

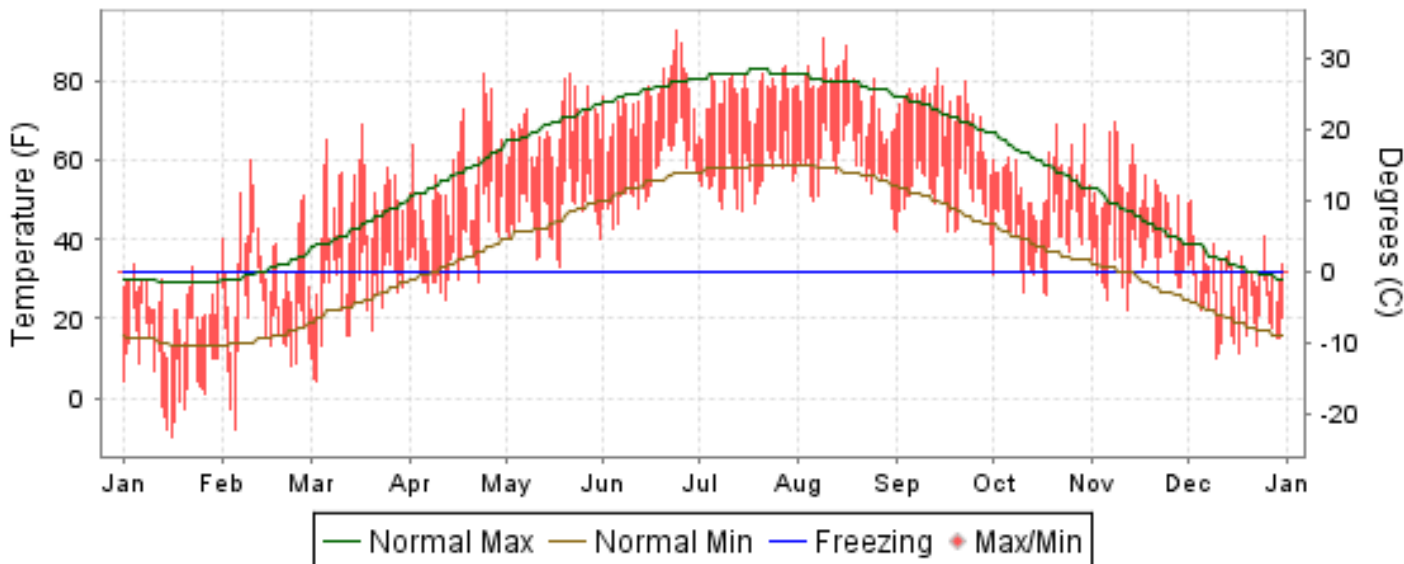


# 2009 LOCAL CLIMATOLOGICAL DATA ANNUAL SUMMARY WITH COMPARATIVE DATA

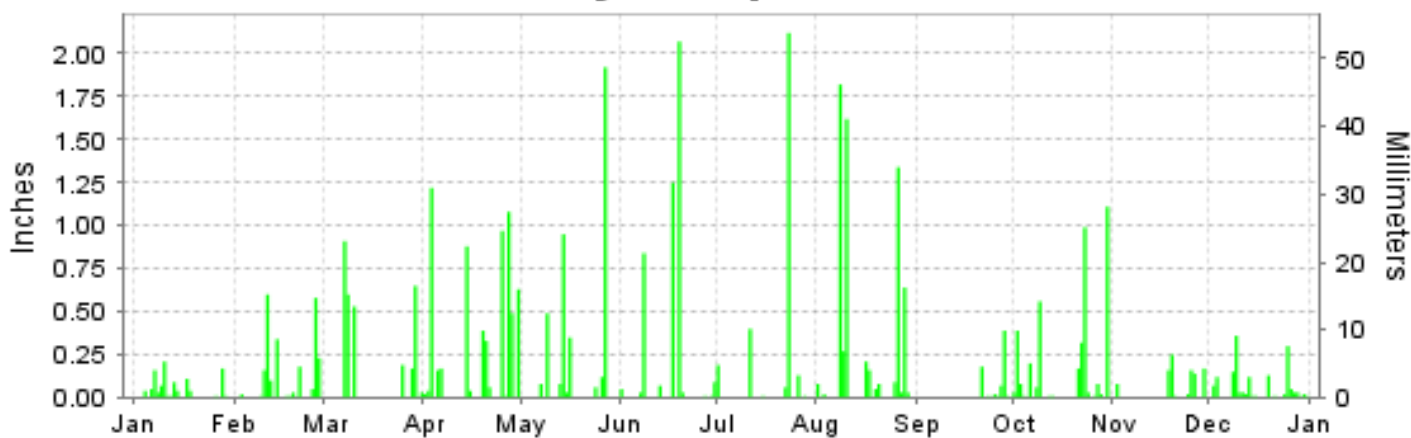
ISSN 0198-2613

## LANSING, MICHIGAN (KLAN)

### 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

## LANSING (KLAN)

LATITUDE: 42° 46'N      LONGITUDE: -84° 34'W      ELEVATION (FT): GRND: 860    BARO: 882      TIME ZONE: EASTERN (UTC -5)      WBAN: 14836

