KITZINGEN AAF, GERMANY	
Latitude = 49.75 N	WMO No. 106590
Longitude = 10.20 E	Elevation = 689 feet
Period of Record = 1965 to 1994	Average Pressure = 29.25 inches Hg

Design Criteria Data

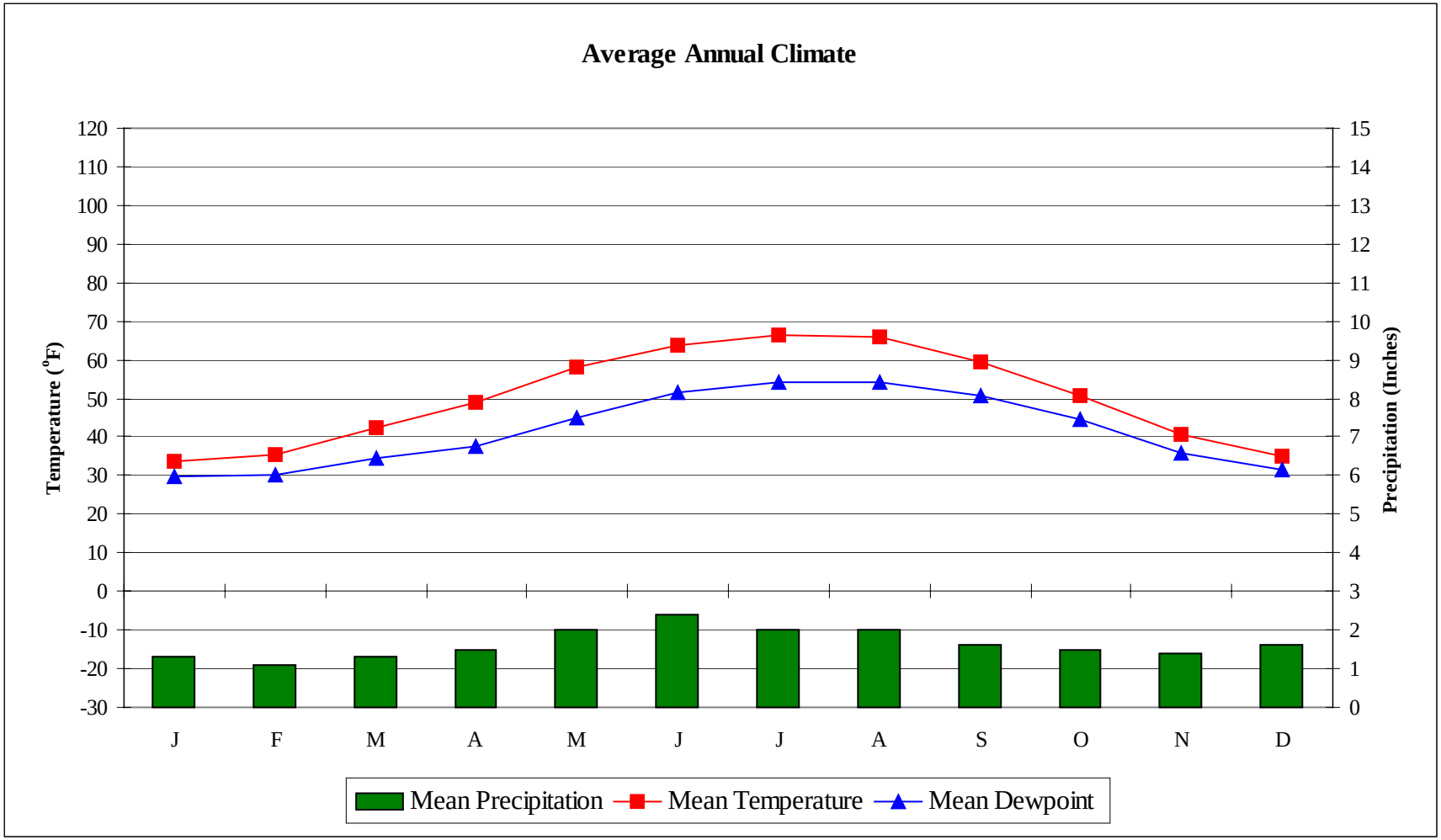
		Mean Coincident (Average) Values			
Dry Bulb Temperature (T)	**Design Value (^oF)**	Wet Bulb Temperature (^oF)	Humidity Ratio (gr/lb)	Wind Speed (mph)	Prevailing Direction (NSEW)
Median of Extreme Highs	93	68	65	6.9	VARIABLE
0.4% Occurrence	88	68	73	5.5	E
1.0% Occurrence	84	67	70	5.3	E
2.0% Occurrence	81	65	69	5.4	E
Mean Daily Range	14	-	-	-	-
97.5% Occurrence	23	22	15	3.2	NNE
99.0% Occurrence	18	18	12	2.7	NNE
99.6% Occurrence	11	11	9	1.9	NNE
Median of Extreme Lows	7	7	7	0.8	SSW
		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	74	87	105	4.7	VARIABLE
0.4% Occurrence	70	82	90	4.7	VARIABLE
1.0% Occurrence	68	80	83	4.9	VARIABLE
2.0% Occurrence	66	77	78	5.0	VARIABLE
		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	110	82	0.70	3.8	NNE
0.4% Occurrence	93	76	0.61	4.2	WSW
1.0% Occurrence	88	73	0.57	4.6	SW
2.0% Occurrence	83	71	0.54	5.1	SW
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	4	221	7	157

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	0.1 + 0.2
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 (#)**
52.7	N/A	N/A	33

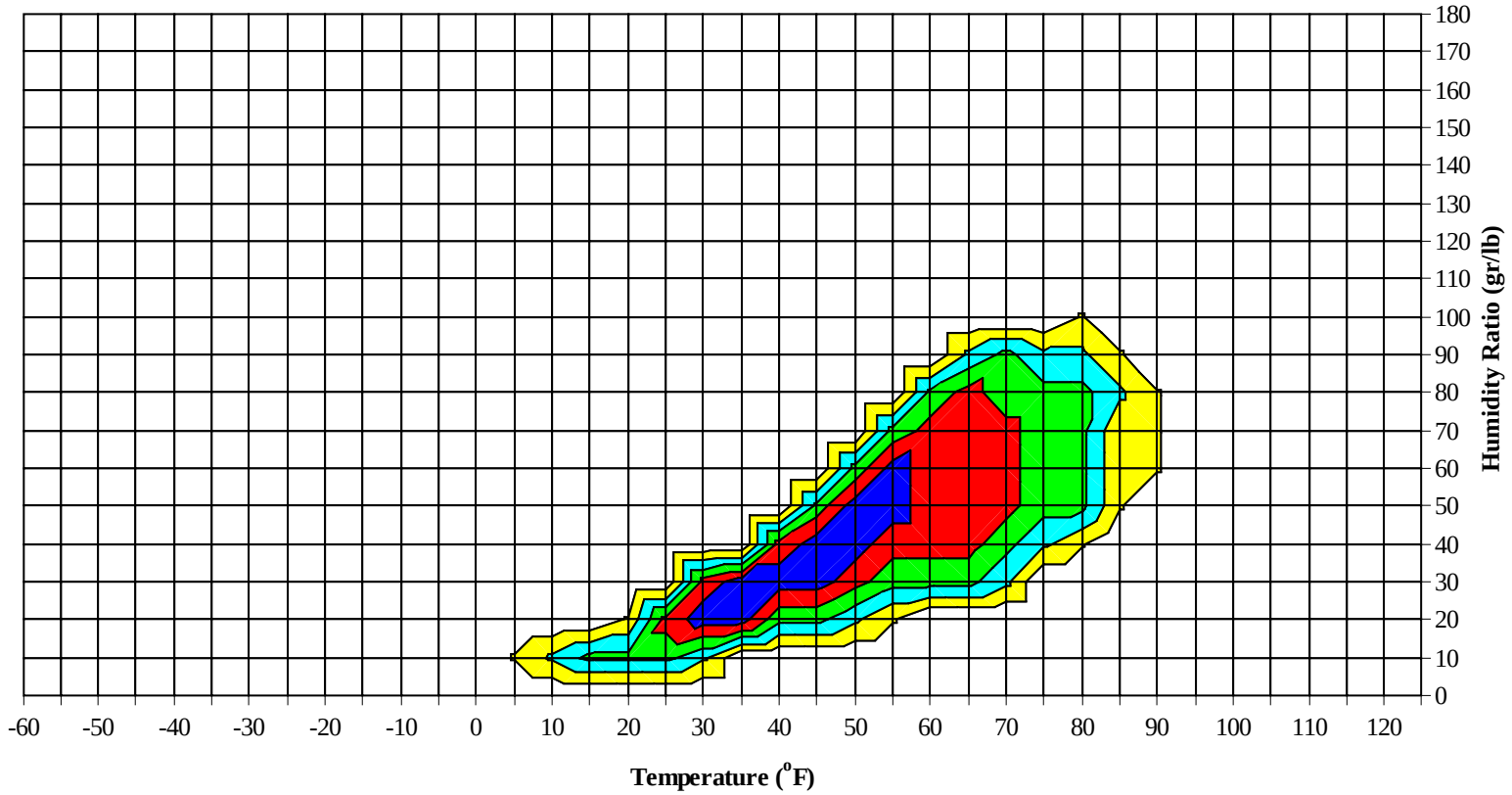
*Note: Temperatures at greater depths can be estimated by adding 1.5°F per 100 feet additional depth.

