

GRISSOM AFB/PERU IN

Latitude = 40.65 N

WMO No. 725335

Longitude = 86.15 W

Elevation = 810 feet

Period of Record = 1967 to 1996

Average Pressure = 29.13 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	78	120	10.4	W
0.4% Occurrence	91	76	112	9.0	SW
1.0% Occurrence	89	75	110	9.0	SW
2.0% Occurrence	86	73	102	8.0	SW
Mean Daily Range	17	-	-	-	-
97.5% Occurrence	10	9	6	9.0	W
99.0% Occurrence	3	2	4	10.5	W
99.6% Occurrence	-3	-4	3	10.7	W
Median of Extreme Lows	-9	-10	2	11.7	W
	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	81	91	147	8.6	W
0.4% Occurrence	78	87	133	8.6	SW
1.0% Occurrence	77	86	129	8.2	SW
2.0% Occurrence	75	83	121	7.6	SSW
	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	154	86	1.00	10.0	SSW
0.4% Occurrence	139	86	0.90	7.3	SW
1.0% Occurrence	131	82	0.85	7.4	WSW
2.0% Occurrence	123	80	0.79	8.3	SSW
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		22	657	389	1307

Other Site Data

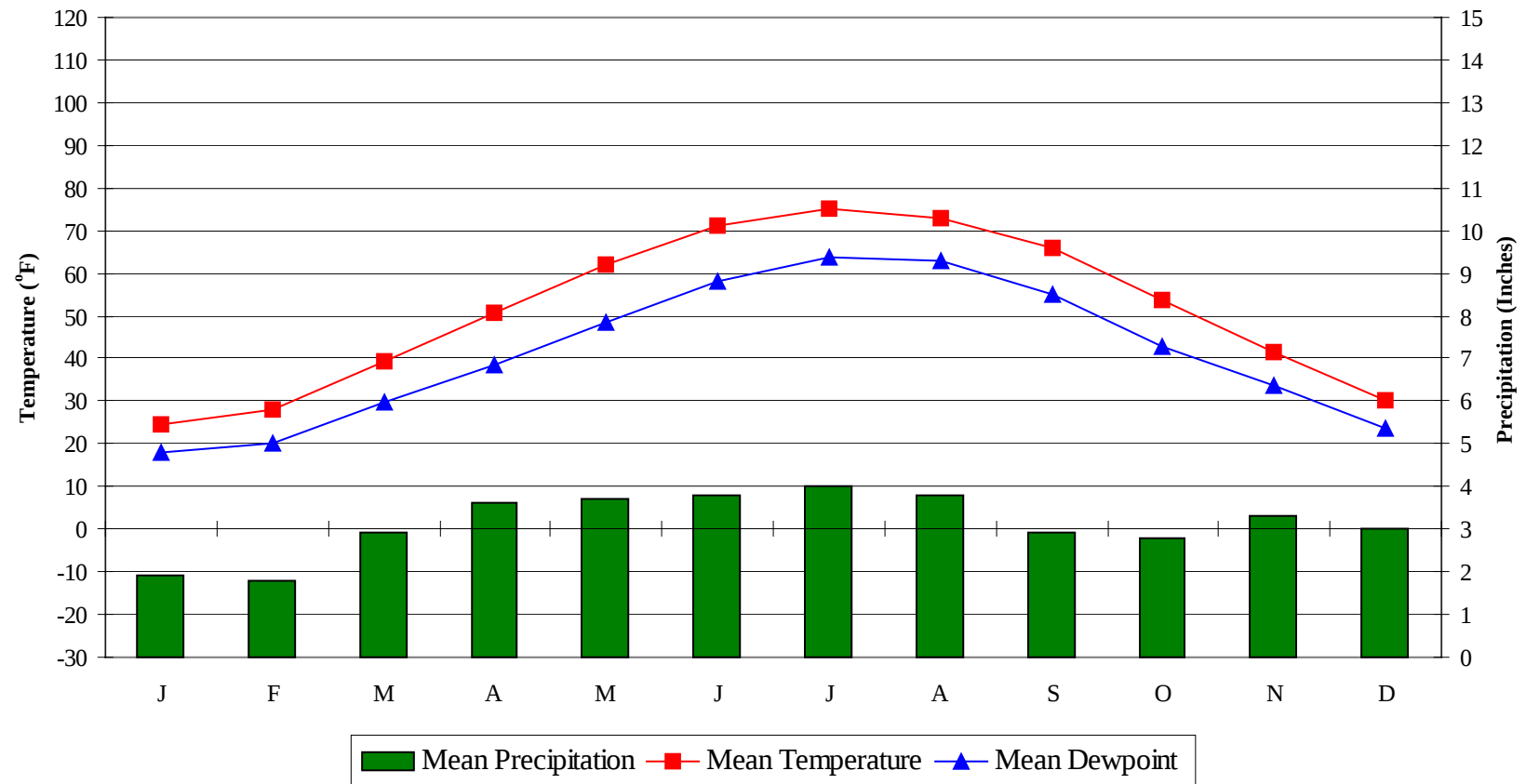
Weather Region	Rain Rate 100 Year Recurrence (in./hr)	Basic Wind Speed 3 sec gust @ 33 ft 50 Year Recurrence (mph)	Ventilation Cooling Load Index (Ton-hr/cfm/yr) Base 75°F-RH 60% Latent + Sensible
6	3.3	90	1.8 + 0.6
Ground Water Temperature (°F) 50 Foot Depth *	Frost Depth 50 Year Recurrence (in.)	Ground Snow Load 50 Year Recurrence (lb/ft ²)	Average Annual Freeze-Thaw Cycles (#)
53.8	49	20	49

