119	133	418	20.6
15 / 19	122	90	94	307	15.8
10 / 14	84	72	79	235	10.9
5 / 9	72	57	65	194	6.1
0 / 4	70	41	51	162	1.1
-5 / -1	36	23	28	87	-3.0
-10 / -6	35	14	24	73	-7.4
-15 / -11	21	6	11	38	-12.2
-20 / -16	10	3	4	17	-16.9
-25 / -21	4	1	1	6	-21.0
-30 / -26	1			1	

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Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary



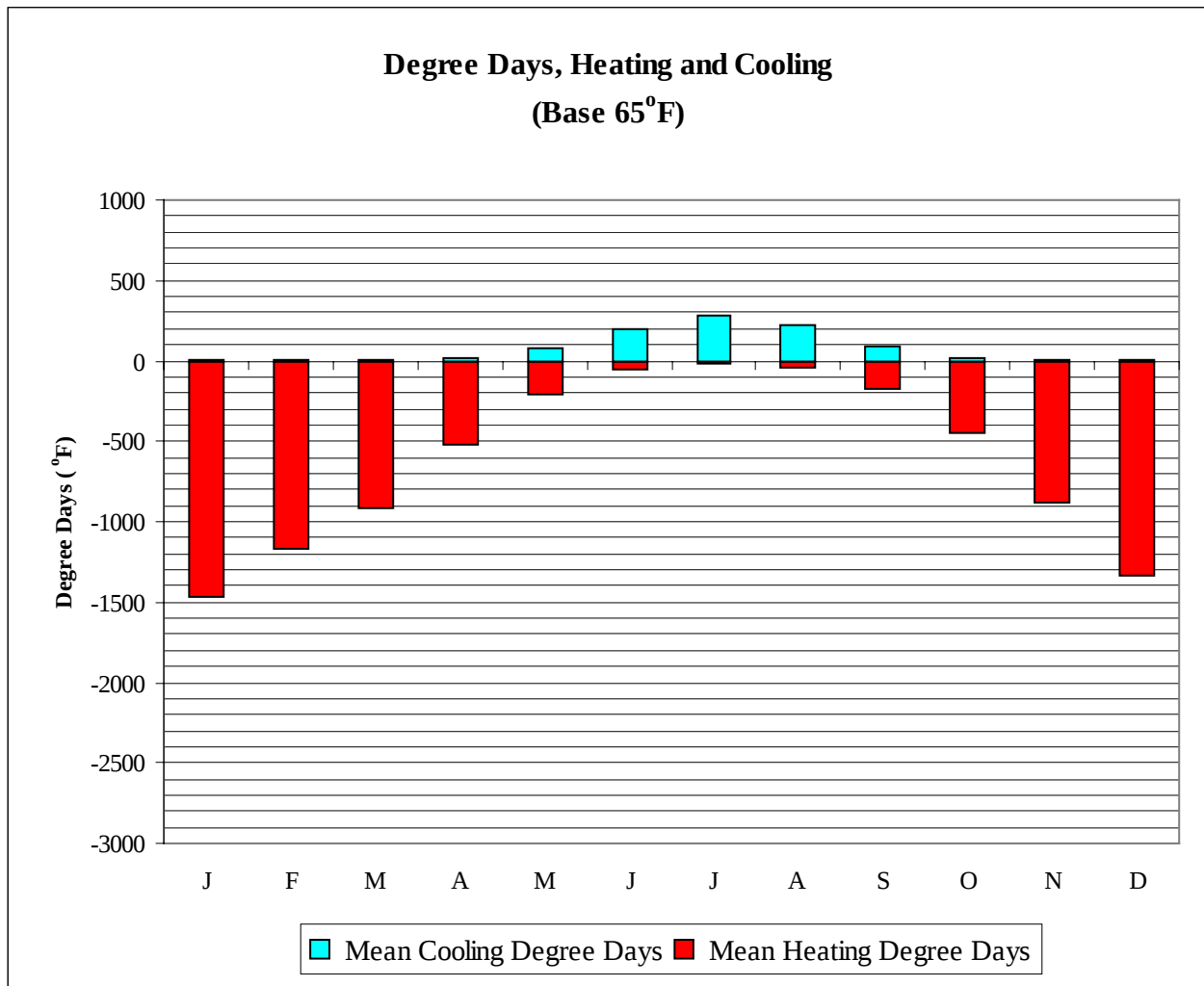
FORT DODGE**IA****WMO No. 725490****Long Term Dry Bulb Temperature and Humidity Summary**

