Overview

This spectrally flat Class A pyranometer is engineered for precise and long-term solar irradiance measurements in the field. It incorporates a robust internal desiccant system with a 10-year lifespan under sealed conditions, significantly reducing maintenance requirements.

The instrument features advanced temperature compensation. A unique polynomial correction function is applied based on individually measured temperature responses, ensuring a minimal sensitivity variation of within ±2% over a wide operational range from -40°C to +70°C, referenced to a calibration temperature of +22°C.

The optional ventilation unit further extends cleaning intervals for the dome, enhancing long-term data quality by minimizing contamination and condensation.

Key Features

- **Spectrally Flat Class A Performance**
  Ensures compliance with the highest industry standards for solar irradiance measurements.
- **Low Maintenance Design**
  Integrated desiccant cartridge lasts up to 10 years without requiring replacement or housing access.
- **Temperature-Compensated Output**
  Maintains measurement accuracy across extreme temperature variations using pre-calibrated polynomial correction.
- **Multiple Output Interfaces**
  Equipped with:
  - RS-485 Modbus® digital output
  - 0 to 1 V analog voltage output
  - 4 to 20 mA current loop output
- **Rapid Response Time**
  Fast data acquisition with <0.7 s (63%) and <2 s (95%) response times.

Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.

- **Rugged Electrical Design**
  Wide power supply range (5 to 30 VDC), with protection against overvoltage, reversed polarity, and short circuits.
- **Standardized Connectivity**
  Allows easy interchange of instruments for recalibration without the need for rewiring or system adjustment.
- **Data Management Software**
  Supplied with SmartExplorer Windows™ software for data logging, Modbus® address configuration, and real-time display.

Technical Specifications

Parameter	Value
Spectral Range (50% points)	285 to 2800 nm
Response Time (63%)	< 0.7 seconds
Response Time (95%)	< 2 seconds
Zero Offset A (with 200 W/m² net longwave)	< ±7 W/m²
Zero Offset B (response to temp. change 5K/h)	< ±2 W/m²
Directional Response (up to 80° at 1000 W/m²)	< ±10 W/m²
Temperature Response (-40 to +70°C)	< ±2 %
Analog Output (-V version)	0 to 1 V
Analog Output (-A version)	4 to 20 mA
Digital Output	2-wire RS-485 Modbus®
Power Supply	5 to 30 VDC
Protection	Overvoltage, reverse polarity, and short circuit

Applications

- Meteorological Stations
- Solar Energy Performance Monitoring
- Photovoltaic System Evaluation
- Climate Research and Environmental Monitoring

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