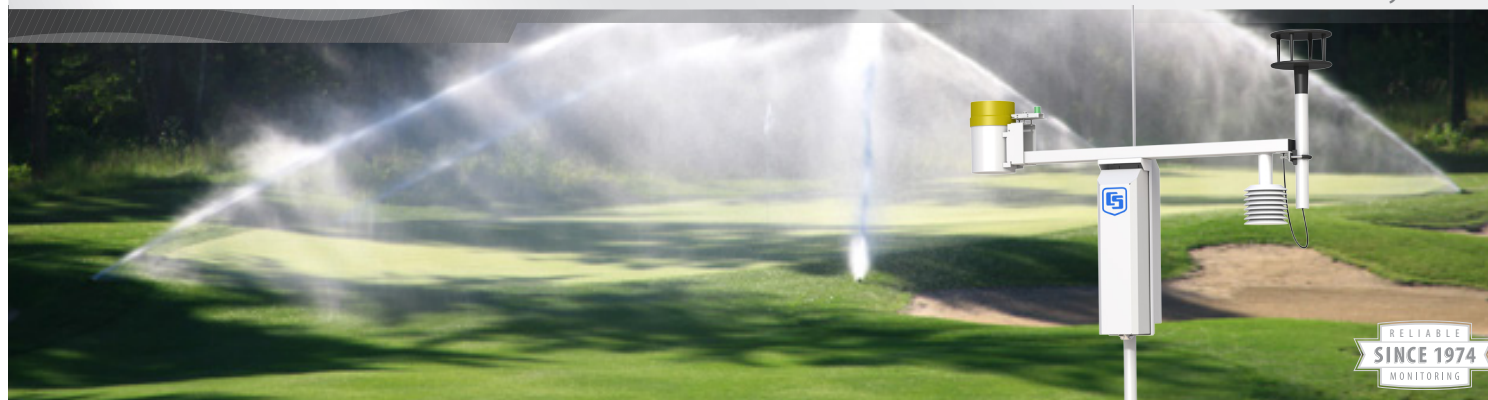




# Evapotranspiration and Irrigation






Automatic weather stations and soil water measurement systems



Campbell Scientific offers preconfigured and custom evapotranspiration (ETo) measurement and control systems to calculate water loss due to evaporation and transpiration. These measurements and calculations can be distributed and displayed in a

variety of ways that help plant managers (golf course superintendents, commercial farmers, horticulturists, turf specialists, homeowners) determine and apply irrigation efficiently and on a schedule that encourages plant health.

## MAJOR SYSTEMS

	<i>Measurements</i>	<i>Datalogger</i>	<i>Power</i>	<i>Communications</i>
<b>ET107</b> Evapotranspiration Monitoring Station 	air temperature, relative humidity, wind direction, wind speed, precipitation, solar radiation, soil temperature*, soil water content*	CR1000	rechargeable battery with ac or solar source	telephone, cell phone voice-synthesized phone, radio short haul, satellite, Ethernet
<b>MetPRO</b> Research-Grade Meteorological Station 	wind speed, wind direction, air temperature, precipitation, relative humidity, barometric pressure, solar radiation, soil water content	CR6	BP12 12Vdc, 12 Ah battery recharged with 20 W solar panel	Wi-Fi, radio
<b>Custom Station</b> Fully customized measurement and control system 	user specified	user specified	user specified	telephone, cell phone, voice-synthesized phone radio, short haul, satellite, Ethernet
<b>HS2</b> HydroSense II Handheld Soil Water Sensor 	soil water content	-	AA batteries	Bluetooth
<b>HS2P</b> HydroSense II Display with Insertion Pole 	soil water content	-	AA batteries	Bluetooth

\*optional



## System Features

### Evapotranspiration

Our ET stations provide continuous monitoring of temperature, solar radiation, rainfall, relative humidity, and wind speed and direction. Using these measurements, an on-board program calculates potential ETo using the Penman-Monteith equation. The resulting output provides hourly and daily assessments of water needs. ETo estimates are based on turf grass, but crop coefficients can be used by the station to estimate the water needs of other crops.

### Weather

ET stations can also provide information for other uses. Data relevant to integrated pest management, disease prediction, growing degree days, and frost forecasting are easily obtained. Stations can also report general weather data such as average wind speed and direction, maximum wind gusts (useful for fungicide, pesticide, and fertilizer applications), maximum and minimum temperatures, and total solar radiation.

We offer both preconfigured and custom ET stations. Our preconfigured stations feature a standard suite of pre-wired sensors, quick-and-easy installation, and simplified programming. While these stations are preconfigured, they are flexible enough to accommodate additional sensors or other ETo calculation algorithms. For example, soil moisture sensors can be added to provide additional water management information, or soil temperature sensors can be used to estimate pest emergence.

Custom stations, typically used for research, are configured from a wider selection of components, allowing greater flexibility. These stations can be configured to measure almost any number or type of sensor and can use many different types of communications options.

### Communications

Data from our stations can be transmitted to and displayed on a computer using a variety of options including:

- › Telephone
- › Cell phone
- › Voice-synthesized phone
- › Radio
- › Short haul
- › Satellite
- › Ethernet

Voice-synthesized phone modems that can give you a verbal report of conditions are commonly used with our ET stations. For example, stations at golf courses can be used not only for water management, but to allow customers to call for a real-time verbal report of weather conditions at the course. These stations can also transmit data to a computer.

### Software

Our PC-based support software simplifies the entire weather monitoring process, from programming to data retrieval to data display and analysis. Our software can automatically manage data collection from station networks or individual stations. Robust error-checking ensures that your data arrives uncorrupted. We can even help you post your data to the Internet.



The ET107 Evapotranspiration Monitoring Station calculates potential ETo, which can aid in the development of an irrigation schedule that provides sufficient water for the crops without overwatering.