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	38.0	34.7	21.5	7.8	-13.0	28.7	35.3	15.0	8.5
14-Jan	45.0	41.0	22.3	7.0	-18.0	34.3	39.3	14.9	8.1
21-Jan	44.0	38.3	25.7	9.6	-20.0	35.7	40.8	17.1	9.5
28-Jan	48.0	40.2	27.2	11.7	-9.0	30.1	37.5	17.5	9.5
4-Feb	46.0	39.7	23.2	7.8	-20.0	31.5	39.3	15.4	9.0
11-Feb	51.0	40.6	25.0	8.7	-15.0	32.9	42.7	15.4	9.0
18-Feb	55.0	43.7	31.0	16.9	-11.0	39.2	50.8	20.4	12.8
25-Feb	56.0	46.2	36.8	21.8	-5.0	42.7	52.6	24.9	15.2
4-Mar	60.0	52.3	35.8	21.3	1.0	51.8	53.5	23.8	14.6
11-Mar	62.0	53.9	37.8	21.4	-4.0	59.5	53.8	25.7	15.5
18-Mar	61.0	53.9	41.8	27.0	5.0	58.1	55.8	29.5	19.1
25-Mar	66.0	52.6	45.5	28.8	13.0	51.1	56.4	30.4	19.2
1-Apr	76.0	61.4	47.9	32.6	17.0	63.7	62.6	34.1	22.4
8-Apr	75.0	60.2	51.4	33.4	17.0	65.1	66.4	33.9	21.8
15-Apr	77.0	59.5	54.2	36.2	24.0	72.1	61.2	39.2	25.3
22-Apr	85.0	65.3	60.4	41.1	29.0	74.9	67.3	45.2	29.8
29-Apr	81.0	63.5	62.9	43.0	31.0	85.4	72.7	49.2	32.8
6-May	81.0	61.5	63.9	44.4	33.0	79.1	71.7	46.6	30.3
13-May	84.0	62.0	68.1	47.7	33.0	90.3	70.1	54.9	36.7
20-May	87.0	65.5	71.3	51.1	40.0	105.0	76.1	63.0	43.4
27-May	85.0	68.8	71.8	53.2	42.0	100.8	75.2	67.7	47.7
3-Jun	86.0	67.4	74.4	55.1	44.0	107.8	77.0	71.8	50.7
10-Jun	91.0	72.6	77.3	57.8	46.0	109.9	79.1	76.3	52.0
17-Jun	91.0	71.7	79.8	60.6	49.0	129.5	81.8	87.7	62.1
24-Jun	92.0	73.3	79.9	61.8	52.0	123.9	83.3	90.9	66.2
1-Jul	92.0	75.1	81.2	63.0	52.0	136.5	86.0	94.9	71.3
8-Jul	94.0	75.2	84.0	65.4	55.0	137.9	86.4	105.4	74.8
15-Jul	95.0	79.0	82.8	64.2	55.0	142.1	88.5	104.7	76.6
22-Jul	92.0	77.6	82.7	65.4	55.0	138.6	86.6	107.3	81.8
29-Jul	90.0	74.7	80.8	62.7	54.0	133.0	82.8	101.0	75.8
5-Aug	93.0	77.4	80.2	63.0	53.0	137.9	84.3	102.1	77.2
12-Aug	92.0	74.8	80.6	62.1	51.0	138.6	86.0	100.9	75.2
19-Aug	96.0	76.3	79.2	62.0	49.0	142.8	88.4	103.5	77.1
26-Aug	89.0	74.8	79.8	62.2	51.0	141.4	81.4	102.9	77.2
2-Sep	90.0	75.6	77.9	60.5	47.0	136.5	85.8	97.5	72.5
9-Sep	90.0	73.8	76.8	57.7	44.0	120.4	84.4	87.3	63.7
16-Sep	87.0	71.9	71.8	53.2	39.0	112.0	79.3	74.5	54.4
23-Sep	85.0	70.9	68.8	49.0	35.0	104.3	76.4	65.1	45.1
30-Sep	82.0	66.5	68.3	47.4	33.0	97.3	69.0	59.9	41.4
7-Oct	81.0	61.7	63.5	44.0	31.0	88.2	71.9	51.0	35.4
14-Oct	78.0	61.3	61.1	42.1	29.0	90.3	67.2	47.2	33.0
21-Oct	73.0	57.6	58.5	39.5	27.0	85.4	67.5	43.7	29.5
28-Oct	75.0	60.3	58.3	38.9	25.0	75.6	62.2	42.8	29.0
4-Nov	67.0	56.7	50.7	34.4	18.0	74.9	61.7	38.4	25.3
11-Nov	63.0	55.0	46.0	29.7	15.0	63.0	57.2	32.2	20.4
18-Nov	62.0	52.6	43.9	28.0	10.0	60.2	56.0	31.3	19.4
25-Nov	59.0	53.3	38.9	24.6	3.0	63.7	55.3	27.0	17.0
2-Dec	55.0	51.4	31.6	18.3	-1.0	51.8	54.7	22.6	13.3
9-Dec	48.0	42.3	30.0	15.5	-5.0	37.1	41.7	20.4	11.7
16-Dec	46.0	40.9	29.4	15.1	-8.0	37.1	47.1	20.5	11.9
23-Dec	45.0	41.0	26.9	13.2	-18.0	33.6	39.6	18.2	10.9
31-Dec	41.0	37.2	25.6	12.0	-14.0	32.9	37.0	17.9	10.5

