

SR30 design

SR30 pyranometer employs a state-of-the-art thermopile sensor with black coated surface, two domes and an anodised aluminium body. It offers a digital output via Modbus RTU over 2-wire RS-485. The pyranometer dome is heated by ventilating the area between the inner and outer dome. This way of heating is much more efficient than traditional external ventilation, where most of the heat is carried away with the ventilation air. Internal ventilation is as effective against dew and frost at 2 W as external ventilation at 10 W. It also leads to a reduction of zero offsets.

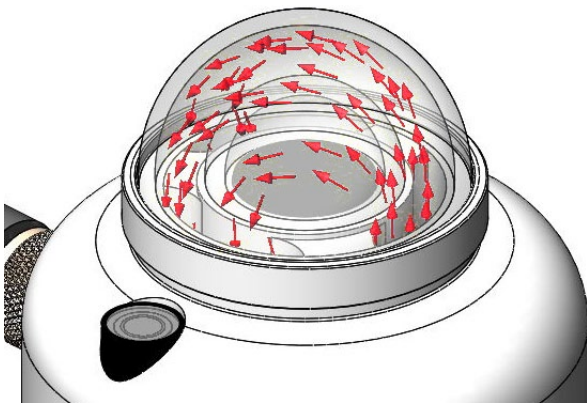


Figure 5 How it's done: internal ventilation between the inner- and outer dome is much more power efficient than conventional external ventilation

Hukseflux Sensor Manager software

For communication between a PC and SR30, the Hukseflux Sensor Manager software is included. It allows the user to plot and export data, and change the SR30 Modbus address and communication settings. Also, the digital outputs may be viewed for sensor diagnostics.

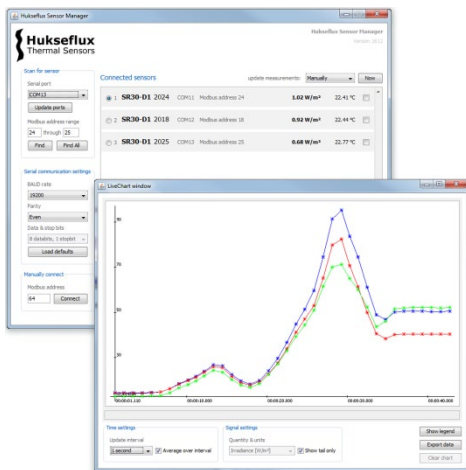


Figure 6 user interface of the Sensor Manager, showing sensor diagnostics



Figure 7 SR30 secondary standard pyranometers with digital output for GHI (global horizontal irradiance) and POA (plane of array) measurements

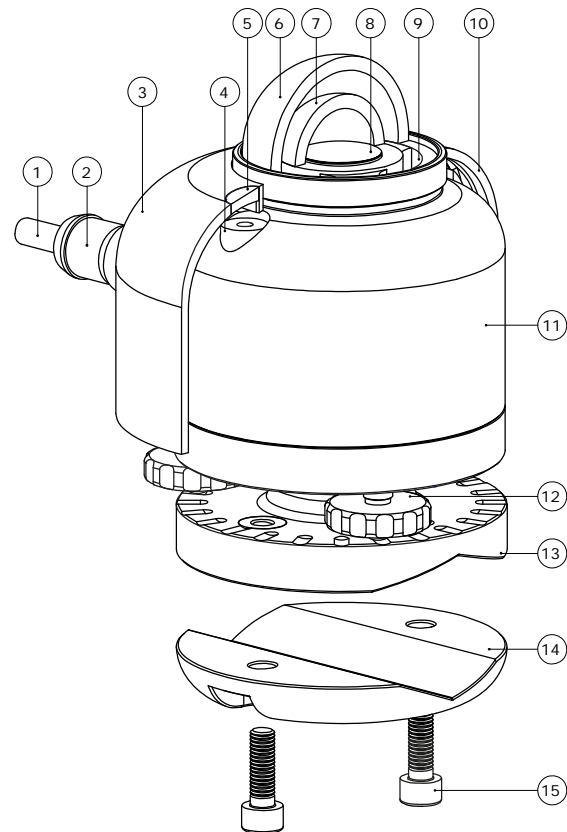


Figure 8 overview of SR30: (1) cable, (2) connector, (3) sun screen, (4) bubble level, (5) bubble level window, (6) outer dome, (7) inner dome, (8) thermal sensor with black coating, (9) internal ventilation vents, (10) quick release system of sun screen, (11) instrument body, (12) levelling feet, (13) optional spring-loaded levelling mount, (14) optional tube mount, (15) screws included with tube mount

