

# LI-250 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-250'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-250 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-250 is 0.4% of reading at 25 °C.

## Automatic Range Selection

The LI-250 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 wide 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-250 to measurement mode where the display is continuously updated.

## 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), and 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-250 is designed for applications demanding performance, reliability and ruggedness. The LI-250's low power consumption gives you over 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-250 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**. The LI-250 can hold calibration multipliers in memory for both a surface and underwater sensor.

## Illuminance

For lighting studies or architectural modeling, the LI-250 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.

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

## Accessories

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



**250-01 Carrying Case.**

## LI-250 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-250 Range and Resolution:

Sensor	Range	Resolution
Quantum	199 $\mu\text{mol s}^{-1} \text{m}^{-2}$	0.01 $\mu\text{mol s}^{-1} \text{m}^{-2}$
	1999	0.1
	19999	1
Radiometric	19 $\text{W m}^{-2}$	0.001 $\text{W m}^{-2}$
	199	0.01
	1999	0.1
Photometric	1999 lux	0.1 lux
	19999 lux	1
	199 klux	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 displayed with approximately 20 hours 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-250 Light Meter

Battery included. Order sensors separately.

### Options

**250-01** Carrying Case

**216** Replacement Battery. 9 volt transistor type. LI-250 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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