

CI-110

■ Plant Canopy Imager

The 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° images of plant canopies and the 24 photosynthetically active radiation (PAR) sensors in the wand of the device measure light to calculate Sunflecks. The handheld tablet computer powers the wand and displays a live-updating image and simultaneous plant canopy calculations simultaneously.



Lens	Equidistant wide-angle lens
Image resolution	768 x 494 pixels
Interface	USB
Measuring time	0.5 second
Fish-eye lens angle	150°
Operating temperature	5 to 50 °C
Probe size	20 x 20 mm
Arm length	400 mm
Probe and arm weight	0.5 kg
Battery capacity	Approximately 6 hours

Product Features

- ▶ Permanent, 150° image of the plant canopy
- ▶ Fully integrated ceptometer with 24 photodiodes to measure Sunflecks in the range of Photosynthetically Active Radiation (PAR)
- ▶ Measures photosynthetically active radiation (PAR) and calculates sunflecks
- ▶ Non-destructive calculation of leaf area index (LAI)
- ▶ Calculated LAI of plant canopies 30cm high up to forest canopy
- ▶ Adjustable camera lens focus for varying canopy heights
- ▶ Image collection under diffuse & direct illumination conditions
- ▶ No above-canopy reference readings required
- ▶ Image and data visible in the field and saved for further analysis
- ▶ GPS location saved for follow-up measurements
- ▶ Internal compass for standardizing measurements across locations
- ▶ Full, user-selectable range of zenith & azimuth angles
- ▶ Digital masking of unwanted elements
- ▶ Calculation of Canopy Gap size distribution
- ▶ User selectable and literature-based thresholding methods, including the Otsu Method and Entropy Crossover Technique
- ▶ Digital color filters to further distinguish sky and plant
- ▶ Calculation of diffuse radiation transmission coefficients, sky view factor, mean foliage inclination angles, and plant canopy extinction coefficients