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

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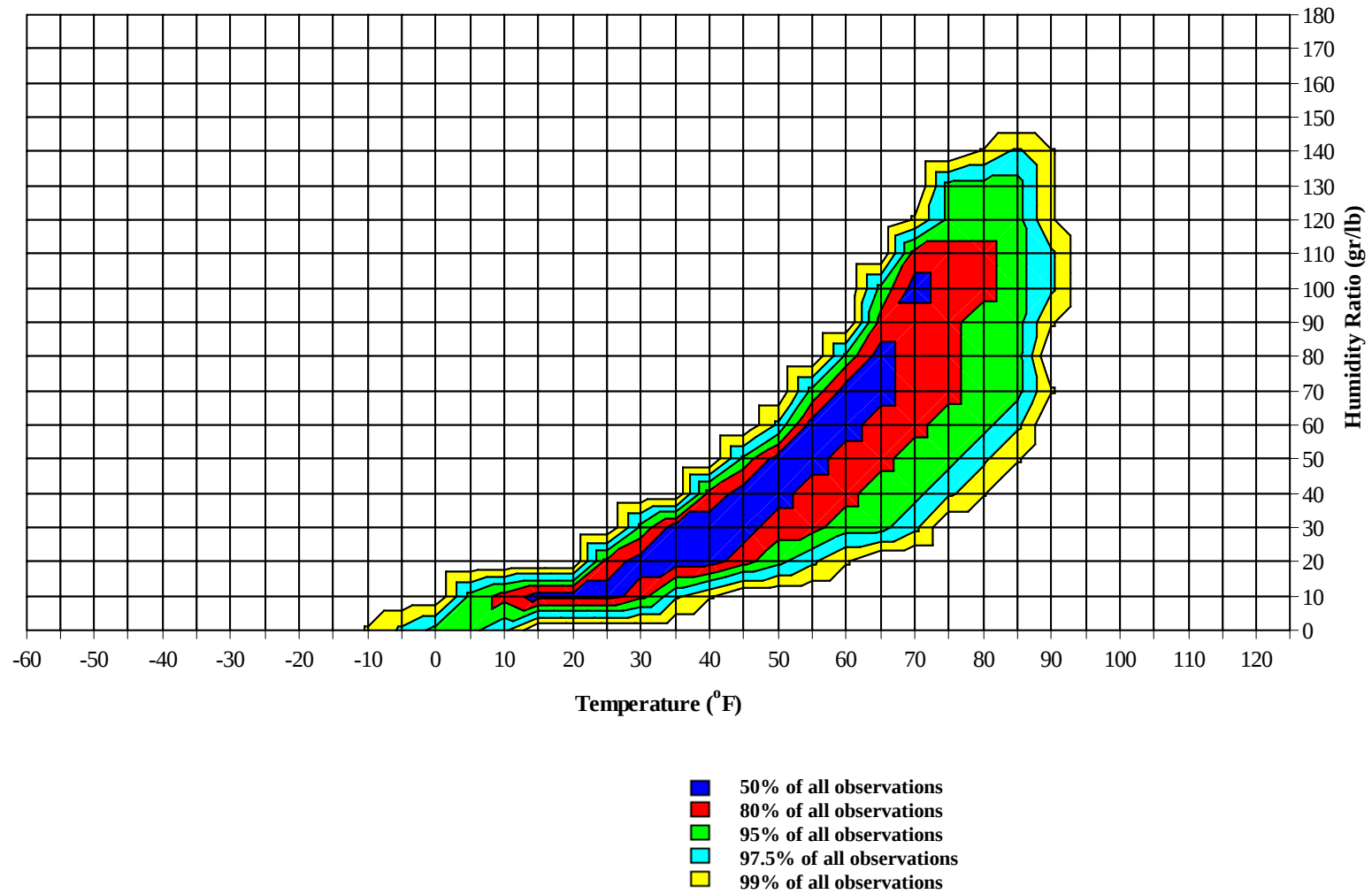
Average Annual Climate



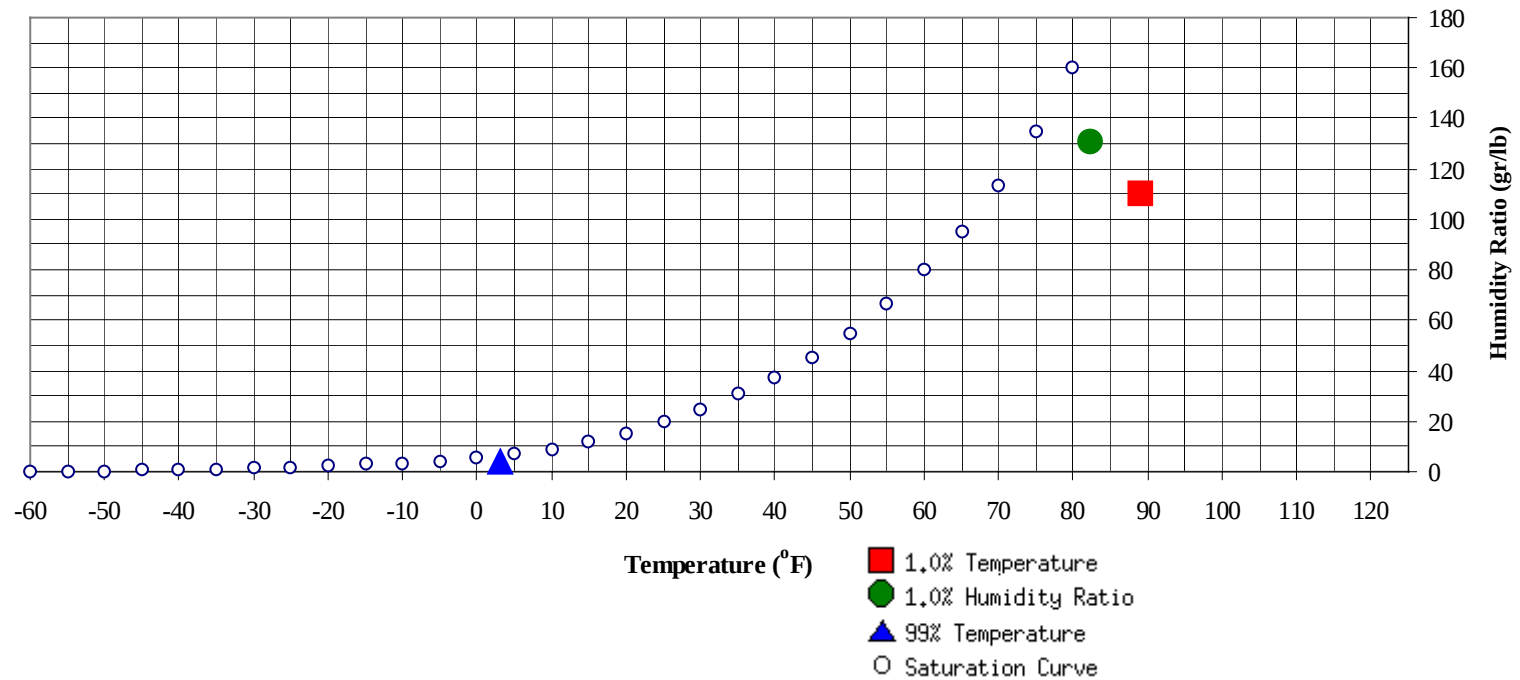
GRISSOM AFB/PERU IN

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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	3	4.2	1.4		130.9	82.3	76.2	74	40.3

