

Datasheet

LuxaLight Industrial LED Fixture Opaline cover Blue 450nm 24.2x16mm (24 Volt, 2835, IP64)

LF-24-450-24.2X16-OC

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Product description

The **LuxaLight Industrial LED Fixture** is specifically designed for demanding industrial applications that require high radiation intensity. With a wavelength of **450nm**, this LED fixture provides a reliable and efficient solution for various industrial processes, such as material curing, biological research, and more. The **450nm wavelength** is ideal for applications such as photochemical processes, biological studies, and other specific industrial needs that benefit from blue light.

Key Features:

- **450nm Wavelength:** The 450nm wavelength is perfect for a range of industrial and scientific applications, including photochemical processes, biological research, and industrial processes where blue light is essential.
- **24V Power Supply:** Powered by a reliable 24V power supply, ensuring stable operation in demanding industrial environments.
- **Aluminum Housing with Opal Cover for Mechanical Protection:** The durable aluminum housing provides robust protection against physical impact, and the opal cover ensures the light is beautifully diffused while allowing the **450nm wavelength** to be effectively transmitted, ensuring long-lasting reliability and performance.
- **Industrial Durability:** This fixture is designed for industrial environments and can withstand the demands of harsh conditions, with resistance to moisture, dust, and mechanical stresses.
- **Real-Time Temperature Monitoring via NTC Sensor:** Integrated with a temperature monitoring system, the fixture ensures continuous temperature regulation, maintaining optimal operating temperatures for consistent and efficient performance.

Applications:

- **Industrial Photochemical Processes:** The **450nm wavelength** is effective for photochemical processes requiring blue light, such as certain chemical production processes or material treatments.
- **Biological and Medical Research:** The fixture supports biological research by promoting cell growth and regeneration, making it valuable for cell cultivation, tissue studies, and medical applications such as photobiomodulation therapy (PBM).
- **Medical Therapy:** Blue light is used in phototherapy treatments for skin healing, muscle recovery, acne treatment, and inflammation reduction.
- **Cosmetic Industry:** The **450nm light** is beneficial for improving skin texture, reducing wrinkles, and promoting collagen production, offering a non-invasive solution for skin treatments.
- **Industrial Material Curing (Non-UV):** The **450nm wavelength** can cure specific materials and coatings that respond to blue light, ensuring faster and more efficient curing processes in industrial production.
- **Food Industry:** Blue light can be used to promote the growth and health of crops in controlled environments and even help preserve certain food products through its effects on microorganisms.
- **Aquaculture:** The **450nm wavelength** is effective in enhancing the health and growth of fish and aquatic plants, making it ideal for aquaculture systems.
- **Water Treatment:** In certain water purification processes, **450nm light** can help activate specific photoreaction mechanisms to break down contaminants.
- **Environmental Monitoring:** The **450nm wavelength** can aid in environmental monitoring by detecting pollutants or promoting the growth of bioindicators in specific ecosystems.
- **Pharmaceutical Manufacturing:** Blue light at **450nm** can be used in the production of pharmaceutical products that require specific light exposure during synthesis or quality control processes.

Benefits:

- **High Radiation Intensity:** With the ability to pulse, the fixture can significantly increase radiation intensity, resulting in faster reaction times and higher productivity in industrial processes.
- **Efficient Temperature Management:** The NTC sensor continuously monitors temperature, ensuring that the fixture remains at optimal levels for peak performance, thus preventing overheating and extending the fixture's lifespan.
- **Industrial Durability:** The aluminum housing, combined with the opal cover, provides robust protection against physical damage while ensuring reliable performance in harsh industrial conditions, extending the fixture's lifespan and minimizing maintenance.
- **Fast and Efficient Performance:** The high efficiency of the **450nm LED** ensures fast processing speeds, ideal for high-throughput industrial applications such as material curing and large-scale production processes.

Technical specifications

General	
Brand	LuxaLight
Application	Machine Vision
LED type	2835
Material	Aluminum
Dimensions	220 × 24,2 × 16 mm
Mounting	Surface mounted
Cover type	PMMA opal
LEDs per piece	108.00

Lighting	
Wave length	450nm
Beam angle	120 °

Measurement results

PPFD	Value	Measuring distance
	1813 µmol/m ²	50 mm
922 µmol/m ²	75 mm	
612 µmol/m ²	100 mm	
196 µmol/m ²	200 mm	
102 µmol/m ²	300 mm	
67,3 µmol/m ²	400 mm	
43,2 µmol/m ²	600 mm	

Irradiance	Value	Measuring distance
	481 W/m ²	50 mm
253 W/m ²	75 mm	
170 W/m ²	100 mm	
53,5 W/m ²	200 mm	
27,5 W/m ²	300 mm	
18 W/m ²	400 mm	
11,5 W/m ²	600 mm	

