

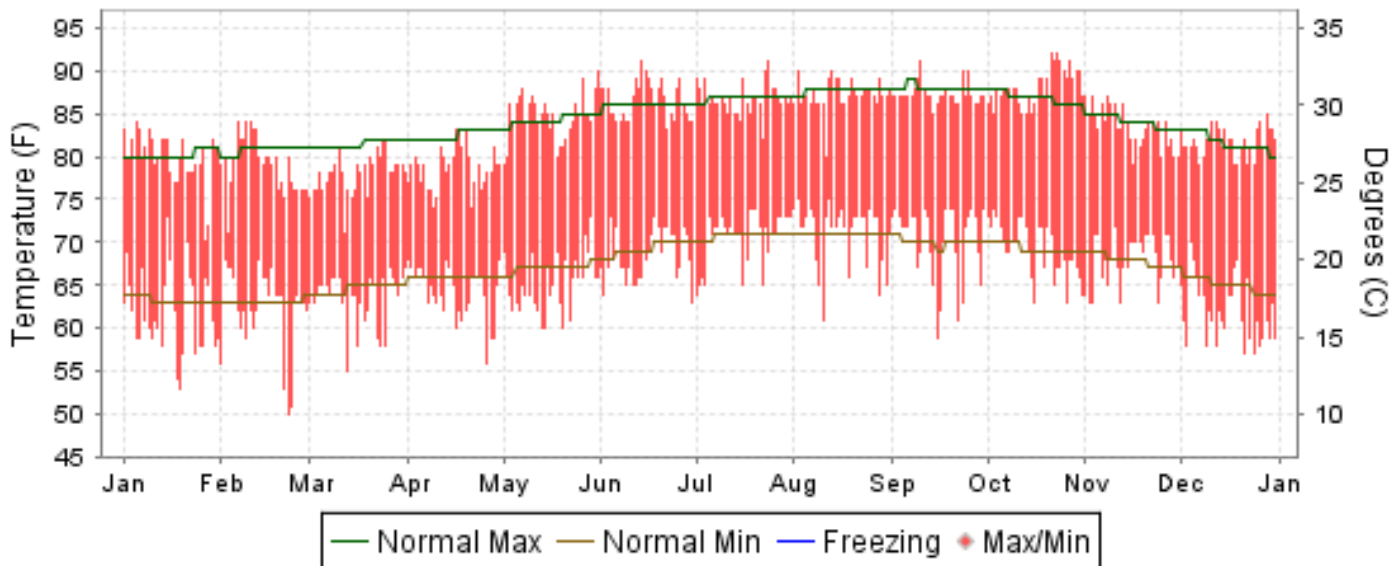


2009 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

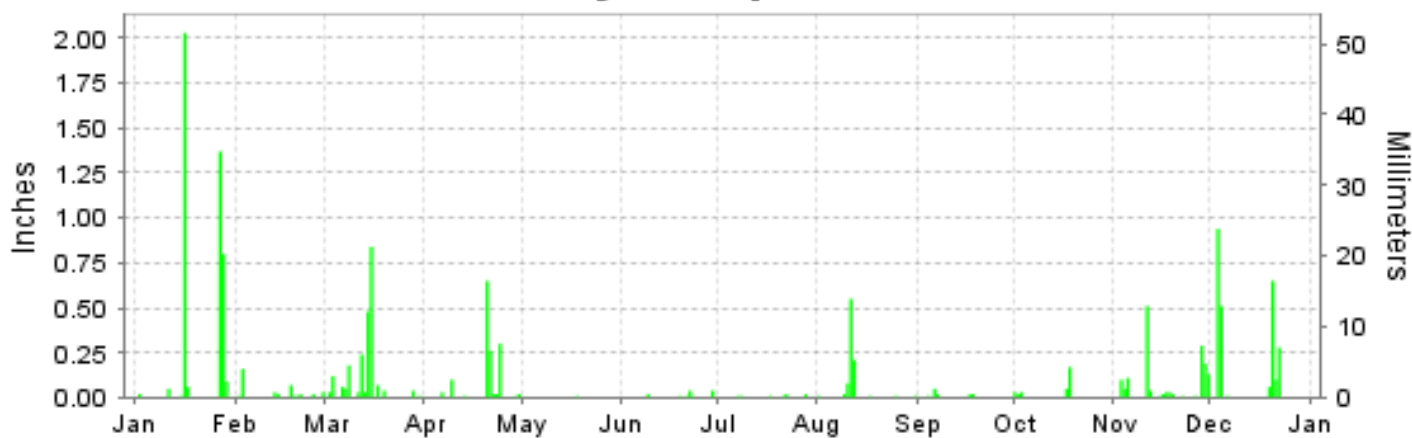
ISSN 0198-1722

KAHULUI, HAWAII (PHOG)

Daily Max/Min Temperature



Daily Precipitation



Daily Station Pressure



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NATIONAL
OCEANIC AND
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NATIONAL
ENVIRONMENTAL SATELLITE, DATA
AND INFORMATION SERVICE

