



APOGEE PHOTOMETRIC SENSOR | SE-200 Series

Measure light with the sensitivity of the human eye



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.

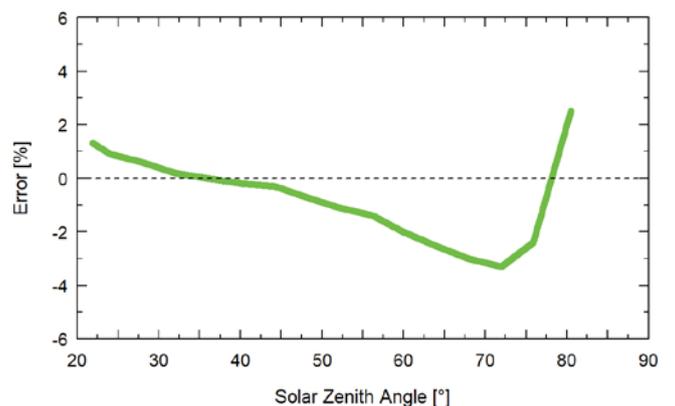
Rugged, Self-cleaning Housing

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

Calibration Traceability

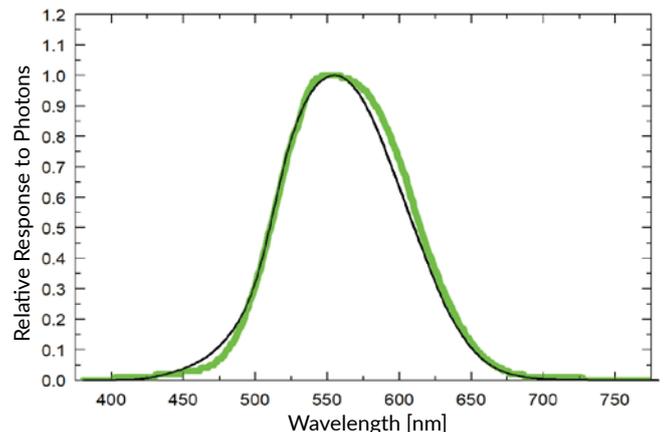
Apogee SE photometric sensors are calibrated through side-by-side comparison to the mean of two transfer standard sensors under a reference lamp. The reference sensors are verified with a quartz halogen lamp traceable to the National Institute of Standards and Technology (NIST).

Cosine Response



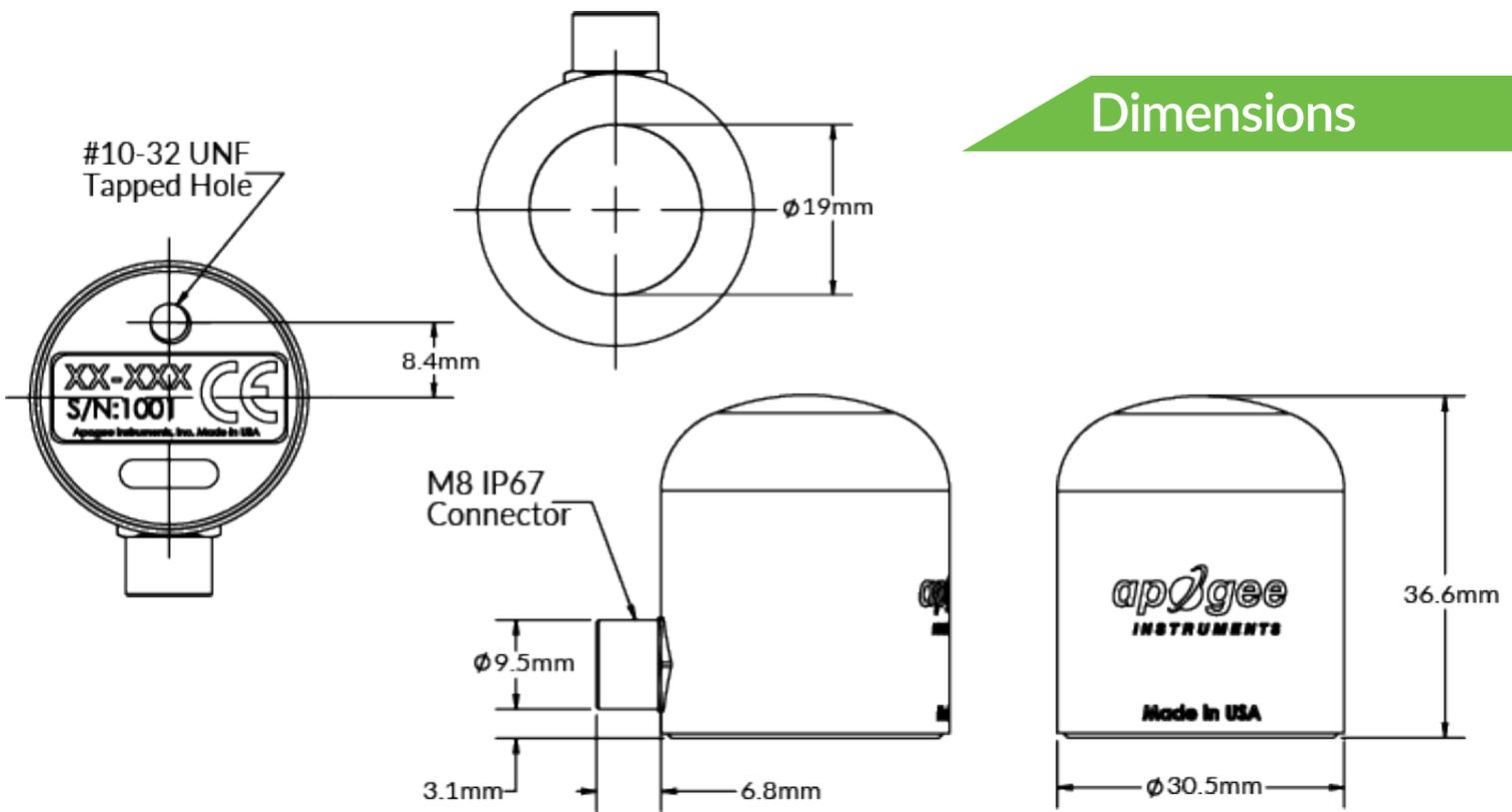
Mean cosine response of four Apogee SE photometric sensors. Cosine response was calculated as the relative difference of SE photometric sensors from the mean of replicate reference photometric sensors deployed outdoors. These data are the average of the AM and PM response.

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-202-SS	SE-205-SS	SE-212-SS	SE-215-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			
Output (sensitivity)	0.5 mV per lux	1 mV per lux	0.0167 mV per lux	0.033 mV per lux
Calibration Factor	2 lux per mV	1 lux per mV	60 lux per mV	30 lux per mV
Calibration Uncertainty	$\pm 5\%$			
Output Range	0 to 2500 mV	0 to 5000 mV	0 to 2500 mV	0 to 5000 mV
Measurement Range	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	$\pm 2\%$ at 45°; $\pm 5\%$ at 75°			
Temperature Response	Less than -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			
Cable	5 m of shielded, twisted-pair wire with TPR jacket and stainless steel connector			
Warranty	4 years against defects in materials and workmanship			