Datasheet

LuxaLight LED Engine Neutral White 4800K Protected (24 Volt, 108 LEDs, 2835, IP64)

LE-24-4800-108X2835PLX

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Product description

The **LuxaLight Industrial LED Engine (4800K)** is designed as a high-quality component for applications that require high light output, precision, and excellent color rendering. This LED engine consists of **54 LEDs of 4200K** and **54 LEDs of 5700K**, resulting in a total color temperature of **4800K**. This balanced spectrum provides an ideal solution for horticultural and research environments, where a full spectrum of light is crucial for photosynthesis and plant growth.

The **LuxaLight LED Engine (4800K)** delivers impressive performance with a **photosynthetic photon flux density (PPFD) of 3226 µmol/m²/s at a 5 cm distance**, making it particularly suitable for horticultural applications where constant light intensity and a balanced spectrum are essential for optimal plant growth.

Key Features:

- **4800K Color Temperature:** The combination of 4200K and 5700K LEDs creates a balanced 4800K spectrum, providing neutral white light that is ideal for horticultural applications. This spectrum is optimized for plant growth and supports effective photosynthesis.
- **High PPFD Output (3226 µmol/m²/s at 5 cm):** The LED engine produces high light intensity, ideal for promoting photosynthesis and healthy plant growth. This makes it an excellent choice for horticulture and other related applications requiring powerful lighting.
- **Semi-Finished Product:** The LED engine is designed as a semi-finished product, intended for integration into existing systems or enclosures. This provides flexibility for a wide range of horticultural and light-related applications.
- **Real-Time Temperature Monitoring via NTC Sensor (in combination with Pollux Industry):** The integrated **NTC sensor** ensures continuous temperature measurement and adjustment. When used in combination with **Pollux Industry**, this sensor maintains optimal operating conditions, prevents overheating, and ensures that the LED engine consistently performs at its best. This combination maximizes output and contributes to reliable, long-lasting results.

Applications:

- **Horticulture and Plant Lighting:** The 4800K color temperature and high PPFD output make this LED engine ideal for horticultural applications, where a broad light spectrum is necessary to promote photosynthesis. This makes the LED engine perfect for **growing facilities**, **vertical farming**, and **commercial cultivation**.
- **Plant Research and Growth Optimization:** With its balanced light spectrum, the LED engine is ideal for scientific research on plant growth, photosynthesis, and other biological processes affected by light intensity and quality.
- **Growing Facilities and Vertical Farming:** The LED engine provides powerful lighting for controlled growing environments in **greenhouses**, **vertical farming**, and other **indoor growing environments**, where specific light spectrums and high PPFD output are crucial for maximum yield and plant health.
- **Plant and Product Quality Control:** The LED engine 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 Lighting:** The combination of **4200K** and **5700K** LEDs provides a wide spectrum, delivering powerful light for photosynthesis and plant growth.
- **High PPFD Output:** The high PPFD output of **3226 µmol/m²/s at 5 cm** ensures sufficient light intensity, promoting healthy plant growth, especially in commercial growing environments.
- **Integration Flexibility:** The LED engine can be easily integrated into existing systems or enclosures, offering flexibility for applications in **greenhouses**, **vertical farming**, and other horticulture-related setups.
- **Efficient Performance:** The LED engine delivers 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.
- **Real-Time Temperature Monitoring for Consistent Performance:** The integrated **NTC sensor** works in combination with **Pollux Industry**, ensuring continuous temperature monitoring, preventing overheating, and maintaining optimal performance over time. This contributes to maximizing the LED engine's output, which is essential for maintaining high performance in a dynamic environment.

