

1999

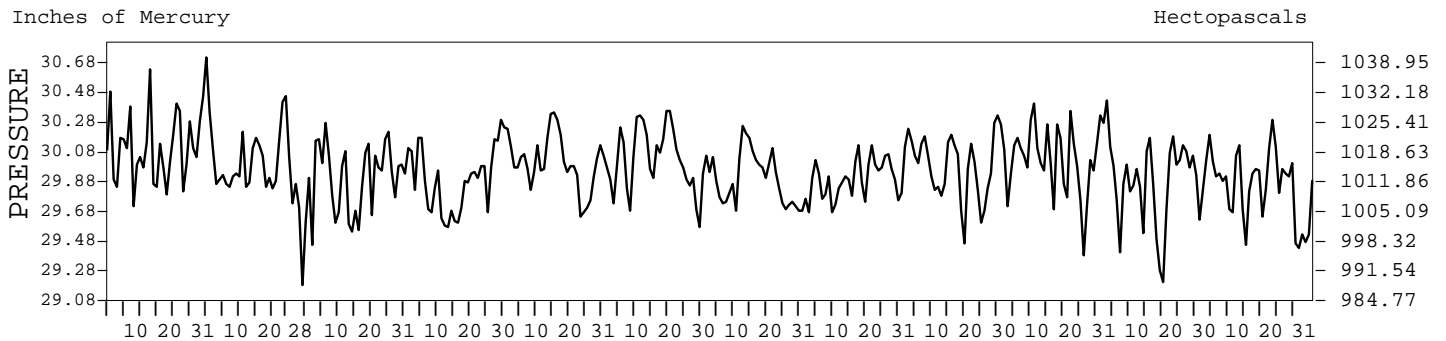
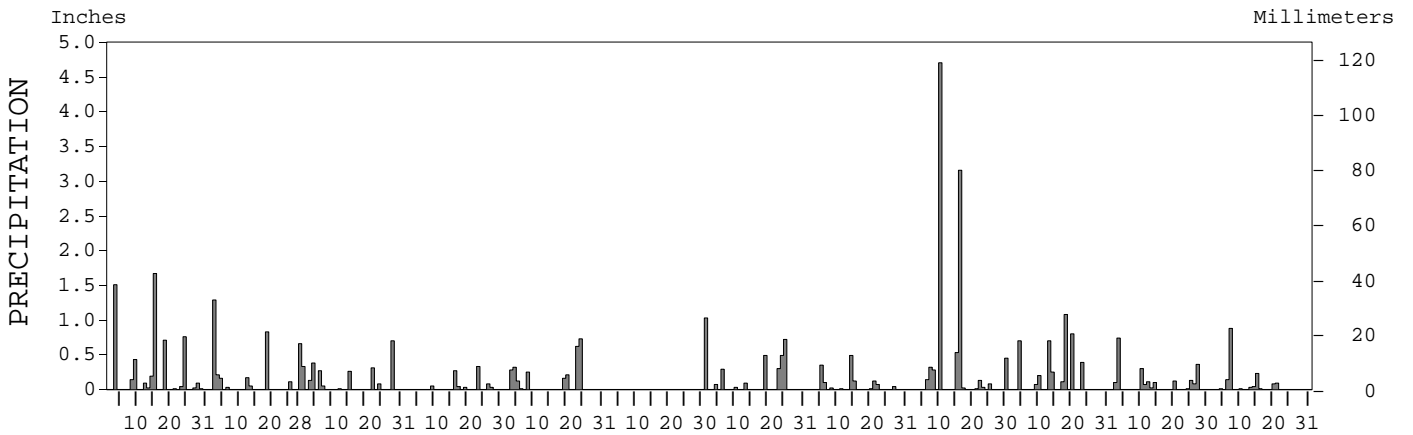
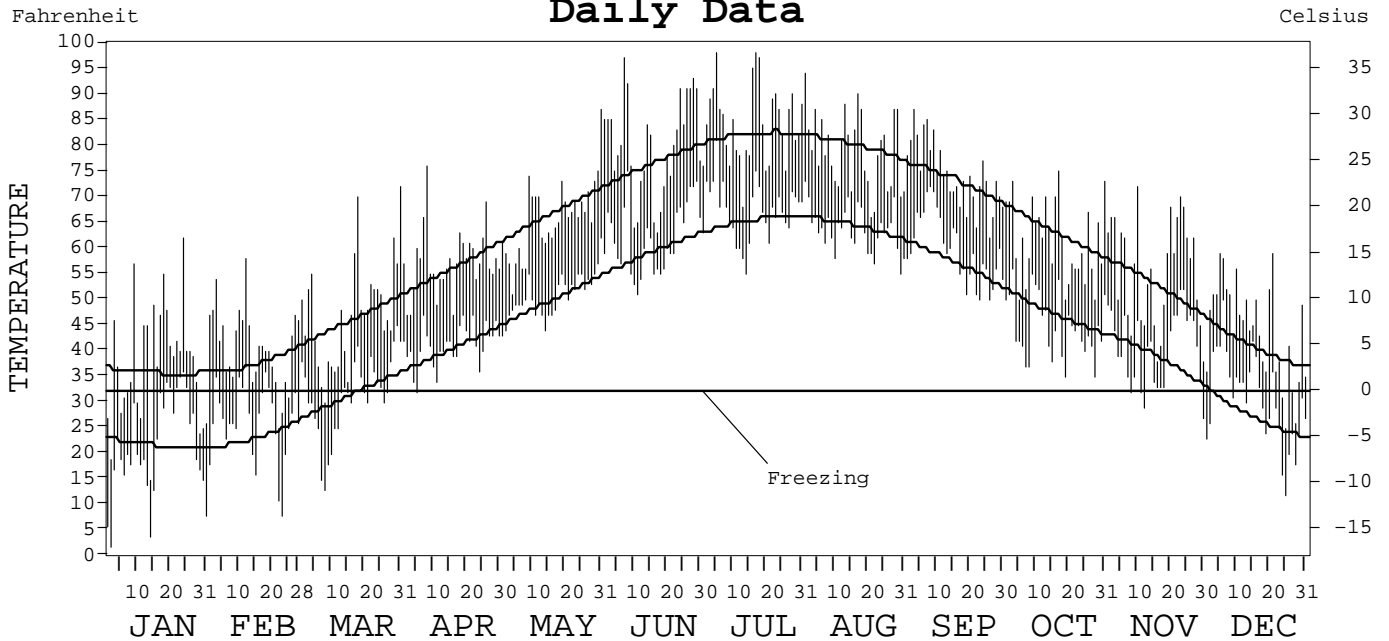
LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-2419

