



GFP Meter



Measures **Green** Fluorescent Protein



- ✓ Non-destructive
- ✓ Hand-held
- ✓ Easy to use
- ✓ Battery operated
- ✓ Integral data storage



Applications

- Measurement of GFP in intact samples
- Distinguish between GMO and non GMO (Genetically Modified Organism)
- Gene expression studies

Non-destructive field determinations

The GFP Meter is a revolutionary new instrument that allows, for the first time, non-destructive, quantitative measurements of Green Fluorescent Protein in intact leaf samples.

The handheld, field portable design provides researchers with rapid and accurate GFP determinations. This innovative new device promises to have far-reaching applications in transgenic crop research and development. Researchers now have a simple, fast means to study and differentiate high and low GFP expressing plants and transformed from non-transformed plants.

GFP: a genetic marker

Green Fluorescent Protein serves as a genetic marker in genetically modified plants and crops and has proven to be an invaluable tool in gene expression studies. GFP will only be detected if the marked gene has been expressed by the organism. By observing GFP in-situ, researchers and biotechnicians are learning how to manipulate genomic traits. The GFP Meter allows researchers to track the expression of these modified genes in crops and their possible spread within the floral community.

The GFP Meter will facilitate these transgenic plant studies by allowing fast field or laboratory screening of potentially thousands of samples to a very high degree of accuracy.

Green Fluorescent Protein is the most common marker, however the GFP Meter can be factory set to measure Cyan, Red or Yellow Fluorescent Protein.

Self-contained fluorometer

The GFP Meter is a self-contained, probe based fluorometer based on a modulated detection system to compensate stray light and temperature drift. This allows measurements to be made at ambient light levels.

The small probe design enables small leaf species such as Arabidopsis to be analysed.

GFP measurements can be made either against input calibration curves or as relative units. There is a linear correlation between these units and traditional extraction assays.

The GFP Meter is practical and easy to use. Programming and operation is via the soft touch keypad. All data is clearly presented on the large LCD display.

Over 1,000 data sets can be stored in the internal logger, before being downloaded via an RS232 port. Battery life provides between 20 and 30 hours of continuous use.



Suggested reading

Haseloff J. And K.R. Siemering. 1998. The use of GFP in plants. In: Chalfie M. And S.R. Kain, eds. Green Fluorescent Protein: Properties, Applications, and Protocols. Wiley and Sons. 191-220.

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Niedz R.P., M.R. Sussman and J.S. Satterlee. 1995. Green Fluorescent Protein: an in vivo reporter of plant gene expression. Plant Cell Rep. 14:403-406.

Stewart C.N., Jr. 2001. The utility of Green Fluorescent Protein in transgenic plants. Plant Cell Rep. 20:376-382



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Technical Specifications

Source: Solid state LED with band limiting filter. Output compensated for battery voltage and temperature drift.

Detector: PIN diode with low noise preamplifier. Band limiting filter sets detection range.

Detection system: Digitally controlled, modulated detection system for optimal rejection of background light and maximal drift reduction.

Sample interface: Bifurcated fibre optic probe, 4mm bundle diameter.

Controller: 16MHz RISC processor.

User interface: 4 x 3 keypad. 20 x 4 line LC display.

Memory: 8KB non-volatile EPROM. Storage for 1020 data sets.

Output: RS232 level serial port. Data format- ASCII plain text.

Power: 4 x AA batteries. Provides 20 -30 hours of use.

Size: 21cm x 8cm x 5cm.

Weight: 1Kg

Operating Temperature Range: 0-70°C

Supplied as standard: GFP Meter with user selected source / detector, filters, battery, fibre probe, RS232 cable, manual