

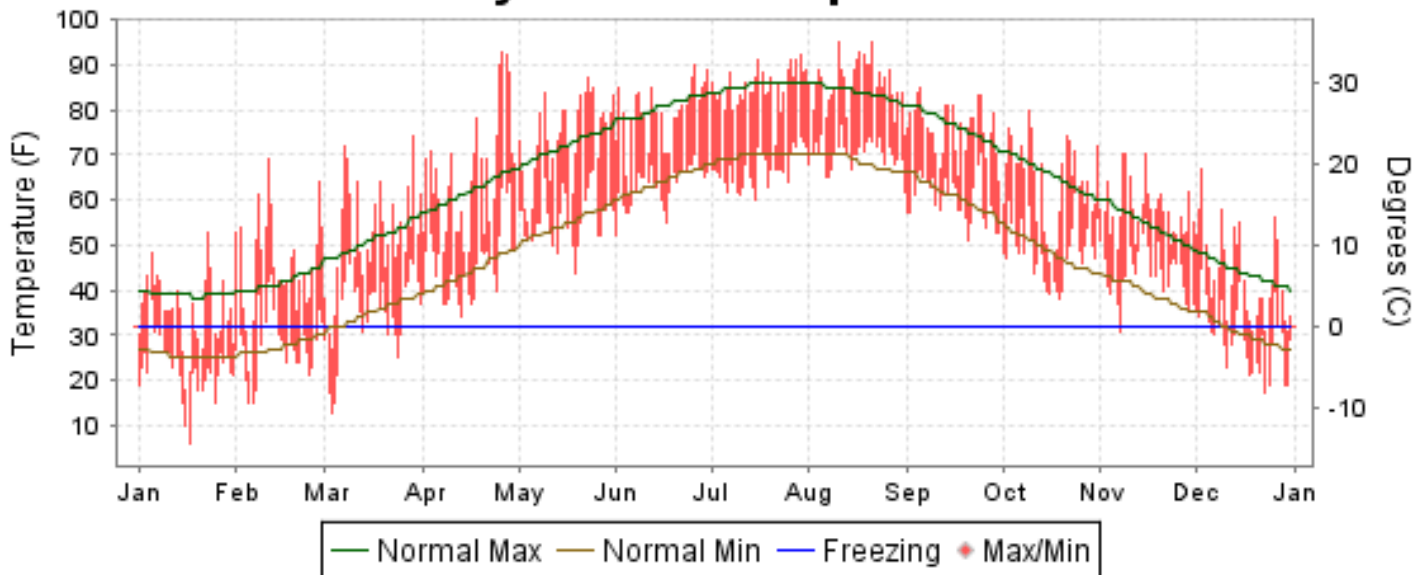


# 2009 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

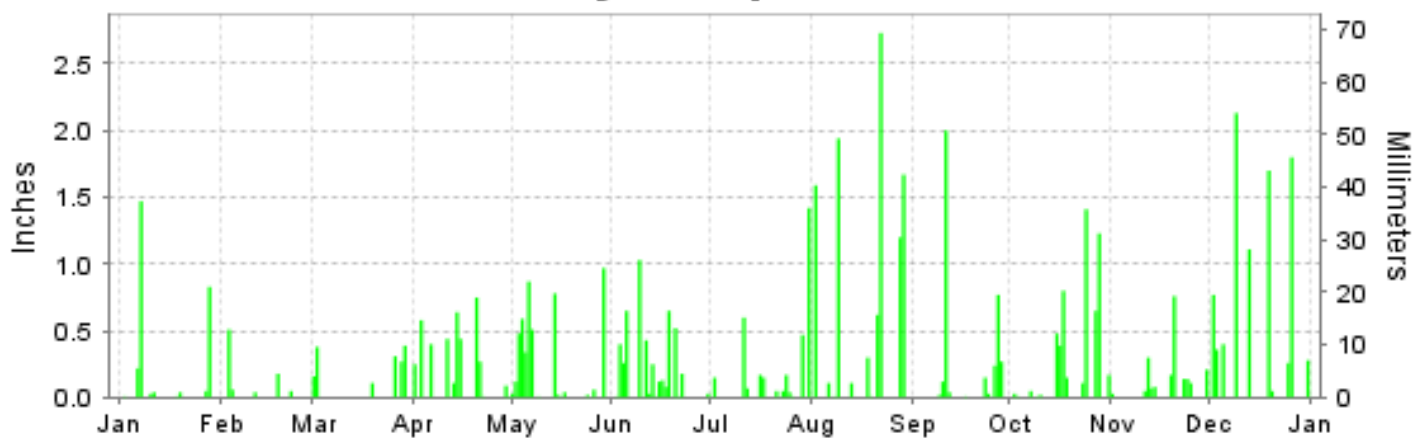
ISSN 0198-4535

## PHILADELPHIA, PENNSYLVANIA (KPHL)

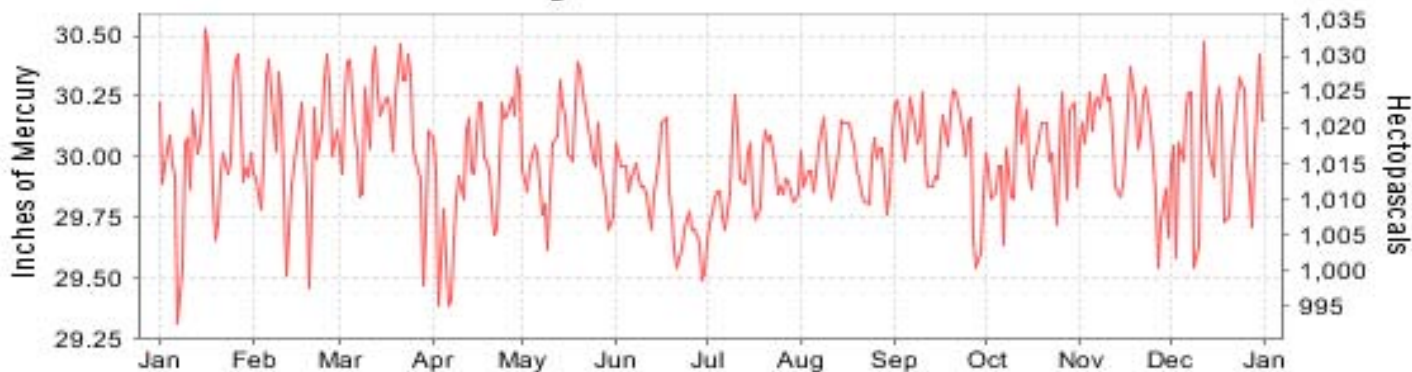
### Daily Max/Min Temperature



### Daily Precipitation



### Daily Station Pressure



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NATIONAL  
CLIMATIC DATA CENTER  
ASHEVILLE, NORTH CAROLINA

*Thomas R. Karl*  
DIRECTOR  
NATIONAL CLIMATIC DATA CENTER

# METEOROLOGICAL DATA FOR 2009

## PHILADELPHIA (KPHL)

LATITUDE: 39° 52'N      LONGITUDE: -75° 13'W      ELEVATION (FT): GRND: 7      BARO: 62      TIME ZONE: EASTERN (UTC -5)      WBAN: 13739

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	35.5	46.0	52.3	65.5	74.1	78.9	85.0	86.0	75.7	64.2	57.8	43.3	63.7	
	HIGHEST DAILY MAXIMUM	53	69	74	93	87	90	92	95	85	80	70	67	95	
	DATE OF OCCURRENCE	23	11	29	26	23	26	29	21+	05	09	15+	03	AUG 21+	
	MEAN DAILY MINIMUM	22.6	28.1	35.0	45.6	55.9	63.2	66.8	70.3	60.3	48.6	44.0	29.4	47.5	
	LOWEST DAILY MINIMUM	6	15	13	34	44	52	60	62	51	38	31	17	6	
	DATE OF OCCURRENCE	17	06+	03	13	19	01	15	31	20	19	07	23	JAN 17	
	AVERAGE DRY BULB	29.1	37.1	43.7	55.6	65.0	71.1	75.9	78.2	68.0	56.4	50.9	36.4	55.6	
	MEAN WET BULB	25.0		37.9	47.7	57.6	64.7	66.6	70.3	60.9	51.1	46.2	32.5		
	MEAN DEW POINT	15.0		28.4	38.7	51.7	60.9	60.9	66.4	56.1	45.7	40.7	24.4		
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 90°	0	0	0	3	0	1	4	7	0	0	0	0	15	
	MAXIMUM <= 32°	11	2	2	9	0	0	0	0	0	0	0	3	27	
	MINIMUM <= 32°	30	21	10	0	0	0	0	0	0	0	1	22	84	
MINIMUM <= 0°	0	0	0	0	0	0	0	0	0	0	0	0	0		
H/C	HEATING DEGREE DAYS	1107	774	653	320	79	15	0	0	19	269	417	881	4534	
	COOLING DEGREE DAYS	0	0	0	42	86	205	347	418	119	10	0	0	1227	
RH	MEAN (PERCENT)	58	56	60	59	68	74	64	71	69	70	70	64	65	
	HOUR 01 LST	60	66	66	70	82	84	78	82	78	79	77	69	74	
	HOUR 07 LST	65	66	68	65	74	78	70	76	74	77	78	68	72	
	HOUR 13 LST	46	45	49	46	54	60	45	55	54	58	59	55	52	
	HOUR 19 LST	58	51	58	53	65	73	62	70	71	70	69	64	64	
