
Measurements Definition

Sample Timestamp

Definition: Time and date of measurement

XML parameter: mtSampTime

Windspeed

Definition: 3 second rolling average of 250 millisecond samples

XML parameter: mtWindspeed

Units: MPH

Raw Wind Direction

Definition: 3 second rolling average of 250 millisecond samples

XML parameter: mtRawWindDir

Units: Degrees

Adjusted Wind Direction

Definition: Raw wind direction corrected for North

XML parameter: mtAdjWindDir

Units: Degrees

3 Second Rolling Average Wind Speed

Definition: 3 second rolling average of wind speed reading

XML parameter: mt3SecRollAvgWindSpeed

Units: MPH

3 Second Rolling Average Wind Direction

Definition: 3 second rolling average of adjusted wind direction reading

XML parameter: mt3SecRollAvgWindDir

Units: Degrees

2 Minute Rolling Average Wind Speed

Definition: 2 minute rolling average of wind speed reading

XML parameter: mt2MinRollAvgWindSpeed

Units: MPH

2 Minute Rolling Average Wind Direction

Definition: 2 minute rolling average of adjusted wind direction reading

XML parameter: mt2MinRollAvgWindDir

Units: Degrees

10 Minute Rolling Average Wind Speed

Definition: 10 minute rolling average of wind speed reading

XML parameter: mt10MinRollAvgWindSpeed

Units: MPH

10 Minute Rolling Average Wind Direction

Definition: 10 minute rolling average of adjusted wind direction reading

XML parameter: mt10MinRollAvgWindDir

Units: Degrees

10 Minute Gust Wind Direction

Definition: 10 minute rolling wind direction at maximum wind speed.

XML parameter: mt10MinWindGustDir

Units: MPH

10 Minute Gust Wind Speed

Definition: 10 minute rolling maximum wind speed.

XML parameter: mt10MinWindGustSpeed

Units: MPH

10 Minute Gust Time

Definition: Gust time stamp during the last 10 minutes.

XML parameter: mt10MinWindGustTime

Units: date and time

60 Minute Gust Wind Direction

Definition: 60 minute rolling wind direction at maximum wind speed.

XML parameter: mt60MinWindGustDir

Units: MPH

60 Minute Gust Wind Speed

Definition: 60 minute rolling maximum wind speed.

XML parameter: mt60MinWindGustSpeed

Units: MPH

60 Minute Gust Time

Definition: Gust time stamp during the last 60 minutes.

XML parameter: mt60MinWindGustTime

Units: date and time

Temperature 1

Definition: One second temperature reading

XML parameter: mtTemp1

Units: °F

Temperature 2

Definition: One second temperature reading (Capricorn/Pegasus only)

XML parameter: mtTemp1

Units: °F

Temperature 3

Definition: One second temperature reading (Capricorn/Pegasus only)

XML parameter: mtTemp1

Units: °F

Temperature 4

Definition: One second temperature reading (Capricorn/Pegasus only)

XML parameter: mtTemp1

Units: °F

Relative Humidity

Definition: One second relative humidity reading

XML parameter: mtRelHumidity

Units: %

Solar Radiation

Definition: One second relative humidity reading (Capricorn/Pegasus only)

XML parameter: mtSolarRadiation

Units: W/m-2

Wind Chill

Definition: Calculated using temperature 1 and wind speed.

XML parameter: mtWindChill

Units: °F

Heat Index

Definition: Calculated using temperature 1 and relative humidity

XML parameter: mtHeatIndex

Units: °F

Dew Point

Definition: Calculated using temperature 1 and relative humidity

XML parameter: mtDewPoint

Units: °F

Degree Days:

Definition: Calculated using temperature 1

XML parameter: mtDegreeDay

Units: °F

Average Temperature Today

Definition: Calculated using temperature 1

XML parameter: mtAvgTempToday

Units: °F

Degree Day Start

Definition: Start date for degree day calculation

XML parameter: mtDegreeDayStart

Raw Barometric Pressure

Definition: One second barometric pressure reading

XML parameter: mtRawBaromPress

Units: Inches Hg

Adjusted Barometric Pressure

Definition: Raw barometric pressure with altitude and offset applied

XML parameter: mtAdjBaromPress

Units: Inches Hg

Density Altitude

Definition: Calculated using adjusted barometric pressure, temperature 1, relative humidity and altitude.

XML parameter: mtDensityAltitude

Units: Feet

Wet Bulb Globe Temperature

Definition: A composite temperature used to estimate the effect of temperature, humidity, and solar radiation on humans. The MicroServer uses an approximation formula.

XML parameter: mtWetBulbGlobeTemp

Units: °F

Wet Bulb Temperature

Definition: Wet bulb temperature derived using a look up table of temperature and relative humidity.

XML parameter: mtWetBulbTemp

Units: °F

Saturated Vapor Pressure

Definition: The pressure of a vapor in equilibrium with its non-vapor phases when air is saturated with water vapor.

XML parameter: mtSaturatedVaporPressure

Units: Inches Hg

Vapor Pressure

Definition: The pressure of a vapor in equilibrium with its non-vapor phases.

