Datasheet

LuxaLight Industrial LED Fixture Transparent IP68 White Full Spectrum 5700K 24.2x16mm (24 Volt, 2835, IP68)

LF-24-5700K-24.2X16-PU

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Product description

The LuxaLight Industrial LED Fixture (5700K) is designed as a high-quality component for industrial applications that require high lumen output, precision, and exceptional color accuracy. With a **CRI of 95+** and a 5700K color temperature, this LED-**fixture** provides an ideal solution for applications such as **food inspection (Agro-Food)**, **hyper-spectral imaging**, **line scan cameras**, and **machine vision systems**, where accurate color rendering and consistent light output are crucial.

Key Features:

- **5700K Color Temperature:** The 5700K natural white light provides clarity and excellent color accuracy, making it ideal for tasks like food inspection, hyper-spectral imaging, and machine vision systems where precise and clear lighting is essential.
- **CRI 95+:** With a Color Rendering Index (CRI) of 95 or higher, the LED-**fixture** ensures excellent color accuracy and true-to-life color rendering, which is critical for applications requiring accurate color differentiation, such as in food quality control and material inspection.
- **High Lumen Output:** This LED-**fixture** delivers a high lumen output, providing bright and even illumination, essential for imaging applications where clarity and precision are key.
- **Modular Design with Aluminum Heatsink and PU-Encapsulated Housing:** The modular design, combined with the aluminum heatsink and the PU-encapsulated housing, ensures optimal heat management, robustness, and waterproofing (IP68). The housing provides protection against dust, water, and impact (IK10), making the **fixture** ideal for demanding industrial environments.
- **Integration with MaNima Pollux Industry Pulsing (Strobing):** The LED-**fixture** integrates seamlessly with the MaNima Pollux Industry System, enabling high-speed pulsing (strobing) for quick exposures. This feature is ideal for high-speed imaging, allowing for fast reaction times and precise control over exposure.
- **Real-Time Temperature Monitoring via NTC Sensor:** The integrated NTC sensor ensures continuous temperature measurement and adjustment, maintaining optimal operating conditions and preventing overheating.

Applications:

- **Food Inspection (Agro-Food):** The 5700K color temperature and high CRI ensure optimal color rendering, making it ideal for food inspection, where accurate color representation is necessary for defect detection and quality control.
- **Hyper-Spectral Imaging:** The LED-**fixture** with high CRI and lumen output is perfect for hyper-spectral imaging systems, offering clear and consistent illumination for spectral analysis of materials and substances.
- **Line Scan Cameras:** Ideal for use with line scan cameras, the high lumen output and precise color rendering ensure bright, even illumination, which is essential for capturing sharp, high-quality images of moving objects or surfaces in high-speed scanning applications.
- **Machine Vision Systems:** The **fixture**'s high CRI and bright illumination provide the ideal lighting for machine vision applications, enabling accurate defect detection, object recognition, and automated quality control in manufacturing and industrial automation.

Benefits:

- **High CRI for Accurate Color Rendering:** The LED-**fixture**'s CRI of 95+ guarantees exceptional color accuracy, making it ideal for applications where precise color differentiation is essential for quality control and analysis.
- **High Lumen Output:** The **fixture**'s high lumen output provides bright and uniform lighting, improving clarity and enhancing the precision of image and video capture in inspection and imaging applications.
- **Fast Exposures with MaNima Pollux Integration:** Thanks to the integration with the MaNima Pollux Industry System for strobing, the **fixture** enables rapid exposures, facilitating high-speed imaging and faster processing in real-time applications.
- **Robust and Waterproof:** The PU-encapsulated housing provides excellent protection against water (IP68) and impact (IK10), making the **fixture** ideal for use in demanding environments that require durability and protection from weather conditions.
- **Flexibility in Integration:** The LED-**fixture** can be easily integrated into custom enclosures or systems, offering flexibility for a wide range of applications, including food inspection, imaging, and machine vision.
- **Efficient Performance:** With consistent, high-quality light output and precise color rendering, the LED-**fixture** offers reliable performance, even in demanding environments that require accurate, high-speed processing.
- **Real-Time Temperature Monitoring for Consistent Performance:** The integrated NTC sensor, combined with the MaNima Pollux Industry System, ensures continuous temperature monitoring, preventing overheating and maintaining optimal performance over time.

