



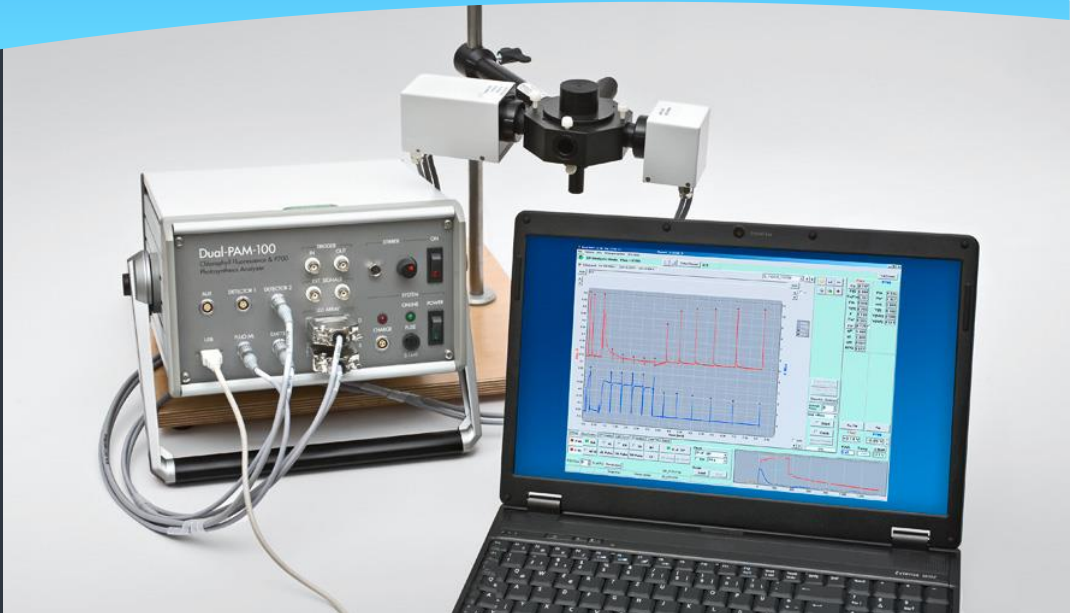
DUAL-PAM-100: P700 & Chlorophyll Fluorescence

DESCRIPTION

The DUAL-PAM-100 measuring system lifts the parallel recording of photosystem II and photosystem I activities on a new level. The outstanding opto-electronical properties of the DUAL-PAM-100 result from more than 25 years of experience with the PAM-101/102/103 chlorophyll fluorometer combined with exceptional modern engineering and craftsmanship.

Essentially, the DUAL-PAM-100 possesses both, the properties of a high performance PAM chlorophyll fluorometer and that of a dual wavelength absorbance spectrometer.

- The MODULAR version of the DUAL-PAM-100 measuring system consists of the Power-and- Control-Unit DUAL-C which can be combined with various emitter and detector heads.
- The power and control unit of the FIBER version, DUAL-PAM/F, contains all actinic and measuring light sources as well as the photodiode signal detector.



DUAL-PAM-100

General Features

The DUAL-PAM-100 measuring system is available in two different versions: the MODULAR version has its light sources and signal detection located in separate measuring heads which are controlled by a central unit.

In comparison, light sources and signal detection are located in the central unit in the FIBER version, in which sample and instrument are connected by special fiberoptics.

The MODULAR version permits the easy exchange of measuring heads thus allowing a wide range of different applications like determinations of NADPH or pH gradients.

The FIBER version lacks this flexibility but may be advantageous when only photosystem II and photosystem I activities are of interest. Both, the MODULAR and the FIBER version, can be used to measure leaves, macroalgae, microalgae and cyanobacteria.

ACCESSORIES

MODULAR Version

- Optical Unit ED-101US/MD
- Micro Quantum Sensor US-SQS/WB
- Miniature Magnetic Stirrer PHYTO-MS
- Temperature Control Unit US-T
- Temperature Control Block ED-101US/T
- Accessory for Low-Drift Absorbance Measurements DUAL-K25
- Combining the DUAL-PAM-100 with Gas Exchange Measurements Using the DUAL-PAM-100 Gas-Exchange Cuvette (3010-DUAL)
- Linear Positioning System 3010-DUAL/B
- Photodiode-Detector Unit DUAL-DPD
- Photomultiplier-Detector Unit DUAL-DPM
- Set of Optical Pinholes DUAL-OP for P700 Measurements
- Two-way Adapter for Unilateral Actinic Illumination DUAL-TW

Features & Configurations

- DUAL-PAM-100 instruments can measure simultaneously a single-channel signal (e.g., chlorophyll fluorescence) and a two-channel signal (e.g. P700- dependent absorption changes at 820 nm relative to 870 nm). Also, a single wavelength and a dual wavelength absorption signal can be concurrently measured as in the case of the P515/535 setup for parallel determination of the electrochromic band shift and scattering changes.
- For the DUAL-PAM-100, a ground-breaking pulse-modulation technique has been developed. This new technique forms the basis for measuring pairs of signals concurrently and at outstandingly high time resolution.

Other Distinctive Features of the DUAL-PAM-100

- Integrated red, blue, far-red actinic LED lamps and saturating single and multiple turnover flash lamps.
- An extremely wide range of measuring light frequencies (1 Hz to 400 kHz) allows assessment of F_0 level fluorescence as well as recording of fast kinetics at high time resolution (e.g. polyphasic fluorescence rise or flash relaxation kinetics).
- Extension of the saturation pulse method to derive from P700 measurements information on the use of absorbed light energy in PSI.
- All light sources can be switched with 2.5 μ s time resolution under software control.
- Operation via automated measuring routines (script file programming).

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

- Measuring of light-induced changes of NADPH fluorescence in suspensions of isolated chloroplasts, algae and cyanobacteria.
- Determine the quantum yields of photochemical energy conversion and nonphotochemical energy dissipation in PS I.
- Analyze Chl b-less and the corresponding wild-type leaves.
- Track the fate of excitation energy in PS II
- Analyzing heat-induced limitations using Maxi-Imaging-PAM and DUAL-PAM-100.
- Non-photochemical fluorescence quenching and quantum yields in PS II and PS I.
- Provides insights into membrane potential, membrane energization ("scattering"), and proton gradient, as well as on proton and electron fluxes.

This Instrument is manufactured by our principle company

WALZ - Germany