

1999

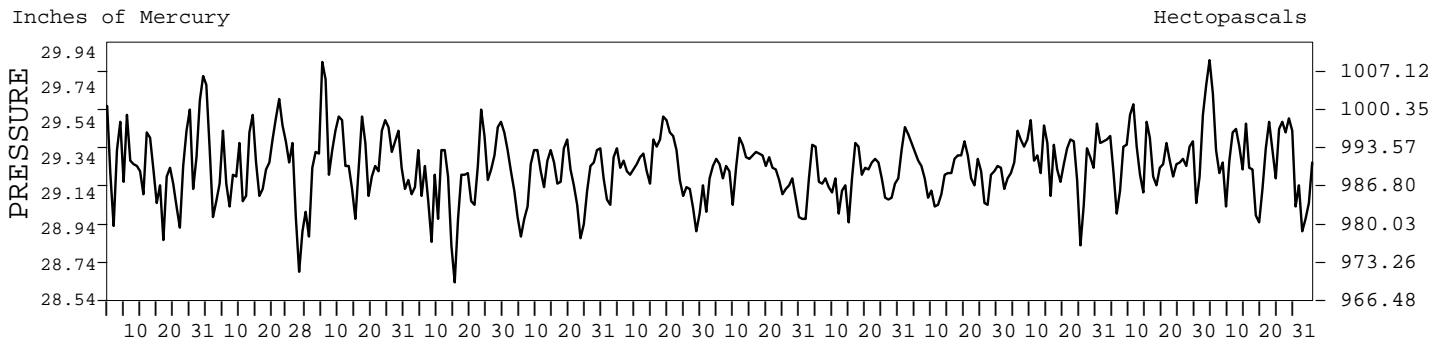
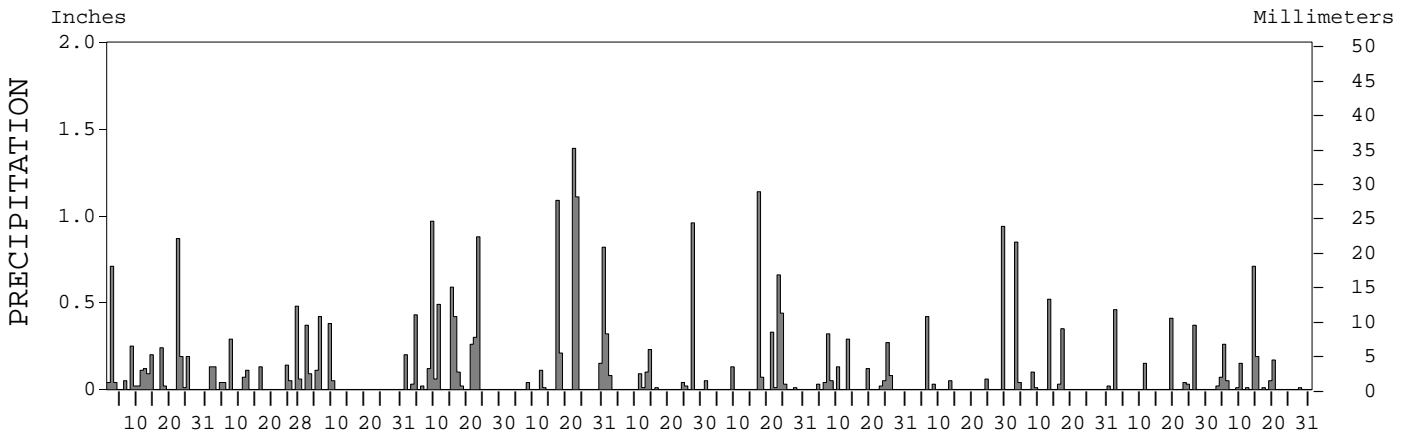
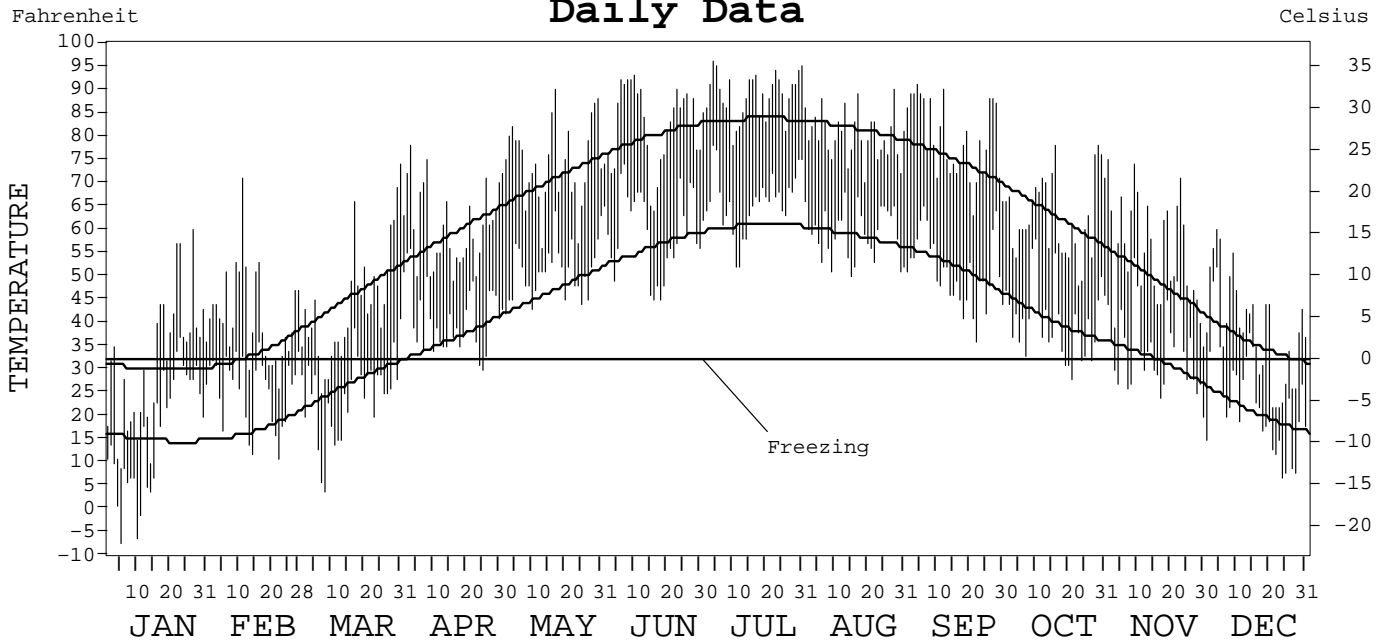
LOCAL CLIMATOLOGICAL DATA
ANNUAL SUMMARY WITH COMPARATIVE DATA