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	Polyurethane
LEDs per piece	108.00

Lighting	
Color temperature	5700 K
Beam angle	120 °

Measurement results

PPFD

Value	Measuring distance
3142 µmol/m2	50 mm
1662 µmol/m2	75 mm
1200 µmol/m2	100 mm
362 µmol/m2	200 mm
186 µmol/m2	300 mm
103 µmol/m2	400 mm
81,9 µmol/m2	600 mm

Irradiance

Value	Measuring distance
713 W/m2	50 mm
378 W/m2	75 mm
273 W/m2	100 mm
82 W/m2	200 mm
42 W/m2	300 mm
23 W/m2	400 mm
16 W/m2	600 mm

Illuminance

Value	Measuring distance
202 klux	50 mm
107 klux	75 mm
78 klux	100 mm
23 klux	200 mm
12 klux	300 mm
6,5 klux	400 mm
4,6 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

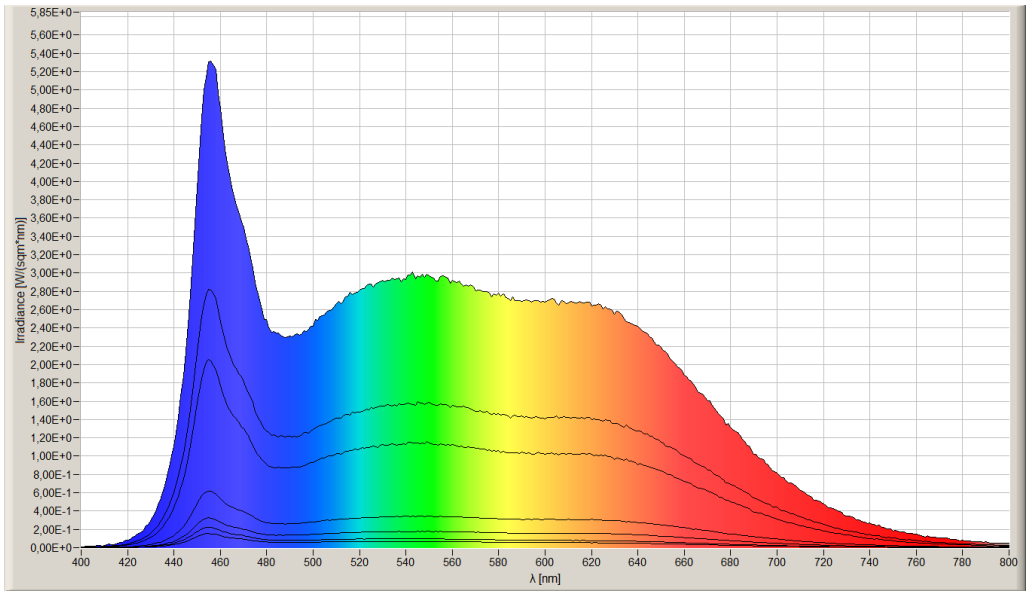
Environmental

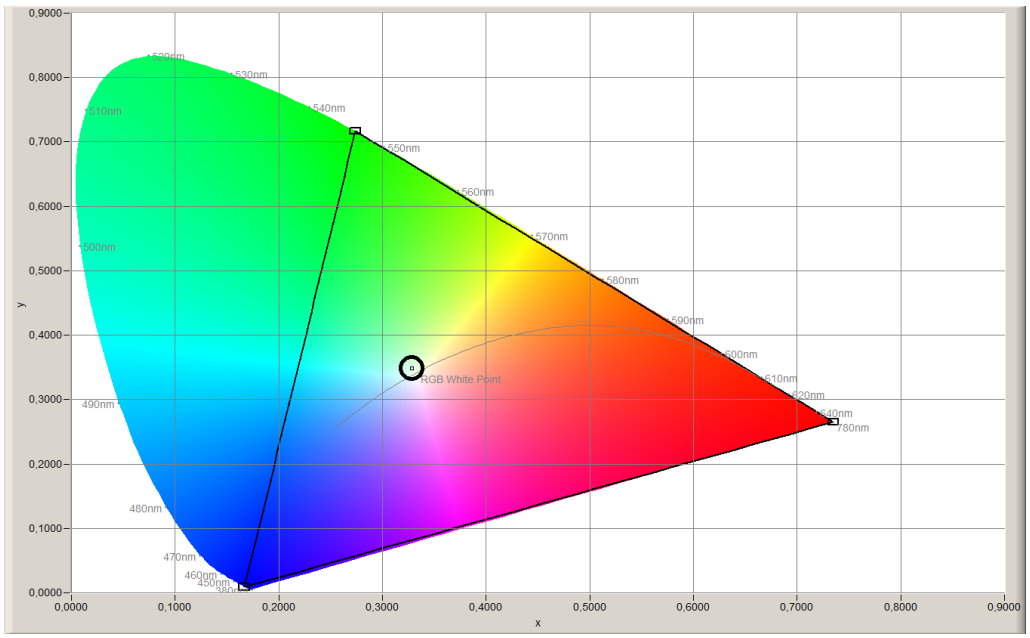
Operating temperature	-20 ~ +60 °C
Storage temperature	-40 ~ +80 °C
IP class	IP 68

Directives - standards - certificates

Directives	RoHS CE
Safety standards	EN60598-1 EN62031 IEC62471

Measurement results





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