	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
1.0% Dry Bulb	89	110.4	74.7	38.7

GRISSOM AFB/PERU IN WMO No. 725335
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		
100 / 104															
95 / 99															
90 / 94															
85 / 89															
80 / 84												0	0	0	61.3
75 / 79												1	1	2	61.4
70 / 74							0		0	60.0		6	2	8	59.0
65 / 69							1	0	1	55.7	1	9	6	16	57.2
60 / 64		1	0	1	56.0	0	2	1	3	52.8	5	12	10	27	54.5
55 / 59	1	2	1	4	53.5	1	4	2	7	50.5	8	16	16	40	50.6
50 / 54	2	4	3	9	48.7	2	7	5	14	46.7	12	21	22	55	46.4
45 / 49	4	7	6	17	43.7	6	11	11	28	43.1	20	29	27	76	42.2
40 / 44	8	13	13	34	39.3	10	22	18	50	38.4	27	38	37	102	38.0
35 / 39	23	34	30	87	34.2	28	36	37	101	34.0	46	46	47	139	33.7
30 / 34	48	45	49	141	29.9	41	39	41	121	29.5	57	33	41	130	29.4
25 / 29	39	38	39	116	24.9	38	34	39	111	24.8	35	22	24	81	24.7
20 / 24	31	33	34	98	20.2	29	25	26	80	20.0	19	10	11	39	19.9
15 / 19	26	25	26	77	15.6	22	17	17	55	15.4	10	4	4	18	15.5
10 / 14	22	17	19	57	10.6	15	14	13	42	10.5	5	1	2	8	10.8
5 / 9	19	13	12	43	5.9	14	7	8	29	5.8	2	0	0	2	6.4
0 / 4	10	8	8	26	1.3	9	4	5	18	1.3	1	0	0	1	0.6
-5 / -1	5	4	4	13	-3.2	4	1	2	7	-2.9	0			0	-2.8
-10 / -6	5	3	3	11	-7.5	2	1	1	4	-7.2					
-15 / -11	3	1	1	5	-12.0	1	0	0	1	-11.0					
-20 / -16	2	1	1	4	-16.5	0		0	0	-15.3					
-25 / -21	0	0		0	-20.9										

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.

GRISSOM AFB/PERU IN WMO No. 725335
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		
100 / 104												0	0	0	76.1
95 / 99												1	0	1	74.5
90 / 94							1	0	1	69.5		9	4	13	73.0
85 / 89		0	0	0	66.0		9	4	13	68.5	0	29	16	45	71.3
80 / 84		5	2	7	64.5		18	9	27	66.8	2	48	32	82	69.0
75 / 79		9	5	14	62.7	1	30	20	51	64.5	17	54	48	119	66.8
70 / 74	0	16	10	25	60.2	10	39	33	83	61.9	46	48	57	151	64.4
65 / 69	6	24	20	50	57.3	30	45	46	121	58.9	64	30	43	137	61.3
60 / 64	18	29	29	75	54.2	46	43	47	136	55.6	50	15	24	88	57.0
55 / 59	24	35	32	92	49.9	45	31	38	114	51.3	39	6	12	56	52.8
50 / 54	27	37	38	103	46.1	47	19	27	94	47.3	17	1	3	21	48.6
45 / 49	38	37	40	115	42.2	38	11	17	65	43.2	5	0	1	6	43.9
40 / 44	50	27	31	109	38.2	22	2	6	30	38.8	1			1	39.9
35 / 39	39	15	21	74	33.8	7	0	1	8	34.3	0			0	36.7
30 / 34	26	6	10	42	29.4	1			1	29.9					
25 / 29	10	1	2	13	25.0										
20 / 24	1	0	0	1	20.3										
15 / 19	0		0	0	14.8										
10 / 14	0			0	11.0										
5 / 9															
0 / 4															
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															

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GRISSOM AFB/PERU IN WMO No. 725335
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		
100 / 104		1	0	1	77.4		0	0	0	81.4					
95 / 99		4	2	6	77.4		2	0	2	80.4		0		0	75.7
90 / 94		17	8	24	76.3		9	3	12	77.9		3	1	4	75.4
85 / 89	0	42	24	65	73.8		31	14	45	74.9		13	4	17	72.5
80 / 84	6	65	48	120	71.1	2	63	39	104	71.5	0	32	14	46	69.5
75 / 79	32	62	65	159	69.2	23	65	59	147	69.1	6	44	30	80	67.1
70 / 74	79	38	58	175	66.9	59	50	68	177	66.6	28	46	47	121	64.9
65 / 69	68	15	31	113	63.1	73	21	41	135	62.9	40	44	46	130	60.8
60 / 64	43	4	11	58	58.6	53	7	19	78	58.7	44	32	42	119	56.6
55 / 59	16	1	2	19	54.0	26	1	5	32	54.3	49	18	31	98	52.9
50 / 54	3		0	3	49.7	11	0	1	11	49.8	39	7	17	62	48.5
45 / 49	1			1	46.4	2			2	45.3	22	2	6	30	44.3
40 / 44											9	0	2	11	39.9
35 / 39											2		0	2	35.9
30 / 34											0			0	32.1
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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GRISSOM AFB/PERU IN WMO No. 725335
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		
100 / 104															
95 / 99															
90 / 94															
85 / 89		0		0	66.4										
80 / 84		5	1	6	65.8										
75 / 79	0	14	4	18	63.5		0		0	61.7					
70 / 74	2	23	13	38	61.2		4	0	4	61.0					
65 / 69	11	30	23	64	59.1	1	7	4	12	59.6	0	0	0	0	62.2
60 / 64	24	40	34	98	55.5	7	15	13	35	57.2	2	3	1	6	57.8
55 / 59	28	42	42	112	51.1	15	19	15	49	52.6	2	5	5	12	53.8
50 / 54	40	42	45	127	47.0	18	28	22	67	47.4	5	8	6	19	48.5
45 / 49	47	29	41	118	42.9	24	37	34	95	43.0	6	10	8	24	43.2
40 / 44	41	16	27	84	38.7	40	40	42	121	38.8	14	24	17	55	39.1
35 / 39	34	6	13	52	34.4	41	43	45	128	33.8	36	49	44	130	34.4
30 / 34	17	1	4	22	30.3	48	30	38	116	29.6	59	58	65	182	30.0
25 / 29	4		1	5	25.7	28	13	20	60	25.2	42	37	40	118	25.1
20 / 24	0			0	20.9	13	4	5	21	20.5	30	21	23	74	20.2
15 / 19						4	1	2	7	15.9	19	14	16	48	15.6
10 / 14						2	1	1	4	11.1	15	8	11	33	10.8
5 / 9						0	0	0	0	7.0	8	5	6	19	6.0
0 / 4											4	4	4	12	1.4
-5 / -1											2	2	1	5	-3.5
-10 / -6											2	1	2	5	-7.7
-15 / -11											1	0	0	1	-12.6
-20 / -16											0	0	0	0	-16.1
-25 / -21															

