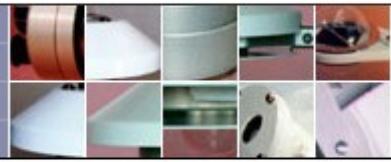
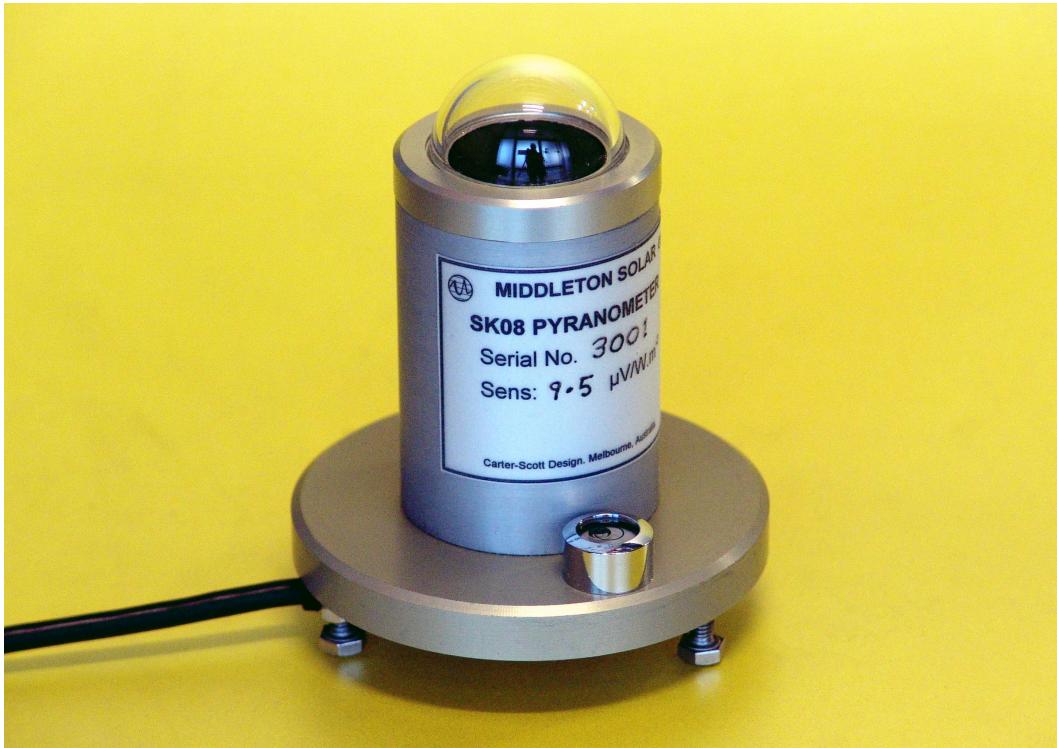


MIDDLETON SOLAR



## SK08 & SK08-E PYRANOMETER

ISO Spectrally Flat Pyranometer of Class B for Solar GHI measurement



The Middleton SK08 is a solar pyranometer for the accurate measurement of Global Horizontal Irradiance (GHI) on a plane surface. It exceeds the ISO specifications for a Class B pyranometer. The SK08 features a passive thermoelectric sensor, optimised for thermal stability. The SK08-E version has an inbuilt signal amplifier.