FORT DODGE

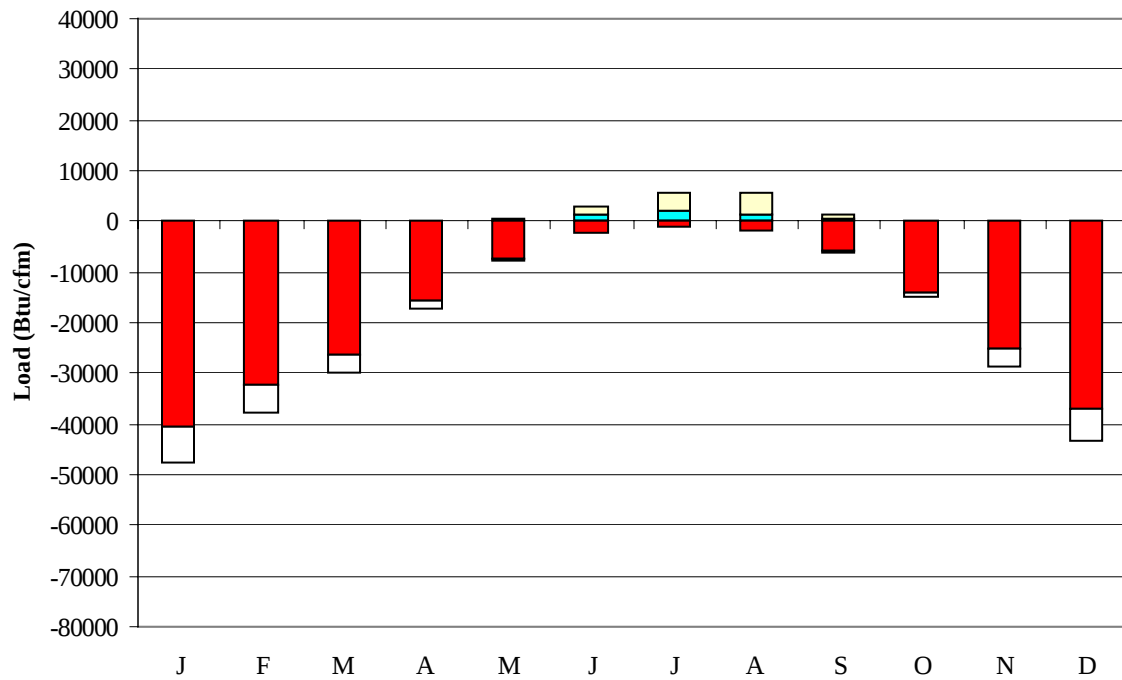
IA

WMO No. 725490



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	1471
FEB	0	1167
MAR	2	921
APR	20	521
MAY	77	214
JUN	196	52
JUL	280	20
AUG	226	41
SEP	91	170
OCT	13	451
NOV	0	886
DEC	0	1337
ANN	906	7251

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	-40547	0	-7144
FEB	0	-32427	0	-5432
MAR	6	-26253	0	-3678
APR	102	-15627	7	-1601
MAY	354	-7294	277	-393
JUN	1358	-2192	1710	-8
JUL	2164	-1034	3679	0
AUG	1479	-1816	4110	0
SEP	468	-5962	1008	-103
OCT	36	-13890	30	-1172
NOV	0	-25226	0	-3655
DEC	0	-37081	0	-6334
ANN	5967	-209349	10821	-29520

Average Annual Solar Radiation – Nearest Available Site

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

City: MASON CITY
 State: IA
 WBAN No: 14940
 Lat(N): 43.15
 Long(W): 93.33
 Elev(ft): 1224

Stn Type: Secondary
 SHADING GEOMETRY IN DIMENSIONLESS UNITS
 Window: 1
 Overhang: 0.624
 Vert Gap: 0.33

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	590	860	1170	1490	1830	2010	2000	1740	1350	960	580	480	1260
	Std Dev	44	58	107	123	108	125	110	106	114	79	46	41	39