NATIONAL
CLIMATIC DATA CENTER
ASHEVILLE, NORTH CAROLINA

Thomas R. Karl
DIRECTOR
NATIONAL CLIMATIC DATA CENTER

METEOROLOGICAL DATA FOR 2009

KAHULUI (PHOG)

LATITUDE: 20° 54'N LONGITUDE: -156° 25'W ELEVATION (FT): GRND: 51 BARO: 44 TIME ZONE: HAWAII (UTC -10) WBAN: 22516

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	79.9	79.0	77.9	78.6	84.6	86.5	86.7	87.2	87.3	88.2	83.4	81.7	83.4	
	HIGHEST DAILY MAXIMUM	84	84	82	83	90	91	91	90	91	92	87	85	92	
	DATE OF OCCURRENCE	05	10+	25+	19+	31	14	24	13+	10	23+	08+	28	OCT 23+	
	MEAN DAILY MINIMUM	61.9	62.3	63.5	64.2	65.2	68.5	70.6	71.1	70.2	69.2	67.9	62.0	66.4	
	LOWEST DAILY MINIMUM	53	50	55	56	60	63	64	61	59	63	63	57	50	
	DATE OF OCCURRENCE	19	22	13	26	20+	30	01	10	15	26+	24+	24+	FEB 22	
	AVERAGE DRY BULB	70.9	70.7	70.7	71.4	74.9	77.5	78.7	79.2	78.8	78.7	75.7	71.9	74.9	
	MEAN WET BULB	64.9	63.3	64.6	65.3	68.5	69.5	70.4	71.2	70.2	71.3	68.9	65.7	67.8	
	MEAN DEW POINT	61.1	59.1	61.1	61.8	65.1	65.5	66.5	67.3	66.1	67.7	65.4	62.1	64.1	
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 90°	0	0	0	0	1	2	2	2	3	8	0	0	18	
	MAXIMUM <= 32°	0	0	0	0	0	0	0	0	0	0	0	0	0	
MINIMUM <= 32°	0	0	0	0	0	0	0	0	0	0	0	0	0		
MINIMUM <= 0°	0	0	0	0	0	0	0	0	0	0	0	0	0		
H/C	HEATING DEGREE DAYS	0	2	0	0	0	0	0	0	0	0	0	0	2	
	COOLING DEGREE DAYS	191	164	185	199	313	381	430	446	421	434	326	217	3707	
RH	MEAN (PERCENT)	73	70	74	74	73	68	69	70	68	72	73	74	72	
	HOUR 02 LST	82	80	83	84	87	80	80	80	79	83	81	85	82	
	HOUR 08 LST	73	69	72	69	66	63	64	66	63	66	68	72	68	
	HOUR 14 LST	59	56	62	63	59	54	53	57	55	56	61	59	58	
	HOUR 20 LST	76	75	79	78	78	74	74	76	74	78	79	80	77	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	0	0	0	0	0	0	0	0	0	0	0	0	0	
	THUNDERSTORMS	0	0	0	0	0	0	0	0	0	0	1	1	2	
CLOUDNESS	SUNRISE-SUNSET: (OKTAS)														
	CEILOMETER (<= 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
	MIDNIGHT-MIDNIGHT: (OKTAS)														
	CEILOMETER (<= 12,000 FT.)														
SATELLITE (> 12,000 FT.)															
NUMBER OF DAYS WITH:															
CLEAR															
PARTLY CLOUDY															
CLOUDY															
PR	MEAN STATION PRESS. (IN.)	29.96	30.04	29.97	29.99	29.93	29.96	29.94	29.91	29.92	29.89	29.93	29.91	29.95	
	MEAN SEA-LEVEL PRESS. (IN.)	30.03	30.12	30.04	30.06	29.99	30.03	30.01	29.98	29.99	29.96	30.00	29.98	30.02	
WINDS	RESULTANT SPEED (MPH)	3.7	11.4	10.0	9.9	5.6	12.9	13.4	13.0	13.1	7.2	11.9	2.5	9.5	
	RES. DIR. (TENS OF DEGS.)	07	05	05	04	03	05	05	05	05	05	05	07	05	
	MEAN SPEED (MPH)	10.8	12.5	13.4	12.2	8.1	14.0	14.3	14.1	13.8	8.8	12.8	7.3	11.8	
	PREVAIL.DIR.(TENS OF DEGS.)	04	04	05	04	02	04	05	05	05	05	05	04	05	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	38	30	33	32	26	35	32	32	32	32	29	41	41	
	DIR. (TENS OF DEGS.)	20	03	06	03	03	03	04	04	04	04	04	36	36	
	DATE OF OCCURRENCE	16	28	30	04	08	23	21	22	02	02	29	20	DEC 20	
	MAXIMUM 3-SECOND WIND:														
	SPEED (MPH)	49	38	41	40	30	43	41	41	40	39	38	58	58	
DIR. (TENS OF DEGS.)	16	04	06	07	06	04	04	09	04	07	06	02	02		
DATE OF OCCURRENCE	16	28	31	01	08	21	07	20	02	03	27	20	DEC 20		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	4.43	0.38	2.22	1.42	0.01	0.13	0.08	0.90	0.12	0.30	1.55	2.55	14.09	
	GREATEST 24-HOUR (IN.)	2.05	0.17	1.09	0.91	0.01	0.05	0.03	0.66	0.05	0.22	0.51	1.45	2.05	
	DATE OF OCCURRENCE	16-17	02-03	14-15	20-21	18	22-23	21-22	11-12	06	17-18	11	03-04	JAN 16-17	
	NUMBER OF DAYS WITH:														
	PRECIPITATION 0.01	8	10	14	10	1	6	6	8	5	5	15	7	95	
PRECIPITATION 0.10	3	1	5	4	0	0	0	2	0	1	6	5	27		
PRECIPITATION 1.00	2	0	0	0	0	0	0	0	0	0	0	0	2		
SNOWFALL	SNOW,ICE PELLETS,HAIL														
	TOTAL (IN.)														
	GREATEST 24-HOUR (IN.)														
	DATE OF OCCURRENCE														
	NUMBER OF DAYS WITH:														
SNOWFALL >= 1.0															

