DORGEAN
Beijing Dorgean Electronic Technology Co.,Ltd

Instrument Expert
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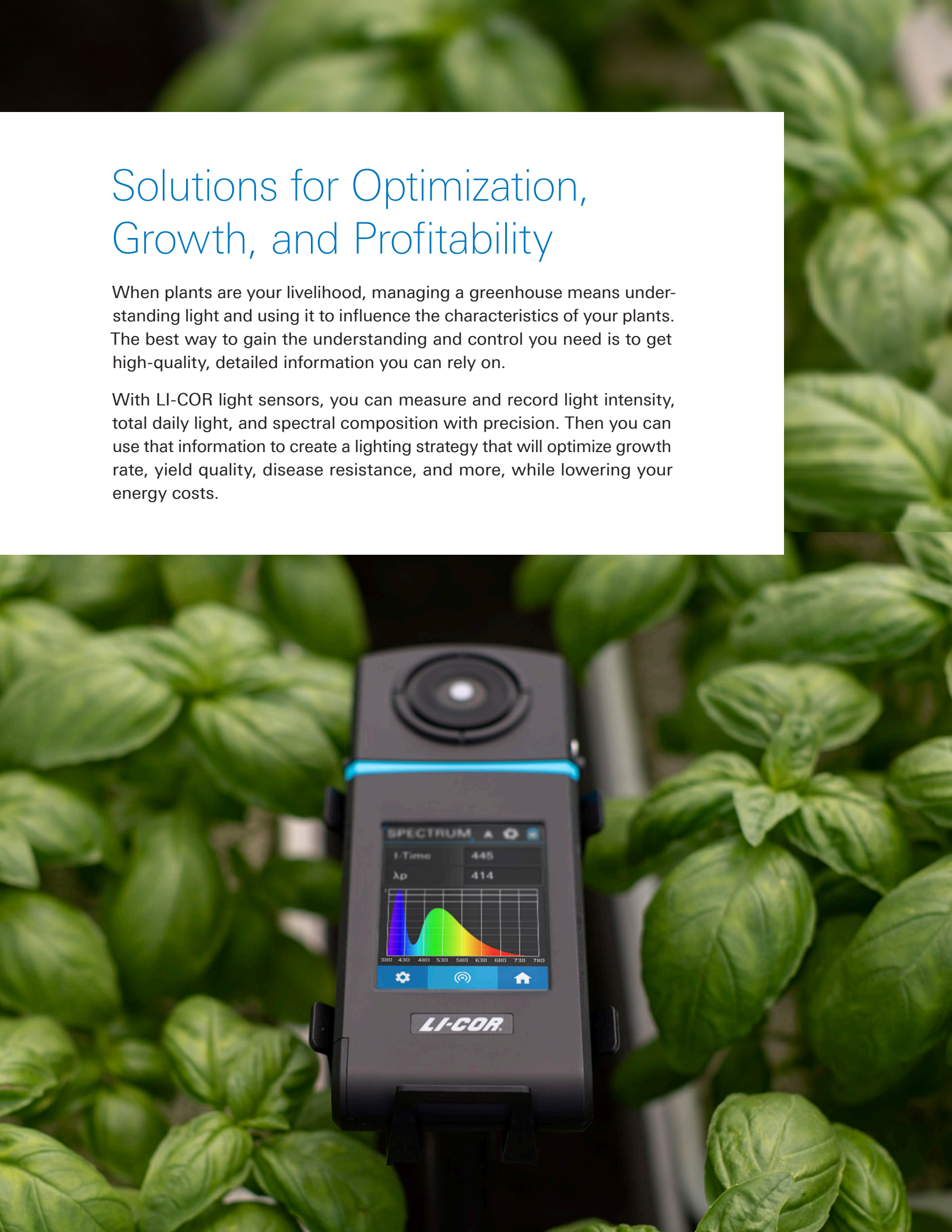
Light Measurement Solutions for Greenhouse Management

Reliable Data to Grow Your Greenhouse

Solutions for Optimization, Growth, and Profitability

When plants are your livelihood, managing a greenhouse means understanding light and using it to influence the characteristics of your plants. The best way to gain the understanding and control you need is to get high-quality, detailed information you can rely on.

