

CI-340 Hand-Held Photosynthesis System

The CI-340 is a lightweight hand-held photosynthesis system. It features a new design concept and a compact solid-state structure. The entire system - display, keypad, computer, data memory, CO₂/H₂O gas analyzer, flow control system, and battery - is contained in a single hand-held case. It has everything you need to measure photosynthesis, transpiration, stomatal conductance, and internal CO₂ concentration, as well as many other factors. Because the chamber is connected directly to the CO₂/H₂O differential gas analyzer, there is virtually no time delay when measuring CO₂/H₂O in the chamber. With CID's carbonate injection CO₂/H₂O generator module, the CI-340 can precisely control CO₂ and H₂O concentrations in the leaf chamber. The CI-340 can also control temperature and light intensity with the optional temperature and light control modules. Furthermore, a chlorophyll fluorescence module can be attached to the CI-340 to simultaneously measure photosynthesis and chlorophyll fluorescence. These features make the CI-340 a fast, small, and accurate photosynthesis system for research and teaching.

Features

- ▶ An entire photosynthesis system in one hand-held case.
- ▶ Lightweight and truly portable.
- ▶ Open and closed system measurements.
- ▶ 9 interchangeable chambers for different types of leaves.
- ▶ Soil respiration chamber and plant canopy attachment available.
- ▶ Modular attachments include light, temperature control, CO₂/H₂O supply, and chlorophyll fluorescence measurement.
- ▶ Infrared non-contact leaf temperature measurement.
- ▶ Measures chlorophyll fluorescence and photosynthesis simultaneously.



Specifications

Main System

Power Supply: 7.2 mAh. Rechargeable battery providing 4 hours of continuous use, or AC power with adapter provided, or 6 ~ 12 VDC input

Data Storage: 2 MB internal FLASH RAM

Data Output: PC link cable, RS232 or USB (with adapter)

Dimensions: 452 L × 53 W × 48 D mm

Weight: 1.5 kg (3 lb.) with battery

Flow Rate to Chamber: 100 ~ 1000 cm³min⁻¹ (1 lpm)

Readings Displayed: LCD 40 × 6 characters or 320 × 60 dots graphic

CO₂ Analyzer

Type: Stable analyzer for accurate CO₂ measurements

Sensor: Low-power infrared detector. No sensitivity to motion

Typical Response Time: @5 sec

Resolution: 0.1 ppm

Warm-Up Time: @ minutes

Accuracy: Better than ± 2% anytime

H₂O Analyzer

Type: Stable analyzer for accurate H₂O measurements

Range: 0 ~ 100% RH

Sensor: Humidity-sensitive capacitor

Accuracy: ±2% at 10% RH. ±3.5% at 90% RH

Typical Response Time: @5 sec

Typical Signal: 0.5V for 50% RH

PAR Sensor

Type: Filtered GaAsP photodiode

Range: 0 ~ 2500 mmol m⁻²s⁻¹

Accuracy: 5 mmol m⁻²s⁻¹

Response: 400 ~ 700 nm

AIR Temperature Sensor

Type: Thermocouple

Range: -15 ~ 50°C

Accuracy: ± 0.1°C

Leaf Temperature Sensor

Type: Infrared

Range: -10 ~ 50°C

Accuracy: ± 0.3°C

Module Specifications

CI-301LA Light Module

Type: Red and blue LED lamp

Red Peak Wavelength: 660 nm ± 10 nm at 25°C

Blue Peak Wavelength: 470 nm ± 10 nm at 25°C

Output Range: 0 ~ 2500 mmol m⁻²s⁻¹

Emitting Area: 80 × 40 mm

Dimensions: 64 × 100 × 160 mm

CI-301AD CO₂ & H₂O Supply Module

CO₂ Supply: CO₂ cartridge

CO₂ Range: 0 ~ 2000 ppm optional

H₂O Supply: Water vapor generator.

H₂O Range: 0 ~ 100% RH

Dimensions: 64 × 100 × 160 mm

CI-510CS Temperature Control Module

Type: Thermoelectric cooler

Range: -25 ~ +25°C from ambient temperature

Cooling Head Dimensions: 55 × 43 × 14 mm

Dimensions: 64 × 100 × 160 mm

CI-510CF Chlorophyll Fluorescence Module

Modulated Light Intensity: 0.25 uE at 12 mm

Flash Light Intensity: 3000 uE at 12 mm

Modulation Frequency: 8 ~ 80 Hz

Fiber Optic Probe: Bifurcated light guide

Dimensions: 64 × 100 × 160 mm

The four modules can be packaged in one carrying bag.

Dimensions: 200 × 128 × 160 mm



Specifications subject to change without notice.

Order Information

Includes infrared gas analyzer, PAR sensor, air temperature sensor, choice of one leaf chamber, an infrared non-contact leaf temperature sensor, a Soda Lime tube, a Silica Gel tube, a spare parts kit, rechargeable battery, battery charger, RS232 communication cable, communication software, operating manual, and a carrying case.