ISSN 0198-4012

TOLEDO,
OHIO (TOL)

Daily Data



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Thomas R. Karl

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
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 ASHEVILLE, NORTH CAROLINA

METEOROLOGICAL DATA FOR 1999

TOLEDO, OH (TOL)

LATITUDE: 41° 35' 19" N LONGITUDE: 83° 48' 05" W ELEVATION (FT): GRND: 691 BARO: 691 TIME ZONE: EASTERN (UTC + 5) WBAN: 94830

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	31.9	41.5	44.3	60.4	74.3	82.0	88.7	80.2	79.2	62.8	55.3	38.7	61.6	
	HIGHEST DAILY MAXIMUM	60	71	74	78	90	93	96	90	91	78	75	60	96	
	DATE OF OCCURRENCE	27	11	31	03	17	10	04	28	04	29+	01	04	JUL 04	
	MEAN DAILY MINIMUM	16.8	25.7	24.5	40.9	50.8	59.5	65.8	59.1	50.9	40.2	34.2	23.3	41.0	
	LOWEST DAILY MINIMUM	-7	11	4	30	42	45	52	50	36	28	20	7	-7	
	DATE OF OCCURRENCE	05	22	08	25	02	18+	12+	15	22	21	30	24	JAN 05	
	AVERAGE DRY BULB	24.4	33.6	34.4	50.7	62.6	70.8	77.3	69.7	65.1	51.5	44.8	31.0	51.3	
	MEAN WET BULB			30.0	45.0	55.2	63.9	70.0		57.1	46.3	40.2	29.3		
	MEAN DEW POINT			22.4	38.7	48.7	59.2	66.1		50.5	40.4	34.0	24.5		
	NUMBER OF DAYS WITH:														
	MAXIMUM ≥ 90°	0	0	0	0	1	7	15	1	2	0	0	0	0	26
	MAXIMUM ≤ 32°	15	5	3	0	0	0	0	0	0	0	0	9	32	
	MINIMUM ≤ 32°	29	23	27	2	0	0	0	0	0	5	14	24	124	
	MINIMUM ≤ 0°	3	0	0	0	0	0	0	0	0	0	0	0	3	
H/C	HEATING DEGREE DAYS	1255	871	942	425	113	39	0	7	85	411	599	1047	5794	
	COOLING DEGREE DAYS	0	0	0	2	46	220	386	161	95	2	0	0	912	
RH	MEAN (PERCENT)	78	72	64	68	64	69	71	73	64	69	69	75	70	
	HOUR 01 LST	81	78	73	78	75	83	83	84	80	77	76	81	79	
	HOUR 07 LST	81	79	78	81	76	82	85	87	87	84	80	83	82	
	HOUR 13 LST	72	62	53	55	50	51	55	56	42	52	56	65	56	
	HOUR 19 LST	78	69	58	59	55	58	60	65	52	65	62	73	63	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	6	2	1	2	1	1	2	3	0	2	2	1	23	
	THUNDERSTORMS	1	1	0	2	5	4	6	2	1	2	0	0	24	
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.)	29.33	29.29	29.36	29.22	29.24	29.29	29.25	29.25	29.25	29.36	29.37	29.32	29.29	
	MEAN SEA-LEVEL PRESS. (IN.)			30.12		29.97		29.98		29.99	30.10	30.12	30.08		
WINDS	RESULTANT SPEED (MPH)	3.6	3.6	3.0	2.7	1.7	0.8	0.8		2.4	3.7	4.6	5.4		
	RES. DIR. (TENS OF DEGS.)	23	25	31	08	22	20	25		26	26	25	24		
	MEAN SPEED (MPH)	11.5	9.9	10.2	10.4	9.2	6.6	7.4	6.6	6.9	8.2	8.8	9.7	8.8	
	PREVAIL. DIR. (TENS OF DEGS.)	23	20	30	07	08	09	24	36	25	23	22	21	24	
	MAXIMUM 2-MINUTE WIND:														
	SPEED (MPH)	37	41	32	39	41	25	33	23	25	30	36	34	41	
	DIR. (TENS OF DEGS.)	23	26	23	24	26	27	27	29	26	32	25	25	26	
	DATE OF OCCURRENCE	03	11	17	06	17	02	09	13	28+	13	24	20	MAY 17	
	MAXIMUM 5-SECOND WIND:														
	SPEED (MPH)	45	48	39	47	68	31	38	31	35	41	52	41	68	
DIR. (TENS OF DEGS.)	23	26	22	24	27	27	27	22	24	29	23	06	27		
DATE OF OCCURRENCE	03	11	17	06	17	02	09	10	06	22	24	14	MAY 17		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	3.17	1.67	1.42	4.89	4.93	1.86	2.87	1.40	1.50	1.92	1.46	1.71	28.80	
	GREATEST 24-HOUR (IN.)	0.87	0.48	0.46	1.18	1.39	0.96	1.21	0.37	0.94	0.89	0.46	0.71	1.39	
	DATE OF OCCURRENCE	22	27	02-03	22-23	22	27	17-18	07-08	29	03-04	02	14	MAY 22	
	NUMBER OF DAYS WITH:														
	PRECIPITATION ≥ 0.01	17	12	6	15	9	10	10	11	5	8	6	13	122	
PRECIPITATION ≥ 0.10	9	7	4	11	7	4	5	5	2	4	4	5	67		
PRECIPITATION ≥ 1.00	0	0	0	0	3	0	1	0	0	0	0	0	4		
SNOWFALL	SNOW, ICE PELLETS, HAIL:														
	TOTAL (IN.)	22.5	7.3	12.7											
	GREATEST 24-HOUR (IN.)	7.5	3.1	6.8											
	DATE OF OCCURRENCE	02	07	09											
	MAXIMUM SNOW DEPTH (IN.)		1	7											
	DATE OF OCCURRENCE		25+	10+											
NUMBER OF DAYS WITH:															
SNOWFALL ≥ 1.0	7	3	3												

