Hukseflux
Thermal Sensors

LP02-LI19

Pyranometer with handheld read-out unit / datalogger

LP02 is a solar radiation sensor that is applied in most common solar radiation observations. LP02 complies with the second class specifications of the ISO 9060 standard and the WMO Guide. LI19 is a high accuracy handheld read-out unit / datalogger. The LP02 - LI19 combination is well suited for mobile measurements and short term datalogging.

Figure 1 *LP02 pyranometer with LI19 handheld read-out unit / datalogger*

Figure 2 *LP02-LI19 as it is delivered, in a practical transport case*

Introduction

LP02 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. LP02 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).

LI19 is used to display the measured radiation and for datalogging. Once programmed with the sensitivity of LP02, the display will read the actual value of the solar radiation in W/m^2. Programming LI19 is done through its PC interface.

The system is delivered in a practical transport case, for easy transport and protection during field measurement campaigns. The case also includes the necessary software, AA-type batteries and a USB cable. Batteries allow for approximately 50 days of operation.

LI19 may also be used with other pyranometers and heat flux sensors.

Operation

Operation of LP02-LI19 is easy. As LI19 has already been programmed at the factory, read-out of LP02 can be done by switching on the LI19. Logging options should be set by connecting the LI19 to a PC.

Suggested use

- short-term field measurement of solar radiation
- amplification of pyranometer signals
- education in solar energy

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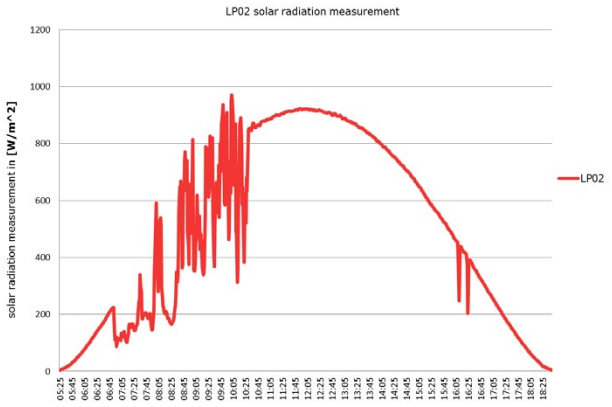

Figure 3 *sample analysis from logging of LP02-LI19 data*

Figure 4 *LP02-LI19 used in field measurement campaign*

Delivery

- LP02 pyranometer
- programmed LI19
- 2 spare batteries (type AA)
- USB cable
- software
- transport case

Options

- longer cable LP02, in multiples of 5 metres
- sun screen

LP02 specifications

Measurand	hemispherical solar radiation
ISO classification	second class pyranometer
Calibration uncertainty	< 1.8 % (k = 2)
Calibration traceability	to WRR
Spectral range	285 to 3000 x 10^{-9} m
Sensitivity (nominal)	15 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	5 m

LI19 specifications

Measurand	Analog voltage with conversion to W/m^2
Sample rate	1 s^{-1}
Battery type	AA
Battery life	> 50 days
Interval setting	2 to 65535 s
Memory capacity	3000 samples
Rated operating temperature range	-10 to +40 °C
Software compatibility	Windows XP and up

See also

- LP02 second class pyranometer
- LI19 read-out unit / datalogger
- SR11, SR12 and SR20 pyranometers for higher accuracy measurements
- view our pyranometer selection guide for PV performance monitoring
- view our product range of solar sensors

About Hukseflux

Hukseflux Thermal Sensors, founded in 1993, aims to advance thermal measurement. We offer a complete range of sensors and systems for measuring heat flux, solar radiation and thermal conductivity. We also provide consultancy and services such as performing measurements and designing instrumentation according to customer requirements. Customers are served through the main office in Delft in the Netherlands, and locally owned representations in the USA, China and Japan.

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