ELEMENT		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR	
TEMPERATURE °F	MEAN DAILY MAXIMUM	23.5	35.2	47.3	56.8	68.2	76.0	77.1	77.5	73.1	55.7	51.9	32.9	56.3	
	HIGHEST DAILY MAXIMUM	34	60	69	82	82	93	84	91	83	69	70	50	93	
	DATE OF OCCURRENCE	04	10	17	24	21	24	28	09	14	30+	08	02	JUN 24	
	MEAN DAILY MINIMUM	7.9	18.7	26.2	36.5	46.1	56.1	56.1	58.9	51.3	39.6	34.7	21.8	37.8	
	LOWEST DAILY MINIMUM	-10	-8	4	25	33	43	47	43	39	26	22	10	-10	
	DATE OF OCCURRENCE	16	05	03	12	18	04	14	31	30	18	12	10	JAN 16	
	AVERAGE DRY BULB	15.7	27.0	36.8	46.7	57.2	66.1	66.6	68.2	62.2	47.7	43.3	27.4	47.1	
	MEAN WET BULB	15.1	25.2	31.4	40.5	50.2	59.0	59.8	61.3	57.0	43.3	39.9	25.2	42.3	
	MEAN DEW POINT	10.4	20.0	22.9	32.5	42.2	53.6	54.5	57.2	53.1	38.8	34.8	20.6	36.7	
	NUMBER OF DAYS WITH:														
	MAXIMUM >= 90°	0	0	0	0	0	2	0	0	1	0	0	0	0	3
	MAXIMUM <= 32°	4	7	4	0	0	0	0	0	0	0	0	17	32	
	MINIMUM <= 32°	31	25	22	12	0	0	0	0	0	7	12	28	137	
MINIMUM <= 0°	7	2	0	0	0	0	0	0	0	0	0	0	9		
H/C	HEATING DEGREE DAYS	1522	1059	868	549	248	65	32	34	107	530	643	1158	6815	
	COOLING DEGREE DAYS	0	0	0	5	11	102	90	140	31	0	0	0	379	
RH	MEAN (PERCENT)	76	73	62	62	59	66	68	72	75	74	73	76	70	
	HOUR 01 LST	80	79	70	70	73	78	83	84	89	81	79	79	79	
	HOUR 07 LST	81	81	72	71	65	74	76	81	86	83	82	80	78	
	HOUR 13 LST	70	63	48	51	46	54	49	55	55	60	59	69	57	
	HOUR 19 LST	76	72	60	56	51	60	61	69	76	75	69	75	67	
S	PERCENT POSSIBLE SUNSHINE														
W/O	NUMBER OF DAYS WITH:														
	HEAVY FOG(VISBY <= 1/4 MI)	2	2	1	0	1	0	1	1	4	2	6	1	21	
	THUNDERSTORMS	0	0	3	2	4	2	1	3	2	2	0	0	19	
CLOUDNESS	SUNRISE-SUNSET: (OKTAS)														
	CEILOMETER (<= 12,000 FT.)														
	SATELLITE (> 12,000 FT.)														
	MIDNIGHT-MIDNIGHT: (OKTAS)														
	CEILOMETER (<= 12,000 FT.)														
SATELLITE (> 12,000 FT.)															
NUMBER OF DAYS WITH:															
CLEAR															
PARTLY CLOUDY															
CLOUDY															
PR	MEAN STATION PRESS. (IN.)	29.05	29.10	29.18	29.02	29.07	28.96	29.01	29.07	29.15	29.05	29.15	29.07	29.07	
	MEAN SEA-LEVEL PRESS. (IN.)	30.03	30.07	30.14	29.96	30.00	29.89	29.94	30.01	30.11	29.99	30.10	30.04	30.02	
WINDS	RESULTANT SPEED (MPH)	4.5	4.4	1.0	1.6	2.9	1.0	3.7	3.8	0.4	2.9	2.0	3.9	2.4	
	RES. DIR. (TENS OF DEGS.)	24	24	20	30	24	29	26	23	36	21	20	21	24	
	MEAN SPEED (MPH)	8.5	10.1	8.9	10.6	8.4	5.8	6.5	7.1	4.9	8.2	7.3	9.6	8.0	
	PREVAIL.DIR.(TENS OF DEGS.)	26	29	13	05	27	28	29	20	06	22	22	22	22	
	MAXIMUM 2-MINUTE WIND														
	SPEED (MPH)	28	31	40	40	33	31	28	31	30	36	24	35	40	
	DIR. (TENS OF DEGS.)	27	27	27	22	26	16	25	27	27	25	29	21	22	
	DATE OF OCCURRENCE	02	12	11	25	14	19	26	09	28	30	05	09	APR 25	
	MAXIMUM 3-SECOND WIND:														
	SPEED (MPH)	36	41	51	53	43	40	38	39	43	49	35	47	53	
DIR. (TENS OF DEGS.)	28	27	27	23	27	28	23	27	30	19	31	21	23		
DATE OF OCCURRENCE	02	12	11	25	14	28	26	09	28	30	05	09	APR 25		
PRECIPITATION	WATER EQUIVALENT:														
	TOTAL (IN.)	1.05	2.32	3.08	6.49	4.08	4.45	2.92	6.44	0.69	4.08	0.99	1.52	38.11	
	GREATEST 24-HOUR (IN.)	0.21	0.81	0.95	1.57	2.04	2.07	2.18	2.09	0.46	1.11	0.41	0.51	2.18	
	DATE OF OCCURRENCE	10	26-27	07-08	27-28	26-27	19	22-23	08-09	27-28	30	18-19	08-09	JUL 22-23	
	NUMBER OF DAYS WITH:														
	PRECIPITATION 0.01	15	13	7	15	9	10	7	14	7	17	8	19	141	
PRECIPITATION 0.10	3	6	6	10	5	3	4	7	2	7	5	6	64		
PRECIPITATION 1.00	0	0	0	2	1	2	1	3	0	1	0	0	10		
SNOWFALL	SNOW,ICE PELLETS,HAIL														
	TOTAL (IN.)	18.7	9.5	0.1	5.0	0.0	0.0	0.0	0.0	0.0	T	T	11.4	44.7	
	GREATEST 24-HOUR (IN.)	4.4	4.2	0.1	3.5	0.0	0.0	0.0	0.0	0.0	T	T	2.1	4.4	
	DATE OF OCCURRENCE	10	14	01	06						06	30+	19	JAN 10	
	MAXIMUM SNOW DEPTH (IN.)	10	9	0	4	0	0	0	0	0	0	0	4	10	
	DATE OF OCCURRENCE	31+	01		06								11	JAN 31+	
NUMBER OF DAYS WITH:															
SNOWFALL >= 1.0	7	2	0	2	0	0	0	0	0	0	0	6	17		

