

Solar Resource Measurement System

with Rotating Shadowband Radiometer



Measurements

- Global Horizontal Irradiance (GHI)
- Diffuse Horizontal Irradiance (DIFF)
- Plane-of-Array Irradiance (POA)
- Direct Normal Irradiance (DNI)*
- Back of Module Temperature (BOM)
- Solar Position/Air Mass
- Wind Speed
- Wind Direction
- Air Temperature
- Relative Humidity
- Barometric Pressure
- Precipitation
- GPS position and time

*Computed

Overview

The RSR100, Rotating Shadowband Radiometer, offers a lower-cost option for providing solar measurements GH, DIFF, and DNI. The RSR100 system uses the fast response time of a Li-Cor photocell diode (10 μ s) coupled with the burst measurement (up to 2 kHz), control, and processing capability of a Campbell Scientific datalogger to measure GHI and DIFF solar irradiance and compute DNI.

The RSR100 is built around Irradiance, Inc's RSR2™ Rotating Shadowband Radiometer. The RSR2 is a second-generation instrument incorporating improvements in accuracy and mechanical reliability from collaborative research conducted at NREL, Sandia, and the University of Oregon Solar Monitoring Lab. Irradiance has manufactured over 500 RSR2 units operating across six continents.

Benefits and Features

- › Contains a Campbell Scientific CR1000 Measurement and Control Datalogger
- › Fast to field with industry-proven design
- › Factory fabrication, programming, and testing minimizes field wiring errors and reduces deployment time
- › Complies with Modbus, PakBus, and DNP3 protocols
- › Provides a battery back system that allows data collection during power outages and network failure

More info: 435.227.9120

campbellsci.com/rsr100



Typical Configuration

- 1 CR1000 Measurement and Control Datalogger
- 2 Cellular Modem
- 3 RSR2 Rotating Shadowband Radiometer (Optional secondary LI200RX pyranometer). Mount: 27065 RSR Mounting Stand
- 4 Secondary standard pyranometer. Mount: CM255LS Fully Adjustable Solar Sensor Mounting Stand with Leveling Screws
- 5 WS600-USB Smart Weather Sensor (air temperature, relative humidity, wind speed, wind direction, precipitation, barometric pressure)
- 6 SP20 20 W Solar Panel
- 7 BP24 24 Ah Rechargeable Battery
- 8 CH200 Smart Charge Controller
- 9 PWENC16/18 Pre-Wired Datalogger Enclosure
- 10 CM106B 7 to 10 ft Galvanized-Steel-Tubing Tripod
- 11 CM203 3 ft Crossarm
- 12 CMB200 Crossarm Brace
- 13 GPS16X-HVS GPS Receiver with Integrated Antenna



See Also

SOLAR1000 SCE

CAISO, SCE Compliant
Operational MET
station for solar
energy producing
utilities



SMP100

In-Field Soiling Measurement Solar-Module-Performance
Monitoring Station

