SR05-LI19

Pyranometer with handheld read-out unit / datalogger

SR05 is a solar radiation sensor that is applied in most common solar radiation observations. SR05-A1, with analogue millivolt output, complies with the spectrally flat Class C specifications of the ISO 9060 standard and the WMO Guide. LI19 is a high-accuracy handheld read-out unit / datalogger. The SR05-LI19 combination is well suited for mobile measurements and short term datalogging.

Figure 1 *SR05-A1 pyranometer with LI19 handheld read-out unit / datalogger.*

Figure 2 *SR05-LI19 as it is delivered, in a practical transport case.*

Introduction

SR05 is a solar radiation sensor that is applied in general observations. It measures the solar radiation received by a plane surface from a 180° field of view angle. This quantity, expressed in W/m^2, is called "hemispherical" solar radiation. SR05 pyranometer can be employed outdoors under the sun, as well as indoors with lamp-based solar simulators. Its orientation depends on the application and may be horizontal, tilted (for plane of array radiation) or inverted (for reflected radiation). Model version SR05-A1 offers analogue millivolt output.

LI19 displays the measured radiation and stores measured data. Once programmed with the sensitivity of SR05, the display will show the actual value of the solar radiation in W/m^2. Programming LI19 is done through its PC user interface.

The system is supplied in a practical transport case, for easy transport and protection during field measurement campaigns. Also included are the necessary software, AA-type batteries and a USB cable. Fresh batteries allow for more than 50 days of operation. LI19 may also be used with other pyranometers and heat flux sensors.

Operation

Operation of SR05-LI19 is easy. As LI19 has already been programmed at the factory, measurements can start by switching on the LI19. The storage interval is set by connecting the LI19 to a PC and using the LI19 user interface software.

Suggested use

- short-term field measurement of solar radiation
- education in solar energy

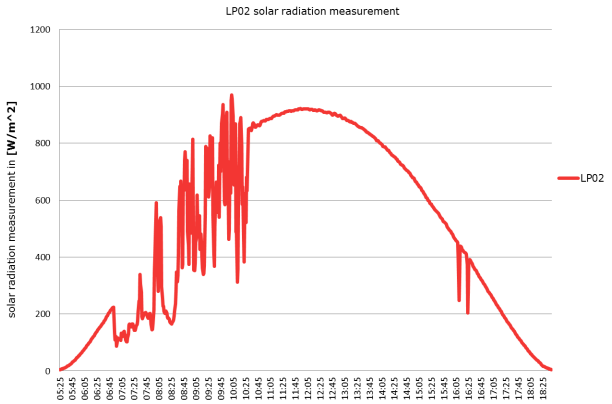

Figure 3 *A graph generated using data stored on LI19.*

Figure 4 *LI19 used with a pyranometer in a field measurement campaign.*

Delivery

- SR05-A1 pyranometer
- programmed LI19 with batteries
- 3 m cable with female M12-A connector on sensor end, stripped on other end
- 2 spare batteries (type AA)
- LI19 software
- transport case with space for sensors
- SR05 and LI19 product certificate
- strip with measurement unit markers
- USB cable

Latest software

The latest software can be downloaded from here.

SR05-A1 specifications

Measurand	hemispherical solar radiation
ISO classification	
ISO 9060:2018	spectrally flat Class C pyranometer
ISO 9060:1990	second class pyranometer
WMO performance level	moderate quality pyranometer
Calibration uncertainty	< 2.4 % (k = 2)
Calibration traceability	to WRR
Spectral range	285 to 3000 x 10^{-9} m
Sensitivity (nominal)	10 x 10^{-6} V/(W/m^2)
Rated operating temperature range	-40 to +80 °C
Temperature response	< ± 3 % (-10 to +40 °C)
Standard cable length	3 m

LI19 specifications

Output on display	solar radiation
Stored measurement definition	minimum maximum and average over storage interval with conversion to W/m^2
A/D conversion	16 bits
Temperature dependence	< 0.5 % + 3 x 10^{-6} V over rated range
Display refreshment rate	1 s^{-1}
Battery type	2 x AA
Battery life	> 50 days (on fresh batteries)
Storage interval range	2 to 65535 s (selectable)
Storage capacity	3518 measurements
Rated operating temperature range	-10 to +40 °C

See also

- SR05-A1 spectrally flat Class C pyranometer
- LI19 read-out unit / datalogger
- view our product range of solar sensors

About Hukseflux

Hukseflux is the leading expert in measurement of energy transfer. We design and manufacture sensors and measuring systems that support the energy transition. We are market leaders in solar radiation- and heat flux measurement. Customers are served through the main office in the Netherlands, and locally owned representations in the USA, Brazil, India, China, Southeast Asia and Japan.

Interested in this product?
E-mail us at: info@hukseflux.com