

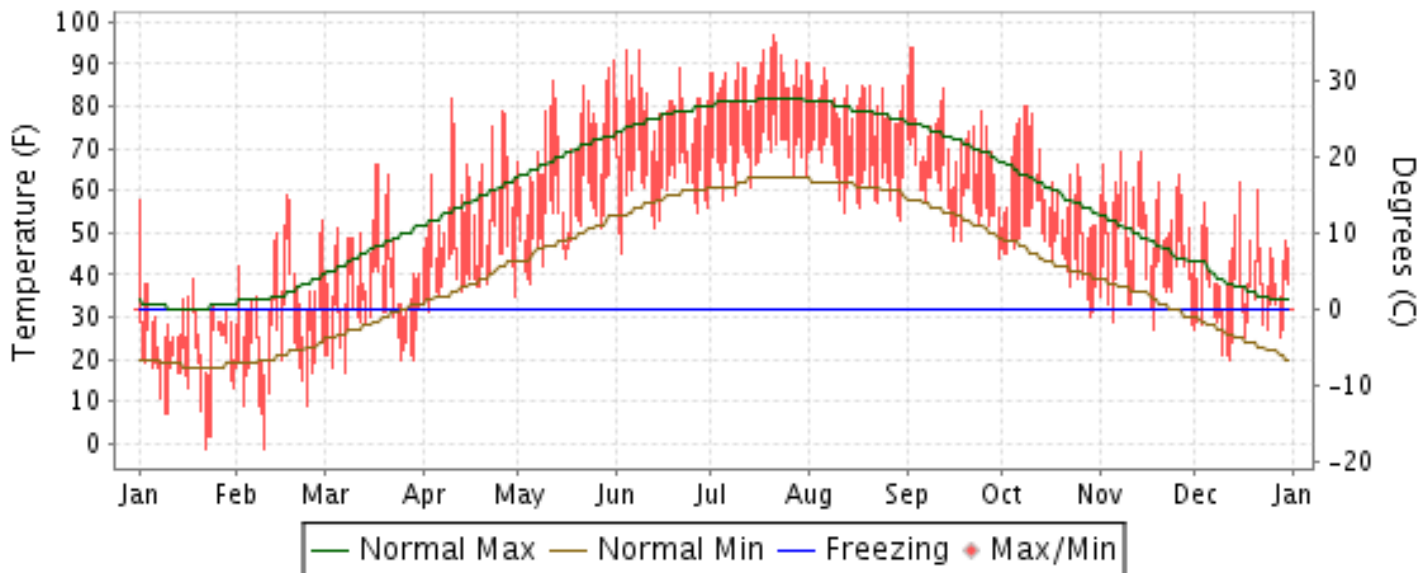


2011 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

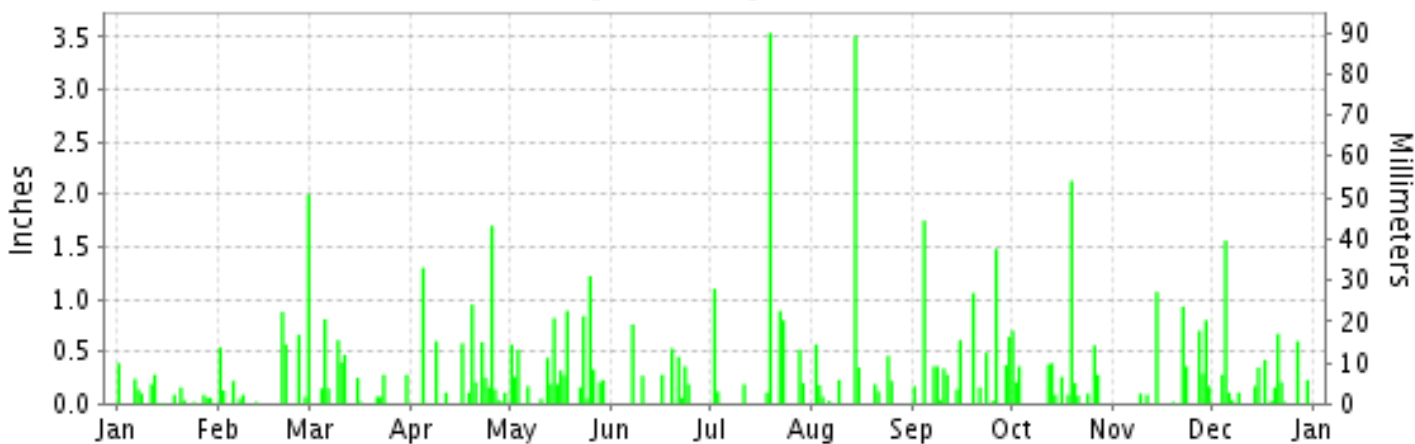
ISSN 0198-3938

CLEVELAND, OHIO (KCLE)

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 2011

CLEVELAND (KCLE)