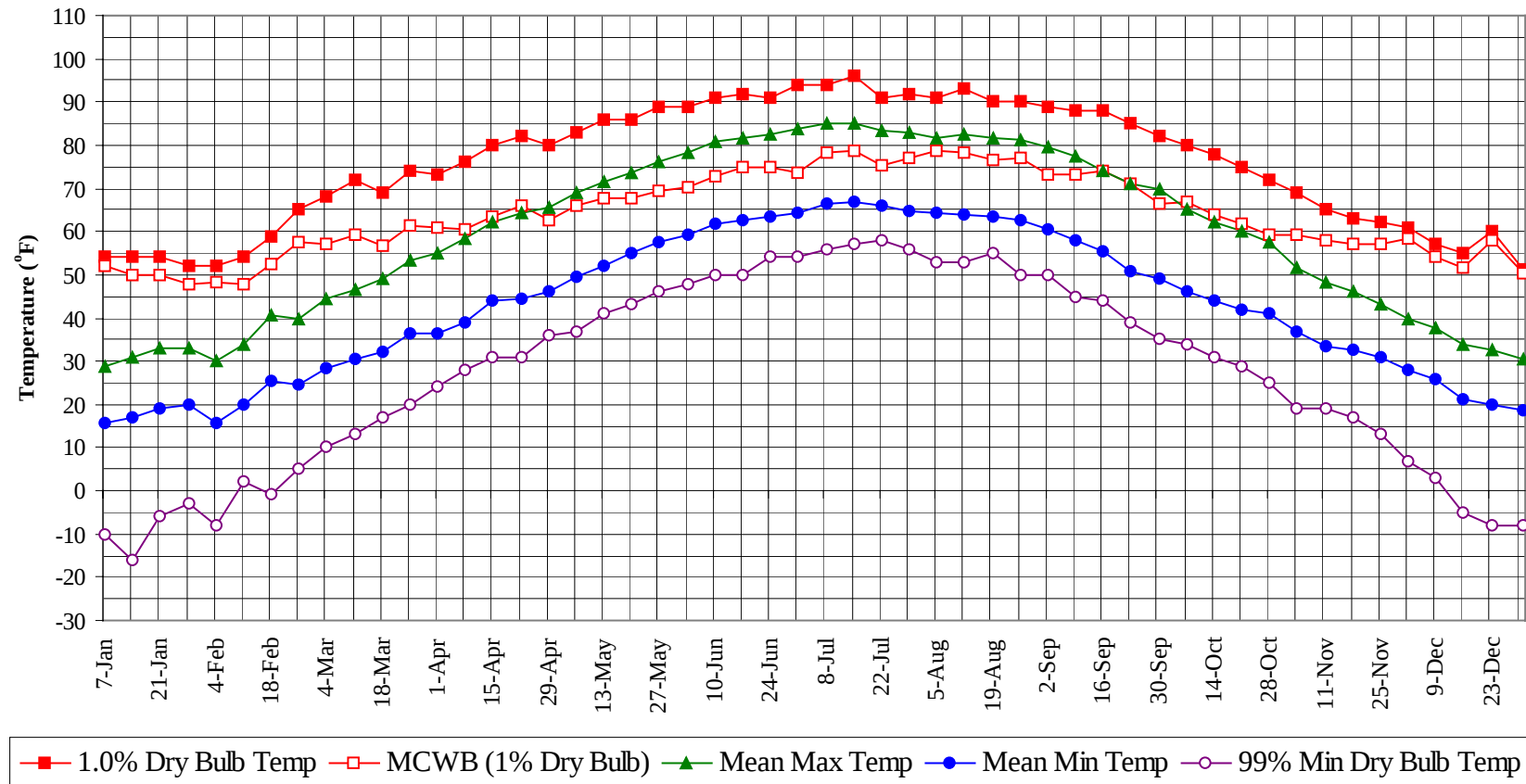
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GRISSOM AFB/PERU IN WMO No. 725335
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)
Period of Record = 1967 to 1996