KITZINGEN AAF, GERMANY WMO No. 106590



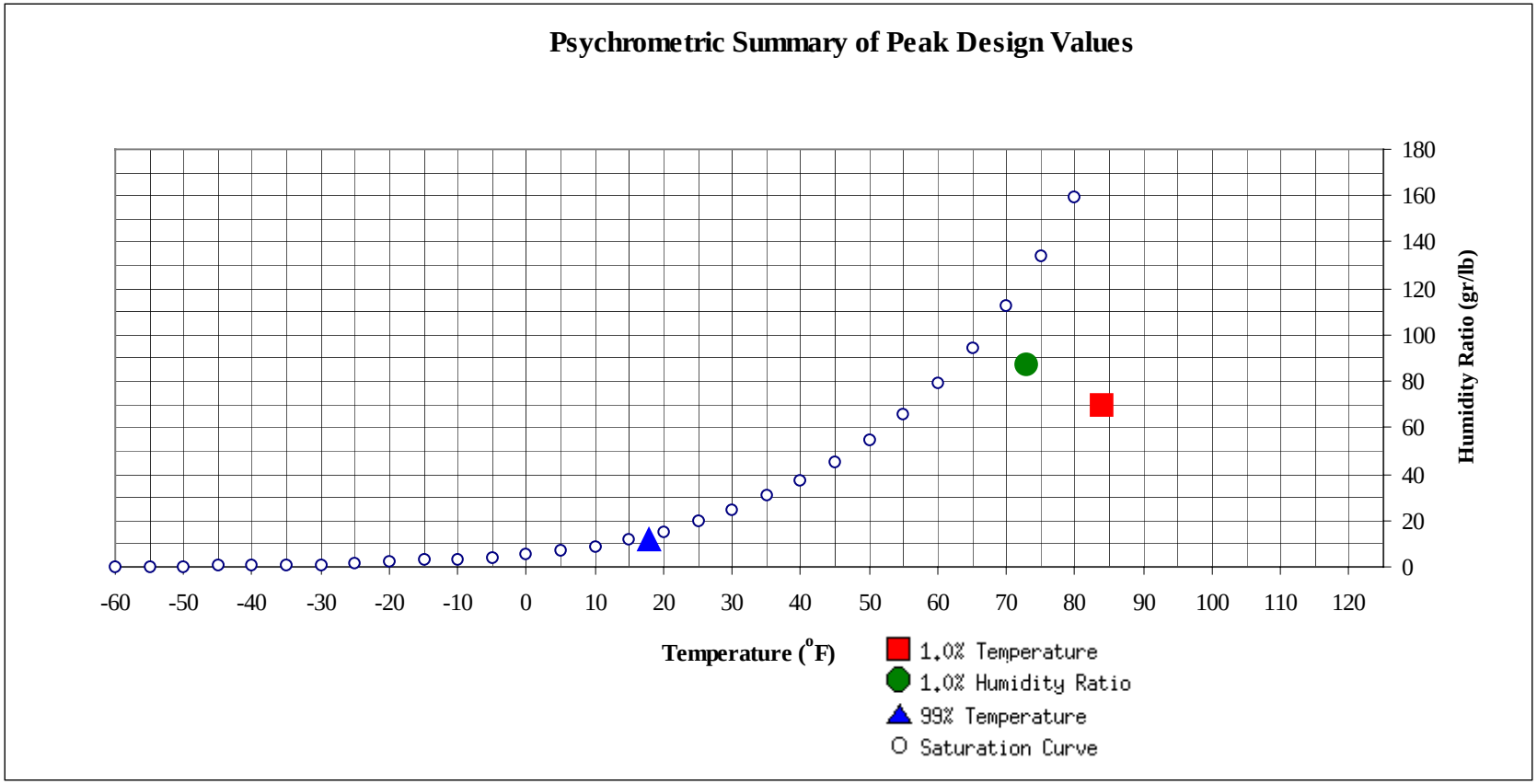
KITZINGEN AAF, GERMANY WMO No. 106590

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

KITZINGEN AAF, GERMANY WMO No. 106590



	(°F)	MCHR (gr/lb)	Enthalpy (btu/lb)
99% Dry Bulb	18	11.8	6.1

	(gr/lb)	MCDB (°F)	MCWB (°F)	MC Dewpt (°F)	Enthalpy (btu/lb)
1.0% Humidity Ratio	87.5	73	66.2	62.6	31.2

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	84	69.4	66.4	31.0

KITZINGEN AAF, GERMANY WMO No. 106590

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

Period of Record = 1965 to 1994

Temperature Range (°F)	January Hour Group (LST) 01 To 08	January 09 To 16	January 17 To 00	January Total Obs	January MCWB (°F)	February Hour Group (LST) 01 To 08	February 09 To 16	February 17 To 00	February Total Obs	February MCWB (°F)	March Hour Group (LST) 01 To 08	March 09 To 16	March 17 To 00	March Total Obs	March MCWB (°F)
95 / 99															
90 / 94															
85 / 89															
80 / 84															
75 / 79															
70 / 74												1	1	2	57.1
65 / 69												3	2	5	54.1
60 / 64		0		0	53.7		1	0	1	51.5		10	6	16	52.2
55 / 59		1	0	1	50.3	0	3	1	4	48.5	1	20	16	37	49.6
50 / 54	1	7	5	14	47.6	3	11	7	20	46.0	8	38	31	78	46.3
45 / 49	13	26	21	60	43.6	13	28	23	65	42.9	34	58	57	148	42.3
40 / 44	25	31	31	87	39.6	23	33	31	87	39.3	44	49	49	142	38.9
35 / 39	63	71	64	198	35.6	56	63	67	186	35.2	66	48	54	168	35.2
30 / 34	72	54	65	192	31.3	57	49	56	162	30.8	59	17	25	102	30.7
25 / 29	31	28	29	89	26.1	43	26	26	95	25.6	26	4	6	36	26.0
20 / 24	14	11	12	37	21.1	13	5	6	24	21.1	5	1	1	7	21.3
15 / 19	13	9	9	31	17.1	9	3	4	16	16.8	4	0	0	4	17.7
10 / 14	7	6	5	17	12.0	3	2	2	6	11.3	0	0		0	12.6
5 / 9	4	3	4	11	6.6	3	1	1	4	6.5		0		0	9.0
0 / 4	3	1	1	4	1.5	1	0	0	1	1.6					
-5 / -1	1	1	1	3	-2.9	0	0		0	-3.1					
-10 / -6	0	0	0	0	-7.3	0			0	-7.3					

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.