LATITUDE: 41° 24'N LONGITUDE: -81° 51'W ELEVATION (FT): GRND: 770 BARO: 805 TIME ZONE: EASTERN (UTC -5) WBAN: 14820

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	28.8	36.8	43.6	59.0	70.8	79.3	87.2	81.1	72.6	61.9	55.7	43.5	60.0	
	HIGHEST DAILY MAXIMUM	58	59	66	82	91	93	97	90	94	80	69	62	97	
	DATE OF OCCURRENCE	01	17	18+	10	31	08+	21	01	03+	09+	14+	15	JUL 21	
	MEAN DAILY MINIMUM	17.5	21.2	29.1	41.0	52.7	60.6	67.9	63.2	58.5	45.6	40.1	31.5	44.1	
	LOWEST DAILY MINIMUM	-1	-1	17	31	38	45	58	53	44	30	27	20	-1	
	DATE OF OCCURRENCE	22	10	07	03	05	03	05	30	30	29	18	12	FEB 10	
	AVERAGE DRY BULB	23.2	29.0	36.4	50.0	61.8	70.0	77.6	72.2	65.6	53.8	47.9	37.5	52.1	
	MEAN WET BULB	21.6	26.4	33.1	45.2	56.1	63.0	69.3	66.0	60.8	49.0	42.9	34.5	47.3	
	MEAN DEW POINT	16.7	20.4	27.3	40.1	52.0	57.9	64.6	61.8	57.6	44.5	36.6	30.1	42.5	
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 90°	0	0	0	0	1	2	9	1	2	0	0	0	0	15
	MAXIMUM <= 32°	24	11	3	0	0	0	0	0	9	0	0	1	48	
MINIMUM <= 32°	31	24	23	1	0	0	0	0	0	2	4	17	102		
MINIMUM <= 0°	1	1	0	0	0	0	0	0	0	0	0	0	2		
H/C	HEATING DEGREE DAYS	1289	1003	881	447	172	18	0	0	76	343	506	845	5580	
	COOLING DEGREE DAYS	0	0	0	5	80	177	397	230	102	4	0	0	995	
RH	MEAN (PERCENT)	75	71	71	71	74	67	66	71	78	74	67	76	72	
	HOUR 01 LST	78	75	74	76	81	79	78	82	86	81	70	79	78	
	HOUR 07 LST	79	78	76	77	77	71	73	78	84	83	73	80	77	
	HOUR 13 LST	70	64	65	65	65	56	53	56	66	59	59	71	62	
	HOUR 19 LST	75	70	70	68	74	61	61	69	78	72	66	76	70	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	1	4	1	3	6	1	0	0	1	0	0	1	18	
	THUNDERSTORMS	0	2	1	7	12	7	9	9	8	1	1	0	57	
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.)	29.16	29.17	29.26	29.02	29.09	29.10	29.12	29.07	29.14	29.14	29.18	29.28	29.14	
	MEAN SEA-LEVEL PRESS. (IN.)	30.06	30.06	30.14	29.89	29.95	29.95	29.97	29.91	30.00	30.01	30.04	30.16	30.01	
WINDS	RESULTANT SPEED (MPH)	4.3	4.2	1.0	2.9	0.2	2.1	1.3	2.1	0.9	2.6	5.1	5.2	2.3	
	RES. DIR. (TENS OF DEGS.)	25	24	36	22	14	25	25	29	18	23	21	22	24	
	MEAN SPEED (MPH)	9.2	11.5	10.3	11.7	8.3	8.3	6.8	6.9	7.8	8.2	11.4	9.3	9.1	
	PREVAIL.DIR.(TENS OF DEGS.)	20	22	01	02	20	20	21	23	21	24	19	20	19	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	32	37	29	46	44	36	41	44	25	33	38	37	46	
	DIR. (TENS OF DEGS.)	29	02	25	23	28	20	03	25	04	26	30	26	23	
	DATE OF OCCURRENCE	01	25	18	28	23	21	02	24	06	15	14	15	APR 28	
	MAXIMUM 3-SECOND WIND:														
	SPEED (MPH)	41	51	36	61	53	46	46	54	33	44	48	45	61	
DIR. (TENS OF DEGS.)	24	02	24	21	27	22	04	26	30	25	30	27	21		
DATE OF OCCURRENCE	15	25	18	28	23	21	02	24	30	15	14	15	APR 28		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	1.91	5.23	3.58	6.89	7.74	2.92	7.47	5.93	8.30	5.84	4.54	4.97	65.32	
	GREATEST 24-HOUR (IN.)	0.39	2.07	0.88	1.84	1.53	0.76	3.65	3.85	1.75	2.14	1.29	1.56	3.85	
	DATE OF OCCURRENCE	01	27-28	05-06	25-26	25-26	07	18-19	14-15	04	18-19	22-23	05	AUG 14-15	
	NUMBER OF DAYS WITH:														
	PRECIPITATION 0.01	18	11	14	17	20	10	9	11	18	15	11	16	170	
PRECIPITATION 0.10	7	7	9	13	17	7	9	9	14	11	8	12	123		
PRECIPITATION 1.00	0	1	0	2	1	0	2	1	3	1	1	1	13		
SNOWFALL	SNOW,ICE PELLETS,HAIL														
	TOTAL (IN.)	21.5	23.3	11.8	T	T	0.0	0.0	0.0	0.0	0.0	1.1	7.0	64.7	
	GREATEST 24-HOUR (IN.)	5.1	8.9	5.2	T	T	0.0	0.0	0.0	0.0	0.0	0.6	5.0	8.9	
	DATE OF OCCURRENCE	12	25	11	02+	25+						11	17	FEB 25	
	MAXIMUM SNOW DEPTH (IN.)	6	10	5	0	0	0	0	0	0	0	T	4	10	
	DATE OF OCCURRENCE	12	08	12+								30	18	FEB 08	
	NUMBER OF DAYS WITH:														
SNOWFALL >= 1.0	7	5	4	0	0	0	0	0	0	0	0	2	18		