NORMALS, MEANS, AND EXTREMES

TOLEDO, OH (TOL)

LATITUDE: 41° 35' 19" N LONGITUDE: 83° 48' 05" W ELEVATION (FT): GRND: 691 BARO: 691 TIME ZONE: EASTERN (UTC + 5) WBAN: 94830

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	30.2	33.4	45.5	58.8	70.5	79.8	83.4	81.3	74.4	62.4	48.5	35.2	58.6
	MEAN DAILY MAXIMUM	44	30.8	34.4	45.4	59.0	70.7	79.8	83.8	81.8	74.8	62.8	48.3	35.9	59.0
	HIGHEST DAILY MAXIMUM	44	65	71	81	88	95	104	104	99	98	91	78	69	104
	YEAR OF OCCURRENCE		1995	1999	1998	1990	1962	1988	1995	1993	1978	1963	1987	1998	JUL 1995
	MEAN OF EXTREME MAXS.	44	51.3	55.5	70.4	80.7	87.3	92.9	94.5	91.8	89.5	80.4	68.4	57.5	76.7
	NORMAL DAILY MINIMUM	30	14.9	17.0	26.8	36.4	46.7	56.0	60.6	58.4	51.5	40.0	31.5	20.5	38.4
	MEAN DAILY MINIMUM	44	15.8	18.4	26.7	37.2	47.3	56.7	61.1	59.2	51.7	40.5	31.6	21.4	39.0
	LOWEST DAILY MINIMUM	44	-20	-14	-6	8	25	32	40	34	26	15	2	-19	-20
	YEAR OF OCCURRENCE		1984	1982	1984	1982	1974	1972	1988	1982	1974	1976	1958	1989	JAN 1984
	MEAN OF EXTREME MINS.	44	-5.6	-1.9	8.7	20.9	32.2	42.5	48.5	46.3	34.9	24.6	15.7	0.6	22.3
	NORMAL DRY BULB	30	22.5	25.2	36.2	47.6	58.6	67.9	72.1	69.9	63.0	51.2	40.0	27.9	48.5
	MEAN DRY BULB	44	23.3	26.3	36.1	48.2	59.1	68.3	72.5	70.4	63.1	51.6	39.9	28.8	49.0
	MEAN WET BULB	14	23.6	25.7	33.0	43.4	53.5	62.5	66.8	65.3	57.8	47.3	37.2	28.5	45.4
	MEAN DEW POINT	14	19.2	20.7	26.6	36.5	47.5	57.4	62.7	61.9	54.0	42.8	32.6	24.7	40.5
	NORMAL NO. DAYS WITH:														
MAXIMUM ≥ 90°	30	0.0	0.0	0.0	0.0	0.9	3.5	5.3	2.8	1.1	*	0.0	0.0	13.6	
MAXIMUM ≤ 32°	30	17.5	13.2	4.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.8	12.3	49.5	
MINIMUM ≤ 32°	30	29.2	25.5	22.5	11.4	1.7	*	0.0	0.0	0.4	7.1	17.4	26.8	142.0	
MINIMUM ≤ 0°	30	4.9	3.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	10.2	
H/C	NORMAL HEATING DEG. DAYS	30	1318	1114	893	522	238	33	0	16	109	436	750	1150	6579
	NORMAL COOLING DEG. DAYS	30	0	0	0	0	40	120	225	168	49	8	0	0	610
RH	NORMAL (PERCENT)	30	74	73	70	66	66	69	72	76	76	72	76	79	72
	HOUR 01 LST	30	77	77	77	76	78	82	84	88	88	82	80	81	81
	HOUR 07 LST	30	79	79	80	79	80	82	86	91	91	85	83	82	83
	HOUR 13 LST	30	69	66	60	54	52	54	55	59	58	57	66	73	60
	HOUR 19 LST	30	73	70	65	58	56	58	61	67	72	70	74	78	67
S	PERCENT POSSIBLE SUNSHINE	40	41	46	50	52	60	64	65	63	61	54	37	33	52
W/O	MEAN NO. DAYS WITH:														
	HEAVY FOG (VISBY ≤ 1/4 MI)	44	1.8	1.8	1.7	0.8	0.7	1.0	0.8	1.8	1.8	1.9	1.6	2.2	17.9
	THUNDERSTORMS	44	0.2	0.5	2.0	3.8	4.8	6.6	18.4	15.4	7.5	2.0	4.8	6.1	72.1
CLOUDINESS	MEAN:														
	SUNRISE-SUNSET (OKTAS)														
