# **Datasheet**

LuxaLight Industrial LED Fixture Polarised cover Far Red 735nm 24.2x16mm (24 Volt, 2835, IP64)

LF-24-735-24.2X16-POL

Version: 2025-02-26.1

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## **Product description**

The LuxaLight Industrial LED Fixture is designed for intensive industrial applications that require high radiation intensity for a wide range of processes, such as material curing, biological research, and more. With a **735nm** deep red wavelength, this LED fixture provides a reliable and efficient solution for processes that benefit from deep red light, such as plant growth stimulation, tissue regeneration, and more.

The LED fixture is made of durable aluminum, ensuring efficient heat dissipation and long-term performance. It is equipped with a **polarized cover** available in four different angles (30°, 60°, 90°, and 120°), offering flexibility to adjust the light distribution according to the specific needs of each application. Additionally, the fixture is coated with silicone on the PCB, providing extra protection against moisture, dust, and other environmental factors.

#### **Key Features:**

- 735nm Deep Red Wavelength: The 735nm wavelength is ideal for applications requiring deep red light, such as horticulture, biological research, and specific industrial processes. It helps promote plant growth, tissue regeneration, and therapeutic applications.
- Aluminum Fixture: The durable aluminum housing ensures excellent heat dissipation, contributing to the long-term efficiency and stability of the LED fixture.
- Polarized Cover with Adjustable Angles: The LED fixture comes with a polarized cover available in four different angles (30°, 60°, 90°, and 120°), allowing for customized light distribution. This ensures the fixture meets the unique requirements of various applications.
- 24V Power Supply: The fixture operates on a reliable 24V power supply, ensuring stable and consistent operation, perfect for demanding industrial applications.
- Silicone Coating on PCB: The PCB is coated with silicone to provide protection against environmental factors such as moisture and dust, ensuring durability in harsh industrial environments.
- Integration with MaNima Pollux Industry Pulsing (Strobing): The LED fixture supports integration with the MaNima Pollux Industry System for pulsing (strobing), significantly increasing radiation intensity. This feature enables faster reactions and improved efficiency in industrial processes.
- Real-Time Temperature Monitoring via NTC Sensor: The integrated NTC sensor provides continuous temperature
  measurement and adjustment through the MaNima Pollux Industry System. This helps maintain the optimal operating temperature
  for maximum radiation output and consistent performance.

### **Applications:**

- Horticulture & Agriculture: The 735nm wavelength is highly effective in promoting plant growth, especially in encouraging blooming and fruiting. This makes it ideal for use in greenhouses and other agricultural applications where plant health and growth are critical.
- Biological Research: In scientific and medical applications, 735nm light can be used for processes such as promoting tissue regeneration, cell cultivation, and photobiomodulation therapy (PBM), which can aid in pain relief and wound healing.
- Medical Therapy: 735nm deep red light is used in phototherapy treatments for skin healing, anti-aging treatments, and muscle recovery, stimulating cells and tissues with the benefits of red light.
- Food Industry: The 735nm wavelength can be used for applications such as stimulating growth in food production environments
  or in the pasteurization process of certain foods.
- Industrial Material Curing (Non-UV): The deep red light is used for curing coatings and materials that react to red wavelengths, ensuring effective and rapid curing processes in industrial settings.
- Cosmetic Industry: The fixture is ideal for applications in the cosmetic industry, where red light is used for skin treatments such as reducing wrinkles, improving skin tone, and promoting collagen production.

#### Benefits:

- **High Radiation Intensity:** The ability to pulse with the MaNima Pollux Industry System allows for a significant increase in radiation intensity, resulting in faster reactions and higher productivity.
- Real-Time Temperature Monitoring for Consistent Performance: The NTC sensor, combined with the MaNima Pollux Industry System, ensures continuous temperature monitoring, helping to maintain optimal operating conditions and prevent overheating. This extends the lifespan of the LED and enhances efficiency.
- Customizable Light Distribution: The polarized cover, available in angles of 30°, 60°, 90°, and 120°, allows for customized light

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distribution, making it versatile for different industrial, research, and medical applications.

- Industrial Durability: The aluminum housing provides durability and excellent heat dissipation, while the silicone coating on the PCB protects against environmental factors like dust and moisture, making the fixture ideal for harsh industrial environments.
- Efficiency and Speed: The LED fixture provides ample power for fast and efficient performance, making it essential for industrial production systems that need to process or cure large quantities of material quickly.

