Datasheet

LuxaLight Industrial LED Fixture Polarised cover Neutral White 4200K 24.2x16mm (24 Volt, 2835, IP64)

LF-24-4200-24.2X16-POL

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Product description

The **LuxaLight Industrial LED Fixture (4200K)** is a high-quality fixture designed for applications that require high light output, precision, and excellent color rendering. The fixture is made from durable aluminum, ensuring robust and reliable construction, while also providing optimized *heat management* to prevent overheating and maximize system efficiency.

Key Features:

- **4200K Color Temperature:** The neutral white light at 4200K provides a balanced spectrum, with a strong focus on 650 nm and 675 nm wavelengths for red light, essential for photosynthesis and plant growth. The LED fixture also has a high peak at 450 nm, ideal for promoting chlorophyll production and other biological processes.
- **High PAR Flux (2726 µmol/m²/s at 5 cm):** The LED fixture delivers high light intensity in the form of PAR, ideal for promoting photosynthesis and plant growth. This makes it an excellent choice for horticulture and other applications requiring intense light.
- **Aluminum Fixture for Optimal Heat Management:** The fixture is made from high-quality aluminum, ensuring efficient heat dissipation and optimizing the performance of the LED fixture. This prevents overheating, ensuring the product operates at its best at all times.
- **Polarized Cover for Different Light Distribution Variants:** The polarized cover is available in different variants, including **0°, 60°, 90°, and 120°**, allowing for customized light spread based on the specific needs of the application. This makes the fixture suitable for a wide range of applications, from large growing spaces to smaller research environments.
- **Compatibility with Pollux for Pulse Mode:** The LuxaLight LED Fixture can be used in combination with the **Pollux**, which provides the ability to adjust light intensity in pulses. This allows the light cycle to be tailored to specific needs, optimizing photosynthesis and plant growth.
- **Easy Integration:** The LED fixture is designed for easy integration into existing systems or enclosures, providing flexibility for a wide range of horticultural and light-related applications.
- **Real-Time Temperature Monitoring via NTC Sensor:** The integrated NTC sensor continuously measures and adjusts temperature, maintaining optimal operating conditions. This prevents overheating and ensures the LED fixture always performs at its best, maximizing output for consistent and long-lasting results.

Applications:

- **Horticulture and Plant Lighting:** The 4200K color temperature and high PAR flux make this LED fixture ideal for horticultural applications, where a broad spectrum of light is necessary to promote photosynthesis, with a strong focus on 650 nm and 675 nm for red light and a peak at 450 nm for blue light. The polarized cover with different light distribution variants offers flexibility for various growing environments.
- **Plant Research and Growth Optimization:** With its balanced light spectrum, including specific wavelengths of 650 nm, 675 nm, and 450 nm, the LED fixture is ideal for scientific research on plant growth, photosynthesis, and other biological processes influenced by light intensity and quality.
- **Growing Facilities and Vertical Farming:** The LED fixture provides powerful lighting for controlled growing environments in greenhouses, vertical farming, and other indoor growing applications, where specific light spectrums and high PAR flux are essential for maximum yield and plant health. The polarized cover offers various light distribution options that can be customized to the needs of the growing environment.
- **Plant and Product Quality Control:** The LED fixture is also suitable for quality control of plants, crops, or other biological products in agriculture and horticulture, providing consistent lighting that accurately simulates growth conditions.

Benefits:

- **Full Spectrum with High Peaks at 450 nm and Red Light (650 nm & 675 nm):** The extensive light spectrum, with specific wavelengths for blue light (450 nm) and red light (650 nm & 675 nm), offers powerful lighting for photosynthesis and plant growth.
- **High PAR Flux:** The high PAR flux of 2726 µmol/m²/s at 5 cm ensures sufficient light intensity, essential for promoting healthy plant growth, especially in commercial growing environments.
- **Flexibility in Light Distribution:** The polarized cover is available in different variants, including **0°, 60°, 90°, and 120°**, allowing for customized light spread based on the specific needs of the application.
- **Efficient Performance:** The LED fixture provides reliable and efficient performance with consistent light output, making it ideal for intensive growth applications such as horticulture, where long-lasting and dependable lighting is required.

Technical specifications

General	
Brand	LuxaLight
Application	Food Inspection (Agro-Food) Hyper - spectral Imaging Line Scan Cameras 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	
Color temperature	4200 K

Measurement results

PPFD

Value	Measuring distance
1811 µmol/m2	50 mm
908 µmol/m2	75 mm
574 µmol/m2	100 mm
179 µmol/m2	200 mm
88 µmol/m2	300 mm
54 µmol/m2	400 mm
36 µmol/m2	600 mm

Irradiance

Value	Measuring distance
408 W/m2	50 mm
205 W/m2	75 mm
129 W/m2	100 mm
40 W/m2	200 mm
20 W/m2	300 mm
12 W/m2	400 mm
8 W/m2	600 mm

Illuminance

Value	Measuring distance
118 klux	50 mm
60 klux	75 mm
38 klux	100 mm
12 klux	200 mm
6 klux	300 mm
3,5 klux	400 mm
2,3 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