



## Custom Weather Stations

Configure a station that meets your application's exact needs



## Flexible Configurations

### Unmatched reliability

#### Measurements

- Temperature (air, water, soil)
- Solar radiation
- Relative humidity
- Precipitation
- Snow depth
- Wind direction
- Wind speed
- Barometric pressure
- Soil moisture
- Fuel moisture

### Overview

Campbell Scientific weather stations have become the world-wide standard for meteorological and climatological monitoring. In use on every continent and virtually every country, our weather stations are known for their precision measurement capability, rugged construction, wide operating temperature range, and low power consumption. Campbell Scientific weather stations offer the flexibility to easily

change sensor configurations, data processing, and data storage and retrieval options.

The flexibility of our products allows you to select only the components you need, in the quantity you need to customize your own weather station.

### Sensors

Campbell Scientific offers high quality sensors for measuring the parameters listed below. These sensors interface directly to our dataloggers. If measurement needs are specialized, our dataloggers' analog, pulse counter, and digital inputs are compatible with sensors offered by most manufacturers.

- › **Wind Speed:** cup, propeller, or sonic anemometers.
- › **Wind Direction:** vanes containing precision potentiometers or sonic anemometers. A single sensor assembly may measure wind speed and direction.



- › **Solar Radiation:** silicon cell or thermopile pyranometers, quantum sensors, or net radiometers.
- › **Temperature (air, water, soil):** thermistors, thermocouples, or RTDs.
- › **Relative Humidity:** capacitive sensors that use integral signal conditioning. RH and air temperature sensors are typically housed in a single body.
- › **Precipitation:** tipping bucket rain gauges. Also offered snowfall conversion adapters that uses antifreeze or a heater.



More info: 780.454.2505

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## Sensors (continued)

- › **Snow Depth:** ultrasonic distance sensors.
- › **Barometric Pressure:** capacitance or strain gage pressure transducers.
- › **Soil Moisture:** moisture blocks, analog output tensiometers, or reflectometers.
- › **Fuel Moisture:** thermistor and reflectometer in a Forest Service-approved ponderosa pine dowel.

## Dataloggers

Our weather stations are based around a programmable datalogger that measures sensors and stores data, in your choice of engineering units (e.g., wind speed in mph,  $m\ s^{-1}$ , knots). Sensor measurements are often processed and stored as hourly and daily arrays (e.g., maximums, minimums, averages). The datalogger also supports conditional outputs, such as rainfall intensity.



## Software

PC-based software is available for datalogger programming, data retrieval, and report generation. You can modify the program at any time to accommodate different



sensor configurations or data processing requirements. The datalogger has programmable execution intervals, on-board instructions for commonly used sensors, and adequate input channels to accommodate all standard sensor configurations. Use of measurement and control peripherals can expand the datalogger's capabilities.

## Power Supply

The power supply consists of either a set of alkaline batteries or a sealed, rechargeable battery; the rechargeable battery can be recharged via solar panel or ac power. Campbell Scientific offers a range of batteries, solar panels, and chargers to meet the needs of

your specific application. Weather stations with high current drain peripherals (satellite, cellular phone) may require one of our larger capacity batteries.

## Tripods and Towers

Our corrosion-resistant tripods and towers provide sturdy support for sensors, solar panels, and enclosures. We have galvanized-steel tripods with 6- or 10-foot heights, stainless-steel tripods with 10-,

15-, or 20-foot heights, and towers with 10-, 20-, or 30-foot heights. Mounts for attaching wind sets, pyranometers, temperature and relative humidity sensors are available.

## Enclosures

Environmental enclosures house the datalogger, power supply, data retrieval peripherals, and a barometer. The enclosures provide protection from dust, humidity, precipitation, sunlight, and environmental pollution. Our enclosures are UV-stabilized and reflect solar

radiation. Enclosures can be customized for cable-entry openings or mounting brackets for our tripods or towers.



## Data Retrieval

We offer multiple communications options for data retrieval, which can be mixed within the same network. Telecommunications options include



short-haul, telephone (landline, voice-synthesized, cellular), radio frequency, multidrop, Internet/IP, and satellite. On-site options include storage module, field display, and laptop.