NORMALS, MEANS, AND EXTREMES KAHULUI (PHOG)

LATITUDE:
20 ° 54'N

LONGITUDE:
-156 ° 25'W

ELEVATION (FT):
GRND: 51 BARO: 44

TIME ZONE:
HAWAII (UTC -10)

WBAN: 22516

	ELEMENT	POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	80.3	80.8	81.5	82.5	84.3	86.0	86.9	87.9	88.1	86.9	84.1	81.7	84.3
	MEAN DAILY MAXIMUM	55	80.1	79.6	81.0	81.8	83.9	85.3	86.3	87.2	86.3	86.3	83.6	81.2	83.6
	HIGHEST DAILY MAXIMUM	45	90	89	90	91	92	94	95	97	96	96	93	90	97
	YEAR OF OCCURRENCE		2006	2001	1984	1981	1996	1996	1996	1994	1997	1973	1990	1995	AUG 1994
	MEAN OF EXTREME MAXS.	55	84.9	85.0	86.2	86.8	88.8	89.7	90.7	91.6	91.7	91.2	88.8	86.3	88.5
	NORMAL DAILY MINIMUM	30	63.3	63.1	64.6	66.0	67.0	69.3	70.8	71.0	70.0	69.4	67.9	65.1	67.3
	MEAN DAILY MINIMUM	55	63.6	63.1	64.5	65.7	67.1	68.9	70.5	71.1	70.0	69.4	67.6	65.3	67.2
	LOWEST DAILY MINIMUM	45	22	50	51	54	57	58	58	61	59	58	55	52	22
	YEAR OF OCCURRENCE		2004	2009	2005	1985	1985	1985	1965	2009	2009	1964	1985	1983	JAN 2004
	MEAN OF EXTREME MINS.	55	55.8	55.5	57.3	59.2	60.7	62.7	63.8	64.6	64.1	62.5	61.5	57.7	60.5
	NORMAL DRY BULB	30	71.8	71.9	73.1	74.2	75.7	77.6	78.8	79.5	79.1	78.1	76.0	73.4	75.8
	MEAN DRY BULB	55	71.9	71.3	72.8	73.8	75.6	77.3	78.6	79.3	78.7	77.9	75.6	73.3	75.5
	MEAN WET BULB	26	66.5	66.3	66.7	67.3	68.5	69.8	70.9	71.4	71.1	70.9	69.7	67.6	68.9
	MEAN DEW POINT	26	64.0	63.4	64.0	64.2	65.7	66.8	68.1	68.7	68.3	68.0	67.2	65.1	66.1
	NORMAL NO. DAYS WITH: MAXIMUM >= 90	30	0.0	0.0	0.1	0.1	0.9	1.8	3.2	6.1	7.6	4.8	1.2	0.1	25.9
	MAXIMUM <= 32	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MINIMUM <= 32	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
MINIMUM <= 0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
H/C	NORMAL HEATING DEG. DAYS	30	0	0	0	0	0	0	0	0	0	0	0	0	0
	NORMAL COOLING DEG. DAYS	30	210	195	250	277	330	379	429	448	422	407	329	260	3936
RH	NORMAL (PERCENT)	30													
	hour 02 LST	30													
	hour 08 LST	30	82	80	77	74	71	69	70	71	70	73	76	79	74
	hour 14 LST	30	62	59	59	58	56	55	56	56	55	57	60	61	58
	hour 20 LST	30	77	75	74	73	71	71	72	72	72	73	75	76	73
S	PERCENT POSSIBLE SUNSHINE	36	64	64	64	63	68	72	70	71	73	67	62	63	67
W/O	MEAN NO. DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI)	46	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	THUNDERSTORMS	51	0.6	0.4	0.3	0.4	0.2	0.0	0.1	0.1	0.1	0.2	0.4	0.4	3.2
CLOUDNESS	MEAN: SUNRISE-SUNSET (OKTAS)	37	3.8	3.9	4.3	4.7	4.3	3.9	3.7	3.7	3.7	4.0	4.0	3.8	4.0
	MIDNIGHT-MIDNIGHT (OKTAS)														
	MEAN NO. DAYS WITH: CLEAR	37	12.9	11.5	10.6	7.8	9.5	10.7	10.7	11.9	11.5	10.6	10.9	11.9	130.5
	PARTLY CLOUDY	37	9.9	9.4	11.3	11.8	13.6	13.5	14.9	13.6	12.6	12.5	10.8	11.3	145.2
	CLOUDY	37	8.2	7.4	9.1	10.5	7.9	5.8	5.3	5.5	5.8	7.9	8.3	7.8	89.5
PR	MEAN STATION PRESSURE(IN)	26	29.93	29.94	29.80	29.98	29.96	29.96	29.94	29.92	29.90	29.91	29.92	29.94	29.93
	MEAN SEA-LEVEL PRES. (IN)	26	30.00	30.01	30.06	30.05	30.03	30.03	30.01	30.00	29.97	29.98	29.99	30.01	30.01
WINDS	MEAN SPEED (MPH)	26	11.0	11.5	12.6	13.7	13.1	15.6	15.6	15.2	13.3	12.2	11.9	11.2	13.1
	PREVAIL.DIR(TENS OF DEGS)	19	05	05	05	05	05	05	05	05	05	05	05	05	05
	MAXIMUM 2-MINUTE: SPEED (MPH)	11	48	40	36	35	34	38	38	36	37	35	41	44	48
	DIR. (TENS OF DEGS)		20	20	04	06	05	04	06	04	04	04	22	19	20
	YEAR OF OCCURRENCE		2004	2004	1999	2003	1999	1999	1999	2008	2006	2001	2001	2007	JAN 2004
	MAXIMUM 3-SECOND SPEED (MPH)	11	64	47	44	44	43	43	46	43	45	43	52	58	64
	DIR. (TENS OF DEGS)		19	20	04	05	05	04	06	04	04	08	22	02	19
YEAR OF OCCURRENCE		2004	2004	2000	2001	2005	2009	1999	2003	2006	2001	2001	2009	JAN 2004	
PRECIPITATION	NORMAL (IN)	30	3.74	2.36	2.35	1.75	0.66	0.23	0.49	0.53	0.39	1.05	2.17	3.08	18.80
	MAXIMUM MONTHLY (IN)	55	14.46	8.31	10.90	14.29	4.36	2.50	1.65	1.54	1.43	5.66	9.27	10.21	14.46
	YEAR OF OCCURRENCE		1980	1972	1967	1989	1987	1967	1989	1982	1987	1985	1965	1996	JAN 1980
	MINIMUM MONTHLY (IN)	55	0.02	0.06	0.01	0.01	T	0.00	0.01	0.02	0.02	T	0.14	0.01	0.00
	YEAR OF OCCURRENCE		2001	2000	2008	2003	1972	1957	1999	2002	2002	1984	2004	1975	JUN 1957
	MAXIMUM IN 24 HOURS (IN)	55	7.01	4.98	5.42	4.83	2.41	2.36	1.04	1.21	1.16	4.85	5.48	5.82	7.01
	YEAR OF OCCURRENCE		1980	1972	1967	1989	1987	1967	1989	1982	1965	1985	1965	1955	JAN 1980
	NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01	30	10.2	8.8	10.7	10.2	6.7	5.7	6.9	6.5	5.0	7.1	10.1	10.8	98.7
PRECIPITATION >= 1.00	30	1.0	0.6	0.6	0.3	*	0.0	*	*	0.0	0.1	0.6	0.7	3.9	
SNOWFALL	NORMAL (IN)	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	MAXIMUM MONTHLY (IN)	2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	YEAR OF OCCURRENCE														
	MAXIMUM IN 24 HOURS (IN)	44	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	YEAR OF OCCURRENCE														
	MAXIMUM SNOW DEPTH (IN)	39	0	0	0	0	0	0	0	0	0	0	0	0	0
YEAR OF OCCURRENCE															
NORMAL NO. DAYS WITH: SNOWFALL >= 1.0	30	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

