Datasheet

LuxaLight Industrial LED Fixture Transparent IP68 Blue 450nm 24.2x16mm (24 Volt, 2835, IP68)

LF-24-450-24.2x16-PU

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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.
- **Fully PU Encapsulated Housing with IP68 and IK10 Protection**: This LED fixture is fully encapsulated in **PU (polyurethane)**, resulting in a robust, waterproof, and dustproof housing with **IP68** protection. This makes it suitable for use in extreme environments, such as outdoor installations or humid spaces. The **IK10** rating provides protection against heavy impacts, ensuring the fixture is highly durable and reliable.
- **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 fully **PU encapsulated** housing provides **IP68** protection against dust and water, and the **IK10** rating offers resistance to heavy impacts and mechanical damage. This makes the fixture extremely robust and suitable for use in the most demanding environments.
- **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	Polyurethane
LEDs per piece	108.00

Lighting	
Wave length	450
Beam angle	120 °

Measurement results

Illuminance (Lux)
(Object size: 1 piece)

	24V
10cm	10400 lx
15cm	5192 lx
20cm	3116 lx
25cm	2064 lx
30cm	1533 lx

Total PPFD umol/m2 (PAR 400-700nm)
(Object size: 1 piece)

	24V
10cm	985.457 umol/m2
15cm	486.885 umol/m2
20cm	291.171 umol/m2
25cm	191.974 umol/m2
30cm	143.277 umol/m2

Peak wavelength
(Object size: 1 piece)
452 nm

• 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

Environmental

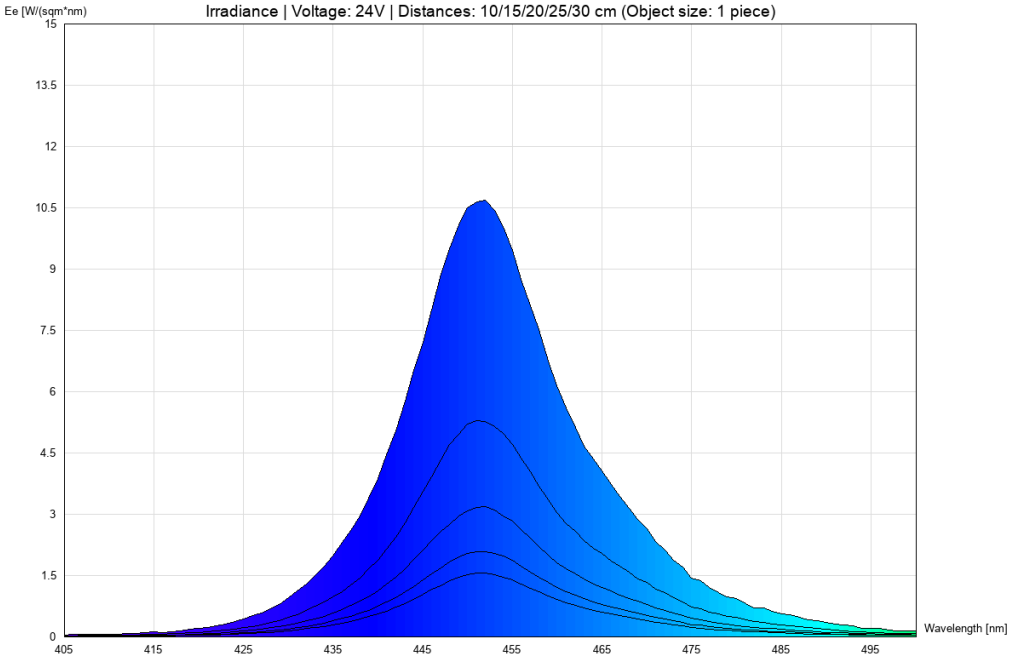
Operating temperature	-20 ~ +60 °C
Storage temperature	-40 ~ +80 °C
IP class	IP 68

Directives - standards - certificates

Directives	RoHS CE
Safety standards	EN60598-1 EN62031 IEC62471

Measurement results

irradiance - 405-500-blue (24V)



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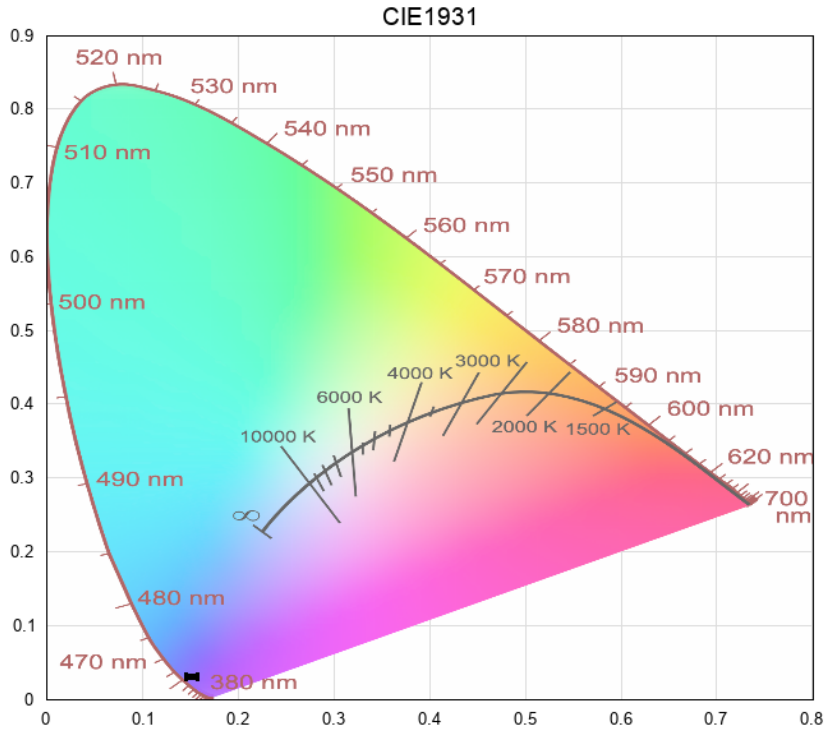

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