NORMALS, MEANS, AND EXTREMES CLEVELAND (KCLE)

LATITUDE: 41° 24'N LONGITUDE: -81° 51'W ELEVATION (FT): GRND: 770 BARO: 805 TIME ZONE: EASTERN (UTC -5) WBAN: 14820

ELEMENT		POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	32.6	35.8	46.1	57.3	68.6	77.4	81.4	79.2	72.3	60.8	48.7	37.4	58.1
	MEAN DAILY MAXIMUM	115	34.3	34.0	45.2	56.1	67.8	76.0	81.5	79.6	72.5	62.3	48.7	37.7	58.0
	HIGHEST DAILY MAXIMUM	70	73	74	83	88	92	104	103	102	101	90	82	77	104
	YEAR OF OCCURRENCE		1950	2000	1945	1986	1959	1988	1941	1948	1953	1946	1950	1982	JUN 1988
	MEAN OF EXTREME MAXS.	115	56.3	58.6	71.9	80.5	85.6	91.5	93.1	91.3	88.4	80.1	70.0	59.6	77.2
	NORMAL DAILY MINIMUM	30	18.8	21.0	28.9	37.9	48.3	57.7	62.3	61.2	54.3	43.7	34.9	24.9	41.2
	MEAN DAILY MINIMUM	115	20.4	19.9	28.9	38.2	49.3	57.9	63.7	62.3	55.0	45.2	34.8	25.2	41.7
	LOWEST DAILY MINIMUM	70	-20	-15	-5	10	25	31	41	38	32	19	3	-15	-20
	YEAR OF OCCURRENCE		1994	1963	1984	1964	1966	1972	1968	1982	1942	1988	1976	1989	JAN 1994
	MEAN OF EXTREME MINS.	115	-0.4	1.4	11.3	24.1	33.9	43.6	50.5	48.9	40.0	30.2	19.7	6.7	25.8
	NORMAL DRY BULB	30	25.7	28.4	37.5	47.6	58.5	67.5	71.9	70.2	63.3	52.2	41.8	31.1	49.6
	MEAN DRY BULB	115	27.3	27.0	37.0	47.2	58.6	67.1	72.6	71.0	63.7	53.8	41.8	31.4	49.9
	MEAN WET BULB	28	24.4	25.9	32.5	42.2	52.2	61.2	65.0	64.4	58.1	47.3	38.2	28.4	45.0
	MEAN DEW POINT	28	21.9	23.2	29.4	39.0	49.5	58.8	62.8	62.5	55.9	44.8	35.4	26.0	42.4
	NORMAL NO. DAYS WITH: MAXIMUM >= 90	30	0.0	0.0	0.0	0.0	0.2	1.8	4.2	2.1	0.6	0.0	0.0	0.0	8.9
	MAXIMUM <= 32	30	14.6	11.7	4.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	1.1	8.9	40.7
MINIMUM <= 32	30	27.5	23.3	20.7	8.7	0.6	*	0.0	0.0	0.0	2.4	13.0	24.1	120.3	
MINIMUM <= 0	30	2.8	2.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	5.7	
H/C	NORMAL HEATING DEG. DAYS	30	1205	1025	847	516	235	54	7	13	114	389	680	1036	6121
	NORMAL COOLING DEG. DAYS	30	0	0	2	7	40	140	236	190	79	8	0	0	702
RH	NORMAL (PERCENT)	30	75	74	70	67	69	70	71	74	74	72	73	76	72
	HOURLY 01 LST	30	78	76	75	74	78	81	82	84	83	78	76	78	79
	HOURLY 07 LST	30	80	79	79	77	79	80	82	86	85	82	78	79	81
	HOURLY 13 LST	30	71	67	62	57	58	57	57	61	61	60	66	71	62
	HOURLY 19 LST	30	74	73	68	62	61	62	62	68	70	71	72	75	68
S	PERCENT POSSIBLE SUNSHINE	66	31	37	45	53	58	65	67	63	60	52	33	27	49
W/O	MEAN NO. DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI)	48	1.2	1.7	1.8	1.1	1.3	0.6	0.3	0.7	0.6	0.7	0.9	1.2	12.1
	THUNDERSTORMS	64	0.2	0.5	1.6	3.3	4.9	6.3	6.3	5.1	3.3	1.5	0.9	0.3	34.2
CLOUDINESS	MEAN: SUNRISE-SUNSET (OKTAS)														
	MIDNIGHT-MIDNIGHT (OKTAS)														
	MEAN NO. DAYS WITH: CLEAR	1	2.0	1.0	4.0										
	PARTLY CLOUDY	1	9.0	6.0	11.0		11.0	9.0							
PR	MEAN STATION PRESSURE(IN)	28	29.21	29.21	29.19	29.13	29.14	29.14	29.16	29.19	29.22	29.22	29.22	29.22	29.19
	MEAN SEA-LEVEL PRES. (IN)	28	30.10	30.10	30.07	29.99	30.00	29.99	30.01	30.04	30.07	30.09	30.09	30.11	30.06
WINDS	MEAN SPEED (MPH)	28	11.2	10.7	10.8	10.3	9.2	8.4	7.9	7.5	8.3	9.2	10.6	10.9	9.6
	PREVAIL.DIR(TENS OF DEGS)	44	24	24	02	02	21	21	22	22	21	21	20	24	24
	MAXIMUM 2-MINUTE: SPEED (MPH)	16	51	46	46	46	45	52	47	44	41	46	47	53	53
	DIR. (TENS OF DEGS)		25	26	27	23	29	33	26	25	29	24	26	25	25
	YEAR OF OCCURRENCE		2008	2009	2002	2011	2004	2009	2003	2011	2008	1996	2003	2004	DEC 2004
	MAXIMUM 3-SECOND SPEED (MPH)	16	66	67	62	61	55	62	68	54	54	57	59	62	68
	DIR. (TENS OF DEGS)		25	17	26	21	29	33	21	26	28	26	27	26	21
YEAR OF OCCURRENCE		2008	2009	2002	2011	2004	2009	1999	2011	2008	1996	2003	2004	JUL 1999	
PRECIPITATION	NORMAL (IN)	30	2.48	2.29	2.94	3.37	3.50	3.89	3.52	3.69	3.77	2.74	3.38	3.14	38.71
	MAXIMUM MONTHLY (IN)	70	7.01	5.54	6.07	6.89	9.14	9.06	9.12	9.03	11.05	9.50	8.80	8.59	11.05
	YEAR OF OCCURRENCE		1950	2008	1954	2011	1989	1972	1992	2007	1996	1954	1985	1990	SEP 1996
	MINIMUM MONTHLY (IN)	70	0.36	0.48	0.78	1.18	0.66	0.65	0.68	0.53	0.74	0.61	0.80	0.71	0.36
	YEAR OF OCCURRENCE		1961	1978	1958	1946	2007	1988	2001	1969	1964	1952	1976	1958	JAN 1961
	MAXIMUM IN 24 HOURS (IN)	70	2.53	2.53	2.76	2.24	3.73	4.00	3.65	3.85	5.24	3.44	2.73	2.81	5.24
	YEAR OF OCCURRENCE		1995	2008	1948	1961	1955	1972	2011	2011	1996	1954	1985	1992	SEP 1996
	NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01	30	16.9	13.7	14.7	14.5	12.6	11.2	10.5	10.4	10.3	11.7	14.0	16.3	156.8
PRECIPITATION >= 1.00	30	0.2	0.1	0.2	0.5	0.7	0.8	1.0	0.9	0.9	0.4	0.5	0.4	6.6	
SNOWFALL	NORMAL (IN)	30	17.1	14.1	10.7	2.5	0.1	0.0	0.0	0.0	0.0	0.4	5.1	13.1	63.1
	MAXIMUM MONTHLY (IN)	70	42.8	39.1	30.4	19.0	2.1	T	T	T	T	8.0	23.4	35.1	42.8
	YEAR OF OCCURRENCE		1978	1993	2008	1943	1974	1996	1993	2008	1993	1962	1996	2004	JAN 1978
	MAXIMUM IN 24 HOURS (IN)	70	10.8	14.8	16.0	11.6	2.1	T	T	T	T	6.7	15.0	12.2	16.0
	YEAR OF OCCURRENCE		1996	1993	1987	1982	1974	1996	1993	2008	1993	1962	1950	1974	MAR 1987
	MAXIMUM SNOW DEPTH (IN)	63	21	22	15	14	0	0	0	0	0	6	20	19	22
	YEAR OF OCCURRENCE		1978	2009	2008	1987						1962	1950	1962	FEB 2009
	NORMAL NO. DAYS WITH: SNOWFALL >= 1.0	30	5.3	4.0	2.9	0.7	0.0	0.0	0.0	0.0	0.0	0.2	1.8	3.8	18.7

