

TTLI-250 Ljus mätare

A cost effective solution for light measurement using radiation sensors

Direct Digital Readout

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

High Quality Circuitry

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

Automatic Range Selection

The TTLI-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 TTLI-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.

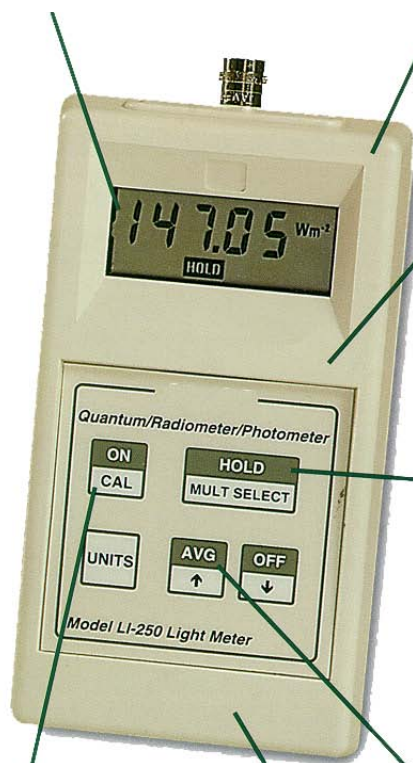
Sensor Calibration

Calibration multipliers for TTLI 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 sensor.

Hand-held, Battery Operated

The TTLI-250 is designed for applications demanding performance, reliability and ruggedness.

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

Photosynthetically Active Radiation (PAR)

The TTLI-109SA Quantum sensor is used by plant scientists, horticulturists, and other environment scientists to measure Photosynthetic Photon Flux Density PPF - the preferred measurement of PAR) in natural sunlight, under plant canopies, and in growth chambers and greenhouses.

The TTLI-190SA is also used in oceanography, limnology and marine sciences as a reference sensor for comparison to underwater PPF measured by the TTLI-192SA Underwater Quantum Sensor. The TTLI-250 hold calibration multipliers in memory for both a surface and underwater sensor.

Illuminance

For lighting studies or architectural modelling, the TTLI-250 and TTLI-210SA Photometric Sensor provide a direct readout of illuminance in lux. The TTLI-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 TTLI-210SA to within 5% under most light sources.

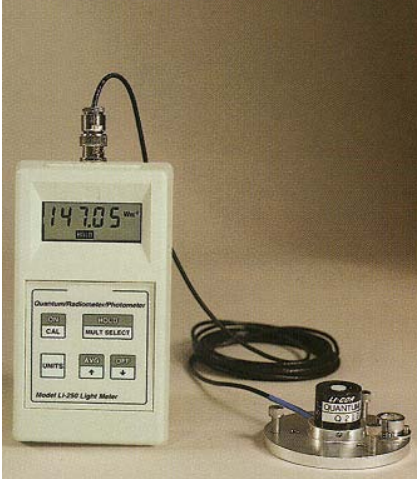
Solar Irradiance

Solar Irradiance measurements for meteorological, hydrological and environmental research can be made using the TTLI-200A Pyranometer Sensor. The TTLI-200A measures global solar radiation (sun plus sky) and provides a typical accuracy of $\pm 5\%$ under unobstructed daylight conditions.

Semtec electronic, 04-1998mk

Sensor Compatibility

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



TTLI-250 Light Meter with TTLI-190SA Quantum Sensor and 2003S Mounting and levelling Fixture.

Accessories

250-01 Carrying Case. The 250-01 has a tough nylon exterior and is padded to protect the TTLI-250 during transport. An internal compartment 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

TTLI-250 Specifications Ordering Information

Accuracy:

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

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

Range select.: Autoranging (3 rang.)

Linearity: $\pm 0.05\%$.

Sensors: Any TTLI type "SA" or type "SB" sensor with BNC connector; Quantum, Pyranometer, or Photometric. Older TTLI radiation sensors, or those without any connector must have a BNC connector installed. Contact Gardentekniks by www.ttshop.se.

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 (approx. 60 readings). Averages are retained on the display in HOLD mode.

TTLI-250 Range and Resolution:

Sensor	Range	Resolution
Quantum:	1999	0.1
	19999	1
		$0.01 \mu\text{mol s}^{-1}\text{m}^{-2}$
Radio-metric:	19 W m ⁻²	0.001 W m ⁻²
	199	0.01
	1999	0.1
Photo-metric:	1999 lux	0.1 lux
	19999 lux	1 lux
	199 Klux	0.01 Klux

Display: 4½ 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

Low Battery Detection: Low battery indicator displayed with approx. 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 77 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 labour

TTLI-250 Light Meter

Battery included. Order sensors separately.

Options

250-01: Carrying case

Sensors

TTLI-190SA Quantum sensor

TTLI-200SA Pyranometer sensor

TTLI-210SA Photometric sensor

TTLI-191SA Line Quantum sensor

2003S Mounting and levelling Fixture

2222SB Extension Cable (50ft)

2222SB-100 Extension Cable (100ft)

Underwater sensors

TTLI-192SA Underwater Quantum sensor

TTLI-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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