	Minimum	510	710	950	1230	1520	1770	1780	1530	1070	770	460	420	1180
	Maximum	680	970	1370	1790	1990	2250	2250	1940	1580	1130	680	570	1350
	Diffuse	300	430	590	700	800	840	790	700	560	410	310	270	560
Clear Day	Global	790	1150	1650	2160	2510	2650	2550	2230	1770	1240	830	670	1680
NORTH	Global	190	260	350	440	550	630	600	480	360	270	190	160	370
	Diffuse	190	260	350	430	500	540	520	450	360	270	190	160	350
Clear Day	Global	160	230	310	410	580	690	640	460	340	240	170	150	370
EAST	Global	420	580	740	890	1050	1140	1130	1010	830	640	400	340	760
	Diffuse	230	330	430	510	600	640	620	560	450	330	230	200	430
Clear Day	Global	630	850	1120	1350	1480	1520	1480	1360	1160	890	650	560	1090
SOUTH	Global	1060	1160	1100	990	920	870	910	1030	1140	1170	900	870	1010
	Diffuse	350	440	510	540	580	590	590	560	500	420	330	310	480
Clear Day	Global	1870	1990	1890	1520	1190	1050	1100	1350	1690	1870	1830	1770	1590
WEST	Global	420	570	720	880	1050	1140	1160	1050	860	630	400	340	770
	Diffuse	230	330	430	520	610	650	640	570	450	340	240	200	430
Clear Day	Global	630	850	1120	1350	1480	1520	1480	1360	1160	890	650	560	1090

