

# Datasheet

## LuxaLight LED Engine Near Infrared 960nm Protected (24 Volt, 108 LEDs, 2835, IP64)

**LE-24-960-108X2835PLX**

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## Product description

The LuxaLight Industrial LED Engine is designed to meet the demands of high-performance applications, specifically those that require light in the **Near-Infrared (NIR)** spectrum. With a wavelength of 960nm, this LED engine provides an efficient solution for industrial processes, medical therapies, and research applications that benefit from deep **NIR** light.

This LED engine is a semi-finished product, allowing easy integration into custom systems or housings tailored to your specific needs. It is well-suited for use in a variety of industrial, research, and medical applications where the 960nm wavelength offers the desired results. The engine is designed for seamless integration into larger systems or custom enclosures.

### Key Features:

- **960nm Wavelength (NIR):** The 960nm wavelength in the **NIR** spectrum is ideal for applications requiring deep infrared light, including medical therapies, industrial material testing, and scientific research.
- **24V Power Supply:** The LED engine operates on a reliable 24V power supply, ensuring stable and consistent operation, perfect for demanding industrial and research environments.
- **High Radiation Intensity:** This LED engine delivers high radiation intensity, making it suitable for high-efficiency processes that require significant light output in the **NIR** spectrum.
- **Semi-Finished Product:** The LED engine can be integrated into custom systems or housings, providing flexibility for various industrial, research, or medical setups.
- **Integration with MaNima Pollux Industry Pulsing (Strobing):** The LED engine is compatible with the MaNima Pollux Industry System for pulsing (strobing), increasing radiation intensity for faster reactions and improved efficiency in industrial processes.
- **Real-Time Temperature Monitoring via NTC Sensor:** The integrated NTC sensor ensures continuous temperature measurement and adjustment through the MaNima Pollux Industry System, maintaining optimal operating conditions for maximum radiation output.

### Applications:

- **Medical Therapy:** The 960nm wavelength in the **NIR** spectrum is effective in various therapeutic applications, such as deep tissue therapy, pain management, and promoting blood circulation. It is commonly used in photobiomodulation (PBM) treatments for pain relief and healing.
- **Material Testing & Quality Control:** The 960nm **NIR** wavelength is used in material testing, where infrared light is used to inspect and assess the quality of materials, such as polymers, composites, and metals.
- **Biological & Scientific Research:** This LED engine is ideal for biological and scientific research that involves deep tissue penetration, such as cellular studies, molecular research, and enhancing the effectiveness of biological treatments.
- **Medical Equipment:** The LED engine can be integrated into medical devices used in deep tissue healing, pain relief therapies, and even in diagnostic imaging tools.
- **Industrial Process Monitoring:** The 960nm **NIR** wavelength is effective in industrial process monitoring, such as measuring the thermal properties of materials, detecting faults, and inspecting the integrity of components.
- **Environmental Testing:** This LED engine is also suitable for environmental testing, especially in areas that require precise measurement of heat and infrared radiation in industrial or research settings.

### Benefits:

- **High Radiation Intensity:** The engine delivers high radiation intensity, allowing for faster reactions and increased efficiency in processes requiring deep **NIR** light.
- **Flexible Integration:** As a semi-finished product, the LED engine can be seamlessly integrated into custom housings or systems tailored to specific industrial, research, or medical applications.
- **Efficient Performance:** The LED engine provides consistent and efficient performance, making it ideal for environments that need reliable and stable light output.
- **Real-Time Temperature Monitoring:** The integrated NTC sensor, combined with the MaNima Pollux Industry System, ensures optimal temperature management, maintaining performance and preventing overheating over extended use.

