

# CI-340

## ■ Handheld Photosynthesis System

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### Accurate and Portable— Gas Exchange on the Go!

Compact and durable, this single-handed tool measures photosynthesis, respiration, transpiration, stomatal conductance, PAR and internal  $\text{CO}_2$  all in one easy to carry unit. Optional accessory modules enable the researcher to control  $\text{CO}_2$ ,  $\text{H}_2\text{O}$ , 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

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## CI-301LA

### ■ Light Module

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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 H<sub>2</sub>O & CO<sub>2</sub> Control Module

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The H<sub>2</sub>O & CO<sub>2</sub> Control Module enables researchers to set or adjust the CO<sub>2</sub> and H<sub>2</sub>O concentrations in the incoming air stream in order to investigate leaf-level physiological responses.



## CI-510CS

### ■ Temperature Control Module

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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

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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 CO<sub>2</sub> and H<sub>2</sub>O concentrates, adjust temperature, and measure chlorophyll fluorescence.

# Leaf Chambers

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## LC-1

### ■ Square Leaf Chamber

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



## LC-5

### ■ Large Cylindrical Leaf Chamber

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



## LC-10

### ■ Liter Leaf Chamber

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



## LC-11

### ■ Cactus Leaf Chamber

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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 CO<sub>2</sub> and H<sub>2</sub>O 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, CO<sub>2</sub> / H<sub>2</sub>O 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](http://www.cid-inc.com/applications)