PYRAFAST LPR10...

FAST RESPONSE SPECTRALLY FLAT CLASS A PYRANOMETER WITH INTEGRATED HEATER, TILT SENSOR & DIAGNOSTIC FEATURES

www.senseca.com

INTRODUCTION

PYRAfast is the newest addition to our PYRAsense family of pyranometers that **brings global solar radiation measurement to a higher level**!
It is designed to provide precise measurements of global irradiance (W/m²) on flat surfaces, delivering the highest level of performance across various weather conditions.
Built to meet the strict standards of ISO 9060:2018 as a **Fast Response Spectrally Flat Class A** sensor, it also adheres to the World Meteorological Organization (WMO) guidelines. Its advanced diagnostic features, integrated environmental controls, and flexible configuration options make it a reliable solution for professionals requiring fast, accurate solar radiation measurements.
The **LPR10...** is the top level of the series. Whether you're working on large-scale solar farms or research projects, the LPR10 adapts to your unique needs. It ensures seamless integration into your existing monitoring systems, providing a comprehensive solution for a diverse range of applications such as:

- Environemntal studies
- Research
- Meteorology
- PV monitoring

FEATURES

Advanced Diagnostic Sensors

Continuously monitor internal temperature, humidity, and pressure to maintain optimal operating conditions and anticipate maintenance needs.

Environmental Controls

Integrated heater activated automatically when required by the environmental conditions. It prevents dew and frost formation while ensuring a uniform temperature, maintaining fast response times and measurement precision even in challenging weather. If not needed, it can be turned off to save power.

Easy Installation

Features an integrated bubble level, adjustable feet, and a tilt sensor for accurate, consistent positioning during installation and continuous tilt monitoring.

CONFIGURATION & MEASUREMENT

Real-Time Monitoring & Data Logging

Compatible with DATAsense PC application software, allowing for real-time monitoring, configuration, and graphical data visualization. The software also enables data logging for later analysis.

Easy Integration with Existing Networks

Equipped with RS485 Modbus-RTU galvanically isolated output for flexible integration with existing systems.

ISO 17025 Calibration Certificate

LPR10 comes with an ISO 17025-accredited calibration certificate, ensuring top-tier accuracy and compliance for your solar measurements—right out of the box!

SMART TECHNOLOGY THANKS TO ADVANCED ENVIRONMENTAL SENSORS
Monitors internal temperature, humidity, and pressure for reliable performance and proactive maintenance.
Built-in days-of-operation counter.

NO MOVING PARTS
The integrated dome heater is designed without moving components, ensuring effective prevention of dew and frost buildup while eliminating the risk of mechanical failure.

EASY INSTALLATION
Features adjustable feet, a bubble level, and tilt sensor for precise positioning and continuous monitoring.

EXTENDED WARRANTY
4 years in addition to the standard 2 years for a total of 6 years warranty.

ACCORDING TO THE STANDARD
Fast response Spectrally Flat Class A according to ISO 9060:2018.
WMO recommendations &
IEC 61724-1 guidelines for Class A PV systems fully compliant.

Technical specifications according to ISO 9060:2018

Classification		Fast response, Spectrally Flat Class A
Response time (95%)		< 0.3 s
Zero offset	a) response to a 200 W/m² thermal radiation	< | ±1| W/m²
	b) response to a 5 K/h change in ambient temperature	<| ±1| W/m²
	c) total zero offset including the effects a), b) and other sources	<| ±4| W/m²
Long-term instability (1 year)		<| ±0.5| %
Non-linearity		<| ±0.2| %
Directional response (up to 80° with 1000 W/m² beam)		<| ±10| W/m²
Spectral error		<| ±0.2| %
Temperature response (-10...+40°C)		<| ±0.5| %
Tilt response		<| ±0.4| %

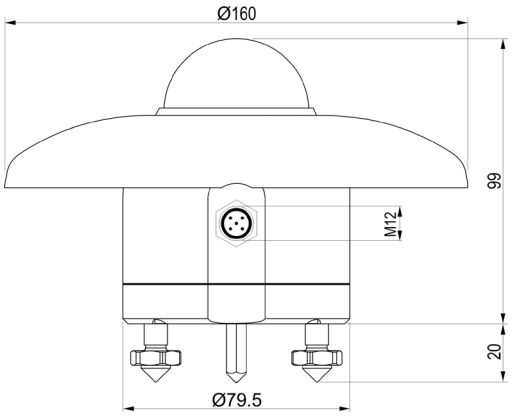
Additional measurements in digital models

Internal temperature	range	-40…+80 °C
	resolution	0.1 °C
	accuracy	± 0.5 °C (0…60 °C)
Internal relative humidity	range	0…100 %RH
	resolution	0.1 %RH
	accuracy	± 3 %RH @ T=25 °C & RH = 20...80 %
Internal pressure	range	500…1100 hPa
	resolution	0.1 hPa
	accuracy	± 1 hPa (0…60 °C)
Tilt sensor	range	0°…+180°
	resolution	0.1°
	accuracy	< 0.5°

General specifications

Sensor	thermopile
Measuring range	-200…4000 W/m²
Resolution	0.1 W/m²
Viewing angle	2π sr
Spectral range (50%)	285...2850 nm
Output	isolated RS485 Modbus-RTU
Heater	integrated
Power supply	7...30 Vdc
Consumption	2 W (heater ON) 0.3 W (heater OFF)
Connection	5-pole M12
Weight	650 g approx.
Operating conditions	-40...+80 °C 0...100 %RH max. altitude 6000 m
Bubble level accuracy	< 0.2°
Protection degree	IP 67
Materials	*housing:* anodized aluminium *screen:* ASA *dome:* optical glass
MTBF	> 10 years

Dimensions *(mm)*



Ordering codes

LPR10M0T	Fast Response Spectrally Flat Class A pyranometer with integrated heater, MODBUS output, tilt sensor.

V 1.1

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