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# **Technical specifications**

Barcode Scanning   Machine Vision   Barcode Scanning   Machine Vision   Section   Se	General							
Machine Vision	Brand	LuxaLight	LuxaLight					
Aluminum imensions 220 × 24,2 × 16 mm lounting Surface mounted over type PMMA Polarised transparent EDs per plece 108.00  ghting  fave length 735mm searm angle 120 *  leasurement results  PFD    Value   Measuring distance   1144 µmol/m2   50 mm   258 µmol/m2   100 mm   356 µmol/m2   300 mm   354 µmol/m2   300 mm   32 µmol/m2   300 mm   31 W/m2   75 mm   38 W/m2   100 mm   139 W/m2   75 mm   139 W/m2   75 mm   139 W/m2   75 mm   139 W/m2   75 mm   130 mm   26 W/m2   200 mm   13 W/m2   300 mm   26 W/m2   200 mm   27 9 W/m2   400 mm   5,2 W/m2   400 mm   5,2 W/m2   400 mm   5,2 W/m2   600 mm   400 mm   5,2 W/m2   600 mm   6,2 W/m2   600 mm	Application							
Surface mounted	LED type	2835	2835					
Surface mounted	Material	Aluminum	Aluminum					
PMMA Polarised transparent	Dimensions	220 × 24,2 × 16 mm	220 × 24,2 × 16 mm					
	Mounting	Surface mounted	Surface mounted					
Session   Sess	Cover type	PMMA Polarised transparent	PMMA Polarised transparent					
Table   Tabl	LEDs per piece	108.00						
Page	Lighting							
PFD   Value	Wave length	735nm						
Value	Beam angle	120 °						
Value         Measuring distance           1144 μmol/m2         50 mm           528 μmol/m2         75 mm           356 μmol/m2         100 mm           109 μmol/m2         200 mm           53 μmol/m2         300 mm           32 μmol/m2         400 mm           22 μmol/m2         600 mm           radiance           Value         Measuring distance           283 W/m2         50 mm           139 W/m2         75 mm           88 W/m2         100 mm           26 W/m2         200 mm           13 W/m2         300 mm           7,9 W/m2         400 mm           5,2 W/m2         600 mm           tectronics           rorking voltage           24V           urrent per piece         1.25 A / piece           ower consumption per piece         30.00 W / piece           CB material         Aluminium								
Value   Measuring distance     1144 µmol/m2   50 mm     528 µmol/m2   100 mm     109 µmol/m2   200 mm     53 µmol/m2   300 mm     32 µmol/m2   400 mm     22 µmol/m2   50 mm     22 µmol/m2   50 mm     139 W/m2   55 mm     139 W/m2   75 mm     88 W/m2   100 mm     26 W/m2   200 mm     13 W/m2   300 mm     13 W/m2   300 mm     13 W/m2   300 mm     13 W/m2   300 mm     13 W/m2   400 mm     5,2 W/m2   400 mm     5,2 W/m2   600 mm     14 W/m2   400 mm     5,2 W/m2   600 mm     15 W/m2   600 mm			-					
528 \text{ mol/m2}	PPFU							
356 μmol/m2   100 mm     109 μmol/m2   200 mm     32 μmol/m2   300 mm     32 μmol/m2   400 mm     22 μmol/m2   50 mm     139 W/m2   50 mm     139 W/m2   75 mm     88 W/m2   100 mm     26 W/m2   200 mm     13 W/m2   300 mm     13 W/m2   300 mm     13 W/m2   400 mm     5,2 W/m2   400 mm     5,2 W/m2   600 mm     24V     urrent per piece   1.25 A / piece     250 material   Aluminium     250 material   Aluminium     250 material   Aluminium     250 material   100 mm     250 mm     2								
109 μmol/m2   200 mm   330 mm   32 μmol/m2   400 mm   600 mm								
53 μmol/m2   300 mm     32 μmol/m2   400 mm     22 μmol/m2   600 mm     400 mm     600 mm     60								
32 μmol/m2   400 mm   600 m								
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Value   Measuring distance	luva di ara a a							
139 W/m2	Irradiance	Value	Measuring distance					
88 W/m2								
26 W/m2   200 mm   300 mm   400 mm   600 mm								
13 W/m2   300 mm   7,9 W/m2   400 mm   600 mm								
7,9 W/m2 400 mm 5,2 W/m2 600 mm  lectronics  /orking voltage 24V  urrent per piece 1.25 A / piece ower consumption per piece 30.00 W / piece  CB material Aluminium								
5,2 W/m2 600 mm  lectronics  Vorking voltage 24V  urrent per piece 1.25 A / piece ower consumption per piece 30.00 W / piece  CB material Aluminium								
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ower consumption per piece 30.00 W / piece  CB material Aluminium  nvironmental	Working voltage	24V						
CB material Aluminium  nvironmental	Current per piece	1.25 A / piece						
nvironmental	Power consumption per piece	30.00 W / piece						
	PCB material	Aluminium						
perating temperature -20 ~ +60 °C	Environmental							
	Operating temperature	-20 ~ +60 °C						

Storage temperature	-40 ~ +80 °C
IP class	IP 64
Directives - standards - certificates	
Directives	RoHS CE

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