

## CI-710

### ■ Miniature Leaf Spectrometer

The CI-710 Miniature Leaf Spectrometer measures light transmission, absorption, and reflection of leaves. The reference illumination light is generated by two combined sources: a blue LED and an incandescent lamp providing output covering the visible to near infrared (NIR) range covering the range of 400 – 950 nm.

The leaf clip isolates stray light and secure the specimen for analysis. The SpectraSnap! software program rapidly estimates pigments using indices and outputs both the waveform and individual wavelength values from the spectrometer in a conveniently analyzed format.

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|------------------------------|--|
| <b>Dimensions</b>            | 89.1 mm x 63.3 mm x 34.4 mm                                |
| <b>Weight</b>                | 290 g  |
| <b>Detector</b>              | Toshiba TCD1304AP Linear CCD array                         |
| <b>Wavelength range</b>      | 400-950 nm   |
| <b>Pixels</b>                | 3648 pixels  |
| <b>Pixel size</b>            | 8 $\mu$ m x 200 $\mu$ m                                    |
| <b>Pixel well depth</b>      | 100,000 electrons  |
| <b>Signal-to-noise ratio</b> | 300:1 (at full signal)                                     |
| <b>A/D resolution</b>        | 16 bit   |
| <b>Dark noise</b>            | 50 RMS counts  |
| <b>Corrected linearity</b>   | >99.8%   |
| <b>Sensitivity</b>           | 130 photons/count at 400 nm;<br>60 photons/count at 600 nm |
| <b>Optical resolution</b>    | ~0.3-10.0 nm FWHM (grating dependent)                      |
| <b>Integration time</b>      | 3.8 ms - 10 seconds  |

## Product Features

- ▶ Measurements of Reflectance, Absorbance, and Transmittance of leaves
- ▶ Portable and rapid spectral analysis
- ▶ Handheld computer included to power the instrument and run preloaded SpectraSnap! software (handheld tablet included)
- ▶ Quick adaptability for measuring intensity and irradiance of light environments
- ▶ Analysis and integration of peaks at multiple wavelengths with included SpectraSnap! Software
- ▶ 29 pre-programmed Vegetation Indices
- ▶ User-programmable, automatically calculated indices



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| <b>Dynamic range</b>       | 2 x 10 <sup>6</sup> (system), 1300:1 for a single acquisition |
| <b>Stray light</b>         | <0.05% at 600 nm; 0.10% at 435 nm                             |
| <b>Power supply</b>        | USB Powered via PC  |
| <b>Power consumption</b>   | 400 mA @ 5 VDC  |
| <b>Data transfer speed</b> | Full spectrum to memory every 5 ms with USB 2.0 port          |
| <b>Trigger modes</b>       | Automatic & manual  |