



MICRO-PAM Chlorophyll Fluorescence

DESCRIPTION

A MICRO-PAM system involves several light-weight chlorophyll fluorometers for field use. Being capable of multi-site monitoring of photosynthesis over weeks and months, the MICRO-PAM is tailored to study plant responses to environmental changes in nature and under controlled conditions. Due to its compact measuring heads, the MICRO-PAM is suited for smaller samples than those typically probed by the established MONITORING-PAM.

Originally, the MICRO-PAM has been developed to measure photosynthesis of lichens growing on rocks or in biological soil crusts. The actual field of application includes herbaceous plants, shrubs and trees. In addition to determining photosynthesis yield by the saturation pulse technique, the measuring heads record light intensity and temperature by external sensors, and humidity by an internal sensor.



MICRO-PAM Compact Fluorometer for Long-term Monitoring of Photosynthesis

The measuring heads of a MICRO-PAM system are denoted as MICRO-HEAD/3B where the "3" specifies the diameter in mm of the light guide and the "B" stands for the blue color of measuring and actinic light.

The MICRO-HEAD/3B is equipped with a sample clip. A cosine-response PAR sensor is positioned parallel to the sample plane. A thermocouple touching the lower sample side measures temperature. Humidity is measured by a capacitive-type sensor located inside the fluorometer housing. On request, a special stand will be provided to mount the MICRO-HEAD/3B on solid surfaces.

The MICRO-HEAD/3B possesses a blue power LED with maximum emission at 465 nm and a full width at half maximum of 22 nm. The maximum

actinic light intensity at sample level is $3000 \mu\text{mol m}^{-2} \text{s}^{-1}$, the maximum saturation pulse intensity is $6000 \mu\text{mol m}^{-2} \text{s}^{-1}$.

MICRO-PAM systems can be operated in the ONLINE configuration in which up to four measuring heads can be connected via the MICRO-IB4 PC Interface Box to an USB port of a Windows computer running WinControl-3. In the OFFLINE configuration, measuring heads are connected directly or via the so-called MINI-HUB to a MONI-DA data acquisition system.

ACCESSORIES

STAND-ALONE configuration
of MICRO-PAM

- Four-Way Distributor
MICRO-HUB
- MONI-Interface USB/0
- Satellite Modem

SPECIFICATIONS:

Comparing Monitoring Systems		
System	MICRO-PAM	MONI-PAM
Measuring Head	MICRO-HEAD/3B	MONI-HEAD/485
Weight	96 g	205 g
Volume	189 cm ³	365 cm ³
PAR Sensor	External	Internal
Temperature Sensor	External (Thermocouple)	Internal
Humidity Sensor	Internal	Absent
Optical Pathway	Fiber	Lens
Weather Resistance	Coating of electronic circuitry to protect against moisture	Waterproof Housing
Underwater Version	Not available	Available
Power Consumption	3 W during SP _{max}	7 W during SP _{max}

Contact info



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Application

- Lichen Photosynthesis
- Cold-acclimation of Leaves

This Instrument is manufactured by our principle company

WALZ - Germany