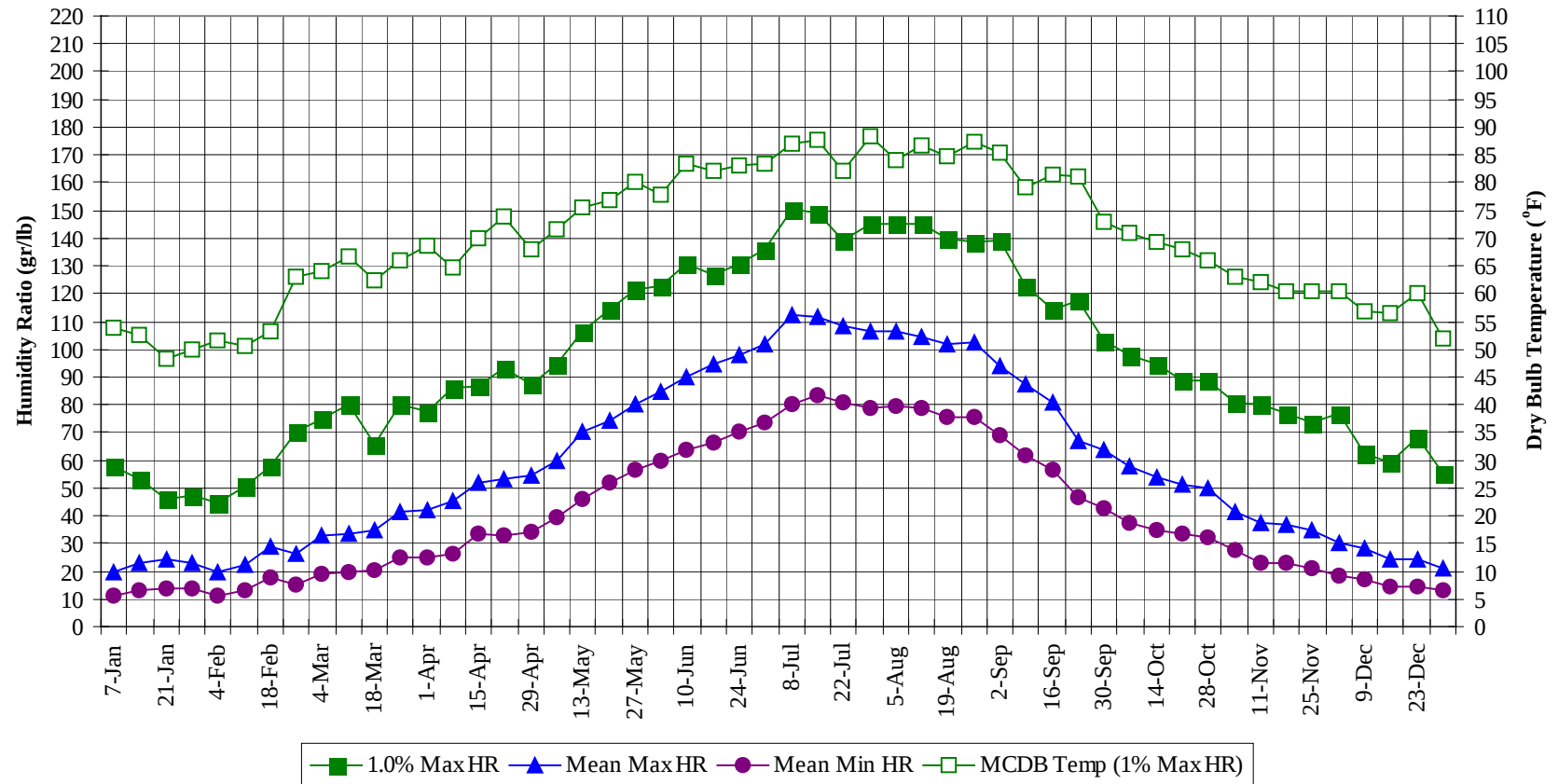
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
100 / 104		1	0	1	77.6
95 / 99		7	3	10	77.7
90 / 94		38	16	54	75.7
85 / 89	0	126	61	187	72.9
80 / 84	10	236	146	392	70.1
75 / 79	78	278	231	588	67.6
70 / 74	225	268	288	780	64.9
65 / 69	292	227	259	778	60.8
60 / 64	289	200	230	720	56.4
55 / 59	254	179	202	634	51.8
50 / 54	220	174	190	584	47.2
45 / 49	212	171	190	573	42.8
40 / 44	221	182	191	594	38.6
35 / 39	256	228	238	722	34.0
30 / 34	299	211	247	757	29.7
25 / 29	198	145	163	507	24.9
20 / 24	124	94	97	316	20.1
15 / 19	81	61	66	209	15.5
10 / 14	61	40	44	145	10.7
5 / 9	44	24	27	95	5.9
0 / 4	25	16	17	57	1.3
-5 / -1	13	7	7	26	-3.2
-10 / -6	9	4	5	18	-7.5
-15 / -11	5	2	2	9	-12.0
-20 / -16	2	1	1	4	-16.5
-25 / -21	0	0		0	-20.9

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Annual Summary of Temperatures



Long Term Humidity and Dry Bulb Temperature Summary



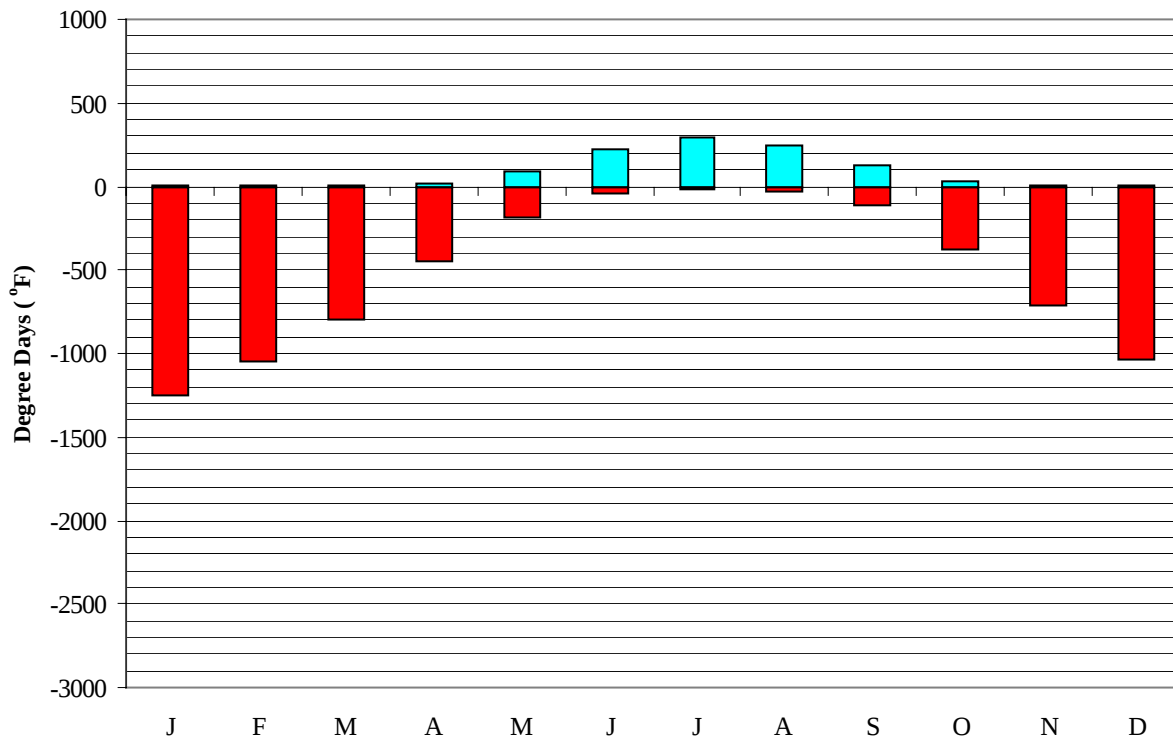
GRISSOM AFB/PERU IN WMO No. 725335
Long Term Dry Bulb Temperature and Humidity Summary