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	1	3	4	
	THUNDERSTORMS	0	0	1	4	6	6	11	8	1	1	1	0	39	
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.)	30.01	30.05	30.14	29.96	30.01	29.83	29.90	29.97	30.04	30.00	30.08	30.05	30.00	
	MEAN SEA-LEVEL PRESS. (IN.)	30.06	30.08	30.22	29.97	30.04	29.85	29.94	30.01	30.08	30.03	30.10	30.08	30.04	
WINDS	RESULTANT SPEED (MPH)	5.6	6.2	2.6	2.5	1.9	1.0	2.5	1.6	2.6	2.1	4.1	5.5	2.3	
	RES. DIR. (TENS OF DEGS.)	29	29	33	27	22	03	24	24	02	32	01	29	30	
	MEAN SPEED (MPH)	9.9	10.8	9.6	10.9	8.7	7.9	8.0	6.3	8.0	8.9	8.8	10.5	9.0	
	PREVAIL. DIR. (TENS OF DEGS.)	31	28	19	23	23	07	19	20	05	04	04	29	04	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	35	46	33	39	30	29	36	36	37	37	33	38	46	
	DIR. (TENS OF DEGS.)	26	27	29	28	27	11	33	27	03	26	04	30	27	
	DATE OF OCCURRENCE	08	12	30	04	29	15	11	18	11	07	13	15	FEB 12	
	MAXIMUM 3-SECOND WIND:														
	SPEED (MPH)	44	56	40	48	39	38	41	46	48	52	40	49	56	
DIR. (TENS OF DEGS.)	26	28	29	28	20	11	32	27	04	29	03	30	28		
DATE OF OCCURRENCE	08	12	30	04	14	15	31	02	11	07	13	15	FEB 12		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	2.70	0.84	1.62	3.99	4.84	4.79	3.35	10.29	3.65	5.51	2.06	8.86	52.50	
	GREATEST 24-HOUR (IN.)	1.65	0.57	0.39	0.86	1.38	1.03	1.42	3.18	2.03	1.65	0.93	2.13	3.18	
	DATE OF OCCURRENCE	06-07	03-04	29	20-21	06-07	09	31	21-22	10-11	27-28	19-20	09	AUG 21-22	
	NUMBER OF DAYS WITH:														
	PRECIPITATION 0.01	9	5	6	12	14	17	12	11	10	14	11	10	131	
PRECIPITATION 0.10	3	2	6	8	8	11	7	9	6	9	7	9	85		
PRECIPITATION 1.00	1	0	0	0	0	1	1	5	1	2	0	4	15		
SNOWFALL	SNOW, ICE PELLETS, HAIL														
	TOTAL (IN.)	4.1	8.4	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	24.1	45.6	
	GREATEST 24-HOUR (IN.)	2.1	7.7	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	22.5	22.5	
	DATE OF OCCURRENCE	28	03	02									19	DEC 19	
	MAXIMUM SNOW DEPTH (IN.)	2	8	6	0	0	0	0	0	0	0	0	21	21	
	DATE OF OCCURRENCE	28	04	02									20	DEC 20	
NUMBER OF DAYS WITH:															
SNOWFALL >= 1.0	1	1	2	0	0	0	0	0	0	0	0	1	5		