PRECIPITATION (inches) 2011 CLEVELAND (KCLE)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1982	4.00	1.41	3.77	1.62	2.65	5.01	1.21	2.66	4.82	0.93	5.17	3.68	36.93
1983	1.08	0.77	3.54	4.48	4.17	3.45	4.16	3.15	2.87	4.14	5.89	2.92	40.62
1984	1.25	3.82	3.80	2.29	5.95	3.40	3.35	5.51	2.43	2.20	3.95	3.38	41.33
1985	1.78	2.60	4.97	1.38	3.45	2.93	3.23	4.01	2.05	3.45	8.80	2.63	41.28
1986	2.23	3.08	2.44	3.90	4.34	2.97	3.10	3.58	6.41	2.83	3.01	2.82	40.71
1987	1.98	0.49	3.84	2.97	2.40	7.94	3.36	5.51	2.07	3.41	1.02	2.96	37.95
1988	1.03	2.84	2.20	3.47	1.33	0.65	3.42	3.35	1.77	2.51	4.63	2.49	29.69
1989	2.07	1.73	3.46	3.73	9.14	5.22	3.02	1.09	4.61	4.50	3.61	1.72	43.90
1990	2.35	4.70	0.86	4.57	6.10	1.72	5.62	4.79	7.33	4.92	2.28	8.59	53.83
1991	2.18	2.31	3.64	4.22	3.24	1.37	1.69	2.79	3.40	2.65	2.92	2.26	32.67
1992	3.32	2.65	3.05	3.77	3.01	2.66	9.12	4.58	3.25	2.27	6.54	4.31	48.53
1993	4.44	2.61	3.85	3.16	1.56	5.18	2.58	1.52	5.94	3.52	4.06	2.21	40.63
1994	2.66	0.83	1.30	3.70	1.67	3.35	2.46	5.35	1.73	1.05	2.52	2.94	29.56
1995	5.81	1.73	1.72	4.33	3.96	3.67	5.39	2.00	1.03	4.08	3.88	1.45	39.05
1996	2.69	1.63	2.81	5.61	2.08	3.89	3.18	0.79	11.05	4.65	5.03	3.03	46.44
1997	1.77	2.93	3.26	2.20	4.21	3.34	1.51	5.26	4.25	1.63	2.58	2.42	35.36
1998	3.92	1.89	3.25	6.07	1.92	2.97	2.72	3.02	1.20	2.36	1.59	1.92	32.83
1999	3.64	2.36	1.65	3.89	1.54	1.43	4.66	1.80	1.93	3.06	3.31	2.70	31.97
2000	2.63	2.05	1.57	3.72	5.46	5.72	2.57	4.72	3.29	3.56	2.55	2.75	40.59
2001	1.59	1.63	2.43	2.33	3.84	3.96	0.68	3.31	3.90	5.56	2.62	2.53	34.38
2002	2.21	2.43	4.13	3.67	5.77	0.92	2.87	2.00	3.50	1.52	3.65	3.71	36.38
2003	1.98	2.74	2.33	2.47	6.49	3.16	4.89	1.96	6.02	2.87	3.58	4.01	42.50
2004	2.69	0.76	4.82	3.74	5.90	2.87	2.88	2.46	3.22	2.34	3.24	4.47	39.39
2005	5.89	2.07	1.66	5.57	1.43	1.64	3.24	7.60	3.55	2.53	2.65	2.04	39.87
2006	1.92	2.80	1.54	2.45	4.54	4.84	4.46	2.21	3.14	5.83	3.40	3.51	40.64
2007	5.84	1.41	3.71	3.52	0.66	1.66	2.57	9.03	2.12	2.65	4.07	4.20	41.44
2008	3.31	5.54	5.47	2.21	4.17	5.21	3.02	1.43	3.79	2.60	3.97	3.77	44.49
2009	2.66	2.73	3.33	3.08	2.35	2.68	3.75	3.52	3.84	3.66	1.45	2.71	35.76
2010	1.69	2.71	1.82	2.01	4.04	4.37	3.57	3.70	2.96	2.60	4.59	1.34	35.40
2011	1.91	5.23	3.58	6.89	7.74	2.92	7.47	5.93	8.30	5.84	4.54	4.97	65.32
POR= 115 YRS	2.58	2.23	2.92	3.11	3.22	3.27	3.43	3.15	3.26	2.67	2.84	2.63	35.31

