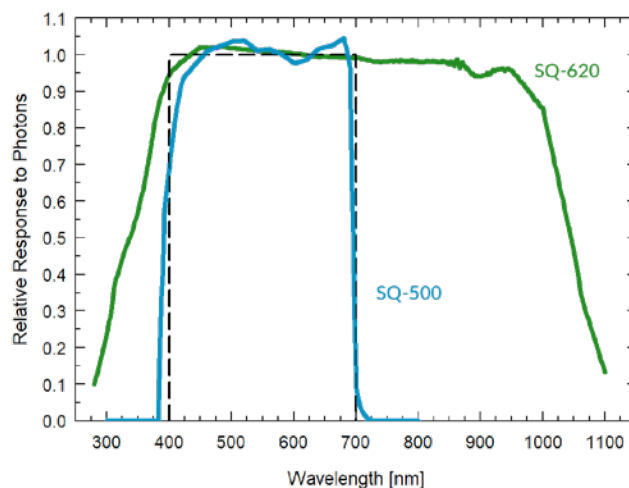


Spectral Response



Spectral response of **SQ-620 series** (green) compared to the **SQ-500 series** (blue) and the defined PAR response of plants (dashed).

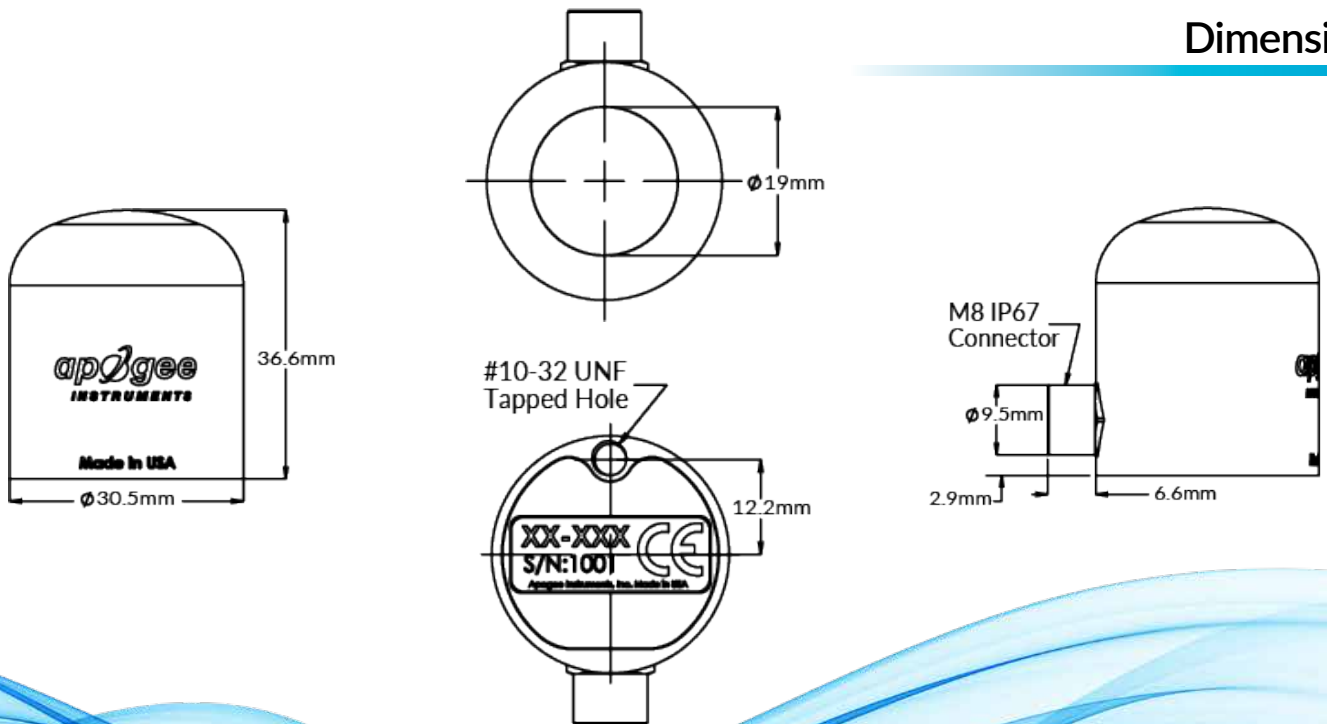
Product Specifications

| | SQ-620-SS | SQ-622-SS | SQ-624-SS | SQ-625-SS | SQ-626 | SQ-627-SS |
|-------------------------------|---|--|--|---------------------------------------|---|--|
| Power Supply | Self-powered | 3.3 to 24 V DC | 12 to 24 V DC | 5.5 to 24 V DC | 5 V USB power source | 5.5 to 24 V DC |
| Current Draw | — | at 12 V is 57 μ A | Maximum of 20 mA | at 12 V is 57 μ A | 61 mA when logging | 1.4 mA (quiescent), 1.8 mA (active) |
| Sensitivity | 0.05 mV per μ mol $m^{-2} s^{-1}$ | 0.625 mV per μ mol $m^{-2} s^{-1}$ | 0.004 mA per μ mol $m^{-2} s^{-1}$ | 1.25 mV per μ mol $m^{-2} s^{-1}$ | — | |
| Output Type | 0 to 200 mV | 0 to 2.5 V | 4 to 20 mA | 0 to 5 V | USB | SDI-12 |
| Resolution | — | | | | 0.1 μ mol $m^{-2} s^{-1}$ | — |
| Calibration Factor | 20 μ mol $m^{-2} s^{-1}$ per mV | 1.6 μ mol $m^{-2} s^{-1}$ per mV | 250 μ mol $m^{-2} s^{-1}$ per mA | 0.8 μ mol $m^{-2} s^{-1}$ per mV | Custom for each sensor and stored in the firmware | |
| Calibration Uncertainty | $\pm 5\%$ | | | | | |
| Measurement Range | 0 to 4000 μ mol $m^{-2} s^{-1}$ | | | | | |
| Measurement Repeatability | Less than 0.5 % | | | | | |
| Calibrated Output Range | 0 to 200 mV | | | | | |
| Long-term Drift | Less than 2 % per year | | | | | |
| Non-linearity | Less than 1 % (up to 4000 μ mol $m^{-2} s^{-1}$) | | | | | |
| Response Time | Less than 1 ms | | | | | |
| Field of View | 180° | | | | | |
| Spectral Range | 340 to 1040 nm ± 5 nm (wavelengths where response is greater than 50 % of maximum) | | | | | |
| Directional (Cosine) Response | $\pm 2\%$ at 45° zenith angle, $\pm 5\%$ at 75° zenith angle | | | | | |
| Temperature Response | -0.11 \pm 0.04 % per C | | | | | |
| Operating Environment | -40 to 70 C; 0 to 100 % relative humidity; can be submerged in water up to depths of 30 m | | | | | |
| Dimensions | 30.5 mm diameter, 37 mm height | | | | | |
