

GULKANA AK

Latitude = 62.15 N

Longitude = 145.40 W

Period of Record = 1973 to 1996

WMO No. 702710

Elevation = 1578 feet

Average Pressure = 28.09 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	82	61	49	5.7	SSE
0.4% Occurrence	77	58	47	6.3	S
1.0% Occurrence	73	56	43	6.6	S
2.0% Occurrence	70	55	43	7.2	S
Mean Daily Range	19	-	-	-	-
97.5% Occurrence	-26	-26	1	1.3	N
99.0% Occurrence	-34	-34	1	1.3	NNW
99.6% Occurrence	-40	-40	0	1.0	NW
Median of Extreme Lows	-44	-44	0	1.0	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	63	78	65	6.3	S
0.4% Occurrence	60	74	58	5.4	S
1.0% Occurrence	57	70	52	6.3	S
2.0% Occurrence	55	66	49	6.8	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	76	69	0.49	6.2	S
0.4% Occurrence	64	64	0.41	5.6	S
1.0% Occurrence	59	61	0.38	6.0	S
2.0% Occurrence	55	59	0.35	5.6	S
Air Conditioning/ Humid Area Criteria	# of Hours	T ≥ 93°F	T ≥ 80°F	T _{wb} ≥ 73°F	T _{wb} ≥ 67°F
		0	15	0	1

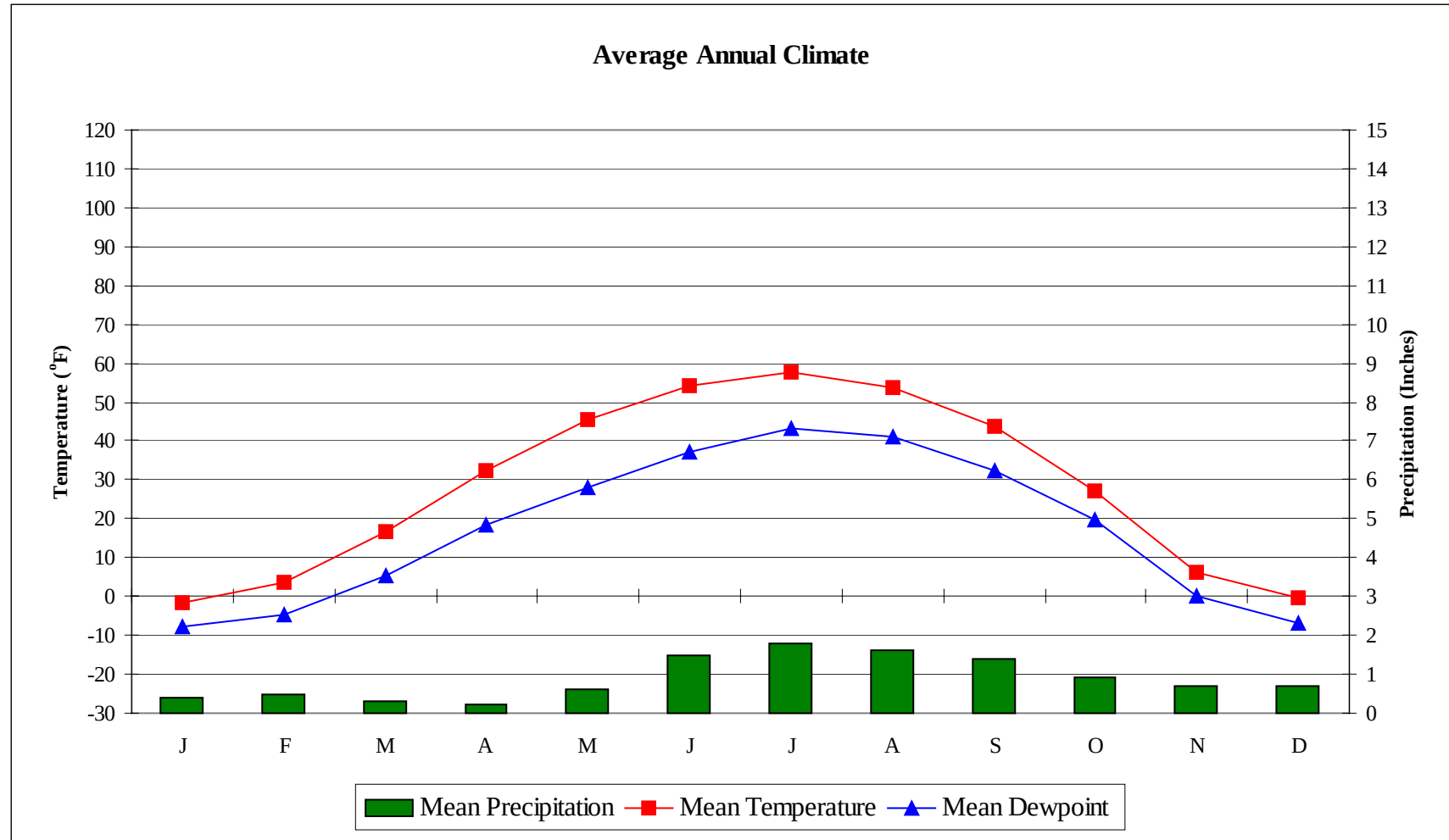
Other Site Data

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
2	0.8	100	0.0 + 0.0
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 (#)
30.9	N/A	N/A	81