# NORMALS, MEANS, AND EXTREMES LANSING (KLAN)

LATITUDE:  
42° 46'N

LONGITUDE:  
-84° 34'W

ELEVATION (FT):  
GRND: 860 BARO: 882

TIME ZONE:  
EASTERN (UTC -5)

WBAN: 14836

	ELEMENT	POR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
TEMPERATURE °F	NORMAL DAILY MAXIMUM	30	29.4	32.6	43.5	56.6	69.4	78.1	82.1	79.7	72.0	59.8	46.0	34.1	56.9
	MEAN DAILY MAXIMUM	57	29.7	32.4	42.7	56.9	68.8	78.3	82.4	80.4	72.8	60.3	46.3	34.2	57.1
	HIGHEST DAILY MAXIMUM	51	66	69	79	86	94	99	100	100	97	89	77	69	100
	YEAR OF OCCURRENCE		1967	1999	2000	2002	1977	1988	1988	1988	1973	1963	1975	2001	AUG 1988
	MEAN OF EXTREME MAXS.	58	49.6	50.9	67.7	78.8	84.7	91.0	92.7	91.8	87.5	79.1	66.6	54.0	74.5
	NORMAL DAILY MINIMUM	30	13.9	15.4	24.3	34.5	44.8	54.3	58.4	57.0	48.9	38.6	30.1	19.7	36.7
	MEAN DAILY MINIMUM	57	14.8	16.0	24.2	35.2	45.2	55.1	58.8	57.4	49.8	39.5	30.8	20.5	37.3
	LOWEST DAILY MINIMUM	51	-29	-25	-15	-2	19	30	37	35	22	15	4	-18	-29
	YEAR OF OCCURRENCE		1981	1994	1978	1982	1966	1966	1972	1976	1991	1966	1976	2002	JAN 1981
	MEAN OF EXTREME MINS.	58	-7.5	-5.3	3.5	19.3	29.8	39.5	44.9	42.9	33.3	23.8	14.5	-0.9	19.8
	NORMAL DRY BULB	30	21.6	24.0	33.9	45.5	57.1	66.2	70.3	68.4	60.5	49.2	38.0	26.9	46.8
	MEAN DRY BULB	57	22.3	24.2	33.5	46.1	57.0	66.8	70.6	68.9	61.3	49.9	38.6	27.3	47.2
	MEAN WET BULB	26	21.5	22.9	30.1	40.4	50.5	59.8	63.6	62.9	55.9	45.0	35.2	25.8	42.8
	MEAN DEW POINT	26	18.8	19.8	26.6	36.2	46.9	56.7	61.0	60.7	53.3	42.0	32.4	23.3	39.8
	NORMAL NO. DAYS WITH: MAXIMUM >= 90	30	0.0	0.0	0.0	0.0	0.5	1.9	4.2	1.9	0.7	0.0	0.0	0.0	9.2
	MAXIMUM <= 32	30	19.1	14.1	5.4	0.4	0.0	0.0	0.0	0.0	0.0	0.0	2.8	12.8	54.6
MINIMUM <= 32	30	29.2	26.0	24.1	12.7	2.5	*	0.0	0.0	0.8	7.9	18.7	27.4	149.3	
MINIMUM <= 0	30	5.4	4.3	1.0	*	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	13.0	
H/C	NORMAL HEATING DEG. DAYS	30	1341	1160	970	585	277	69	17	35	179	493	805	1167	7098
	NORMAL COOLING DEG. DAYS	30	0	0	1	6	34	113	195	151	53	5	0	0	558
RH	NORMAL (PERCENT)	30	80	77	74	69	69	71	73	77	78	76	79	81	75
	HOURLY 01 LST	30	83	82	81	78	80	83	87	90	89	85	83	84	84
	HOURLY 07 LST	30	84	84	84	81	81	83	87	92	92	88	86	85	86
	HOURLY 13 LST	30	75	71	64	58	56	57	58	61	61	63	70	76	64
	HOURLY 19 LST	30	79	75	69	61	58	59	61	67	73	75	78	81	70
S	PERCENT POSSIBLE SUNSHINE	42	36	44	49	52	61	65	69	64	59	50	31	29	51
W/O	MEAN NO. DAYS WITH: HEAVY FOG(VISBY <= 1/4 MI)	46	1.7	1.8	2.2	0.9	1.0	1.0	1.1	1.9	1.9	1.7	1.8	2.5	19.5
	THUNDERSTORMS	57	0.3	0.2	1.5	3.2	4.2	6.3	6.2	5.7	3.9	1.5	1.0	0.3	34.3
CLOUDNESS	MEAN: SUNRISE-SUNSET (OKTAS)	42	6.3	5.9	5.8	5.5	5.1	4.8	4.5	4.5	4.8	5.1	6.2	6.4	5.4
