



## Overview

The SR20-D2, manufactured by Hukseflux Thermal Sensors, is an ISO 9060:2018 spectrally flat Class A (secondary standard) digital pyranometer that measures solar short-wave radiation in a full hemisphere of the sky. It connects directly to a Campbell Scientific data logger and is designed for Modbus

RTU applications that require high measurement accuracy in demanding applications such as scientific meteorological observation networks and utility scale solar-energy-power production sites.

## Benefits and Features

- ▶ Low temperature dependence
- ▶ Onboard digital temperature sensor
- ▶ Ultra robust connector, desiccant holder, and sun screen
- ▶ Temperature dependence characterized and supplied for each instrument
- ▶ Directional response tested on each instrument
- ▶ Digital output (Modbus RTU)

## Specifications

|                         |   |                      |  |
|-------------------------|---|----------------------|--|
| Sensor                  | High-quality blackened thermopile protected by two glass domes            | Zero Offset A        | 5 W/m <sup>2</sup> (unventilated), 2.5 W/m <sup>2</sup> (ventilated)<br>(response to 200 W/m <sup>2</sup> net thermal radiation) |
| Measurement Description | Monitors solar radiation for the full solar spectrum range                | Zero Offset B        | ≤ ± 2 W/m <sup>2</sup> (response to 5 K/h change in ambient temperature)   |
| ISO Classification      | Spectrally flat Class A (secondary standard) pyranometer (ISO 9060:2018 ) | Non-Stability        | ≤ ± 0.5% change per year   |
| WMO Performance Level   | High-quality pyranometer  | Non-Linearity        | ≤ ± 0.2% (100 to 1000 W/m <sup>2</sup> )   |
| Response Time           | 4.5 s   | Directional Response | < ± 10 W/m <sup>2</sup>  |

|                          |   |
|--------------------------|---|
| Spectral Selectivity     | < ± 3% (0.35 to 1.5 x 10 <sup>-6</sup> m)   |
| Temperature Response     | < ± 0.4% (-30° to +50°C)  |
| Tilt Response            | < ± 0.2% (0 to 90° at 1000 W/m <sup>2</sup> )                                       |
| Heater                   | No heater available   |
| Steady-state Zero Offset | > < ± 0.8 W/m <sup>2</sup> (-40° to +80°C)<br>> < ± 0.5 W/m <sup>2</sup> (at +20°C) |
| Calibration Uncertainty  | < 1.2% (k=2)  |
| Level Accuracy           | < 0.1° (bubble entirely in ring)  |

|                             |   |
|-----------------------------|---|
| Operating Temperature Range | -40° to +80°C   |
| Field of View (FOV)         | 180°  |
| Measurement Range           | -400 to 4000 W/m <sup>2</sup>                               |
| Spectral Range              | 285 to 3000 x 10 <sup>-9</sup> m (20% transmission points)  |
| Sensitivity                 | Digital output  |
| Output Definition           | Running average over 4 measurements (refreshed every 0.1 s) |

For comprehensive details, visit: [www.campbellsci.com/sr20-d2-l](http://www.campbellsci.com/sr20-d2-l) 



Campbell Scientific, Inc. | 815 W 1800 N | Logan, UT 84321-1784 | (435) 227-9120 | [www.campbellsci.com](http://www.campbellsci.com)  
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