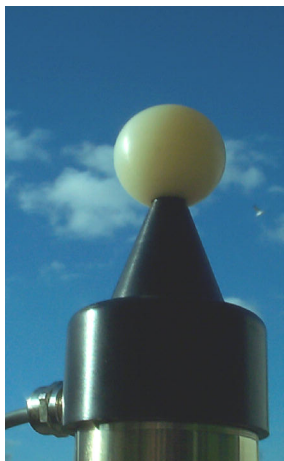


## Q201 QUANTUM RADIOMETER

The Q201 radiometer is the perfect choice when it comes to measuring the quantum irradiance between 400 and 700 nm (the PAR spectral response) in  $\mu\text{mol}\cdot\text{m}^{-2}\cdot\text{s}^{-1}$ .

### FEATURES

- Compact and robust, ideal for field or factory use.
- Easy to operate with micro-processor control.
- Good PAR spectral response.
- Good cosine angular response.
- Accurate measurements are obtained under both natural and artificial lighting conditions.
- Large 4½ digit LCD display.
- Extension cable for remote sensing.
- Battery operation.



Optional 4 $\pi$  detector.



Optional waterproof detector with cosine corrected diffuser.

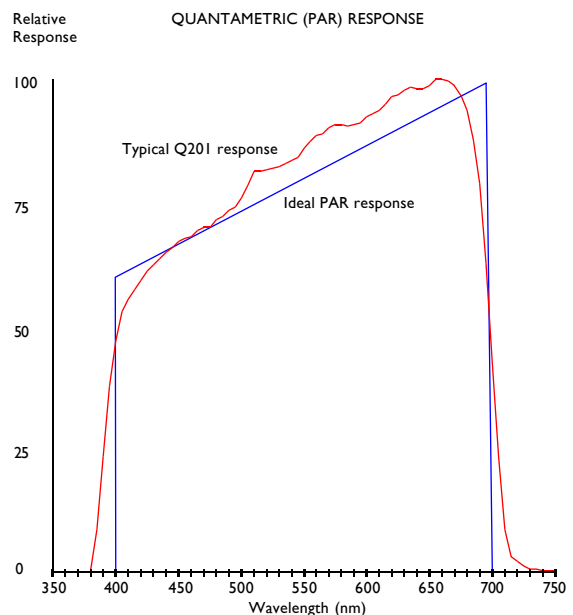


### OPTIONS / ACCESSORIES

- Mounting plate with integral level indicator and adjustment.
- Waterproof detector.
- 4 $\pi$  detector.
- 3 m extension cable.
- Absolute calibration certificate.

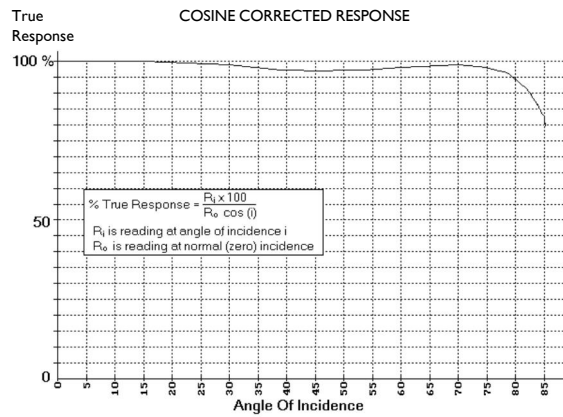
### APPLICATIONS

- Agriculture, horticulture & plant growth studies.
- Biological research.
- Limnology.
- Environmental measurements.



## COSINE CORRECTION

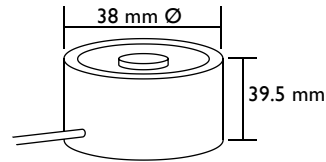
Accurate measurement of quantum irradiance requires that the detector has a cosine corrected angular response. The Q201 quantum detector (model SD221Q-Cos) has a specially designed diffuser input assembly to give an angular response which closely matches Lambert's Cosine Law to an accuracy of  $\pm 5\%$  over input angles of up to  $\pm 70^\circ$  from normal incidence.



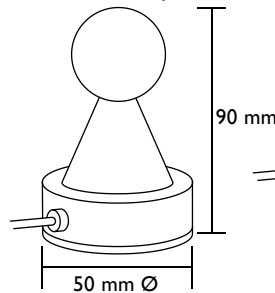
## DETECTOR OPTIONS

Macam detector model SD221Q-Cos is supplied as standard with the Q201 quantum radiometer. Other detector designs are available including sealed waterproof detectors and  $4\pi$  isotropic angular response quantum detectors. For more details contact Macam.

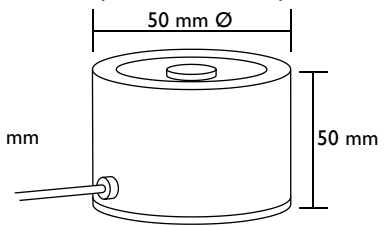
SD221Q-Cos



$4\pi$  Detector Option



Waterproof Detector Option



## SPECIFICATION

The Macam model Q201 Quantum radiometer comprises of a Q201X display unit with lithium battery, SD221Q-Cos detector with integral amplifier, calibration certificate and CC-2 carrying case.

### DISPLAY UNIT

Model:	Q201X
Design:	Portable $\mu$ processor controlled meter with large LCD display, simple key pad operation, battery powered.
Standard Range:	0.0 - 1999.9 $\mu\text{mol.m}^{-2}.\text{s}^{-1}$
Optional Range:	0 - 19999 $\mu\text{mol.m}^{-2}.\text{s}^{-1}$
Accuracy:	$\pm 1\%$ , $\pm 1$ digit on display.
Keypad Operations:	Power On / Off. Hold display on / off action. Zero stores offset for subtraction from subsequent readings.
Display:	4½ digit LCD display with 10 mm high numerals.
Power Supply:	PP3 Lithium battery. Operating life 30 to 50 hours.
Dimensions:	80 mm x 45 mm x 150 mm.
Weight:	Approximately 0.3 Kg.
Calibration:	

The Q201 radiometers are calibrated with a solar simulated uniform source and a Macam spectroradiometer with calibration reference lamps traceable to NPL optical metrology standards. Absolute calibration accuracy is estimated as  $\pm 5\%$ .

### DETECTOR

Model:	SD221Q-Cos
Design:	Silicon photodiode with custom manufactured glass filters. Integral detector amplifier with signal to frequency converter. Aluminium housing and 1m cable.
Spectral Response:	Ref. graph.
Angular Response:	$\pm 5\%$ to $70^\circ$ .
Linearity:	Better than $\pm 1\%$ across range.
Standard Dimension:	38 mm $\varnothing$ x 39.5 mm high.

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