

# 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 ( $\mu\text{mol}$ , lux, klux, or  $\text{W m}^{-2}$ ) 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.

## 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  $\pm 5\%$  under unobstructed daylight conditions.

# CaTec

## 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 x 9.5 cm W x 9 cm D.



250-01 Carrying Case.

## LI-250A Specifications

### Accuracy:

**25°C:** Typically  $\pm 0.4\%$  of reading  $\pm 3$  digits on the least significant digit displayed (all ranges).

**0 – 55°C:** Typically  $\pm 0.6\%$  of reading  $\pm 3$  digits on the least significant digit displayed (all ranges).

**Range Selection:** Autoranging (3 ranges).

**Linearity:**  $\pm 0.05\%$ .

**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 $\mu\text{mol s}^{-1} \text{m}^{-2}$ 1999 19999	0.01 $\mu\text{mol s}^{-1} \text{m}^{-2}$ 0.1 1
Radiometric	19 $\text{W m}^{-2}$ 199 1999	0.001 $\text{W m}^{-2}$ 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

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