XML parameter: mtVaporPressure

Units: Inches Hg

Dry Air Pressure

Definition: Barometric pressure minus vapor pressure.

XML parameter: mtDryAirPressure

Units: Inches Hg

Dry Air Density

Definition: The air's density depending on temperature and pressure.

XML parameter: mtDryAirDensity

Units: lbm/ft3

Wet Air Density

Definition: The air's density depending on temperature, humidity, and pressure.

XML parameter: mtWetAirDensity

Units: lbm/ft3

Absolute Humidity

Definition: Actual amount of water vapor in the air.

XML parameter: mtAbsoluteHumidity

Units: lbm/ft3

Air Density Ratio

Definition: Dry air density with the added effect of water vapor displacement of oxygen.

XML parameter: mtAirDensityRatio

Units: %

Adjusted Altitude

Definition: Calculated using dry air density. Used for horsepower correction and prediction of vehicle performance.

XML parameter: mtAdjustedAltitude

Units: Feet

SAE Correction Factor

Definition: Society of Automotive Engineers (SAE) calculation using temperature, pressure, and vapor pressure

XML parameter: mtSAECorrectionFactor

Units: none

Rain Today

Definition: Accumulated rain for the day in 0.01 inches increments

XML parameter: mtRainToday

Units: Inches

Rain this week

Definition: Accumulated rain for the week

XML parameter: mtRainThisWeek

Units: Inches

Rain this month

Definition: Accumulated rain for the month

XML parameter: mtRainThisMonth

Units: Inches

Rain this year

Definition: Accumulated rain for the year

XML parameter: mtRainThisYear

Units: Inches

Rain Rate

Definition: Running 5-minute rain rate

XML parameter: mtRainRate

Units: Inches/Hour

Hail Today

Definition: Cumulative amount of hits against collecting surface for the day

XML parameter: mtHailToday

Units: Hits/in²

Hail Rate

Definition: Running 5-minute hail rate

XML parameter: mtHailRate

Units: Hits/in²/hour

Extinction Coefficient

Definition: Fraction of light lost to scattering and absorption

XML parameter: mtExtinctionCoefficient

Units: km⁻¹

Visibility

Definition: Visibility

XML parameter: mtVisibility

Units: miles

Lux

Definition: Day/Night meter

XML parameter: mtLux

Units: Lux

Windspeed – Sensor 2

Definition: 3 second rolling average of 250 millisecond samples

XML parameter: mtWindspeed_2

Units: MPH

Raw Wind Direction – Sensor 2

Definition: 3 second rolling average of 250 millisecond samples

XML parameter: mtRawWindDir

Units: Degrees

Adjusted Wind Direction – Sensor 2

Definition: Raw wind direction corrected for North

XML parameter: mtAdjWindDir_2

Units: Degrees

3 Second Rolling Average Wind Speed – Sensor 2

Definition: 3 second rolling average of wind speed reading

XML parameter: mt3SecRollAvgWindSpeed_2

Units: MPH

3 Second Rolling Average Wind Direction – Sensor 2

Definition: 3 second rolling average of adjusted wind direction reading

XML parameter: mt3SecRollAvgWindDir_2

Units: Degrees

2 Minute Rolling Average Wind Speed – Sensor 2

Definition: 2 minute rolling average of wind speed reading

XML parameter: mt2MinRollAvgWindSpeed_2

Units: MPH

2 Minute Rolling Average Wind Direction – Sensor 2

Definition: 2 minute rolling average of adjusted wind direction reading

XML parameter: mt2MinRollAvgWindDir_2

Units: Degrees

10 Minute Rolling Average Wind Speed – Sensor 2

Definition: 10 minute rolling average of wind speed reading

XML parameter: mt10MinRollAvgWindSpeed_2

Units: MPH

10 Minute Rolling Average Wind Direction – Sensor 2

Definition: 10 minute rolling average of adjusted wind direction reading

XML parameter: mt10MinRollAvgWindDir_2

Units: Degrees

10 Minute Gust Wind Direction – Sensor 2

Definition: 10 minute rolling wind direction at maximum wind speed.

XML parameter: mt10MinWindGustDir_2

Units: MPH

10 Minute Gust Wind Speed – Sensor 2

Definition: 10 minute rolling maximum wind speed.

XML parameter: mt10MinWindGustSpeed_2

Units: MPH

10 Minute Gust Time – Sensor 2

Definition: Gust time stamp during the last 10 minutes.

XML parameter: mt10MinWindGustTime_2

Units: date and time

60 Minute Gust Wind Direction – Sensor 2

Definition: 60 minute rolling wind direction at maximum wind speed.

XML parameter: mt60MinWindGustDir_2

Units: MPH

60 Minute Gust Wind Speed – Sensor 2

Definition: 60 minute rolling maximum wind speed.

XML parameter: mt60MinWindGustSpeed_2

Units: MPH

60 Minute Gust Time – Sensor 2

Definition: Gust time stamp during the last 60 minutes.

XML parameter: mt60MinWindGustTime_2

Units: date and time