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

GULKANA AK

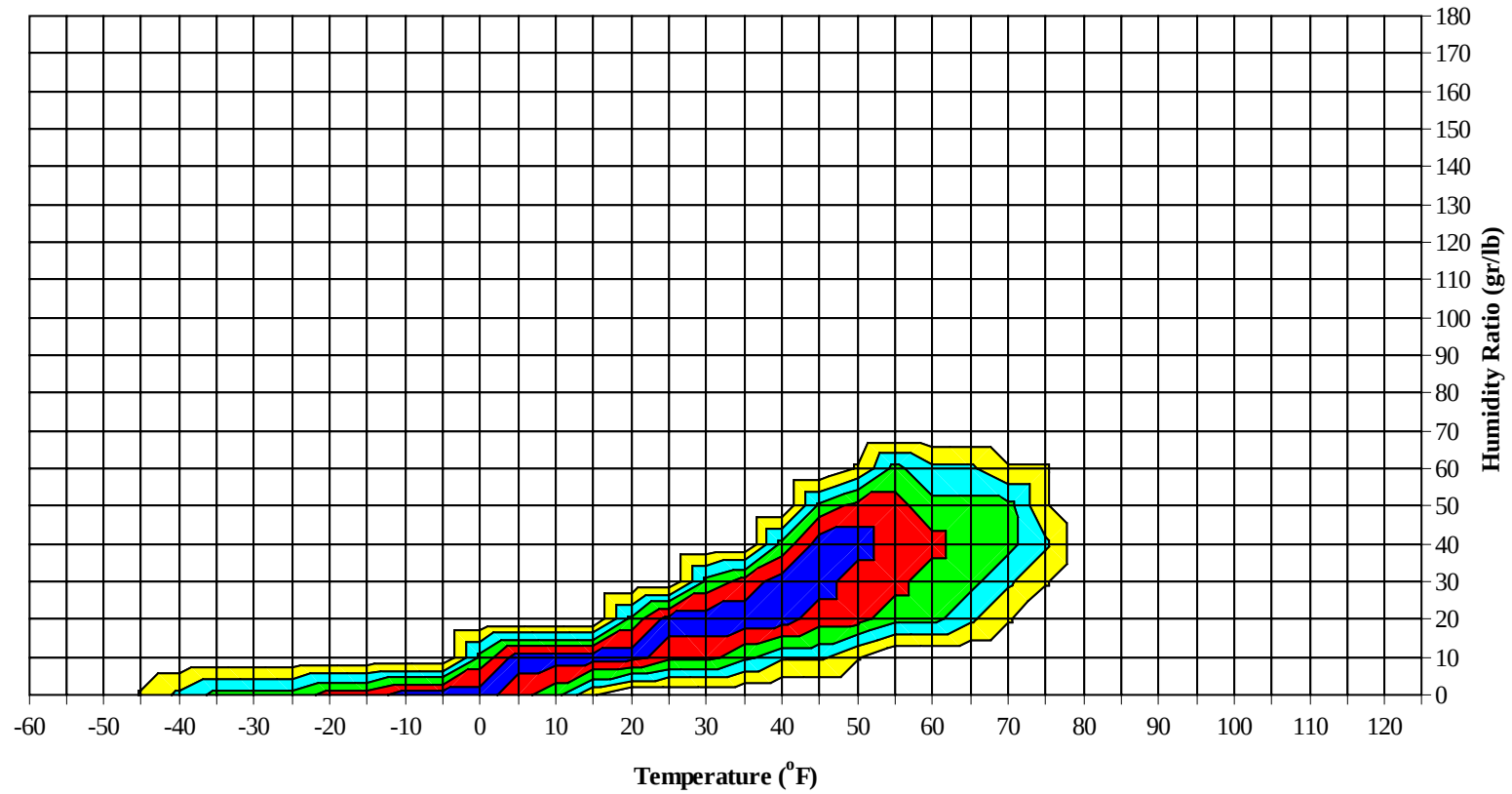
WMO No. 702710



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WMO No. 702710

Long Term Psychrometric Summary

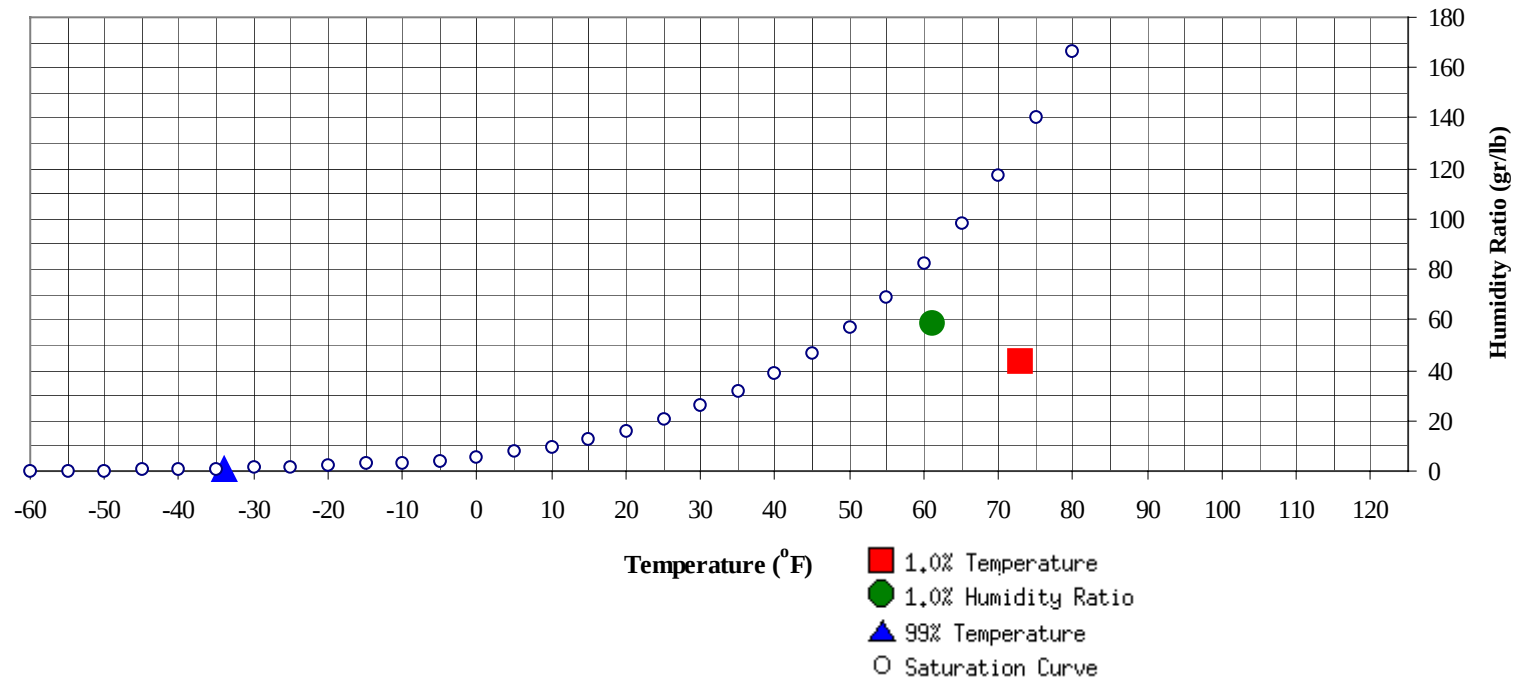


- 50% of all observations
- 80% of all observations
- 95% of all observations
- 97.5% of all observations
- 99% of all observations

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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	-34	0.6	-8.1		58.8	61	55.1	51.1	23.8