PRECIPITATION (inches) 2009 KAHULUI (PHOG)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980	14.46	4.07	2.93	2.48	0.53	0.22	0.72	0.30	0.11	0.54	0.14	1.37	27.87
1981	0.46	1.94	0.73	0.89	0.84	0.06	0.06	0.67	0.85	1.48	2.26	2.61	12.85
1982	8.12	3.77	5.20	3.26	0.14	0.22	0.64	1.54	0.56	2.63	1.91	6.05	34.04
1983	0.58	0.07	1.12	0.24	0.94	0.17	0.53	0.67	0.50	1.38	0.98	5.87	13.05
1984	2.45	0.67	1.42	1.07	0.47	0.02	0.09	0.46	0.11	T	1.16	0.64	8.56
1985	1.16	2.03	1.96	0.25	1.20	0.01	0.53	0.52	0.10	5.66	4.61	1.97	20.00
1986	1.30	1.36	3.93	3.95	1.02	0.77	0.25	0.45	0.05	0.96	1.49	2.86	18.39
1987	2.91	1.41	0.57	3.77	4.36	0.12	0.13	0.62	1.43	0.25	3.02	5.72	24.31
1988	7.72	0.93	0.89	1.37	0.17	0.02	0.21	0.46	0.23	0.84	3.76	10.19	26.79
1989	1.59	5.38	3.96	14.29	0.85	0.42	1.65	0.50	0.31	4.71	2.25	4.72	40.63
1990	6.32	7.94	2.98	0.06	1.50	0.90	0.39	0.50	0.50	0.60	6.44	7.07	35.20
1991	2.94	4.94	2.89	0.50	0.24	0.13	0.37	1.06	1.17	0.15	0.23	1.47	16.09
1992	2.40	1.02	0.34	0.90	1.58	0.30	1.09	0.16	1.32	1.47	3.55	2.85	16.98
1993	2.19	0.21	1.55	1.28	0.52	0.09	1.30	0.80	0.78	1.19	1.99	0.79	12.69
1994	1.12	1.64	4.23	0.99	0.05	0.72	1.30	0.50	1.11	0.10	1.26	0.91	13.93
1995	2.73	0.91	2.13	1.76	0.61	0.26	0.46	0.63	0.12	0.80	0.92	2.12	13.45
1996	2.47	3.02	6.75	0.50	0.46	0.18	.52	.18	.18	T	6.53	10.21	31.00
1997	9.23	1.11	3.06	1.34	0.83	0.71	1.22	0.14	0.09	0.50	3.10	1.75	23.08
1998	0.36	0.49	0.18	1.27	0.44	0.04	0.18	0.21	0.41	0.08	1.93	1.17	6.76
1999	2.01	1.70	1.48	0.34	0.51	0.09	0.01	0.31	0.03	0.41	0.22	2.55	9.66
2000	1.00	0.06	0.34	1.26	0.04	0.09	0.78	1.20	0.54	0.79	3.44	0.18	9.72
2001	0.02	0.90	0.42	0.20	0.08	0.18	0.19	0.69	0.09	1.24	3.41	3.11	10.53
2002	3.75	0.99	1.80	0.64	1.83	0.01	0.66	T	T	4.42	0.42	0.55	15.07
2003	2.40	5.33	1.70	0.01	T	0.02	0.07	0.21	0.17	0.15	1.05	2.72	13.83
2004	7.89	3.08	8.54	2.47	2.24	0.04	0.05	0.36	0.02	T	T	1.48	26.17
2005	4.91	1.99	4.24	0.30	0.21	0.05	1.23	0.62			1.76	0.14	
2006	0.74	0.69	5.34	0.27	0.75	T	0.14	0.04	0.23	4.16	3.04	3.25	18.65
2007	0.48	0.93	2.13	0.25	0.05	T	0.11	0.13	0.03	0.48	1.59	6.88	13.06
2008	1.42	1.03	0.01	0.66	0.04	0.01	0.47	0.40	0.19	0.13	0.65	4.54	9.55
2009	4.43	0.38	2.22	1.42	0.01	0.13	0.08	0.90	0.12	0.30	1.55	2.55	14.09
POR= 55 YRS	3.64	2.49	2.62	1.40	0.66	0.22	0.47	0.47	0.34	1.03	2.27	3.07	18.68

