



MINI-PAM-II Photosynthesis Yield Analyzer

DESCRIPTION

- The new MINI-PAM-II fluorometer combines the merits of its predecessor “MINI-PAM” with most modern LED and computer technology.
- Sensitivity, small dimensions, reliability under rugged conditions, and simple execution of fluorescence analysis makes the MINI-PAM-II the new standard for PAM fluorometry in field research.
- Well-tested fiberoptics with 5.5 mm or 2 mm active diameter reaches even hidden samples.
- Measurements under field conditions are easily controlled and monitored by a transfective touchscreen.
- Energy-efficient LED sources, storage capacity of 27,000 data sets, and easy replaceable off-the-shelf batteries permit long term research campaigns at remote places.
- A new fully digital leaf clip combines fluorescence analysis with measurements of photosynthetically active radiation (PAR), leaf temperature and relative humidity.
- Expandable through accessories such as external multicolor lamp, optical oxygen sensor and barcode scanner.



MINI-PAM-II

General Features

Microsecond timing enables the MINI-PAM-II fluorometer to use the same LED as source for PAM measuring light, actinic light and saturation pulses. Measuring light corresponds to μ s flashes of constant amplitude, actinic light is quasi-constant light employed to drive photosynthesis, and saturation pulses temporarily saturate primary photosynthesis so that all photosystem II reaction centers are “closed”.

Being a PAM fluorometer, the MINI-PAM-II device records only the fluorescence elicited by measuring light. Fluorescence excited by internal actinic light, saturation pulses or constant external light, like sun

radiation, is not measured. Therefore, the MINI-PAM-II determines how environmental factors modulate the efficiency of conversion of measuring light into fluorescence. These “PAM fluorescence data” are required to retrieve information on primary photosynthesis like the photosynthetic efficiency of photosystem II, Y(II).

ACCESSORIES

- Miniature Spectrometer MINI-SPEC/MP
- Arabidopsis Leaf Clip 2060-B
- External LED Light Source 2054-L
- Suspension Cuvette KS-2500
- Fiberoptics Adapter 90° 2030-B90
- Miniature Fiberoptics MINI-PAM/F1
- Barcode Scanner BCS-9590
- Light, Temperature and Humidity Sensing Leaf Clip Holder 2035-B
- Mini Quantum/Temp.-Sensor 2065-M
- Dark Leaf Clip DLC-8
- Magnetic Stirrer with Fiberoptics, Holder MKS-2500
- Fiberoptics Holder for Surfaces 2060-A
- Compact Tripod ST-2101A
- Leaf Positioning Setup DUAL-BA

Features & Configurations

Measuring Principle & Quenching Analysis

- A second LED in the MINI-PAM-II emits far red light. This LED preferably excites photosystem I but is negligibly absorbed by photosystem II. A special measuring routine uses this far red LED to determine the F0' fluorescence level which is important to correctly assess the reduction state of photosystem II reaction centers.
- In experiments using internal actinic light, the light intensity at sample level can be monitored online using an internal light sensor. This internal sensor must be calibrated against an external light sensor.

BLUE & RED Version: MINI-PAM-II/B and MINI-PAM-II/R

- The color of light emitted by the primary LED distinguishes the BLUE from the RED version of the MINI-PAM-II fluorometer. The BLUE version (MINI-PAM-II/B) possesses a blue LED emitting maximally around 475 nm which is replaced by a red LED emitting maximally around 655 nm in the RED version (MINI-PAM-II/R). Both versions have a second LED providing far red light for specific excitation of photosystem I.
- The second difference between the two versions is the spectral window for fluorescence detection. The BLUE version detects fluorescence at wavelengths > 630 nm but the RED version detects fluorescence at wavelengths > 700 nm

Contact info



Monitoring MENA

Insight into instrumentations

(962) 5353-2091

PO Box 1100 Salt

Post Code 19110 JORDAN

sales@monitoring-mena.com

www.monitoring-mena.com

Application

Standard Configuration

- The MINI-PAM-II combined with the newly developed digital leaf clip 2035-B measures simultaneously PAM fluorescence, photosynthetically active radiation (PAR), leaf temperature and air humidity.

O₂ + Fluorescence Configuration

- Simultaneous measurement of fluorescence and oxygen
- Photosynthetic oxygen evolution
- Non-photochemical quenching

This Instrument is manufactured by our principle company

WALZ - Germany