

# Datasheet

## LuxaLight LED Engine Blue 450nm Protected (24 Volt, 108 LEDs, 2835, IP64)

**LE-24-450-108X2835PLX**

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## Product description

The **LuxaLight Industrial LED Engine** is designed as a high-quality component for intensive industrial applications that require high radiation intensity. With a **450nm wavelength**, this LED engine provides an efficient solution for processes that benefit from blue light, such as photochemical processes, certain industrial applications, and healthcare applications.

This LED engine is a semi-finished product, allowing it to be integrated into custom fixtures or housings depending on your specific requirements. It offers flexibility for use in various industrial, research, and medical applications, where the powerful **450nm wavelength** can deliver targeted results. The engine is designed for easy integration into larger systems or custom enclosures.

### Key Features:

- **450nm Wavelength:** The 450nm wavelength is ideal for applications that benefit from blue light, such as photochemical processes, industrial applications, and medical treatments.
- **24V Power Supply:** The LED engine operates on a reliable 24V power supply, ensuring stable and consistent operation, perfect for demanding applications.
- **High Radiation Intensity:** This LED engine delivers high radiation intensity, making it suitable for processes that require significant light output.
- **Semi-Finished Product:** The LED engine is designed to 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 supports integration with the MaNima Pollux Industry System for pulsing (strobing), significantly increasing radiation intensity. This feature allows 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, helping to maintain the optimal operating temperature for maximum radiation output.

### Applications:

- **Industrial Photochemical Processes:** The 450nm wavelength is effective for photochemical processes that require blue light, such as certain chemical production processes or material treatments.
- **Biological Research:** The LED engine can be used in scientific and medical applications, such as cell stimulation, photobiomodulation, and regeneration processes that are useful for promoting tissue repair and pain relief.
- **Medical Therapies:** Blue light is used in phototherapy treatments such as promoting skin healing, muscle recovery, and treating acne and inflammation.
- **Industrial Material Processing (Non-UV):** Blue light can cure certain coatings and materials that react to blue wavelengths, providing effective and fast curing processes in industrial environments.

### Benefits:

- **High Radiation Intensity:** The engine provides high radiation intensity, enabling faster reactions and increased productivity in applications that require blue light.
- **Flexibility in Integration:** As a semi-finished product, the LED engine offers flexibility for integration into custom enclosures or systems tailored to specific industrial, research, or medical applications.
- **Efficient Performance:** The LED engine offers efficient performance with stable output, making it ideal for environments that need consistent light delivery.
- **Real-Time Temperature Monitoring for Consistent Performance:** The integrated NTC sensor, combined with the MaNima Pollux Industry System, ensures continuous temperature monitoring, helping to prevent overheating and maintain optimal operating conditions for long-term reliability.

## Technical specifications

### General

Brand	LuxaLight
Application	Machine Vision
LED type	2835
Material	Aluminum
Dimensions	200 × 20 × 2 mm
Mounting	3M tape VHB4905
Warranty	5 years
LEDs per piece	108.00
Lifetime	70000 hours

### Lighting

Wave length	450nm
Beam angle	120 °
LB waarde	L80B50

### Measurement results

PPFD	Value	Measuring distance
	1943 µmol/m <sup>2</sup>	50 mm
1121 µmol/m <sup>2</sup>	75 mm	
765 µmol/m <sup>2</sup>	100 mm	
256 µmol/m <sup>2</sup>	200 mm	
136 µmol/m <sup>2</sup>	300 mm	

Irradiance	Value	Measuring distance
	518 W/m <sup>2</sup>	50 mm
311 W/m <sup>2</sup>	75 mm	
208 W/m <sup>2</sup>	100 mm	
69,5 W/m <sup>2</sup>	200 mm	
36,8 W/m <sup>2</sup>	300 mm	

Illuminance	Value	Measuring distance
	22,6 klux	50 mm
13,4 klux	75 mm	
9,1 klux	100 mm	
3,1 klux	200 mm	
1,6 klux	300 mm	

- By combining Pulse Mode with Real-Time Monitoring, the efficiency of LED systems can be increased, resulting in higher output.
- We have the expertise and equipment to perform measurements tailored to the specific requirements of the application.