# NORMALS, MEANS, AND EXTREMES

## PHILADELPHIA (KPHL)

LATITUDE: 39 ° 52'N      LONGITUDE: -75 ° 13'W      ELEVATION (FT): GRND: 7      BARO: 62      TIME ZONE: EASTERN (UTC -5)      WBAN: 13739

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	39.0	42.1	51.3	62.0	72.1	80.6	85.5	84.0	76.7	65.7	54.8	44.2	63.2	
	MEAN DAILY MAXIMUM	62	39.7	42.6	51.5	63.4	73.3	82.0	86.5	84.8	77.7	66.6	55.3	44.0	64.0	
	HIGHEST DAILY MAXIMUM	68	74	74	87	95	97	100	104	101	100	96	81	73	104	
	YEAR OF OCCURRENCE		1950	1997	1945	2002	1991	1994	1994	1966	2001	1953	1941	1993	1998	JUL 1966
	MEAN OF EXTREME MAXS.	62	60.1	61.9	73.1	83.3	88.5	93.6	95.8	94.1	90.2	81.8	72.6	63.1	79.8	
	NORMAL DAILY MINIMUM	30	25.5	27.5	35.1	44.2	54.8	64.0	69.7	68.5	60.9	48.7	39.5	30.6	47.4	
	MEAN DAILY MINIMUM	62	24.9	26.4	33.6	43.2	53.1	62.3	68.0	66.8	59.3	47.6	38.2	29.1	46.0	
	LOWEST DAILY MINIMUM	68	-7	-4	7	19	28	44	51	44	35	25	15	1	-7	
	YEAR OF OCCURRENCE		1984	1961	1984	1982	1966	1984	1966	1986	1963	1969	1976	1983	1984	JAN 1984
	MEAN OF EXTREME MINS.	62	9.0	10.9	18.9	30.4	40.8	50.6	58.2	55.9	45.0	33.8	24.2	14.3	32.7	
	NORMAL DRY BULB	30	32.3	34.8	43.2	53.1	63.5	72.3	77.6	76.3	68.8	57.2	47.1	37.4	55.3	
	MEAN DRY BULB	62	32.3	34.5	42.6	53.3	63.2	72.3	77.3	75.8	68.5	57.1	46.8	36.6	55.0	
	MEAN WET BULB	26	28.8	30.4	36.4	45.7	55.3	64.5	68.8	67.9	61.7	51.3	42.0	32.8	48.8	
	MEAN DEW POINT	26	24.1	24.6	31.3	40.8	51.3	61.1	65.9	65.2	58.7	47.8	37.6	27.8	44.7	
	NORMAL NO. DAYS WITH:															
	MAXIMUM >= 90	30	0.0	0.0	0.0	0.4	1.3	4.6	10.5	7.3	1.6	0.0	0.0	0.0	25.7	
MAXIMUM <= 32	30	8.0	5.3	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	3.6	17.7		
MINIMUM <= 32	30	24.8	20.8	12.6	2.0	0.0	0.0	0.0	0.0	0.0	0.7	7.3	19.2	87.4		
MINIMUM <= 0	30	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5		
H/C	NORMAL HEATING DEG. DAYS	30	1020	858	681	362	113	12	1	2	39	269	545	857	4759	
	NORMAL COOLING DEG. DAYS	30	0	0	2	10	70	234	395	351	152	19	2	0	1235	
RH	NORMAL (PERCENT)	30	67	64	62	61	66	68	69	70	72	71	68	68	67	
	HOURLY 01 LST	30	71	69	70	70	77	80	80	82	82	82	75	72	76	
	HOURLY 07 LST	30	74	73	73	71	75	77	78	81	83	83	78	75	77	
	HOURLY 13 LST	30	60	55	52	50	53	54	54	55	56	55	56	58	55	
	HOURLY 19 LST	30	65	61	58	55	59	61	62	65	68	69	66	66	63	
S	PERCENT POSSIBLE SUNSHINE	59	49	53	55	55	56	62	61	62	59	59	52	49	56	
W/O	MEAN NO. DAYS WITH:															
	HEAVY FOG(VISBY <= 1/4 MI) THUNDERSTORMS	46 62	2.0 0.3	1.5 0.3	1.0 1.0	0.8 2.2	0.7 4.0	0.6 5.2	0.7 5.6	0.4 4.9	0.8 2.4	1.9 0.8	1.5 0.5	1.7 0.2	13.6 27.4	
CLOUDNESS	MEAN:															
	SUNRISE-SUNSET (OKTAS)															
