



## APOGEE PHOTOMETRIC SENSOR | SE-100

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.

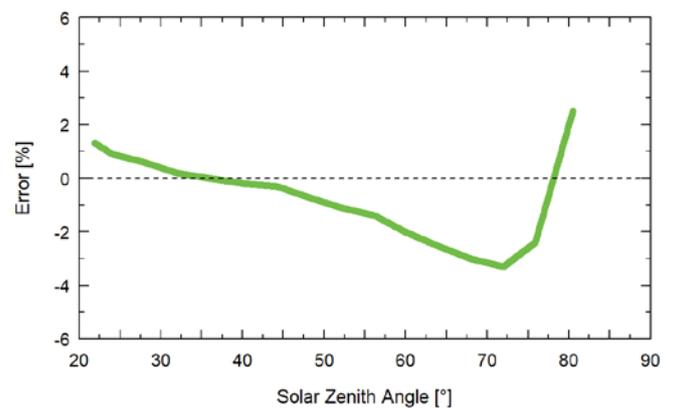
#### Rugged, Self-cleaning Housing

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

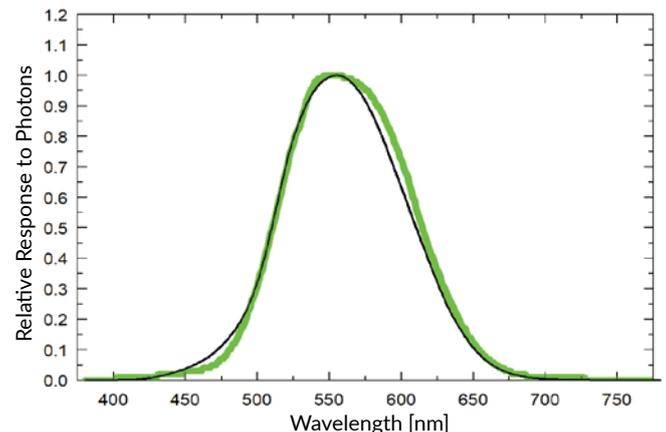
Apogee SE photometric sensors are calibrated through side-by-side comparison to the mean of two transfer standard sensors under a reference lamp. The reference sensors are verified with a quartz halogen lamp traceable to the National Institute of Standards and Technology (NIST).

#### Cosine Response



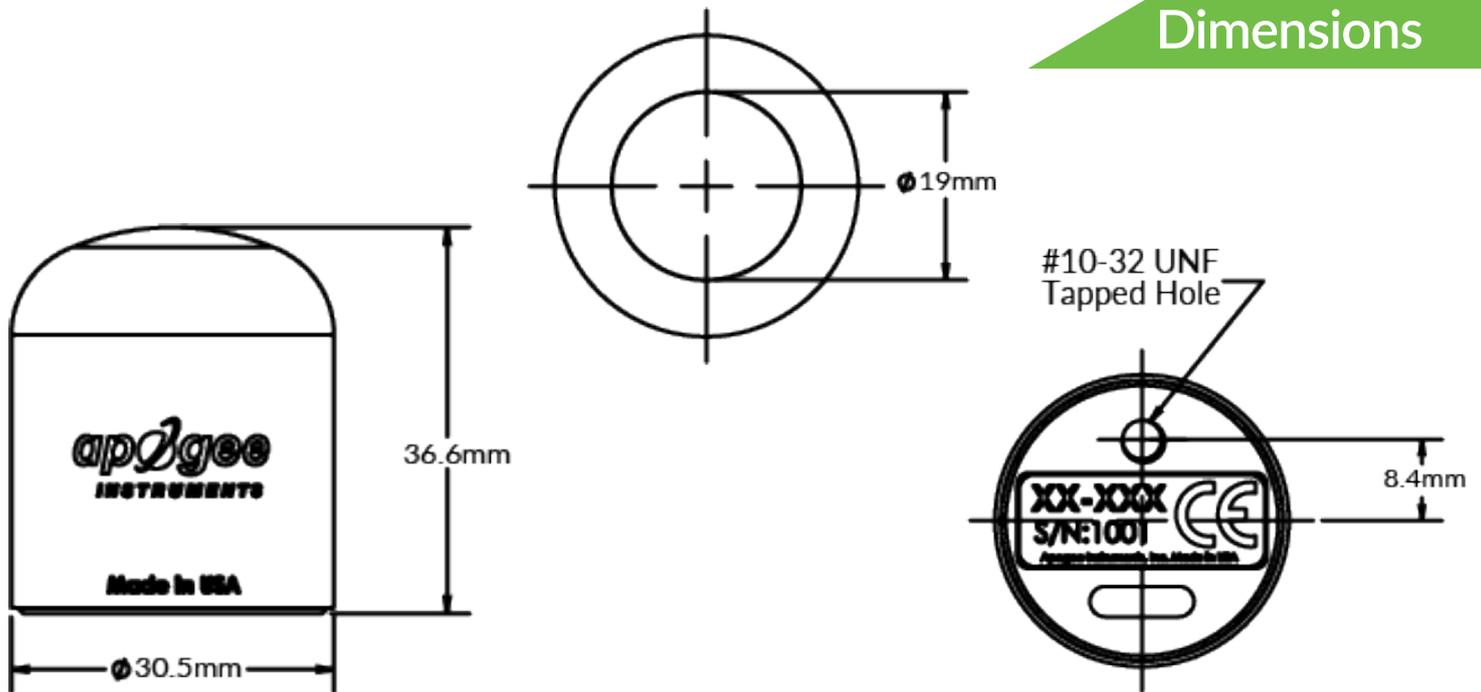
Mean cosine response of four Apogee SE photometric sensors. Cosine response was calculated as the relative difference of SE photometric sensors from the mean of replicate reference photometric sensors deployed outdoors. These data are the average of the AM and PM response.

#### 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-100-SS   |
|-------------------------------|---|
| Output (sensitivity)          | 0.001 mV per lux  |
| Calibration Factor            | 1000 lux per mV   |
| Calibration Uncertainty       | $\pm 5\%$   |
| 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  |
| 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 (with 5 m of lead wire)   |
| Cable                         | 5 m of shielded, twisted-pair wire with TPR jacket (high water resistance, high UV stability, flexibility in cold conditions); pigtail lead wires |
| Warranty                      | 4 years against defects in materials and workmanship  |