BOSTON,
MASSACHUSETTS (BOS)

Daily Data



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METEOROLOGICAL DATA FOR 1999

BOSTON, MA (BOS)

LATITUDE: 42° 21' 38" N LONGITUDE: 71° 00' 38" W ELEVATION (FT): GRND: 178 BARO: 178 TIME ZONE: EASTERN (UTC + 5) WBAN: 14739

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	37.5	40.8	47.2	57.3	65.6	79.9	84.2	78.9	74.2	61.4	55.6	43.9	60.5	
	HIGHEST DAILY MAXIMUM	62	58	72	76	87	97	98	94	87	75	72	59	98	
	DATE OF OCCURRENCE	24	12	31	08	31	07	17+	01	03	17	10	21+	JUL 17+	
	MEAN DAILY MINIMUM	21.5	26.4	31.5	41.1	50.7	62.0	67.2	63.7	59.9	44.6	40.4	30.7	45.0	
	LOWEST DAILY MINIMUM	2	8	13	32	43	51	55	55	50	35	27	12	2	
	DATE OF OCCURRENCE	02	23	08	05	01	11	14	30	26+	28+	30	25	JAN 02	
	AVERAGE DRY BULB	29.5	33.6	39.4	49.2	58.2	71.0	75.7	71.3	67.1	53.0	48.0	37.3	52.8	
	MEAN WET BULB	27.4	30.3	34.1	41.7	52.7	62.9	67.9	64.7	62.2	48.6	42.9	32.7	47.3	
	MEAN DEW POINT	20.2	21.8	25.9	31.9	47.6	57.7	63.5	60.4	59.1	43.8	35.6	23.3	40.9	
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	0	7	7	2	0	0	0	0	0	16
	MAXIMUM ≤ 32°	11	3	1	0	0	0	0	0	0	0	0	4	19	
	MINIMUM ≤ 32°	25	22	17	1	0	0	0	0	0	0	4	17	86	
MINIMUM ≤ 0°	0	0	0	0	0	0	0	0	0	0	0	0	0		
H/C	HEATING DEGREE DAYS	1092	872	790	468	215	29	2	7	39	363	505	851	5233	
	COOLING DEGREE DAYS	0	0	0	0	11	215	344	213	110	0	0	0	893	
RH	MEAN (PERCENT)	69	64	63	55	72	66	70	71	78	72	65	59	67	
	HOUR 01 LST	70	68	68	59	76	76	77	79	86	82	72	63	73	
	HOUR 07 LST	75	70	70	60	75	69	74	78	85	81	72	66	73	
	HOUR 13 LST	63	57	56	49	64	54	59	58	68	60	54	53	58	
	HOUR 19 LST	69	64	60	54	72	63	68	71	76	70	64	56	66	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	4	1	2	0	5	1	3	1	2	0	1	0	20	
	THUNDERSTORMS	1	0	0	1	2	0	6	2	0	0	0	0	12	
CLOUDINESS	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.)	30.12	29.99	29.87	29.88	30.01	30.02	29.89	29.91	29.97	30.05	29.86	29.83	29.95	
	MEAN SEA-LEVEL PRESS. (IN.)	30.15	30.02	29.90	29.91	30.04	30.05	29.92	29.94	30.00	30.08	30.05	30.02	30.01	
WINDS	RESULTANT SPEED (MPH)	5.6	5.0	6.2	3.6	0.9	3.6	2.5	1.0	2.7	4.7	6.6	6.3	3.5	
	RES. DIR. (TENS OF DEGS.)	28	31	29	31	23	23	23	22	20	26	26	28	27	
	MEAN SPEED (MPH)	12.2	11.2	14.6	11.8	9.7	10.7	10.2	10.0	10.1	11.3	12.5	12.0	11.4	
	PREVAIL. DIR. (TENS OF DEGS.)	28	32	32	32	08	20	27	20	19	29	29	29	29	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	36	31	43	31	31	30	45	25	37	41	40	39	45	
	DIR. (TENS OF DEGS.)	20	13	16	28	23	22	30	22	29	31	16	30	30	
	DATE OF OCCURRENCE	24	02	22+	08+	25	28	25	14+	17	14	03	11	JUL 25	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	45	38	53	41	39	37	74	32	46	52	49	45	74	
DIR. (TENS OF DEGS.)	27	30	19	29	22	22	25	31	30	32	17	29	25		
DATE OF OCCURRENCE	18	26	04	08	25	28	24	06	17	14	03	11	JUL 24		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	5.69	3.51	2.52	0.83	2.70	T	3.51	1.33	9.86	4.30	2.14	1.52	37.91	
	GREATEST 24-HOUR (IN.)	1.80	1.50	0.70	0.33	1.31	T	1.21	0.61	4.71	1.19	0.84	1.01	4.71	
	DATE OF OCCURRENCE	14-15	02-03	28	23	23-24	30+	24-25	14-15	10	17-18	02-03	06-07	SEP 10	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	14	9	10	7	9	0	9	10	12	9	12	10	111	
PRECIPITATION ≥ 0.10	7	7	7	2	8	0	6	5	8	8	8	3	69		
PRECIPITATION ≥ 1.00	2	1	0	0	0	0	1	0	2	1	0	0	7		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)	16.8	7.4	11.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.6	
	GREATEST 24-HOUR (IN.)	7.8	6.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.8	
	DATE OF OCCURRENCE	14	25	15										JAN 14	
	MAXIMUM SNOW DEPTH (IN.)	8	7	3	0	0	0	0	0	0	0	0	0	8	
	DATE OF OCCURRENCE	15	26	16+										JAN 15	
NUMBER OF DAYS WITH:															
SNOWFALL ≥ 1.0	5	1	4	0	0	0	0	0	0	0	0	0	10		

