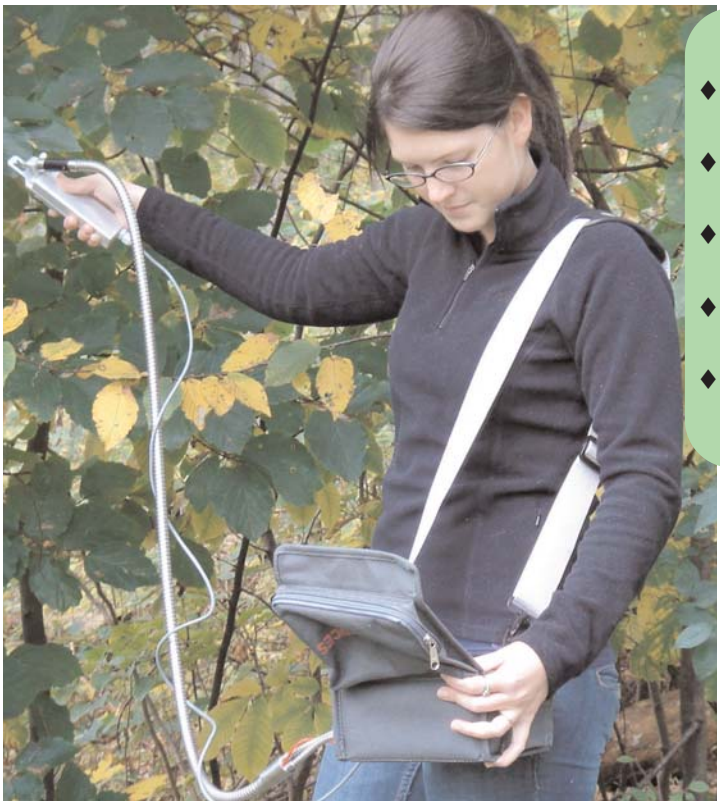
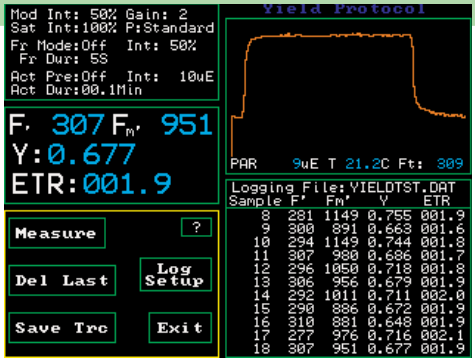
# OS1p

## Ultra Compact Chlorophyll Fluorometer

An ultra compact, battery portable system designed for plant stress field research



- Ultra compact
- Weighs only 1.4kg
- Easy to use
- Variety of fast tests including Yield
- Touch screen, colour, graphic display




## Plant stress research tool

The OS1p is the most portable and easy to use research chlorophyll fluorometer yet.

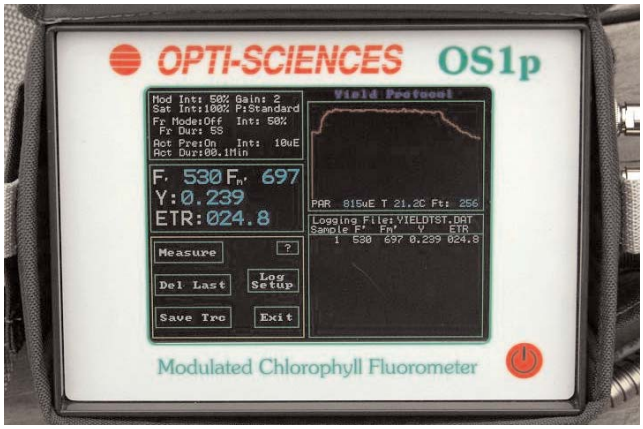
The OS1p employs the proven pulse modulation fluorescence technique, where a rapidly pulsing excitation light is used to induce a corresponding pulsed fluorescence emission. This fluorescence is measured by the OS1p at a longer wavelength than the excitation light. The fluorescence intensity is measured and plotted against time. The sophisticated detection system distinguishes between the pulsed response and the non-pulsed response allowing both ambient light and dark adapted experiments to be performed.

Chlorophyll fluorescence can be used to measure most types of plant stress. The OS1p offers a number of fast tests including Quantum Photosynthetic Yield, Fv/Fm, Quenching relaxation and Rapid light curves to analyse these stresses. Multiflash tests can be performed at high saturation light levels.

## Truly field portable and easy to use

Weighing just 1.4kg, this robust, battery portable system offers up to 12 hours of continuous operation from a single charge.

Full programming and operation is achieved by a large, colour, graphic, touch screen display. No separate PC is required. Calculated parameters and real time fluorescence transient curves are presented.



## Large integral data storage

Data can either be stored in a large 1Gb internal memory, capable of storing thousands of test data sets and traces, or on removable smart memory cards.

Once back in the laboratory, data is quickly and easily transferred to a PC via USB or directly from the memory cards.

The OS1p is supplied, as standard, with an open body cuvette and 10 dark adaption cuvettes.

## PAR Clip

As Yield measurements can vary significantly with light levels and temperature, it is recommended that the optional PAR clip is used when carrying out such tests.

The unique design of the PAR Clip allows one handed operation and prevents the clip unexpectedly opening due to the weight of the fibre optic cable.

The PAR clip is also required for ETR determinations.

## Plant Stress Guide

To assist researchers, a Plant Stress Guide is available that provides the value and limitations of different fluorescence tests for different kinds of plant stress.

**Plant stresses include:** Light, drought, heat, nutrient (including nitrogen), cold, over watering, herbicide, heavy metal and $CO_2$.

Contact ADC BioScientific if you would like to receive a complementary copy of the Plant Stress Guide.

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## Parameters include:

**Y:** Quantum photosynthetic yield (DeltaF/Fm')
**Fo:** Minimum fluorescence
**Fm:** Maximal fluorescence
**Fv:** Variable fluorescence
**Fv/Fm:** Maximum photochemical efficiency
**Fms:** Maximal fluorescence under steady state conditions (Fm')
**Fs:** Fluorescence signal prior to saturation pulse (F')
**NPQ:** Non-photochemical quenching calculated with Fm*****
**Ft:** Current fluorescence readout
**ETR:** Electron transport rate (with optional PAR sensor)
**PAR:** Photosynthetic Active Radiation (with optional PAR sensor)
**T:** Leaf temperature (with optional PAR sensor)
**$ETR_{max}$:** Leaf photosynthetic capacity
**Ik:** Minimum saturation level

***** Hendrickson Lake model supplied as standard. Customer may alternatively purchase the Puddle model or Kramer Lake Quenching model.

## Specifications

**Excitation sources:**
**Saturation pulse:** LED with 690nm filter. 11,000uE
**Modulating light:** 660nm LED with 690nm filter
**Actinic light:** LED to 1,500 uE.

**Detection method:** Pulse modulation.

**Detector:** PIN photodiode with 700-750nm filter.

**Sampling rate:** Auto-switching from 10 to 10,000 points per second, depending on phase of test.

**Test duration:** Adjustable 2 seconds - 16 hours.

**Data storage:** 1Gb internal memory for thousands of data sets and traces. Removable smart cards.

**Digital output:** Smart cards and USB

**User interface:** Graphic, backlit, colour, touch screen display.

**Battery:** Internal 12V, rechargeable Nickel metal hydride battery providing up to 12 hours of continuous operation. .

**Dimensions:** 18 x 14 x 8cms

**Weight:** 1.4kg
1.6kg with PAR clip