KITZINGEN AAF, GERMANY WMO No. 106590

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

Period of Record = 1965 to 1994

Temperature Range (°F)	April Hour Group (LST) 01 To 08	April 09 To 16	April 17 To 00	April Total Obs	April MCWB (°F)	May Hour Group (LST) 01 To 08	May 09 To 16	May 17 To 00	May Total Obs	May MCWB (°F)	June Hour Group (LST) 01 To 08	June 09 To 16	June 17 To 00	June Total Obs	June MCWB (°F)
95 / 99												0		0	66.0
90 / 94							0	0	0	71.0		2	1	3	68.0
85 / 89							2	1	3	66.8		6	4	10	68.0
80 / 84		1	0	1	60.4		6	4	11	63.3		17	11	27	65.4
75 / 79		2	2	5	57.9		19	14	32	60.6	0	33	25	58	63.1
70 / 74		10	6	16	55.4	0	29	23	52	58.0	4	43	34	80	61.0
65 / 69	0	13	9	22	53.4	2	32	24	58	56.0	14	34	36	83	59.2
60 / 64	1	27	21	49	51.2	14	51	46	110	53.9	50	51	57	158	56.6
55 / 59	6	37	33	76	48.8	44	52	52	148	51.4	80	39	43	163	53.3
50 / 54	33	50	52	134	46.4	76	37	51	165	48.4	60	14	25	100	49.7
45 / 49	49	53	52	154	42.4	69	16	27	112	44.3	25	2	4	31	45.5
40 / 44	53	30	33	116	39.1	26	4	5	35	40.2	5		0	5	41.5
35 / 39	63	16	26	105	35.7	14	1	1	15	36.8	1			1	37.1
30 / 34	31	2	4	37	31.1	2			2	32.3					
25 / 29	5	0	0	5	26.5										
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															

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.

KITZINGEN AAF, GERMANY WMO No. 106590

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

Period of Record = 1965 to 1994

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		1	0	1	69.5		0	0	0	70.0					
90 / 94		4	3	7	68.9		3	2	5	68.3		0	0	0	65.7
85 / 89		11	8	19	67.4		7	4	11	67.7		1	0	1	65.3
80 / 84		26	18	45	66.0		24	15	40	66.0		6	3	9	66.5
75 / 79	0	35	31	66	64.0	0	41	30	71	63.5		16	8	24	63.9
70 / 74	8	50	41	99	61.6	4	52	45	101	61.7		34	20	54	61.3
65 / 69	25	38	39	102	60.0	15	42	43	100	60.1	4	35	31	69	59.2
60 / 64	68	51	60	179	57.5	73	50	60	184	57.9	25	62	56	142	56.7
55 / 59	91	30	38	158	54.2	86	24	38	149	54.5	65	56	64	185	53.6
50 / 54	48	2	9	60	50.8	56	3	9	69	50.8	78	26	45	148	50.1
45 / 49	9		0	9	46.3	13	0	1	14	46.1	48	5	12	64	45.8
40 / 44	0			0	42.5	1			1	42.4	16	1	1	18	41.7
35 / 39						0			0	39.0	5	0		5	38.0
30 / 34															
25 / 29															
20 / 24															
15 / 19															
10 / 14															
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															

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.

KITZINGEN AAF, GERMANY WMO No. 106590

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

Period of Record = 1965 to 1994

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		1	0	1	65.2										
75 / 79		2	0	2	62.6										
70 / 74		7	2	9	60.5										
65 / 69		11	5	15	58.9										
60 / 64	4	35	21	61	56.3	0	2	1	3	54.5					
55 / 59	25	55	49	129	53.0	4	11	7	22	51.5	1	2	1	5	51.0
50 / 54	52	60	62	174	49.0	12	31	18	60	47.6	7	12	7	26	47.9
45 / 49	57	49	59	164	44.3	33	54	49	136	43.7	16	29	21	66	43.8
40 / 44	53	16	34	103	40.7	49	45	54	147	40.1	21	34	30	85	39.7
35 / 39	36	10	13	59	36.8	64	55	59	178	36.0	65	76	70	211	35.6
30 / 34	18	3	3	24	31.8	50	32	40	121	31.4	71	55	63	189	31.3
25 / 29	3	0	0	3	27.9	21	9	12	42	26.5	36	25	35	96	25.8
20 / 24						5	2	2	9	21.3	13	7	12	32	21.2
15 / 19						3	0	0	3	17.6	11	5	6	21	17.2
10 / 14						0	0		0	13.3	5	2	1	8	12.3
5 / 9							0		0	8.0	1	1	1	3	6.8
0 / 4											1	0	1	2	1.3
-5 / -1											0		0	0	-3.0
-10 / -6											0			0	-6.0

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.