	MIDNIGHT-MIDNIGHT (OKTAS)														
	MEAN NO. DAYS WITH:														
CLEAR	0			2.0		2.0									
PARTLY CLOUDY	0			1.0											
CLOUDY	1	1.0	1.0	2.0											
PR	MEAN STATION PRESSURE (IN)	27	29.31	29.33	29.27	29.23	29.25	29.25	29.27	29.31	29.33	29.33	29.31	29.32	29.29
	MEAN SEA-LEVEL PRES. (IN)	15	30.09	30.09	30.06	29.97	29.99	30.01	30.00	30.04	30.06	30.09	30.08	30.10	30.05
WINDS	MEAN SPEED (MPH)	31	11.1	10.4	11.2	11.0	9.6	8.3	7.7	7.1	7.8	8.8	10.3	10.2	9.5
	PREVAIL. DIR (TENS OF DEGS)	25	24	24	07	07	07	24	24	24	24	24	24	24	24
	MAXIMUM 2-MINUTE:														
	SPEED (MPH)	4	43	43	46	48	43	41	34	43	34	45	45	48	48
	DIR. (TENS OF DEGS)		24	25	26	25	23	24	01	26	24	24	24	30	30
	YEAR OF OCCURRENCE		1996	1997	1996	1997	1997	1997	1996	1998	1997	1996	1998	1998	DEC 1998
	MAXIMUM 5-SECOND:														
SPEED (MPH)	4	56	56	53	59	68	47	47	54	45	59	66	56	68	
DIR. (TENS OF DEGS)		25	23	26	25	27	25	29	26	25	25	24	31	27	
YEAR OF OCCURRENCE		1996	1997	1996	1997	1999	1997	1998	1998	1997	1996	1998	1998	MAY 1999	
PRECIPITATION	NORMAL (IN)	30	1.75	1.73	2.66	2.96	2.91	3.75	3.27	3.25	2.85	2.10	2.81	2.93	32.97
	MAXIMUM MONTHLY (IN)	44	4.61	5.39	5.70	6.10	6.76	8.48	6.75	8.47	8.10	5.53	6.86	6.81	8.48
	YEAR OF OCCURRENCE		1965	1990	1985	1977	1997	1981	1969	1965	1972	1991	1982	1967	JUN 1981
	MINIMUM MONTHLY (IN)	44	0.27	0.27	0.58	0.88	0.96	0.27	0.34	0.40	0.58	0.28	0.55	0.54	0.27
	YEAR OF OCCURRENCE		1961	1969	1958	1962	1964	1988	1995	1976	1963	1964	1976	1958	JUN 1988
	MAXIMUM IN 24 HOURS (IN)	44	1.78	2.59	2.60	3.43	2.34	3.21	4.39	2.42	3.97	3.21	3.17	3.53	4.39
	YEAR OF OCCURRENCE		1959	1990	1985	1977	1991	1978	1969	1972	1972	1988	1982	1967	JUL 1969
	NORMAL NO. DAYS WITH:														
PRECIPITATION ≥ 0.01	30	13.5	10.8	13.2	12.7	11.9	10.4	9.5	9.1	9.9	9.5	11.8	14.7	137.0	
PRECIPITATION ≥ 1.00	30	0.1	0.1	0.2	0.3	0.4	0.7	0.8	0.8	0.6	0.2	0.4	0.4	5.0	
SNOWFALL	NORMAL (IN)	30	9.5	8.6	6.0	1.5	0.*	0.0	0.0	0.0	T	0.1	3.0	9.3	38.0
	MAXIMUM MONTHLY (IN)	42	30.8	16.6	17.7	12.0	1.3	T	T	T	T	2.0	17.9	24.2	30.8
	YEAR OF OCCURRENCE		1978	1994	1993	1957	1989	1995	1992	1994	1993	1989	1966	1977	JAN 1978
	MAXIMUM IN 24 HOURS (IN)	42	10.4	7.7	9.7	9.8	1.3	T	T	T	T	1.8	8.3	13.9	13.9
	YEAR OF OCCURRENCE		1978	1981	1993	1957	1989	1995	1992	1994	1993	1989	1966	1974	DEC 1974
	MAXIMUM SNOW DEPTH (IN)	40	17	19	8	10	1	0	0	0	0	1	8	16	19
	YEAR OF OCCURRENCE		1978	1978	1993	1957	1989					1989	1966	1977	FEB 1978
NORMAL NO. DAYS WITH:															
SNOWFALL ≥ 1.0	30	2.9	2.7	2.0	0.5	0.0	0.0	0.0	0.0	0.0	0.*	1.2	2.9	12.2	

