












Solar Radiation Sensors

Pyranometers, quantum sensors, and net radiometers








The solar radiation sensors that Campbell Scientific offers come in a variety of designs: pyranometers, net radiometers, quantum sensors, and pyrheliometers. These sensors measure various aspects of the energy imparted by the sun on the Earth's surface. A leveling fixture fitted with a bubble level may be required to accurately install solar radiation sensors.

| | | <i>ISO Classification</i> | <i>Spectral Range</i> | <i>Sensitivity</i> | <i>Operating Temperature Range</i> |
|---|--|---|--|---|---|
| CS310 Quantum (PAR) Sensor Featured  | | — | 389 to 692 nm ± 5 nm (wavelengths where response is greater than 50% of maximum) | 0.01 mV per $\mu\text{mol m}^{-2} \text{ s}^{-1}$ | -40° to +70°C |
| SR20-T2-L ISO Secondary Standard Pyranometer with 10K Thermistor Featured  | | Spectrally flat Class A (secondary standard) pyranometer (ISO 9060:2018) | 285 to 3000 $\times 10^{-9}$ m (20% transmission points) | 7 to 25 $\times 10^{-6}$ V/(W/m ²) | -40° to +80°C |
| SR30-L Secondary Standard Pyranometer with RS-485 Modbus Communications and Integrated Heating and Ventilation Featured  | | Hemispherical Solar Radiation: Spectrally flat Class A (secondary standard) ISO 9060:2018 | Hemispherical Solar Radiation: 285 to 3000 $\times 10^{-9}$ m | — | Hemispherical Solar Radiation: -40 to +80°C (rated) |
| CMP10-L ISO Secondary Standard Pyranometer Featured  | | Class A (secondary standard) | 285 to 2800 nm | 7 to 14 $\mu\text{V/W/m}^2$ | -40° to +80°C |

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|---|---|--|--|----------------------------------|------------------------------------|
| SMP10-L Radiation Sensor with Digital RS-485 Output <div>Featured</div> |  | Class A (secondary standard) | 285 to 2800 nm (50% points) | — | — |
| SR05-L ISO 9060 Second Class Pyranometer with Analog and RS-485 Modbus Communications |  | Spectrally flat Class C (second class) ISO 9060:2018 | 285 to 3000 x 10 ⁻⁹ m | — | -40° to +80°C |
| LP02-L Pyranometer |  | ISO 9060:2018 spectrally flat Class C (second class) | 285 to 3000 nm | 15 µV/W/m ² (nominal) | -40° to +80°C |
| SR11 First Class Pyranometer |  | Class B (first class) | 285 to 3000 nm | 15 µV/W/m ² (nominal) | -40° to +80°C |
| SR20-D2-L Digital Secondary Standard Pyranometer |  | Spectrally flat Class A (secondary standard) pyranometer (ISO 9060:2018) | 285 to 3000 x 10 ⁻⁹ m (20% transmission points) | — | -40° to +80°C |
| MS-80-L Secondary Standard Pyranometer |  | Class A (secondary standard) pyranometer (ISO 9060, ISO 17025) | 285 to 3000 nm | ~10 µV/W/m ² | -40° to +80°C |
| MS-80M-L Secondary Standard Pyranometer with RS-485 Modbus Communication |  | Class A (secondary standard) pyranometer (ISO 9060, ISO 17025) | 285 to 3000 nm | ~10 µV/W/m ² | -40° to +80°C |

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|--|---|------------------------------|--|---|--------------------------------------|
| CMP3-L Pyranometer with Sun Shield |  | Class C (second class) | 300 to 2800 nm | 5 to 20 $\mu\text{V}/\text{W}/\text{m}^2$ | -40° to +80°C |
| CMP6-L Pyranometer |  | Class B (first class) | 285 to 2800 nm | 5 to 20 $\mu\text{V W}^{-1} \text{m}^2$ | -40° to +80°C |
| CMP11-L Pyranometer |  | Class A (secondary standard) | 285 to 2800 nm | 7 to 14 $\mu\text{V}/\text{W}/\text{m}^2$ | -40° to +80°C |
| CMP21-L Pyranometer |  | Class A (secondary standard) | 285 to 2800 nm | 7 to 14 $\mu\text{V}/\text{W}/\text{m}^2$ | -40° to +80°C |
| CS301 Pyranometer |  | Class C (second class) | 360 to 1120 nm | 0.2 $\text{mV}/\text{W}/\text{m}^2$ | -40° to +70°C |
| SP230SS Heated Pyranometer |  | Class C (second class) | 360 to 1120 nm (wavelengths where response is 10% of maximum) | 0.2 $\text{mV}/\text{W}/\text{m}^2$ | -40° to +70°C |
| NR-LITE2-L Net Radiometer |  | — | 0.2 to 100 μm | 10 $\mu\text{V W}^{-1} \text{m}^2$ (nominal) | -40° to +80°C |
| SN500SS Net Radiometer |  | — | <ul style="list-style-type: none"> ▶ Pyranometer: 295 to 2685 nm (downward-looking) ▶ Pyrgeometer : 5,000 to 30,000 nm ▶ Pyranometer: 385 to 2105 nm (upward-looking) | <ul style="list-style-type: none"> ▶ Pyranometer: 0.15 mV per W/m^2 (downward-looking) ▶ Pyranometer: 0.057 mV per W/m^2 (upward-looking) ▶ Pyrgeometer : 0.12 mV per W/m^2 | -50° to +80°C and 0 to 100% humidity |



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|---|--|---------------------------|--|---|------------------------------------|
| NR01-L 4-Component Net Radiometer  | | — | ▶ Pyrgometer: 4500 to 50,000 nm ▶ Pyranometer: 305 to 2800 nm | 10 to 40 $\mu\text{V W}^{-1} \text{m}^2$ | -40° to +80°C |
| CNR4-L 4-Component Net Radiometer  | | — | Pyranometer : 305 to 2800 nm | 5 to 20 $\mu\text{V W}^{-1} \text{m}^2$ | -40° to +80°C |
| CHP1-L Pyrhemiliometer  | | — | 200 to 4000 nm | 7 to 14 $\mu\text{V/W/m}^2$ | -40° to +80°C |
| LI200R-L Pyranometer  | | — | 400 to 1100 nm | 0.13 $\text{kW m}^{-2} \text{mV}^{-1}$ (typically) | -40° to +65°C |
| LI190R-L Quantum (PAR) Sensor  | | — | 400 to 700 nm | Typically 5 to 10 μA per 1000 $\mu\text{moles s}^{-1} \text{m}^{-2}$ | -40° to +65°C |

For comprehensive details, visit: www.campbellsci.ca/solar-radiation

