Datasheet

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

LF-24-450-24.2X16-POL

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LuxaLight B.V.
Hastelweg 260B
5652 CN Eindhoven
Nederland

KvK-nummer: 57580561
BTW-nummer: NL852642209B01
IBAN: NL87 INGB 0007 8159 75
BIC/SWIFT code: INGBNL2A

Email: info@luxalight.eu
Website: www.luxalight.eu
Tel.: +31 (0)40 - 202 49 04

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 Polarized Cover for Mechanical Protection**: The durable aluminum housing provides robust protection against physical impact, and the polarized cover ensures the light is beautifully diffused, with the option to choose from different light distribution angles of **0°, 60°, 90°, and 120°**, allowing for optimal adjustment to specific applications. The **450nm wavelength** is 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 polarized cover, provides robust protection against physical damage while ensuring reliable performance in harsh industrial conditions, extending the fixture’s lifespan and minimizing maintenance.
- **Customizable Light Distribution**: The polarized cover offers the ability to diffuse light at different angles (**0°, 60°, 90°, 120°**), allowing the LED fixture to be optimized for specific industrial or scientific applications.
- **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.

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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 Polarised transparent
LEDs per piece	108.00

Lighting	
Wave length	450nm
Beam angle	120 °
LB waarde	L80B50

Measurement results

PPFD

Value	Measuring distance
1218 µmol/m2	50 mm
649 µmol/m2	75 mm
413 µmol/m2	100 mm
127 µmol/m2	200 mm
64 µmol/m2	300 mm
39 µmol/m2	400 mm
26 µmol/m2	600 mm

Irradiance

Value	Measuring distance
332 W/m2	50 mm
179 W/m2	75 mm
113 W/m2	100 mm
34,5 W/m2	200 mm
17 W/m2	300 mm
10,4 W/m2	400 mm
6,8 W/m2	600 mm

Illuminance

Value	Measuring distance
14,5 klux	50 mm
7,7 klux	75 mm
5 klux	100 mm
1,5 klux	200 mm
0,8 klux	300 mm
0,5 klux	400 mm
0,3 klux	600 mm

Electronics	
Working voltage	24V
Current per piece	1.25 A / piece
Power consumption per piece	30.00 W / piece
PCB material	Aluminium
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

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