NORMALS, MEANS, AND EXTREMES

BOSTON, MA (BOS)

LATITUDE: 42° 21' 38" N LONGITUDE: 71° 00' 38" W ELEVATION (FT): GRND: 178 BARO: 178 TIME ZONE: EASTERN (UTC + 5) WBAN: 14739

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	35.7	37.5	45.8	55.9	66.6	76.3	81.8	79.8	72.8	62.7	52.2	40.4	59.0
	MEAN DAILY MAXIMUM	54	36.6	38.2	45.5	56.1	66.8	76.7	82.0	80.0	72.5	62.7	51.9	40.9	59.2
	HIGHEST DAILY MAXIMUM	48	66	70	89	94	95	100	102	102	100	90	79	76	102
	YEAR OF OCCURRENCE		1995	1985	1998	1976	1979	1952	1977	1975	1953	1963	1994	1998	JUL 1977
	MEAN OF EXTREME MAXS.	54	56.1	56.1	67.1	77.7	87.1	92.7	95.3	92.9	88.9	80.0	69.9	60.5	77.0
	NORMAL DAILY MINIMUM	30	21.6	23.0	31.3	40.2	49.8	59.1	65.1	64.0	56.8	46.9	38.3	26.7	43.6
	MEAN DAILY MINIMUM	54	22.1	23.5	31.1	40.3	49.8	59.2	65.3	64.0	56.7	47.0	38.1	27.2	43.7
	LOWEST DAILY MINIMUM	48	-12	-4	6	16	34	45	50	47	38	28	15	-7	-12
	YEAR OF OCCURRENCE		1957	1961	1984	1982	1956	1986	1988	1986	1965	1976	1989	1980	JAN 1957
	MEAN OF EXTREME MINS.	54	3.3	5.9	15.4	29.5	40.3	49.5	57.1	54.6	44.2	34.6	24.3	9.3	30.7
	NORMAL DRY BULB	30	28.6	30.3	38.6	48.1	58.2	67.7	73.5	71.9	64.8	54.8	45.3	33.6	51.3
	MEAN DRY BULB	54	29.3	30.9	38.3	48.2	58.3	67.9	73.7	72.0	64.5	54.9	45.0	34.1	51.4
	MEAN WET BULB	16	26.8	28.1	33.6	42.1	51.5	60.7	66.1	65.4	58.7	45.9	39.8	28.9	45.6
	MEAN DEW POINT	16	18.9	19.5	24.2	34.6	42.7	55.4	61.6	61.2	54.3	40.5	32.9	21.2	38.9
	NORMAL NO. DAYS WITH:														
MAXIMUM ≥ 90°	30	0.0	0.0	0.0	0.1	0.5	2.5	5.4	2.9	0.8	*	0.0	0.0	12.2	
MAXIMUM ≤ 32°	30	11.4	8.0	2.0	*	0.0	0.0	0.0	0.0	0.0	0.0	0.3	6.5	28.2	
MINIMUM ≤ 32°	30	26.1	23.5	16.8	2.7	0.0	0.0	0.0	0.0	0.0	0.6	7.0	22.3	99.0	
MINIMUM ≤ 0°	30	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	1.2	
H/C	NORMAL HEATING DEG. DAYS	30	1128	972	818	507	221	32	0	6	72	321	591	973	5641
	NORMAL COOLING DEG. DAYS	30	0	0	0	0	10	113	264	220	66	5	0	0	678
RH	NORMAL (PERCENT)	30	62	62	63	63	67	68	68	71	72	68	68	65	66
	HOUR 01 LST	30	65	65	67	69	74	77	77	79	80	76	72	68	72
	HOUR 07 LST	30	67	68	69	68	71	73	74	77	79	77	74	71	72
	HOUR 13 LST	30	57	56	56	55	58	58	57	59	59	57	59	59	58
	HOUR 19 LST	30	61	60	62	61	64	66	66	69	71	67	66	64	65
S	PERCENT POSSIBLE SUNSHINE	61	53	56	57	56	58	63	65	65	63	60	50	52	58
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	65	1.8	1.7	2.0	1.7	2.7	2.1	2.3	1.8	1.9	2.2	1.8	1.3	23.3
	THUNDERSTORMS	65	0.2	0.1	0.6	1.0	2.3	3.4	4.2	3.4	1.6	0.7	0.4	0.2	18.1
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)	61	5.0	5.0	5.1	5.3	5.3	5.0	4.9	4.5	4.4	4.4	5.0	5.0	4.9
	MIDNIGHT-MIDNIGHT (OKTAS)	32	4.8	4.7	4.9	4.9	5.0	4.7	4.7	4.3	4.3	4.1	4.8	4.7	4.7
