

HOURLY PRODUCTS DESCRIPTION

Sub-Daily Data Lister Product Description

The Sub-Daily Data Lister on cli-MATE allows for the listing and plotting of over a dozen observed and calculated variables from sub-daily stations.

ASOS/AWOS

ASOS/AWOS stations have either hourly or 20-minute observations.

Raw data variables include:

1. Temperature (°F Dry Bulb)
2. Relative Humidity (%)
3. Dew Point Temperature (°F)
4. Wind Speed (mph)
5. Wind Direction (degrees, measured every 10 degrees)
6. Wind Gust (mph)
7. Cloud Height—Up to Three Levels (feet)
8. Visibility (miles)
9. Atmospheric Pressure (hPa, hecto-Pascals)
10. Sea Level Pressure (hPa, hecto-Pascals)
11. Altimeter (hPa, hecto-Pascals)
12. Precipitation (inches)

Derived data variables include:

1. Wind Chill (°F)
2. Heat Index (°F)

Missing values are indicated by "M" and "m". When observations note specific values as missing, "M" is used. The "m" is used when there is a lack of information from the observation.

Plotting of Data

Data plots are available for ASOS/AWOS stations. Data plots will appear for all variables in the list, regardless if they are checked when selecting data. Five plots are created, and are grouped by variable type.

Plot 1: Air temperature, dew point temperature, wind chill and heat index.

Plot 2: Precipitation and relative humidity

Plot 3: Wind speed, wind direction and wind gust

Plot 4: Cloud height at lowest, middle and highest levels, and visibility

Plot 5: Station Pressure, Sea Level Pressure and Altimeter

All plots are made using [Highcharts](#) software, and variables can be toggled on and off from the plot. Plots can be downloaded by selecting the menu in the top right of the plot.

Climate Reference Network

[Climate Reference Network](#) (CRN) stations have two different time steps available: hourly summary variables and 5-minute observations. All of the 5-minute observations can be displayed or only the top of the

hour measurements.

Hourly variables are:

1. Average Air Temperature (°F)
2. Maximum Air Temperature (°F)
3. Minimum Air Temperature (°F)
4. Average Relative Humidity (%)
5. Accumulated Solar Radiation (kW/m2)
6. Maximum Solar Radiation (kW/m2)
7. Minimum Solar Radiation (kW/m2)
8. Precipitation (inches)
9. Average Surface Temperature (°F)
10. Maximum Surface Temperature (°F)
11. Minimum Surface Temperature (°F)
12. Soil Moisture at 2, 4, 8, 20, and 40in (m3/m3)
13. Soil Temperature at 2, 4, 8, 20, and 40in (°F)

5-minute variables are:

1. Air Temperature (°F)
2. Surface Temperature (°F)
3. Heat Index – derived (°F)
4. Wind Chill – derived (°F)
5. Relative Humidity (%)
6. Precipitation (in)
7. 2in Soil Moisture (m3/m3)
8. 2in Soil Temperature (°F)
9. Wind Speed at 1.5m (mph)
10. Solar Radiation (kW/m2)

Missing values are indicated by "M" and "m". When observations note specific values as missing, "M" is used. The "m" is used when there is a lack of information from the observation.

Wind Chill and Heat Index Calculation

Wind Chill and Heat Index are calculated by using National Weather Service definitions. Wind chill is only calculated when the air temperature is less than or equal to 50°F and wind speed is non-zero. Heat Index is only calculated when the temperature is greater than or equal to 80°F. If these variables do not fall in the calculated range, an 'NC' will appear in the data list.