

Photosynthesis Monitor

Model PTM-48A

**A new all-in-one instrument
for monitoring plant status
and environment**

OVERVIEW

The PTM-48A Monitor is truly state-of-the-art system for long-term automatic recording physiological status of intact plants.

The Monitor has four inputs for original automatic self-clamping leaf chambers. The chamber is normally open and shuts the leaf only for 30 seconds to take readings of both CO₂ and H₂O exchange rate with minimal disturbance of natural leaf conditions. The standard LC-4B Leaf Chamber has a 20 cm² aperture suitable for a wide variety of broad-leaf plants.

The monitor has also eleven inputs for optional sensors.

The Monitor provides fully automatic continuous operation with sampling rate selectable from 5 to 120 minutes.

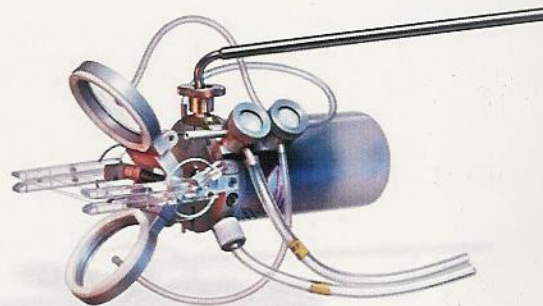
The RS-232 and RS-485 ports may be used for communicating with the PC. The Terminal Emulator software allows controlling system setup and operation as well as data downloading and export in TXT or CSV format for further processing and analysis.

Basic Measurements:

- Solar Radiation (Quantum)
- Air Temperature
- Air Humidity
- CO₂ Concentration
- Leaf CO₂ Exchange (4 channels)
- Leaf Transpiration (4 channels)
- Atmospheric Pressure

Optional Sensors:

- Pyranometer
- Leaf Temperature
- Leaf Wetness
- Sap Flow Rate (indicative)
- Stem Diameter Micro-variations
- Fruit Growth
- Soil Temperature
- Soil Moisture



**Two LC-4B Leaf chambers in operation.
The right chamber is currently measuring
while the left one stays in queue.**

PTM-48A Photosynthesis Monitor

PERFORMANCE SPECIFICATION

- Number of leaf chamber inputs: 4
- Leaf chamber area: 20 cm²
- Standard length of connecting hose: 4 m
- Normal range of airflow rate in the leaf chamber channel: 0.8 to 1.0 LPM
- CO₂ concentration measurement range: 0-1000 ppm
- Rated measurement range of CO₂ exchange: -40 to 40 μmolCO₂m⁻²s⁻¹
- Rated measurement range of H₂O exchange: 0 to 50 mgH₂O m⁻² s⁻¹
- Built-in RTH-48 Meter for measuring Photosynthetic Radiation, Air Temperature and Humidity
- Number of inputs for optional sensors: 8
- Input range for optional sensors: 0 to 10 Vdc
- Power requirements: 12 Vdc @ 60 W max.
- Interface: RS232 and RS485.
- Terminal Emulator software for Windows 98, 2000, ME and XP.
- Environmental protection index: IP55

TYPICAL SET FOR ORDERING

- 1 x System console
- 4 x LC-4B leaf chamber
- 4 x 4 m PVC double hose
- 2 x 1-m stainless steel tripod for leaf chambers and optional sensors
- 1 x RTH-48 Meter with Quantum sensor, Air Temperature and Humidity sensors
- Optional sensors
- Software (English, Windows 98 or higher)
- User's manual (English)



FI-TYPE
Fruit Growth Sensors



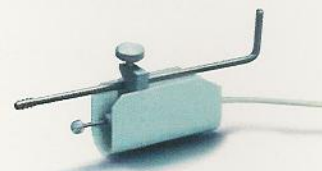
LT-2 Leaf Temperature



FI-XSM
Small Fruit Growth



SD-5M and SD-6M
Stem Microvariation



DE-1M Dendrometer



SA-20 Auxanometer



SF-8 Sap Flow Sensor



SF-4M and SF-5M Sensors

Description

Measurement Range

Notes

SD-5M Stem Microvariation Sensor	0 to 5000 μm	For 5 to 25 mm stem dia.
SD-6M Trunk Microvariation Sensor	0 to 5000 μm	For 2 to 7 cm stem dia.
DE-1 Dendrometer	0 to 10 mm	Mounted on implanted rod
FI-LM Fruit Growth Sensor	30 to 160 mm	For rounded fruits
FI-MM Fruit Growth Sensor	15 to 90 mm	For rounded fruits
FI-SM Fruit Growth Sensor	7 to 45 mm	For rounded fruits
FI-XSM Fruit Growth Sensor	3 to 30 mm	For rounded fruits
LT-2M Leaf Temperature Sensor	5 to 50 °C	Includes 2 sensors
SF-4M Sap Flow Sensor	Approx. 3 ml/h max. *	For 1 to 5 mm stem dia.
SF-5M Sap Flow Sensor	Approx. 3 ml/h max. *	For 4 to 10 mm stem dia.
SA-20 Auxanometer	0 to 2000 mm	10-bit resolution (~2 mm)
TIR-4 Pyranometer	0 to 1000 W/m ²	For solar radiation
PAR-2 Quantum sensor	0 to 2500 μmol/m ² s	
ATH-2 Air Temp. and Humidity	0 to 50 °C; 0 to 100%RH	Power aspirated
ST-21 Soil Temperature sensor	0 to 50 °C	11 cm long probe
SMS-5M Soil Moisture sensor	0 to 100 vol. %	

Each sensor has 4m cable to connect to PTM-48M Photosynthesis Phytamonitor.


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