

## CI-110 Technical and Application FAQs:

1. How do you tell if the compass sensor is working right? Where are instructions to calibrate the compass?

If the compass points north after calibration, it is good. Calibration instructions can be found in the support forum (<http://www.cid-inc.com/support/viewtopic.php?f=5&t=124>) and will be added to the CI-110 manual the next time it is revised.

2. In the “GAP Fraction Threshold” menu of the software, how do you know which method (Otsu method, manual threshold or Entropy Crossover Method) to select?

The threshold method to select is the decision of the user. Each user must decide which method provides the best separation of plant (green) and sky (grey) elements, according to her/his experience. The different methods are provided for convenience. To change the method, go to Measurement<Gap Fraction Threshold and select the method from the drop down list. Press Save.

3. Why doesn't CID use a 150° fish-eye lens (vs. 180°), to avoid capturing the user on the side of the image?

With the software, it is easy to “mask” the outer 30° of the image from the analysis. That is what the Azimuth and Zenith divisions are for: to remove unwanted edges or parts of the image. You can switch between 150° images and 180° images in the Advanced<Compass, Lens and Camera settings.

4. How could you verify the LAI measured by the CI-110?

The CI-110 provides an estimate of LAI. The only way to verify is to harvest all of the plants in the image and measure leaf area. This has been done before, using the CI-110 {{977 Negrón Juárez, R.I. 2009}}.

5. How do you make the most accurate estimate of LAI with the CI-110? Does the contrast need to be adjusted in the field?

A properly exposed image is important. If the image is too bright, then leaves can appear like sky. If the image is too dark, then the sky cannot be distinguished from plants. It is important to look image and adjust the exposure manually, if the automatic exposure is incorrect.

6. How could a user get the most accurate data if the image has to be taken at noon under full sunlight?

This is a difficult situation, but not impossible. It may help if the user can prevent direct light from entering the lens, by placing the lens in a shadow.

7. Can the CI-110 software be used to analyze picture from other fish-eye cameras? How?

Yes, the CI-110 software can be downloaded from the website (<http://www.cid-inc.com/ci-110-software.php>). CID cannot support researchers using other fish-eye cameras.