

## FLUORPEN

## FLUOROMETER

### Measured parameters:

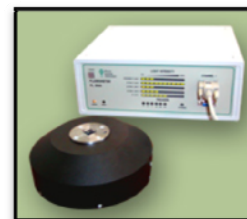
- $F_T$  - Continuous fluorescence yield in non-actinic light.
- QY - Photosystem II Quantum Yield.
- NPQ - Non-Photochemical Quenching
- OJIP - Chlorophyll Fluorescence Induction Kinetics
- Light Curve - Adaption of quantum yield to several different light levels



### FL 3500 Fast and Standard

For assessment of **flash fluorescence induction**.

**PAM** and **OJIP** in **liquid samples and small leaves**  
**Measures with time resolution down to 1  $\mu$ s**  
 Far-red light for preferential Photosystem 1 excitation



## THERMOLUMINESCENCE SYSTEM TL 200/PMT

## N-Pen N

### Technical Specification:

**Temperature Range:** -25°C - +70°C with water circuit,  
 +10°C - +70°C without water circuit

**Temperature Mode:** Constant

**Sampling Period:** 10ms

**Sample Disc:** 1/2" disc made of gold-plated copper

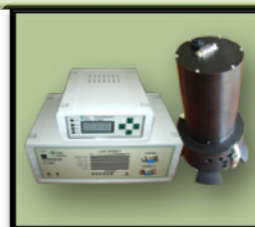
**Typical Sample:** Algal or cyanobacterial suspensions; Leaf segments

**Light Source Characteristics:** 625 nm; intensity up to 200,000  $\mu\text{mol}(\text{photon}).\text{m}^{-2}.\text{s}^{-1}$

**Detection Sensor:** Photomultiplier with sensitivity software control

**Spectral Response:** 300 nm - 900 nm, **Sampling period:** 100ms

**Time response:** 50ms ; **Switch-On Delay:** 100 ms ; **Ambient Light Protection:** Mechanical switch ; **A/D converter resolution:** 16 bit



Actual Nitrogen Content  
 in Plants

## MULTISPECTRAL KINETIC FLUORESCENCE IMAGING

## CUSTOMIZED VERSIONS

### Key Features:

- Highly modular instrument
- Flexible geometry of the camera and light sources
- Imaging area 13 x 13 or 20x20 cm
- Optical dark room for adaptation.



Transect FluorCam



Arch FluorCam



XY-Plane



Rover FluorCam

## SPECTRAPEN SP-100

**SpectraPen SP-100** is a low-cost, handheld spectrophotometer that's ideal as a general-purpose instrument for research labs. The SpectraPen works with Li-Ion rechargeable battery and does not require any PC or any other bulky accessory. Instead, wavelength and intensity readings and their spectral lines are instantly displayed on the SpectraPen touch screen display.



### Two Standard Versions:

- SP 100-UVIS: range 340-780 nm
- SP 100-NIR: range 640-1050 nm
- Optional specific setups for fluorescence or reflectance will be released soon

### Applications:

- Visible light source testing
- Color measurement
- Chemical measurement