PRECIPITATION (inches) 1999 TOLEDO, OH (TOL)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	1.09	0.89	2.61	4.26	4.05	4.59	5.99	3.00	5.78	2.00	2.09	1.49	37.84
1971	0.82	2.59	1.34	1.08	2.33	2.64	2.77	1.10	1.84	1.77	1.17	3.73	23.18
1972	1.42	0.77	2.33	3.74	2.63	4.09	2.77	4.47	8.10	1.46	3.55	3.08	38.41
1973	1.63	1.05	4.20	1.79	2.85	6.51	3.17	1.18	1.09	2.76	3.27	3.17	32.67
1974	2.27	2.00	2.93	2.55	4.18	3.31	0.68	1.61	1.41	0.70	3.57	3.41	28.62
1975	2.57	2.57	1.90	2.34	3.83	4.21	4.99	5.52	2.70	2.42	2.17	3.35	38.57
1976	2.80	4.43	3.56	2.79	1.72	3.70	2.08	0.40	3.68	2.14	0.55	0.93	28.78
1977	1.29	1.99	4.43	6.10	1.53	3.48	1.83	5.79	4.27	1.77	2.72	3.56	38.76
1978	3.14	0.54	2.34	3.74	2.48	5.34	1.86	1.67	3.19	1.65	2.48	3.31	31.74
1979	1.24	0.70	2.55	4.03	3.15	4.23	3.96	4.71	2.90	2.02	4.25	2.46	36.20
1980	0.74	0.96	3.65	3.13	2.93	3.26	4.49	5.89	1.63	1.79	0.97	2.48	31.92
1981	0.48	3.27	0.63	3.54	2.38	8.48	3.72	2.28	6.05	3.79	0.84	2.93	38.39
1982	3.61	1.15	3.74	1.53	2.61	2.01	1.97	1.38	2.03	1.14	6.86	3.48	31.51
1983	0.88	0.59	1.86	4.28	3.98	4.06	3.39	2.15	1.42	3.59	5.56	3.91	35.67
1984	0.99	1.18	2.95	5.15	3.48	1.49	2.30	3.87	2.02	1.75	2.74	3.22	31.14
1985	2.02	3.23	5.70	1.40	1.85	2.90	3.86	4.30	2.53	3.05	5.89	1.62	38.35
1986	0.99	2.46	2.16	2.81	2.72	5.32	3.37	5.93	4.75	4.78	1.66	1.87	38.82
1987	1.87	0.53	1.78	1.72	2.32	5.62	1.51	4.45	2.31	2.21	2.59	3.80	30.71
1988	1.17	1.33	1.69	1.45	1.37	0.27	3.76	5.11	1.80	4.37	4.27	1.96	28.55
1989	1.80	0.74	2.03	3.50	4.87	6.74	6.31	3.59	3.30	1.36	1.89	1.29	37.42
1990	2.18	5.39	3.46	2.09	4.63	3.14	1.89	3.32	1.72	2.63	2.27	5.69	38.41
1991	1.41	1.42	1.42	4.29	4.82	1.51	0.52	1.94	0.73	5.53	2.15	1.51	27.25
1992	1.70	1.68	3.05	3.41	3.18	1.28	6.51	2.40	4.01	1.77	4.45	3.60	37.04
1993	3.17	1.71	3.46	3.06	1.13	4.60	1.60	1.15	4.50	1.51	2.73	1.25	29.87
1994	2.83	1.88	2.06	4.86	1.11	3.63	2.14	3.05	0.93	1.00	2.69	3.01	29.19
1995	3.07	0.57	1.59	4.52	2.96	4.46	0.34	2.72	1.41	3.71	2.72	0.89	28.96
1996	2.22	0.95	2.67	3.85	2.62	4.91	1.81	0.74	2.74	1.75	2.79	2.92	29.97
1997	2.35	4.27	2.53	1.55	6.76	3.70	2.63	4.07	4.74	1.24	2.16	2.07	38.07
1998	2.96	3.77	3.32	4.54	2.07	1.73	2.70	5.44	0.96	2.13	1.63	0.61	31.86
1999	3.17	1.67	1.42	4.89	4.93	1.86	2.87	1.40	1.50	1.92	1.46	1.71	28.80
POR= 129 YRS	2.16	1.92	2.58	2.91	3.16	3.47	2.89	2.90	2.60	2.29	2.38	2.38	31.64