WBAN : 14820

AVERAGE TEMPERATURE (°F) 2011 CLEVELAND (KCLE)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1982	19.8	25.2	37.1	44.6	64.9	64.1	73.6	67.9	62.7	55.3	45.4	40.5	50.1
1983	30.7	33.9	40.8	47.1	55.7	69.0	75.2	73.7	65.1	53.4	43.9	23.2	51.0
1984	20.7	34.5	28.4	46.8	54.0	69.5	68.7	70.6	61.1	56.3	40.9	36.5	49.0
1985	20.8	25.2	40.3	53.6	60.4	62.7	71.1	68.9	64.9	54.0	46.0	24.3	49.4
1986	26.7	28.8	39.5	49.8	60.8	67.2	73.1	69.0	67.0	54.3	40.3	32.6	50.8
1987	27.4	30.5	39.0	49.1	63.0	70.2	75.2	70.8	63.5	47.5	46.1	34.8	51.4
1988	25.6	25.8	37.5	47.9	59.7	68.9	75.9	74.2	64.0	47.1	43.8	31.3	50.1
1989	35.0	26.1	38.1	45.3	57.6	68.3	73.4	71.0	64.0	54.0	41.0	19.2	49.4
1990	35.8	34.1	42.0	49.4	56.3	67.6	71.2	69.8	63.4	53.7	45.3	35.6	52.0
1991	27.3	32.8	40.7	52.6	66.9	71.1	74.7	72.7	64.5	55.7	40.2	34.8	52.8
1992	30.2	32.7	36.6	47.9	57.9	64.1	70.7	67.6	63.3	49.9	42.0	34.1	49.8
1993	32.3	25.6	33.6	47.6	59.2	67.9	75.0	73.2	62.2	51.3	41.8	30.5	50.0
1994	19.3	26.5	36.3	50.5	54.7	69.7	73.3	69.3	63.9	54.5	47.8	36.9	50.2
1995	30.1	27.0	40.0	46.6	59.3	71.5	75.5	77.8	63.2	56.4	38.5	26.1	51.0
1996	25.9	27.6	30.9	46.3	56.7	69.3	69.6	70.9	64.0	54.0	36.3	34.7	48.9
1997	25.7	34.4	38.8	45.2	52.9	68.2	70.6	67.5	62.6	53.1	39.0	33.4	49.3
1998	35.2	37.6	41.2	49.3	64.4	68.5	71.4	72.1	67.0	53.5	44.9	37.0	53.5
1999	27.1	34.7	34.3	50.4	61.0	70.1	76.2	69.1	65.0	52.5	45.9	33.8	51.7
2000	26.6	34.3	43.2	47.0	61.5	68.6	68.0	68.9	63.1	54.7	39.8	22.3	49.8
2001	27.7	32.2	34.0	51.4	60.0	68.0	71.9	72.6	61.4	54.4	48.8	37.1	51.6
2002	34.6	34.0	37.4	50.5	55.5	70.4	75.5	73.6	68.7	51.8	41.3	30.7	52.0
2003	21.2	24.5	38.7	48.9	57.8	66.9	72.5	73.2	63.7	51.4	47.8	33.6	50.0
2004	21.6	29.7	40.4	49.0	62.2	66.7	71.4	68.1	65.8	53.6	44.5	31.0	50.3
2005	27.4	30.9	32.6	48.7	55.2	73.7	75.2	74.1	67.1	54.4	44.7	27.4	51.0
2006	38.6	30.5	37.7	51.5	58.8	66.1	74.2	72.5	62.2	50.1	44.9	38.4	52.1
2007	31.1	18.8	40.1	46.5	61.9	69.7	70.9	72.8	66.7	60.2	41.4	32.6	51.1
2008	30.2	27.2	33.5	52.3	56.3	70.9	73.5	71.1	66.2	51.5	40.2	31.0	50.3
2009	19.4	30.5	39.6	50.7	60.1	68.1	70.0	72.5	65.4	52.4	47.7	31.7	50.7
2010	27.1	28.4	42.3	56.0	64.8	72.4	75.8	74.9	66.3	54.3	43.2	26.4	52.7
2011	23.2	29.0	36.4	50.0	61.8	70.0	77.6	72.2	65.6	53.8	47.9	37.5	52.1
POR= 115 YRS	27.3	27.0	37.0	47.2	58.6	67.1	72.6	71.0	63.7	53.8	41.8	31.4	49.9