KITZINGEN AAF, GERMANY WMO No. 106590

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

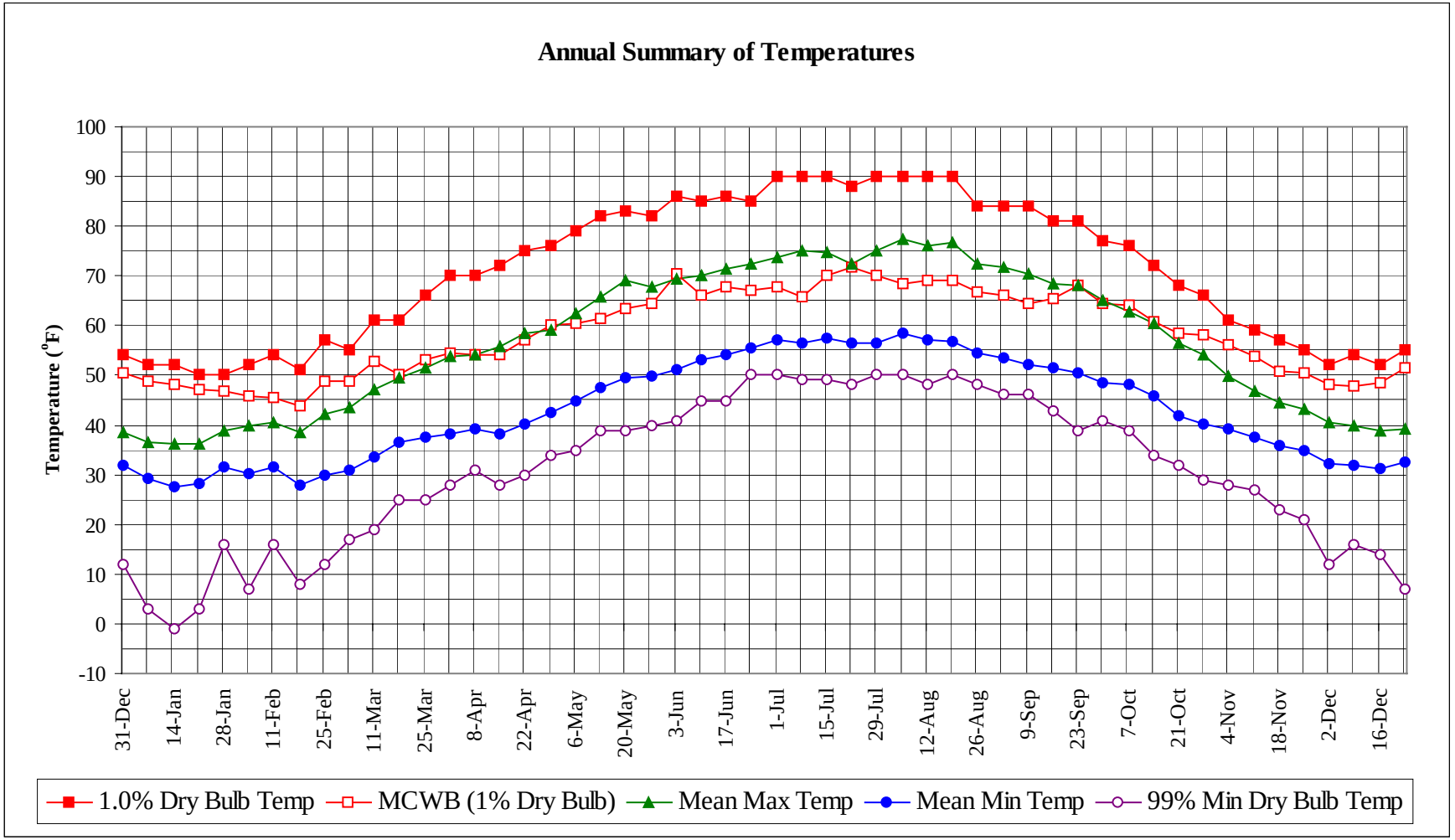
Period of Record = 1965 to 1994

Annual Totals

Temperature Range (°F)	Hour Group (LST) 01 To 08	09 To 16	17 To 00	Total Obs	MCWB (°F)
95 / 99		1	0	1	69.4
90 / 94		10	7	17	68.5
85 / 89		25	17	42	67.5
80 / 84		82	53	135	65.6
75 / 79	1	151	110	262	63.1
70 / 74	17	227	172	415	60.7
65 / 69	63	209	186	458	58.8
60 / 64	246	342	328	915	56.3
55 / 59	416	332	342	1090	52.7
50 / 54	443	291	325	1058	48.5