	MIDNIGHT-MIDNIGHT (OKTAS)															
	MEAN NO. DAYS WITH:															
	CLEAR	1	3.0	2.0	8.0		8.0	11.0								
	PARTLY CLOUDY			1.0	4.0		5.0	3.0								
	CLOUDY	1	3.0	6.0	8.0		7.0	9.0								
PR	MEAN STATION PRESSURE(IN)	26	30.06	30.05	30.02	29.95	29.96	29.94	29.95	29.99	30.03	30.06	30.03	30.08	30.01	
	MEAN SEA-LEVEL PRES. (IN)	26	30.09	30.08	30.06	29.98	29.99	29.97	29.98	30.02	30.07	30.09	30.10	30.10	30.04	
WINDS	MEAN SPEED (MPH)	26	10.0	10.4	10.9	10.3	9.2	8.7	8.5	8.0	8.4	8.7	9.4	10.0	9.4	
	PREVAIL.DIR(TENS OF DEGS)	46	30	31	30	24	24	24	24	24	24	24	24	30	24	
	MAXIMUM 2-MINUTE:															
	SPEED (MPH)	14	44	46	49	39	52	51	41	41	39	45	46	45	52	
	DIR. (TENS OF DEGS)		27	27	24	28	28	30	33	25	32	24	27	27	28	
	YEAR OF OCCURRENCE		2008	2009	2008	2009	2005	1998	1999	1997	1998	2003	2003	2000	MAY 2005	
	MAXIMUM 3-SECOND															
	SPEED (MPH)	14	57	56	56	51	69	71	48	52	49	55	58	53	71	
DIR. (TENS OF DEGS)		18	28	24	28	27	30	28	24	13	20	28	28	30		
YEAR OF OCCURRENCE		1996	2009	2008	2000	2005	1998	2006	1997	2003	2003	2003	2000	JUN 1998		
PRECIPITATION	NORMAL (IN)	30	3.52	2.74	3.81	3.49	3.89	3.29	4.39	3.82	3.88	2.75	3.16	3.31	42.05	
	MAXIMUM MONTHLY (IN)	67	8.86	6.44	7.01	9.05	7.41	8.08	10.42	10.29	13.07	8.68	9.06	8.86	13.07	
	YEAR OF OCCURRENCE		1978	1979	1980	2007	1948	2003	1994	2009	1999	2005	1972	2009	SEP 1999	
	MINIMUM MONTHLY (IN)	67	0.45	0.55	0.68	0.52	0.47	0.11	0.64	0.49	.21	0.09	0.32	0.25	0.09	
	YEAR OF OCCURRENCE		1955	2002	1966	1985	1964	1949	1957	1964	2005	1963	1976	1955	OCT 1963	
	MAXIMUM IN 24 HOURS (IN)	67	2.70	3.52	3.08	4.36	3.18	4.62	4.68	5.68	6.77	5.94	3.99	3.18	6.77	
	YEAR OF OCCURRENCE		1979	2008	2000	2007	1984	1973	2004	1971	1999	2005	1977	2008	SEP 1999	
	NORMAL NO. DAYS WITH:															
	PRECIPITATION >= 0.01	30	10.9	9.7	10.5	10.9	11.7	10.0	9.4	8.4	9.1	8.0	9.4	10.6	118.6	
PRECIPITATION >= 1.00	30	0.9	0.6	1.0	0.8	0.8	0.8	1.3	1.2	1.1	0.7	0.6	0.8	10.6		
SNOWFALL	NORMAL (IN)	30	6.4	6.6	3.2	0.6	0.0	0.0	0.0	0.0	0.0	0.1	0.4	2.0	19.3	
	MAXIMUM MONTHLY (IN)	66	23.4	29.6	13.4	4.3	T	T	T	0.0	0.0	2.1	8.8	24.1	29.6	
	YEAR OF OCCURRENCE		1978	2003	1958	1971	1963	1993	2008			1979	1953	2009	FEB 2003	
	MAXIMUM IN 24 HOURS (IN)	66	33.8	21.3	12.0	4.3	T	T	T	0.0	0.0	2.1	8.7	22.5	33.8	
	YEAR OF OCCURRENCE		1996	1983	1993	1971	1963	1993	2006			1979	1953	2009	JAN 1996	
	MAXIMUM SNOW DEPTH (IN)	61	12	23	12	3	0	0	0	0	0	0	8	21	23	
	YEAR OF OCCURRENCE		1961	2003	1993	1997							1953	2009	FEB 2003	
	NORMAL NO. DAYS WITH:															
SNOWFALL >= 1.0	30	1.9	1.5	0.8	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	5.1		

