



Plant Canopy Imager CI-110

DESCRIPTION

Fast and simple, In depth canopy analysis any time, anywhere. Capture wide-angle plant canopy images while instantly estimating Leaf Area Index (LAI) and measuring Photosynthetically Active Radiation (PAR) levels. The digital, self-leveling camera, updated touch screen, and included filters work together to collect, calculate, and save data in any daylight condition.

New unit with delay trigger release capture and amplified antennae connected to four satellite constellations provide accurate, instant location data along LAI measurements.

Weight and dimension

- Camera Sensor: 5 cm x 5 cm
- Total Length: 84 cm
- Imaging Probe and Arm Weight: 1.5 kg
- PAR (Range / Accuracy): 0-2500 $\mu\text{mol m}^{-2}\text{s}^{-1}$ / 5 $\mu\text{mol m}^{-2}\text{s}^{-1}$



The NEW Plant Canopy Imager

CI-110:

The new CI-110 combines hemispherical canopy photography and image analysis with light measurement to non-destructively calculate leaf area index (LAI) and other canopy parameters. The self-leveling digital camera takes 150 degree images of plant canopies for hemispherical photograph analysis.

The 24 photosynthetically active radiation (PAR) sensors in the arm of the instrument can be used for an alternative measurement of LAI, to assess current radiation levels of the site, and to evaluate sunflecks. The

updated, ergonomic design is paired with a 7" capacitive touch screen, a trigger with delayed image release for crisp images, and the ability to add or exchange filters over the camera lens.

Lens: Equidistant wide-angle lens
Image resolution: 8 Megapixel(s)
Interface: 7" capacitive touch screen, 6 button keypad, trigger-release capture
Measuring time: 0.5 second
Fish-eye lens angle: 150°
Operating temperature: 5 to 50 °C

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THEORY OF OPERATION

Leaf Area Index (LAI) is defined as one sided leaf area divided by the total ground area. Photosynthetically Active Radiation (PAR) designates the spectral range of solar radiation (400-700 nm). By measuring PAR and LAI simultaneously, one is able to calculate LAI and canopy parameters using a variety of methodologies.

To calculate LAI, the CI-110 captures a 150° fisheye image of the canopy, which is divided into zenith and azimuthal divisions. Using the software included on the tablet computer, the user can include or exclude any zenith and azimuth division to focus on specific portions of the canopy for study.

Product Features:

- Self-leveling digital camera provides 150° field-of-view image of the plant canopy
- Measures photosynthetically active radiation (PAR) and calculates sunflecks using 24 photodiodes
- Non-destructive calculation of leaf area index (LAI) using images or PAR sensors
- Calculated LAI of plant canopies across multiple size classes; adjustable camera lens focus for varying canopy heights
- Calculation of canopy gap fraction distribution, leaf angle distribution, and plant canopy extinction coefficients
- No above-canopy reference readings required for gap fraction LAI
- Image and data visible in the field and saved for further analysis
- Full, user-selectable range of zenith & azimuth angles, digitally applied
- User selectable and literature-based thresholding methods, including the Otsu Method and Entropy Crossover Technique
- Performs measurements under any sky condition
- Ability to change images RGB (red, green and blue) color value(s)
- Location acquired via GPS, Glonass, Beidou and Galileo with amplified antenna
- Internal compass for standardizing measurements across locations
- Neutral Density Filters included to optimize images across varying light conditions

APPLICATIONS

Physiological Impacts of Short-Term UV Irradiance Exposures on Cultivars of Glycine Max

Radiation use efficiency and leaf CO₂ exchange for diverse C4 grasses

Contact info



Monitoring MENA

Insight into instrumentations

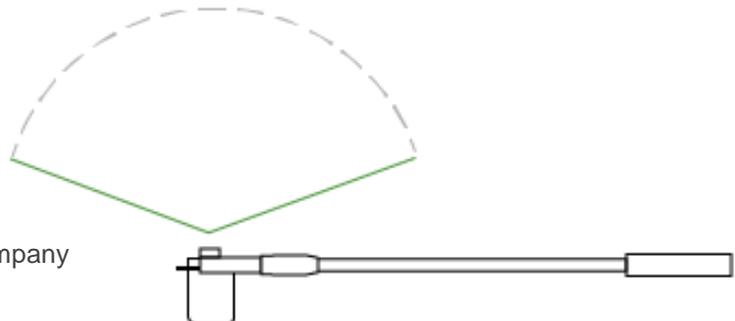
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This Instrument is manufactured by our principle company

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