45 / 49	379	319	330	1027	43.6
40 / 44	312	242	273	826	39.7
35 / 39	424	335	354	1112	35.6
30 / 34	348	207	253	808	31.1
25 / 29	157	92	106	355	25.9
20 / 24	49	24	31	104	21.2
15 / 19	37	18	18	73	17.1
10 / 14	14	8	8	30	11.9
5 / 9	8	4	5	17	6.6
0 / 4	4	2	2	8	1.5
-5 / -1	3	1	1	4	-2.9
-10 / -6	1	0	0	1	-7.1

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.

KITZINGEN AAF, GERMANY WMO No. 106590



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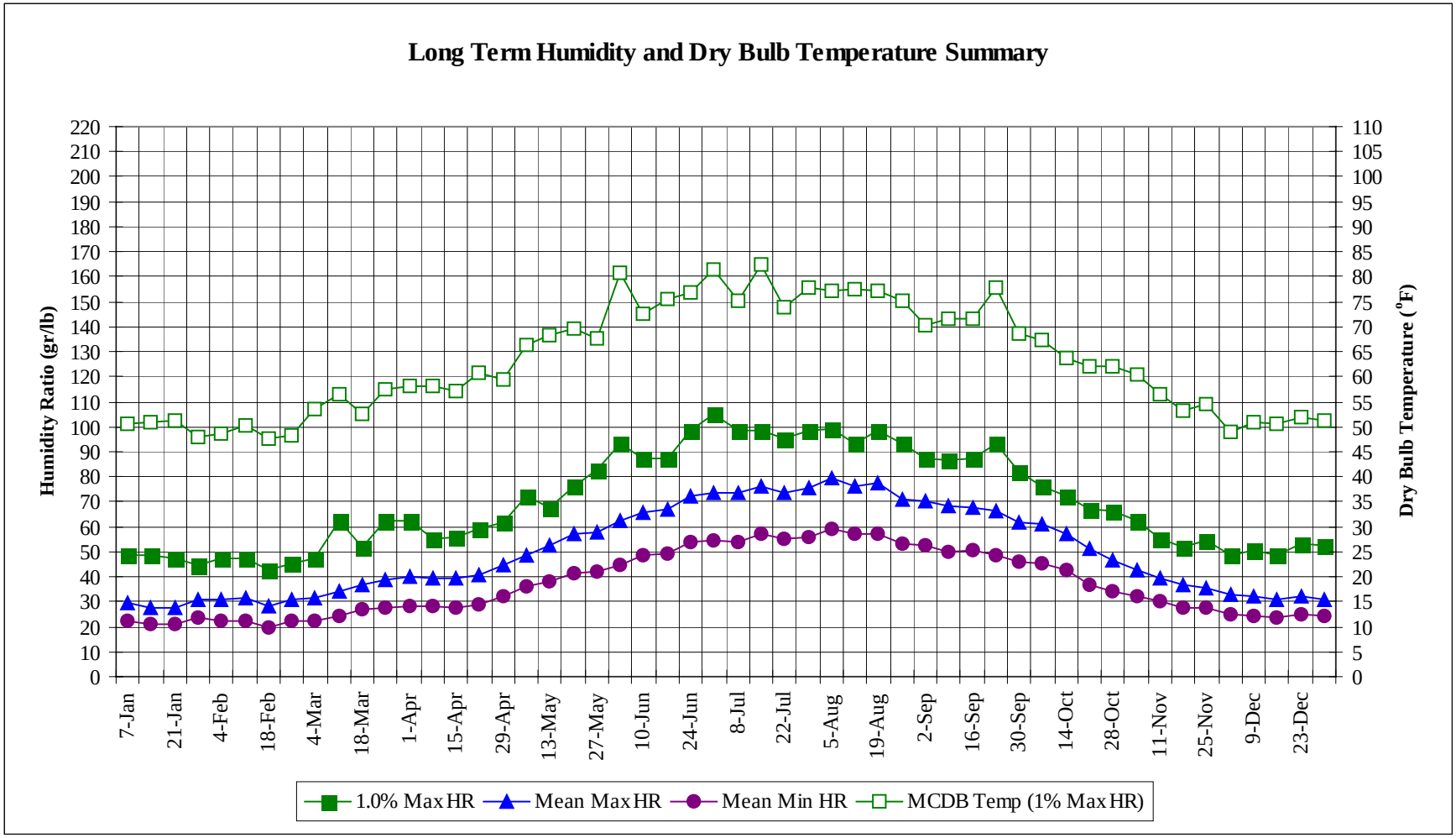
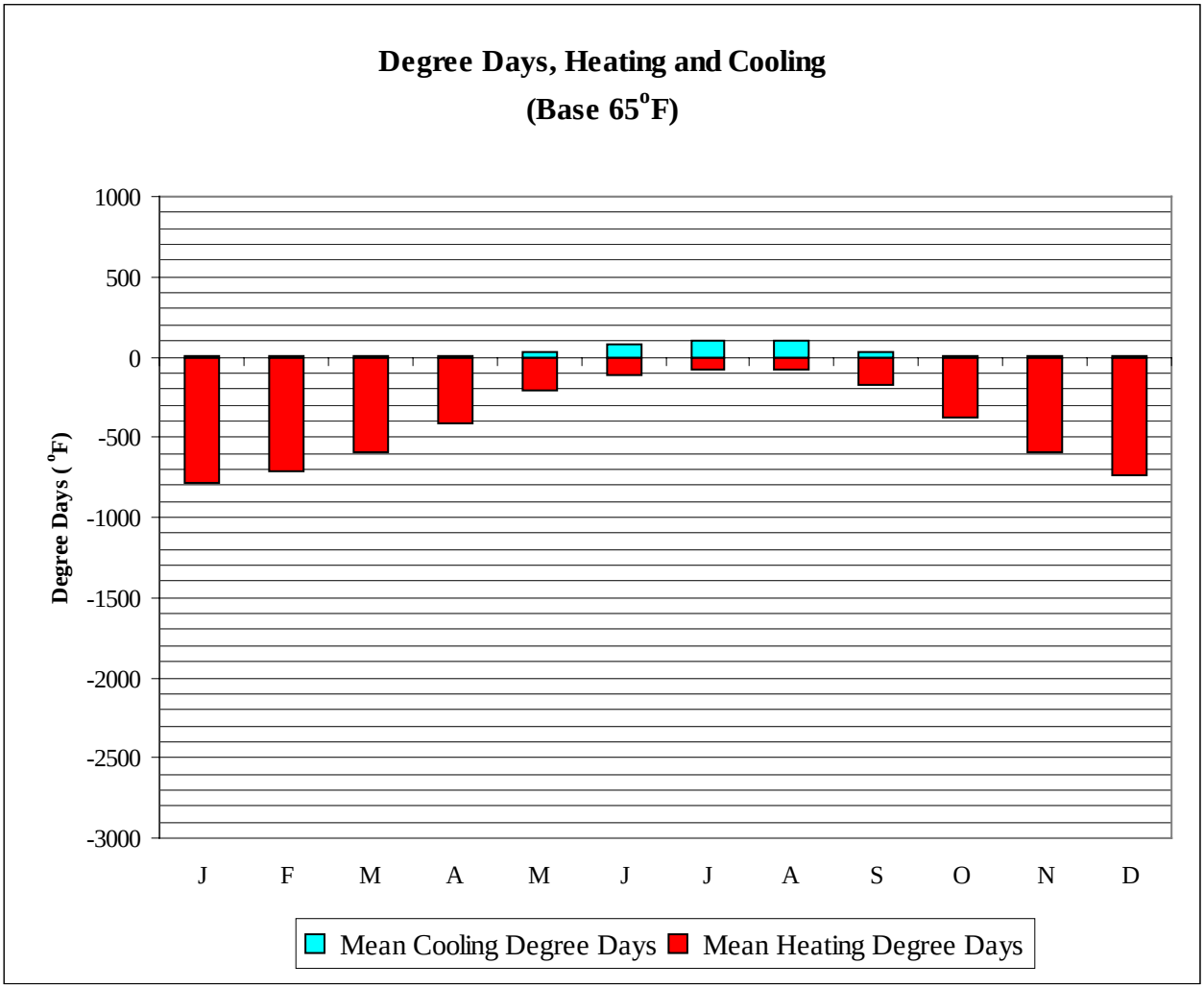