**PRECIPITATION (inches) 2009 PHILADELPHIA (KPHL)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980	2.27	0.96	7.01	4.79	3.22	1.73	6.58	0.80	2.79	5.03	2.85	0.77	38.80
1981	0.50	2.94	1.61	3.60	4.53	4.40	4.54	5.11	2.83	2.68	0.95	4.14	37.83
1982	4.45	3.16	2.66	6.06	4.47	5.76	1.94	2.20	2.32	1.94	3.67	1.80	40.43
1983	2.81	3.53	6.70	8.12	7.03	2.75	0.68	2.57	3.45	3.69	5.71	7.37	54.41
1984	2.22	2.81	6.14	4.25	6.87	2.85	6.99	3.28	1.96	2.56	1.56	2.17	43.66
1985	1.55	2.44	1.95	0.52	4.99	1.88	4.66	2.82	5.78	1.54	6.09	0.98	35.20
1986	4.13	3.38	1.25	4.46	0.70	1.99	4.10	3.70	2.33	2.22	6.27	5.89	40.42
1987	4.58	1.17	1.16	3.63	3.15	2.01	4.82	3.72	2.78	2.62	2.08	1.68	33.40
1988	2.72	4.11	2.24	2.92	3.67	0.57	8.07	3.16	2.62	2.16	5.17	1.00	38.41
1989	2.41	3.25	4.41	2.27	6.76	4.73	9.44	3.92	5.03	3.44	1.79	1.21	48.66
1990	4.09	1.44	2.59	3.16	6.08	3.39	2.62	4.07	1.71	1.68	1.17	3.79	35.79
1991	4.10	0.75	4.13	2.81	1.82	3.36	4.79	3.86	3.58	1.61	1.55	3.86	36.22
1992	0.88	1.31	3.19	1.26	2.74	1.84	5.05	2.00	3.04	1.23	3.26	4.61	30.41
1993	1.97	3.03	6.61	4.20	2.42	1.52	1.98	5.18	6.66	2.69	2.23	3.69	42.18
1994	4.27	3.27	6.44	2.86	3.66	1.74	10.42	4.54	1.64	0.94	3.03	2.11	44.92
1995	3.10	2.41	1.67	1.96	2.67	0.62	2.92	1.15	3.55	5.99	3.34	2.15	31.53
1996	4.39	2.12	4.27	4.48	3.25	4.73	8.17	4.29	4.95	4.30	3.03	8.47	56.45
1997	2.80	2.48	3.91	2.58	2.32	1.49	2.38	4.56	1.59	1.83	3.49	3.09	32.52
1998	4.24	3.25	3.93	2.70	3.87	4.91	1.79	1.26	1.86	1.84	1.18	0.82	31.65
1999	4.89	2.95	4.02	3.31	3.70	1.16	1.22	5.32	13.07	3.55	2.31	2.99	48.49
2000	3.22	2.02	6.32	3.05	3.03	3.82	5.54	2.90	8.28	1.51	2.21	2.82	44.72
2001	2.77	3.04	5.44	1.49	3.99	5.93	1.30	0.97	2.58	0.83	0.56	2.11	31.01
2002	2.43	0.55	4.03	2.17	3.57	3.73	2.12	2.47	3.67	5.90	4.61	4.05	39.30
2003	1.93	5.04	4.09	2.20	4.17	8.08	2.01	3.26	4.66	4.45	2.63	5.46	47.98
2004	1.70	2.50	3.54	6.02	3.62	4.57	7.91	4.17	5.19	2.24	4.55	3.17	49.18
2005	4.45	2.61	3.66	5.32	1.27	3.31	4.31	2.57	0.21	8.68	2.86	2.97	42.22
2006	4.34	1.51	0.91	3.71	2.16	7.95	4.27	3.93	5.97	6.42	4.88	2.15	48.20
2007	3.35	1.73	3.82	9.05	2.68	4.02	3.44	2.94	0.58	4.66	1.45	4.41	42.13
2008	1.74	3.93	3.67	2.19	4.55	2.87	3.45	2.44	4.31	1.59	4.02	5.57	40.33
2009	2.70	0.84	1.62	3.99	4.84	4.79	3.35	10.29	3.65	5.51	2.06	8.86	52.50
POR= 62 YRS	3.17	2.70	3.75	3.50	3.57	3.64	4.07	3.95	3.57	2.93	3.20	3.52	41.57

