| | PYRANOMETER SMP SERIES | | | | |
|---|---|---|---|---|---|
| **SPECIFICATION** | **SMP3** | **SMP6** | **SMP10/SMP11** | **SMP21** | **SMP22** |
| **Classification to ISO 9060:1990** | Class C | Class B | Class A | Class A | Class A |
| **Analogue output • V-version** | 0 to 1V | 0 to 1V | 0 to 1V | 0 to 1V | 0 to 1V |
| **Analogue output range** | -200 to 2000W/m² | -200 to 2000W/m² | -200 to 2000W/m² | -200 to 2000W/m² | -200 to 2000W/m² |
| **Analogue output • A-version** | 4 to 20mA | 4 to 20mA | 4 to 20mA | 4 to 20mA | 4 to 20mA |
| **Analogue output range*** | 0 to 1600W/m² | 0 to 1600W/m² | 0 to 1600W/m² | 0 to 1600W/m² | 0 to 1600W/m² |
| **Serial output** | RS-485 Modbus® | RS-485 Modbus® | RS-485 Modbus® | RS-485 Modbus® | RS-485 Modbus® |
| **Serial output range** | -400 to 2000W/m² | -400 to 2000W/m² | -400 to 4000W/m² | -400 to 4000W/m² | -400 to 4000W/m² |
| **Response time (63 %)** | < 1.5 s | < 1.5 s | < 0.7 s | < 0.7 s | < 0.7 s |
| **Response time (95 %)** | < 12 s | < 12 s | < 2 s | < 2 s | < 2 s |
| **Spectral range (20 % points)**<br>**(50 % points)** | 285 to 3000nm<br>300 to 2800nm | 270 to 3000nm<br>285 to 2800nm | 270 to 3000nm<br>285 to 2800nm | 270 to 3000nm<br>285 to 2800nm | 210 to 3600nm<br>250 to 3500nm |
| **Zero offsets (unventilated)**<br>**(a) thermal radiation (at 200 W/m²)**<br>**(b) temperature change (5 K/h)** | <br>< 15W/m²<br>< 5W/m² | <br>< 10W/m²<br>< 4W/m² | <br>< 7 W/m²<br>< 2 W/m² | <br>< 7 W/m²<br>< 2 W/m² | <br>< 3 W/m²<br>< 1 W/mm² |
| **Nonstability (change/year)** | < 1% | < 1% | < 0.5% | < 0.5% | < 0.5% |
| **Non-linearity (100 to 1000 W/m²)** | < 1.5% | < 1% | < 0.2% | < 0.2% | < 0.2% |
| **Directional response (up to 80 ° with 1000 W/m beam)** | < 20W/m² | < 15W/m² | < 10 W/m² | < 10W/m² | < 5 W/m² |
| **Temperature response** | < 2% (-20 °C to +50 °C)<br>< 4% (-40 °C to +70 °C) | < 1.5% (-20 °C to +50 °C)<br>< 3% (-40 °C to +70 °C) | < 1% (-20°C to +50 °C)<br>< 2% (-40 °C to +70 °C) | < 0.3% (-20°C to +50 °C)<br>< 0.3% (-40 °C to +70 °C) | < 0.3% (-20°C to +50 °C)<br>< 0.3% (-40 °C to +70 °C) |
| **Spectral selectivity (350 to 1500 nm)** | < 1% | < 1% | < 1% | < 1% | < 2% |
| **Tilt response (0 ° to 90 ° at 1000 W/m²)** | < 1% | < 1% | < 0.2% | < 0.2% | < 0.2% |
| **Field of view** | 180 ° | 180 ° | 180 ° | 180 ° | 180 ° |
| **Accuracy of bubble level** | < 0.2 ° | < 0.1° | < 0.1 ° | < 0.1 ° | < 0.1 ° |
| **Power consumption (at 12 VDC)** | V-version: 55mW<br>A-version: 100mW | V-version: 55mW<br>A-version: 100mW | V-version: 55mW<br>A-version: 100mW | V-version: 55mW<br>A-version: 100mW | V-version: 55mW<br>A-version: 100mW |
| **Software, Windows™** | Smart Sensor Explorer Software, for configuration, test and data logging. | Smart Sensor Explorer Software, for configuration, test and data logging. | Smart Sensor Explorer Software, for configuration, test and data logging. | Smart Sensor Explorer Software, for configuration, test and data logging. | Smart Sensor Explorer Software, for configuration, test and data logging. |
| **Supply voltage** | 5 to 30VDC | 5 to 30VDC | 5 to 30VDC | 5 to 30VDC | 5 to 30VDC |
| **Detector type** | Thermopile | Thermopile | Thermopile | Thermopile | Thermopile |
| **Operating and storage temperature range** | -40 °C to +80 °C | -40 °C to +80°C | -40 °C to +80 °C | -40 °C to +80 °C | -40 °C to +80 °C |
| **Humidity range** | 0 to 100% | 0 to 100% | 0 to 100% | 0 to 100% | 0 to 100% |
| **MTBF (Mean Time Between Failures)** | > 10 years | > 10 years | > 10 years | > 10 years | > 10 years |
| **Ingress Protection (IP) rating** | 67 | 67 | 67 | 67 | 67 |
| **Onsite pyranometer uncertainty** | Calculate with Suncertainty App | Calculate with Suncertainty App | Calculate with Suncertainty App | Calculate with Suncertainty App | Calculate with Suncertainty App |
