LI-250A Light Meter

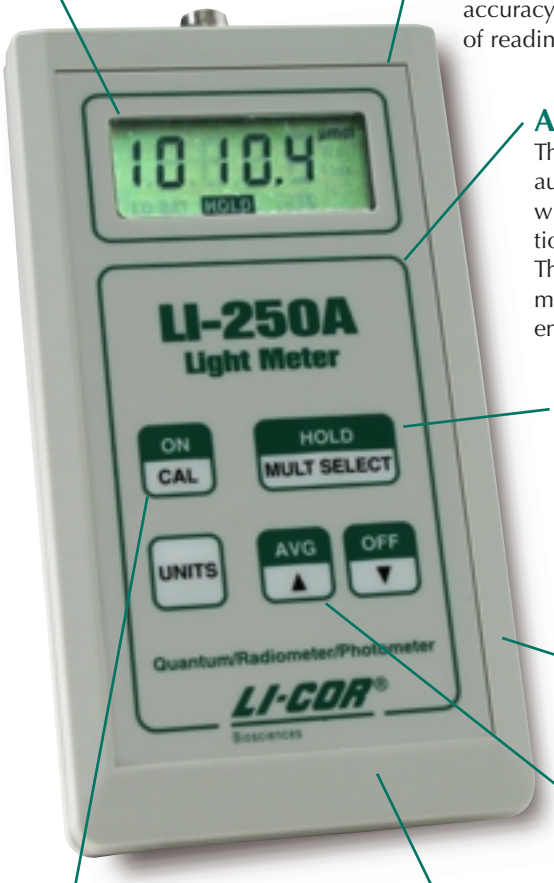
A Cost-Effective Solution For Light Measurement Using LI-COR® Radiation Sensors

Direct Digital Readout

Instantaneous sensor output or 15-second averages can be shown on the LI-250A's display. Measurement units for any LI-COR® sensor (µmol, lux, klux, or W m^{-2}) are also displayed.

High Quality Circuitry

The high-quality amplifier used in the LI-250A provides excellent long-term stability and automatic zeroing. This high-gain amplifier presents an extremely low input impedance to the sensor, resulting in excellent linearity. Typical accuracy of the LI-250A is 0.4% of reading at 25°C.



Automatic Range Selection

The LI-250A simplifies operation by automatically selecting the range with the best accuracy and resolution for a given sensor input signal. The wide dynamic range allows measurements in a variety of light environments.

Hold Key

Pressing the *HOLD* key lets you retain the current reading on the display. Pressing the *HOLD* key again returns the LI-250A to measurement mode where the display is continuously updated.

Weathertight

The LI-250A case is O-ring sealed to make it weathertight.

Average Key

15-second averages can be collected and then held on the display by pressing the *AVG* key.

Sensor Calibration

Calibration multipliers for LI-COR sensors can be entered by simply pressing the *CAL* key, setting the display units (*UNITS* key), then changing the sensor calibration multiplier with the up and down arrow keys. Two sensor multipliers can be held in memory to aid in switching between sensors.

Hand-held, Battery Operated

Like all LI-COR instruments, the LI-250A is designed for applications demanding performance, reliability and ruggedness. The LI-250A's low power consumption gives you more than 150 hours of continuous operation from a single 9-volt transistor battery. A low battery condition is indicated on the display. To conserve battery life, the meter automatically shuts off after 20 minutes of inactivity.

LI-COR®
Biosciences

Applications

The LI-250A provides direct digital readout of LI-COR radiation sensors.

Photosynthetically Active Radiation (PAR)

The **LI-190SA Quantum Sensor** is used by plant scientists, horticulturists, and other environmental scientists to measure Photosynthetic Photon Flux Density (PPFD – the preferred measurement of PAR) in natural sunlight, under plant canopies, and in growth chambers and greenhouses.

The LI-190SA is also used in oceanography, limnology and marine sciences as a reference sensor for comparison to underwater PPFD measured by the **LI-192SA Underwater Quantum Sensor** or the **LI-193SA Underwater Spherical Quantum Sensor**. The LI-250A can hold calibration multipliers in memory for both a surface and underwater sensor.

