IRRADIAN
Light Measurement Systems & Calibration

L203 Photometer

Designed to accurately measure a wide range of luminance and illuminance intensities from light sources of differing spectral distribution or low light level.

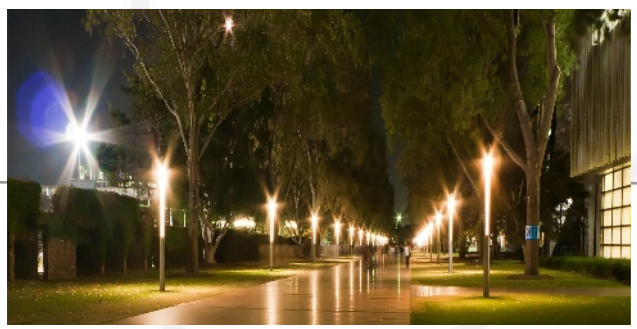
Helping you measure!

L203 PHOTOMETER

The Irradian photometer (*model L203*) 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. The photometer comprises of a hand held, battery operated, illuminated display unit, a small detector and a connecting cable. The detector is carefully constructed to give an optical response that closely matches the CIE standard response function, Vλ known as the CIE Photopic Luminous Efficiency Curve, as shown on the graph opposite. The sensor used in the detector is a silicon photodiode which performs with excellent linearity and long term stability.

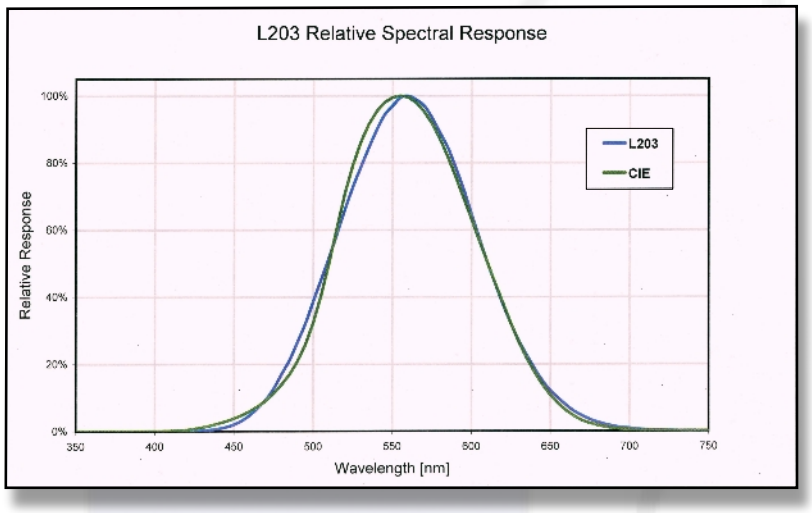
OPERATION

The detector, coupled with with either the illuminance filter ring or the luminance probe accessory, is placed in the required position to measure from a visible light source. The photometer display is switched on, with accompanying backlight if necessary and zeroed using the supplied blanking cap. The desired units are selected on the front panel and the measurements are read directly on the display. The readings can be held at the measurement value and a special function mode allows easy determination of the *Average*, *Maximum* and *Minimum* stored values. Dosage or exposure can also be read using the *Integrate* function. Remote meter operation is possible using the optional computer interface cable accessory.



FEATURES

- Compact and robust.
- Detachable detector head for remote sensing.
- Accurate measurements under natural and artificial lighting conditions.
- Easy to operate with micro-processor control.
- Eight decades of sensitivity: 0.1 mlux to 199 990 lux.
- Photopic filter closely matches the CIE Vλ response.
- Direct reading for illuminance and luminance.
- Units of lux or footcandle, $cd.m^{-2}$ or footlambert.
- High accuracy cosine corrected diffuser assembly.



SPECIFICATION

The Irradian digital photometer comprises of a microprocessor controlled display unit with battery, laboratory detector with integral amplifier, illuminance filter ring, luminance probe accessory, calibration certificate, user handbook, blanking cap, and carrying case. Optional USB/RS232 computer interface cable accessory available.

DISPLAY UNIT

Model:	L203
Design:	Portable microprocessor controlled meter with backlit 4½ digit LCD, auto or manual ranging, simple keypad operation, battery powered. Remote operation via interface cable.
Ranges:	Up to six discrete ranges; 0 - 1.9999, 0 - 19.999, 0 - 199.99, 0 - 1999.9, 0 - 19999, 0 - 19999x10
Accuracy:	± 1%, ± 1 digit on display.
Keypad Operations:	*Power* on / off action, *Zero* stores offset for subtraction from subsequent readings, *Manual* or auto ranging gain control, *Average, Maximum, Minimum* and *Integrate* functions.
Display:	4½ digit LCD, 10 mm high numerals.
Power Supply:	PP3 battery. Operating life 30 to 50 hours.
Calibration:	The L203 is calibrated with an illuminant A source, a uniform extended source and a photometer traceable to NPL optical metrology standards.
Dimensions:	80 mm x 45 mm x 150 mm
Weight:	Approximately 0.4 kg

DETECTOR

Model:	DET203Vis
Design:	Silicon photodiode with integral detector amplifier and signal to frequency converter. Aluminium housing with removable optical accessories and 1.0 m cable.
Linearity:	Better than 1% through ranges.
Dimensions:	38 mm Ø x 30.0 mm high.

ILLUMINANCE FILTER RING

Spectral Response:	Refer to figure above. λ_{peak} @ 555 ± 10 nm FWHM = 100 ± 10 nm V(λ) uncertainty f_1 = 5.5 ± 1 Absolute calibration accuracy ± 3%
Angular Response:	Cosine error ≤ ± 3.5% to 70° from normal incidence.

LUMINANCE PROBE ACCESSORY

Spectral Response:	Refer to figure above. λ_{peak} @ 555 ± 10 nm FWHM = 100 ± 10 nm V(λ) uncertainty f_1 = 5.5 ± 1 Absolute calibration accuracy ± 5%
Field of View:	6° full angle.

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