Spectrally Flat Class A Pyranometer

LPPYRA10

ACCORDING TO THE STANDARD

Follows recommendations of the WMO
fully compliant with **ISO 9060:2018**

GREAT FLEXIBILITY

Wide availability of standard output signals
for **easy integration** in any installation

EASY TO SET UP AND QUICK TO INSTALL

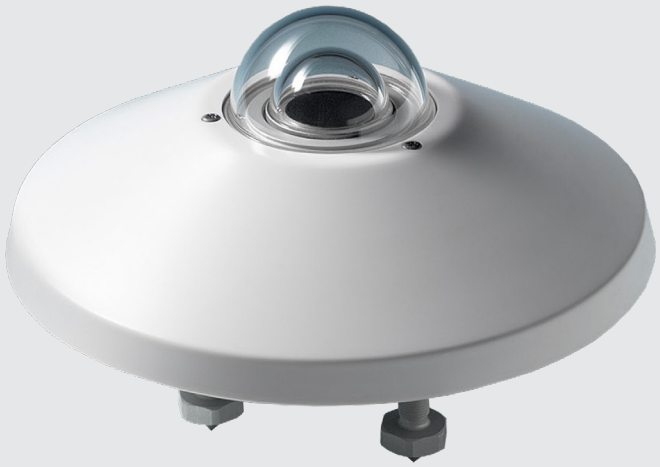
Rugged housing with low temperature response
Integrated **levelling device** for perfect positioning

ACCURATE AND RELIABLE SYSTEM

High reliability - 6 year warranty
Individual Calibration Reports for each instrument

HIGH IMMUNITY AGAINST INTERFERENCE

Protected against overpower and **fully electrically isolated** from any mounting surface



Main Applications

Environmental studies
Research
Meteorlogy
PV monitoring

Research grade high performance pyaranometer

The LPPYRA10 series has been designed especially for those applications where the best performance is a must. This research grade pyranomenter is fully compliant to the highest possible classifications according to ISO 9060:2018.

The pyranometers in this series are all based on the thermopile principle, very accurate. This principle provides a µV signal without the need of a power supply. To be able to transfer the signal over a longer distance and to prevent interference, mostly types are used with an integrated transmitter. When using a 4-20 mA, 0-10 VDC or RS485 Modbus-RTU output, an active power supply is necessary. The output of these series is always related to W/m^2, making it possible to have a relation to the total solar panel surface.

All our pyranometers are made in a way that the electrical system is totally isolated from the housing, making it possible to mount the pyranometer on any (metal) surface with the need of isolation disks.

Delta OHM is one of the main pyranometer producers worldwide. We produce a full range of pyranometers according to the ISO 9060: 2018, in Class A, B and C.

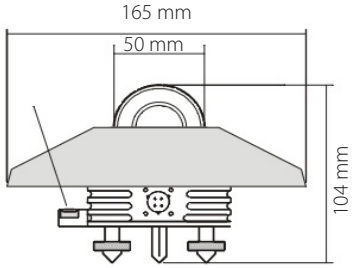
Each of our pyranometers is calibrated separately during production; all are supplied standard with a Report of Calibration according to WRR (World Radiometric Reference). Next to this, we are the only pyranometer producer that has invested in a full range of 6 accredited ISO 17025 calibration laboratories.

Pyranometers can be used as stand-alone or in combination with our weather stations. Delta OHM provides a full range of dataloggers with integrated GSM/3G/4G modem to read and transfer the signals to any database or cloud solution.

Technical Specification

Sensor	Thermopile
Typical Sensitivity	6÷11 μV/Wm^{-2}
Impendance	5 Ω ÷ 50 Ω
Measuring range	0 ÷ 2000 / 4000 W/m^2
Viewing angle	2π sr
Spectral range (50%)	283 ÷ 2800 nm
Operating temperature/ humidity	-40 ÷ 80 °C 0 ÷ 100 % RH
Output	Depending on the model: - Analog in μV/Wm^{-2} - Analog 4÷20 mA - Analog 0÷1 V, 0÷5 V or 0÷10 V - Digital RS485 Modbus-RTU - Digital SDI-12
Power supply	10÷30 Vdc (4÷20 mA - 0÷1 V - 0÷5 V outputs) 15÷30 Vdc (0÷10 V output) 5÷30 Vdc (RS485 Modbus-RTU) 7÷30 Vdc (SDI-12)
Consumption	< 200 μA for Modbus version
Connection	- 4-pole M12 connector for analog output models - 8-pole M12 connector for digital output models
Accuracy of levelling device	< 0.1°
Protection Degree	IP 67
MTBF	> 10 years

Dimensions



LPPYRA10 is also available in the **version with shadow-ring** (LPPYRA13) This measures the diffuse solar radiation eliminating the contribution of direct irradiance.

ISO 9060:2018 Technical Specifations

Classification		Spectrally Flat Class A
Response time (95%)		< 5 s
Zero offset	a) response to a 200 W/m^2 thermal radiation	< 7 W/m^2
Zero offset	b) response to a 5 K/h change in ambiente temperature	< |±2| W/m^2
Long-term instability (1 year)		< |±0.5| %
Non-linearity		< |±0.2| %
Response according to the cosine law		< |±10| W/m^2
Spectral error		< |±3| %
Temperature response (-10… +40°C)		< 1 %
Tilt response		< |±0.2| %

Ordering Codes

LPPYRA10 ☐
LPPYRA13

Blank = Analog in μV/Wm^{-2}
AC = Analog 4÷20 mA (0...2000 W/m^2)
AC4 = Analog 4÷20 mA (0...4000 W/m^2)
AV = Analog 0÷1 V, 0÷5 V or 0÷10 V (0...2000 W/m^2)
AC4 = Analog 0÷1 V, 0÷5 V or 0÷10 V (0...4000 W/m2)
S = Digital RS485 Modbus-RTU
S12 = Digital SDI-12

All pyranometers are supplied with shade disk, cartridge for silica-ge crystal, 2 spare sachets, levelling device, M12 4-pole or 8-pole M12 connector (depending on the model) and Calibration Report.

Accessories

LPS1	Fixing bracket.
LPRING02	Base with levelling device and adjustable holder.
LPRING04	Adjustable holder for mounting the pyranometer in an inclined position.
HD2003.79K	Kit to install the pyranometer on a transverse mast.
HD2003.85K	Kit with adjustable height to mount on a Ø40 mm mast.
LPS6	Kit for the installation of the pyranometer, including: 750 mm mast, base fitting, graduated support plate, bracket for pyranometers.
CPM12AA4.xx	Cable with 4-pole M12 connector on one end, open wires on the other end. Available length: 2, 5 or 10 m.
CPM12-8D.xx	Cable with 8-pole M12 connector on one end, open wires on the other end. Available length: 2, 5 or 10 m.
CP24	PC connecting cable for the RS485 MODBUS parameters configuration.

Member of GHM GROUP

In order to ensure the quality of our instruments, we may have to develop our products. We may make changes or corrections at any time. Check on our website to make sure your documentation is up to date.

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