Plant Stress Kit

Compact and affordable Y(II)/ETR & Fv/Fm meters

One case, two instruments. One for measuring light adapted Quantum Yield of PSII or Y(II) and one for dark adapted Maximum Potential Quantum Efficiency of PS(II) or Fv/Fm

Y(II)/ETR meter

- Y(II) and ETR corrected for absorptance
- Leaf absorptance using RGB sensors
- PAR and leaf temperature measured
- Fm' correction according to Loriaux 2013
- Long-term fluorescence monitoring mode

Fv/Fm meter

Rapid measurement of large populations –

Lightweight dark adaption clips –

Graphic Fv/Fm trace display –

Compact, ergonomic design –

Measurements from the same known state –

Compact, lightweight and portable

Supplied in a rigid clamshell case, the Plant Stress Kit comprises the Y(II) meter, Fv/Fm meter, 2 x Li/ion batteries, 2 x USB chargers, 2 x USB cables, 10 x dark adaption clips, 2 x absorptance calibration cards and manual on USB flash drive.

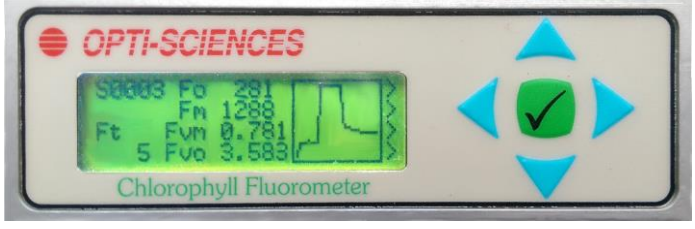
Accurate and reliable results

Weighing less than 0.5kg, these plant stress meters are the most advanced lightweight, compact and portable fluorometers available.

The Y(II) meter follows established and proven scientific principles to provide the user with accurate plant stress measurements.

Yield(II) is measured from the top of the leaf along with photosynthetically active radiation, while the leaf temperature is measured, over a large area, from the bottom of the chamber. This gives a more representative and accurate leaf temperature reading than a spot, thermistor measurement.

The Fv/Fm meter utilises the latest in electronic circuitry to automatically adjust modulated light intensity and detector gain to provide the user with the most reliable and accurate measurements possible.



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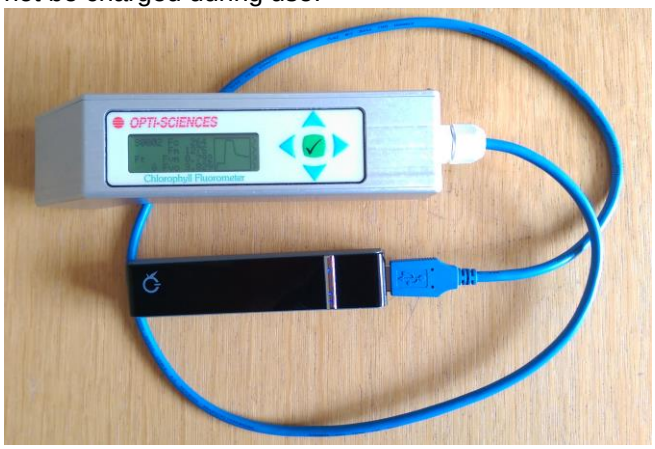
Long battery life

Both fluorometers are powered by the latest Lithium ion USB batteries. These batteries can power the fluorometers for over 8 hours on a single charge.
The batteries can be recharged overnight using the supplied international USB charger. The meters can also be powered directly from the charger but the batteries will not be charged during use.



USB

A mini USB port is provided on the back of both meters. When connected to a PC the meters become a hard drive, allowing the transfer of data measuring files and software upgrades. No special software is required. Data files can simply be opened in ExCel, or any other software that can receive comma delineated files.

Parameters measured Y(II) and Fv/Fm

Y(II): Quantum Photosynthetic Yield of PS(II)
ETR: Electron transport rate
PAR: Photosynthetically active radiation
T: Leaf temperature
F_{MS} (or F_M'): Maximum fluorescence at steady state
F_S (or F): Fluorescence under steady state
Loriaux 2013 correction of ETR and F_M'
α: Leaf absorptance & transmittance
RH: Relative humidity 5% to 95% (+/-2% over the range)
Monitor mode: Fv/Fm, Y(II), ETR, absorptance, PAR, T, RH and ETR
Fv/Fm: Maximum potential quantum efficiency of PSII
Fv/Fo: A normalised ratio that may be used to improve stress detection
Fo: Fluorescence after dark adaption
Fm: Maximum fluorescence during a saturating pulse following a period of dark adaption
Ft: Instantaneous fluorescence

Specification Y(II) and Fv/Fm

Light Sources:
Saturation pulse: 7,000umols white LED
6,000umol red LED
Modulated light: Red: 660 nm LED with 690 nm short pass filter
Actinic light source: Ambient light only
Dark adapted only
Detection method: Pulse modulation method
Detector & Filters: A PIN photodiode with a 700 ~750 nm bandpass filter
Sampling Rate: Auto-switching from 1 to 10,000 points per sec, depending on test & on phase of test
Automated routine to optimally set the modulated light intensity. The modulated light may also be set manually
Multi-Flash Fm' correction for all light adapted protocols & quenching: May be turned off
Test Duration: About 3 seconds for fast tests and may be run for months in monitor mode
Storage Capacity: 2 Gigabyte of non-volatile flash memory, supporting almost unlimited data sets
Special Algorithms: 8 point rolling 25 ms average to determine Fm and Fm' eliminating saturation pulse NPQ as an issue
Output: USB comma delineated files may be opened in Excel
User Interface: Menu driven with arrows
Display: Graphic black and white display 132 x 32 pixels
Power Supply: 8 hour USB lithium ion battery is standard, but any USB battery can be used. Mains current may also be used. Mains plug is also supplied. Charger included
Dimensions: 23cm long with a USB cable that is 160cm long
The case is 36 x 28 x 15mm - included
Weight:
Meters w/battery & USB cable- 0.45 kg
Complete w/case & accessories- 1.5 kg
Operating temperature range: 0°C to 50°C
Absorptance measuring standard: 2 included

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