	MEAN NO. DAYS WITH:														
CLEAR	62	9.0	8.2	7.7	7.0	6.3	6.6	6.6	9.1	10.0	10.7	7.7	8.5	97.4	
PARTLY CLOUDY	62	6.8	6.6	8.0	8.1	9.9	10.4	12.0	10.5	7.9	7.7	7.2	7.3	102.4	
CLOUDY	62	15.2	13.4	15.3	14.9	14.8	12.9	11.9	10.9	11.6	12.1	14.7	14.9	162.6	
PR	MEAN STATION PRESSURE (IN)	27	30.00	30.00	30.00	29.90	29.90	29.90	29.90	30.00	29.99	30.00	29.99	29.99	29.96
	MEAN SEA-LEVEL PRES. (IN)	16	30.03	30.03	30.01	29.96	29.97	29.95	29.97	30.02	30.06	30.08	30.07	30.04	30.02
WINDS	MEAN SPEED (MPH)	51	13.8	13.8	14.0	13.5	12.2	11.6	11.0	10.8	11.3	11.9	12.9	13.6	12.5
	PREVAIL. DIR (TENS OF DEGS)	32	30	30	29	30	20	24	24	24	24	30	30	30	30
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	3	37	40	46	40	36	30	45	30	47	41	48	39	48
	DIR. (TENS OF DEGS)		27	03	03	02	21	22	30	09	23	31	11	30	11
	YEAR OF OCCURRENCE		1997	1998	1997	1997	1997	1999	1999	1997	1998	1999	1997	1999	NOV 1997
	MAXIMUM 5-SECOND:														
SPEED (MPH)	3	51	47	55	51	41	40	74	37	63	52	57	47	74	
DIR. (TENS OF DEGS)		26	04	28	01	21	31	25	10	23	32	11	29	25	
YEAR OF OCCURRENCE		1997	1998	1997	1997	1997	1998	1999	1997	1998	1999	1997	1997	JUL 1999	
PRECIPITATION	NORMAL (IN)	30	3.59	3.62	3.69	3.60	3.25	3.09	2.84	3.24	3.06	3.30	4.22	4.01	41.51
	MAXIMUM MONTHLY (IN)	48	10.55	7.81	11.00	9.46	13.38	13.20	8.12	17.09	9.86	10.66	8.89	9.74	17.09
	YEAR OF OCCURRENCE		1979	1984	1953	1987	1954	1982	1959	1955	1999	1996	1983	1969	AUG 1955
	MINIMUM MONTHLY (IN)	48	0.61	0.72	0.62	0.83	0.53	0.48	0.52	0.82	0.35	0.41	0.64	0.81	0.35
	YEAR OF OCCURRENCE		1989	1987	1981	1999	1964	1999	1952	1995	1957	1994	1976	1989	SEP 1957
	MAXIMUM IN 24 HOURS (IN)	48	2.72	2.68	4.13	3.32	5.74	5.69	3.36	8.40	5.64	6.63	3.76	5.14	8.40
	YEAR OF OCCURRENCE		1979	1969	1968	1991	1954	1998	1996	1955	1954	1996	1992	1992	AUG 1955
	NORMAL NO. DAYS WITH:														
PRECIPITATION ≥ 0.01	30	11.0	9.9	11.6	11.0	11.2	10.7	8.9	9.9	8.4	8.6	10.9	12.0	124.1	
PRECIPITATION ≥ 1.00	30	0.9	1.2	0.8	1.0	0.7	0.6	0.7	0.7	0.7	0.7	1.2	0.9	10.1	
SNOWFALL	NORMAL (IN)	30	11.9	12.3	6.9	1.1	0.*	0.0	0.0	0.0	0.*	1.3	8.1	41.6	
	MAXIMUM MONTHLY (IN)	62	39.8	41.3	38.9	13.3	0.5	0.0	0.0	T	0.0	0.2	10.0	27.9	
	YEAR OF OCCURRENCE		1996	1969	1993	1982	1977			1994		1979	1938	1970	FEB 1969
	MAXIMUM IN 24 HOURS (IN)	62	21.0	23.6	17.7	13.2	0.5	0.0	0.0	T	0.0	0.2	8.0	13.0	23.6
	YEAR OF OCCURRENCE		1978	1978	1960	1982	1977			1994		1979	1987	1960	FEB 1978
	MAXIMUM SNOW DEPTH (IN)	49	26	29	20	12	0	0	0	0	0	0	6	14	29
	YEAR OF OCCURRENCE		1978	1978	1978	1982							1987	1975	FEB 1978
NORMAL NO. DAYS WITH:															
SNOWFALL ≥ 1.0	30	2.9	2.7	2.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.5	2.5	11.0	