WBAN : 94830

AVERAGE TEMPERATURE (°F) 1999 TOLEDO, OH (TOL)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	16.2	24.3	31.8	48.9	61.1	67.2	71.1	69.6	64.4	54.0	39.8	28.9	48.1
1971	20.3	27.9	32.9	46.1	56.4	71.3	69.0	69.0	66.8	59.0	37.6	33.6	49.2
1972	23.4	24.4	34.1	46.1	60.4	63.9	71.4	68.4	62.2	47.2	37.7	30.3	47.5
1973	28.2	25.2	44.1	48.3	55.7	70.1	72.3	71.3	64.4	55.7	41.9	27.5	50.4
1974	26.1	23.2	36.2	48.8	56.0	65.4	72.5	71.5	59.6	49.5	40.4	28.9	48.2
1975	29.2	28.3	33.3	42.7	62.5	69.0	70.8	72.0	57.4	51.9	45.3	28.9	49.3
1976	19.8	32.8	41.6	49.3	56.0	69.3	72.2	68.2	60.5	45.6	32.3	19.9	47.3
1977	9.6	24.3	41.6	53.3	63.6	65.0	74.6	69.3	65.0	49.3	41.0	24.7	48.4
1978	16.7	11.8	28.7	45.8	58.9	67.6	70.9	70.4	68.0	49.8	40.3	30.1	46.6
1979	17.6	15.1	38.7	45.5	57.9	67.7	70.1	68.8	63.0	51.3	40.6	32.1	47.4
1980	24.3	21.4	32.4	46.8	59.5	65.5	73.6	73.3	63.8	46.8	37.4	26.0	47.6
1981	17.6	28.5	36.5	49.9	55.4	68.4	71.7	69.8	61.3	47.7	39.6	27.4	47.8
1982	15.8	20.2	33.4	42.7	64.4	64.3	72.6	67.5	61.9	52.7	41.8	36.6	47.8
1983	27.6	30.5	37.9	44.2	54.8	67.9	74.7	73.8	64.2	51.9	41.3	20.0	49.1
1984	16.6	33.0	27.6	46.8	54.4	71.2	69.8	71.2	60.8	55.2	38.7	34.0	48.3
1985	19.5	22.6	39.3	53.5	61.6	64.8	73.2	69.1	64.0	53.3	43.9	22.3	48.9
1986	25.6	25.0	39.2	50.0	60.3	66.8	73.8	67.0	65.3	53.2	37.2	31.6	49.6
1987	25.8	30.0	39.7	50.3	62.5	70.8	74.9	71.0	63.8	45.4	44.4	33.0	51.0
1988	23.8	23.3	37.5	48.1	61.0	69.3	75.9	73.9	62.5	45.2	41.8	28.0	49.2
1989	33.1	24.5	36.7	45.5	57.2	68.2	73.2	69.8	61.8	52.2	38.5	16.8	48.1
1990	34.3	32.4	41.1	49.4	56.6	69.1	71.8	70.0	63.7	51.8	44.3	33.1	51.5
1991	25.2	31.6	40.3	52.6	67.0	72.6	74.6	73.0	62.9	55.0	37.9	33.0	52.1
1992	28.8	31.9	36.1	47.4	57.9	65.1	70.1	67.8	61.9	49.6	40.8	32.9	49.2
1993	30.2	24.7	34.3	48.3	60.6	68.1	76.1	74.3	61.1	49.8	39.7	29.5	49.7
1994	17.1	23.0	36.7	50.8	57.2	71.0	72.6	67.1	64.1	53.6	45.9	35.7	49.6
1995	28.2	25.7	40.5	46.8	60.1	72.3	76.5	78.5	62.8	55.8	36.6	25.4	50.8
1996	23.7	26.9	31.7	46.1	57.5	70.8	70.5	72.3	64.3	53.1	34.4	31.6	48.6
1997	21.9	31.4	38.6	46.2	52.5	68.8	71.7	67.3	62.4	52.1	36.6	31.3	48.4
1998	33.0	36.3	40.0	50.0	66.0	70.2	73.3	72.2	67.2	53.5	42.9	35.1	53.3
1999	24.4	33.6	34.4	50.7	62.6	70.8	77.3	69.7	65.1	51.5	44.8	31.0	51.3
POR= 126 YRS	25.6	27.0	35.9	47.6	59.1	68.7	73.2	71.0	64.2	52.7	40.4	29.5	49.6

HEATING DEGREE DAYS (base 65°F) 1999 TOLEDO, OH (TOL)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	14	11	118	345	749	1111	1379	1035	987	561	272	22	6604
1971-72	18	12	78	197	813	966	1283	1169	952	560	158	95	6301
1972-73	28	36	134	543	810	1073	1135	1106	639	499	285	3	6291
1973-74	3	16	114	289	686	1157	1197	1166	885	483	295	71	6362
1974-75	2	0	190	478	730	1108	1104	1021	974	664	148	45	6464
1975-76	7	6	227	406	585	1110	1393	927	717	497	277	16	6168
1976-77	1	33	162	596	976	1393	1708	1135	718	381	135	91	7329
1977-78	3	29	71	481	713	1241	1490	1484	1121	573	243	43	7492
1978-79	11	11	74	466	732	1076	1461	1390	808	577	259	42	6907
1979-80	16	33	121	440	724	1009	1258	1256	1005	542	199	83	6686
1980-81	0	3	113	560	822	1206	1464	1015	879	450	309	24	6845
1981-82	7	15	169	529	754	1160	1522	1250	972	665	81	76	7200
1982-83	3	47	148	386	690	871	1154	958	833	624	311	55	6080
1983-84	8	0	127	407	705	1389	1494	920	1151	545	341	9	7096
1984-85	11	15	173	297	782	951	1404	1182	791	368	158	58	6190
1985-86	0	16	138	356	626	1316	1216	1113	793	449	185	54	6262
1986-87	2	54	87	365	828	1027	1209	972	778	439	173	20	5954
1987-88	5	34	89	601	611	986	1269	1202	845	498	159	53	6352
1988-89	4	5	104	613	691	1141	979	1127	869	578	270	29	6410
1989-90	0	14	159	396	789	1488	947	907	742	492	262	31	6227
1990-91	4	3	125	415	612	981	1228	928	758	377	115	7	5553
1991-92	0	0	167	315	806	986	1116	953	889	525	245	62	6064
1992-93	7	25	146	473	719	987	1072	1123	943	493	156	48	6192
1993-94	0	3	151	465	756	1095	1479	1170	868	442	272	34	6735
1994-95	0	34	87	344	566	897	1137	1091	753	537	160	6	5612
1995-96	3	0	124	287	846	1221	1272	1099	1027	559	279	11	6728
1996-97	6	0	100	365	911	1027	1329	937	813	557	382	44	6471
1997-98	4	22	112	430	848	1037	985	795	783	447	63	72	5598
1998-99	0	3	52	363	655	920	1255	871	942	425	113	39	5638
1999-	0	7	85	411	599	1047							

