

## MT-SL0009, MT-SL0010, MT-SL0011



The MT-SL0009 **Quantum Sensor** is ideal for measuring photosynthetically active radiation in the 400 to 700 nm waveband. Accurate measurements are obtained under natural and artificial light conditions because of the computer-tailored spectral response of the sensor. Color filters are used to tailor the silicon photodiode response to the desired quantum response and an interference filter is used to provide a sharp cutoff at 700 nm. A sharp cutoff is necessary for measurements under vegetation where the ratio of infrared to visible light may be high. A small response in the infrared region can cause an appreciable measurement error.

The MT-SL0010 **Pyranometer Sensor** is ideal for solar energy measurements. It is designed for measurements in solar, agricultural, meteorological, and hydrological studies. The sensor has a silicon photovoltaic detector mounted in a fully cosine-corrected miniature head. The sensor can be mounted in any plane without affecting its performance. The pyranometer compares favorably with first class thermopile types, but it is priced at a fraction of the cost.

The MT-SL0011 **Photometric Sensor** measures illuminance as related to the CIE Standard Observer Curve. This is the visual radiation in the spectral responsivity curve equal to the average human eye. It matches the CIE curve within five percent under most light sources. The sensor's silicon photodiode and filter combination are placed in a fully cosine-corrected sensor head to provide the proper response to radiation at various angles of incidence.

**What applications use quantum and photometric?**

### Technical Specifications

#### General

Output:	Analog
Stability:	<2% change per year
Response:	10 $\mu$ s
Dependence:	0.15% per $^{\circ}$ C, maximum
Correction:	Cosine corrected up to 80 degrees
Azimuth:	<1% error over 360 $^{\circ}$ at 45 $^{\circ}$ elevation
Tilt:	No error induced from orientation
Op. Temp:	-40 $^{\circ}$ C to 65 $^{\circ}$ C
Detector:	High stability silicon photovoltaic
Housing:	Weatherproof anodized aluminum

#### Quantum Sensor (MT-SL0009)

Calibration:	$\pm$ 5% traceable to NIST
Sensitivity:	5 $\mu$ A per 1000 $\mu$ mol $s^{-1}m^{-2}$
Linearity:	1% up to 10,000 $\mu$ mol $s^{-1}m^{-2}$

#### Pyranometer Sensor (MT-SL0010)

Calibration:	$\pm$ 5% against an Eppley pyranometer
Sensitivity:	90 $\mu$ A per 1000 $Wm^{-2}$
Linearity:	1% up to 3000 $Wm^{-2}$

#### Photometric Sensor (MT-SL0011)

Calibration:	$\pm$ 5% traceable to NIST
Sensitivity:	3 $\mu$ A per 100 klux
Linearity:	1% up to 100 klux

### Ordering Options

Quantum Sensor for measuring PAR  
 Pyranometer sensor  
 Photometric sensor  
 Mounting and leveling fixture  
 Millivolt amplifier, 0-10 V output

