



OS-30p+



Rapid Plant Stress Screening Device

An enhanced, hand-held device for Fv/Fm and OJIP analysis



- ◆ Small hand-held device
- ◆ Integral fibre optic probe
- ◆ Accurate Fv/Fm and OJIP analysis
- ◆ Colour graphic display
- ◆ Large integral data storage
- ◆ Cost effective

Using Chlorophyll Fluorescence to analyse plant stress

Chlorophyll fluorescence is proven to provide reliable, non-destructive information regarding the photosynthetic processes and plant health/stress.

Fluorescence tests can be easily and quickly performed by the pre-darkening of the leaf followed by short exposure to a saturating light intensity. Measuring the fluorescence intensities over time produces a Kautsky induction curve. The shape of this curve and the value of significant transient levels on the curve can be used as an indication of environmental stress damage on the photosynthetic apparatus.

Accurate Fv/Fm and OJIP analysis

Fv/Fm is the most widely used fluorescence test for plant stress detection. Fv/Fm, defined as Maximum Photochemical Efficiency, is a comparative measurement of plant stress with lower values indicating plant stress. The OS-30p+ is designed for the rapid screening of Maximum Photochemical Efficiency.

The OJIP test uses higher sampling rates to resolve fluorescence transient steps in the Kautsky curve. These steps are affected differently by different types of plant stress.

The OS-30p+ ensures the most accurate Fv/Fm and OJIP results by measuring Fo rather than offering an estimated value.

Single hand operation

The battery operated OS-30p+ features a built-in fibre optic probe, meaning that only one hand is required to operate the unit.

Lightweight leaf clips are provided for effective pre-darkening of the measurement site prior to the induction of fluorescence. These non-destructive clips are suitable for use on a wide range of plant species.

Measurements are made by introducing the analysis probe to the leaf clip. The leaf clip shutter is then withdrawn, exposing the dark adapted site to a saturating excitation light source provided by a 660nm LED. Induced fluorescence is measured by a PIN photodiode at >700nm. Excitation intensity and experimental duration is user selectable.

The OS-30p+ provides a direct read-out of both the standard and an enhanced range of Fv/Fm and OJIP parameters.



Rapid field screening

Fluorescence parameters are presented on the OS-30p+ large, colour, graphic display together with a logarithmic time scale presentation of the Kautsky curve. Previous measurements may be reviewed in the field. Up to 160,000 data sets and hundreds of experimental traces can be stored in the internal memory. Data is downloaded via a USB port.

The OS-30p+ will operate continuously for up to 8 hours from a single charge.

The OS-30p+ is the ideal choice for the rapid screening of a variety of plant stresses.



Technical Specifications

Items supplied: OS-30p+ unit with integral fluorescence probe, 10 dark adaption leaf clips, battery charger, USB cable, instruction manual and carry case.

Test Modes:	Fv/Fm, OJIP
Measured parameters:	Fo, Fm, Fv/Fm, Fv/Fo, O, K, J, I, P, tFm, A, Mo and PI/ABS.
Excitation/Actinic source:	Solid state 660nm source. Saturating 525-6,000µE.
Detection system:	Related pulse excitation detection with high resolution sampling mode for Kautsky induction curve recording.
Detectors and filters:	A PIN photodiode with a 700-750nm bandpass filter.
Test duration:	Fv/Fm: 0.1-1.5 seconds. OJIP: 3-300 seconds
Sampling rate:	Variable from 10µS to seconds.
Digital output:	USB.
Storage capacity:	Up to 160,000 data sets and hundreds of experimental traces.
User interface:	Display: Colour graphic display. Keypad: 10 key dedicated function keypad.
Power supply:	Rechargeable NiMH battery pack.
Battery life:	8 hours of continuous operation.
Weight:	900g
Operating range:	5 to 45°C
Control unit dimensions:	18cm x 7cm x 6cm



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