WBAN : 13739

**AVERAGE TEMPERATURE (°F) 2009 PHILADELPHIA (KPHL)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980	31.8	29.7	40.2	54.7	65.4	70.6	78.5	80.0	72.2	54.9	43.2	32.5	54.5
1981	25.3	37.9	40.0	54.7	62.6	72.0	76.9	74.9	66.8	53.1	45.6	34.6	53.7
1982	24.7	34.4	41.7	50.2	65.9	68.7	76.9	73.5	67.6	56.9	48.4	41.3	54.2
1983	34.1	34.0	43.7	51.0	62.1	72.0	77.9	77.1	69.0	56.6	46.7	33.2	54.8
1984	26.2	38.7	35.5	50.2	60.2	73.0	73.9	75.2	64.7	61.2	44.4	41.9	53.8
1985	27.3	35.3	44.6	55.5	64.5	68.8	75.4	74.1	69.1	59.3	51.3	33.3	54.9
1986	32.8	32.1	44.5	53.3	66.8	73.8	78.1	74.0	68.3	57.8	44.5	37.9	55.3
1987	31.9	32.5	45.7	53.1	63.9	74.6	79.5	75.4	68.8	52.5	48.0	39.2	55.4
1988	27.3	34.6	44.7	51.3	63.6	72.3	80.7	78.3	66.7	51.8	47.7	35.4	54.5
1989	36.5	34.8	42.3	52.4	62.4	74.7	76.3	75.6	69.7	58.3	44.9	25.5	54.5
1990	40.3	41.2	46.1	53.3	61.3	72.2	78.0	75.8	68.0	61.9	49.7	42.1	57.5
1991	35.2	40.0	46.1	55.5	70.8	75.7	79.0	79.0	69.5	58.9	47.3	39.6	58.1
1992	35.7	37.5	41.6	53.2	62.5	71.3	77.1	73.5	68.4	55.2	48.0	38.8	55.2
1993	38.2	31.9	39.8	54.2	66.4	74.4	81.4	78.9	69.7	58.0	49.0	38.4	56.7
1994	27.4	33.2	42.8	59.5	62.5	78.1	82.1	74.9	68.3	57.5	51.7	41.9	56.7
1995	38.2	31.5	47.3	54.5	64.3	74.3	81.5	79.9	70.4	61.4	43.0	31.6	56.5
1996	30.2	33.9	38.7	52.7	60.6	73.0	74.4	74.5	68.7	56.3	41.3	40.2	53.7
1997	32.5	40.0	44.1	51.4	59.5	71.1	77.5	73.9	67.1	57.3	44.4	38.5	54.8
1998	41.0	41.8	45.5	55.3	66.2	71.5	77.5	78.0	71.8	58.3	48.2	42.0	58.1
1999	35.0	38.0	42.4	53.5	64.0	72.9	81.2	77.4	69.9	56.1	50.9	39.9	56.8
2000	32.1	37.5	48.0	52.6	64.2	72.6	74.1	74.1	66.4	57.7	45.4	31.3	54.7
2001	32.5	37.4	41.1	54.9	64.7	75.2	75.4	79.9	68.4	59.1	52.9	43.7	57.1
2002	39.2	41.1	45.5	57.2	63.3	73.9	79.6	79.5	72.2	57.6	45.9	35.4	57.5
2003	28.6	29.9	44.9	52.6	60.6	71.3	78.8	78.3	70.1	56.0	50.8	36.8	54.9
2004	26.1	35.5	45.1	54.4	69.3	71.8	76.3	75.0	70.5	56.2	47.9	37.8	55.5
2005	31.8	36.1	39.5	55.3	59.6	74.8	78.9	79.7	73.8	58.8	49.3	34.4	56.0
2006	40.8	35.6	44.5	56.7	64.6	72.8	79.5	78.1	67.2	56.2	51.3	42.7	57.5
2007	38.2	28.0	43.7	50.8	66.1	73.8	77.3	77.0	72.0	64.5	45.7	37.7	56.2
2008	35.9	36.9	44.8	56.3	61.2	76.4	79.3	74.6	70.4	56.6	45.6	38.7	56.4
2009	29.1	37.1	43.7	55.6	65.0	71.1	75.9	78.2	68.0	56.4	50.9	36.4	55.6
POR= 62 YRS	32.3	34.5	42.6	53.3	63.2	72.3	77.3	75.8	68.5	57.1	46.8	36.6	55.0