HEATING DEGREE DAYS (base 65°F) 2011 CLEVELAND (KCLE)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1982-83	5	42	136	310	586	760	1056	864	742	533	294	56	5384
1983-84	7	0	116	362	628	1291	1366	878	1126	544	347	19	6684
1984-85	16	17	174	270	716	877	1364	1110	757	370	187	99	5957
1985-86	2	7	118	338	565	1255	1180	1009	785	459	172	52	5942
1986-87	3	40	63	332	736	999	1158	958	795	473	170	23	5750
1987-88	3	22	90	535	562	929	1213	1129	848	506	208	60	6105
1988-89	8	5	83	557	629	1040	922	1084	831	585	272	33	6049
1989-90	0	6	108	350	716	1416	898	858	718	492	270	56	5888
1990-91	7	3	121	350	585	906	1163	897	748	379	111	11	5281
1991-92	0	0	123	310	738	930	1074	929	872	513	243	90	5822
1992-93	8	26	118	462	682	952	1009	1097	967	519	192	56	6088
1993-94	0	3	134	420	691	1063	1414	1073	880	443	330	57	6508
1994-95	4	10	83	322	507	865	1077	1061	769	546	190	13	5447
1995-96	3	0	103	271	787	1200	1203	1077	1052	556	297	19	6568
1996-97	8	0	98	333	850	932	1213	849	805	584	368	46	6086
1997-98	11	30	103	404	773	972	916	763	758	465	94	73	5362
1998-99	1	4	52	350	597	863	1171	840	942	433	155	56	5464
1999-00	3	3	83	384	569	961	1180	884	674	533	169	54	5497
2000-01	10	21	136	315	750	1317	1152	914	955	427	177	58	6232
2001-02	11	0	150	332	480	857	934	862	847	464	309	31	5277
2002-03	0	0	37	432	701	1053	1350	1128	809	490	224	52	6276
2003-04	0	1	88	426	511	966	1338	1016	754	482	153	52	5787
2004-05	0	24	55	350	610	1045	1159	947	999	484	299	12	5984
2005-06	0	1	22	350	604	1160	810	957	841	402	240	51	5438
2006-07	3	0	104	454	594	818	1041	1286	767	547	176	32	5822
2007-08	5	6	57	205	703	996	1074	1091	967	383	284	15	5786
2008-09	2	1	43	411	735	1049	1407	956	777	453	171	37	6042
2009-10	3	12	56	388	513	1027	1167	1019	697	302	115	9	5308
2010-11	4	1	60	330	647	1189	1289	1003	881	447	172	18	6041
2011-	0	0	76	343	506	845							

WBAN : 14820

COOLING DEGREE DAYS (base 65°F) 2011 CLEVELAND (KCLE)