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	52.2	28.9	15.7	-10.0	58.1	53.8	19.8	11.0
14-Jan	54.0	50.1	31.1	16.9	-16.0	53.2	52.4	23.0	13.0
21-Jan	54.0	50.1	33.0	19.2	-6.0	46.2	48.3	24.2	13.6
28-Jan	52.0	47.9	33.0	20.0	-3.0	47.6	49.9	23.2	13.5
4-Feb	52.0	48.3	30.2	15.5	-8.0	44.8	51.7	19.6	11.2
11-Feb	54.0	47.9	33.9	19.9	2.0	50.4	50.5	22.6	13.2
18-Feb	59.0	52.3	40.5	25.6	-1.0	58.1	53.2	29.1	17.6
25-Feb	65.0	57.4	39.8	24.4	5.0	70.0	63.1	26.1	15.4
4-Mar	68.0	57.3	44.6	28.5	10.0	74.9	64.2	32.6	19.1
11-Mar	72.0	59.2	46.6	30.3	13.0	79.8	66.5	33.3	19.8
18-Mar	69.0	56.8	48.9	32.1	17.0	65.8	62.4	35.0	20.7
25-Mar	74.0	61.3	53.1	36.2	20.0	79.8	66.0	41.3	24.9
1-Apr	73.0	60.8	54.8	36.5	24.0	77.7	68.5	42.2	25.2
8-Apr	76.0	60.5	58.3	39.0	28.0	86.1	64.6	45.0	26.1
15-Apr	80.0	63.4	62.2	43.8	31.0	86.8	69.8	51.7	33.3
22-Apr	82.0	66.0	64.5	44.5	31.0	93.1	74.0	53.2	33.1
29-Apr	80.0	62.6	65.6	46.0	36.0	87.5	68.0	54.4	34.1
6-May	83.0	66.0	69.1	49.4	37.0	94.5	71.5	59.7	39.1
13-May	86.0	67.9	71.6	52.0	41.0	106.4	75.5	70.1	45.9
20-May	86.0	67.8	73.6	55.1	43.0	114.1	76.9	74.2	51.6
27-May	89.0	69.4	76.1	57.6	46.0	121.8	80.0	80.3	56.4
3-Jun	89.0	70.3	78.4	59.4	48.0	122.5	77.9	84.8	59.5
10-Jun	91.0	72.7	80.9	61.8	50.0	130.9	83.4	90.3	63.8
17-Jun	92.0	74.8	81.7	62.8	50.0	126.7	82.2	94.3	66.3
24-Jun	91.0	74.9	82.5	63.5	54.0	130.9	83.0	98.1	70.2
1-Jul	94.0	73.5	83.6	64.5	54.0	135.8	83.5	102.0	73.5
8-Jul	94.0	78.1	85.0	66.5	56.0	150.5	86.9	112.4	80.2
15-Jul	96.0	78.8	85.2	66.8	57.0	149.1	87.7	111.6	83.5
22-Jul	91.0	75.2	83.4	66.0	58.0	139.3	82.0	108.4	81.1
29-Jul	92.0	77.1	82.9	64.6	56.0	144.9	88.3	106.5	79.1
5-Aug	91.0	78.6	81.7	64.4	53.0	144.9	84.2	106.7	79.2
12-Aug	93.0	78.5	82.6	64.0	53.0	144.9	86.8	104.3	78.6
19-Aug	90.0	76.4	81.6	63.3	55.0	140.0	84.7	101.8	75.5
26-Aug	90.0	76.9	81.3	62.8	50.0	138.6	87.3	102.5	75.5
2-Sep	89.0	73.0	79.7	60.5	50.0	139.3	85.4	93.7	68.7
9-Sep	88.0	73.4	77.5	57.8	45.0	122.5	79.2	87.5	61.7
16-Sep	88.0	73.9	73.9	55.6	44.0	114.1	81.3	80.5	56.4
23-Sep	85.0	70.9	71.0	50.7	39.0	117.6	81.0	66.9	46.4
30-Sep	82.0	66.3	69.8	49.0	35.0	102.9	73.0	63.7	42.5
7-Oct	80.0	67.0	65.1	46.0	34.0	98.0	71.0	57.8	37.7
14-Oct	78.0	63.8	62.3	43.8	31.0	94.5	69.4	54.2	34.8
21-Oct	75.0	61.7	60.0	41.8	29.0	88.9	67.9	51.0	33.8
28-Oct	72.0	59.2	57.7	41.1	25.0	88.9	66.0	49.6	32.5
4-Nov	69.0	59.4	51.4	36.7	19.0	80.5	63.0	41.7	27.3
11-Nov	65.0	58.0	48.2	33.6	19.0	79.8	62.1	37.4	23.1
18-Nov	63.0	57.1	46.0	32.7	17.0	77.0	60.5	36.9	23.0
25-Nov	62.0	57.3	43.1	30.9	13.0	73.5	60.5	35.0	21.2
2-Dec	61.0	58.5	39.8	27.7	7.0	77.0	60.4	30.2	18.5
9-Dec	57.0	54.3	37.7	25.7	3.0	62.3	56.7	28.3	17.0
16-Dec	55.0	51.8	33.8	21.2	-5.0	58.8	56.4	24.6	14.5
23-Dec	60.0	57.8	32.5	20.0	-8.0	68.6	60.0	24.4	14.2
31-Dec	51.0	50.3	30.7	18.7	-8.0	55.3	52.0	21.2	12.8

GRISSOM AFB/PERU IN

WMO No. 725335

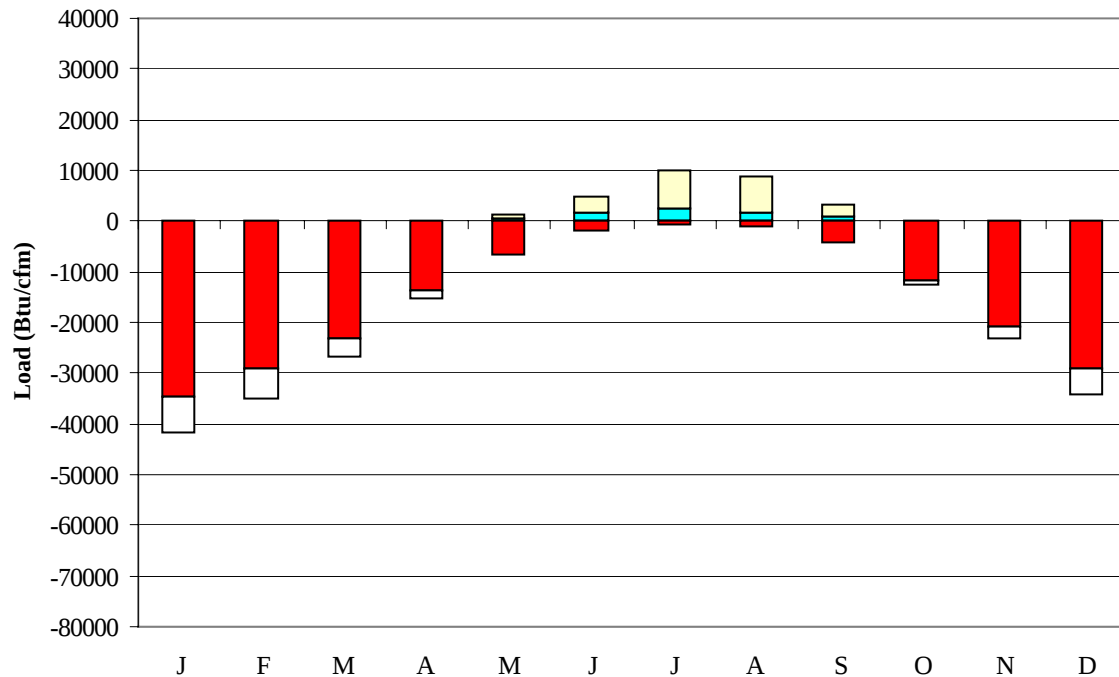
Degree Days, Heating and Cooling
(Base 65°F)