KITZINGEN AAF, GERMANY WMO No. 106590

Long Term Dry Bulb Temperature and Humidity Summary

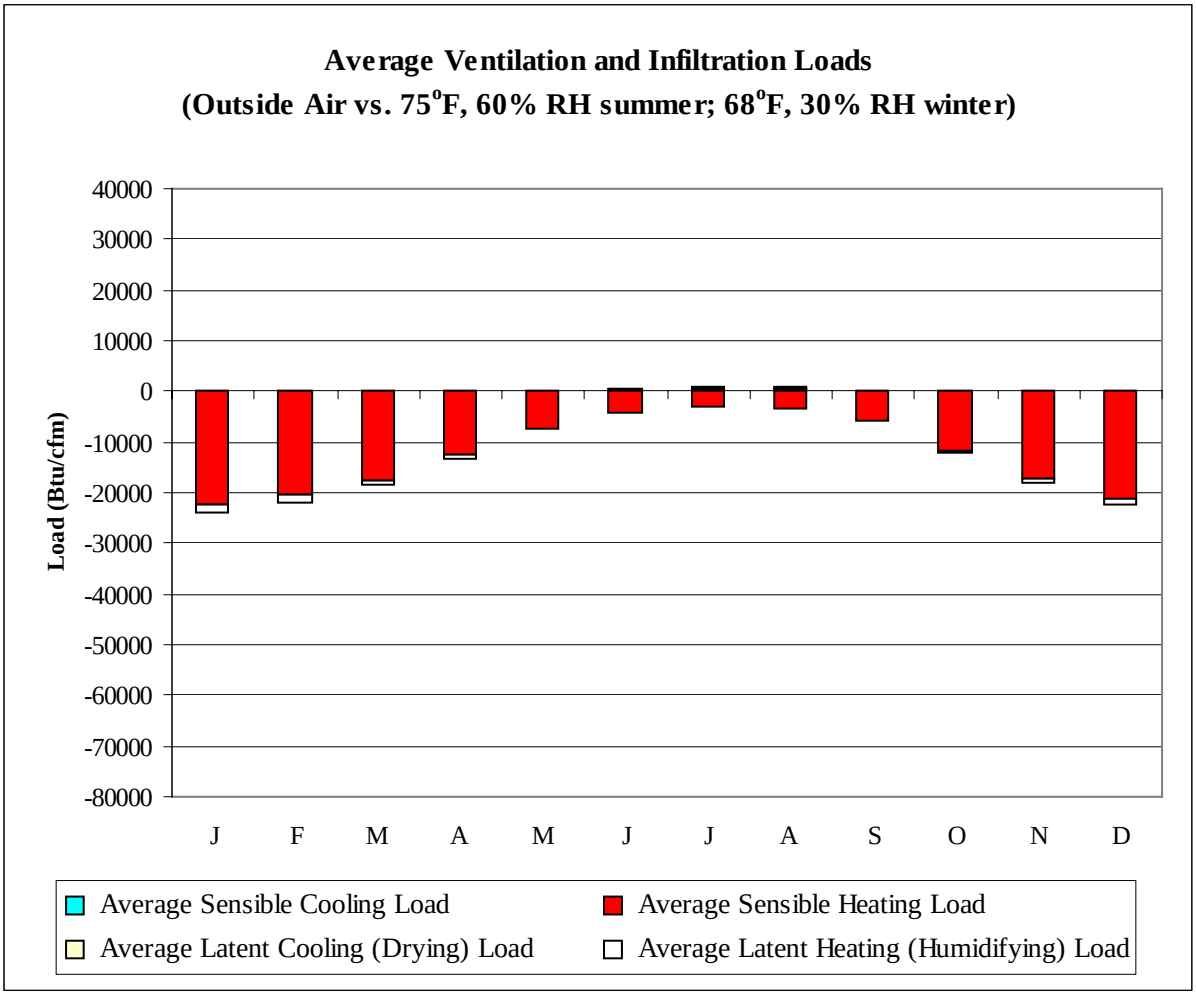
Week Ending	1.0% Temp (°F)	MCWB @ 1% Temp (°F)	Mean Max Temp (°F)	Mean Min Temp (°F)	99% Temp (°F)	1.0% HR (gr/lb)	MCDB @ 1% HR (°F)	Mean Max HR (gr/lb)	Mean Min HR (gr/lb)
7-Jan	52.0	48.9	36.6	29.2	3.0	48.3	50.6	29.4	22.2
14-Jan	52.0	48.0	36.1	27.5	-1.0	48.3	51.0	27.8	20.9
21-Jan	50.0	47.1	36.3	28.1	3.0	47.6	51.3	27.8	20.7
28-Jan	50.0	46.8	38.9	31.6	16.0	44.8	47.9	31.0	23.6
4-Feb	52.0	45.7	40.0	30.3	7.0	47.6	48.5	30.8	22.5
11-Feb	54.0	45.4	40.6	31.4	16.0	47.6	50.3	31.6	22.7
18-Feb	51.0	44.0	38.7	27.7	8.0	42.7	47.7	28.2	19.9
25-Feb	57.0	48.7	42.3	29.9	12.0	45.5	48.2	31.0	22.0
4-Mar	55.0	48.9	43.7	30.8	17.0	47.6	53.4	31.4	22.3
11-Mar	61.0	52.7	47.2	33.7	19.0	62.3	56.5	34.0	24.3
18-Mar	61.0	50.1	49.3	36.4	25.0	51.8	52.4	36.8	26.6
25-Mar	66.0	53.1	51.4	37.4	25.0	62.3	57.5	38.9	27.9
1-Apr	70.0	54.5	53.9	38.2	28.0	62.3	58.1	40.4	28.2
8-Apr	70.0	54.1	54.3	39.2	31.0	55.3	58.1	39.5	28.5
15-Apr	72.0	54.3	55.8	38.2	28.0	56.0	57.0	39.2	27.7
22-Apr	75.0	57.0	58.5	40.0	30.0	58.8	60.9	41.0	28.7
29-Apr	76.0	60.0	59.2	42.5	34.0	61.6	59.4	44.4	32.4
6-May	79.0	60.5	62.6	44.9	35.0	72.1	66.3	48.8	35.8
13-May	82.0	61.5	65.7	47.4	39.0	67.9	68.1	52.5	38.2
20-May	83.0	63.5	69.0	49.3	39.0	76.3	69.8	57.2	41.6
27-May	82.0	64.4	67.6	49.7	40.0	82.6	67.5	57.8	41.7
3-Jun	86.0	70.3	69.4	51.2	41.0	93.1	80.7	62.3	44.9
10-Jun	85.0	66.0	70.2	53.2	45.0	87.5	72.6	65.9	48.4
17-Jun	86.0	67.9	71.6	54.1	45.0	87.5	75.6	67.3	49.5
24-Jun	85.0	67.1	72.3	55.5	50.0	98.7	76.7	71.9	53.5
1-Jul	90.0	67.8	73.7	57.0	50.0	105.0	81.5	73.8	54.2
8-Jul	90.0	65.8	75.0	56.6	49.0	98.7	75.3	73.7	54.2
15-Jul	90.0	70.1	74.8	57.4	49.0	98.7	82.5	76.0	56.8
22-Jul	88.0	71.9	72.5	56.5	48.0	95.2	74.0	73.8	55.0
29-Jul	90.0	70.1	75.1	56.5	50.0	98.7	77.7	75.3	55.9
5-Aug	90.0	68.4	77.3	58.6	50.0	99.4	77.3	79.5	59.1
12-Aug	90.0	69.0	76.2	57.2	48.0	93.1	77.4	76.4	57.4
19-Aug	90.0	69.2	76.7	57.0	50.0	98.7	77.2	77.3	57.5
26-Aug	84.0	66.9	72.3	54.4	48.0	93.1	75.2	70.9	53.3
2-Sep	84.0	66.0	71.7	53.5	46.0	87.5	70.2	70.5	52.9
9-Sep	84.0	64.5	70.3	52.3	46.0	86.8	71.7	68.3	50.1
16-Sep	81.0	65.6	68.5	51.4	43.0	87.5	71.6	67.5	50.4
23-Sep	81.0	68.0	68.1	50.5	39.0	93.1	77.8	66.2	48.6
30-Sep	77.0	64.4	65.3	48.3	41.0	81.9	68.6	61.8	46.1
7-Oct	76.0	64.0	62.8	48.2	39.0	76.3	67.5	60.8	45.3
14-Oct	72.0	61.0	60.4	45.7	34.0	72.1	63.9	57.0	42.6
21-Oct	68.0	58.6	56.5	41.7	32.0	67.2	62.2	51.0	36.6
28-Oct	66.0	58.3	54.2	40.1	29.0	66.5	61.9	46.3	34.1
4-Nov	61.0	56.0	49.8	39.2	28.0	62.3	60.4	42.7	32.4
11-Nov	59.0	53.8	46.9	37.4	27.0	55.3	56.4	39.3	30.2
18-Nov	57.0	50.7	44.6	35.8	23.0	51.8	53.0	36.6	27.7
25-Nov	55.0	50.6	43.3	35.0	21.0	54.6	54.5	35.5	27.3
2-Dec	52.0	48.1	40.5	32.2	12.0	48.3	48.8	32.7	24.7
9-Dec	54.0	47.7	40.0	32.0	16.0	50.4	51.0	31.9	24.3
16-Dec	52.0	48.5	38.8	31.1	14.0	48.3	50.7	31.2	23.4
23-Dec	55.0	51.4	39.0	32.4	7.0	53.2	52.0	32.0	24.9
31-Dec	54.0	50.5	38.5	31.7	12.0	52.5	51.3	30.8	24.1

KITZINGEN AAF, GERMANY WMO No. 106590



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	789
FEB	0	710
MAR	1	595
APR	7	413
MAY	35	214
JUN	76	114
JUL	102	76
AUG	96	82
SEP	30	168
OCT	4	382
NOV	0	590
DEC	0	735
ANN	350	4868

KITZINGEN AAF, GERMANY WMO No. 106590



	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	-22377	0	-1733
FEB	0	-20269	0	-1641
MAR	0	-17529	0	-1015
APR	11	-12606	0	-580
MAY	127	-7198	15	-96
JUN	416	-4242	136	-9
JUL	687	-3106	229	0
AUG	543	-3284	220	0
SEP	95	-5958	51	-3
OCT	5	-11901	1	-136
NOV	0	-17179	0	-655
DEC	0	-21023	0	-1339
ANN	1884	-146672	652	-7207

