I. Description

The 1981-2010 Normals comprise all climate normals using the thirty year period of temperature, degree days, precipitation, snowfall, snow depth, wind, etc. Data is organized into hourly, daily, monthly, seasonal and annual. This document describes the elements and layout of the Daily Normals which are derived from a composite of climate records from numerous sources that were merged and then subjected to a suite of quality assurance reviews.

II. Format/Element (Value) Definitions

(note: the term 'element' is used throughout this documentation and refers to an individual meteorological/climatological measurement or statistical value such as temperature, precipitation (amount), etc.)

A. Initial section

Each record represents all selected elements available for a given station-day. The initial section of each record is ordered as follows with the following definitions:

STATION (17 characters) is the station identification code. Please see

ftp://ftp.ncdc.noaa.gov/pub/data/normals/1981-2010/station-inventories/

for a complete list of stations and their metadata.

STATION_NAME (max 50 characters) is the name of the station (usually city/airport name). Optional field.

GEOGRAPHIC_LOCATION (31 characters) is the latitude (decimated degrees w/northern hemisphere values > 0, southern hemisphere values < 0), longitude (decimated degrees w/western hemisphere values < 0, eastern hemisphere values > 0) and elevation above mean sea level (thousandths of meters). Optional field.

DATE is the year of the record (4 digits) followed by month (2 digits) and day (2 digits).

B. Elements (values) and flags (attributes)

Following this initial section of the record, all selected elements and flags are given in the following order:

1st Element |Completeness Flag | 2nd Element | Completeness Flag| 3rd Element…etc., for all elements selected.

Element(s)/Value(s) is/are defined in Table 2 below. Please note only elements selected by user will appear in the specific output.

Completeness Flag (Attribute) is defined in **Table 1** below

Flags accompany every Normals value and indicate the completeness of the data record used to compute each value, accounting for methodological differences for different product classes. There are six flag options described generally in **Table 1** below. Due to methodological differences, the flags are applied somewhat differently between the temperature-based normals and the precipitation-based normals. For the precipitation-based and hourly normals, the following flags were assigned independently for each normals value reported based on number of years available for that individual calculation. For temperature-based normals, strong precedence is given to the monthly normals of maximum and minimum temperature or derived from the flags for these two variables.

Table 1 (CompletenessFlag/Attribute)

C = complete (all 30 years used)
S = standard (no more than 5 years missing and no more than 3 consecutive years missing among the sufficiently complete years)
R = representative (observed record utilized incomplete, but value was scaled or based on filled values to be representative of the full period of record)
P = provisional (at least 10 years used, but not sufficiently complete to be labeled as standard or representative). Also used for parameter values on February 29 as well as for interpolated daily precipitation, snowfall, and snow depth percentiles.
Q = quasi-normal (at least 2 years per month, but not sufficiently complete to be labeled as provisional or any other higher flag code. The associated value was computed using a pseudonormals approach or derived from monthly pseudonormals.
Blank = the data value is reported as a special value, such as 9999 (special values given in section B of III. Additional Information below)

Note: Flags Q and R also aren't applicable to daily precipitation/snowfall/snow depth percentiles. Further, Q flags are not applicable for standard deviations.

Table 2 (Elements/Values)

dly-cldd-base45	Long-term averages of daily cooling degree days with base 45F
dly-cldd-base50	Long-term averages of daily cooling degree days with base 50F
dly-cldd-base55	Long-term averages of daily cooling degree days with base 55F
dly-cldd-base57	Long-term averages of daily cooling degree days with base 57F
dly-cldd-base60	Long-term averages of daily cooling degree days with base 60F
dly-cldd-base70	Long-term averages of daily cooling degree days with base 70F
dly-cldd-base72	Long-term averages of daily cooling degree days with base 72F
dly-cldd-normal	Long-term averages of daily cooling degree days with base 65F

