



Automated Station

For commercial agriculture,
irrigation scheduling, and
meteorological applications

Measurements

- Wind speed
- Wind direction
- Air temperature
- Relative humidity
- Precipitation
- Solar radiation—sun plus sky radiation

Overview

Campbell Scientific's ET107 is an automated system designed for commercial agriculture and irrigation scheduling. The station calculates potential evapotranspiration (ET_o), which is the amount of water lost from the soil due to evaporation and plant transpiration.

Calculating a crop's evapotranspiration rate can aid in the development of an irrigation schedule that provides sufficient water for the crops without overwatering.

Benefits and Features

- › CR1000-based system
- › Commonly used suite of sensors that supports many applications
- › Watertight enclosure that protects electronics and enhances long-term reliability
- › Low power consumption
- › Slim, vertical profile for a more attractive station
- › Simple, integrated design for faster installation



Standard Components

Configuration of the station requires selection of a charging source option, communication option, and wind sensor option.

- 1 CR1000M Measurement and Control Module
- 2 7 Ah sealed rechargeable battery (choose option -AC to recharge this battery via ac power or option -SP to recharge the battery via a 10 W solar panel)
- 3 CS305-ET Solar Radiation Sensor
- 4 HMP60-ETS Air Temperature and Relative Humidity Probe housed in a MetSpec radiation shield*
- 5 TE525-ET Tipping Bucket Rain Gage
- 6 Wind Sensor (option -GW WindSonic1-ETM 2D Sonic Wind Sensor is shown at right; option -MW 034B-ETM Wind Set is also available)
- 7 Short-haul modem (option -SH) or phone modem (option -PH)
- 8 3 m Aluminum Pole
- 9 Environmental Enclosure



Programming

The ET107 can be programmed in minutes using VisualWeather software (requires version 3.0 or higher). VisualWeather software supports programming, manual and scheduled data retrieval, and report generation. The software also includes onboard equations that calculate ETo, crop water needs, growing degree days, wet bulb temperature, dew point, wind chill, and chill hours.

Customizations

The ET107 can be customized to fit a project's needs, while retaining turn-key functionality. Components that can be added to the ET107 are listed below.

Sensors

Cable termination option -C allows the following soil sensors to be connected to the ET107:

- › 107 Soil Temperature Probe (-35° to +50°C)
- › 108 Soil Temperature Probe (-5° to +95°C)
- › CS616 Soil Water Content Reflectometer
- › CS650 30 cm Soil Water Content Reflectometer Plus
- › CS655 12 cm Soil Water Content Reflectometer Plus
- › Other sensors may be available upon request. Contact a Campbell Scientific representative if interested.

Communications

Wi-Fi and Ethernet interfaces, spread-spectrum radios, digital-cellular phones, and voice-synthesized modems may be used for some applications; contact Campbell Scientific for more information.

Power

The PS24 power supply is recommended when using a spread spectrum radio or cellular phone with a solar-powered ET107 station. The PS24 includes its own 10-inch-by-12-inch environmental enclosure that is mounted to the ET107 pole via the 18520 hanger mounting kit.



**Older models of the ET107 station used an R.M. Young 6-Plate Radiation Shield to house the air temperature and relative humidity sensor. The adapter for the R.M. Young radiation shield is no longer available. If a replacement sensor is needed for an older station, order an HMP60-ET and reuse the old adapter. The MetSpec radiation shield has wingnuts on the bottom of it.*



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