| Mass (with 5 m of cable) | 140 g | | | | | |
| Warranty | 4 years against defects in materials and workmanship | | | | | |

Overview

Scientific studies indicate that radiation outside the standard 'photosynthetically active radiation' (PAR) range (400 - 700 nm) can have substantial effects on plant growth, morphology, and secondary compounds. Apogee's new Extended Range PFD sensor is sensitive to light beyond just the PAR region, capturing portions of the UV spectrum as well as far-red radiation. Since the detector is sensitive to radiation with wavelengths up to 1100 nm, beyond the range of wavelengths that influence plants, **we recommend using Extended Range sensors in indoor grow environments utilizing LED lights.** The patented, dome-shaped aluminum head is cosine-corrected, self-cleaning, and fully-potted for a waterproof design.

Dimensions



Features

TYPICAL APPLICATIONS

- Incoming PFD measurements over plant canopies in indoor greenhouses or in growth chambers, and reflected or under-canopy (transmitted) PFD measurements in the same environments
- This particular sensors should only be used for photon flux density measurements under LEDs
- Measuring extremely dim light that may cause interruptions in plant dark periods

MULTIPLE OUTPUT OPTIONS

- Attached to a hand-held meter
- Analog, multiple analog models, or SDI-12 output

ACCURATE, STABLE MEASUREMENTS

Cosine-corrected with directional errors less than $\pm 5\%$ at a solar zenith angle of 75° . Long-term non-stability less than 2% per year.

HIGH QUALITY CABLE

Pigtail-lead sensors feature on IP68, marine-grade stainless-steel cable connectors attached directly to the sensor head to simplify sensor removal for maintenance and recalibration.

CALIBRATION TRACEABILITY

Apogee Instruments SQ-600 series quantum sensors are calibrated through side-by-side comparison to the mean of four transfer standard quantum sensors under a reference lamp. The transfer standard quantum sensors are recalibrated with a quartz halogen lamp traceable to the National Institute of Standards and Technology (NIST).