1.0% Dry Bulb	(°F)	MCHR (gr/lb)	MCWB (°F)	Enthalpy (btu/lb)
	73	43.4	56	24.3

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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		
85 / 89															
80 / 84															
75 / 79															
70 / 74															
65 / 69															
60 / 64															
55 / 59															
50 / 54												0	0	0	37.8
45 / 49												1	0	1	36.1
40 / 44	0	0	0	0	35.7	0	2	1	3	35.1		10	4	14	33.7
35 / 39	5	7	5	17	32.8	3	9	6	18	32.2	4	27	21	53	30.8
30 / 34	11	10	10	31	29.0	7	12	13	33	28.7	14	38	37	88	27.4
25 / 29	9	9	12	30	25.0	15	14	17	46	24.5	25	37	45	106	23.6
20 / 24	11	12	11	34	20.6	13	16	14	43	20.1	25	35	36	95	19.4
15 / 19	12	14	14	40	15.7	13	19	18	50	15.4	23	31	30	85	14.9
10 / 14	25	21	22	67	11.0	18	23	22	63	10.7	30	23	25	79	10.4
5 / 9	20	23	23	66	6.0	21	24	22	67	6.0	30	17	18	66	5.8
0 / 4	26	28	25	79	0.9	23	26	26	75	0.9	28	13	13	55	0.8
-5 / -1	20	24	18	62	-3.3	16	19	17	52	-3.4	17	7	7	30	-3.4
-10 / -6	25	23	25	72	-7.8	19	20	21	60	-7.7	19	5	5	29	-7.7
-15 / -11	20	19	23	62	-12.4	21	15	15	51	-12.5	12	2	3	16	-12.6
-20 / -16	19	16	15	50	-17.0	15	10	12	36	-17.2	9	2	2	13	-17.1
-25 / -21	14	13	11	38	-21.8	12	6	9	26	-21.9	5	1	1	7	-21.7
-30 / -26	9	10	10	29	-26.9	8	3	6	17	-26.9	4	0	0	4	-27.0
-35 / -31	6	8	9	23	-32.0	11	3	4	17	-32.0	2	0	0	2	-31.3
-40 / -36	5	6	7	18	-36.9	6	2	2	10	-36.7	0			0	-35.5
-45 / -41	6	4	6	16	-41.7	2	1	1	4	-41.6					
-50 / -46	3	2	1	6	-46.6	1	0	0	1	-46.3					
-55 / -51	1	0	1	2	-51.1	0	0		0	-50.3					
-60 / -56	0		0	0	-55.0										

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.

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WMO No. 702710

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 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		
85 / 89												0		0	60.0
80 / 84												2	1	3	57.4
75 / 79							0	0	0	54.5		7	5	12	56.0
70 / 74							3	2	5	52.0		18	14	32	53.8
65 / 69		0		0	51.3		9	6	15	49.3		0	35	25	60
60 / 64		1	1	2	47.6		21	12	33	46.8		3	50	37	91
55 / 59		4	2	6	43.5		45	27	74	44.2		15	56	50	121
50 / 54		13	8	22	40.3		70	47	122	41.4		43	44	51	137
45 / 49	1	31	19	51	37.0	24	58	58	140	39.1	84	22	39	145	42.8
40 / 44	3	58	42	102	34.0	56	30	50	136	36.6	68	6	15	88	39.4
35 / 39	22	59	57	137	31.3	78	10	30	118	33.4	23	1	2	26	35.4
30 / 34	52	32	51	134	28.0	56	2	12	70	29.7	4	0	0	4	31.0
25 / 29	63	19	31	114	24.3	24	0	2	26	25.6	1			1	26.9
20 / 24	34	11	15	60	20.1	4		0	4	21.1					
15 / 19	25	7	8	40	15.3	0			0	16.8					
10 / 14	18	3	3	24	10.8										
5 / 9	10	2	2	14	6.0										
0 / 4	6	1	1	8	1.3										
-5 / -1	2	0	0	2	-3.4										
-10 / -6	2	0	0	2	-7.4										
-15 / -11	1		0	1	-12.4										
-20 / -16	0			0	-17.1										
-25 / -21	0			0	-22.0										
-30 / -26	0			0	-27.0										
-35 / -31															
-40 / -36															
-45 / -41															
-50 / -46															
-55 / -51															
-60 / -56															

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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		
85 / 89		0	0	0	63.1		0	1	1	64.2					
80 / 84		4	4	8	60.1		2	2	4	62.7					
75 / 79	0	12	11	23	58.2	0	7	5	12	60.0					
70 / 74	0	27	20	47	56.2	0	14	11	25	56.3		1	0	1	55.5
65 / 69	0	50	35	85	54.3	0	33	21	55	54.0		3	1	4	51.6
60 / 64	5	64	52	122	52.3	2	62	39	102	51.6	0	11	7	18	48.9
55 / 59	29	55	58	142	50.3	18	58	55	131	49.5	1	43	21	65	46.5
50 / 54	92	29	48	169	48.0	58	46	59	163	47.3	9	60	46	116	44.5
45 / 49	93	8	17	118	44.7	82	21	38	141	44.0	39	50	60	149	41.9
40 / 44	23	0	2	25	40.4	47	5	13	65	40.0	56	33	45	134	38.6
35 / 39	4		0	4	36.1	23	1	3	27	35.3	46	22	28	97	34.5
30 / 34	1		0	1	29.8	13	0	1	14	30.7	40	10	18	69	30.0
25 / 29	0			0	23.5	4		0	4	26.6	27	5	9	41	25.5
20 / 24	0			0	22.0	0		0	0	21.3	13	2	3	18	20.7
15 / 19						0		0	0	15.4	5	0	1	6	15.7
10 / 14						1		0	1	12.1	2	0	0	2	10.7
5 / 9											1		0	1	7.0
0 / 4											0			0	2.0
-5 / -1															
-10 / -6															
-15 / -11															
-20 / -16															
-25 / -21															
-30 / -26															
-35 / -31															
-40 / -36															
-45 / -41															
-50 / -46															
-55 / -51															
-60 / -56															

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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		
85 / 89															
80 / 84															
75 / 79															
70 / 74															
65 / 69															
60 / 64															
55 / 59		1	0	1	45.6										
50 / 54	0	7	1	8	42.7										
45 / 49	2	20	11	33	39.9		0		0	38.8					
40 / 44	15	28	25	69	36.8	2	3	2	7	36.4	2	2	2	6	36.4
35 / 39	30	35	37	102	33.4	5	6	5	16	33.6	5	6	6	17	33.2
30 / 34	40	45	48	133	29.7	6	10	9	25	29.4	9	9	9	27	29.2
25 / 29	46	39	41	127	25.3	10	15	14	39	25.5	10	8	9	27	24.8
20 / 24	37	26	30	93	20.8	17	19	18	54	20.7	12	10	11	33	20.4
15 / 19	25	20	19	63	16.1	25	26	25	76	15.9	15	18	18	51	16.0
10 / 14	22	11	14	46	11.0	29	31	30	90	11.2	18	21	17	56	10.9
5 / 9	11	9	7	27	6.3	32	33	28	93	6.2	19	24	24	68	6.2
0 / 4	8	5	7	20	1.2	28	32	30	90	1.1	30	29	29	88	0.9
-5 / -1	4	2	2	8	-3.1	21	19	19	59	-3.2	25	23	24	72	-3.2
-10 / -6	5	1	3	9	-7.6	20	16	20	56	-7.6	26	26	27	79	-7.6
-15 / -11	2	0	1	3	-12.0	16	13	15	43	-12.4	20	21	18	59	-12.3
-20 / -16	1	0	0	1	-16.4	13	9	12	33	-17.0	16	15	17	48	-17.0
-25 / -21	0			0	-22.0	7	5	7	19	-21.8	13	12	14	39	-21.9
-30 / -26						4	3	4	11	-26.7	12	9	10	31	-26.9
-35 / -31						2	1	2	5	-32.0	6	6	6	18	-31.7
-40 / -36						2	0	1	3	-36.3	4	4	5	13	-37.0
-45 / -41						0		0	0	-42.6	2	3	3	8	-41.5
-50 / -46											2	1	2	5	-46.9
-55 / -51											0	0		0	-50.3
-60 / -56															

