

Solar Radiation

Quantum sensors, pyranometers, net radiometers, and pyrhemimeters

Rugged, Reliable, and Ready for any Application



Campbell Scientific offers pyranometers, net radiometers, and quantum sensors, all designed to 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.

MAJOR SPECIFICATIONS

MAJOR SPECIFICATIONS		Sensor	Measurement Description	Spectral Range	Sensitivity	Operating Temperature
LI190R Quantum Sensor Accurate and versatile		Silicon photovoltaic detector mounted in a cosine-corrected head	Measures Photosynthetic Photon Flux Density (PPFD), in both natural and artificial light	400 to 700 nm	Typically 5 μA per 1000 $\mu\text{moles s}^{-1} \text{m}^2$	-40° to +65°C
LI200R Silicon Pyranometer Accurate and dependable		Silicon photovoltaic detector mounted in a cosine-corrected head	Measures sun plus sky radiation	400 to 1100 nm	0.2 $\text{kW m}^{-2} \text{mV}^{-1}$	-40° to +65°C
CS300 Silicon Pyranometer Accurate, dependable, and ideal for long-term deployment in harsh conditions		Silicon photovoltaic detector mounted in a cosine-corrected head	Measures sun plus sky radiation	360 to 1120 nm	5 mV/Wm^2	-40° to +70°C
SP230 Heated All-Season Pyranometer Heater prevents snow, frost, and dew accumulation		Silicon photovoltaic detector mounted in a cosine-corrected head	Measures sun plus sky radiation	360 to 1120 nm	5 mV/Wm^{-2}	-40° to +70°C
CS320 Digital Thermopile Pyranometer For measurement of global solar radiation under changing weather conditions		Thermopile detector, acrylic diffuser, heater, and signal processing circuitry mounted in an aluminum housing	Measures broad-spectrum short-wave radiation	385 to 2105 nm	digital output	-50° to +50°C
LP02 ISO-Second-Class Pyranometer High Quality device with protective dome		Blackened thermopile protected by a dome	Monitors solar radiation for the full solar spectrum range	285 to 3000 nm	15 $\mu\text{V/W/m}^2$	-40° to +80°C



		Sensor	Measurement Description	Spectral Range	Sensitivity	Operating Temperature
CMP3 ISO-Second-Class Pyranometer Protective Glass Dome and Solar Shield		Blackened thermopile protected by a dome	Monitors solar radiation for the full solar spectrum range	300 to 2800 nm	5 to 20 $\mu\text{V}/\text{W}/\text{m}^2$	-40° to +80°C
CMP6 ISO-First-Class Pyranometer Double glass dome and increased thermal mass improve performance		High-quality blackened thermopile protected by two glass domes	Monitors solar radiation for the full solar spectrum range	285 to 2800 nm	5 to 20 $\mu\text{V}/\text{W}/\text{m}^2$	-40° to +80°C
CMP11 ISO-Secondary-Standard Pyranometer Double glass dome and high-quality detector		High-quality blackened thermopile protected by two glass domes	Monitors solar radiation for the full solar spectrum range	285 to 2800 nm	7 to 14 $\mu\text{V}/\text{W}/\text{m}^2$	-40° to +80°C
CMP21 ISO-Secondary-Standard Pyranometer Double glass dome and internal thermistor for optimized measurements		High-quality blackened thermopile protected by two glass domes	Monitors solar radiation for the full solar spectrum range	285 to 2800 nm	7 to 14 $\mu\text{V}/\text{W}/\text{m}^2$	-40° to +80°C
NR-LITE2 Net Radiometer Weather-resistant PTFE-coated absorbers instead of fragile dome		Two black conical absorbers—one facing upward and the other facing downward	Measures incoming and outgoing short-wave and long-wave radiation	0 to 100 μm	10 $\mu\text{V}/\text{W}/\text{m}^2$ (nominal)	-30° to 70°C
NR01 4-Component Research-Grade Net Radiometer Robust, 4-way radiometer that requires little maintenance		Hukseflux's SR01 ISO-class, thermopile pyranometers, IR01 pyrgeometers, PT100 RTD	Measures incoming and outgoing short-wave and long-wave radiation	Pyranometer: 305 to 2800 nm Pyrgeometer: 4500 to 50,000 nm	10 to 40 $\mu\text{V}/\text{W}/\text{m}^2$	-40° to 80°C
CNR4 4-Component WMO-Class-Quality Radiometer Scientific-grade radiometer with internal thermistor and PRT		Two, thermopile pyranometer, two pyrgeometer, PT100 RTD, and thermistor	Measures incoming and outgoing short-wave and long-wave radiation	Pyranometer: 305 to 2800 nm Pyrgeometer: 4500 to 42,000 nm	5 to 20 $\mu\text{V}/\text{W}/\text{m}^2$	-40° to 80°C
CHP1 Pyrheliometer Used with a sun tracker such as Kipp & Zonen's Solys2 to keep the CHP1 aimed at the sun throughout the day		Pyrheliometer	Measures the direct beam solar irradiance with a field of view limited to 5 degrees	200 to 4000 nm	7 to 14 $\mu\text{V}/\text{W}/\text{m}^2$	-40° to +80°C