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1982	0	0	0	3	84	54	278	140	73	17	6	6	661
1983	0	0	0	5	12	185	327	277	127	12	0	0	945
1984	0	0	0	3	13	159	139	197	60	5	0	0	576
1985	0	0	0	38	52	34	201	131	122	4	2	0	584
1986	0	0	1	9	48	128	259	168	131	8	0	0	752
1987	0	0	0	0	114	183	322	209	53	0	3	0	884
1988	0	0	0	0	47	185	348	297	58	9	0	0	944
1989	0	0	4	0	46	138	268	199	83	14	0	0	752
1990	0	0	10	31	8	141	208	158	80	8	1	0	645
1991	0	0	1	14	176	200	307	245	114	26	0	0	1083
1992	0	0	0	8	28	68	191	114	74	0	0	0	483
1993	0	0	0	0	17	147	316	262	62	2	0	0	806
1994	0	0	0	15	17	204	269	149	58	5	1	0	718
1995	0	0	0	0	21	216	336	404	58	11	0	0	1046
1996	0	0	0	2	48	155	160	193	76	1	0	0	635
1997	0	0	0	0	0	147	194	113	38	41	0	0	533
1998	0	0	25	0	82	183	207	231	118	4	0	0	850
1999	0	0	0	0	39	218	357	138	88	1	0	0	841
2000	0	0	4	1	69	169	114	145	86	7	0	0	595
2001	0	0	0	23	31	156	231	240	48	11	0	0	740
2002	0	0	0	37	23	199	330	275	153	31	0	0	1048
2003	0	0	0	10	9	116	238	261	56	8	3	0	701
2004	0	0	0	9	72	111	206	129	89	1	0	0	617
2005	0	0	0	4	3	279	323	286	93	30	0	0	1018
2006	0	0	0	4	54	92	296	238	26	0	0	0	710
2007	0	0	3	0	89	178	196	256	117	65	0	0	904
2008	0	0	0	8	21	198	274	196	84	1	0	0	782
2009	0	0	0	32	27	132	163	251	76	0	0	0	681
2010	0	0	0	41	115	237	348	315	104	8	0	0	1168
2011	0	0	0	5	80	177	397	230	102	4	0	0	995

SNOWFALL (inches) 2011 CLEVELAND (KCLE)

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1982-83	0.0	0.0	0.0	T	2.2	6.3	6.5	8.3	11.3	3.4	0.0	0.0	38.0
1983-84	0.0	0.0	0.0	0.0	7.1	13.0	12.9	27.1	19.3	T	0.0	0.0	79.4
1984-85	0.0	0.0	0.0	0.0	4.0	8.9	25.5	18.2	1.2	5.9	0.0	0.0	63.7
1985-86	0.0	0.0	0.0	0.0	T	23.4	17.2	10.8	6.7	0.2	0.0	0.0	58.3
1986-87	0.0	0.0	0.0	0.0	3.1	1.1	16.4	5.0	26.2	4.0	0.0	0.0	55.8
1987-88	0.0	0.0	0.0	T	1.0	16.4	8.7	22.9	20.4	1.9	0.0	0.0	71.3
1988-89	0.0	0.0	0.0	T	1.7	17.9	6.6	13.8	9.9	4.9	T	0.0	54.8
1989-90	0.0	0.0	0.0	T	9.1	24.0	10.5	9.9	4.4	4.7	0.0	0.0	62.6
1990-91	0.0	0.0	0.0	T	T	7.4	16.6	18.9	4.2	T	0.0	0.0	47.1
1991-92	0.0	0.0	0.0	0.0	3.5	9.4	23.8	6.2	18.4	4.4	0.0	0.0	65.7
1992-93	0.0	0.0	0.0	T	7.1	7.1	8.7	39.1	25.4	1.1	0.0	T	88.5
1993-94	T	0.0	T	0.2	3.0	19.0	27.4	12.3	7.0	3.6	0.0	0.0	72.5
1994-95	0.0	0.0	0.0	0.0	T	1.0	23.4	14.7	4.3	0.2	0.0	0.0	43.6
1995-96	0.0	0.0	0.0	0.0	9.9	29.6	21.9	10.1	19.4	10.2	0.0	T	101.1
1996-97	0.0	0.0	0.0	0.0	23.4	5.0	13.0	8.4	5.3	0.8	0.0	0.0	55.9
1997-98	0.0	0.0	0.0	T	8.6	10.7	5.0	0.2	9.5	T	0.0	0.0	34.0
1998-99	0.0	0.0	0.0	0.0	0.1	6.9	29.6	14.2	11.6	T	0.0	0.0	62.4
1999-00	0.0	0.0	0.0	T	1.6	10.3	24.7	13.9	8.0	1.0	0.0	0.0	59.5
2000-01	0.0	0.0	T	0.1	11.2	21.9	14.9	3.2	26.5	0.3	0.0	0.0	78.1
2001-02	0.0	0.0	0.0	1.0	T	3.5	6.3	16.9	15.9	2.2	T	0.0	45.8
2002-03	0.0	0.0	0.0	T	6.1	22.4	30.3	30.1	6.7	0.1	T	0.0	95.7
2003-04	0.0	0.0	0.0	0.3	4.5	26.6	32.9	5.7	18.6	2.6	T	T	91.2
2004-05	0.0	0.0	0.0	0.0	0.9	35.1	32.8	10.3	19.8	19.0	T	0.0	117.9
2005-06	0.0	0.0	0.0	0.0	5.5	21.0	4.6	16.9	2.2	0.4	0.0	0.0	50.6
2006-07	0.0	0.0	0.0	T	1.4	9.5	21.1	23.8	7.3	13.4	0.0	0.0	76.5
2007-08	0.0	0.0	0.0	0.0	1.1	9.6	16.5	19.6	30.4	T	T	0.0	77.2
2008-09	0.0	T	0.0	0.3	10.1	8.4	40.5	17.1	1.0	2.6	0.0	0.0	80.0
2009-10	0.0	0.0	0.0	0.0	1.2	6.9	18.6	31.4	1.4	T	0.0	0.0	59.5
2010-11	0.0	0.0	0.0	0.0	T	12.7	21.5	23.3	11.8	T	T	0.0	69.3
2011-	0.0	0.0	0.0	0.0	1.1	7.0							
POR= 64 YRS	T	T	T	0.5	5.1	12.4	15.3	13.0	11.0	2.5	T	T	59.8

WBAN : 14820

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 EIGHTHS(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 SNOWFALL STOPPED MONTH & YEAR INDICATED ABOVE. NO FURTHER YEARS INCLUDED UNLESS RESTARTED.</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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2011 CLEVELAND OHIO (KCLE)

Cleveland is on the south shore of Lake Erie in northeast Ohio. The metropolitan area has a lake frontage of 31 miles. The surrounding terrain is generally level except for an abrupt ridge on the eastern edge of the city which rises some 500 feet above the shore terrain. The Cuyahoga River, which flows through a rather deep but narrow north-south valley, bisects the city.