■ Mean Cooling Degree Days ■ Mean Heating Degree Days

	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	1249
FEB	0	1044
MAR	4	801
APR	21	447
MAY	84	188
JUN	216	42
JUL	299	13
AUG	251	25
SEP	126	113
OCT	26	378
NOV	2	707
DEC	0	1035
ANN	1030	6042

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	-34770	0	-6841
FEB	0	-29258	0	-5558
MAR	4	-23119	6	-3574
APR	76	-13656	59	-1519
MAY	480	-6476	809	-289
JUN	1683	-1793	3227	-6
JUL	2624	-706	7551	0
AUG	1905	-1176	6894	0
SEP	753	-4139	2554	-37
OCT	79	-11897	233	-697
NOV	0	-20617	15	-2531
DEC	0	-29135	2	-4988
ANN	7604	-176742	21350	-26040

Average Annual Solar Radiation – Nearest Available Site

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

City: INDIANAPOLIS
 State: IN
 WBAN No: 93819
 Lat(N): 39.73
 Long(W): 86.28
 Elev(ft): 807

Stn Type: Primary
 SHADING GEOMETRY IN DIMENSIONLESS UNITS

Window: 1
 Overhang: 0.526
 Vert Gap: 0.319

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	620	880	1160	1540	1870	2050	1990	1790	1440	1050	650	510	1300
	Std Dev	45	71	79	142	153	115	111	108	81	75	61	54	37
	Minimum	520	720	1010	1310	1600	1860	1790	1600	1280	870	540	420	1240
	Maximum	740	1040	1310	1810	2180	2430	2200	2030	1630	1200	810	620	1410
	Diffuse	350	480	630	760	860	920	890	790	640	470	370	310	620
Clear Day	Global	900	1250	1730	2200	2510	2620	2540	2260	1850	1350	950	790	1750
NORTH	Global	210	280	360	450	560	640	610	500	390	300	220	180	390
	Diffuse	210	280	360	440	520	560	540	480	390	300	220	180	370
Clear Day	Global	190	250	330	430	580	680	630	480	360	270	200	170	380
EAST	Global	410	560	710	910	1060	1130	1110	1030	860	670	420	340	770
	Diffuse	250	340	440	540	620	670	650	590	490	370	260	220	450
Clear Day	Global	680	880	1130	1330	1420	1460	1430	1330	1160	910	690	610	1090
SOUTH	Global	920	1030	990	950	870	820	850	970	1120	1150	880	770	940
	Diffuse	360	440	510	560	590	610	600	590	550	460	360	310	500
Clear Day	Global	1890	1940	1790	1410	1080	930	980	1240	1600	1830	1830	1800	1520
WEST	Global	410	550	690	870	1020	1120	1110	1030	870	650	420	330	760
	Diffuse	250	340	440	540	630	680	660	600	500	370	260	220	460
Clear Day	Global	680	880	1130	1330	1420	1460	1430	1330	1160	910	690	610	1090

Average Annual Solar Heat and Illumination – Nearest Available Site

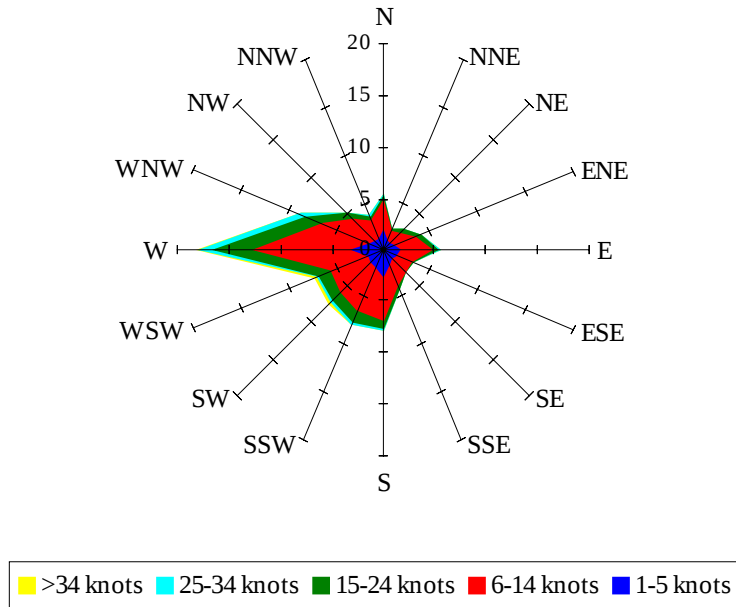
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

