

LIGHT

Pyranometer Sensor

- Meteorology
- Use on weather stations for agriculture, horticulture etc.
- Study of ecosystems
- Energy balance studies of buildings



The SKS 1110 Pyranometer sensor is probably the widest selling unit in the Skye Instruments' range of sensors, with units sold all around the globe. It offers a compact sensor for solar energy measurements and compares favourably with thermopile sensors, offering considerable financial savings.

It gives much greater output than thermopile instruments, which, with its better


temperature stability, makes it easier to use.

The sensors are calibrated against precision reference thermopile pyranometers in natural light conditions. Although production checks are made using artificial sources, these sensors are calibrated for use in natural daylight conditions, and should not be used with artificial or filtered light sources (sensor type SKE 510 is offered for applications

with artificial and mixed light sources, as well as ecological studies in conjunction with measurements of total solar radiation). This limitation to outdoor use is due to the sensor response curve which differs from that of received solar energy. However, because it takes a constant sample of sky light it will always be accurate when used in such conditions outdoors.



SKS 1110 SPECIFICATIONS

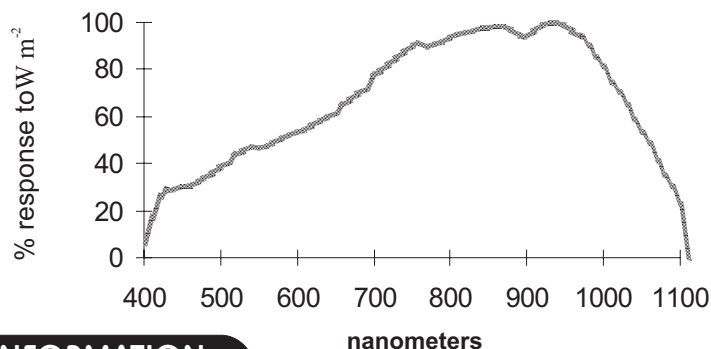
Dimensions	Weight	Construction	Cable	Sensor	Detector	Filters	Sensitivity -current (1)	Sensitivity -voltage	Working range (2)
	130g. (with 3m cable)	Material Dupont 'Delrin' fully sealed to IP68	2 core screened DEF std 61-12/4.5	Cosine corrected head	Silicon photocell	N/A	5 μ A/100 W m ⁻²	1mV/100 W m ⁻²	0-5000 W m ⁻²
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%	$\pm 0.2\%/^{\circ}\text{C}$	$\pm 2\%$	10ns	c.200 ohms	-30 to +75 $^{\circ}\text{C}$	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. SKS 1110 is calibrated against Kipp and Zonen reference standard pyranometers in natural light conditions
- (4) Cosine error to 80 $^{\circ}$ 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 $^{\circ}$ elevation over 360 $^{\circ}$
- (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

PYRANOMETER SKS 1110



ORDERING INFORMATION

Sensor

SKS1110 Pyranometer sensor

Accessories

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

Meters and dataloggers

SKS 1100 Display meter
SKL 904 SpectroSense2
SKL 908 SpectroSense2+
SDL 5000 series DataHog datalogger

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