

Datasheet

LuxaLight Infrared LED-strip 850nm Protected (24 Volt, 140 LEDs, 2835, IP64)

LS24IR140X2835850PLX

Version: 2025-07-10.3

Product description

The LuxaLight Industrial LED Strip is designed for industrial and commercial applications that require high radiation intensity and precise light distribution. With a **850nm near-infrared wavelength**, this LED strip provides a powerful solution for processes that benefit from the penetrating properties of near-infrared light, without interference from visible daylight. This makes the strip ideal for applications in environments where natural light should not influence the process, such as industrial processes, material testing, and biomedical applications.

Key Features:

- **850nm Near-Infrared Wavelength:** The 850nm wavelength falls within the near-infrared spectrum (NIR) and has the unique ability to penetrate materials or tissues deeply, without interference from visible light. This makes it ideal for industrial applications where visible light must not affect the process.
- **140 LEDs per Meter:** With 140 LEDs per meter, the strip provides high light density, ensuring uniform light distribution across the surface for effective coverage and maximum performance.
- **24V Power Supply:** The LED strip operates on a reliable 24V power supply, providing stable and consistent performance, perfect for demanding environments and applications.
- **Flexible Design:** The LED strip is flexible and can easily be adapted or bent to fit custom systems or enclosures, making it extremely versatile for different configurations and applications.
- **High Radiation Intensity:** The LED strip delivers high radiation intensity, ideal for industrial applications requiring significant light output, such as material processing and quality control.
- **Passive Cooling Required:** The LED strip is designed for passive cooling, meaning it must be integrated into an appropriate enclosure or system that efficiently dissipates heat. Ensure the product does not overheat to maintain optimal performance and extend its lifespan.
- **Semi-Finished for Customization:** The LED strip is designed to be integrated into custom fixtures, enclosures, or systems depending on your specific needs. It is a semi-finished product, offering flexibility for a wide range of applications.
- **PCB Thickness:** The PCB has a thickness of 3 oz/ft², ensuring robust support and efficient heat dissipation.

Applications:

- **Industrial Material Processing:** The 850nm near-infrared wavelength is ideal for industrial processes such as material testing, where light penetrates deeply into materials without interference from ambient light. This is particularly useful for applications requiring precise measurements or treatments.
- **Thermal Treatment of Materials:** In certain industries, the 850nm LED strip can be used for hardening or strengthening materials sensitive to near-infrared light, such as plastics or composites, where no visible light interference is needed.
- **Biological Research:** This LED strip is also ideal for biomedical research, such as stimulating tissue repair and photobiomodulation (PBM) therapies. Near-infrared light promotes cell regeneration and tissue repair without the influence of visible daylight.
- **Horticulture & Agriculture:** The 850nm wavelength is also effective for applications in horticulture, where it helps support root growth and plant strengthening without interfering with the plant's day-night cycle.
- **Safety & Monitoring Applications:** Because the light falls outside the visible spectrum, the 850nm LED strip can be used in applications where the presence of light should not be noticeable, such as certain security or monitoring systems, like night-vision cameras.

Benefits:

- **No Interference with Daylight:** The 850nm near-infrared wavelength ensures that there is no interference with ambient visible light, which is crucial in industrial and research settings where visible light should not impact the process.
- **High Radiation Intensity:** The LED strip provides high radiation intensity, which helps speed up processes that require near-infrared light, improving productivity and performance.
- **Flexible and Customizable:** The flexible design of the strip makes it easy to integrate into custom systems or enclosures, making it a versatile solution for a wide range of industrial and research applications.
- **Even Light Distribution:** With 140 LEDs per meter, the strip provides even and consistent light distribution, ensuring that light intensity is uniformly spread across the surface for optimal results.

Technical specifications

General		
Brand	LuxaLight	
LEDs / meter	140	
LED type	2835	
Length per reel	10 m	
Length per segment	50 mm	
LED strip width	10.00 mm	
LED strip thickness	4.00 mm	
PCB color	White	
Mantle material	Silicon	
Dimensions	10.000 × 10 × 4 mm	
Mounting	3M tape VHB4905	
Warranty	5 years	
Lifetime	70000 hours	
Lighting		
Wave length	850 nm	
Beam angle	120 °	
Measurement results		
Peak wavelength (Object size: 1 piece)	851 nm	
Peak irradiance (Object size: 1 piece)		24V
	5cm	1.09773 W/sqm
	10cm	0.366219 W/sqm
	15cm	0.198539 W/sqm
	20cm	0.121094 W/sqm
	25cm	0.0788044 W/sqm
	30cm	0.0578081 W/sqm
	Total irradiance (Object size: 1 piece)	
5cm		45.37 W/sqm
10cm		15.26 W/sqm
15cm		8.344 W/sqm
20cm		5.155 W/sqm
25cm		3.392 W/sqm
30cm		2.521 W/sqm
Electronics		
Working voltage	24V	
Current / meter	1.00 A / meter	
Power consumption per meter	24.00 W / meter	
PCB material	Copper	