WBAN : 22516

AVERAGE TEMPERATURE (°F) 2009 KAHULUI (PHOG)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980	73.3	73.4	75.6	75.9	78.9	80.0	81.2	80.5	81.0	79.8	78.2	76.0	77.8
1981	74.7	74.6	75.0	76.1	78.0	80.7	80.5	81.3	80.4	78.3	76.9	74.5	77.6
1982	73.1	72.4	72.8	73.2	76.0	78.5	80.9	81.5	80.0	79.0	77.0	73.2	76.5
1983	71.4	71.5	72.5	74.1	74.9	77.6	78.1	79.1	78.0	77.3	75.8	73.5	75.3
1984	73.4	73.4	75.9	77.0	78.5	80.5	80.0	79.5	79.4	80.5	79.0	74.2	77.6
1985	72.0	73.0	70.7	70.8	73.1	75.1	77.6	77.8	77.1	76.7	73.0	71.2	74.0
1986	70.4	71.4	73.7	74.3	75.9	77.1	79.4	80.6	79.4	77.5	77.1	72.9	75.8
1987	72.0	69.3	72.0	72.8	72.4	76.5	78.6	78.9	79.5	78.3	75.6	73.8	75.0
1988	71.5	72.3	73.4	74.2	76.5	77.8	78.9	79.2	78.9	77.5	76.8	73.1	75.8
1989	72.3	72.6	73.2	72.0	75.5	77.3	79.0	78.0	78.6	77.6	74.8	71.7	75.2
1990	72.7	70.8	72.0	74.6	75.5	77.9	78.4	79.6	80.3	78.4	76.5	73.0	75.8
1991	71.7	72.6	72.1	74.4	75.8	76.6	78.3	79.6	79.0	78.3	77.3	74.8	75.9
1992	71.4	71.8	72.9	74.1	76.3	78.6	79.2	80.5	80.4	78.5	76.9	75.4	76.3
1993	71.2	69.6	71.9	75.3	76.0	78.7	79.5	80.3	80.0	78.2	75.9	73.8	75.9
1994	71.1	74.0	73.0	73.6	76.2	78.2	80.0	81.2	80.7	79.0	76.5	73.5	76.4
1995	71.6	72.7	74.4	74.7	76.0	79.0	80.3	80.6	79.9	79.8	77.9	75.9	76.9
1996	75.1	72.5	72.2	77.0	78.0	80.6	81.4	80.9	80.4	80.2	77.6	73.3	77.4
1997	72.4	73.4	74.6	74.8	75.6	79.5	80.0	80.2	81.3	79.6	75.6	73.2	76.7
1998	71.7	71.9	73.3	73.8	74.4	76.3	78.0	79.1	77.9	77.2	75.9	72.0	75.1
1999	71.3	71.0	72.9	73.7	75.7	77.0	77.5	78.3	78.6	76.5	75.2	72.9	75.1
2000	70.3	71.6	73.4	73.8	75.9	77.6	78.9	79.1	77.8	78.2	75.4	72.1	75.3
2001	72.5	72.0	72.9	74.3	75.4	77.3	78.8	79.5	79.2	77.0	75.7	73.7	75.7
2002	71.9	70.8	72.2	74.2	75.7	78.0	78.4	79.7	77.9	77.5	75.0	73.1	75.4
2003	71.9	71.7	73.9	74.9	76.2	78.6	80.2	80.6	79.6	79.0	76.5	73.2	76.4
2004	71.9	73.4	72.6	73.7	76.3	78.8	79.5	81.3	80.0	79.4	76.3	73.2	76.4
2005	73.0	72.2	71.3	74.2	77.0	78.3	79.2	78.6	79.9	77.5	75.5	73.5	75.9
2006	75.0	72.6	74.8	73.8	74.3	77.9	79.1	80.1	79.5	78.4	76.1	73.6	76.3
2007	73.3	72.0	73.7	74.2	76.5	78.1	79.9	79.5	79.4	77.6	74.9	73.4	76.0
2008	68.9	68.6	71.7	74.1	76.2	77.5	78.5	79.2	78.0	77.9	74.9	73.7	74.9
2009	70.9	70.7	70.7	71.4	74.9	77.5	78.7	79.2	78.8	78.7	75.7	71.9	74.9
POR= 55 YRS	71.9	71.3	72.8	73.8	75.6	77.3	78.6	79.3	78.7	77.9	75.6	73.3	75.5

HEATING DEGREE DAYS (base 65°F) 2009 KAHULUI (PHOG)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1983-84	0	0	0	0	0	0	0	0	0	0	0	0	0
1984-85	0	0	0	0	0	0	0	0	0	0	2	0	2
1985-86	0	0	0	0	0	0	0	0	0	0	0	0	0
1986-87	0	0	0	0	0	0	0	1	0	0	0	0	1
1987-88	0	0	0	0	0	0	0	0	0	0	0	0	0
1988-89	0	0	0	0	0	0	0	0	0	0	0	0	0
1989-90	0	0	0	0	0	0	0	1	0	0	0	0	1
1990-91	0	0	0	0	0	0	0	0	0	0	0	0	0
1991-92	0	0	0	0	0	0	0	0	0	0	0	0	0
1992-93	0	0	0	0	0	0	0	0	0	0	0	0	0
1993-94	0	0	0	0	0	0	0	0	0	0	0	0	0
1994-95	0	0	0	0	0	0	0	0	0	0	0	0	0
1995-96	0	0	0	0	0	0	0	0	0	0	0	0	0
1996-97	0	0	0	0	0	0	0	0	0	0	0	0	0
1997-98	0	0	0	0	0	0	0	0	0	0	0	0	0
1998-99	0	0	0	0	0	0	0	0	0	0	0	0	0
1999-00	0	0	0	0	0	0	0	0	0	0	0	0	0
2000-01	0	0	0	0	0	0	0	0	0	0	0	0	0
2001-02	0	0	0	0	0	0	0	0	0	0	0	0	0
2002-03	0	0	0	0	0	0	0	0	0	0	0	0	0
2003-04	0	0	0	0	0	0	0	0	0	0	0	0	0
2004-05	0	0	0	0	0	0	0	0	0	0	0	0	0
2005-06	0	0	0	0	0	0	0	0	0	0	0	0	0
2006-07	0	0	0	0	0	0	0	0	0	0	0	0	0
2007-08	0	0	0	0	0	0	0	0	0	0	0	0	0
2008-09	0	0	0	0	0	0	0	2	0	0	0	0	2
2009-	0	0	0	0	0	0	0	0	0	0	0	0	0