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GULKANA AK

WMO No. 702710

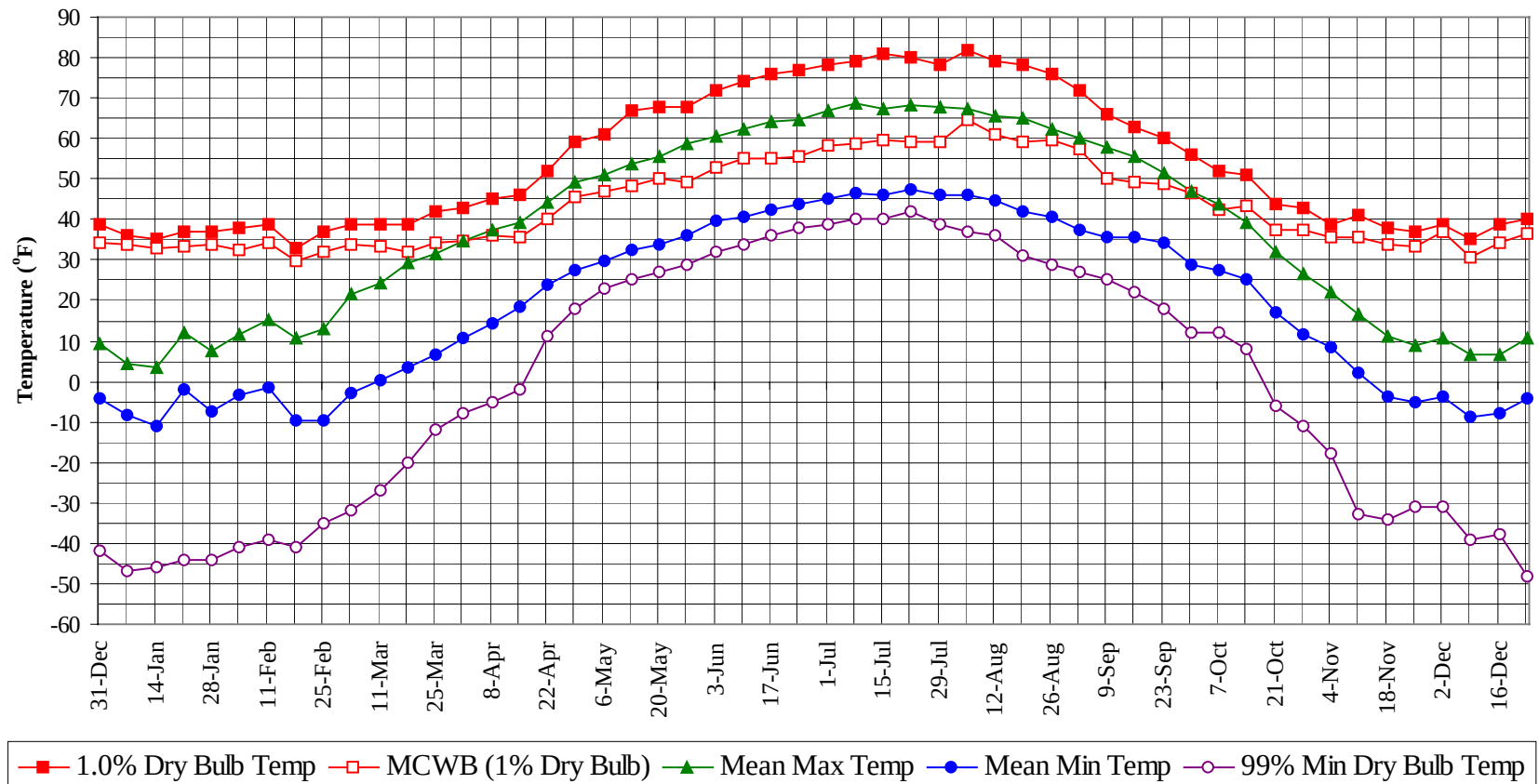
Dry-Bulb Temperature Hours For An Average Year (Sheet 5 of 5)