	MIDNIGHT-MIDNIGHT (OKTAS)	32	6.2	5.7	5.3	5.2	4.8	4.4	4.2	4.1	4.4	4.8	6.0	6.2	5.1
	MEAN NO. DAYS WITH: CLEAR	42	3.2	4.2	5.2	5.9	7.0	7.2	8.0	8.4	7.9	7.1	3.6	2.8	70.5
	PARTLY CLOUDY	42	6.6	6.9	7.8	7.1	9.8	11.3	13.2	11.8	9.5	8.6	5.7	5.6	103.9
	CLOUDY	42	21.2	17.2	18.0	17.0	14.2	11.5	9.8	10.8	12.7	15.3	20.7	22.6	191.0
PR	MEAN STATION PRESSURE(IN)	26	29.09	29.11	29.10	29.03	29.05	29.04	29.07	29.08	29.12	29.08	29.10	29.10	29.08
	MEAN SEA-LEVEL PRES. (IN)	26	30.06	30.08	30.06	29.98	29.98	29.97	29.99	30.04	30.06	30.06	30.05	30.07	30.03
WINDS	MEAN SPEED (MPH)	26	10.8	10.4	10.4	10.3	9.2	8.0	7.4	6.9	7.3	8.7	10.1	10.4	9.2
	PREVAIL.DIR(TENS OF DEGS)	35	23	28	28	28	28	28	28	20	20	21	22	23	23
	MAXIMUM 2-MINUTE: SPEED (MPH)	13	45	40	45	44	44	49	41	43	38	43	49	40	49
	DIR. (TENS OF DEGS)		26	25	25	26	21	26	29	28	24	25	23	25	26
	YEAR OF OCCURRENCE		2008	2001	2002	1997	1999	2008	2003	2006	2007	2002	1998	2008	JUN 2008
	MAXIMUM 3-SECOND SPEED (MPH)	13	56	53	59	53	53	62	54	59	48	54	62	63	63
	DIR. (TENS OF DEGS)		27	24	23	23	28	25	29	27	27	20	26	26	26
	YEAR OF OCCURRENCE		2008	2001	2002	2009	2000	2008	2003	2006	1997	2001	2003	2008	DEC 2008
PRECIPITATION	NORMAL (IN)	30	1.61	1.45	2.33	3.09	2.71	3.60	2.68	3.46	3.48	2.29	2.66	2.17	31.53
	MAXIMUM MONTHLY (IN)	58	4.39	4.21	4.36	6.49	10.44	10.21	6.43	9.81	8.34	5.69	5.62	4.70	10.44
	YEAR OF OCCURRENCE		2005	1954	1974	2009	2004	1986	1992	1975	1986	2001	2003	1949	MAY 2004
	MINIMUM MONTHLY (IN)	58	0.24	0.22	0.17	0.68	0.62	0.20	0.50	0.17	T	0.28	0.51	0.37	T
	YEAR OF OCCURRENCE		2003	1969	2001	2004	1977	1988	1965	1969	1979	1956	1962	1960	SEP 1979
	MAXIMUM IN 24 HOURS (IN)	58	1.60	2.40	1.59	2.73	3.28	5.01	2.20	3.75	3.43	3.46	2.47	1.62	5.01
	YEAR OF OCCURRENCE		2005	1954	1954	1993	1989	1986	2005	1975	1981	1981	1990	1970	JUN 1986
	NORMAL NO. DAYS WITH: PRECIPITATION >= 0.01	30	14.5	11.4	12.8	12.7	10.9	10.4	9.7	10.0	10.8	10.2	13.2	14.1	140.7
	PRECIPITATION >= 1.00	30	0.2	0.1	0.3	0.4	0.4	0.9	0.5	0.8	0.9	0.3	0.4	0.2	5.4
SNOWFALL	NORMAL (IN)	30	14.0	10.6	8.7	2.5	0.*	0.0	0.0	0.0	0.*	0.4	5.1	13.2	54.5
	MAXIMUM MONTHLY (IN)	52	34.6	27.6	19.8	17.0	0.3	T	T	0.0	T	7.5	16.8	33.5	34.6
	YEAR OF OCCURRENCE		1999	2008	1971	1970	1994	2008	2004	1994	1967	1966	2000	2000	JAN 1999
	MAXIMUM IN 24 HOURS (IN)	52	20.4	9.0	15.5	17.0	0.3	T	T	0.0	T	7.5	11.0	15.1	20.4
	YEAR OF OCCURRENCE		1967	1965	1973	1970	1994	1992	2004	1994	1967	1967	1951	1970	JAN 1967
	MAXIMUM SNOW DEPTH (IN)	54	24	23	17	13	0	0	0	0	0	4	11	20	24
	YEAR OF OCCURRENCE		1978	1978	1973	1975						1967	1951	1951	JAN 1978
	NORMAL NO. DAYS WITH: SNOWFALL >= 1.0	30	4.0	3.4	2.8	0.8	0.0	0.0	0.0	0.0	0.0	0.2	1.6	4.4	17.2