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COOLING DEGREE DAYS (base 65°F) 2009 KAHULUI (PHOG)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1980	266	253	335	334	442	457	512	488	484	462	401	347	4781
1981	307	276	314	337	407	476	489	510	469	417	363	300	4665
1982	259	215	248	254	347	412	498	519	458	438	366	259	4273
1983	205	188	240	278	315	384	414	445	398	389	333	272	3861
1984	264	250	346	367	425	472	470	456	437	486	425	295	4693
1985	223	229	182	178	260	312	397	403	371	370	250	200	3375
1986	174	187	276	287	345	373	454	490	442	392	370	249	4039
1987	226	127	224	242	237	353	430	440	440	418	326	282	3745
1988	210	218	267	285	364	390	438	444	426	395	358	261	4056
1989	234	193	260	218	331	375	440	412	414	400	301	215	3793
1990	246	169	223	294	332	394	422	458	467	425	352	252	4034
1991	211	219	228	290	341	353	421	458	427	417	375	312	4052
1992	207	205	254	282	358	413	448	489	468	427	362	331	4244
1993	199	135	222	316	347	419	454	482	456	417	334	278	4059
1994	196	259	255	267	355	400	471	507	478	439	351	269	4247
1995	213	219	296	298	347	426	482	492	453	466	393	348	4433
1996	320	226	230	368	410	473	518	499	471	479	383	264	4641
1997	239	244	306	300	336	439	468	478	496	460	324	261	4351
1998	214	200	266	269	302	347	412	442	392	385	334	223	3786
1999	199	174	252	268	341	366	398	420	412	361	310	252	3753
2000	172	197	268	273	345	388	438	444	394	412	318	227	3876
2001	239	204	252	281	327	376	434	459	430	381	327	276	3986
2002	220	168	233	286	337	397	422	465	394	393	306	258	3879
2003	219	198	283	305	353	414	477	492	446	441	353	261	4242
2004	221	250	243	267	357	419	460	509	456	453	346	263	4244
2005	253	207	203	283	378	407	448	426	453	392	325	270	4045
2006	293	217	313	271	296	391	430	474	442	423	341	274	4165
2007	262	203	277	283	362	401	472	456	437	400	302	269	4124
2008	128	111	218	280	357	380	427	447	397	408	308	278	3739
2009	191	164	185	199	313	381	430	446	421	434	326	217	3707

SNOWFALL (inches) 2009 KAHULUI (PHOG)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1976-77	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1977-78	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1978-79	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1979-80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1980-81	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1981-82	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1982-83	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1983-84	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1984-85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1985-86	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1986-87	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1987-88	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1988-89	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1989-90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1990-91	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1991-92	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1992-93	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1993-94	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1994-95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1995-96	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1996-97	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1997-98	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
1998-99													
1999-00													
2000-01													
2001-02													
2002-03													
2003-04													
