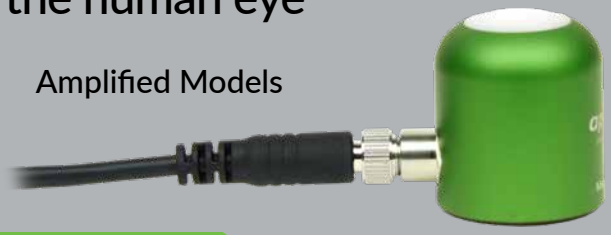


PHOTOMETRIC SENSOR | SE-100 Series, SE-200 Series, & SE-421

Measure light with the sensitivity of the human eye

Amplified Models



Features

Overview

Apogee photometric sensors 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 sensors provide highly accurate illuminance measurements (lux or footcandles) at an affordable price.

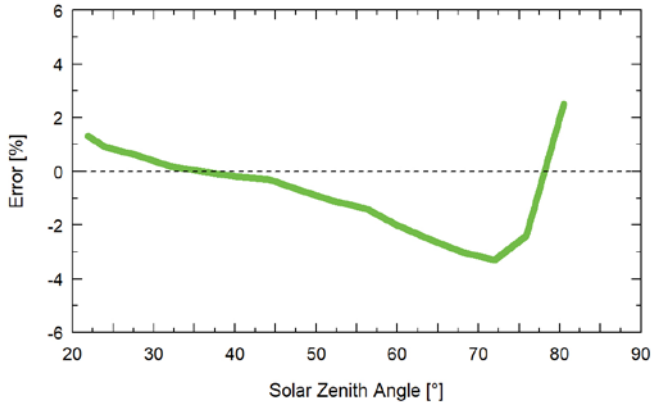
Rugged, Self-cleaning Housing

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

Calibration Traceability

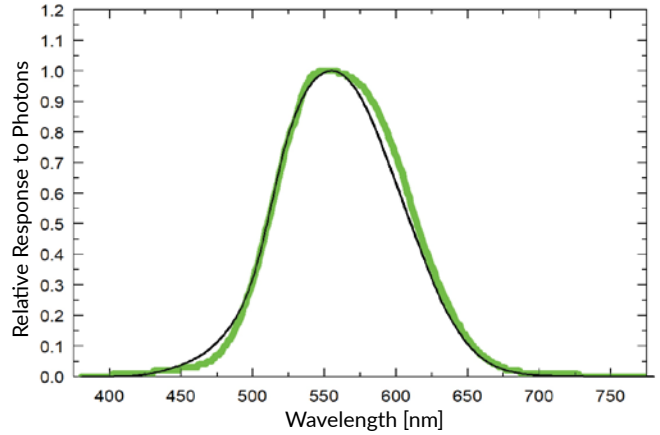
Apogee SE photometric sensors are calibrated through side-by-side comparison to the mean of two transfer standard sensors under a reference lamp. The reference sensors are verified with a quartz halogen lamp traceable to the National Institute of Standards and Technology (NIST).

