

CI-340

■ Handheld Photosynthesis System

Accurate and Portable— Gas Exchange on the Go!

Compact and durable, this single-handed tool measures photosynthesis, respiration, transpiration, stomatal conductance, PAR and internal CO_2 all in one easy to carry unit. Optional accessory modules enable the researcher to control CO_2 , H_2O , temperature, light intensity, and measure chlorophyll fluorescence, while the ten different customized chambers accommodate any leaf size, including conifer needles and cacti. Direct chamber connection to the $\text{CO}_2/\text{H}_2\text{O}$ gas analyzer reduces measurement delay and enables rapid measurement of gas exchange.

Control Modules



CI-301LA

■ Light Module

The Light Module allows researchers to adjust the light intensity above the leaf in the chamber to perform light-response curves and standardize light environment across measurements.



CI-301AD

■ Adjustable H₂O & CO₂ Control Module

The H₂O & CO₂ Control Module enables researchers to set or adjust the CO₂ and H₂O concentrations in the incoming air stream in order to investigate leaf-level physiological responses.



CI-510CS

■ Temperature Control Module

The Temperature Control Module allows researchers to adjust the temperature of the leaf chamber to evaluate changes in photosynthetic rate relative to high or low temperatures.



CI-510CF

■ Chlorophyll Fluorescence Module

The Chlorophyll Fluorescence Module measures fluorescence simultaneously alongside gas-exchange measurements and provides researchers with information about changes in photosynthesis efficiency and heat dissipation from a leaf.

The control modules expand the use of the CI-340 and enable users to modify light intensity, manipulate CO₂ and H₂O concentrates, adjust temperature, and measure chlorophyll fluorescence.

Leaf Chambers



LC-1

■ Square Leaf Chamber

For open-system measurements of trees, shrubs and herbs with small, broad leaves.
25 mm x 25 mm



LC-5

■ Large Cylindrical Leaf Chamber

For open-system measurements of large-needled conifers. 50 mm x 70 mm



LC-10

■ Liter Leaf Chamber

For closed-system measurements of very large leaves. 180 mm x 130 mm x 170 mm



LC-11

■ Cactus Leaf Chamber

For measuring the leaves of Cacti with the CI-340 Handheld Photosynthesis System.

Our **10 customized leaf chambers** maximize the amount of leaf area enclosed in the sample chamber. Visit our website to see more.

Product Features

- ▶ Lightweight and optimized for single-handed operation
- ▶ Stable analyzers for accurate CO₂ and H₂O measurements
- ▶ Accommodates open and closed system measurements
- ▶ Infrared, non-contact leaf temperature measurement
- ▶ Ten interchangeable chambers customized for different leaf types
- ▶ Custom soil respiration chamber
- ▶ Control modules for light, temperature control, CO₂ / H₂O supply and chlorophyll fluorescence measurement
- ▶ Chlorophyll fluorescence and photosynthesis measured simultaneously



Applications

- ▶ Ecologists use the CI-340 to measure seasonal changes in photosynthetic rate as a response to temperature shifts.
- ▶ Agronomists use the CI-340 to measure water status of crop plants across related genotypes.
- ▶ Horticulturalists use the CI-340 to measure changes in leaf physiology as a result of drought stress.

To see a full list of application resources including published research with the **CI-340 Handheld Photosynthesis System**, please visit:
www.cid-inc.com/applications

