



# PYRAFAST LPR10...

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

## 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 ( $W/m^2$ ) 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:

- Environmental 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!



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### 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/m <sup>2</sup> thermal radiation	<  ±1  W/m <sup>2</sup>
	b) response to a 5 K/h change in ambient temperature	<  ±1  W/m <sup>2</sup>
	c) total zero offset including the effects a), b) and other sources	<  ±4  W/m <sup>2</sup>
Long-term instability (1 year)	<  ±0.5  %	
Non-linearity	<  ±0.2  %	
Directional response (up to 80° with 1000 W/m <sup>2</sup> beam)	<  ±10  W/m <sup>2</sup>	
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°

## Ordering codes

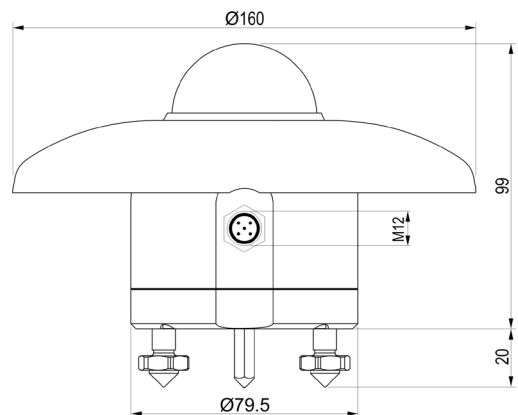
**LPR10M0T** Fast Response Spectrally Flat Class A pyranometer with integrated heater, MODBUS output, tilt sensor.



## General specifications

Sensor	thermopile
Measuring range	-200...4000 W/m <sup>2</sup>
Resolution	0.1 W/m <sup>2</sup>
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)



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