Local climate is continental in character but with strong modifying influences by Lake Erie. West to northerly winds blowing off Lake Erie tend to lower daily high temperatures in summer and raise temperatures in winter. Temperatures at Hopkins Airport which is 5 miles south of the lakeshore average from 2-4 degrees higher than the lakeshore in summer, while overnight low temperatures average from 2-4 degrees lower than the lakefront during all seasons.

In this area, summers are moderately warm and humid with occasional days when temperatures exceed 90 degrees. Winters are relatively cold and cloudy with an average of 5 days with sub-zero temperatures. Weather changes occur every few days from the passing of cold fronts.

The daily range in temperature is usually greatest in late summer and least in winter. Annual extremes in temperature normally occur soon after

late June and December. Maximum temperatures below freezing occur most often in December, January, and February. Temperatures of 100 degrees or higher are rare. On the average, freezing temperatures in fall are first recorded in October while the last freezing temperature in spring normally occurs in April.

As is characteristic of continental climates, precipitation varies widely from year to year. However, it is normally abundant and well distributed throughout the year with spring being the wettest season. Showers and thunderstorms account for most of the rainfall during the growing season. Thunderstorms are most frequent from April through August. Snowfall may fluctuate widely. Mean annual snowfall increases from west to east in Cuyahoga County ranging from about 45 inches in the west to more than 90 inches in the extreme east.

Damaging winds of 50 mph or greater are usually associated with thunderstorms. Tornadoes, one of the most destructive of all atmospheric storms, occasionally occur in Cuyahoga County.

Station History

CLEVELAND, OH

NAME	Begin Date	End Date	Latitude	Longitude	Elevation Feet	Relocation	Platform
CLEVELAND MUNICIPAL AP	1956-01-01	1963-12-31	41° 24'	-81° 51'	814		AIRWAYS, COOP
CLEVELAND HOPKINS INTL AP	1981-12-31	1988-01-07	41° 25'	-81° 52'	778		COOP
CLEVELAND MUNICIPAL AP	1948-01-01	1956-01-01	41° 24'	-81° 51'	804		AIRWAYS, COOP
CLEVELAND HOPKINS AP	1963-12-31	1964-12-01	41° 24'	-81° 51'	814		AIRWAYS, COOP
CLEVELAND HOPKINS INTL AP	1995-12-01	Present	41° 24'	-81° 51'	770		ASOS, COOP
CLEVELAND HOPKINS INTL AP	1964-12-01	1969-01-01	41° 24'	-81° 51'	814		AIRWAYS, COOP
CLEVELAND HOPKINS INTL AP	1969-01-01	1977-01-01	41° 24'	-81° 51'	814		COOP, WXSVC
CLEVELAND HOPKINS INTL AP	1977-01-01	1981-12-31	41° 25'	-81° 52'	778		COOP, WXSVC
CLEVELAND HOPKINS INTL AP	1988-01-07	1995-12-01	41° 25'	-81° 52'	770		COOP
CLEVELAND MUNICIPAL AP	1932-01-01	1948-01-01	41° 24'	-81° 51'			AIRWAYS

Element History

Element	Begin Date	End Date	Frequency	Time Of Observation	Equipment *	Equipment * Modifications	Equipment Exposure
TEMP	1960-03-01	1970-10-01	DAILY	2400	HYGR		
PRECIP	1970-10-01	1995-07-01	DAILY	2400	UNIV	RCRD	
TEMP	1926-08-01	1960-03-01	DAILY	2400	MXMN		ROOF
TEMP	1995-07-01	Present	DAILY	2400	HYGR		
PRECIP	1970-10-01	1995-07-01	HOURLY	2400			
PRECIP	1995-07-01	Present	DAILY	2400	UNIV	RCRD	
PRECIP	1960-03-01	1970-10-01	DAILY	2400	UNIV	RCRD	
PRECIP	1926-08-01	1960-03-01	DAILY	2400	UNIV	RCRD	
TEMP	1970-10-01	1995-07-01	DAILY	2400	HYGR		
PRECIP	1995-07-01	Present	HOURLY	2400	UNIV	RCRD	

* For explanation of codes and abbreviations see Station Metadata link below.

Other Station Information can be found at:

ASOS Implementation by NWS: <http://www.nws.noaa.gov/ops2/Surface/asosimplementation.htm>

Station Metadata website: <http://www.ncdc.noaa.gov/homr>

INQUIRES/COMMENTS CALL: (828) 271-4800, option 2

Fax Number : (828) 271-4876

TDD : (828) 271-4010

Email : ncdc.info@noaa.gov

NOAA/National Climatic Data Center

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Asheville, NC 28801-5001

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