Illuminance	Value	Measuring distance
	20,1 klux	50 mm
10,7 klux	75 mm	
7,2 klux	100 mm	
2,3 klux	200 mm	
1,2 klux	300 mm	
0,8 klux	400 mm	
0,5 klux	600 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	Symbol	Function
	V+	V+
	GND	Ground
	NTC	NTC sensor
	NTC_GND	NTC ground

NTC parameters	Resistance: 5000 Ohm Beta value: 3950
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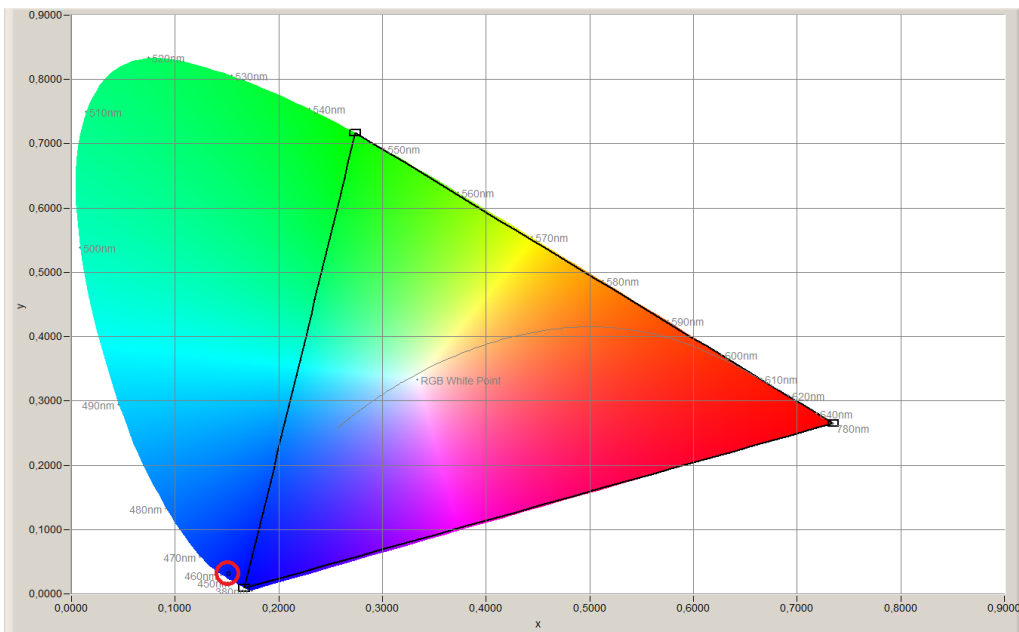
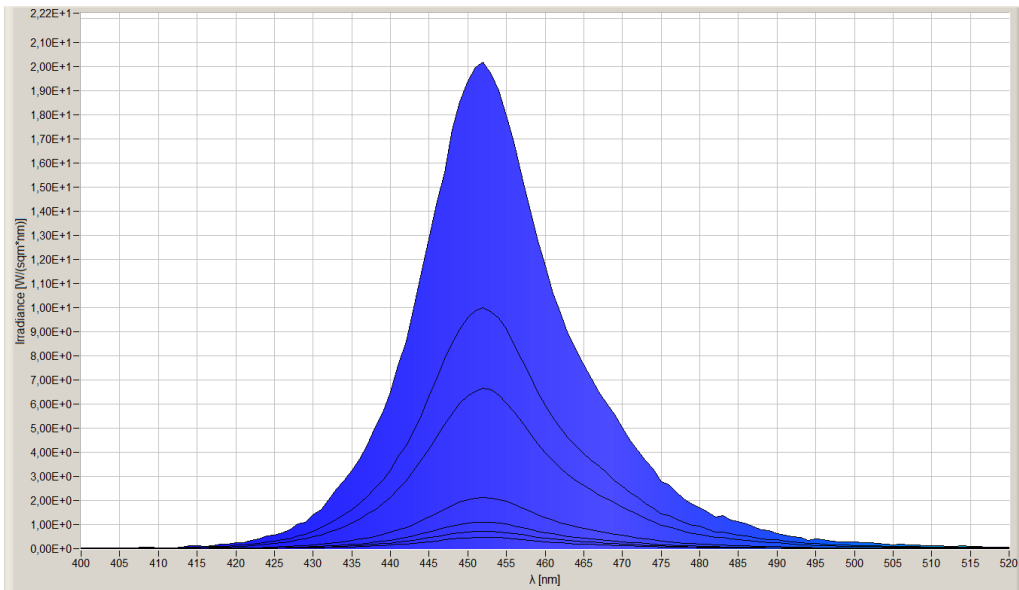
Environmental

Operating temperature	-20 ~ +60 °C
Storage temperature	-40 ~ +80 °C
IP class	IP 68

Directives - standards - certificates

Directives	RoHS CE
Safety standards	EN60598-1 EN62031 IEC62471

Measurement results



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