PRECIPITATION (inches) 1999 BOSTON, MA (BOS)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0.89	4.65	4.32	2.79	3.01	4.62	1.27	4.12	2.60	2.63	4.09	6.92	41.91
1971	1.88	5.05	3.08	2.92	3.72	1.74	2.84	1.59	1.55	2.16	6.74	2.40	35.67
1972	2.05	5.29	5.37	3.34	5.26	6.76	2.19	0.83	5.94	2.98	7.02	6.08	53.11
1973	3.12	2.13	2.20	5.65	3.76	4.68	4.83	2.78	1.95	2.71	1.74	7.20	42.75
1974	3.22	3.24	4.01	3.86	2.87	2.29	1.54	3.41	7.03	3.12	1.73	3.92	40.24
1975	5.70	3.37	2.74	2.40	1.78	2.10	2.35	5.52	5.49	4.41	5.13	4.80	45.79
1976	5.29	2.45	2.42	2.00	1.98	0.58	4.30	7.99	1.56	4.16	0.64	3.35	36.72
1977	4.41	2.40	4.76	4.07	3.52	2.49	2.21	2.91	4.03	4.63	2.54	6.20	44.17
1978	8.12	2.87	2.46	1.79	4.50	1.53	1.48	4.62	1.30	3.13	2.21	3.63	37.64
1979	10.55	3.46	3.03	3.19	4.24	0.86	2.36	5.02	3.61	3.14	3.29	1.42	44.17
1980	0.74	0.88	5.37	4.36	2.30	3.05	2.20	1.55	0.82	4.14	3.01	0.97	29.39
1981	0.95	6.65	0.62	3.14	1.17	1.65	3.47	1.04	2.54	3.43	4.78	6.27	35.71
1982	4.69	2.66	2.17	3.42	2.58	13.20	4.22	2.22	1.57	3.19	3.42	1.27	44.61
1983	5.03	5.00	9.72	6.86	2.94	1.07	1.07	3.28	1.06	3.74	8.89	4.94	53.60
1984	2.31	7.81	6.82	4.43	8.77	3.06	4.43	1.60	1.22	5.18	1.68	2.93	50.24
1985	1.12	1.83	2.29	1.62	3.36	3.94	3.51	6.67	3.00	1.65	6.39	1.21	36.59
1986	3.42	2.83	3.42	1.59	1.31	7.74	3.96	3.32	1.08	3.27	6.01	6.38	44.33
1987	7.28	0.72	4.27	9.46	1.75	2.62	0.82	2.93	7.29	2.73	3.49	2.12	45.48
1988	2.50	3.93	3.52	1.47	2.86	1.29	7.62	1.11	1.29	1.60	6.57	1.02	34.78
1989	0.61	2.51	3.07	3.58	3.54	2.84	5.09	5.92	4.61	5.71	4.13	0.81	42.42
1990	3.78	3.60	1.71	5.94	6.53	0.69	4.08	6.57	1.67	7.36	1.39	3.18	46.50
1991	3.24	1.58	4.33	4.84	0.92	2.89	1.95	5.27	6.32	4.27	4.06	2.58	42.25
1992	3.11	2.28	3.59	2.34	1.40	4.61	2.66	4.25	3.46	1.62	6.14	8.26	43.72
1993	2.17	4.94	7.67	4.86	1.04	1.75	1.75	1.32	4.64	3.61	2.86	6.60	43.21
1994	5.22	2.95	7.49	2.25	5.35	0.86	1.80	7.03	4.58	0.41	4.31	5.37	47.62
1995	4.33	2.57	2.20	1.40	1.82	1.55	2.06	0.82	3.60	6.42	5.13	3.20	35.10
1996	7.44	3.17	2.36	4.38	2.73	1.03	5.23	1.54	6.09	10.66	2.29	5.76	52.68
1997	2.34	1.28	4.68	3.46	2.63	1.41	0.63	3.01	1.02	1.78	5.86	2.29	30.39
1998	4.76	5.54	4.15	3.58	6.84	11.58	2.47	3.37	3.03	5.38	1.38	1.59	53.67
1999	5.69	3.51	2.52	0.83	2.70	T	3.51	1.33	9.86	4.30	2.14	1.52	37.91
POR= 129 YRS	3.69	3.37	3.86	3.57	3.25	3.15	3.10	3.56	3.25	3.28	3.88	3.57	41.53

WBAN : 14739

AVERAGE TEMPERATURE (°F) 1999 BOSTON, MA (BOS)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	23.0	32.3	37.4	49.0	59.6	67.0	74.3	73.6	65.6	54.9	44.8	28.9	50.9
1971	23.8	30.5	36.7	45.1	55.7	69.1	73.4	73.4	68.0	59.8	43.1	36.3	51.2
1972	33.0	29.6	36.3	44.9	57.6	65.4	73.8	71.5	65.7	51.8	42.3	33.0	50.4
1973	31.4	30.1	43.3	49.9	57.0	70.0	74.3	74.8	64.4	55.6	45.8	39.6	53.0
1974	31.7	29.1	38.7	50.9	54.7	64.8	72.4	72.0	63.7	50.1	45.3	37.8	50.9
1975	34.9	32.1	36.9	45.1	61.5	67.5	75.9	72.9	63.9	57.3	51.8	34.4	52.9
1976	26.1	37.3	41.2	55.1	60.2	73.4	72.9	72.0	64.9	52.3	41.9	29.0	52.2
1977	23.3	30.7	44.7	51.3	62.6	67.4	74.9	73.4	64.4	55.3	48.1	34.2	52.5
1978	28.5	27.1	36.2	48.8	59.3	68.3	72.1	71.6	61.4	52.5	43.6	35.3	50.4
1979	32.5	23.1	42.5	48.7	61.1	68.2	74.5	71.7	64.9	52.7	48.6	36.7	52.1
1980	29.4	27.9	36.9	48.7	59.4	66.3	75.8	74.2	67.0	52.4	41.2	28.6	50.7
1981	21.4	36.4	39.1	51.7	60.4	70.7	74.6	72.1	63.7	51.2	43.9	33.2	51.5
1982	22.9	30.8	38.7	48.2	57.8	63.3	74.9	70.3	64.1	54.2	47.6	39.6	51.0
1983	31.2	32.8	40.6	49.1	58.2	70.7	78.0	73.6	70.6	55.2	46.1	32.1	53.2
1984	26.7	37.6	31.9	46.1	58.0	70.5	74.7	74.6	62.1	53.3	44.6	39.5	51.6
1985	24.4	32.8	40.4	49.3	59.3	64.8	73.5	70.4	65.4	55.4	45.4	31.3	51.0
1986	31.4	28.9	40.7	48.4	58.4	66.1	71.0	70.5	63.2	54.0	42.3	35.5	50.9
1987	28.9	29.1	38.5	45.1	57.2	65.1	71.7	70.3	65.4	54.3	43.9	36.1	50.5
1988	27.8	32.2	39.2	46.8	57.6	68.5	73.7	75.5	64.6	50.8	46.7	32.8	51.4
1989	34.5	30.5	37.3	45.9	59.4	67.8	72.8	71.6	64.7	55.3	42.8	21.7	50.4
1990	36.4	34.1	40.1	47.6	54.9	66.6	73.1	73.3	64.6	58.3	48.5	40.7	53.2
1991	29.4	36.1	41.6	51.3	63.3	70.0	74.6	73.8	63.7	56.4	45.2	36.0	53.5
1992	31.0	32.4	35.4	46.4	55.6	67.8	69.5	70.4	63.9	52.5	42.9	34.8	50.2
1993	32.4	27.1	36.4	48.3	60.3	69.5	74.7	73.6	64.8	52.3	45.6	34.2	51.6
1994	22.2	26.9	38.2	51.4	58.4	71.9	77.5	72.4	64.2	55.5	49.0	38.5	52.2
1995	34.6	28.5	38.8	46.1	57.2	68.6	75.9	72.8	63.1	58.4	41.9	31.7	51.5
1996	30.1	30.9	36.5	47.9	57.4	68.1	71.8	70.9	64.2	53.2	40.3	39.3	50.9
1997	29.2	36.0	36.7	46.3	56.1	68.2	73.7	71.2	64.2	52.8	41.7	35.2	50.9
1998	33.9	35.3	41.5	49.4	60.3	64.7	74.4	72.5	66.3	54.5	44.6	39.1	53.0
1999	29.5	33.6	39.4	49.2	58.2	71.0	75.7	71.3	67.1	53.0	48.0	37.3	52.8
POR= 127 YRS	28.8	29.6	37.2	47.2	57.9	67.1	72.7	70.9	64.1	54.1	43.7	33.0	50.5

