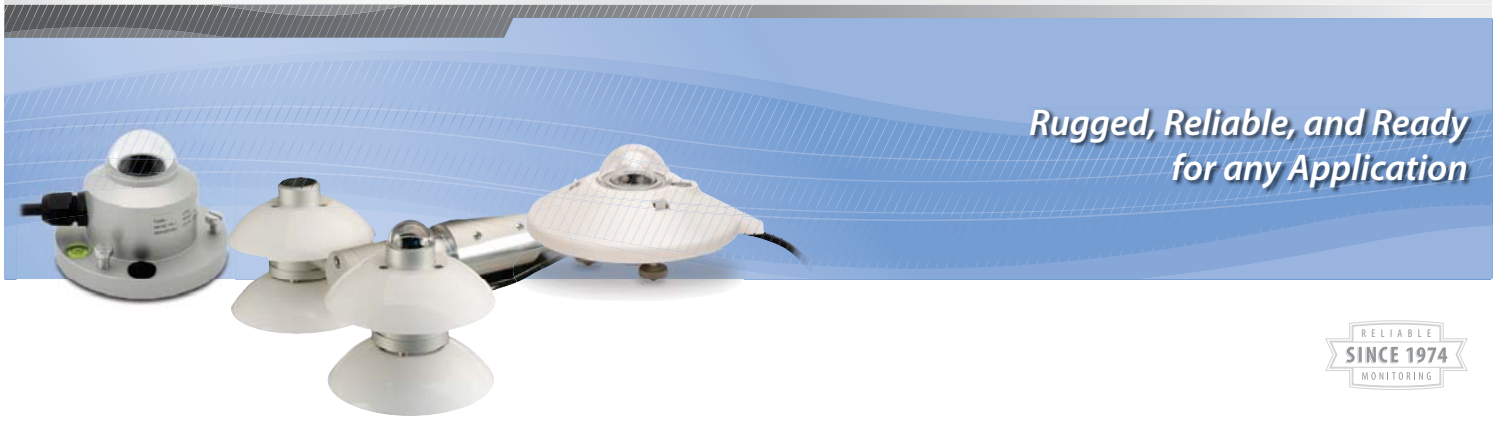
CAMPBELL SCIENTIFIC®
WHEN MEASUREMENTS MATTER

# SOLAR RADIATION

*Quantum sensors, pyranometers, net radiometers, and pyrheliometers*




RELIABLE SINCE 1974 MONITORING

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

| | Sensor | Measurement Description | Spectral Range | Sensitivity | Operating Temperature |
|---|---|---|---|---|---|
| **LI190SB** \| Quantum Sensor<br>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 µmoles $s^{-1}$ $m^{-2}$ | -40° to +65°C |
| **LI200X** \| Silicon Pyranometer<br>Accurate and dependable  | silicon photovoltaic detector mounted in a cosine-corrected head | Measures sun plus sky radiation | 400 to 1100 nm | 0.2 kW $m^{-2}$ $mV^{-1}$ | -40° to +65°C |
| **CS300** \| Silicon Pyranometer<br>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 | 300 to 1100 nm | 0.2 mV/$Wm^{-2}$ | -40° to +70°C |
| **CMP3** \| ISO-Second-Class Pyranometer<br>Protective Glass Dome and Solar Shield  | Blackened thermopile protected by a dome | Monitors solar radiation for the full solar spectrum range | 310 to 2800 nm | 5 to 20 µV/W/$m^2$ | -40° to +80°C |
| **CMP6** \| ISO-First-Class Pyranometer<br>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 µV/W/$m^2$ | -40° to +80°C |

| | | Sensor | Measurement Description | Spectral Range | Sensitivity | Operating Temperature |
|---|---|---|---|---|---|---|
| **CMP11** \| ISO-Secondary Standard Pyranometer<br>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 µV/W/m$^2$ | -40° to +80°C |
| **CMP21** \| ISO-Secondary-Standard Pyranometer<br>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 µV/W/m$^2$ | -40° to +80°C |
| **NR-LITE2** \| Net Radiometer-<br>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 100µm | 10 µV/W/m$^2$ (nominal) | -30° to 70°C |
| **CNR4** \| 4-Component WMO-Good-Quality Radiometer<br>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<br>Pyrgeometer: 4500 to 42,000 nm | 5 to 20 µV/W/m$^2$ | -40° to 80°C |
| **CHP1** \| Pyrheliometer<br>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 µV/W/m$^2$ | -40° to +80°C |