### Electronics

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

Pinout	<b>Symbol</b>	<b>Function</b>
	V+	V+
	GND	Ground
	NTC	NTC sensor
	NTC_GND	NTC ground

NTC parameters	Resistance: 5000 Ohm Beta value: 3950
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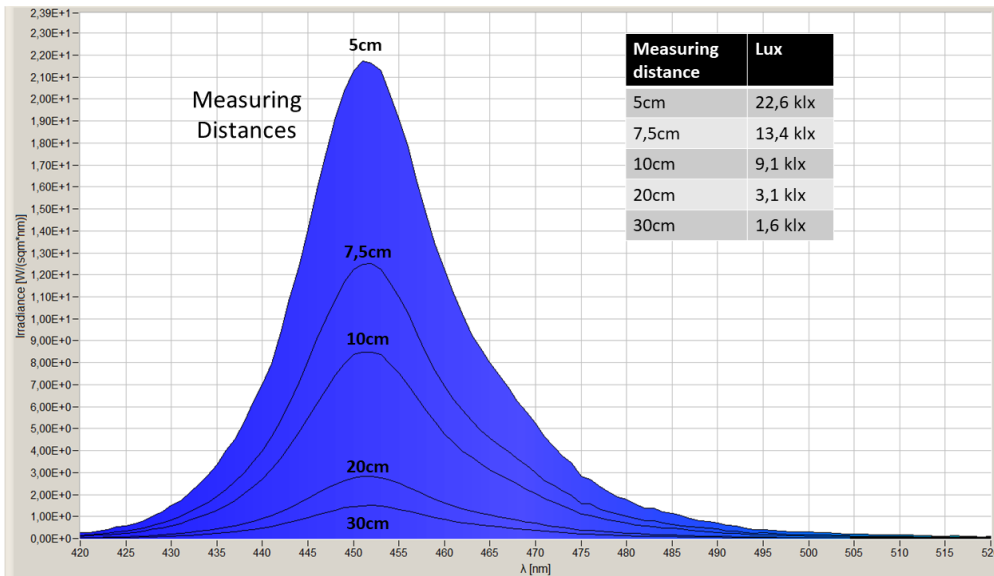
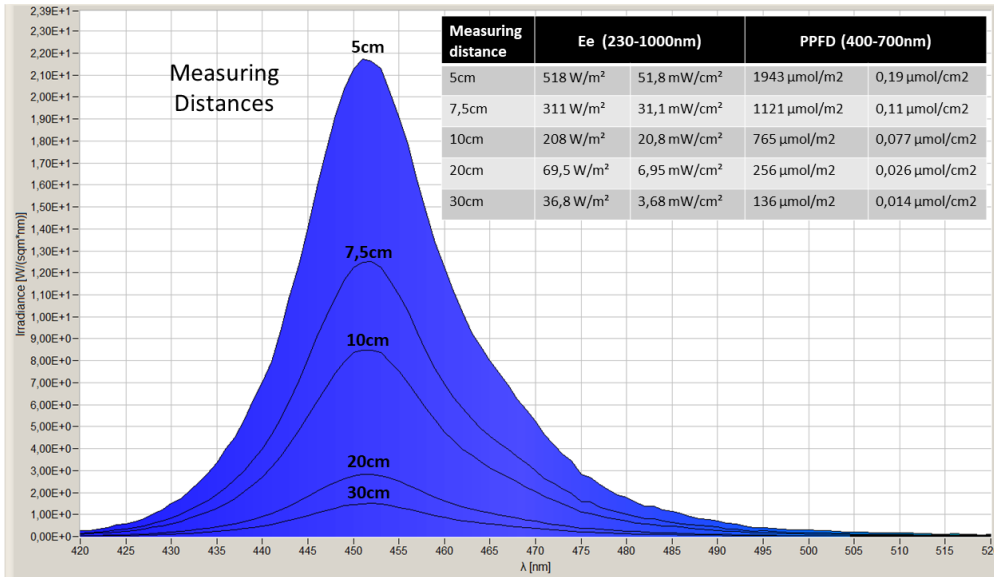
**Environmental**

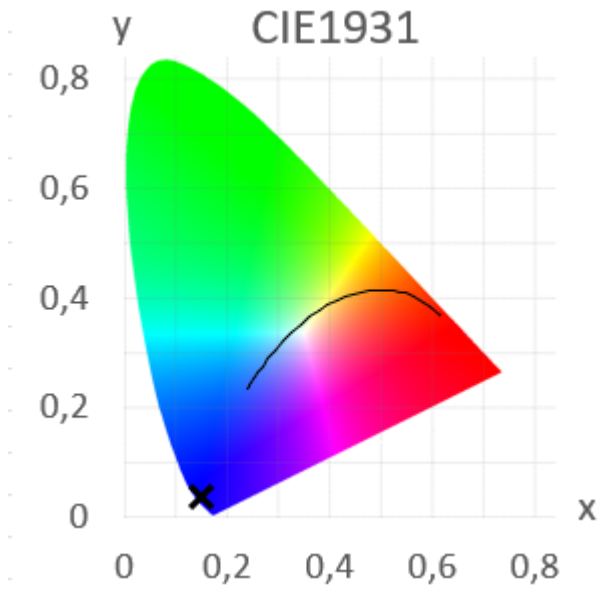
Operating temperature	-20 ~ +60 °C
Storage temperature	-40 ~ +80 °C
IP class	IP 64

**Directives - standards - certificates**

Directives	RoHS CE
Safety standards	EN60598-1 EN62031 IEC62471

## Measurement results





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