Period of Record = 1973 to 1996

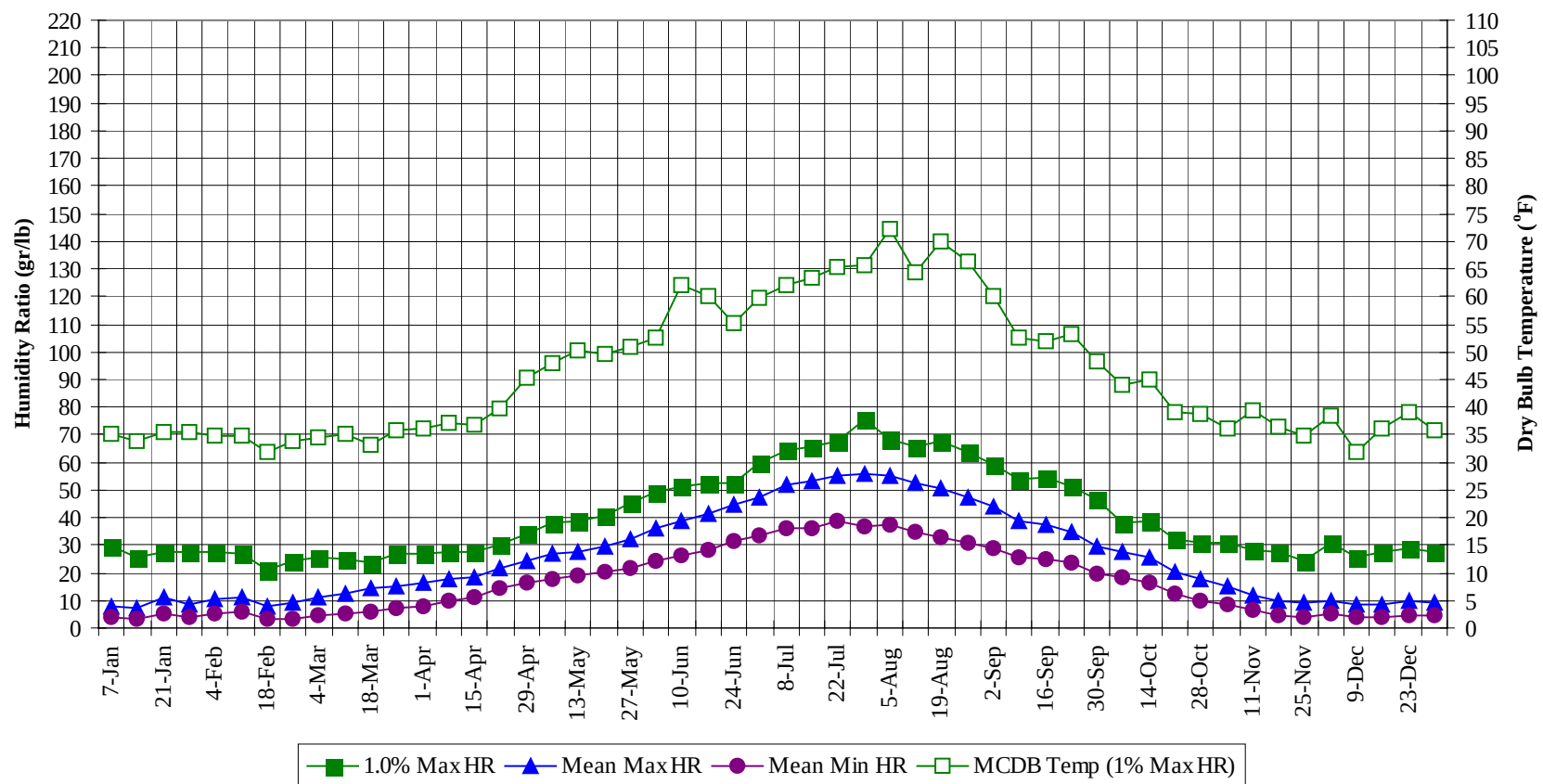
Annual Totals					
Temperature Range (°F)	Hour Group (LST)			Total Obs	M C W B (°F)
	01 To 08	09 To 16	17 To 00		
85 / 89		1	1	2	63.6
80 / 84		7	7	14	60.3
75 / 79	0	26	21	47	58.1
70 / 74	0	64	48	112	55.3
65 / 69	1	131	89	222	53.1
60 / 64	11	209	148	368	50.7
55 / 59	63	261	213	537	48.0
50 / 54	209	268	258	736	45.3
45 / 49	327	209	239	775	41.9
40 / 44	273	179	199	651	37.4
35 / 39	250	181	201	632	33.0
30 / 34	253	168	207	628	28.9
25 / 29	236	149	180	566	24.7
20 / 24	167	132	140	439	20.3
15 / 19	145	134	134	413	15.6
10 / 14	161	132	134	427	10.9
5 / 9	145	131	124	400	6.1
0 / 4	149	133	131	414	0.9
-5 / -1	104	92	88	284	-3.3
-10 / -6	113	91	101	306	-7.7
-15 / -11	91	69	76	236	-12.4
-20 / -16	72	50	58	181	-17.0
-25 / -21	49	36	41	127	-21.9
-30 / -26	36	26	30	91	-26.9
-35 / -31	27	17	20	64	-31.9
-40 / -36	19	10	14	43	-36.8
-45 / -41	11	8	10	28	-41.6
-50 / -46	6	3	3	12	-46.7
-55 / -51	1	1	1	3	-50.8
-60 / -56	0		0	0	-55.0

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Annual Summary of Temperatures