With LI-COR light sensors, you can measure and record light intensity, total daily light, and spectral composition with precision. Then you can use that information to create a lighting strategy that will optimize growth rate, yield quality, disease resistance, and more, while lowering your energy costs.



LI-180 Spectrometer

The LI-180 provides precise and portable spectral measurements with flexible software options ideal for growers on the move. View spectral composition and light intensity 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 enables 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

Record the spectral composition of your lights in 1-nm wavelength intervals (12 nm bandwidth) including photosynthetically active radiation (PAR) and red, blue, green, UV, and far-red wavebands with one-click measurements of dozens of parameters. Results are displayed immediately on the touchscreen display and data files can be viewed and saved through the instrument and desktop or mobile applications.

The LI-180 can be set to take automatic measurements at specified intervals while you focus your attention elsewhere.

At Home in Any Greenhouse

The LI-180 is fast and flexible. Take measurements where you need to with the instrument or use the mobile app to control the LI-180 without the need to be near the device. Instant measurements give you the details you need to adjust your lighting strategy according to species. Customize your display to see the variables that matter to you.

LI-1500 DLI Package

Lighting conditions and intensities continually change with time of day, time of year, and/or with use of periodic supplemental lighting. For vegetation requiring long-day lighting, or lighting for suppression or stimulation of flowering, the total light exposure is critical. In many of these cases, Daily Light Integral (DLI) may be more useful than instant survey measurements.

DLI can be difficult to determine by survey measurements. With the LI-1500 DLI package, you can automatically log light at precise, regular intervals throughout the day to compute accurate DLI measurements.

Be confident that you are providing the right amount of light for achieving ideal growth and maximum yield while being mindful of your bottom line. Includes the LI-190R Quantum Sensor, LI-1500 Light Sensor Data Logger, and 2003S Mounting and Leveling Fixture.

Answers You Can Apply

The amount of supplemental lighting required to maintain a consistent DLI can vary dramatically throughout the year. The LI-1500 DLI package greatly simplifies the complex process of measuring and calculating your DLI by automatically taking measurements and doing the math for you.

After analyzing your results, you can design a lighting strategy specific to your needs.

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 PAR directly inside your greenhouse in changing combinations of light sources with the LI-250Q package.

Get the Most Out of Your Light, Get the Most Out of Your Greenhouse

When you can measure and optimize your lighting, you gain an additional layer of control over the plant characteristics that matter most to you and your species. You can plan for seasonal changes in supplemental lighting needs and even monitor the degradation of your lights.

With LI-COR light measurement solutions, you can maximize the quality and yield of your greenhouse and avoid wasting costly energy resources.

Light Measurement Solutions

LI-180 Spectrometer

Measure the spectral composition of your lighting to tune your strategy.

LI-1500 DLI Package

Calculate Daily Light Integral and log continuous PAR measurements.

LI-250Q PAR Package

Take instant measurements of photosynthetically active radiation intensity.

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 32 GB)
- 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 8 GB 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 photo-voltaic 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-1500 Light Sensor Logger

Accuracy: 25 °C ± 0.3% of full scale reading
Standard Modes Sampling Rate: 1 per 10 seconds, 1 per minute, 1 per hour, or 1, 2, 5, 10, or 20 Hz
Raw Mode Sampling Rate: 1 – 500 Hz
Standard Logging Rate: Every sample 100 msec – 24 hr
Raw Logging Rate: Every sample (1 – 500 Hz)
Signal Averaging: Averaging windows depend on standard modes sampling rate
Display: 128 x 64 graphics display
Battery Life: 80 hours typical for 1 Hz sampling and logging rate, 40 hours with GPS on
Size: 20.9 cm L x 9.8 cm W x 3.5 cm D (8.2" x 3.9" x 1.4")
Weight: 0.454 kg (1.0 lb) with batteries
Power Requirements:
- 4 "AA" size batteries
- USB, AC-DC power adapter
- USB, external battery power pack (customer supplied)

Operating Temperature Range: -20 to 50 °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)

Choose the right solutions for your greenhouse.

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