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COOLING DEGREE DAYS (base 65°F) 1999 TOLEDO, OH (TOL)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1970	0	0	0	19	62	142	210	159	107	10	0	0	709
1971	0	0	0	1	13	219	148	143	138	18	0	0	680
1972	0	0	0	0	22	67	236	148	55	0	0	0	528
1973	0	0	0	5	3	163	237	222	103	9	0	0	742
1974	0	0	0	4	25	91	243	206	34	5	0	0	608
1975	0	0	0	0	79	172	197	230	7	7	0	0	692
1976	0	0	0	31	10	155	230	137	34	2	0	0	599
1977	0	0	0	37	95	99	309	167	77	0	0	0	784
1978	0	0	0	0	58	128	200	184	170	1	0	0	741
1979	0	0	0	0	46	127	182	158	67	22	0	0	602
1980	0	0	0	3	35	106	275	265	84	4	0	0	772
1981	0	0	1	2	17	132	220	170	64	0	0	0	606
1982	0	0	0	0	68	61	245	132	62	11	0	0	579
1983	0	0	0	4	2	148	311	279	109	11	0	0	864
1984	0	0	0	5	17	203	168	214	51	1	0	0	659
1985	0	0	0	29	60	58	263	147	116	0	0	0	673
1986	0	0	1	4	48	113	282	125	103	4	0	0	680
1987	0	0	0	5	105	202	318	225	59	0	4	0	918
1988	0	0	0	0	43	190	350	286	39	5	0	0	913
1989	0	0	2	0	34	132	259	168	69	5	0	0	669
1990	0	0	7	32	11	164	222	164	91	14	0	0	705
1991	0	0	0	14	185	244	305	256	111	13	0	0	1128
1992	0	0	0	3	32	66	170	120	59	2	0	0	452
1993	0	0	0	0	26	148	351	297	41	1	0	0	864
1994	0	0	0	22	39	222	245	104	66	1	0	0	699
1995	0	0	0	0	16	230	367	426	64	8	0	0	1111
1996	0	0	0	2	53	191	184	234	85	2	0	0	751
1997	0	0	0	0	0	163	215	101	41	34	0	0	554
1998	0	0	13	0	100	233	263	236	126	11	0	0	982
1999	0	0	0	2	46	220	386	161	95	2	0	0	912

SNOWFALL (inches) 1999 TOLEDO, OH (TOL)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1970-71	0.0	0.0	0.0	0.0	3.6	8.1	8.5	8.0	5.2	T	0.0	0.0	33.4
1971-72	0.0	0.0	0.0	0.0	5.7	1.4	10.1	7.6	3.3	1.8	0.0	0.0	29.9
1972-73	0.0	0.0	0.0	0.2	5.0	7.7	3.0	11.6	4.0	T	0.0	0.0	31.5
1973-74	0.0	0.0	0.0	0.0	0.2	13.8	7.5	11.6	2.9	1.1	T	0.0	37.1
1974-75	0.0	0.0	0.0	T	2.8	23.9	5.4	5.5	5.3	1.8	0.0	0.0	44.7
1975-76	0.0	0.0	0.0	0.0	5.7	12.2	14.5	8.4	4.0	1.3	0.0	0.0	46.1
1976-77	0.0	0.0	0.0	T	1.3	11.1	17.2	8.7	15.0	0.6	0.0	0.0	53.9
1977-78	0.0	0.0	0.0	0.0	6.6	24.2	30.8	9.0	2.5	T	0.0	0.0	73.1
1978-79	0.0	0.0	0.0	0.0	2.8	2.3	7.6	5.1	1.2	4.0	0.0	0.0	23.0
1979-80	0.0	0.0	0.0	T	1.6	1.5	4.1	6.4	3.4	0.5	T	0.0	17.5
1980-81	0.0	0.0	0.0	0.9	3.5	11.6	6.9	11.2	3.6	0.0	0.0	0.0	37.7
1981-82	0.0	0.0	0.0	T	0.8	14.9	18.4	14.3	10.7	9.1	0.0	0.0	68.2
1982-83	0.0	0.0	0.0	T	2.2	1.2	0.7	4.1	3.6	0.7	0.0	0.0	12.5
1983-84	0.0	0.0	0.0	0.0	3.4	13.4	12.2	6.3	9.8	T	T	0.0	45.1
1984-85	0.0	0.0	0.0	0.0	2.4	5.1	14.0	12.4	2.6	2.0	0.0	0.0	38.5
1985-86	0.0	0.0	0.0	0.0	2.5	8.7	6.6	10.2	2.2	0.2	0.0	0.0	30.4
1986-87	0.0	0.0	0.0	T	4.5	1.3	20.5	0.5	10.0	2.4	0.0	0.0	39.2
1987-88	0.0	0.0	0.0	T	0.1	11.1	8.3	14.3	4.2	T	0.0	0.0	38.0
1988-89	0.0	0.0	0.0	T	2.3	6.6	2.4	4.8	2.6	0.7	1.3	0.0	20.7
1989-90	0.0	0.0	0.0	2.0	2.3	6.5	2.5	10.4	3.5	0.3	0.0	0.0	27.5
1990-91	0.0	0.0	0.0	0.0	T	8.2	5.0	10.1	T	T	0.0	0.0	23.3
1991-92	0.0	0.0	0.0	T	1.7	2.5	10.5	3.0	12.5	0.1	0.0	0.0	30.3
1992-93	T	0.0	0.0	1.0	0.2	5.2	6.3	10.2	17.7	0.8	0.0	0.0	41.4
1993-94	0.0	T	T	0.8	1.1	6.9	20.2	16.6	4.2	7.0	0.0	T	56.8
1994-95	0.0	T	0.0	0.0	T	4.8	13.6	1.2	2.6	0.1	0.0	T	22.3
1995-96	0.0	0.0	0.0	0.0	6.8	7.0	11.0	2.5	4.4	T	0.0	0.0	31.7
1996-97													
1997-98									2.1				
1998-99						0.5	22.5	7.3	12.7				
1999-													
POR= 40 YRS	T	T	T	0.1	2.9	8.2	9.8	7.9	6.1	1.6	0.0	T	36.6