Technical specifications

General	
Brand	LuxaLight
Application	Food Inspection (Agro-Food) Hyper - spectral Imaging Line Scan Cameras Machine Vision
LED type	2835
PCB color	White
Material	Aluminum
Dimensions	200 × 20 × 2 mm
Mounting	3M tape VHB4905
Warranty	5 years
LEDs per piece	108.00
Lifetime	70000 hours

Lighting	
Color temperature	4800 ~ 5000 K
Luminous Flux	3720 lm
BIN	3 SDCM
Beam angle	120 °
LB waarde	L80B50

Measurement results	
CRI (Object size: 1 piece)	93
CCT (Object size: 1 piece)	4920 K

Illuminance (Lux)
(Object size: 1 piece)

	24V
5cm	187100 lx
10cm	74750 lx
15cm	38480 lx
20cm	23880 lx
25cm	16160 lx
30cm	12170 lx

Total PPFD umol/m2 (PAR 400-700nm)
(Object size: 1 piece)

	24V
5cm	2918.42 umol/m2
10cm	1167.06 umol/m2
15cm	600.707 umol/m2
20cm	373.353 umol/m2
25cm	252.442 umol/m2
30cm	189.882 umol/m2

Peak wavelength (Object size: 1 piece)	454 nm

Peak irradiance
(Object size: 1 piece)

	24V
5cm	4.42247 W/sqm
10cm	1.7722 W/sqm
15cm	0.924298 W/sqm
20cm	0.577731 W/sqm
25cm	0.389644 W/sqm
30cm	0.292744 W/sqm

Total irradiance
(Object size: 1 piece)

	24V
5cm	662.2 W/sqm
10cm	264.2 W/sqm
15cm	136 W/sqm
20cm	84.51 W/sqm
25cm	57.06 W/sqm
30cm	42.86 W/sqm

• 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

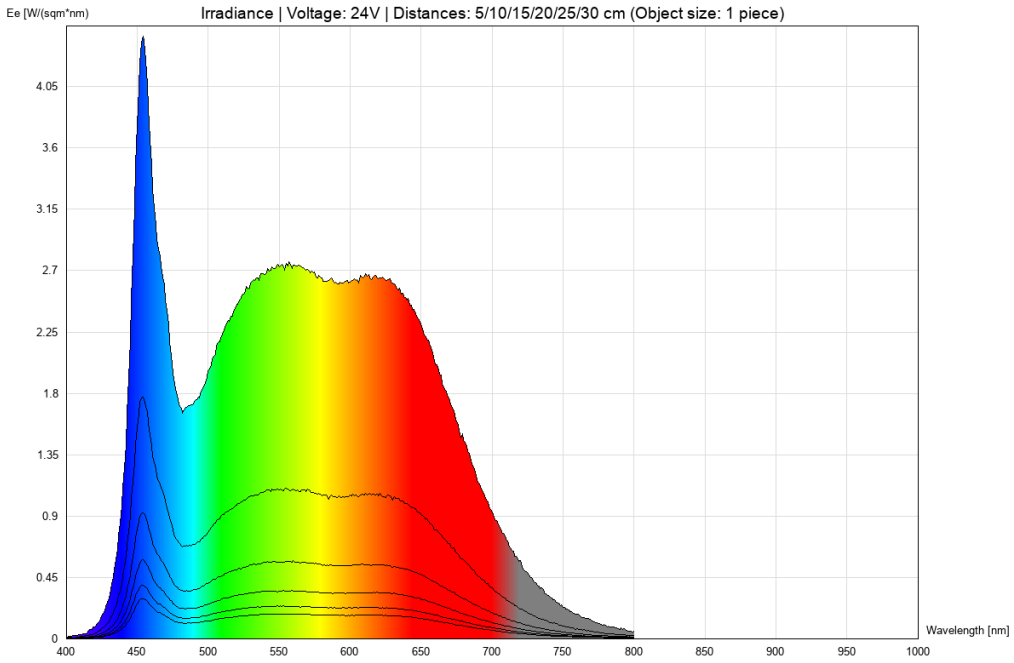
Operating temperature	-20 ~ +60 °C
Storage temperature	-40 ~ +80 °C
IP class	IP 64

Directives - standards - certificates

Directives	RoHS CE
Safety standards	EN60598-1 EN62031 IEC62471

Measurement results

irradiance - full-spectrum (24V)



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