HEATING DEGREE DAYS (base 65°F) 1999 BOSTON, MA (BOS)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	0	0	68	314	598	1113	1269	962	868	586	287	25	6090
1971-72	0	2	37	169	651	882	985	1021	883	598	250	54	5532
1972-73	3	4	51	405	673	985	1033	971	666	450	258	24	5523
1973-74	0	2	94	289	570	782	1023	1000	809	429	335	77	5410
1974-75	0	2	102	458	587	836	925	918	866	590	162	59	5505
1975-76	0	8	70	239	395	941	1198	800	733	331	166	16	4897
1976-77	1	10	55	393	688	1108	1290	956	623	414	158	43	5739
1977-78	0	4	85	304	498	948	1127	1057	885	480	209	18	5615
1978-79	11	11	150	381	635	916	1002	1169	691	481	149	19	5615
1979-80	2	15	80	390	484	873	1096	1071	866	481	185	66	5609
1980-81	2	5	72	387	706	1120	1344	794	796	393	200	7	5826
1981-82	2	6	91	419	628	979	1300	948	811	496	231	113	6024
1982-83	2	19	71	338	515	783	1040	896	749	478	223	22	5136
1983-84	0	8	42	327	561	1012	1182	790	1020	563	239	36	5780
1984-85	3	0	142	359	605	781	1255	897	758	471	204	71	5546
1985-86	3	11	65	298	580	1035	1035	1008	746	490	258	66	5595
1986-87	21	16	98	344	674	904	1112	997	814	588	285	76	5929
1987-88	8	18	57	326	626	888	1145	945	792	541	253	61	5660
1988-89	9	10	64	443	541	992	938	959	853	565	196	51	5621
1989-90	2	4	88	294	660	1336	880	857	762	524	307	60	5774
1990-91	4	5	84	236	496	744	1096	803	721	407	126	35	4757
1991-92	1	8	111	273	586	894	1049	937	913	552	317	37	5678
1992-93	21	14	109	386	656	930	1002	1056	880	493	167	31	5745
1993-94	3	1	89	387	579	946	1320	1059	827	404	226	7	5848
1994-95	1	3	61	288	479	813	932	1016	804	561	258	30	5246
1995-96	1	2	113	214	685	1023	1074	981	875	510	260	20	5758
1996-97	1	6	80	358	739	792	1104	806	868	551	269	87	5661
1997-98	5	3	83	383	693	917	955	826	736	462	192	66	5321
1998-99	0	2	36	321	606	798	1092	872	790	468	215	29	5229
1999-	2	7	39	363	505	851							