Pinout

Symbol	Function
V+	V+
GND	Ground

Environmental

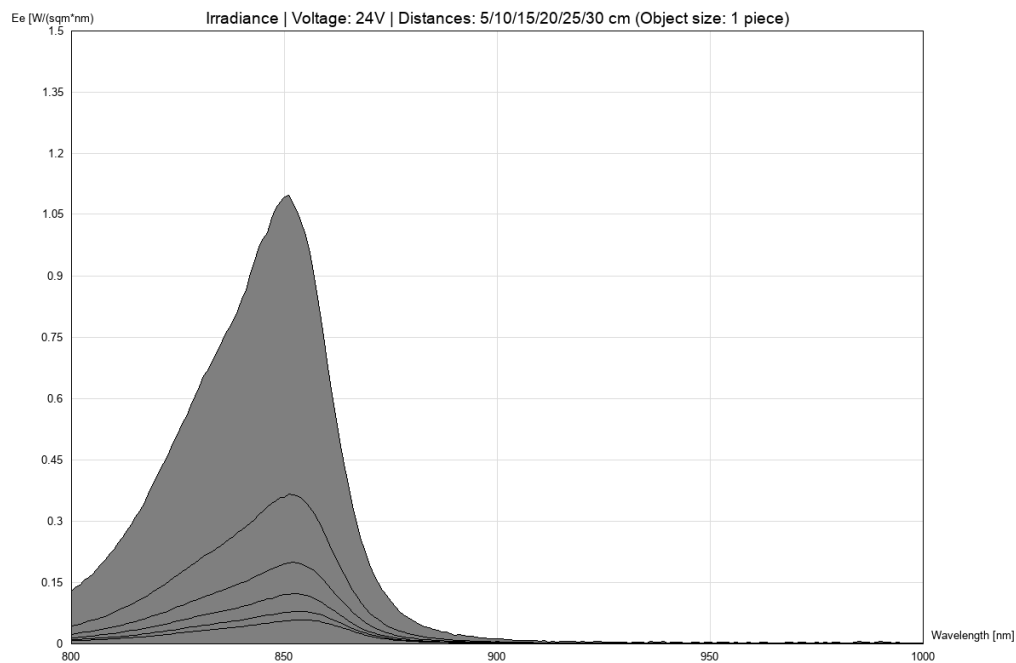
Operating temperature	-20 ~ +60 °C
Storage temperature	-40 ~ +80 °C
IP class	IP 64

Directives - standards - certificates

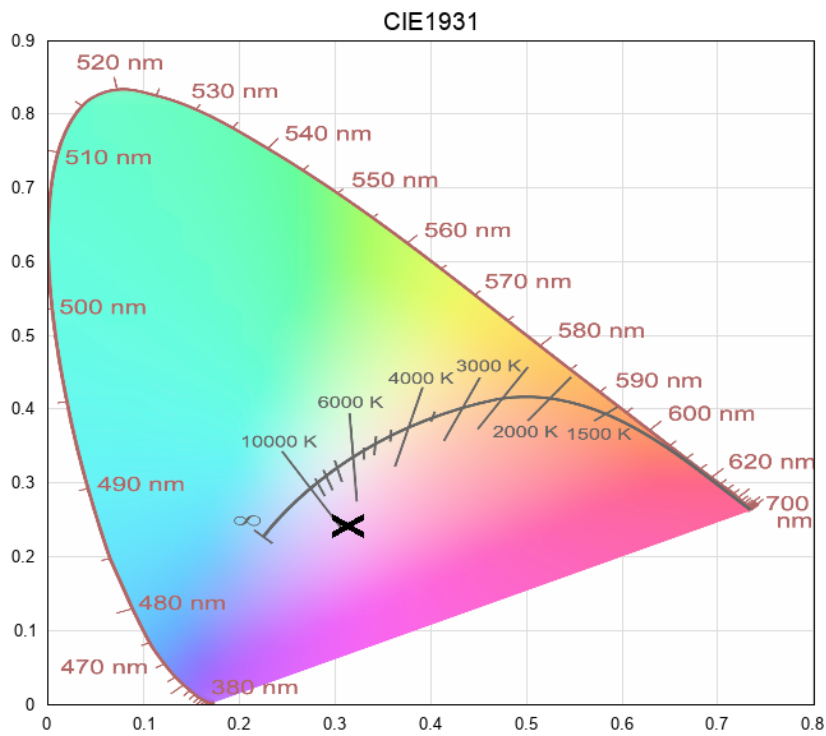
Directives	RoHS CE
Safety standards	EN60598-1 EN62031 IEC62471

Measurement results

irradiance - 800-nir (24V)



cie1931



While LuxaLight has made every reasonable effort to ensure the accuracy of the information in this brochure, LuxaLight does not guarantee that it is error - free, nor does LuxaLight make any other representation, warranty or guarantee that the information is accurate, correct, reliable or current. LuxaLight reserves the right to make any adjustments to the information contained herein at any time without notice. LuxaLight expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. The dimensions in this catalogue are for reference purposes only and are subject to change without notice. Specifications are subject to change without notice. Consult LuxaLight for the latest dimensions and design specifications.