**PRECIPITATION (inches) 2009 LANSING (KLAN)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980	0.70	0.99	1.94	2.41	1.84	3.20	3.56	4.76	3.22	2.02	0.90	3.06	28.60
1981	0.39	1.39	1.10	5.16	4.69	3.22	1.71	1.98	8.01	1.28	1.50	1.10	31.53
1982	1.55	0.55	2.98	1.07	2.52	3.00	3.00	1.99	3.51	0.43	4.21	3.54	28.35
1983	1.00	0.81	3.25	4.10	3.97	4.27	2.54	2.70	3.74	2.57	3.22	1.83	34.00
1984	0.49	0.89	2.54	3.02	4.05	0.32	2.64	3.16	2.69	3.09	2.54	3.79	29.22
1985	2.04	3.03	3.53	2.90	2.14	2.17	3.06	4.36	3.34	3.25	3.08	1.29	34.19
1986	0.89	2.62	1.56	1.96	1.97	10.21	1.69	2.88	8.34	2.66	1.21	1.13	37.12
1987	1.00	0.35	0.97	1.58	1.37	3.30	3.35	5.64	4.88	1.77	2.89	3.40	30.50
1988	1.53	1.10	1.52	3.95	0.63	0.20	2.56	5.08	5.97	3.35	4.26	1.26	31.41
1989	1.15	0.67	2.13	1.44	6.57	3.61	0.93	4.90	3.49	1.29	3.65	0.86	30.69
1990	1.55	2.65	1.40	2.36	3.43	2.50	3.61	2.40	4.00	5.58	5.40	2.79	37.67
1991	1.28	0.79	3.76	4.41	1.75	2.60	2.41	3.83	1.05	3.80	3.02	2.13	30.83
1992	1.38	1.36	2.68	4.64	2.09	2.07	6.43	2.79	3.21	2.18	3.88	2.16	34.87
1993	3.22	1.17	1.74	4.86	1.37	6.50	2.94	3.80	4.80	2.99	1.39	0.70	35.48
1994	1.87	1.10	1.95	3.60	1.12	5.54	3.90	5.30	2.99	2.63	3.87	1.55	35.42
1995	2.34	1.18	2.01	2.85	2.83	0.95	2.04	2.87	1.06	2.55	3.37	1.05	25.10
1996	1.26	0.78	1.02	3.58	3.39		1.82	3.71	2.41	2.73	1.59	2.58	
1997	1.24	3.83	2.07	1.69	3.19	1.74	2.22	3.92	3.10	1.66	1.39	0.89	26.94
1998	3.34	2.15	3.97	2.62	1.58	3.45	2.15	2.62	1.55	2.40	1.63	1.53	28.99
1999	2.63	1.06	0.94	5.79	1.66	4.53	3.64	2.41	2.04	1.22	1.10	1.84	28.86
2000	1.07	1.00	1.21	3.30	6.98	1.96	2.63	2.81	6.16	1.73	2.26	1.06	32.17
2001	0.65	2.79	0.17	2.68	6.07	3.64	1.25	2.43	3.23	5.69	2.25	1.13	31.98
2002	0.98	1.37	1.67	2.29	3.56	1.67	4.37	1.94	0.65	1.21	1.43	0.79	21.93
2003	0.24	0.32	1.57	2.82	3.97	1.88	1.81	1.27	2.06	1.84	5.62	1.43	24.83
2004	0.91	0.55	3.35	0.68	10.44	3.08	3.80	3.19	1.02	1.92	4.02	1.84	34.80
2005	4.39	2.02	1.35	1.05	1.72	5.49	5.76	0.74	2.78	0.57	4.53	1.91	32.31
2006	4.14	1.72	2.64	1.82	4.74	1.60	4.05	3.41	3.07	2.95	3.75	3.07	36.96
2007	2.13	0.47	2.66	3.37	3.49	3.09	0.71	6.42	1.86	3.36	1.35	2.43	31.34
2008	2.81	2.67	2.38	2.16	1.29	4.89	3.15	1.38	8.22	2.12	1.69	3.80	36.56
2009	1.05	2.32	3.08	6.49	4.08	4.45	2.92	6.44	0.69	4.08	0.99	1.52	38.11
POR= 57 YRS	1.77	1.54	2.26	2.94	2.91	3.46	2.74	3.15	3.07	2.24	2.57	2.13	30.78

