

# SE-100

# DESCRIPTION

The SE-100 Photometric sensor is a self-powered lux sensor with a range of 0-200 klux over a 0 to 200 mV range. The sensor features a rugged, aluminum housing that is fullysubmersible and is built to withstand harsh conditions. The sensor cable includes an IP68 marine-grade stainlesssteel cable connector to simplify sensor removal and replacement from permanent installations for maintenance and calibration. Typical applications of photometric sensors include measuring light levels for human vision in offices, sports arenas, hospitals, museums and more.



#### Features: Overview

Apogee photometric radiometers use a photodetector with a spectral response that closely matches the sensitivity of the human eye to light; sensors include a diffuser to properly weight light incident from any angle. Apogee photometric radiometers provide highly accurate illuminance measurements (lux or footcandles) at an affordable price.

#### Rugged, Self-cleaning Housing

Sensor features an anodized aluminum body with fully-potted electronics. The dome-shaped sensor head minimizes errors by shedding dust and water for a selfcleaning performance.

#### **Calibration Traceability**

Apogee SE photometric sensors are calibrated through side-by-side comparison to the mean of two transfer standard sensors under a reference lamp. The reference sensors are verified with a quartz halogen lamp traceable to the National Institute of Standards and Technology (NIST).

#### **Product Specifications**

	SE-100
Calibration Uncertainty	± 10 %
Measurement Repeatability	Less than 1 %
Long-term Drift (Non- stability)	Less than 3 % per year
Non-linearity	Less than 1 % (up to 300 µmol m <sup>-2</sup> s <sup>-1</sup> )
Response Time	Less than 1 ms
Field of View	180°
Spectral Range	250 nm to 400 nm
Directional (Cosine) Response	± 10 % at 75° zenith angle
Temperature Response	Approximately 0.1 % per C
Operating Environment	0 to 50 C; less than 90 % non-condensing relative humidity up to 30 C; less than 70 % non-condensing relative humidity from 30 to 50 C
Sensor Dimensions	24 mm diameter, 28 mm height
Meter Dimensions	126 mm length, 70 mm width, 24 mm height
Mass	150 g 180 g
Cable	2 m of shielded, twisted- pair wire; additional cable available; TPR jacket (high water resistance, high UV stability, flexibility in cold conditions); pigtail lead wires stainless steel connector
Warranty	4 years against defects in materials and workmanship

# Mean **cosine response** of four Apogee SE photometric sensors. Cosine response was calculated as the relative difference of SE photometric sensors from the mean of replicate reference photometric sensors deployed outdoors. These data are the average of the AM and PM response.

#### **Spectral Response**

Spectral sensitivity of photometric sensors. Replicate (n=6) sensors indicate a spectral shift to lower wavelengths caused by nonzero incidence angle, resulting in mismatch between CIE 1931 photopic weighting factors and sensor sensitivity. Measurements were made with CR6 datalogger at 10 nm increments in the monochromator

# SE-100

#### **Product Specification**

	SE-100
Output (sensitivity)	0.001 mV per lux
Calibration Factor (reciprocal of output)	1000 lux per mV
Calibration Uncertainty	±5%
Output Range	0 to 200 mV
Measurement Range	0 to 200 klux
Measurement Repeatability	Less than 0.5 %
Long-term Drift	Less than 2 % per year
Non-linearity	Less than 1 %
Response Time	Less than 1 ms
Field of View	180°
Spectral Range	CIE 1931 luminous efficiency function
Directional (Cosine) Response	± 2 % at 45°, ± 5 % at 75°
Temperature Response	Less tha 0.1 % per C
Operating Environment	-40 to 70 C, 0 to 100 % relative humidity
Dimensions	24 mm diameter, 37 mm height
Mass	100 g (with 5 m of lead wire)
Cable	5 m of shielded, twisted-pair wire; TPR
	jacket (high water resistance, high UV
	stability,flexibility in cold conditions); pigtail
	lead wires stainless steel connector
Warranty	4 years against defects in materials and
	workmanship



IP68 marine-grade stainless-steel, cable connector simplifies removal from stations for maintenance and recalibration

This Instrument is manufactured by our principle company

#### **Apogee Instruments - USA**

## Contact info



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