dly-dutr-normal	Long-term averages of daily diurnal temperature range
dly-dutr-stddev	Long-term standard deviations of daily diurnal temperature range
dly-grdd-base40	Long-term averages of daily growing degree days with base 40F
dly-grdd-base45	Long-term averages of daily growing degree days with base 45F
dly-grdd-base50	Long-term averages of daily growing degree days with base 50F
dly-grdd-base55	Long-term averages of daily growing degree days with base 55F
dly-grdd-base57	Long-term averages of daily growing degree days with base 57F
dly-grdd-base60	Long-term averages of daily growing degree days with base 60F
dly-grdd-base65	Long-term averages of daily growing degree days with base 65F
dly-grdd-base70	Long-term averages of daily growing degree days with base 70F
dly-grdd-base72	Long-term averages of daily growing degree days with base 72F
dly-grdd-tb4886	Long-term averages of daily growing degree days with truncated bases 48F and 86F
dly-grdd-tb5086	Long-term averages of daily growing degree days with truncated bases 50F and 86F
dly-htdd-base40	Long-term averages of daily heating degree days with base 40F
dly-htdd-base45	Long-term averages of daily heating degree days with base 45F
dly-htdd-base50	Long-term averages of daily heating degree days with base 50F
dly-htdd-base55	Long-term averages of daily heating degree days with base 55F
dly-htdd-base57	Long-term averages of daily heating degree days with base 57F
dly-htdd-base60	Long-term averages of daily heating degree days with base 60F
dly-htdd-normal	Long-term averages of daily heating degree days with base 65F
dly-prcp-25pctl	25th percentiles of daily nonzero precipitation totals for 29-day windows centered on each day of the year
dly-prcp-50pctl	50th percentiles of daily nonzero precipitation totals for 29-day windows centered on each day of the year
dly-prcp-75pctl	75th percentiles of daily nonzero precipitation totals for 29-day windows centered on each day of the year
dly-prcp-pctall-ge001hi	Probability of precipitation >= 0.01 inches for 29-day windows centered on each day of the year
dly-prcp-pctall-ge010hi	Probability of precipitation >= 0.10 inches for 29-day windows centered on each day of the year
dly-prcp-pctall-ge050hi	Probability of precipitation >= 0.50 inches for 29-day windows centered on each day of the year
dly-prcp-pctall-ge100hi	Probability of precipitation >= 1.00 inches for 29-day windows centered on each day of the year
dly-snow-25pctl	25th percentiles of daily nonzero snowfall totals for 29-day windows centered on each day of the year
dly-snow-50pctl	50th percentiles of daily nonzero snowfall totals for 29-day windows centered on each day of the year
dly-snow-75pctl	75th percentiles of daily nonzero snowfall totals for 29-day windows centered on each day of the year
dly-snow-pctall-ge001ti	Probability of snowfall >= 0.1 inches for 29-day windows centered on each day of the year
dly-snow-pctall-ge010ti	Probability of snowfall >= 1.0 inches for 29-day windows centered on each day of the year
dly-snow-pctall-ge030ti	Probability of snowfall >= 3.0 inches for 29-day windows centered on each day

	of the year
dly-snow-pctall-ge050ti	Probability of snowfall >= 5.0 inches for 29-day windows centered on each day of the year
dly-snow-pctall-ge100ti	Probability of snowfall >= 10 inches for 29-day windows centered on each day of the year
dly-snwd-25pctl	25th percentiles of daily nonzero snow depth for 29-day windows centered on each day of the year
dly-snwd-50pctl	50th percentiles of daily nonzero snow depth for 29-day windows centered on each day of the year
dly-snwd-75pctl	75th percentiles of daily nonzero snow depth for 29-day windows centered on each day of the year
dly-snwd-pctall-ge001wi	Probability of snow depth >= 1 inch for 29-day windows centered on each day of the year
dly-snwd-pctall-ge003wi	Probability of snow depth >= 3 inches for 29-day windows centered on each day of the year
dly-snwd-pctall-ge005wi	Probability of snow depth >= 5 inches for 29-day windows centered on each day of the year
dly-snwd-pctall-ge010wi	Probability of snow depth >= 10 inches for 29-day windows centered on each day of the year
dly-tavg-normal	Long-term averages of daily average temperature
dly-tavg-stddev	Long-term standard deviations of daily average temperature
dly-tmax-normal	Long-term averages of daily maximum temperature
dly-tmax-stddev	Long-term standard deviations of daily maximum temperature
dly-tmin-normal	Long-term averages of daily minimum temperature
dly-tmin-stddev	Long-term standard deviations of daily minimum temperature
mtd-prcp-normal	Long-term average month-to-date liquid precipitation amount
mtd-snow-normal	Long-term average month-to-date snowfall amount
ytd-prcp-normal	Long-term average year-to-date liquid precipitation amount
ytd-snow-normal	Long-term average year-to-date snowfall amount

III. Additional Information

A. Units

Degrees Fahrenheit or tenths of a degree Celsius for maximum, minimum, average, dew point, heat index, wind chill, and air temperature normals and standard deviations depending on user specification between standard or metric units.

Tenths of days for the number of days per month above or below certain threshold, such as days above 90F. e.g., "256" is 25.6 days.

Degrees Fahrenheit or Celsius for heating and cooling degree days depending on user specification between standard or metric units.

Inches or millimeters for average monthly/seasonal/annual precipitation,

month-to-date/year-to-date precipitation, and percentiles of precipitation days depending on user specification between standard or metric units..

Inches or millimeters for average monthly/seasonal/annual snowfall, month-to-date/year-to-date snowfall, and percentiles of snowfall days depending on user specification between standard or metric units.

Inches or millimeters for percentiles of snow depth days depending on user specification between standard or metric units.

Tenths of percent for probabilities of precipitation, snowfall, or snow
depth exceeding a specific threshold, as well as cloud and wind percentages.
e.g., "207" is 20.7%

Tenths of degree hours for heating and cooling degree hours. e.g., "152" is 15.2

Tenths of percent for prevailing and secondary wind direction percentages. e.g., "299" is 29.9%

Prevailing and secondary wind directions can take on 8 values:
1=N, 2=NE, 3=E, 4=SE, 5=S, 6=SW, 7=W, 8=NW

Miles per hour or meters per second for wind speeds and vector magnitudes days depending on user specification between standard or metric units.

Whole degrees for mean vector wind directions

B. Special values

-9999: missing or insufficient data (text data)
-7777: a non-zero value that would round to zero
-6666: parameter undefined; insufficient occurrences to compute
-4444: year-round risk of frost-freeze
blank: missing or insufficient data (pdf only)

Note: More special values may be added at a later date.

C. For further information

For more detailed information, view complete documentation at:
http://www1.ncdc.noaa.gov/pub/data/normals/1981-2010/readme.txt.