



LIGHT

PAR 'Special' Sensor

- Measures Photosynthetically Active Radiation
- Counts quanta of photons in $\mu\text{mol m}^{-2} \text{s}^{-1}$
- Matched to McCree's action spectrum*
- For plant and crop research
- Suitable for natural and artificial light sources
- Calibrated to National Standards

Skye Instruments have been specialising in light and radiation sensors since 1983. All are designed, manufactured and calibrated to the highest standards. Each is supplied with a Calibration Certificate traceable to the UK's National Physical Laboratory (NPL).

There are three PAR sensors in the range, PAR Quantum, PAR Special and PAR Energy models. All measure the Photosynthetically Active Radiation between 400-700 nm, the part of the solar spectrum used by plants for photosynthesis and sugar production.

The PAR Special sensor has a

spectral response closely related to a green plant (McCree 1971/72 *) i.e. it is more responsive in the red and blue areas of the spectrum and less responsive in the green region. This design is unique to Skye Instruments.

This sensor is often used alongside the more popular PAR Quantum sensor which has an "ideal" square response to PAR. Both measure photon irradiance, or quantity of PAR light and are calibrated in units of $\mu\text{mol m}^{-2} \text{s}^{-1}$ (number or quanta of photons).

PAR sensors are suitable for use in natural solar radiation or any lamp

or light source. Each is fully waterproof and guaranteed submersible to 4m depth.

They are compatible with Skye Display Meters, SpectroSense meters and DataHog loggers. A choice of outputs are also available to suit most dataloggers and controllers.

* KJ McCree. The action spectrum, absorbance and quantum yield of photosynthesis in crop plants. Agricultural Meteorology. 1971/72. Vol 9, pp 191-216



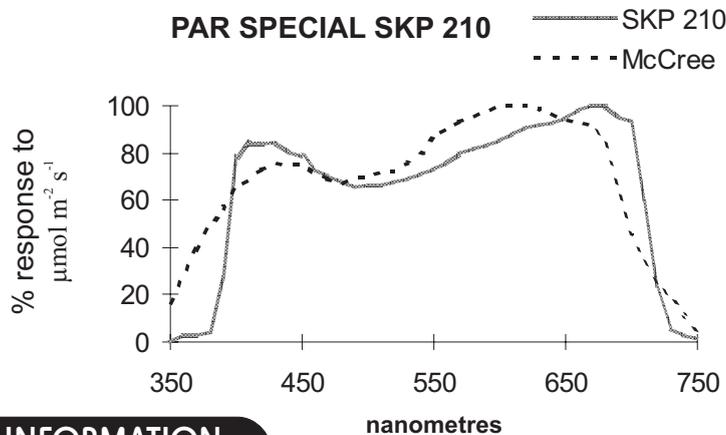
SKP 210 SPECIFICATIONS

Dimensions	Weight	Construction	Cable	Sensor	Detector	Filters	Sensitivity -current (1)	Sensitivity -voltage	Working range (2)
	140g. (with 3m cable)	Material Dupont 'Delrin' fully sealed to IP68	2 core screened DEF std 61-12/4.5	Cosine corrected head	Silicon photocell low fatigue characteristics	Optical glass	2µA/100 µmol m ⁻² s ⁻¹	1mV/100 µmol m ⁻² s ⁻¹	0 -10 ⁴ µmol m ⁻² s ⁻¹
Linearity error	Absolute calibration error (3)	Cosine error (4)	Azimuth error (5)	Temperature coefficient	Longterm stability (6)	Response time (7) - voltage output	Internal resistance - voltage output	Temperature range	Humidity range
<0.2%	typ. <3% 5% max.	3%	<1%	±0.1%/°C	±2%	10ns	c.500 ohms	-35 to +75°C	0-100% RH

NOTES ON SPECIFICATIONS

- (1) Current output varies from sensor to sensor. Each individual unit will have a slightly different output. A calibration certificate is supplied with each sensor
- (2) All Skye sensors will work at levels of irradiance well above that found in terrestrial sunlight conditions, room or growth chamber lighting
- (3) Main source of this error is uncertainty of calibration of Reference Lamp. Skye calibration standards are directly traceable to N.P.L. standard references
- (4) Cosine error to 80° is typically 5% max. Figures shown are for normal use sources, e.g., sun plus sky, diffuse sun, growth chambers, etc.
- (5) Measured at 45° elevation over 360°
- (6) Maximum change in one year. Calibration check recommended at least every two years. Experience has shown that changes are typically much less than figures
- (7) Times are generally less than the figure quoted, which is in nanoseconds. They may be slightly increased if long leads are fitted, or those of a higher capacity cable

GRAPH



*Reference.

KJ McCree. The action spectrum, absorbance and quantum yield of photosynthesis in crop plants. Agricultural Meteorology, 1971/72. Vol 9, pp 191-216.

ORDERING INFORMATION

Sensor

SKP 210 PAR 'Special' sensor

Accessories

SKM 221 Levelling unit
SKM 226 Long arm pole/wall mount

Meters and dataloggers

SKP 200 Display meter
SKL 904 4 channel SpectroSense2 display meter
SKL 908 8 channel SpectroSense2 logging display meter
SDL 5000 series DataHog datalogger

Skye Instruments Ltd

21, Ddole Enterprise Park
Llandrindod Wells
Powys LD1 6DF
United Kingdom

TEL +44 (0)1597 824811

FAX +44 (0)1597 824812

EMAIL skyemail@skyeinstruments.com

WEB <http://www.skyeinstruments.com>

