

PLS-10R Smart Phyto-Sensor™ Pro

Provides automatic, continuous, non-invasive monitoring of leaf function and immediate microclimate conditions by recording the following measured and derived data:

- **CO₂ Exchange rate** ▪ **Transpiration rate** ▪ **Stomatal conductance** ▪ **Leaf temperature** ▪ **Leaf-Air Temperature Difference** ▪
- **Air and Leaf VPD** ▪ **Air temperature and Humidity**, ▪ **CO₂ concentration**, ▪ **Photosynthetic radiation** ▪ **Barometric pressure** ▪

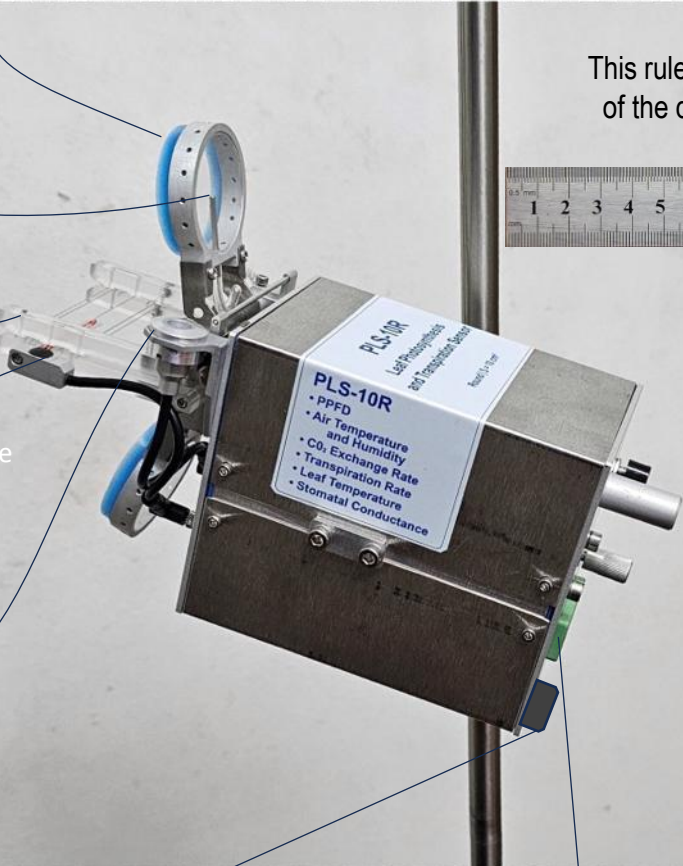
Leaf Chamber in open position.

Air intake tube from the leaf chamber to the gas measurement system.

Leaf fixation clamp

Dual leaf and air Temperature Sensor.

Photosynthetic radiation sensor (PPFD)
It replicates position and shape of the leaf chamber to accurately measure the incident radiation.



This ruler provides an idea of the dimensions of the Sensor



Leaf Chamber in closed position.

Air Intake Holes

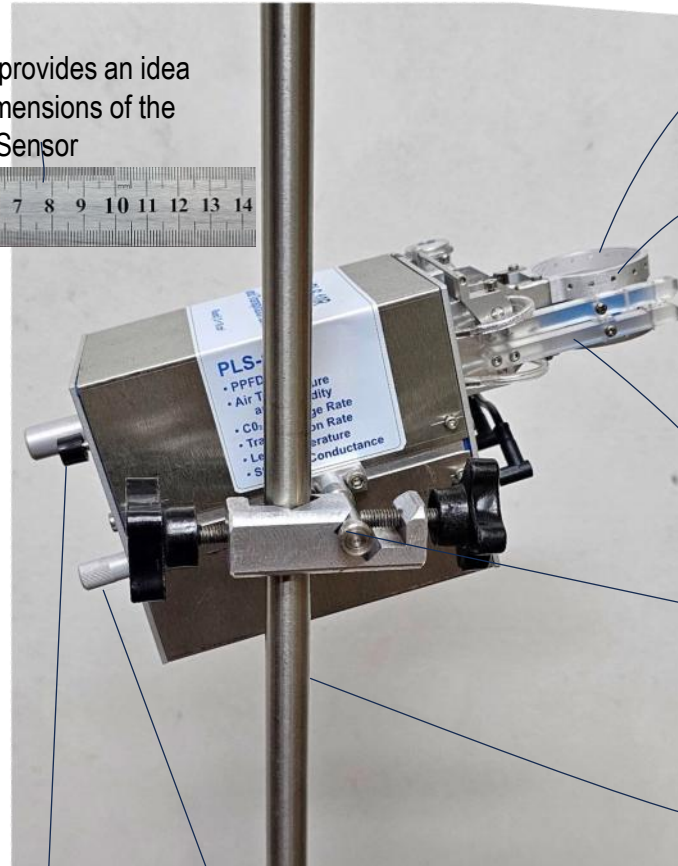
The air intake holes are evenly distributed around the lateral surface of the leaf chamber, ensuring uniform, all-around air intake into the chamber when it is closed.

Leaf fixation clamp

Hand-tightened angle clamp.

Allows fixing the PLS-10R at the desired height and angle/direction.

Support



Air exhaust

Manual chamber opening/closing button

Socket

for connecting optional RS-01 Rain Sensor, which disables air intake in rainy conditions

Sockets

for connecting SDI-12 or RS-485 Modbus communication line, and external 12V battery power supply.





Know Your Plant: Empower Scientists and Farmers with Plant Insights!

Our cutting-edge instrument is designed for continuous, non-invasive monitoring of key physiological parameters of plant leaves. Compact, fully automated, and highly accurate, it integrates seamlessly with modern research and agricultural practices, providing comprehensive data for optimized plant care and analysis.

Performance Characteristics

- ***Measurement Cycle***

The PLS-10R initiates the measurement cycle upon receiving an external command. The **active phase** of the working cycle—when the leaf chamber is closed and covers a section of the leaf from both sides—lasts only 10 to 15 seconds. This ensures minimal impact of the leaf chamber on the leaf's vital functions. At the end of the cycle, the device saves all results to memory and transmits them via the communication line upon request.

- ***Communication***

Supports SDI-12 or RS-485 Modbus communication protocols. It can be integrated into the same lines as other Phyto-Sensors™, communicating via the same protocol.

- ***Power Supply***

External 12V rechargeable battery or any other regulated 12V power supply.

Applications

- Academic research on plant physiology.
- Monitoring plant responses in controlled environments.
- Precision agriculture and environmental studies. Perfect for phenotyping applications.

