

# Datasheet

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

**LF-24-450-24.2X16-TC**

**Version: 2025-07-10.2**

## Product description

The **LuxaLight Industrial LED Fixture** is specifically engineered for demanding industrial applications that require high radiation intensity. With a wavelength of **450nm**, this LED fixture is a reliable and efficient solution for a variety of industrial processes, including 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 across demanding industrial environments.
- **Aluminum Housing with Transparent Cover for Mechanical Protection:** The durable aluminum housing provides robust protection against physical impacts, and the transparent cover ensures the LED fixture remains protected while allowing the **450nm wavelength** to pass through effectively, ensuring long-lasting reliability and performance.
- **Industrial-Grade Durability:** Designed with an industrial focus, this fixture withstands the rigors of tough environments, offering 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 an optimal operating temperature for consistent and efficient performance.

### 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 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 manufacturing.
- **Food Industry:** Blue light can be used to influence 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 facilitating the detection of pollutants or enhancing bioindicator growth 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 lifespan of the fixture.
- **Industrial Durability:** The aluminum housing, combined with the transparent 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
Warranty	5 years
Cover type	PMMA transparent
LEDs per piece	108.00
Lifetime	70000 hours

### Lighting

Wave length	450 nm
Beam angle	120 °
LB waarde	L80B50

### Measurement results

Illuminance (Lux)  
(Object size: 1 piece)

	24V
5cm	24600 lx
10cm	10930 lx
15cm	5581 lx
20cm	3447 lx
25cm	2329 lx
30cm	1777 lx

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

	24V
5cm	2100.93 umol/m2
10cm	911.416 umol/m2
15cm	465.719 umol/m2
20cm	289.431 umol/m2
25cm	195.906 umol/m2
30cm	149.571 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.

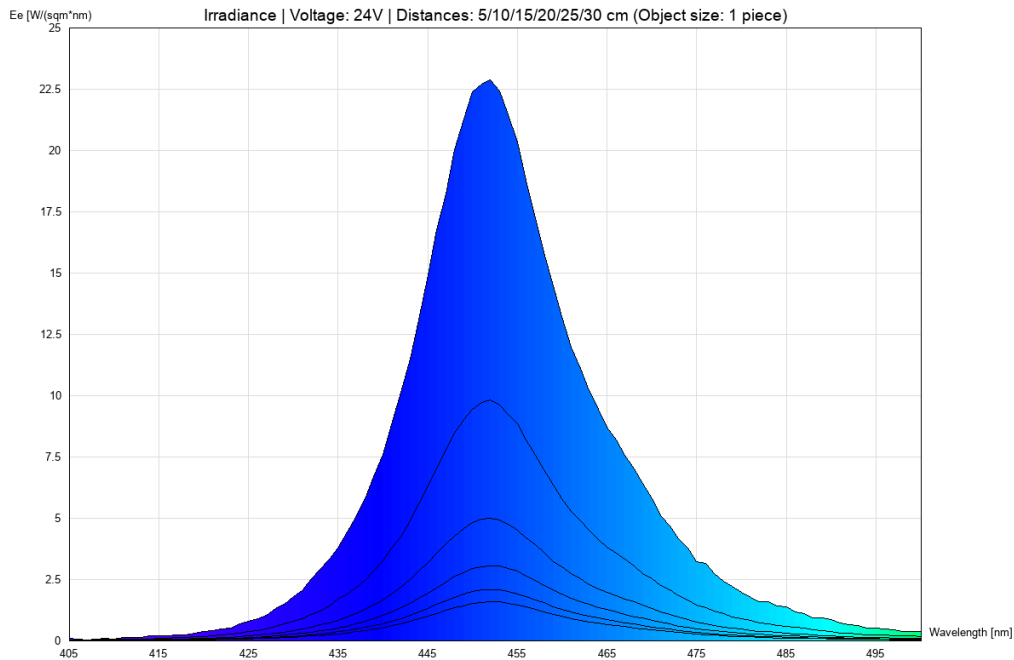
### Electronics

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

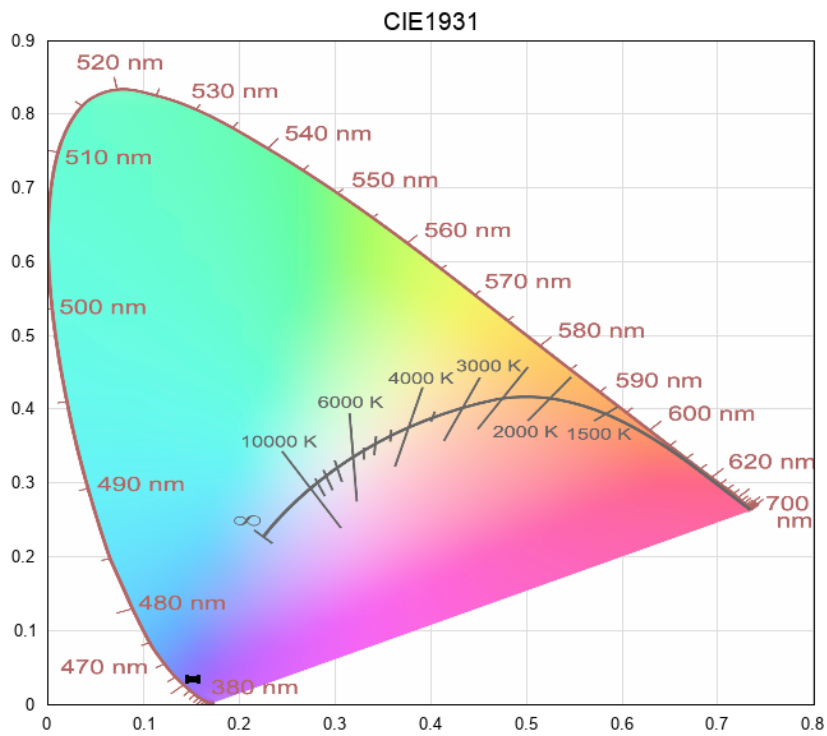
PCB material	Aluminium	
Pinout	<b>Symbol</b>	<b>Function</b>
	V+	V+
	GND	Ground
	NTC	NTC sensor
	NTC_GND	NTC ground
NTC parameters	Resistance: 5000 Ohm Beta value: 3950	
Environmental		
Operating temperature	-20 ~ +60 °C	
Storage temperature	-40 ~ +80 °C	
IP class	IP 64	
Directives - standards - certificates		
Directives	RoHS CE	
Safety standards	EN60598-1 EN62031 IEC62471	

## Measurement results

### irradiance - 405-500-blue (24V)



## cie1931



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