| **Recommended applications** | Economical solution for efficiency and maintenance monitoring of PV power installations, routine measurements in weather stations, agriculture, horticulture and hydrology. | Good quality measurements for Solar Monitoring, hydrology networks, greenhouse climate control. | High performance for PV panel and thermal collector testing, solar energy research, solar prospecting, materials testing, advanced meteorology and climate networks. | Meteorological networks, reference measurements in PV monitoring, extreme climates, polar or arid. | Scientific research requiring the highest level of measurement accuracy and reliability under all conditions. |

| | PYRANOMETER CMP SERIES | | | | |
|---|---|---|---|---|---|
| **SPECIFICATION** | **CMP3** | **CMP6** | **CMP10/CMP11** | **CMP21** | **CMP22** |
| **Classification to ISO 9060:1990** | Class C | Class B | Class A | Class A | Class A |
| **Sensitivity** | 5 to 20µV/W/m² | 5 to 20µV/W/m² | 7 to 14µV/W/m² | 7 to 14µV/W/m² | 7 to 14µV/W/m² |
| **Impedance** | 20 to 200Ω | 20 to 200Ω | 10 to 100Ω | 10 to 100Ω | 10 to 100Ω |
| **Expected output range (0 to 1500 W/m )** | 0 to 30mV | 0 to 30mV | 0 to 20mV | 0 to 20mV | 0 to 20mV |
| **Maximum operational irradiance** | 2000 W/m² | 2000 W/m² | 4000 W/m² | 4000 W/m² | 4000 W/m² |
| **Response time (63 %)**<br>**Response time (95 %)** | < 6 s<br>< 18 s | < 6 s<br>< 18 s | < 1.7 s<br>< 5 s | < 1.7 s<br>< 5 s | < 1.7 s<br>< 5 s |
| **Spectral range (20 % points)**<br>**(50 % points)** | 285 to 3000nm<br>300 to 2800nm | 270 to 3000nm<br>285 to 2800nm | 270 to 3000nm<br>285 to 2800nm | 270 to 3000nm<br>285 to 2800nm | 210 to 3600nm<br>250 to 3500nm |
| **Zero offsets (unventilated)**<br>**(a) thermal radiation (at 200 W/m²)**<br>**(b) temperature change (5 K/h)** | <br>< 15 W/m²<br>< 5 W/m² | <br>< 10W/m²<br>< 4 W/m² | <br>< 7W/m²<br>< 2W/m² | <br>< 7W/m²<br>< 2W/m² | <br>< 3W/m²<br>< 1W/m² |
| **Nonstability (change/year)** | < 1% | < 1% | < 0.5% | < 0.5% | < 0.5% |
| **Non-linearity (100 to 1000 W/m²)** | < 1.5% | < 1% | < 0.2% | < 0.2% | < 0.2% |
| **Directional response (up to 80 ° with 1000 W/m beam)** | < 20 W/m² | < 20 W/m² | < 10 W/m² | < 10 W/m² | < 5W/m² |
| **Spectral selectivity (350 to 1500 nm)** | < 3% | < 3% | < 3% | < 3% | < 3% |
| **Tilt response (0 ° to 90 ° at 1000 W/m²)** | < 1% | < 1% | < 0.2% | < 0.2% | < 0.2% |
| **Temperature response** | < 5% (-10 °C to +40 °C) | < 4% (-10 °C to +40 °C) | < 1% (-10 °C to +40 °C) | < 1% (-20 °C to +50 °C) | < 0.5% (-20 °C to +50 °C) |
| **Field of view** | 180 ° | 180 ° | 180 ° | 180 ° | 180 ° |
| **Accuracy of bubble level** | < 0.2 ° | < 0.1 ° | < 0.1 ° | < 0.1 ° | < 0.1 ° |
| **Temperature sensor output** | NA | NA | NA | 10 k Thermistor (optional Pt-100) | 10 k Thermistor (optional Pt-100) |
| **Detector type** | Thermopile | Thermopile | Thermopile | Thermopile | Thermopile |
| **Operating and storage temperature range** | -40 °C to +80 °C | -40 °C to +80 °C | -40 °C to +80 °C | -40 °C to +80 °C | -40 °C to +80 °C |
| **Humidity range** | 0 to 100% | 0 to 100% | 0 to 100% | 0 to 100% | 0 to 100% |
| **MTBF (Mean Time Between Failures)** | > 10 years | > 10 years | > 10 years | > 10 years | > 10 years |
| **Ingress Protection (IP) rating** | 67 | 67 | 67 | 67 | 67 |
| **Onsite pyranometer uncertainty** | Calculate with Suncertainty App | Calculate with Suncertainty App | Calculate with Suncertainty App | Calculate with Suncertainty App | Calculate with Suncertainty App |
| **Recommended applications** | Economical solution for routine measurements in weather stations, field testing. | Good quality measurements for hydrology networks, greenhouse climate control. | Meteorological networks, PV panel and thermal collector testing, materials testing. | Meteorological networks, reference measurements in extreme climates, polar or arid. | Scientific research requiring the highest level of measurement accuracy and reliability. |