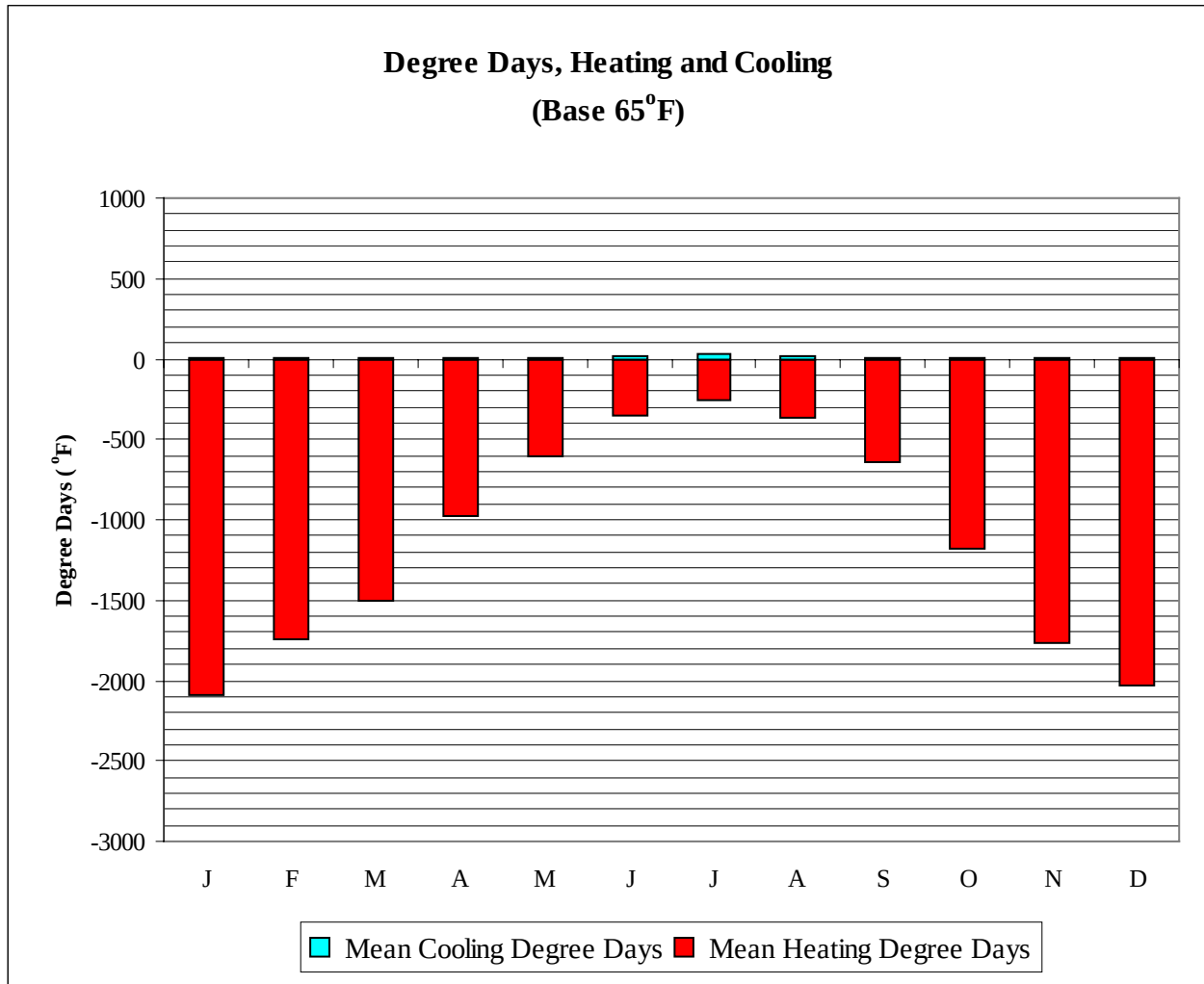


Long Term Humidity and Dry Bulb Temperature Summary



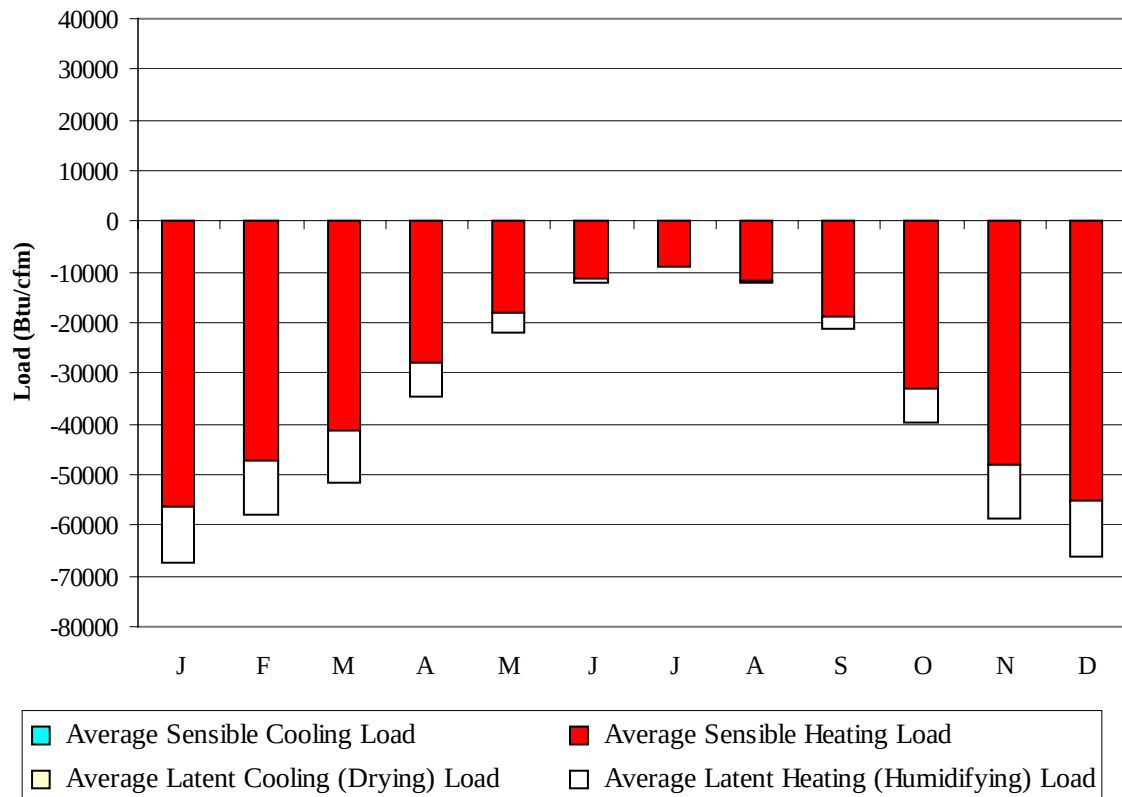
GULKANA AK**WMO No. 702710****Long Term Dry Bulb Temperature and Humidity Summary**

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	36.0	33.6	4.5	-8.5	-47.0	29.4	35.1	7.6	4.0
14-Jan	35.0	32.8	3.4	-11.0	-46.0	25.9	34.0	7.1	3.3
21-Jan	37.0	33.2	12.2	-1.9	-44.0	27.3	35.6	11.0	5.2
28-Jan	37.0	33.9	7.6	-7.4	-44.0	27.3	35.4	8.7	4.2
4-Feb	38.0	32.5	11.5	-3.2	-41.0	27.3	34.7	10.2	5.1
11-Feb	39.0	34.2	15.2	-1.6	-39.0	26.6	34.8	11.3	5.7
18-Feb	33.0	29.9	10.9	-9.5	-41.0	21.0	32.0	8.0	3.3
25-Feb	37.0	32.0	13.0	-9.6	-35.0	24.5	33.7	9.1	3.5
4-Mar	39.0	33.6	21.5	-2.8	-32.0	25.9	34.4	11.4	4.8
11-Mar	39.0	33.4	24.4	0.1	-27.0	25.2	35.2	12.4	5.4
18-Mar	39.0	31.9	29.1	3.6	-20.0	23.8	33.3	14.2	6.2
25-Mar	42.0	34.3	31.7	6.7	-12.0	26.6	35.6	15.0	7.0
1-Apr	43.0	34.5	34.8	10.9	-8.0	26.6	36.1	16.2	8.2
8-Apr	45.0	35.9	37.3	14.3	-5.0	27.3	37.1	17.6	9.7
15-Apr	46.0	35.6	39.2	18.5	-2.0	27.3	36.8	18.7	11.2
22-Apr	52.0	40.3	44.1	24.0	11.0	30.1	39.8	21.8	14.3
29-Apr	59.0	45.7	49.1	27.3	18.0	34.3	45.4	24.1	16.3
6-May	61.0	47.1	51.1	29.7	23.0	37.8	48.0	26.6	17.6
13-May	67.0	48.4	53.6	32.3	25.0	38.5	50.1	27.7	18.9
20-May	68.0	50.2	55.5	33.7	27.0	40.6	49.6	29.5	20.2
27-May	68.0	49.3	58.6	36.1	29.0	45.5	51.0	32.5	21.7
3-Jun	72.0	52.9	60.8	39.5	32.0	49.0	52.6	36.4	24.1
10-Jun	74.0	55.3	62.4	40.6	34.0	51.1	62.1	38.8	26.0
17-Jun	76.0	55.3	64.1	42.3	36.0	52.5	60.1	41.2	28.2
24-Jun	77.0	55.7	64.5	43.6	38.0	52.5	55.1	44.4	31.3
1-Jul	78.0	58.4	66.7	45.3	39.0	59.5	59.8	47.4	33.2
8-Jul	79.0	58.8	68.6	46.7	40.0	64.4	62.0	51.8	36.2
15-Jul	81.0	59.6	67.5	46.2	40.0	65.8	63.5	53.0	35.8
22-Jul	80.0	59.4	68.2	47.3	42.0	67.9	65.4	54.9	38.5
29-Jul	78.0	59.2	67.8	46.1	39.0	75.6	65.7	55.7	37.1
5-Aug	82.0	64.8	67.1	46.0	37.0	68.6	72.2	55.4	37.7
12-Aug	79.0	60.8	65.7	44.7	36.0	65.8	64.5	52.4	35.1
19-Aug	78.0	59.4	65.0	41.9	31.0	67.9	70.1	50.4	32.6
26-Aug	76.0	59.6	62.5	40.7	29.0	63.7	66.3	47.1	31.1
2-Sep	72.0	57.3	60.1	37.3	27.0	58.8	60.0	43.7	28.7
9-Sep	66.0	50.0	58.0	35.6	25.0	53.9	52.6	38.6	25.9
16-Sep	63.0	49.0	55.5	35.5	22.0	54.6	51.9	37.7	25.3
23-Sep	60.0	48.7	51.6	34.3	18.0	51.1	53.3	34.8	23.7
30-Sep	56.0	46.4	46.8	28.7	12.0	46.9	48.2	29.6	19.4
7-Oct	52.0	42.6	43.7	27.4	12.0	37.8	43.9	27.6	18.3
14-Oct	51.0	43.3	39.1	25.2	8.0	38.5	45.1	25.7	16.3
21-Oct	44.0	37.6	32.0	17.1	-6.0	32.2	39.1	20.6	12.4
28-Oct	43.0	37.6	26.8	11.8	-11.0	30.8	38.7	17.5	10.2
4-Nov	39.0	35.4	21.8	8.3	-18.0	30.8	36.0	14.8	8.7
11-Nov	41.0	35.8	16.7	2.0	-33.0	28.0	39.2	12.1	6.4
18-Nov	38.0	33.8	11.2	-3.9	-34.0	27.3	36.6	9.8	4.9
25-Nov	37.0	33.3	8.9	-5.2	-31.0	24.5	34.8	8.9	4.3
2-Dec	39.0	36.8	10.5	-3.7	-31.0	30.8	38.5	10.1	5.0
9-Dec	35.0	30.8	6.5	-8.8	-39.0	25.9	31.8	8.6	3.8
16-Dec	39.0	34.3	6.5	-7.7	-38.0	27.3	36.2	8.5	4.3
23-Dec	40.0	36.4	10.5	-4.1	-48.0	28.7	39.0	9.7	4.6
31-Dec	39.0	34.3	9.6	-4.4	-42.0	27.3	35.8	9.2	4.6