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	410	600	820	1100	1350	1490	1450	1290	1030	730	440	330	920
NORTH	Unshaded	140	190	250	310	370	420	400	340	270	210	150	130	270
	Shaded	130	170	220	270	330	370	360	300	240	180	130	110	230
EAST	Unshaded	280	390	500	650	750	800	790	730	610	470	290	230	540
	Shaded	250	340	440	560	640	680	670	630	530	410	260	210	470
SOUTH	Unshaded	690	750	690	620	540	500	520	620	760	830	650	580	640
	Shaded	660	690	550	420	360	370	370	400	550	720	620	560	520
WEST	Unshaded	280	380	480	620	720	790	790	730	620	460	290	230	530
	Shaded	250	340	420	530	620	680	670	630	540	400	260	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	24	62	81	72	40	54	88	102	93	62
	M.Cloudy	15	38	49	45	25	37	63	76	71	46
NORTH	M.Clear	7	13	15	14	10	17	17	17	17	15
	M.Cloudy	6	14	17	16	10	15	19	20	20	15
EAST	M.Clear	60	68	26	14	10	80	68	24	17	15
	M.Cloudy	19	31	21	16	10	41	46	24	20	15
SOUTH	M.Clear	24	63	83	74	40	13	35	48	40	17
	M.Cloudy	10	29	41	36	18	13	29	39	34	17
WEST	M.Clear	7	13	15	54	71	13	17	17	59	78
	M.Cloudy	6	14	17	29	27	13	19	20	44	48
M.Clear	(% hrs)	27	25	22	22	23	40	37	28	28	32
		Sept					Dec				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	34	71	85	74	40	5	32	46	37	9
	M.Cloudy	21	47	59	52	28	3	19	27	21	6
NORTH	M.Clear	10	15	16	15	11	2	9	11	9	4
	M.Cloudy	9	16	18	17	11	2	8	11	9	3
EAST	M.Clear	69	65	21	15	11	17	45	14	9	4
	M.Cloudy	25	37	21	17	11	4	16	12	9	3
SOUTH	M.Clear	27	61	76	65	32	13	67	88	74	24
	M.Cloudy	13	35	47	41	19	3	21	29	24	6
WEST	M.Clear	10	15	16	59	71	2	9	11	43	29
	M.Cloudy	9	16	18	38	34	2	8	11	17	7
M.Clear	(% hrs)	42	41	36	36	41	23	23	22	21	22

Wind Summary - December, January, and February

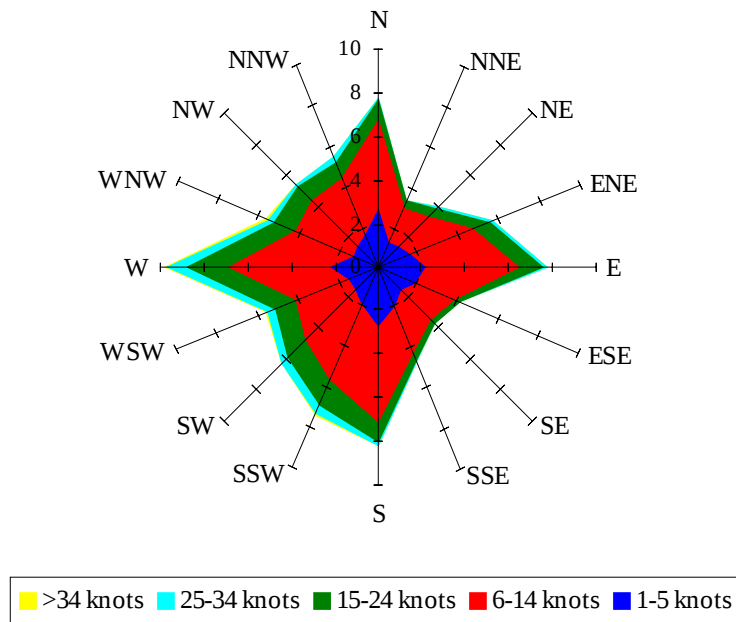
Labels of Percent Frequency on North Axis



Percent Calm = 5.06

Wind Summary - March, April, and May

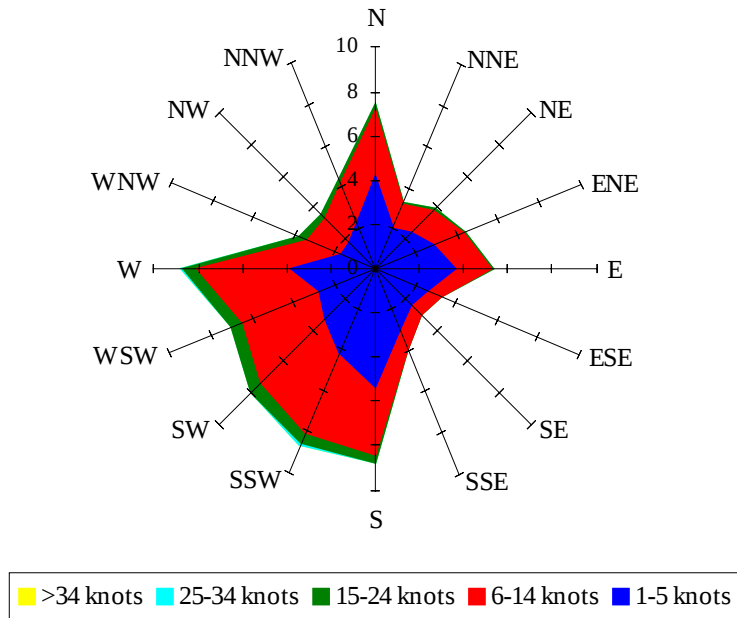
Labels of Percent Frequency on North Axis



Percent Calm = 6.14

Wind Summary - June, July, and August

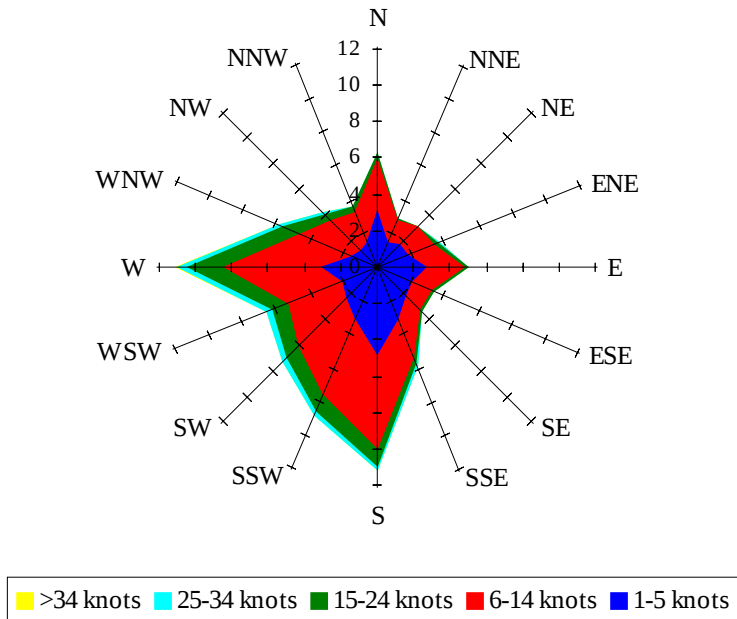
Labels of Percent Frequency on North Axis



Percent Calm = 12.99

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 9.17