Average Annual Solar Heat and Illumination – Nearest Available Site

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

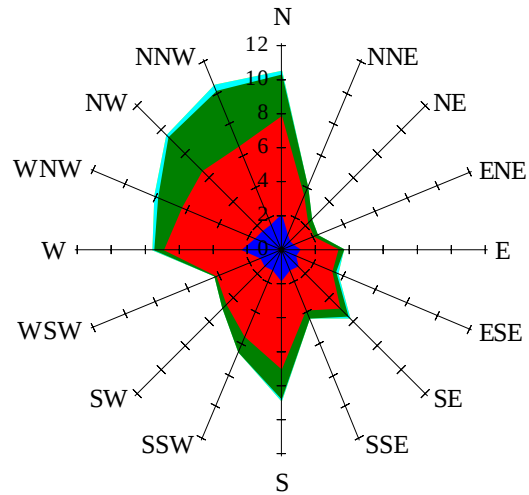
AVERAGE TRANSMITTED SOLAR RADIATION (Btu/sq.ft./day) FOR DOUBLE GLAZING, Percentage Uncertainty = 9		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
HORIZ	Unshaded	370	580	820	1060	1320	1460	1450	1250	960	660	380	300	890
NORTH	Unshaded	130	180	240	300	360	410	390	320	250	190	130	110	250
	Shaded	110	160	210	260	320	360	340	280	220	160	110	94	220
EAST	Unshaded	290	400	520	640	750	810	800	720	590	450	270	230	540
	Shaded	250	350	440	530	620	660	660	590	490	390	240	200	450
SOUTH	Unshaded	800	860	780	660	580	530	560	660	780	850	680	650	700
	Shaded	780	780	600	400	350	360	350	380	530	730	640	630	540
WEST	Unshaded	290	400	510	630	750	810	830	750	610	440	280	230	540
	Shaded	260	350	430	520	610	660	680	620	520	380	240	200	460

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	33	65	76	62	27	45	80	98	94	70
	M.Cloudy	20	42	51	39	18	29	54	68	68	50
NORTH	M.Clear	9	13	14	13	8	17	16	17	17	15
	M.Cloudy	8	15	17	14	8	13	17	19	19	16
EAST	M.Clear	70	58	14	13	8	77	74	35	17	15
	M.Cloudy	23	30	17	14	8	36	45	28	19	16
SOUTH	M.Clear	37	74	87	71	31	11	34	52	48	26
	M.Cloudy	15	35	45	32	14	11	26	37	37	22
WEST	M.Clear	9	13	18	63	65	11	16	17	47	77
	M.Cloudy	8	15	19	30	23	11	17	19	37	49
M.Clear	(% hrs)	32	32	28	27	29	41	42	37	33	35

		Sept					Dec				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	23	60	80	75	48	8	33	41	25	2
	M.Cloudy	13	36	50	49	31	6	21	25	16	2
NORTH	M.Clear	7	13	15	15	11	4	9	10	7	1
	M.Cloudy	6	13	17	16	12	3	9	10	7	1
EAST	M.Clear	60	70	32	15	11	28	38	10	7	1
	M.Cloudy	17	31	23	16	12	7	16	10	7	1
SOUTH	M.Clear	18	56	78	73	43	25	75	87	61	6
	M.Cloudy	8	27	40	40	23	7	25	31	20	2
WEST	M.Clear	7	13	15	48	73	4	9	17	43	7
	M.Cloudy	6	13	17	30	34	3	9	12	15	2
M.Clear	(% hrs)	43	43	43	43	45	31	30	28	29	32