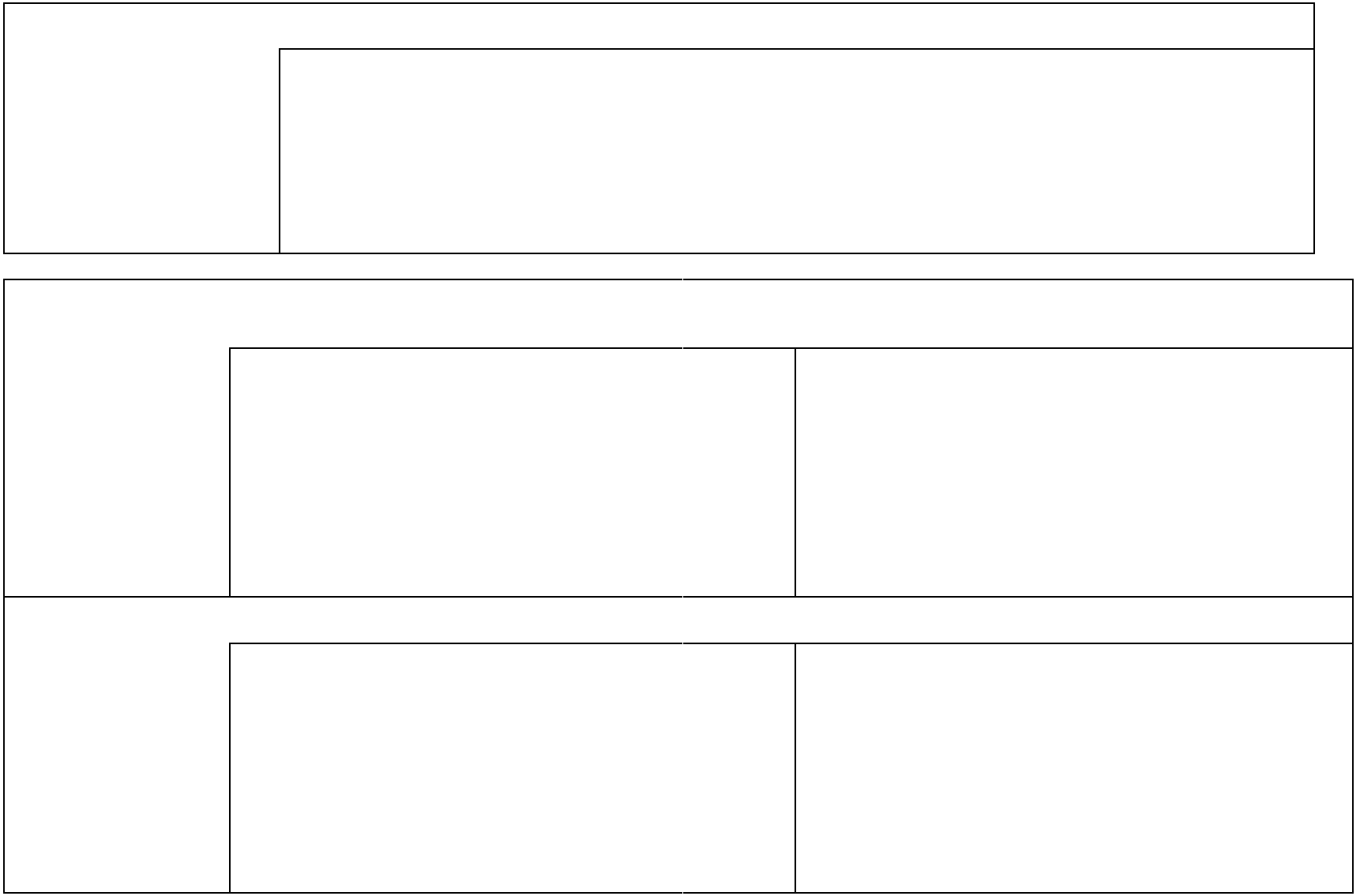
Average Annual Solar Radiation – Nearest Available Site

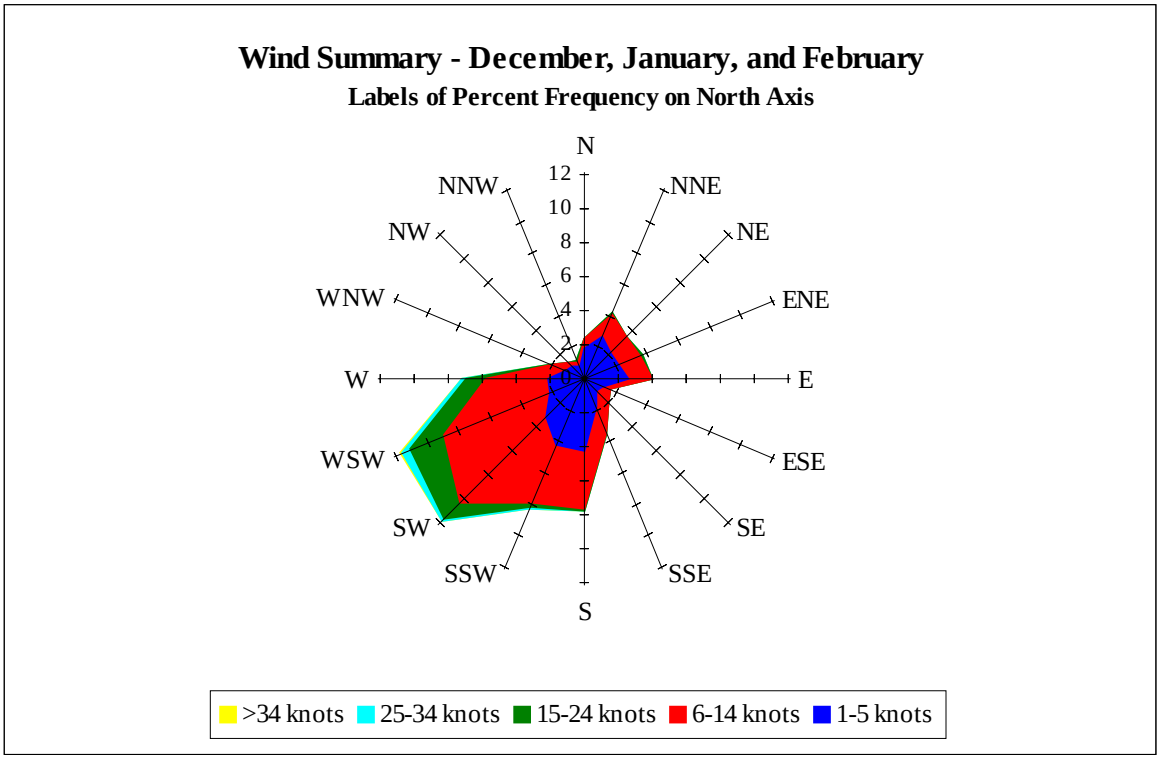
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

