

ICT International Product Catalogue

**AusIndustry Business
of the Year 2009**



ICT International provides monitoring and management technologies to Mining, Forestry, Agriculture, Phytoremediation, Salinity, Catchment Hydrology & Eco Physiology



Solutions for soil, plant & meteorology

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Soil Moisture

Soil Moisture



Measurement of soil moisture and the moisture content of any material, soil, sand or minerals.

The sensor uses the standing wave technique enabling precise and accurate moisture measurements.

Potential Monitoring Applications

- Agriculture and forest water use
- Eco hydrology studies
- Irrigation timing and amount
- Roads and building materials moisture
- Mine cover and landfill closure monitoring
- Leachate movement into ground water
- Slope stability

MP Kit

The MPKit enables rapid sampling of Volumetric Soil Water Content (VSW%). The MP406 is inserted to the required depth of measurement and the VSW% is read out on the display of the MPM160 meter.

Features

- Volumetric Soil Water Content Sampling
- Highly Accurate
- Robust
- Portable
- Rapid Measurement

Potential Monitoring Applications

- Catchment and hydrology studies
- Irrigation management
- Mine cover laboratory studies
- Building materials moisture
- Mineral separation moisture



Soil Monitoring

Soil Water Potential



A pre-calibrated sensor with no maintenance requirements and high accuracy and operation in any soil type.

Potential Monitoring Applications

- Soil saturation
- Hydraulic flow downslope
- Leachate movement into ground water
- Irrigation management and plant stress

Soil Thermal Matric Sensor



The thermal matric sensor is used to measure the soil matric potential especially in dry to very dry soils. Custom calibration enables accurate measurement of soil suction in the range (5 - 10) to (1,500 - 2,000) kPa.

Potential Monitoring Applications

- Store release cover hydrology monitoring
- Research on desert vegetation and hydrology
- Hydrology modelling
- Mine cover - clay liner monitoring
- Landfill closure monitoring
- Custom calibration service available

Soil Salinity



Real-time measuring of salinity in the soil solution using plug and play logging system. As soil salinity varies temporally and spatially, the need arises for continuous monitoring to sustain plants, soils and productivity.

Potential Monitoring Applications

- Sustainable reuse of effluent and saline water resources
- Rehabilitation projects and mine sites
- Marginal lands

Plant Water Use

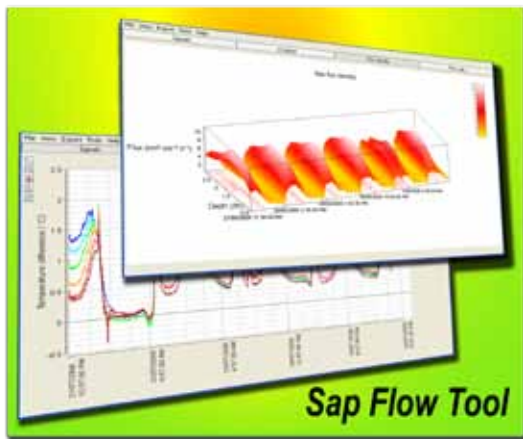


HRM Sap Flow Meter

Measures sap flow or transpiration in plants. Utilising the Heat Ratio Method (HRM) principle, the Sap Flow Meter is able to measure high, low and reverse flow rates in both small woody stems and roots, as well as large trees. This makes HRM the most powerful and flexible instrument for the direct measurement of plant water use.

Potential Monitoring Applications

- Phytoremediation
- Quantifying bio-pumping capacity of plant species
- Tree species selection prior to planting



Sap Flow Tool

A powerful analysis and visualisation tool for sap flow data. Compatible with both HRM and HFD, Sap Flow Tool enables the rapid analysis of the data in both raw data and corrected formats. Automatically graphing sap flow in 2D and 3D graphs to better understand water use and water movement through trees.

Potential Applications

- Calculate tree daily water use
- Calculate accumulated sap flow over time
- Visualise radial profiles of tree water use

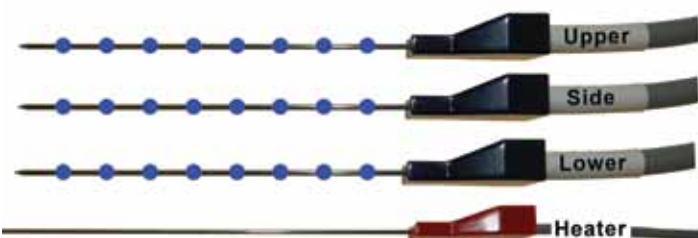


HFD Sap Flow Meter

A multi-point sap flow technique that senses the heat around a central heater measuring the expansion and contraction of the heat field in 3 dimensions, axially, radially and tangentially. With 8 measurement points spaced equidistant along a 100 mm needle, a very accurate radial profile of a tree's hydraulic architecture can be mapped.

Potential Monitoring Applications

- Map hydraulic architecture of trees
- Water use of large trees
- Hydraulic redistribution of water in plants and soils



Plant Growth

Stem Water Potential



Stem psychrometer integrates all the ambient environmental parameters acting upon the plant into a single continuously measurable variable of plant water status. This is a direct measure of the energy the plant must use to access water from the soil or the water stress of the plant.

