

## Handheld Fluorometer



Aquation's **Handheld Fluorometer** and **Portable Datalogger** is designed for measuring plant stress in the field (i.e. the effective quantum yield of photochemistry;  $\phi_{II}$ ). The Handheld design enables rapid one-handed measurement of multiple samples; results can be viewed immediately and later downloaded to PC for analysis.

### Features

- Measures  $\phi_{II}$  using multiple-turnover saturating pulse method (PAM)
- Includes PAR and leaf temperature measurements
- Single-handed operation: trigger activated measurement, thumb activated leaf-clip
- Water resistant sensor
- Portable Datalogger will operate for 12 hours and log all measurements
- Lightweight and portable: the system can be easily carried and used in the field
- Easy-to-use software with an uncluttered interface
- Automated function when in pass-thru mode: measurements can be made according to program

**Aquation's Handheld Fluorometer and Portable Datalogger enables rapid repeated stress measurement of multiple replicate leaves *in situ*.**

$\phi_{II}$  is widely used as a measure of plant stress. Rapid sequential measurement of multiple leaves is important for accurate representation of plant stress. The one-handed design makes measurement of many plants easily achieved by a single operator. Additional features include the measurement of ambient irradiance (as PAR), and leaf temperature during each  $\phi_{II}$  reading.

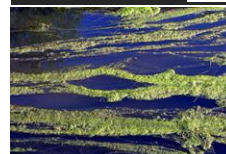
Not only is the Portable Fluorometer useful for field studies. With the easy-to-use operating software AquationDirect, the fluorescence sensor can be operated direct from a computer. This opens the door to a multitude of plant stress tests that can be conducted on the bench under controlled environmental conditions.

*See over for further detail.*

#### Field Studies



#### Pollution Studies



#### Plant Stress Analysis



#### Environmental Analysis





## Handheld Fluorometer

### Specifications:

- Excitation light 470 nm
- Actinic & saturating lights – white LED
- Far-red light for PSI excitation 735 nm
- PAR sensor: cosine corrected 2 $\pi$  sensor 400-700 nm
- Leaf temperature: infra-red sensor 5.5–14  $\mu$ m, emissivity of 1, resolution to  $\pm 0.5$  C
- Operating temperature: 0 °C to 45 °C
- Storage temperature: -5 °C to 60 °C
- Power: 14.8V 2.6Ah rechargeable lithium ion battery pack

### Configuration and use

The Handheld Fluorometer is connected to the Portable Datalogger, which is slung over the shoulder.

The Portable Datalogger enables user interaction while in the field, and displays the results of each measurement. Different settings can be stored and used for different plant species if needed.

The Handheld unit has a thumb operated clip used to open the leaf clip for easy one-handed leaf insertion; the cosine-corrected PAR sensor can be seen on the blue stalk. Leaf temperature (not shown) is measured close to the area of measurement. All measurements are made virtually simultaneously.

The Fluorescence sensor can be easily removed from the sample holder clip and used on the bench for a wide range of plant stress tests. The pass-thru mode enables operation direct via PC and AquationDirect.

Software is easy to use graphical user interface; fully flexible functions enable a wide range of settings and custom programs

PO Box 3146 Umina Beach, NSW 2257, Australia

Phone +61-(0)-400 088 662

Email [info@aquation.com.au](mailto:info@aquation.com.au)

[www.aquation.com.au](http://www.aquation.com.au)



Portable Datalogger with High Contrast backlit screen for use in bright sunlight.



PAR measurement using cosine corrected 2 $\pi$  sensor.



Leaf temperature measurement using IR technology.

**Aquation Pty Ltd**

ABN: 97 127 430 184

DUNS: 75 650 2930

[www.aquation.com.au](http://www.aquation.com.au)