

- “Second Class” solar radiation sensor
- Compliant with WMO and ISO standards
- Easy installation and maintenance
- Utilises thermopile sensor
- Connectable to established data loggers
- Applications:
  - General meteorological observations
  - Climate - & solar collector testing
  - Outdoor solar radiation measurements
  - Building physics



## Description

LP02 is a solar radiation sensor that can be applied for most common solar radiation observations. It complies with the latest ISO and WMO standards. The scientific name of this instrument is pyranometer. LP02 is a modern alternative for the so-called “star” or “black and white” pyranometers overcoming the problem of poor stability of the white reflective paint.

LP02 serves to measure the solar radiation flux that is incident on a plane surface in  $W/m^2$  from a 180 degrees field of view (also called “global” solar radiation). Working completely passive, using a thermopile sensor, LP02 generates a small output voltage proportional to this flux. Contrary to photodiode-based- and “black and white” instruments LP02 has a spectrally flat response across the full solar spectrum. Using LP02 is easy. For readout one only needs an accurate voltmeter that works in the millivolt range. To calculate the radiation level the voltage must be divided by the sensitivity; a constant that is supplied with each individual instrument.

## Connection

LP02 can be directly connected to most commonly used datalogging systems.

## Applications

LP02 can be used for general meteorological observations, building physics, climate- and solar collector testing. A common application is for outdoor solar radiation measurements as part of a meteorological station. This application requires horizontal levelling; levelling feet (7) and a level (11) are included. The LP02 cable can easily be installed or replaced by the user.

## Compliant with WMO and ISO Standards

Applicable standards are ISO 9060 and 9847, WMO (World Meteorological Organisation), and ASTM E824-94. LP02 can also be used for stability estimations according to EPA (EPA- 454/R-99-005).

Characteristic	Description / Value
ISO classification	Second Class
Spectral range	305 ... 2800 nm
Sensitivity (nominal)	15 $\mu\text{V} / \text{W}/\text{m}^2$
Temperature range	-40 ... +80°C
Range	0 ... 2000 $\text{W}/\text{m}^2$
Temperature dependence	< 0.1%/°C
Calibration traceability	WRR
Manufacturer	Hukseflux Thermal Sensors B.V.

**Options:**

- Additional cable length x meters (add to 5m)
- AMF 01 Albedometer fixture (used with 2 x LP 02)
- AC 100 / AC 420 amplifiers
- With LI 19 readout unit, in portable carrying case

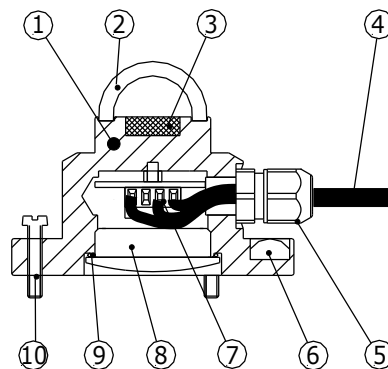


Figure 1 LP02 solar radiation sensor: (1) LP02 housing, (2) glass dome, (3) sensor, (4) cable, standard length 5 m, (7) screwed cable connection, (8) access for cable connection/ replacement.

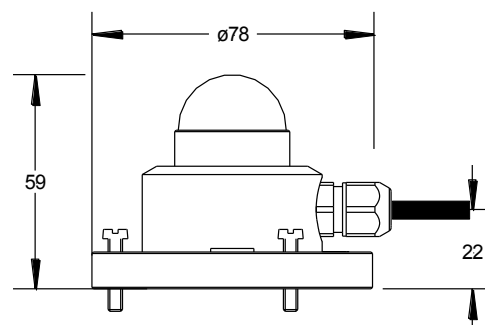


Figure 2 LP02 dimensions. Standard cable length is 5 m. All dimensions are in mm. Cable can be installed / replaced by the user.

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