2004-05													
2005-													
POR= 44 YRS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

WBAN : 22516

REFERENCE NOTES :

<p>PAGE 1: THE TEMPERATURE GRAPH SHOWS NORMAL MAXIMUM AND NORMAL MINIMUM DAILY TEMPERATURES (SOLID CURVES) AND THE ACTUAL DAILY HIGH AND LOW TEMPERATURES (VERTICAL BARS).</p> <p>PAGE 2 AND 3: H/C INDICATES HEATING AND COOLING DEGREE DAYS. RH INDICATES RELATIVE HUMIDITY W/O INDICATES WEATHER AND OBSTRUCTIONS S INDICATES SUNSHINE. PR INDICATES PRESSURE. CLOUDINESS ON PAGE 3 IS THE SUM OF THE CEILOMETER AND SATELLITE DATA NOT TO EXCEED EIGHT EIGHTHS(OKTAS).</p> <p>GENERAL: T INDICATES TRACE PRECIPITATION, AN AMOUNT GREATER THAN ZERO BUT LESS THAN THE LOWEST REPORTABLE VALUE. + INDICATES THE VALUE ALSO OCCURS ON EARLIER DATES. BLANK ENTRIES DENOTE MISSING OR UNREPORTED DATA. NORMALS ARE 30-YEAR AVERAGES (1971 - 2000). ASOS INDICATES AUTOMATED SURFACE OBSERVING SYSTEM. PM INDICATES THE LAST DAY OF THE PREVIOUS MONTH. POR (PERIOD OF RECORD) BEGINS WITH THE JANUARY DATA MONTH AND IS THE NUMBER OF YEARS USED TO COMPUTE THE MEAN. INDIVIDUAL MONTHS WITHIN THE POR MAY BE MISSING. WHEN THE POR FOR A NORMAL IS LESS THAN 30 YEARS, THE NORMAL IS PROVISIONAL AND IS BASED ON THE NUMBER OF YEARS INDICATED. 0.* OR * INDICATES THE VALUE OR MEAN-DAYS-WITH IS BETWEEN 0.00 AND 0.05. CLOUDINESS FOR ASOS STATIONS DIFFERS FROM THE NON-ASOS OBSERVATION TAKEN BY A HUMAN OBSERVER. ASOS STATION CLOUDINESS IS BASED ON TIME-AVERAGED CEILOMETER DATA FOR CLOUDS AT OR BELOW 12,000 FEET AND ON SATELLITE DATA FOR CLOUDS ABOVE 12,000 FEET. THE NUMBER OF DAYS WITH CLEAR, PARTLY CLOUDY, AND CLOUDY CONDITIONS FOR ASOS STATIONS IS THE SUM OF THE CEILOMETER AND SATELLITE DATA FOR THE SUNRISE TO SUNSET PERIOD. CLEAR INDICATES 0 - 2 OKTAS, PARTLY CLOUDY INDICATES 3 - 6 OKTAS, AND CLOUDY INDICATES 7 OR 8 OKTAS. WHEN AT LEAST ONE OF THE ELEMENTS (CEILOMETER OR SATELLITE) IS MISSING, THE DAILY CLOUDINESS IS NOT COMPUTED.</p>	<p>GENERAL CONTINUED: WIND DIRECTION IS RECORDED IN TENS OF DEGREES (2 DIGITS) CLOCKWISE FROM TRUE NORTH. "00" INDICATES CALM. "36" INDICATES TRUE NORTH. RESULTANT WIND IS THE VECTOR AVERAGE OF THE SPEED AND DIRECTION. AVERAGE TEMPERATURE IS THE SUM OF THE MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURE DIVIDED BY 2. SNOWFALL DATA COMPRISE ALL FORMS OF FROZEN PRECIPITATION, INCLUDING HAIL. A HEATING (COOLING) DEGREE DAY IS THE DIFFERENCE BETWEEN THE AVERAGE DAILY TEMPERATURE AND 65 F. DRY BULB IS THE TEMPERATURE OF THE AMBIENT AIR. DEW POINT IS THE TEMPERATURE TO WHICH THE AIR MUST BE COOLED TO ACHIEVE 100 PERCENT RELATIVE HUMIDITY. WET BULB IS THE TEMPERATURE THE AIR WOULD HAVE IF THE MOISTURE CONTENT WAS INCREASED TO 100 PERCENT RELATIVE HUMIDITY. ON JULY 1, 1996, THE NATIONAL WEATHER SERVICE BEGAN USING THE "METAR" OBSERVATION CODE THAT WAS ALREADY EMPLOYED BY MOST OTHER NATIONS OF THE WORLD. THE MOST NOTICEABLE DIFFERENCE IN THIS ANNUAL PUBLICATION WILL BE THE CHANGE IN UNITS FROM TENTHS TO EIGHTS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER. STATION HISTORY STOPPED WITH THE 2009 ANNUAL. IF YOU NEED HISTORY GO TO "MULTI-NETWORK MEDADATA SYSTEM", URL IS: https://mi3.ncdc.noaa.gov/mi3qry/login.cfm</p> <p>NOTE: The "Period of Record:(POR) for all "averages" is based on the "Summary of the Day First Order Station" and "Cooperative Summary of the Day" archives.</p>
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2009 KAHULUI HAWAII (PHOG)