Levelling mount

There are 2 mounting options available for SR30. They allow for simplified mounting, levelling and instrument exchange on a flat surface or a tube.



Figure 9 optional spring-loaded levelling and tube mount for SR30

Suggested use

- PV system performance monitoring
- scientific meteorological observations

See also

- **SR05**, an economical solution often used for monitoring small scale PV systems
- consult our pyranometer selection guide
- view our complete [range of solar sensors](#)

About Hukseflux

Hukseflux Thermal Sensors offers measurement solutions for the most challenging applications. We design and supply sensors as well as test & measuring systems, and offer related services such as calibration, engineering and consultancy. Our main area of expertise is measurement of heat transfer and thermal quantities such as solar radiation, heat flux and thermal conductivity. Hukseflux is ISO 9001:2008 certified. Hukseflux sensors, systems and services are offered worldwide via our office in Delft, the Netherlands and local distributors.

Are you interested in this product?
E-mail us at: info@hukseflux.com

SR30 specifications

Measurand	hemispherical solar radiation
ISO classification	secondary standard pyranometer
Calibration uncertainty	< 1.2 % (k = 2)
Measurand	sensor tilt angle
Tilt measurement uncertainty	$\pm 1^\circ$ (0 to 90°)
Heating	included
Ventilation	included
Standard operating mode	heated and ventilated
Power consumption	< 2.3 W at 12 VDC
Zero offset a	< 2 W/m ²
Calibration traceability	to WRR
Calibration registers	accessible to users
Spectral range	285 to 3000 x 10 ⁻⁹ m
Rated operating temperature range	-40 to +80 °C
Temperature response	< ± 0.4 % (-30 to +50 °C)
Temperature response test of individual instrument	report included
Directional response test of individual instrument	report included
Tilt sensor test of individual instrument	report included
Standard cable length	5 m
Rated operating voltage range	5 to 30 VDC

Optional operation in low power mode

Operating condition	heater and ventilator [OFF]
Zero offset a	5 W/m ² (unventilated)
Power consumption	< 0.1 W at 12 VDC

Digital output

Output	<ul style="list-style-type: none"> - irradiance in W/m² - instrument body temperature in °C - tilt angle in ° - internal humidity in % - ventilator speed in RPM
Communication protocol	Modbus / over 2-wire RS-485
Transmission mode	RTU

Options

- spring-loaded levelling; a practical mount for easy mounting, levelling and instrument exchange on flat surfaces
- tube levelling mount with set of bolts
- longer cable; 10 and 20 metres
- 20 metres extension cable with 2 connectors

SR30 next level digital secondary standard pyranometer

Nowadays, the best pyranometers are made by Hukseflux Thermal Sensors. This overview of features and benefits of SR30 gives you some of the reasons why! Whatever your application is, Hukseflux offers the highest accuracy in every class at the most attractive price level.



Best data availability

- heated domes
- suppresses dew and frost deposition
- no external ventilator needed
- low power consumption



Best measurement accuracy

- lowest zero offsets
- lowest calibration uncertainty
- best temperature dependence



Best levelling

- window for visible bubble level
- with optional spring-loaded levelling mount
- easy mounting, levelling and instrument exchange



Best paperwork

- all ISO required reports with every individual sensor
 - temperature response testing -30 to 50 °C
 - full directional response testing
 - tilt sensor testing



Best diagnostics

- tilt angle
- humidity
- temperature
- ventilator speed (RPM)



Best worldwide support

- efficient calibration support
- fast servicing organisation
- local stock of spare parts

