

Optimization. Growth. Profitability.

Light Measurement Solutions for Greenhouse Management



New LI-180 Spectrometer

Precise, portable spectral measurement technology with flexible software options ideal for growers on the move. Capture spectral composition and light intensity measurements inside your greenhouse in seconds and get instantaneous feedback on the full-color display.

Why Measure the Spectra of Your Lights?

Measuring and modifying the intensity of specific wavelengths of supplemental lighting provides enhanced control of desirable plant characteristics, which can add significant value to your greenhouse or growth chamber operation.



**Shorten Production Time
and Increase Total Yield**



**Enhance Taste, Appearance,
and Chemical Content**



**Improve Insect, Disease, and
Environmental Stress Resistance**

The LI-180 Advantage

Measure the spectral composition of your lights in 1-nm wavelength intervals (12 nm bandwidth) including PAR, UV, and far-red with one-click capture of dozens of parameters.

Results are displayed immediately on the touch-screen display and data files can be viewed and saved through the instrument and desktop or mobile applications.

Data captures can be configured for specific time intervals and displays can be customized to show your variables of interest.

LI-250Q PAR Package

Measure the intensity of photosynthetically-active radiation (PAR) inside your greenhouse and optimize your lighting for maximum production and energy efficiency. Includes the LI-190R Quantum Sensor, LI-250A Light Meter, and 2003S Mounting and Leveling Fixture.

Measure the Light That Matters, No Matter the Source

The LI-190R Quantum Sensor measures light intensity with uniformity across the entire 400-700nm (PAR) waveband. Get the same precision in sun, artificial lighting sources, or a combination of natural and artificial light, without the need for spectral correction factors.

Remove the Guesswork from Supplemental Lighting

As the intensity of natural light in your greenhouse changes throughout your photoperiod, so do your artificial light requirements. Reducing artificial lighting during peak sun hours can significantly lower energy costs, but guessing or estimating light intensity often leads to over- or under-lighting. Be confident in your lighting strategy by measuring total PAR directly inside your greenhouse in changing combinations of light sources with the LI-250Q package.



Specifications

LI-180 Spectrometer

Detector: CMOS Linear Image Sensor

Wavelength Range: 380 to 780 nm

Wavelength Data Increment: 1 nm

Spectral Bandwidth: Approximately 12 nm (half-bandwidth)

Measurement Range:

- 70 to 150,000 lx (lux)
- 0.5 to 1,000 W/m² (irradiance)
- 1 to 3,000 μmol s⁻¹ m⁻² (PPFD)

Illuminance Accuracy: ± 5%

Illuminance Repeatability (2σ): 0.2%

Color Accuracy: x y ± 0.0025

Integration Time Range: 2 to 2000 ms

Display: 3.5-inch, 320 x 420 Resistive Touch LCD

Battery Life: 5 hours typical with continuous operation

Power Requirement: Adapter, 2500 mAh (3.7 V rechargeable lithium ion battery included)

Data Output Interface:

- 16 GB SD Card, included (SD2.0, SDHC, up to 32GB)
- 8 GB WiFi SD Card, included (compatible with iOS and Android)
- Mini USB Port (USB 2.0)

Data Output Format: .xls, .jpg

Storage Capacity: 68,000 files (for 8GB SD card)

Size: 20 cm L x 7.7 cm W x 2.6 cm D (7.8" x 3" x 1")

Weight: 0.28 kg (0.62 lbs)

Operating Temperature Range: 0 to 35 °C

Operating Humidity Range: 0% to 70% RH (non-condensing)

LI-190R Quantum Sensor

Detector: High stability silicon photovoltaic detector (blue enhanced)

Wavelength Range: 400 to 700 nm

Absolute Calibration: ± 5% traceable to the U.S. National Institute of Standards and Technology (NIST)

Sensitivity: Typically, 5 μA to 10 μA per 1,000 μmol s⁻¹ m⁻²

Linearity: Maximum deviation of 1% up to 10,000 μmol s⁻¹ m⁻²

Response Time: Less than 1 μs (2 m cable terminated into a 604 Ohm load)

Temperature Dependence: ± 0.15% per °C maximum

Cosine Correction: Cosine corrected up to 82° angle of incidence

Azimuth: < ± 1% error over 360° at a 45° elevation

Tilt: No error induced from orientation

Operating Temperature Range: -40 to 65 °C

Operating Humidity Range: 0% to 95% RH (non-condensing)

LI-250A Light Meter

Accuracy:

- 25 °C: Typically, ± 0.4% of reading
- 0 to 55 °C: Typically, ± 0.6% of reading

Range Selection: Autoranging (3 ranges)

Signal Averaging: Sensor output can be collected and displayed as a 15-second average (approximately 60 readings)

Display: LCD display

Battery Life: 150 hours typical with continuous operation

Power Requirement: 9V alkaline battery

Size: 14 cm L x 7.7 cm W x 3.8 cm D (5.5" x 3" x 1.5")

Weight: 0.26 kg (0.57 lbs)

Operating Temperature Range: 0 to 55 °C

Operating Humidity Range: 0% to 95% RH (non-condensing)

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