Kahului Airport is located in the relatively broad central valley of Maui near the northern coast of the island. Five miles to the west, the mountains of west Maui rise abruptly, reaching an elevation of 5,788 feet above sea level at the crest of Puu Kukui 10 miles west of the station. To the southeast the terrain rises gradually to the summit of Haleakala at 10,023 feet, located 17 miles from the airport.

The outstanding features of the climate are the equable temperature regime, the marked seasonal variation in rainfall, the persistent surface winds from the northeast quadrant, and the rarity of severe storms.

The extremely equable temperatures at Kahului are associated with the tempering effect of the Pacific Ocean and the small seasonal variation in the amount of energy received from the sun. The range in normal temperature between the warmest month, August, and the coldest month, February, is 7.2 degrees.

Rainfall is relatively light. The contrast between the dry season, which extends from May through October, and the wet season, November through April, is quite pronounced. Major widespread rainstorms, which account for the bulk of the precipitation in the area, usually occur several times during each wet season, but are infrequent in the dry season. Approximately 50 percent of the normal annual rainfall occurs in the three months of December through February, and over 80 percent in the six months of the wet season. June is the driest month, receiving about 1 percent of the annual total. Occasionally, an entire dry season month will go by with no measurable precipitation whatever. At the other extreme, a single wet season storm sometimes contributes more than one-half the total rainfall in an individual year.

Showers constitute the greatest number of rainfall occurrences and although most of these are light and short-lived, very heavy showers do occur at times. Thunderstorms, which are reported rather infrequently, are usually associated with major storms in the wet season.

Violent, damaging, windstorms are rare, but sometimes occur in connection with major storms moving through the region.

Hurricanes, with winds of 75 mph, or more, rarely affect the Kahului area. However, tropical storms, which are similar to hurricanes, except that the wind speed is less than 75 mph, may pass close enough to produce heavy rain and strong wind at Kahului once every several years.

The large Pacific semipermanent high pressure cell, which is usually centered north of the Hawaiian Islands, is one of the important climatic controls affecting the circulation of air in the region. Over the central North Pacific, this cell produces a rather persistent flow of air from the northeast known as the Northeast Trades. Thus, surface wind at Kahului is predominantly from the northeast quadrant. The trade-wind flow is most prevalent during the dry season. Wind is more variable during the wet season although, on the average, the trades still blow more than 50 percent of the time during this period.

The normal trade winds, accentuated by the funneling effect between Haleakala and the west Maui mountains, as well as by the daytime thermally induced low pressure in the valley, often attain a speed of 40 to 45 mph at the airport, but serve to make living conditions in the nearby Kahului-Wailuku community pleasant and comfortable. Air conditioning is used in only a few business establishments and residences.

Humidity at Kahului is usually moderate to high, with wet season humidities averaging slightly higher than those in the dry season. However, due to the system of natural ventilation provided by the prevailing winds, the weather is seldom oppressive even during the warmer months of the year.

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