Potential Monitoring Applications

- Plant water stress
- Maximise plant growth
- Impact of water stress on carbon gain

Stem Growth Meter



Continuously measure changes in stem circumference of trees and shrubs. Accurately measure diurnal fluctuations of shrinking and swelling of the stem in response to environmental and cultural practices.

Potential Monitoring Applications

- Measure stem growth rates
- Predict yield
- Determine growth response to irrigation and rainfall

Canopy Light Meter

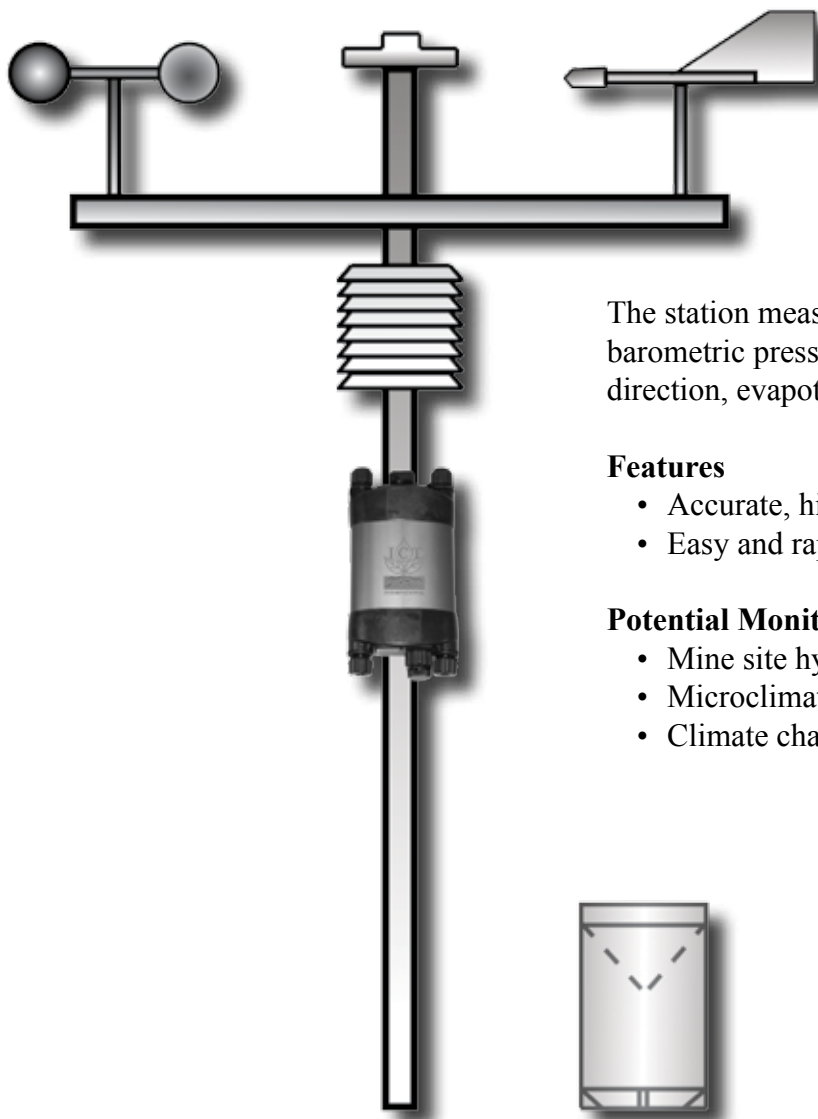


A linear Photosynthetically Active Radiation (PAR) light meter designed to measure light interception within a plant canopy. The amount of light penetrating the canopy can be used to calculate Leaf Area Index and sunflecks which describe the plant canopy and growth rates.

Potential Monitoring Applications

- Canopy architecture and light interception
- Calculate biomass production
- Plan thinning regimes to promote higher growth rates

Meteorology



Weather Station

The station measures temperature, relative humidity, barometric pressure, rainfall, solar radiation, wind speed and direction, evapotranspiration.

Features

- Accurate, high quality meteorological station.
- Easy and rapid installation

Potential Monitoring Applications

- Mine site hydrology
- Microclimate assessment of rehabilitation sites
- Climate change monitoring



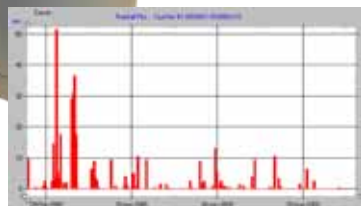
Raingauge



Incorporating a tipping bucket rain gauge and an internal event logger, ICT International pluviometers only measure rainfall when it rains.

Features

- Low-cost
- Highly accurate
- Maintenance free data collection
- 3 years battery life



Environmental Logging Systems



Features

Data Storage

- MicroSD
- 2GB expandable to 16GB

Data transfer

- USB
- Removable microSD card
- Wireless
- Via modem

Stand-alone data logging

Windows configuration software

Daisy chain logging

2 wire non polarised bus for power & data

Internal Lithium-Polymer battery

Internal voltage regulation

IP68 rated water proof enclosure

Optical isolation lightning protection

ICT International

Solutions for soil, plant & meteorology

International Distributors

www.ictinternational.com.au/distributors.htm

Solutions

www.ictinternational.com.au/solutions.htm

Case Studies

www.ictinternational.com.au/casestudies.htm

Soil Moisture - MPKit

www.ictinternational.com.au/mpkit.htm

Sap Flow Software

www.sapflowtool.com



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