WBAN : 94830

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
TOLEDO,
OHIO (TOL)

Toledo is located on the western end of Lake Erie at the mouth of the Maumee River. Except for a bank up from the river about 30 feet, the terrain is generally level with only a slight slope toward the river and Lake Erie. The city has quite a diversified industrial section and excellent harbor facilities, making it a large transportation center for rail, water, and motor freight. Generally rich agricultural land is found in the surrounding area, especially up the Maumee Valley toward the Indiana state line.

Rainfall is usually sufficient for general agriculture. The terrain is level and drainage rather poor, therefore, a little less than the normal precipitation during the growing season is better than excessive amounts. Snowfall is generally light in this area, distributed throughout the winter from November to March with frequent thaws.

The nearness of Lake Erie and the other Great Lakes has a moderating effect on the temperature, and extremes are seldom recorded. On average, only fifteen days a year experience temperatures of 90 degrees or higher, and only eight days when it drops to zero or lower. The growing season averages 160 days, but has ranged from over 220 to less than 125 days.

Humidity is rather high throughout the year in this area, and there is an excessive amount of cloudiness. In the winter months the sun shines during only about 30 percent of the daylight hours. December and January, the cloudiest months, sometimes have as little as 16 percent of the possible hours of sunshine.

Severe windstorms, causing more than minor damage, occur infrequently. There are on the average twenty-three days per year having a sustained wind velocity of 32 mph or more.

Flooding in the Toledo area is produced by several factors. Heavy rains of 1 inch or more will cause a sudden rise in creeks and drainage ditches to the point of overflow. The western shores of Lake Erie are subject to flooding when the lake level is high and prolonged periods of east to northeast winds prevail.

STATION LOCATION

TOLEDO, OHIO

LOCATION	OCCUPIED FROM	OCCUPIED TO	AIRLINE DISTANCES AND DIRECTIONS FROM PREVIOUS LOCATION	LATITUDE NORTH	LONGITUDE WEST	ELEVATION ABOVE											* Type	REMARKS
						SEA LEVEL	GROUND											
							WIND	EMERSON	EMERSON	EMERSON	EMERSON	EMERSON	EMERSON	EMERSON	EMERSON	EMERSON		
<u>CITY</u>																		
C.A. King Building Water Street	11/01/70	3/01/71		41°40'	83°34'													
Chamber of Commerce Building, corner of Summit & Madison Sts.	3/01/71	2/01/88	1 blk. NW	41°40'	83°34'	602	114	65	65									
Government Building corner St. Clair & Madison	2/01/88	7/12/06	1 blk. NW	41°40'	83°34'	603	127	120	120									
Nicholas Building corner Huron & Madison	7/12/06	6/20/32	2 blks. NW	41°40'	83°34'	591	243	208	208									
New Federal Building Civic Center Spielbusch Avenue	6/20/32	7/01/49	4 blks. NE	41°39'	83°32'	589	87	79	79			74	72				All observations made at airport beginning 2/1/43.	
<u>AIRPORT</u>																		
Toledo Municipal AP Transcontinental Hangar 9 miles SE of Federal Building	6/03/28	9/08/38		41°34'	83°28'	621	47	5	5								WB observations to 11/2/33, CAA thereafter.	
Toledo Municipal AP Administration Hangar	9/08/38	1/12/55	350 ft. W	41°34'	83°28'	622	47	5	5		a4	a4	a3	c			CAA observations to 1/1/39, WB thereafter.	
Toledo Express Airport Administration Building	1/12/55	12/01/95	15 mi. W	41°36'	83°48'	h669	d30	g19 130	g19 130	74	18 130	18 130	18 130	c4	NA		a - Installed 2/1/43. c - Telepsychrometer (5') 7/1/43-1/22/55, (19') 1/12/55 until 10/1/59. Hygro. comm. 10/1/59. d - 72 feet to 11/8/58 and 20 feet to 11/1/68. g - Standby after 10/1/59. h - 676 feet to 10/1/59. i - Effective 4/1/76.	
Toledo Express Airport	12/01/95	Present	NA	41°35'	83°48'	691									S		ASOS Commissioned 12/01/95	

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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