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COOLING DEGREE DAYS (base 65°F) 1999 BOSTON, MA (BOS)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0	0	0	0	25	118	294	273	91	9	0	0	810
1971	0	0	0	0	6	155	269	271	132	15	1	0	849
1972	0	0	0	0	26	74	279	213	79	0	0	0	671
1973	0	0	0	7	18	180	296	316	84	3	0	0	904
1974	0	0	0	10	22	81	235	226	68	1	3	0	646
1975	0	0	0	0	60	139	345	261	44	9	4	0	862
1976	0	0	0	43	25	276	251	231	61	8	0	0	895
1977	0	0	1	13	92	124	314	272	75	6	0	0	897
1978	0	0	0	0	40	122	237	221	48	0	0	0	668
1979	0	0	0	0	35	122	304	226	85	17	0	0	789
1980	0	0	0	0	18	114	347	299	137	1	0	0	916
1981	0	0	0	0	67	185	306	232	60	0	0	0	850
1982	0	0	0	0	15	67	314	192	49	10	2	0	649
1983	0	0	0	7	18	200	410	283	217	27	0	0	1162
1984	0	0	0	3	31	207	312	306	62	3	0	0	924
1985	0	0	0	5	30	72	271	183	83	8	0	0	652
1986	0	0	0	0	60	105	211	190	55	10	0	0	631
1987	0	0	0	0	48	87	221	189	76	0	2	0	623
1988	0	0	0	0	31	173	287	342	59	11	0	0	903
1989	0	0	1	0	29	142	248	214	89	0	0	0	723
1990	0	0	0	10	2	116	261	268	77	34	8	0	776
1991	0	0	0	3	79	189	304	287	79	15	0	0	956
1992	0	0	0	0	30	126	165	189	83	5	0	0	598
1993	0	0	0	0	28	173	310	273	89	0	2	0	875
1994	0	0	0	1	29	221	395	241	44	1	4	0	936
1995	0	0	0	0	24	147	344	252	64	15	0	0	846
1996	0	0	0	3	30	120	222	196	63	0	1	0	635
1997	0	0	0	0	0	189	280	202	66	12	0	0	749
1998	0	0	16	2	52	59	298	240	83	1	0	0	751
1999	0	0	0	0	11	215	344	213	110	0	0	0	893

SNOWFALL (inches) 1999 BOSTON, MA (BOS)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	0.0	0.0	0.0	T	T	27.9	12.0	8.1	7.4	1.9	0.0	0.0	57.3
1971-72	0.0	0.0	0.0	0.0	2.8	7.9	7.8	16.5	12.1	0.4	0.0	0.0	47.5
1972-73	0.0	0.0	0.0	T	0.6	3.3	3.6	2.5	0.3	T	0.0	0.0	10.3
1973-74	0.0	0.0	0.0	0.0	0.0	T	16.0	17.8	0.1	3.0	0.0	0.0	36.9
1974-75	0.0	0.0	0.0	0.0	2.0	3.6	2.2	17.0	1.8	1.0	0.0	0.0	27.6
1975-76	0.0	0.0	0.0	T	0.1	19.3	15.0	1.4	10.8	T	0.0	0.0	46.6
1976-77	0.0	0.0	0.0	0.0	1.0	17.2	23.2	5.9	10.7	T	0.5	0.0	58.5
1977-78	0.0	0.0	0.0	0.0	0.7	5.2	35.9	27.2	16.1	T	0.0	0.0	85.1
1978-79	0.0	0.0	0.0	0.0	4.2	5.8	10.5	6.6	T	0.4	0.0	0.0	27.5
1979-80	0.0	0.0	0.0	0.2	T	2.0	0.4	6.5	3.6	T	0.0	0.0	12.7
1980-81	0.0	0.0	0.0	0.0	2.4	5.6	11.9	1.9	0.5	0.0	0.0	0.0	22.3
1981-82	0.0	0.0	0.0	0.0	T	17.6	18.0	7.6	5.3	13.3	0.0	0.0	61.8
1982-83	0.0	0.0	0.0	0.0	T	5.5	4.7	22.3	0.2	T	0.0	0.0	32.7
1983-84	0.0	0.0	0.0	0.0	T	2.6	21.1	0.3	19.0	T	0.0	0.0	43.0
1984-85	0.0	0.0	0.0	0.0	T	3.7	7.0	10.2	3.7	2.0	0.0	0.0	26.6
1985-86	0.0	0.0	0.0	0.0	3.0	1.3	0.8	10.4	2.6	T	0.0	0.0	18.1
1986-87	0.0	0.0	0.0	0.0	3.5	3.4	24.3	3.7	3.5	4.1	0.0	0.0	42.5
1987-88	0.0	0.0	0.0	0.0	9.0	7.5	17.0	14.1	5.0	T	0.0	0.0	52.6
1988-89	0.0	0.0	0.0	T	0.0	3.7	1.5	6.7	3.2	0.4	0.0	0.0	15.5
1989-90	0.0	0.0	0.0	0.0	4.5	6.2	7.0	16.9	4.1	0.5	0.0	0.0	39.2
1990-91	0.0	0.0	0.0	0.0	T	1.2	11.7	2.8	3.4	0.0	0.0	0.0	19.1
1991-92	0.0	0.0	0.0	0.0	T	5.8	0.4	4.0	10.8	1.0	0.0	0.0	22.0
1992-93	0.0	0.0	0.0	0.0	0.6	9.7	12.9	19.6	38.9	2.2	0.0	0.0	83.9
1993-94	0.0	0.0	0.0	0.0	T	11.6	33.7	36.2	14.8	0.0	0.0	0.0	96.3
1994-95	0.0	T	0.0	0.0	0.1	1.5	4.4	8.5	0.4	T	0.0	0.0	14.9
1995-96	0.0	0.0	0.0	0.0	4.1	24.1	39.8	15.5	16.8				
1996-97					1.6								
1997-98													
1998-99							16.8	7.4	11.4	0.0	0.0	0.0	
1999-	0.0	0.0	0.0	0.0	0.0	0.0							
POR= 61 YRS	0.0	T	0.0	0.0	1.3	7.5	12.6	11.4	8.0	0.9	0.0	0.0	41.7

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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 (1961 - 1990). 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.</p>	<p>GENERAL CONTINUED: 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. 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.</p> <p>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 EIGHTHS(OKTAS) FOR REPORTING THE AMOUNT OF SKY COVER.</p>
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1999
BOSTON,
MASSACHUSETTS (BOS)

Climate is the composite of numerous weather elements. Three important influences are responsible for the main features of the Boston climate. First, the latitude places the city in the zone of prevailing west to east atmospheric flow. Both polar and tropical air masses influence the region. Secondly, Boston is situated on or near several tracks frequently followed by low pressure storm systems. The weather fluctuates regularly from fair to cloudy to stormy conditions and assures an adequate amount of precipitation. The third factor is the east-coast location of Boston. The ocean has a moderating influence on temperature extremes of winter and summer.