**HEATING DEGREE DAYS (base 65°F) 2009 PHILADELPHIA (KPHL)**

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1980-81	0	0	22	320	646	999	1222	752	768	309	129	4	5171
1981-82	0	0	58	364	576	936	1243	850	714	440	50	25	5256
1982-83	0	8	31	277	497	730	951	861	653	423	128	2	4561
1983-84	0	0	70	283	540	981	1196	756	911	438	181	13	5369
1984-85	0	0	92	138	613	709	1161	824	627	306	89	9	4568
1985-86	0	0	38	187	407	975	990	914	628	345	77	6	4567
1986-87	0	21	23	255	609	838	1017	904	591	359	129	1	4747
1987-88	0	0	20	379	504	796	1162	876	624	404	105	32	4902
1988-89	0	0	35	408	513	908	876	840	700	371	138	0	4789
1989-90	0	0	43	220	594	1219	757	662	588	375	127	6	4591
1990-91	2	1	55	171	453	701	920	694	576	296	44	0	3913
1991-92	0	0	42	215	527	778	903	789	720	356	124	9	4463
1992-93	0	1	49	310	504	804	824	920	773	314	47	6	4552
1993-94	0	0	34	219	479	820	1156	881	681	193	132	0	4595
1994-95	0	0	20	231	392	710	824	932	542	318	82	0	4051
1995-96	0	0	21	159	656	1029	1072	894	809	370	191	7	5208
1996-97	0	0	34	265	704	761	999	695	643	401	172	42	4716
1997-98	2	0	45	278	612	811	738	644	619	287	67	13	4116
1998-99	0	0	14	207	498	706	920	751	691	336	77	3	4203
1999-00	0	0	22	275	415	772	1012	792	519	371	107	15	4300
2000-01	0	0	73	230	584	1039	999	768	734	320	74	4	4825
2001-02	0	0	48	211	358	652	791	662	595	290	120	4	3731
2002-03	0	1	4	277	567	910	1123	975	618	373	157	25	5030
2003-04	0	0	11	284	421	870	1199	848	609	323	47	11	4623
2004-05	0	0	10	268	507	839	1021	803	780	297	170	5	4700
2005-06	0	0	7	221	463	941	743	816	628	251	82	2	4154
2006-07	0	0	34	281	404	683	824	1030	651	427	76	4	4414
2007-08	0	6	13	117	570	842	895	810	617	261	149	0	4280
2008-09	0	0	12	274	576	809	1107	774	653	320	79	15	4619
2009-	0	0	19	269	417	881							

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**COOLING DEGREE DAYS (base 65°F) 2009 PHILADELPHIA (KPHL)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1980	0	0	0	0	89	194	428	470	244	10	0	0	1435
1981	0	0	0	9	62	224	373	315	119	1	0	0	1103
1982	0	0	0	3	85	142	376	280	115	31	5	0	1037
1983	0	0	0	11	43	217	409	380	199	27	0	0	1286
1984	0	0	0	0	39	260	283	324	90	30	0	0	1026
1985	0	0	0	27	81	133	330	291	166	19	0	0	1047
1986	0	0	0	0	139	278	413	307	129	40	0	0	1306
1987	0	0	0	7	101	295	456	332	142	0	0	0	1333
1988	0	0	0	1	70	259	495	418	93	7	0	0	1343
1989	0	0	1	1	62	298	357	332	192	18	1	0	1262
1990	0	0	9	29	20	226	413	341	152	83	1	0	1274
1991	0	0	1	21	230	327	443	437	183	30	0	0	1672
1992	0	0	0	10	54	205	380	268	158	13	0	0	1088
1993	0	0	0	0	95	298	517	438	181	11	6	0	1546
1994	0	0	0	34	63	401	540	313	125	4	0	0	1480
1995	0	0	0	8	66	284	519	468	189	53	1	0	1588
1996	0	0	0	9	61	257	301	305	151	2	1	0	1087
1997	0	0	0	0	9	230	397	280	113	49	0	0	1078
1998	0	0	20	3	114	216	397	410	223	3	0	0	1386
1999	0	0	0	0	51	246	508	394	177	4	0	0	1380
2000	0	0	0	3	89	251	286	286	123	12	0	0	1050
2001	0	0	0	22	72	316	330	468	158	37	1	0	1404
2002	0	0	0	63	76	277	459	461	224	54	0	0	1614
2003	0	0	0	7	25	219	432	418	169	7	1	0	1278
2004	0	0	0	11	186	221	357	318	179	2	0	0	1274
2005	0	0	0	11	11	305	437	462	278	34	0	0	1538
2006	0	0	1	11	76	240	454	413	102	17	0	0	1314
2007	0	0	0	8	115	275	391	384	230	110	0	0	1513
2008	0	0	0	9	37	347	452	310	180	19	0	0	1354
2009	0	0	0	42	86	205	347	418	119	10	0	0	1227

