240-SP-420 Silicon Cell Pyranometer - USB

The **240-SP-420 Silicon Cell Pyranometer** is a complete data collection system. An on-board logger stores up to 10,000 measurements while connected to a 5V USB power supply. Included software downloads the collected data, provides a real-time display, graphing, and control of data logger settings.

The 240-SP-420 is sensitive in the 360-1120 nm shortwave radiation range and is calibrated to estimate total shortwave radiation across the entire solar spectrum.

The solar radiation sensor consists of a cast acrylic diffuser, photodiode, and signal processing circuitry potted solid in an anodized aluminum housing.

Features

- Dome shaped sensor head (diffuser and body) facilitates runoff of dew and rain to keep the diffuser clean
- Cosine-corrected for accurate readings even at low zenith levels
- Rugged design for continuous outdoor use in all climates
- Low-power operation and quick response time

Applications

- Agriculture
- Meteorology
- Solar Energy

Pyranometer with USB output

ISO 9060:2018	Class C (previously known as *second class*)
Power	5 Vdc @ 61 mA (when logging)
Output	Real-time and logged data via USB 2.0 cable. Updates every second.
Resolution	0.1 Wm^{-2}
Calibration uncertainty	Less than 3% @ 1000 Wm-2 (Custom calibration for each sensor stored in firmware.)
Measurement repeatability	Less than 1%
Long-term drift	Less than 2% per year
Non-linearity	Less than 1% up to 2000 Wm^{-2}
Field of view	180°
Spectral range	360-1120 nm
Cosine response	± 5% at 75° zenith angle
Temperature response	0.04 ± 0.04 % per C
Operating environment	-40°C to +70°C, 0-100% humidity, may be submerged
USB cable	4.6 meters (15 feet)
Dimensions and weight	24 mm diameter x 33 mm high, 90 g

Ordering Information

240-SP-420	Silicon Cell Pyranometer, USB, 15' (4.6 m) cable
240-AL-100	Leveling Plate
240-AL-120	Mounting Bracket with Leveling Plate
240-153	Tower Mount, 12-inch boom

If you require a longer cable length an “active” USB extension cable is required. Please note, the connection between the cables must be made water tight prior to submersion.