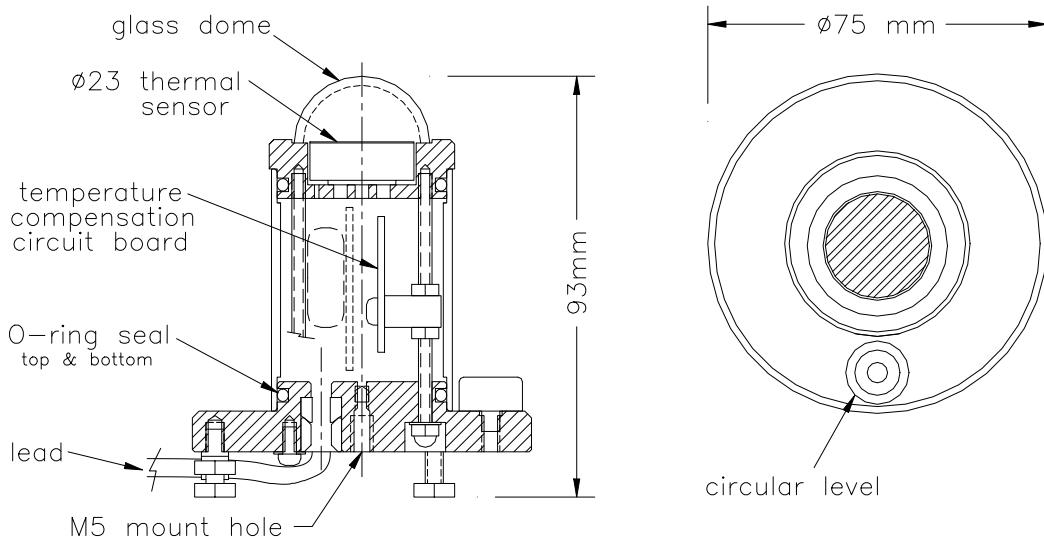
Performance Specification	ISO 9060:2018 Spectrally Flat Class B	SK08 & SK08-E
Response time (95%)	< 20s	7s
Zero offsets		
a) thermal radiation ( $200 \text{ W.m}^{-2}$ )	$\pm 15 \text{ W.m}^{-2}$	$< + 2.5 \text{ W.m}^{-2}$
b) temperature gradient (5K/hr)	$\pm 4 \text{ W.m}^{-2}$	$< \pm 4 \text{ W.m}^{-2}$
Non-stability (change/year)	$\pm 1.5\%$	$< - 0.5\%$
Non-linearity ( $100 - 1000 \text{ W.m}^{-2}$ )	$\pm 1\%$	$< \pm 1\%$
Directional response ( $1000 \text{ W.m}^{-2}$ at $80^\circ$ )	$\pm 20 \text{ W.m}^{-2}$	$< \pm 20 \text{ W.m}^{-2}$
Spectral error (0.28 to $4\mu\text{m}$ )	$\pm 1 \text{ W.m}^{-2}$	$< \pm 1 \text{ W.m}^{-2}$
Spectral selectivity (0.3 to $3\mu\text{m}$ )	$\pm 3\%$	$< \pm 3\%$
Temperature response (-10 to $+40^\circ\text{C}$ )	$\pm 2\%$	$< \pm 2\%$
Tilt response (0-90°, at $1000 \text{ W.m}^{-2}$ )	$\pm 2\%$	$< \pm 1\%$

### QUICK RESPONSE and STABLE OUTPUT SIGNAL

Aluminium construction, hard anodized for corrosion resistance.

Excellent directional response, and minimal thermal errors.

## Middleton Solar SK08 & SK08-E Pyranometer Detailed Specification



Meets the ISO 9060:2018 specifications for a Spectrally Flat Pyranometer of Class B, and the equivalent WMO specifications for a Good Quality Pyranometer.

Temperature-compensated thermoelectric sensor.

The SK08 has a passive microvolt output, and the SK08-E version has an in-built signal amplifier to give a millivolt output for easy measurement.

Fully sealed to IP66, with no need for regular desiccant inspection.

Glass dome windshield to protect the sensor.

Black carbon nanotube (CNT) sensor surface

User's Instructions and Calibration Certificate included.

### General Specification

sensitivity (typical)	9 - 10 $\mu\text{V}/\text{W} \cdot \text{m}^{-2}$ (SK08); 1.0mV/W.m <sup>-2</sup> (SK08-E)
viewing angle	$2\pi$ steradians
maximum irradiance	2,000 W/m <sup>2</sup>
spectral range	0.3 - 3 $\mu\text{m}$ (nominal); 305 – 2800 nm (50% points)
resolution	$\pm 2 \text{ W} \cdot \text{m}^{-2}$
operating temperature	-35 to +60°C
impedance	33 $\Omega$ (SK08); 65 $\Omega$ (SK08-E)
level accuracy	0.2°
power requirement (SK08-E only)	5 -15 VDC; < 6mA
desiccant	orange silica gel (non-toxic)
mounting method	central M5 hole; adjustable feet
output lead	6m
shipping size & weight; net weight	150 x 150 x 150mm, 0.5Kg; 0.3Kg

fullscale output	< 20mV (SK08); < 2V (SK08-E)
daily uncertainty (95% confidence)	5%
applications	economical good quality measurements for weather stations, networks, climate control, field testing