	Mean Cooling Degree Days (°F)	Mean Heating Degree Days (°F)
JAN	0	2086
FEB	0	1745
MAR	0	1501
APR	0	979
MAY	2	602
JUN	19	350
JUL	33	262
AUG	19	369
SEP	0	643
OCT	0	1183
NOV	0	1762
DEC	0	2032
ANN	74	13514

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 Load	Average Latent Heating Load
	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)	(Btu/cfm)
JAN	0	-56456	0	-11074
FEB	0	-47432	0	-10379
MAR	0	-41341	0	-10114
APR	0	-27737	0	-7041
MAY	0	-17964	0	-3839
JUN	32	-11173	0	-948
JUL	90	-8820	5	-182
AUG	57	-11765	3	-460
SEP	0	-18981	0	-2267
OCT	0	-33064	0	-6794
NOV	0	-48009	0	-10665
DEC	0	-55084	0	-10923
ANN	179	-377826	8	-74686

Average Annual Solar Radiation – Nearest Available Site

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

City: GULKANA
 State: AK
 WBAN No: 26425
 Lat(N): 62.15
 Long(W): 145.45
 Elev(ft): 1578

Stn Type: Secondary
 SHADING GEOMETRY IN DIMENSIONLESS UNITS
 Window: 1
 Overhang: 0.16
 Vert Gap: 0.2

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	86	310	790	1300	1610	1740	1670	1300	820	380	130	41	850
	Std Dev	9	27	45	85	108	129	114	91	69	27	14	5	30
	Minimum	67	260	660	1160	1370	1480	1460	1120	670	340	110	32	800
	Maximum	100	380	880	1450	1780	1980	1870	1450	960	430	160	48	920
	Diffuse	58	180	380	590	750	860	800	620	410	230	91	30	420
Clear Day	Global	98	370	940	1680	2290	2590	2420	1860	1140	510	150	51	1180
NORTH	Global	34	110	240	400	590	710	640	430	260	140	53	18	300
	Diffuse	34	110	240	380	490	560	520	400	260	140	53	18	270
Clear Day	Global	29	89	190	370	710	960	820	460	230	120	41	16	340
EAST	Global	93	290	650	1020	1190	1190	1130	920	630	310	130	46	630
	Diffuse	46	150	320	490	600	650	620	490	330	180	70	22	330
Clear Day	Global	160	450	920	1420	1740	1880	1800	1500	1050	570	210	92	990
SOUTH	Global	400	820	1280	1360	1220	1140	1160	1170	1050	730	450	240	920
	Diffuse	120	270	450	570	630	660	640	550	410	280	150	68	400
Clear Day	Global	850	1520	2010	2000	1810	1710	1730	1860	1930	1660	1000	600	1560
WEST	Global	94	290	650	930	1060	1120	1100	910	620	320	120	45	610
	Diffuse	47	150	330	500	600	670	630	500	330	180	71	21	340
Clear Day	Global	160	450	920	1420	1740	1880	1800	1500	1050	570	210	92	990

Average Annual Solar Heat and Illumination – Nearest Available Site

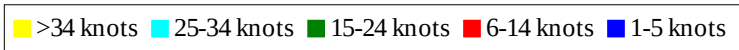
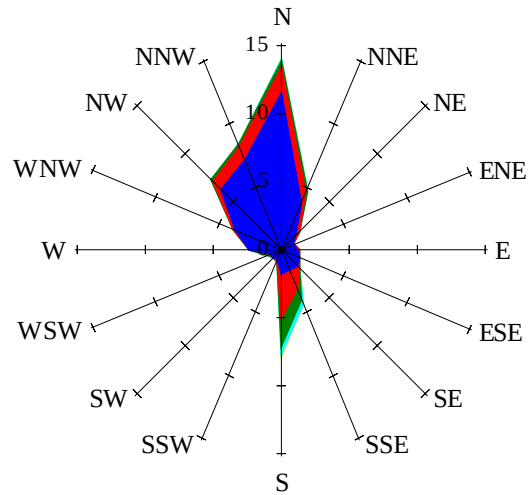
(Source: National Renewable Energy Laboratory, Golden CO, 1995)

