

L201 PHOTOMETER

The Macam L201 photometer / luxmeter is a high performance portable instrument for the accurate measurement of illuminance in a variety of environments.

The photometer comprises of a micro-processor controlled portable display unit connected with a cable to the photopic detector with integral amplifier and digitiser. Each detector is fitted with a high accuracy photopic filter and cosine diffuser to give the user confidence in the veracity of the measurements from light sources with different spectral distributions.

OPTIONS

Mounting plate with level indicator and adjustment.

3m detector extension cable.

Optional higher sensitivity range.



Typical application: Interior / office lighting



FEATURES

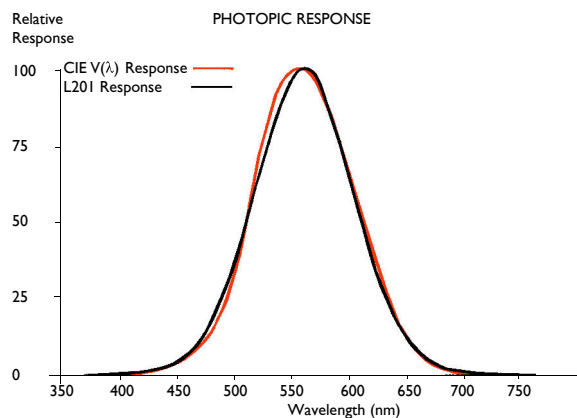
- Accurate measurements are obtained under both natural and artificial lighting conditions.
- Easy to operate with micro-processor control.
- Macam photopic filter is colour balanced to give a response which closely matches the CIE $V(\lambda)$ human eye response.
- Profiled diffuser to give accurate cosine corrected angular response.

APPLICATIONS

- Office & factory lighting measurements.
- Quality control measurements.
- Exterior lighting.

PHOTOMETRY

Photometry is the measurement of light as the human eye responds to it. The CIE standard response function $V(\lambda)$, known as the CIE Photopic Luminous Efficiency Curve, is shown on the graph together with L201 illuminance detector response.

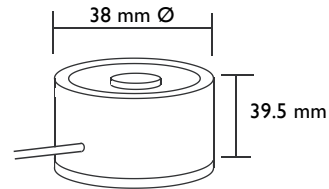


ILLUMINANCE

By definition illuminance is the luminous flux falling per unit area. Units of illuminance are the lux, (lumen per square metre) or footcandle, (lumen per square foot).

Conversion factor:

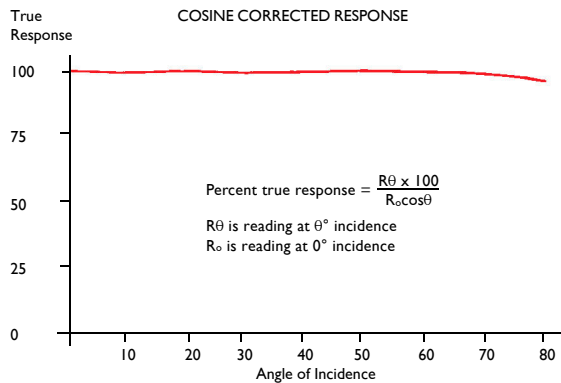
1 lux = 0.2919 footcandle



SD221L-Cos illuminance detector with photopic filter and cosine diffuser.

COSINE CORRECTION

Light incident on a surface may come from all directions and it is necessary to measure the integrated illuminance from the sources in the hemisphere normal to the detector. Accurate measurements will only be obtained if the detector has an angular response which closely follows Lambert's Cosine Law. The Macam filter ring supplies cosine corrected assemblies accurate to $\pm 5\%$ to 70° from normal incidence.



SPECIFICATION

The Macam model L201 photometer comprises of a L201X display unit with lithium battery, SD221L-Cos illuminance detector with integral amplifier, calibration certificate and CC-4 carrying case.

DISPLAY UNIT

Model:	L201X
Design:	Portable μ processor controlled meter with $4\frac{1}{2}$ digit LCD display, simple key pad operation, battery powered.
Standard Range:	0 - 19 999 lux
Optional Range:	0.0 - 1999.9 lux
Accuracy:	$\pm 1\%$, ± 1 digit on display.
Keypad Operations:	Power On / Off. Hold display on / off action. Zero stores offset for subtraction from subsequent readings.
Display:	$4\frac{1}{2}$ digit LCD display with 10mm high numerals.
Power Supply:	PP3 Lithium battery. Operating life 30 to 50 hours.
Calibration:	L201 is calibrated with an illuminant A source, and a photometer traceable to BSI optical metrology standards. Absolute calibration accuracy is estimated as $\pm 5\%$.
Dimensions:	80 mm x 45 mm x 150 mm.
Weight:	Approximately 0.3 Kg.

ILLUMINANCE DETECTOR

Model:	SD221L
Design:	Silicon photodiode with integral detector amplifier and signal to frequency convertor. Aluminium housing with photopic filter, cosine diffuser and 1m cable.
Linearity:	Better than $\pm 1\%$ across range.
Spectral Response:	Refer to graph.
Angular Response:	$\pm 5\%$ to 70°
Dimension:	38 mm \varnothing x 39.5 mm high

Data Sheet 148 / 070

Macam
PHOTOMETRICS LTD.

**10 KELVIN SQUARE
LIVINGSTON EH54 5PF
SCOTLAND**

Tel: +44 (0)1506 437 391
 Fax: +44(0)1506 438 543
 E-mail: info@macam.com
 Web: www.macam.com