

The Casella CEL Automatic Weather Station (AWS) is a tried and tested solution for the monitoring of a wide range of environmental parameters. Casella CEL systems are in use all over the world, providing continuous meteorological data in extremely harsh environments.

The standard hardware consists of a 2m galvanised steel supporting frame, upon which the electronics and above-ground sensors are mounted. Alternatively, if the sensors need to be mounted more than 2m from the ground, Casella CEL can supply masts of varying heights and specifications.

Sensor cables may be contained within flexible steel conduit to protect them from sunlight, water ingress and insect attack. As the AWS is of a modular design, the process of selecting a suitable system may be subdivided and is outlined as follows:

Sensors

A wide variety of environmental data may be collected using the Casella CEL AWS. Sensors are available for the measurement of basic meteorological parameters such as wind and temperature as well as highly sophisticated radiation sensors and cloud base ceilometers. Other environmental parameters such as water characteristics and gas concentration may also be measured. A full range of sensors is available upon request.

Sensus Logger

The latest 24 channel logger forms the heart of the system. (See next page for details.)

Telemetry

There are a variety of telemetry options available for an AWS system. These are dependent upon the users requirements and are briefly described as:

- Landline
AWS is connected to the user's PC via a cable providing both power and communications
- Modem/GSM Modem
For stations that are remote, but have access to a telephone line/GSM network
- Radio
For stations within 20km of the display site, data is transmitted every 5 - 60 seconds

Power

There are three options available as follows:

- Mains Power
Through either local mains connection or the landline telemetry option



- Solar Power
High quality solar panels and battery with adjustable support assembly
- Battery Power
Heavy duty batteries in a protective enclosure

WATER BALANCE SOFTWARE

In situations where evapotranspiration (ET) parameters are required using Automatic Weather Stations, Casella CEL is able to offer a tailored software package, developed by the Water Management Group at Cranfield University, Bedfordshire, England. The software comprises two separate programs, which are as follows:

- AWSET
Used for calculating the reference ET
- BALANCE
Used for calculating the actual ET and soil water deficit

Features

- Proven, robust and reliable technology
- Tailored to customers requirements

- User friendly and configurable software
- Wide range of sensors
- High accuracy

Applications

- Meteorological monitoring
- Landfill and waste disposal sites
- Water treatment works
- Power stations
- Industrial dust/odour emitters
- Harbours and airports

Applicable Standards

- BS 7843 Guide to acquisition and management of meteorological precipitation data
- BS 1339 Definitions, formulae and constants relating to the humidity of the air
- BMO AWS advice leaflet and RMS Meteorological Applications Vol. 1 and 2
- WMO Commission for Instruments and Methods of Observation No. 727