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	45	170	490	880	1120	1230	1170	900	540	230	74	22	580
	NORTH	Unshaded	24	75	170	270	400	480	430	290	180	96	37	12
	Shaded	23	73	160	260	390	470	420	280	170	93	36	12	200
EAST	Unshaded	58	190	460	730	860	860	810	660	450	220	82	27	450
	Shaded	58	190	450	720	850	840	790	650	440	210	81	27	440
SOUTH	Unshaded	310	620	940	970	840	770	790	820	760	550	340	190	660
	Shaded	310	620	940	960	820	750	780	810	750	540	340	190	650
WEST	Unshaded	59	200	460	670	770	810	790	660	440	220	82	27	430
	Shaded	58	200	460	660	750	790	770	640	430	220	81	27	420

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	13	34	45	40	21	40	62	76	78	66
	M.Cloudy	10	26	35	30	16	26	43	53	55	47
NORTH	M.Clear	5	9	10	10	7	11	13	14	14	13
	M.Cloudy	5	10	12	11	7	10	14	16	16	15
EAST	M.Clear	45	54	18	10	7	79	74	41	14	13
	M.Cloudy	19	30	16	11	7	37	43	29	16	15
SOUTH	M.Clear	22	67	89	78	38	10	45	70	73	51
	M.Cloudy	11	35	49	42	18	10	29	44	48	34
WEST	M.Clear	5	9	10	45	56	10	13	14	33	69
	M.Cloudy	5	10	12	27	25	10	14	16	26	43
M.Clear	(% hrs)	33	33	33	34	34	25	23	16	11	10
		Sept					Dec				
		9am	11am	1pm	3pm	5pm	9am	11am	1pm	3pm	5pm
HORIZ.	M.Clear	11	34	48	48	35	0	0	6	0	0
	M.Cloudy	7	22	32	33	24	0	0	5	0	0
NORTH	M.Clear	4	9	11	11	9	0	0	3	0	0
	M.Cloudy	3	8	11	11	9	0	0	2	0	0
EAST	M.Clear	41	63	35	11	9	0	1	4	0	0
	M.Cloudy	14	28	21	11	9	0	0	3	0	0
SOUTH	M.Clear	11	52	81	82	54	0	2	32	2	0
	M.Cloudy	5	24	40	42	27	0	0	10	0	0
WEST	M.Clear	4	9	11	30	59	0	0	3	1	0
	M.Cloudy	3	8	11	20	29	0	0	2	0	0
M.Clear	(% hrs)	22	22	24	20	20	32	27	25	27	29

Wind Summary - December, January, and February

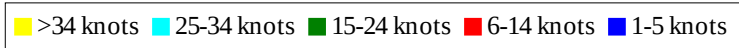
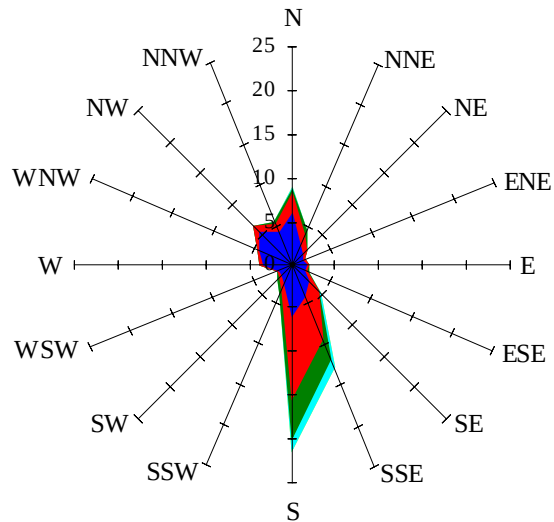
Labels of Percent Frequency on North Axis



Percent Calm = 37.53

Wind Summary - March, April, and May

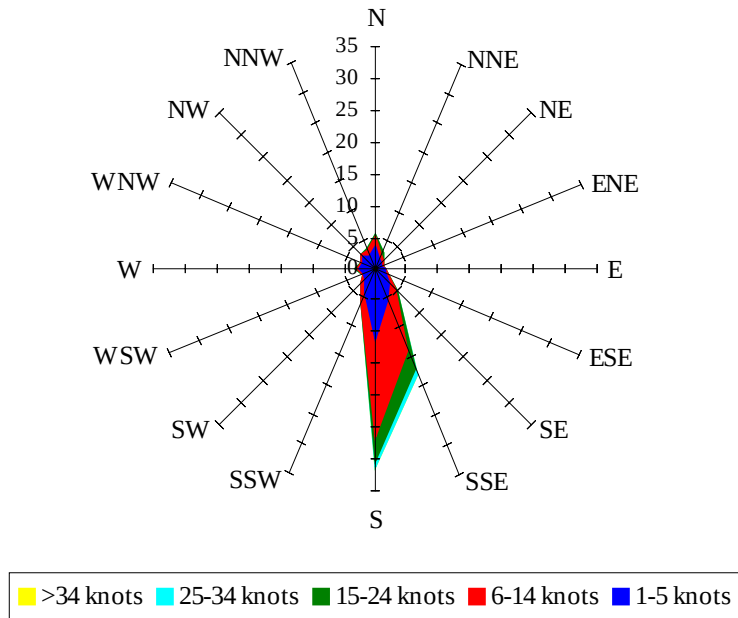
Labels of Percent Frequency on North Axis



Percent Calm = 13.81

Wind Summary - June, July, and August

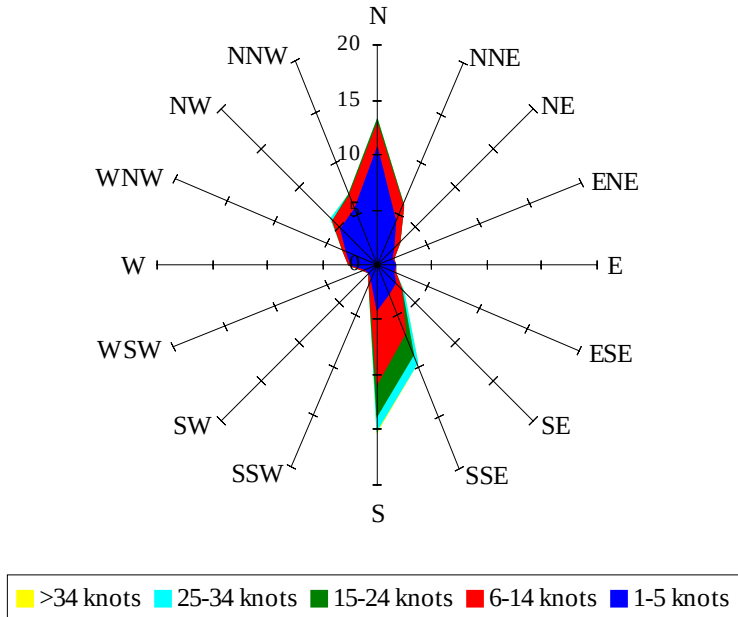
Labels of Percent Frequency on North Axis



Percent Calm = 7.81

Wind Summary - September, October, and November

Labels of Percent Frequency on North Axis



Percent Calm = 22.80