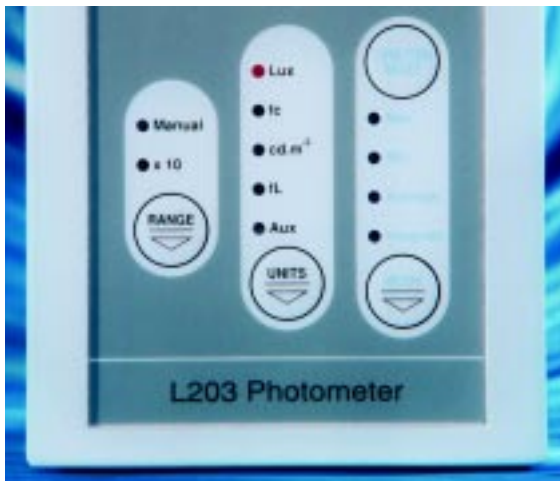


L203 PHOTOMETER

The Macam L203 photometer is a high performance portable instrument designed to measure a wide range of illuminance and luminance levels. It is calibrated directly in LUX (Lumens per square metre) and Cd/m² (Lumens per steradian per square metre) using a high accuracy photopic filter to give the user confidence in the veracity of the measurements from light sources with different spectral distributions.

OPTIONS

Higher sensitivity scale for very low light levels.
Mounting plate with level indicator and adjustment.
Sealed waterproof detector.
PC software.

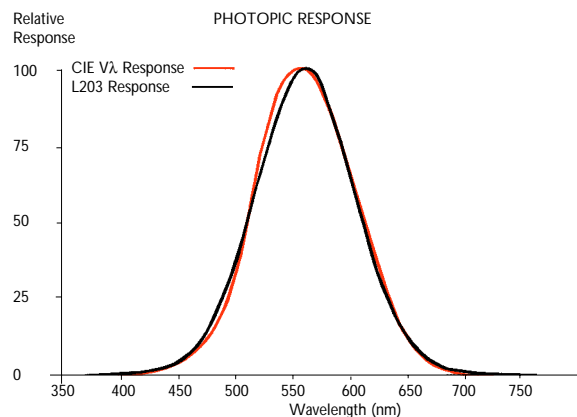


FEATURES

- Compact and robust it is ideal for field, laboratory and factory use.
- Detachable detector head for remote sensing.
- Accurate measurements are obtained under both natural and artificial lighting conditions.
- Easy to operate with micro-processor control.
- Eight decades of sensitivity: 1 mLux - 200 000Lux
- Macam photopic filter CIE2 is colour balanced to give a response which closely matches the CIE V_λ human eye response.
- Direct reading for illuminance and luminance.
- Units of Lux or footcandle, cd.m⁻² or footlambert.
- High accuracy cosine corrected diffuser assembly.

PHOTOMETRY

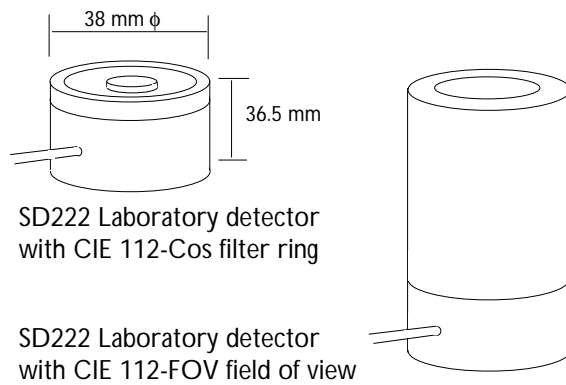
Photometry is the measurement of light as the human eye responds to it. The CIE standard response function, V_λ known as the CIE Photopic Luminous Efficiency Curve is shown on the graph together with L203 photopic filter response.



ILLUMINANCE & LUMINANCE

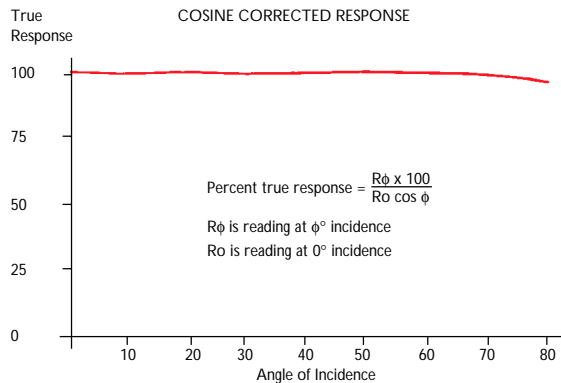
Illuminance is the luminous flux falling per unit area. Units of illuminance are the Lux, (lumen/m²) or footcandle, (lumen per square foot).

The luminance of a surface or extended source is measured by replacing the cosine corrected diffuser ring with a narrow field of view probe. The measuring angle of the detector is restricted to 6°. Units of luminance measurement are cd.m⁻² (candela per square metre) or footLambert.



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. Macam filter ring supplies cosine corrected assemblies accurate to $\pm 3\%$ to 70° from normal incidence



SPECIFICATION

The Macam model L203 photometer comprises of a L203X display unit with lithium battery, SD222 laboratory detector and integral amplifier, CIE Cos -112 illuminance filter ring, CIE FOV-112 luminance probe accessory, calibration certificate and CC-4 carrying case. The L203 Lux illuminance only photometer is supplied without the luminance probe.

DISPLAY UNIT

Model:	L203X
Design:	Portable μ processor controlled meter with backlit LCD display, auto or manual ranging, RS232 simple key pad operation, battery powered.
Ranges:	0 - 19 999 x 10 , 0 - 19 999 0 - 1999.9, 0 - 199.99 and 0 - 19.999 Lux & cd.m ⁻²
Accuracy:	$\pm 1\%$, ± 1 digit on display
Keypad Operations:	<i>Power On / Off</i> <i>Hold display on / off action</i> <i>Zero stores offset for subtraction from subsequent readings.</i> <i>Manual or autoranging, Integrate Average, Minimum and Maximum</i>
Display	4½ digit lcd display with 10mm high numerals.
Power Supply	PP3 Lithium battery. Operating life 30 to 50 hours.
Calibration	L203 is calibrated with an illuminant A source, a uniform extended source and a photometer traceable to NPL optical metrology standards. Absolute calibration accuracy is $\pm 5\%$.
Dimensions	80mm x 45mm x 150mm.
Weight	Approx. 0.3 Kg.

LABORATORY DETECTOR

Model:	SD222
Design:	Silicon photodiode with integral detector amplifier and signal to frequency convertor. Aluminium housing with removable filter rings and 1m cable.
Linearity	Better than 1% through ranges
Dimension:	38mm ϕ x 28.5mm high

ILLUMINANCE FILTER RING

Spectral Response	Ref graph
Angular Response	$\pm 3\%$ to 70°

LUMINANCE PROBE ACCESSORY

Spectral Response	Ref graph
Field of View	6°

Macam

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