WBAN : 14836

**AVERAGE TEMPERATURE (°F) 2009 LANSING (KLAN)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1980	22.2	19.6	29.9	45.0	58.5	63.5	72.5	71.8	61.8	45.2	36.7	23.7	45.9
1981	17.6	28.2	35.5	48.6	54.3	67.2	71.1	69.7	58.1	46.1	39.1	27.1	46.9
1982	15.1	19.8	31.2	41.5	63.9	62.3	70.8	66.7	60.4	51.8	40.1	34.8	46.5
1983	26.5	30.9	35.9	42.1	52.4	67.1	74.4	72.3	62.4	48.9	39.5	17.8	47.5
1984	14.9	32.6	27.1	46.5	52.6	69.7	69.6	71.9	59.6	52.7	38.2	31.3	47.2
1985	17.8	20.2	36.0	51.1	59.3	63.3	70.5	67.2	63.0	50.7	39.0	21.2	46.6
1986	21.9	21.1	36.0	49.2	58.1	64.6	72.3	65.4	62.6	50.3	35.0	29.9	47.2
1987	24.7	29.0	37.5	49.2	62.4	70.6	74.6	69.4	62.3	44.7	41.5	31.7	49.8
1988	20.6	19.9	34.0	46.5	59.7	68.1	74.6	72.6	61.2	44.1	40.7	27.1	47.4
1989	30.9	19.9	32.5	43.6	55.1	65.8	71.3	68.4	59.8	50.7	33.6	15.8	45.6
1990	31.8	26.8	37.0	47.8	54.1	66.5	69.3	68.4	62.1	49.7	42.5	29.2	48.8
1991	20.9	29.4	37.6	50.2	63.7	69.3	71.4	69.3	58.6	51.9	35.5	28.8	48.9
1992	25.9	29.5	32.2	43.4	56.2	63.3	66.1	63.9	58.8	47.3	37.7	30.8	46.3
1993	25.7	20.9	32.4	44.7	57.6	65.1	72.1	70.5	56.5	47.8	36.9	27.5	46.5
1994	14.1	18.1	33.5	47.5	54.8	67.3	70.4	65.5	62.4	50.8	41.7	31.6	46.5
1995	25.5	21.2	35.9	42.0	55.3	67.6	71.3	74.2	58.5	52.0	31.9	23.3	46.6
1996	21.6	24.2	28.4	42.6	55.1	67.3	66.6	69.5	60.3	49.6	32.6	28.4	45.5
1997	21.1	26.3	34.0	42.7	48.3	66.3	68.7	64.5	59.6	47.7	34.8	30.0	45.3
1998	29.7	33.7	35.6	46.8	62.5	65.9	70.0	70.4	64.4	51.2	41.0	31.9	50.3
1999	20.1	30.1	30.4	47.7	59.2	69.0	73.1	65.7	61.4	48.2	42.1	29.1	48.0
2000	20.7	29.8	41.0	44.2	59.2	66.1	66.7	68.2	60.2	53.0	37.7	15.6	46.9
2001	24.7	26.5	31.9	48.9	59.2	66.3	69.7	70.8	58.7	49.9	46.4	34.2	48.9
2002	30.7	29.8	31.5	47.2	51.8	68.6	73.2	69.3	64.6	46.4	36.4	26.9	48.0
2003	17.7	20.0	32.4	45.3	53.9	63.5	69.0	69.7	60.9	48.2	41.2	30.7	46.0
2004	16.5	23.3	38.8	48.2	58.3	65.0	69.0	65.1	64.7	51.3	40.4	28.2	47.4
2005	21.8	28.2	30.8	50.2	54.7	72.7	72.8	72.9	66.8	52.6	41.8	25.6	49.2
2006	33.2	25.5	35.8	50.3	58.2	66.6	73.7	69.8	59.1	46.4	40.9	34.8	49.5
2007	26.4	17.3	39.4	44.7	60.5	68.9	70.3	71.4	64.5	56.5	37.6	27.2	48.7
2008	26.3	21.5	31.9	50.2	54.7	68.2	71.1	69.0	63.4	48.4	37.6	25.5	47.3
2009	15.7	27.0	36.8	46.7	57.2	66.1	66.6	68.2	62.2	47.7	43.3	27.4	47.1
POR= 57 YRS	22.3	24.2	33.5	46.1	57.0	66.8	70.6	68.9	61.3	49.9	38.6	27.3	47.2

