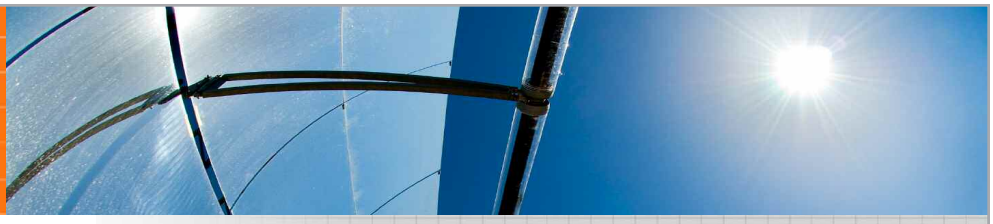
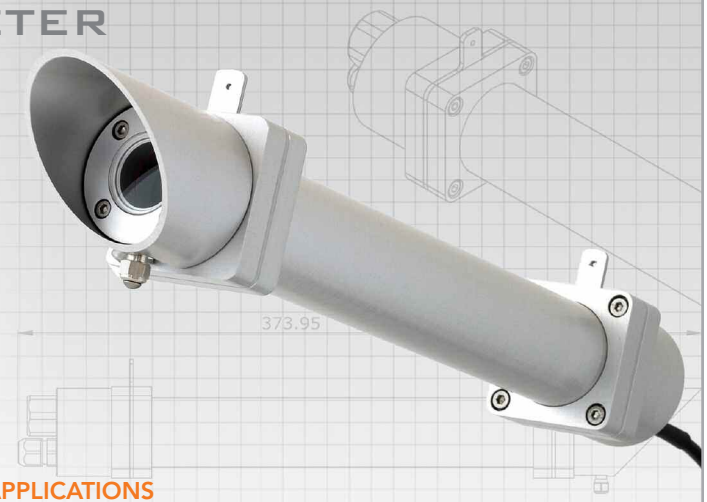
DR01



FIRST CLASS PYRHELIOMETER



The DR01 is a research grade normal incidence direct solar irradiance sensor (also known as a pyrheliometer). Suitable for tracker mounted operation, the DR01 is intended for short-wave direct solar irradiance measurement of the Sun. The DR01 is a 'First Class' compliant pyrheliometer, as per the latest ISO and WMO standards.

The DR01 foreoptic assembly features a precision ground and polished quartz window/lens, for true spectral solar transmission ranging from 0.2 - 4.0 µm. As per the latest ISO-9060 and WMO standards, the full opening view angle of the DR01 is collimated precisely to 5.0° degrees, making the sensor ideally suited for normal incidence direct solar irradiance measurement. Capable of measuring up to two suns, 2000 W/m^2, the DR01 pyrheliometer can be deployed anywhere on Earth. The instrument employs a passive thermopile-based sensing technology that generates a low level DC millivolt output signal proportional to the normal incident direct solar flux received at the detector surface. The DR01 also features a thermally isolated low power window/lens heater in the foreoptic; when cycled on/off prior to sunrise the heater effectively eliminates the formation of dew on the pyrheliometer window/lens, thus resulting in improved post sunrise early morning measurement accuracy. Determining direct solar disk irradiance with the DR01 requires connection to a data acquisition device with a measurement resolution of ten micro-volts or better, and an autonomous two-axis solar tracker platform. Typical DR01 measurement applications include scientific meteorological/climate observations, material testing research, solar collector/PV panel efficiency and solar renewable resource assessment validation. The signal cable of the DR01 can be easily replaced by the user onsite, thus minimizing down-time and expense otherwise associated with instrument re-cabling and/or cable connector replacement by the manufacturer. Each DR01 is calibrated upon manufacture and delivered standard with a WRR (World Radiometric Reference) traceable certificate of calibration.

APPLICATIONS

- **Climatology / Meteorology**
- **Material Testing Research**
- **Solar Collector & PV Panel Efficiency Validation**
- **Solar Renewable Resource Assessment**

Note: Above applications are inclusive of, but not limited to the entire DR01 application range.

DR01 SPECIFICATIONS

ISO classification:	First Class
Spectral range:	200 to 4000 nm
Sensitivity (nominal):	10 µV/W/m^2
Response time:	4 sec. (1/e signal) 18 sec. (95%)
Range:	0 to 2000 W/m^2
Full opening view angle:	5.0° degrees
Slope angle:	1.0° degree
Non-linearity (to 1000 W/m^2):	± 1%
Temperature range:	-40 to +80° C
Temperature dependence:	< ± 0.1 %/°C
Non stability (drift):	< ± 1% per year
Calibration traceability:	WRR
Cable length:	5 meter standard *(longer lengths optional)*

OPTIONS

Additional cable length by the meter, AC100 / AC420 amplifiers

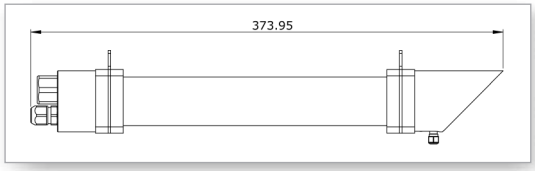


Figure 1: DR01 Pyrheliometer mechanical dimensions

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