Illuminance

For lighting studies or architectural modeling, the LI-250A and **LI-210SA Photometric Sensor** provide a direct readout of illuminance in lux. The LI-210SA measures visible radiation and has a spectral response curve equal to that for the average human eye. This curve is known as the CIE Standard Observer Curve and is matched by the LI-210SA to within 5% under most light sources.

Solar Irradiance

Solar irradiance measurements for meteorological, hydrological and environmental research can be made using the **LI-200SA Pyranometer Sensor**. The LI-200SA measures global solar radiation (sun plus sky) and provides a typical accuracy of ± 5% under unobstructed daylight conditions.

Sensor Compatibility

Type "SA" sensors (e.g. LI-190SA) are recommended for use with the LI-250. Older type "SB" sensors (e.g. LI-190SB) can also be used by removing the calibration connector. Other types of older LI-COR sensors can be made compatible by adding a BNC connector to the cable.

LI-250A Light Meter with LI-190SA Quantum Sensor and 2003S Mounting and Leveling Fixture.

Accessories

The 250-01 Carrying Case has a tough nylon exterior and is padded to protect the LI-250A during transport. Internal compartments provide storage for the LI-250A and several sensors. For field use, the 250-01 Carrying Case also lets you hang the meter on your belt.
Size: 20 cm L × 9.5 cm W × 9 cm D.

250-01 Carrying Case.

LI-250A Specifications

Accuracy:
- **25°C:** Typically ± 0.4% of reading ± 3 digits on the least significant digit displayed (all ranges).
- **0 – 55°C:** Typically ± 0.6% of reading ± 3 digits on the least significant digit displayed (all ranges).

Range Selection: Autoranging (3 ranges).
Linearity: ± 0.05%.
Sensors: Any LI-COR type "SA" or type "SB" sensor with BNC connector; Quantum, Pyranometer, or Photometric. Older LI-COR radiation sensors, or those without any connector must have a BNC connector installed. Contact LI-COR.
Sensor Calibration: Each sensor is supplied with a calibration multiplier. Calibration multipliers for two sensors can be stored in memory. Calibration multipliers are entered from the keypad.
Signal Averaging: Sensor output can be collected and displayed as a 15-second average (approximately 60 readings). Averages are retained on the display in *HOLD* mode.

LI-250A Range and Resolution:

Sensor	Range	Resolution
Quantum	199 µmol s^{-1} m^{-2} 1999 19999	0.01 µmol s^{-1} m^{-2} 0.1 1
Radiometric	19 W m^{-2} 199 1999	0.001 W m^{-2} 0.01 0.1
Photometric	1999 lux 19999 lux 199 klux	0.1 lux 1 0.01 klux

Display: 4 1/2-digit LCD display. Updated every 0.5 seconds in Instantaneous mode.
Keypad: Sealed, 5-key tactile response keypad.
Battery Life: 150 hours typical with continuous operation.
Power Requirement: One 9V Eveready Alkaline #522 or equivalent (LI-COR model number 216).
Low Battery Detection: Low battery indicator displays when approximately 20 hours of battery life remaining.
Operating Conditions: 0 to 55°C, 0 to 95% RH (non-condensing).
Storage Conditions: -55 to 60°C, 0 to 95% RH (non-condensing).
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).
Warranty: 1 year parts and labor.

Ordering Information

LI-250A Light Meter
Battery included.
Order sensors separately.

Options
- **250-01** Carrying Case
- **216** Replacement Battery, 9-volt transistor type. LI-250A requires 1 for replacement.

Sensors
- **LI-190SA** Quantum Sensor
- **LI-200SA** Pyranometer Sensor
- **LI-210SA** Photometric Sensor
- **LI-191SA** Line Quantum Sensor
- **2003S** Mounting and Leveling Fixture
- **2222SB** Extension Cable (50 ft.)
- **2222SB-100** Extension Cable (100 ft.)

Underwater Sensors
- **LI-192SA** Underwater Quantum Sensor
- **LI-193SA** Spherical Quantum Sensor
- **2222UWB** Underwater Cable. Standard lengths range from 3 to 100 meters. Custom lengths are available.
- **2009S** Lowering Frame

LI-COR® Biosciences
4421 Superior Street • P.O. Box 4425 • Lincoln, Nebraska 68504 USA
North America: 800-447-3576 • International: 402-467-3576
FAX: 402-467-2819 • E-mail: envsales@licor.com • www.licor.com

Doc #980-07661
0404