## Technical specifications

### General

Brand	LuxaLight
Application	Hyper - spectral Imaging Machine Vision
LED type	2835
PCB color	White
Material	Aluminum
Dimensions	200 × 20 × 2 mm
Mounting	3M tape VHB4905
LEDs per piece	108.00
Lifetime	70000 hours

### Lighting

Wave length	960 nm
Beam angle	120 °

### Measurement results

Irradiance	Value	Measuring distance
	490 W/m <sup>2</sup>	25 mm
	239 W/m <sup>2</sup>	50 mm
	143 W/m <sup>2</sup>	75 mm
	78,3 W/m <sup>2</sup>	100 mm
	30 W/m <sup>2</sup>	200 mm
	16,4 W/m <sup>2</sup>	300 mm

### Electronics

Working voltage	24V
Current per piece	1.25 A / piece
Power consumption per piece	30.00 W / piece
PCB material	Aluminium

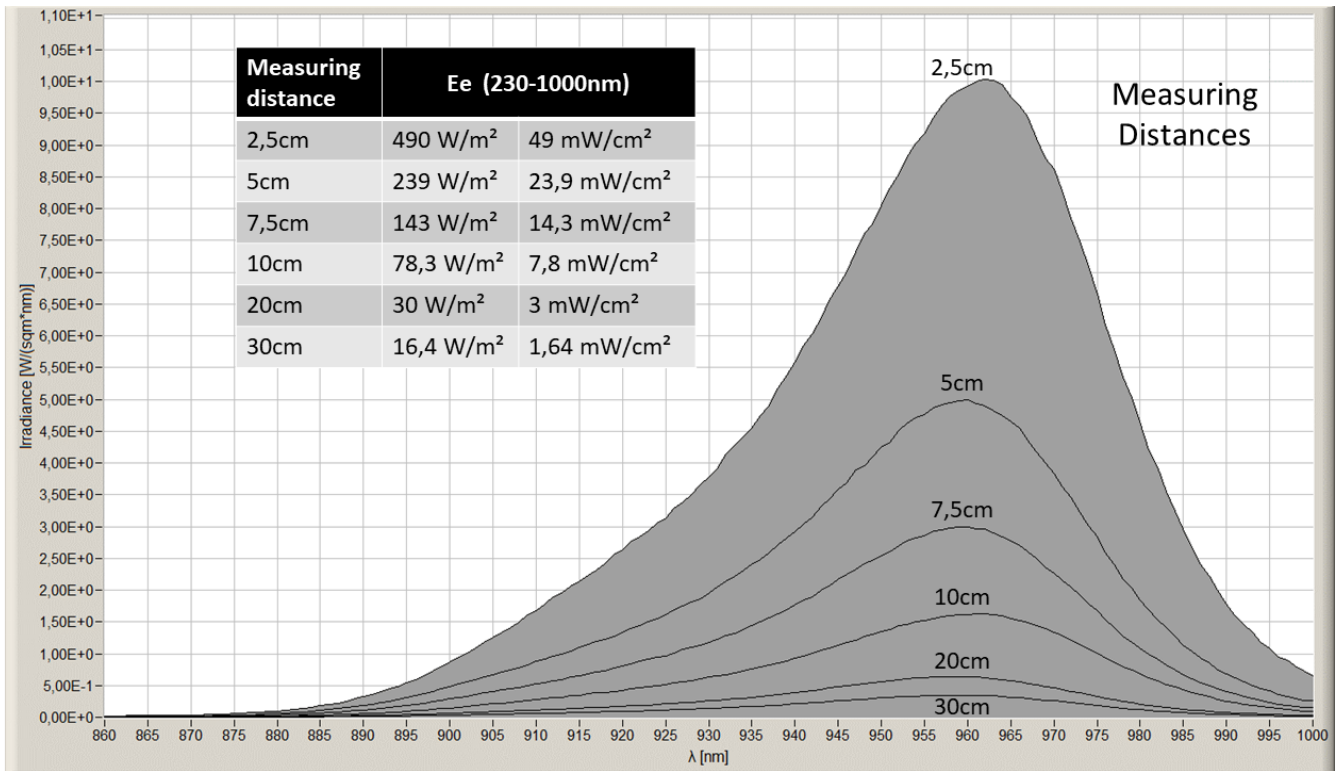
### Environmental

Operating temperature	-20 ~ +60 °C
Storage temperature	-40 ~ +80 °C
IP class	IP 64

### Directives - standards - certificates

Directives	RoHS CE
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## Measurement results



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