Cosine Response



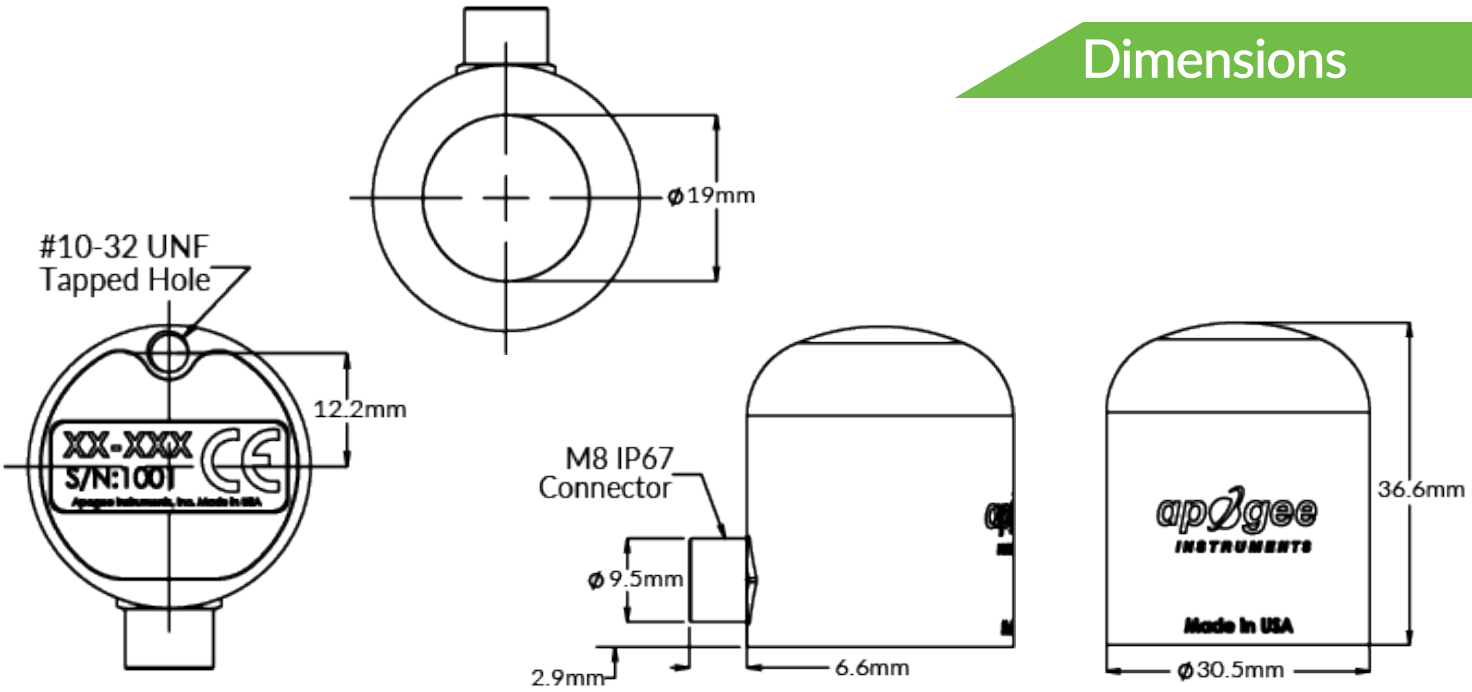
Mean **cosine response** of four Apogee SE photometric sensors. Cosine response was calculated as the relative difference of SE photometric sensors from the mean of replicate reference photometric sensors deployed outdoors. These data are the average of the AM and PM response.

Spectral Response



Spectral sensitivity of photometric sensors. Replicate (n=6) sensors indicate a spectral shift to lower wavelengths caused by non-zero 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.

Dimensions



Product Specifications

	SE-100-SS	SE-202-SS	SE-205-SS	SE-212-SS	SE-215-SS	SE-421-SS
Power Supply	–	3.3 to 24 V DC	5.5 to 24 V DC	3.3 to 24 V DC	5.5 to 24 V DC	
Current Draw	–	Maximum of 10 µA				1.4 mA (quiescent); 1.8 mA (active)
Output (sensitivity)	0.001 mV per lux	0.5 mV per lux	1 mV per lux	0.0167 mV per lux	0.033 mV per lux	–
Calibration Factor	1000 lux per mV	2 lux per mV	1 lux per mV	60 lux per mV	30 lux per mV	Custom for each sensor and stored in the firmware
Calibration Uncertainty	± 5 %					
Output Range	0 to 200 mV	0 to 2500 mV	0 to 5000 mV	0 to 2500 mV	0 to 5000 mV	SDI-12
Measurement Range	0 to 150000 lux	0 to 5000 lux		0 to 150000 lux		
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					
Spectral Range	CIE 1931 luminous efficiency function					
Field of View	180°					
Directional (Cosine) Response	± 2 % at 45°; ± 5 % at 75°					
Temperature Response	Less than 0.1 % per C					
Operating Environment	-40 to 70 C; 0 to 100 % relative humidity					
Dimensions	30.5 mm diameter, 37 mm height					
Mass (with 5 m of cable)	140 g					
Cable	5 m of shielded, twisted-pair wire with TPR jacket and stainless steel connector					
Warranty	4 years against defects in materials and workmanship					