**HEATING DEGREE DAYS (base 65°F) 2009 LANSING (KLAN)**

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1980-81	0	5	136	607	842	1271	1464	1026	907	483	330	24	7095
1981-82	12	23	227	579	770	1168	1540	1259	1044	696	108	113	7539
1982-83	7	62	184	406	739	930	1187	951	895	681	386	66	6494
1983-84	14	9	152	500	756	1456	1546	936	1166	554	387	17	7493
1984-85	21	13	208	374	798	1039	1458	1248	891	439	202	94	6785
1985-86	12	26	168	438	772	1350	1330	1224	893	480	237	77	7007
1986-87	11	63	125	451	895	1079	1240	1005	846	469	188	23	6395
1987-88	16	38	124	621	700	1026	1371	1301	955	547	199	74	6972
1988-89	7	35	147	644	721	1165	1049	1255	999	637	320	53	7032
1989-90	6	28	199	437	934	1520	1023	1062	869	546	336	55	7015
1990-91	22	20	154	484	667	1102	1359	990	841	449	171	30	6289
1991-92	7	13	244	407	877	1114	1207	1023	1007	642	294	95	6930
1992-93	33	88	224	543	813	1050	1215	1231	1003	604	234	81	7119
1993-94	3	22	264	533	835	1158	1574	1307	973	535	331	62	7597
1994-95	1	61	121	432	692	1027	1216	1221	895	682	295	49	6692
1995-96	22	1	225	405	985	1285	1340	1180	1130	663	331	28	7595
1996-97	38	8	174	472	966	1130	1352	1075	953	661	513	57	7399
1997-98	23	70	175	538	898	1079	1090	871	916	540	122	119	6441
1998-99	11	11	95	429	715	1017	1385	971	1065	515	202	58	6474
1999-00	7	48	148	515	681	1106	1367	1014	738	619	217	71	6531
2000-01	38	38	204	371	816	1526	1241	1069	1020	477	199	81	7080
2001-02	29	4	221	461	553	948	1056	981	1031	552	420	52	6308
2002-03	6	18	105	586	852	1175	1459	1255	1008	595	340	91	7490
2003-04	5	9	164	515	707	1056	1497	1203	803	504	230	81	6774
2004-05	13	72	78	417	730	1135	1330	1023	1053	442	317	15	6625
2005-06	5	5	52	409	690	1216	981	1101	898	433	263	36	6089
2006-07	3	8	184	569	714	929	1191	1329	788	604	188	28	6535
2007-08	18	22	107	306	814	1166	1193	1255	1017	440	323	31	6692
2008-09	9	14	91	511	815	1218	1522	1059	868	549	248	65	6969
2009-	32	34	107	530	643	1158							

WBAN : 14836

**COOLING DEGREE DAYS (base 65°F) 2009 LANSING (KLAN)**

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
1980	0	0	0	4	33	86	239	223	46	0	0	0	631
1981	0	0	0	1	7	101	210	178	27	0	0	0	524
1982	0	0	0	0	80	40	193	122	53	6	0	0	494
1983	0	0	0	0	1	134	311	242	79	7	0	0	774
1984	0	0	0	5	10	164	173	234	51	1	0	0	638
1985	0	0	0	32	31	50	189	100	116	0	0	0	518
1986	0	0	0	10	31	68	246	83	59	0	0	0	497
1987	0	0	0	0	114	199	322	181	48	0	1	0	865
1988	0	0	0	0	41	173	307	277	41	4	0	0	843
1989	0	0	0	0	22	85	209	138	49	1	0	0	504
1990	0	0	6	37	7	106	163	134	74	14	0	0	541
1991	0	0	0	14	139	165	213	151	59	9	0	0	750
1992	0	0	0	2	28	48	74	62	45	1	0	0	260
1993	0	0	0	0	13	92	228	200	13	5	0	0	551
1994	0	0	0	15	22	135	177	85	50	0	0	0	484
1995	0	0	0	0	4	133	222	292	35	8	0	0	694
1996	0	0	0	0	30	105	96	152	41	0	0	0	424
1997	0	0	0	0	0	102	145	60	18	9	0	0	334
1998	0	0	11	0	52	153	173	185	81	7	0	0	662
1999	0	0	0	3	30	182	265	76	48	0	0	0	604
2000	0	0	3	0	44	109	98	145	66	3	0	0	468
2001	0	0	0	1	26	128	183	193	38	3	0	0	572
2002	0	0	0	26	16	167	266	158	99	16	0	0	748
2003	0	0	0	8	0	56	137	163	45	0	0	0	409
2004	0	0	0	7	33	88	143	83	77	0	0	0	431
2005	0	0	0	5	8	253	255	252	112	31	0	0	916
2006	0	0	0	1	59	95	279	165	14	0	0	0	613
2007	0	0	2	0	54	154	190	226	99	48	0	0	773
2008	0	0	0	1	11	132	203	145	49	1	0	0	542
2009	0	0	0	5	11	102	90	140	31	0	0	0	379

