YP- SLL1 Photosynthesis System

Brief Introduction

The SLL1 Plant Photosynthesis Measurement System is an experimental instrument used to detect photosynthesis in **living plant leaves** in artificial climate chambers, greenhouses, plastic tunnels, fields, and other environments.

It can measure a total of 15 parameters, including:ambient CO_2 concentration, ambient temperature and humidity, leaf chamber temperature and humidity, leaf surface temperature, atmospheric pressure, photosynthetically active radiation (PAR), net photosynthetic rate (Pn), stomatal conductance (Gs), transpiration rate (Tr), intercellular CO_2 concentration (Ci), water use efficiency (WUE), respiration rate (Rd), transpiration ratio (TR), etc.

It is widely used in scientific research on plant growth physiology, photosynthetic physiology, and stress physiology.This photosynthesis system is suitable for agricultural research, teaching, horticulture, grassland science, forestry, and other fields.

Product Features

Intelligent: Equipped with Android operating system and high-sensitivity touch screen, providing efficient human- machine interaction, real- time display, and better operation experience.

High Stability: Dual- wavelength infrared CO_2 analyzer with temperature regulation and atmospheric pressure measurement unit, effectively improving the stability and accuracy of CO_2 detection and avoiding large fluctuations caused by temperature changes.

Multi- function: Simultaneously measures photosynthetic rate, transpiration rate, intercellular CO_2 concentration, stomatal conductance, water use efficiency, as well as CO_2 concentration, relative humidity, PAR, air temperature, leaf temperature, atmospheric pressure, and other indicators.

Customizable: Users can edit custom experiment remarks according to measurement needs.

Data Analysis: Supports simultaneous analysis of multiple groups of data after experiments for convenient comparison.

Large Screen: 7-inch high-sensitivity touch screen with user-friendly interface for clearer data display.

Data Export: Supports data copy via USB flash drive, plug-and-play without driver.

Long Battery Life: Continuous field use for 10–12 hours when fully charged.

Portability: Compact, lightweight, with a portable case for easy single-person mobile testing.

Measurement Parameters

- **Ambient CO_2 Concentration**: Non-diffusive infrared CO_2 analyzer; Range: 0–3000 μmol/mol (ppm); Resolution: 0.0005; Error ≤ 3% FS
- **Ambient Temperature**: Range: −20–80 °C; Resolution: 0.001; Error ≤ ±0.2 °C
- **Ambient Humidity**: Range: 0–100% RH; Resolution: 0.001; Error ≤ ± 1% RH
- **Leaf Chamber Temperature**: Range: −20–80 °C; Resolution: 0.001; Error ≤ ±0.2 °C
- **Leaf Chamber Humidity**: Range: 0–100% RH; Resolution: 0.001; Error ≤ ±1% RH

- **Leaf Surface Temperature**: Range: −20–60 °C; Resolution: 0.001; Error ≤ ±0.2 °C
- **Atmospheric Pressure**: Range: 30–110 kPa; Resolution: 0.01; Error ≤ ± 0.06 kPa
- **Photosynthetically Active Radiation (PAR)**: Range: 0–3000 μmol/(m²·s); Resolution: 0.001; Error ≤ ±5 μmol/(m²·s)
- **Photosynthetic Rate (Pn)**: Unit: μmol/(m²·s); Resolution: 0.001
- **Stomatal Conductance (Gs)**: Unit: mmol H_2O/(m²·s); Resolution: 0.001
- **Transpiration Rate (Tr)**: Unit: mmol H_2O/(m²·s); Resolution: 0.001
- **Intercellular CO_2 Concentration (Ci)**: Unit: μmol/mol; Resolution: 0.001
- **Water Use Efficiency (WUE)**: Unit: μmol CO_2/mol H_2O; Resolution: 0.001
- **Respiration Rate (Rd)**: Unit: μmol/(m²·s); Resolution: 0.001
- **Transpiration Ratio (TR)**: Unit: μmol H_2O/mmol CO_2; Resolution: 0.001

Instrument Specifications

- **Leaf Chamber Size**: Standard 3.3 × 3.3 cm
- **Main Control Chip**: ARM Cortex-A7, RK3288 / Quad-core, 1.88 GHz
- **Memory**: RAM 1 GB, ROM 16 GB
- **Data Interface**: USB

- **Power Adapter**: 100–240 V, universal for domestic and international use
- **Lithium Battery**: 8000 mAh
- **Charging Indicator**: Red when charging, green when fully charged
- **Main Unit Dimensions**: 312.3 × 308.5 × 186 mm
- **Handle Dimensions**: 250 × 30 × 48 mm
- **Weight**: Main unit 4 kg, handle 0.7 kg