No Solar Radiation
Data Available

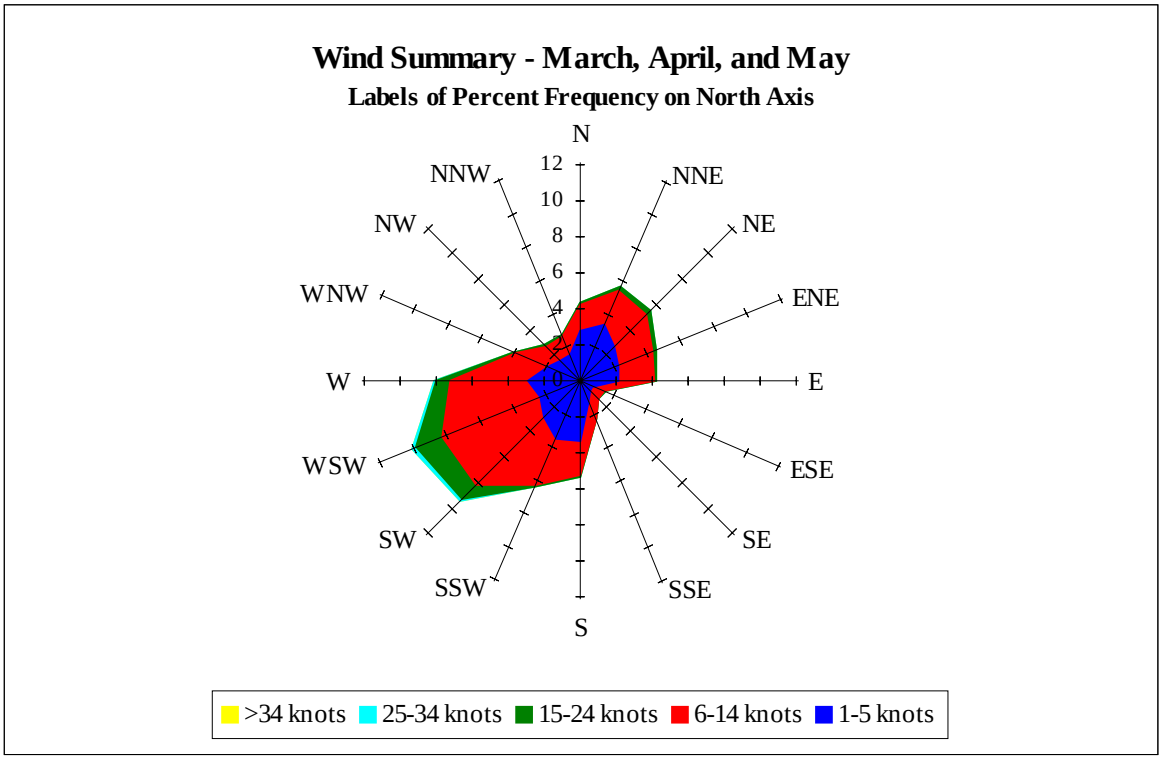
Average Annual Solar Heat and Illumination – Nearest Available Site

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

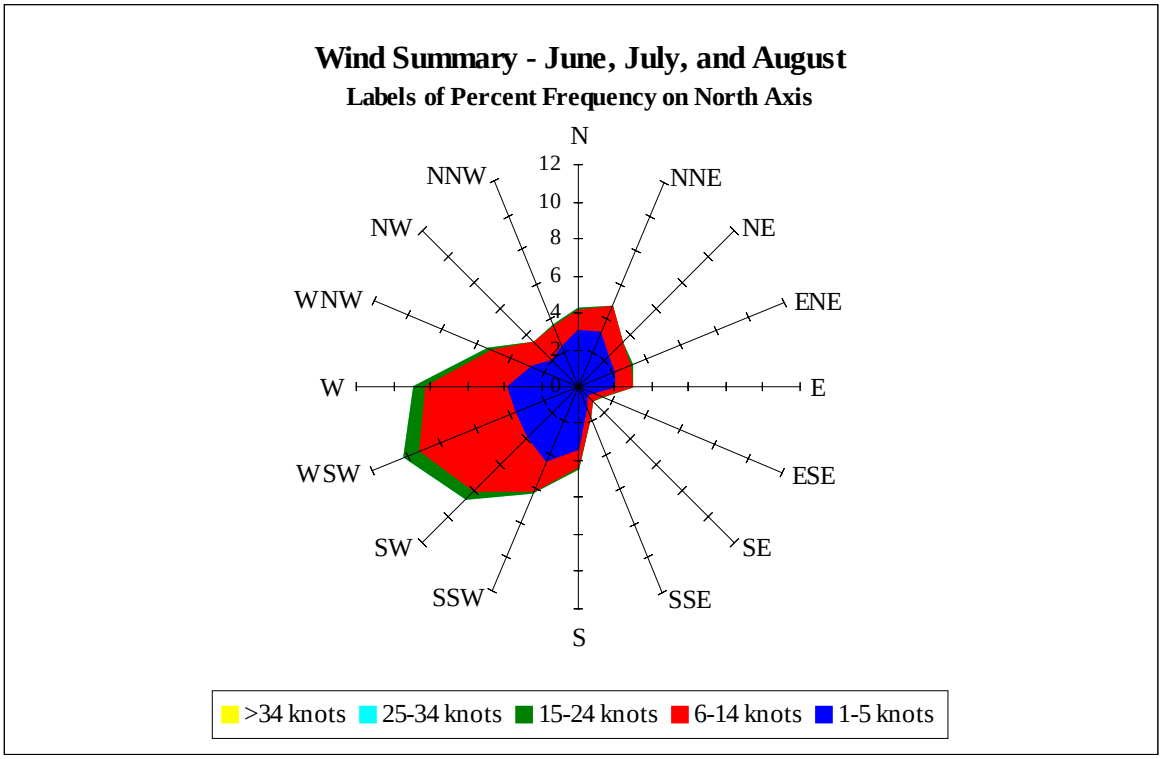




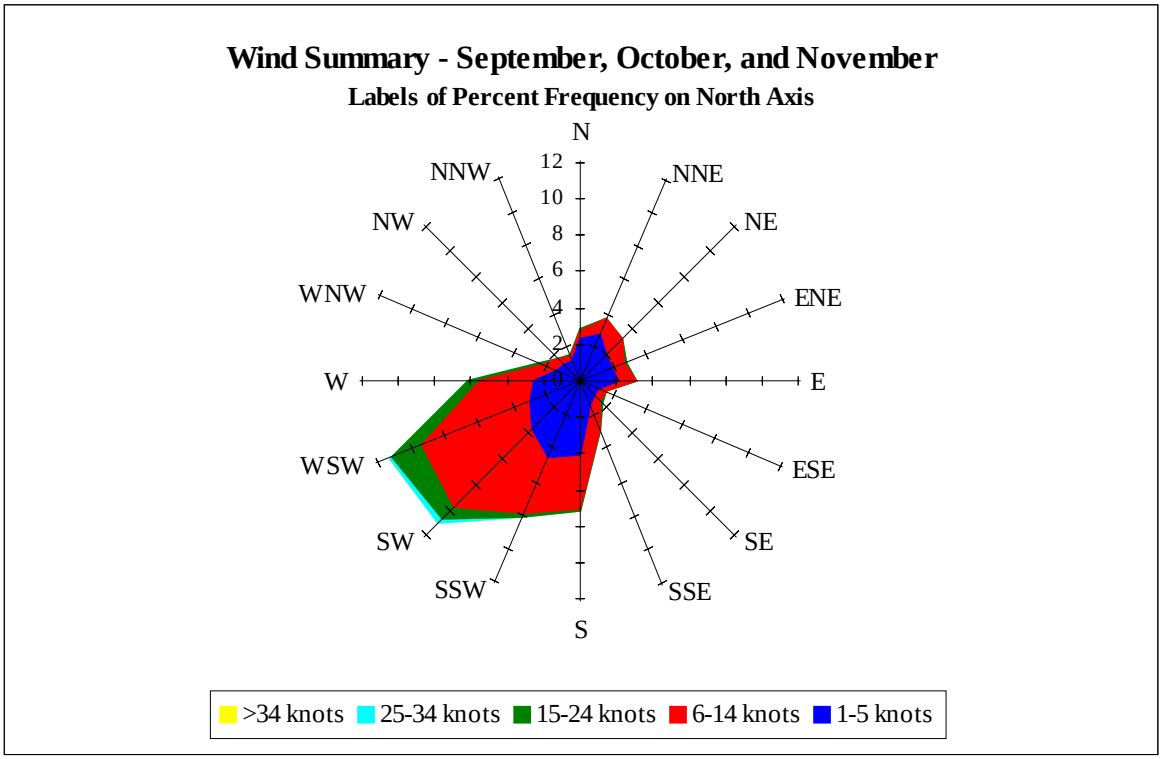
Percent Calm = 24.17



Percent Calm = 22.01



Percent Calm = 27.01



Percent Calm = 29.31