Hot summer afternoons are frequently relieved by the locally celebrated sea breeze, as air flows inland from the cool water surface to displace the warm air over the land. This refreshing east wind is more commonly experienced along the shore than in the interior of the city or the western suburbs. In winter, under appropriate conditions, the severity of cold waves is reduced by the nearness of the relatively warm ocean. The average last occurrence of freezing temperature in spring is early April and the first occurrence of freezing temperature in autumn is early November. In suburban areas, especially away from the coast, these dates are later in spring and earlier in autumn by up to one month in the more susceptible localities.

Boston has no dry season. Most growing seasons have several shorter dry spells during which irrigation for high-value crops may be useful. Much of the rainfall from June to September comes from showers and thunderstorms. During the rest of the year, low pressure systems pass more or less regularly and produce precipitation on an average of roughly one day in three. Coastal storms, or northeasters, are prolific producers of rain and snow. The main snow season extends from December through March. Periods when the ground is bare or nearly bare of snow may occur at any time in the winter.

Relative humidity has been known to fall as low as 5 percent but such desert dryness is very rare. Heavy fog occurs on an average of about two days per month with its prevalence increasing eastward from the interior of Boston Bay to the open waters beyond.

Although winds of 30 mph or higher may be expected on at least one day in every month of the year, gales are both more common and more severe in winter.

STATION LOCATION

BOSTON, MASSACHUSETTS

LOCATION	OCCUPIED FROM	OCCUPIED TO	AIRLINE DISTANCES AND DIRECTIONS FROM PREVIOUS LOCATION	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE											AUTOMATIC RECORDING	* Type M = AMOS T = AUTOB S = ASOS W = AWOS	REMARKS
						SEA LEVEL	GROUND												
							G	W	E	P	S	T	R	W	8	H			
CITY - - NOTE: For period October 20, 1870 through October 1, 1884, refer to previous editions.																			
Old U.S. Post Office and Courthouse Milk, Devonshire, Congress & Water Streets East Tower	10/1/84	6/7/29	300 ft. NE	42° 21'	71° 04'	17	188	115	115						154	174 154	NA	8 inch rain gage moved from bad exposure atop east tower to west tower 154 feet above ground on 7/1/91. Marvin Weighing Rain and Snow Gage installed 1/1/98.	
Young's Hotel Building Corner City Hall Avenue and Court Street	6/7/29	9/29/33	700 ft. NW	42° 21'	71° 04'	40	165	106	106				96			96	NA	Anemometer atop City Hall Annex, across City Hall Avenue.	
New U.S. Post Office and Courthouse Same site as old	9/29/33	6/6/64	700 ft. SE	42° 21'	71° 04'	20	360	337	336				329			328	NA	Observation Program transferred to Airport 1/1/36.	
AIRPORT																			
U.S. Army Hangar No. 1 Boston Airport East Boston	10/15/26	4/1/27	NA	42° 22'	71° 02'	3											NA	Pibal only.	
Section F, Army Base South Boston	4/1/27	11/1/27	1.75 mi. S	42° 21'	71° 02'		143										NA	Pibal only.	
Shack 25 feet South of Commercial Hangar Boston AP, East Boston	11/1/27	7/1/29	1.75 mi. N	42° 21'	71° 02'	2	22		4								NA	Pibal only.	
Shack 200 feet SW of East Coast Hangar Boston AP, East Boston	7/1/29	5/1/30	0.13 mi. SW	42° 22'	71° 02'	12	24		4								NA	Pibal only to 2/16/30.	
Administration Building Boston Municipal Airport East Boston	5/1/30	11/22/51	0.13 mi. NW	42° 22'	71° 02'	12	50 b62	31 b33	31 b33	NA aUnk	NA a3 d32	NA c3 d32	d32			NA	NA	Official synoptic records began 1/1/36. a - Installed 1/1/36 b - Installed on 30' instrument tower on roof 9/17/37. c - Installed 2/1/38 d - Moved to roof 3/10/44.	
Gate No. 11, Boutwell Building, Logan Int'l. Airport, East Boston	11/22/51	12/5/63	0.63 mi. E	42° 22'	71° 01'	15	34 f75 g33	20	20	Unk e24	19	19	18	NA	NA	NA	NA	e - Effective 6/4/53. f - Effective 7/20/54. g - Effective 8/23/57.	
General Aviation Admn. Building, West Wing, Logan International AP	12/5/63	8/1/86	0.63 mi. W	42° 22'	71° 02'	12	22	33 j6	33 j5	48 j9	33 j5	33 j5	33 j5	NA h4 k5	NA	NA	NA	Instrument relocations completed 12/11/83. h - Commissioned on field site 4/1/64. i - Effective 4/1/64. j - Moved from roof to field site app. 30' NE 8/5/71. k - Minor move 12/5/84. m - Relocated on roof 7/1/86.	
Logan International AP East Boston	8/1/86	04/01/96	0.25 mi. SE	42° 22'	71° 02'					m40	m40	m40	m40				NA		
Gen Logan Int'l Airport	04/01/96	Present	NA	42° 22'	71° 01'	178											S	ASOS Commissioned 04/01/96	

SUBSCRIPTION: Price and ordering information available through: National Climatic Data Center, Federal Building, Asheville, North Carolina 28801.
 INQUIRIES/COMMENTS CALL: (828) 271-4800

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