**SNOWFALL (inches) 2009 LANSING (KLAN)**

YEAR	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
1980-81	0.0	0.0	0.0	T	4.2	14.2	5.9	12.2	2.2	T	0.0	0.0	38.7
1981-82	0.0	0.0	0.0	0.3	2.2	15.9	15.6	8.2	12.9	7.0	0.0	0.0	62.1
1982-83	0.0	0.0	0.0	0.0	1.1	4.3	5.1	3.5	15.2	4.3	0.0	0.0	33.5
1983-84	0.0	0.0	0.0	0.1	3.0	21.4	9.1	3.2	12.1	0.5	0.0	0.0	49.4
1984-85	0.0	0.0	0.0	0.0	1.2	11.7	25.5	17.5	3.8	0.9	0.0	0.0	60.6
1985-86	0.0	0.0	0.0	0.0	3.7	16.4	12.5	23.7	4.9	T	0.0	0.0	61.2
1986-87	0.0	0.0	0.0	T	4.1	6.8	16.8	1.4	5.7	2.5	0.0	0.0	37.3
1987-88	0.0	0.0	0.0	0.5	T	12.9	9.7	18.7	4.9	1.2	0.0	0.0	47.9
1988-89	0.0	0.0	0.0	T	3.8	8.5	7.2	13.5	4.4	2.5	0.0	0.0	39.9
1989-90	0.0	0.0	T	3.9	11.8	10.2	3.6	21.3	5.0	0.6	T	0.0	56.4
1990-91	0.0	0.0	0.0	0.0	0.1	12.9	13.8	6.5	2.8	0.1	0.0	0.0	36.2
1991-92	0.0	0.0	0.0	1.3	3.8	19.1	11.0	4.2	14.1	4.8	0.0	T	58.3
1992-93	0.0	0.0	0.0	1.2	4.3	8.7	17.6	19.2	13.1	3.3	0.0	0.0	67.4
1993-94	0.0	0.0	0.0	T	1.5	5.7	16.0	21.6	5.1	0.1	0.3	0.0	50.3
1994-95	0.0	0.0	T	0.0	0.9	9.0	20.9	13.7	5.6	1.7	0.0	0.0	51.8
1995-96	0.0	0.0	0.0	0.0	7.9	11.2	5.3	3.9	10.3	0.6	0.0		
1996-97													
1997-98													
1998-99						6.3	34.6	4.2	11.2	T	0.0	0.0	
1999-00	0.0					5.8	11.5	5.4					
2000-01					2.3	33.5	4.0	4.2					
2001-02													
2002-03							10.9	11.3	13.3				
2003-04							28.3	7.2	2.9	0.5	T	0.0	
2004-05	T	0.0	0.0	0.0	5.5	13.9	26.8	11.1	12.1	4.3	T	0.0	73.7
2005-06	0.0	0.0	0.0	T	7.5	20.8	8.0	10.1	2.3	0.2	0.0	0.0	48.9
2006-07	0.0	0.0	0.0	1.5	1.6	3.2	8.8	7.6	2.8	6.0	0.0	0.0	31.5
2007-08	0.0	0.0	0.0	0.0	3.0	16.7	15.2	27.6	7.0	T	0.0	T	69.5
2008-09	0.0	0.0	0.0	T	7.5	29.0	18.7	9.5	0.1	5.0	0.0	0.0	69.8
2009-	0.0	0.0	0.0	T	T	11.4							
POR= 57 YRS	T	0.0	T	0.3	4.4	11.4	12.7	9.6	7.5	2.5	0.6	T	49.0

WBAN : 14836

**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 LANSING MICHIGAN (KLAN)

The climate at Lansing alternates between continental and semi-marine, depending on meteorological conditions. The marine type is due to the influence of the Great Lakes and is governed by the force and direction of the wind. When there is little or no wind, the weather becomes continental in character, which means pronounced fluctuation in temperature, hot weather in summer and severe cold in winter. On the other hand, a strong wind from the Lakes may immediately transform the weather into a semi-marine type.

Since large bodies of water are less responsive to temperature changes, the Great Lakes hold the winter cold longer in the spring and the summer heat longer in the fall than do the land areas. This fact is illustrated by looking at some monthly mean temperatures at Lansing as compared to similar latitudes west of the Lakes. Such a comparison shows cooler summers and milder winters in Lansing because of the lake effect.

Based on the 1951-1980 period, the average first occurrence of 32 degrees Fahrenheit in the fall is September 30 and the average last occurrence in the spring is May 13.

Precipitation is fairly well distributed through the year, and no conspicuous annual variation is noted, although there is about 1 inch less per month in winter than in summer. The heavier amounts in summer occur in thunderstorms. The wettest months are May and June. Snowfall for Lansing is moderate, averaging about 52 inches per year.

There are almost twice as many cloudy days as clear days throughout the year. Much cloudiness prevails during the winter season, but sunshine is abundant during the summer months. Similarly, relative humidity remains rather high during the winter, but is only moderate in summer.

Tornadoes sometimes occur in this area, but their frequency is less than in states farther to the south and west. Destructive thunder and wind storms are not uncommon. Flooding of streams and rivers in the upper grand Basin occurs in about one year out of three, with floods causing considerable damage in about one year out of ten.

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