



# PAR Special Sensor SKP 210

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 design of the PAR 'Special' sensor is exclusive to Skye and compliments the standard PAR Quantum sensor. Both sensors measure Photosynthetically Active Radiation between 400 and 700nm, the light energy used by plants for photosynthesis. The PAR Quantum sensor has the 'square' ideal response curve, whereas the PAR 'Special' is closely matched to a real plant's light response curve.

Just like any green plant, the 'PAR Special' sensor is more sensitive to blue and red light wavelengths than it is to green wavelengths. This makes the sensor ideal for plant research projects involving light measurements. Applications include: assessment of natural growing conditions, efficiency of artificial lighting, shading requirements, keeping historical environmental records.

As with all Skye light sensors, the PAR 'Special' is available with a hand-held Display Meter SpectroSense logging Meter or DataHog datalogger. A range of outputs are also available for compatibility with other loggers or control systems.



Choice of sites for indoor plants & garden planting sites  
Design of lighting arrays in greenhouses & other facilities  
Predicting over a long period of time, photosynthetic activity, particularly under fluctuating light environments  
Comparison of photosynthetic efficiencies of light sources, differing in spectral emission  
Assessment of drift in incident radiation

## SKP 210 SPECIFICATIONS

**Construction** - Material Dupont 'Delrin' fully sealed to Ip68

**Cable** - 7 -2- 3C cable

**Sensor** - Cosine corrected head

**Detector** - Si Photodiode

**Filters** - Optical glass

**Sensitivity -current** - (I) -0.01µA

**Sensitivity -voltage** - 10µV

**Working range (2)** - 0-40 µmol/m<sup>2</sup> /sec

**Linearity error** - <0.2%

**Absolute calibration error (3)** - typ. <3% 5% max

**Cosine error (4)** - 3%

**Azimuth error (5)** - <1%

**Temperature coefficient** - +0.1%/°C

**Longterm stability (6)** - +2%

**Response time (7) (voltage output)** - 10ns

**Internal resistance (voltage output)** - C.500ohms

**Temperature range** - -35 to +75°C

**Humidity range** - 0-100% RH

**Weight** - 140g (with 3m cable)

**Dimensions** -



## ORDERING INFORMATION

### Sensor

SKP 210 - PAR Special Sensor with 3m cable

### Accessories

SKM 221 - Levelling unit

SKM 226 - Long arm pole/wall mount

### Meters and Dataloggers

SKE 500 - Display meter

SKL 904 - 4 channel SpectroSense2 display meter

SKL 908 - 8 channel SpectroSense2 logging display meter

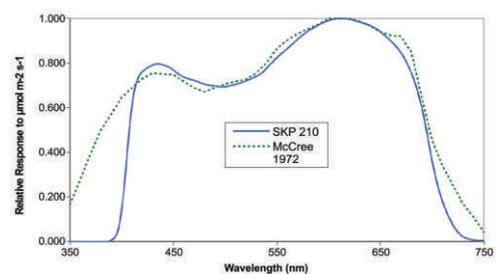
SDL 5000 series DataHog datalogger

## 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 quoted.
- (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

### PAR Special - SKP 210



\*Reference

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

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