Wind Summary - December, January, and February

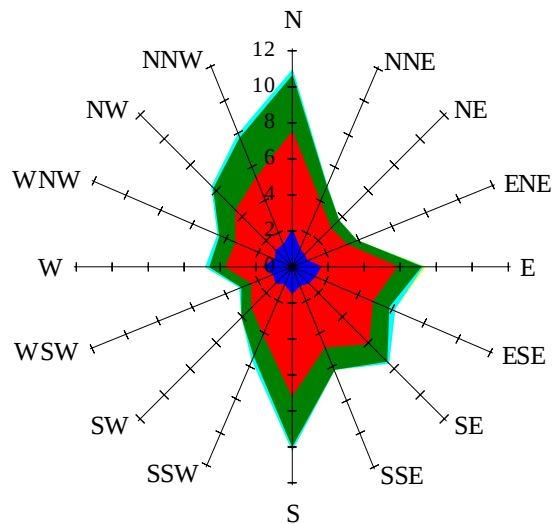
Labels of Percent Frequency on North Axis



Percent Calm = 4.77

Wind Summary - March, April, and May

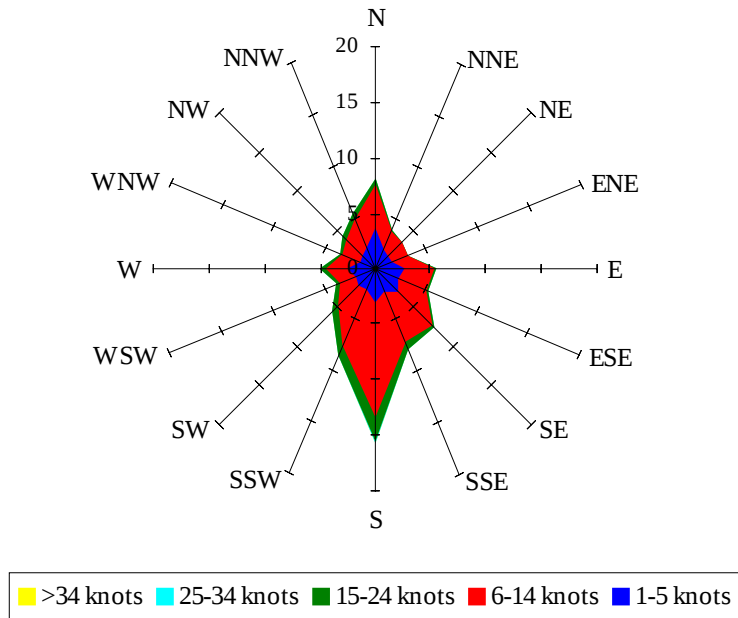
Labels of Percent Frequency on North Axis



Percent Calm = 3.89

Wind Summary - June, July, and August

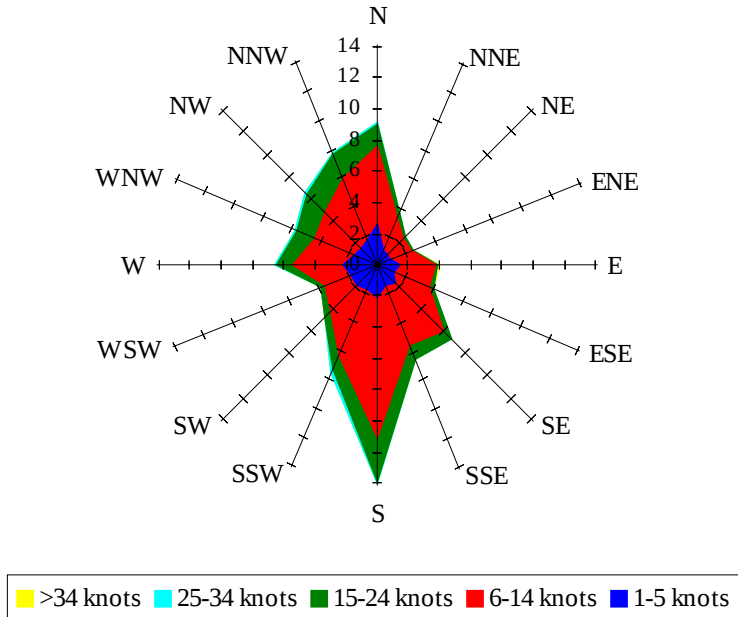
Labels of Percent Frequency on North Axis



Percent Calm = 5.85

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 5.22