Datasheet

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

LF-24-450-24.2X16-TC

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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

PPFD

Value	Measuring distance
2648 µmol/m2	50 mm
1409 µmol/m2	75 mm
926,9 µmol/m2	100 mm
2990 µmol/m2	200 mm
145 µmol/m2	300 mm
96,1 µmol/m2	400 mm
63,5 µmol/m2	600 mm

Irradiance

Value	Measuring distance
702 W/m2	50 mm
376 W/m2	75 mm
255 W/m2	100 mm
82,5 W/m2	200 mm
39,7 W/m2	300 mm
27 W/m2	400 mm
17,6 W/m2	600 mm

Illuminance

Value	Measuring distance
29,1 klux	50 mm
15,3 klux	75 mm
10,5 klux	100 mm
3,4 klux	200 mm
1,7 klux	300 mm
1,1 klux	400 mm
0,7 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

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