**SNOWFALL (inches) 2009 PHILADELPHIA (KPHL)**

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1980-81	0.0	0.0	0.0	0.0	0.2	1.4	5.0	T	8.8	0.0	0.0	0.0	15.4
1981-82	0.0	0.0	0.0	0.0	T	2.8	14.0	3.5	1.1	4.0	0.0	0.0	25.4
1982-83	0.0	0.0	0.0	0.0	0.0	6.8	0.2	26.1	0.9	1.9	0.0	0.0	35.9
1983-84	0.0	0.0	0.0	0.0	0.8	T	10.5	T	10.3	T	0.0	0.0	21.6
1984-85	0.0	0.0	0.0	0.0	T	0.2	11.9	4.4	T	T	0.0	0.0	16.5
1985-86	0.0	0.0	0.0	0.0	0.0	1.5	3.4	11.5	T	T	0.0	0.0	16.4
1986-87	0.0	0.0	0.0	0.0	T	0.4	15.2	10.1	T	T	0.0	0.0	25.7
1987-88	0.0	0.0	0.0	0.0	1.4	1.5	10.6	1.5	T	0.0	0.0	0.0	15.0
1988-89	0.0	0.0	0.0	0.0	0.0	0.4	6.0	2.4	2.4	0.0	0.0	0.0	11.2
1989-90	0.0	0.0	0.0	0.0	4.6	5.3	1.4	0.9	2.4	2.4	0.0	0.0	17.0
1990-91	0.0	0.0	0.0	0.0	0.0	6.4	6.5	1.0	0.7	0.0	0.0	0.0	14.6
1991-92	0.0	0.0	0.0	0.0	T	T	1.2	1.0	2.5	T	0.0	0.0	4.7
1992-93	0.0	0.0	0.0	0.0	T	T	1.0	10.9	12.4	T	0.0	T	24.3
1993-94	0.0	0.0	0.0	0.0	T	0.9	4.1	13.2	4.9	0.0	0.0	0.0	23.1
1994-95	0.0	0.0	0.0	0.0	T	0.0	T	9.8	T	0.0	0.0	0.0	9.8
1995-96	0.0	0.0	0.0	0.0	1.9	7.3	33.8	12.9	7.2	2.4	0.0	0.0	65.5
1996-97	0.0	0.0	0.0	0.0	T	T	1.7	4.1	5.5	1.6	0.0	0.0	12.9
1997-98	0.0	0.0	0.0	0.0	T	0.2	0.5	T	0.1	0.0	0.0	T	0.8
1998-99	0.0	0.0	0.0	0.0	0.0	2.0	4.9	0.7	4.9	0.0	0.0	0.0	12.5
1999-00	0.0	0.0	0.0	0.0	0.0	T	13.7	5.7	0.0	1.6	T	0.0	21.0
2000-01	0.0	0.0	0.0	0.0	0.0	10.5	3.8	10.0	1.8	T	0.0	0.0	26.1
2001-02	0.0	0.0	0.0	0.0	0.0	0.0	4.0	T	T	T	0.0	0.0	4.0
2002-03	0.0	0.0	0.0	T	T	8.4	6.3	29.6	0.2	1.8	0.0	0.0	46.3
2003-04	0.0	0.0	0.0	0.0	T	6.0	7.6	0.4	3.7	0.3	0.0	0.0	18.0
2004-05	0.0	0.0	0.0	0.0	0.0	0.4	15.6	12.9	1.5	0.0	0.0	0.0	30.4
2005-06	0.0	0.0	0.0	0.0	T	7.0	0.4	12.0	T	0.1	0.0	0.0	19.5
2006-07	T	0.0	0.0	0.0	0.0	T	2.2	6.5	4.7	T	0.0	0.0	13.4
2007-08	0.0	0.0	0.0	0.0	0.0	1.6	1.0	3.7	T	0.0	0.0	0.0	6.3
2008-09	T	0.0	0.0	0.0	1.0	0.4	4.1	8.4	9.0	0.0	0.0	0.0	22.9
2009-	0.0	0.0	0.0	0.0	0.0	24.1							
POR= 62 YRS	T	0.0	0.0	T	0.6	3.5	6.5	6.8	3.5	0.5	T	T	21.4

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**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 METADATA SYSTEM", URL IS: <a href="https://mi3.ncdc.noaa.gov/mi3qry/login.cfm">https://mi3.ncdc.noaa.gov/mi3qry/login.cfm</a></p> <p><b>NOTE:</b> 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 PHILADELPHIA PENNSYLVANIA (KPHL)

The Appalachian Mountains to the west and the Atlantic Ocean to the east have a moderating effect on climate. Periods of very high or very low temperatures seldom last for more than three or four days. Temperatures below zero or above 100 degrees are a rarity. On occasion, the area becomes engulfed with maritime air during the summer months, and high humidity adds to the discomfort of seasonably warm temperatures.

Precipitation is fairly evenly distributed throughout the year with maximum amounts during the late summer months. Much of the summer rainfall is from local thunderstorms and amounts vary in different areas of the city. This is due, in part, to the higher elevations to the west and north. Snowfall amounts are often considerably larger in the northern suburbs than in the central and southern parts of the city. In many cases, the precipitation will change from snow to rain within the city. Single storms of 10 inches or more occur about every five years.

The prevailing wind direction for the summer months is from the southwest, while northwesterly winds prevail during the winter. The annual prevailing direction is from the west-southwest. Destructive velocities are comparatively rare and occur mostly in gustiness during summer thunderstorms. High winds occurring in the winter months, as a rule, come with the advance of cold air after the passage of a deep low pressure system. Only rarely have hurricanes in the vicinity caused widespread damage, primarily because of flooding.

Flood stages in the Schuylkill River normally occur about twice a year. Flood stages seldom last over 12 hours and usually occur after excessive thunderstorms. Flooding rarely occurs on the Delaware River.

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