

Datasheet

Zirqle LED Engine Deep Red 660nm Protected (24 Volt, 108 LEDs, 2835, IP64)

LE-24-660-108X2835PZQ

Version: 2025-07-09.2

Product description

The **Zirqle Industrial LED Engine** is designed as a high-performance component for intensive industrial applications that require high radiation intensity. With a 660nm wavelength, this LED engine provides an efficient solution for processes that benefit from deep red light, such as plant growth stimulation, tissue regeneration, and more.

This LED engine is a semi-finished product, allowing it to be integrated into custom fixtures or housings depending on your specific requirements. It offers flexibility for use in various industrial, research, and medical applications, where the powerful 660nm wavelength can deliver targeted results. The engine is designed for easy integration into larger systems or custom enclosures.

Key Features:

- **660nm Wavelength:** The 660nm wavelength is ideal for applications that require deep red light, such as horticulture, biological research, and certain industrial processes.
- **24V Power Supply:** The LED engine operates on a reliable 24V power supply, ensuring stable and consistent operation, perfect for demanding applications.
- **High Radiation Intensity:** This LED engine delivers high radiation intensity, making it suitable for high-efficiency processes and applications that require significant light output.
- **Semi-Finished Product:** The LED engine is designed to be integrated into custom systems or housings, providing flexibility for adapting to various industrial, research, or medical setups.
- **Integration with MaNima Pollux Industry Pulsing (Strobing):** The LED engine supports integration with the MaNima Pollux Industry System for pulsing (strobing), significantly increasing radiation intensity. This feature allows for faster reactions and improved efficiency in industrial processes.
- **Real-Time Temperature Monitoring via NTC Sensor:** The integrated NTC sensor ensures 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 660nm wavelength is highly effective for stimulating plant growth, making it ideal for integration into custom lighting solutions for greenhouses and agricultural applications.
- **Biological Research:** The LED engine can be used in scientific and medical applications for processes such as promoting tissue regeneration, cell cultivation, and photobiomodulation therapy (PBM), assisting in pain relief and wound healing.
- **Medical Therapy:** 660nm light is used in phototherapy treatments such as skin healing, anti-aging treatments, and muscle recovery, where red light stimulates cells and tissues.
- **Food Industry:** The 660nm wavelength can be used for applications such as stimulating growth in food production environments or in the pasteurization of certain food items.
- **Industrial Material Curing (Non-UV):** The deep red light can cure specific coatings and materials that react to red wavelengths, providing effective and fast curing processes in industrial settings.
- **Cosmetic Industry:** The LED engine is suitable for use in the cosmetic industry for skin treatments such as wrinkle reduction, skin tone improvement, and stimulating collagen production.

Benefits:

- **High Radiation Intensity:** The engine provides high radiation intensity, allowing for faster reactions and increased productivity in applications that require deep red light.
- **Flexibility in Integration:** As a semi-finished product, the LED engine offers flexibility for integration into custom housings or systems tailored to specific industrial, research, or medical applications.
- **Efficient Performance:** The LED engine provides efficient performance with stable output, making it ideal for environments that need consistent light delivery.
- **Real-Time Temperature Monitoring for Consistent Performance:** The integrated NTC sensor, combined with the MaNima Pollux Industry System, ensures continuous temperature monitoring, helping to prevent overheating and maintain optimal operating conditions for long-term reliability.

Technical specifications

General

Brand	Zirqle
Application	Barcode Scanning Horticulture Machine Vision
LED type	2835
PCB color	White
Material	Aluminum
Dimensions	200 × 20 × 4 mm
Mounting	3M tape VHB4905
Warranty	5 years
LEDs per piece	108.00

Lighting

Wave length	660 nm
Beam angle	120 °
LB waarde	L80B50

Measurement results

Illuminance (Lux)
(Object size: 1 piece)

	24V
5cm	26400 lx
10cm	11120 lx
15cm	5631 lx
20cm	3479 lx
25cm	2293 lx
30cm	1729 lx

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

	24V
5cm	2135.54 umol/m2
10cm	872.583 umol/m2
15cm	456.777 umol/m2
20cm	282.985 umol/m2
25cm	190.418 umol/m2
30cm	143.864 umol/m2

Peak wavelength
(Object size: 1 piece)

659 nm

- 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

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 -20 ~ +60 °C

IP class IP 64

Directives - standards - certificates

Directives

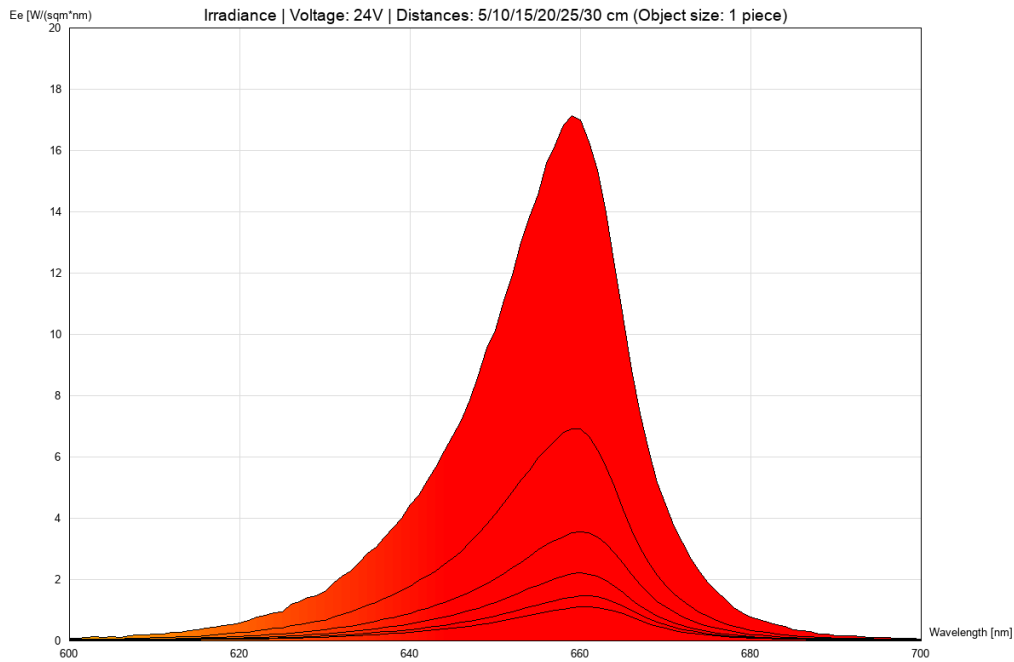
RoHS
CE

Safety standards

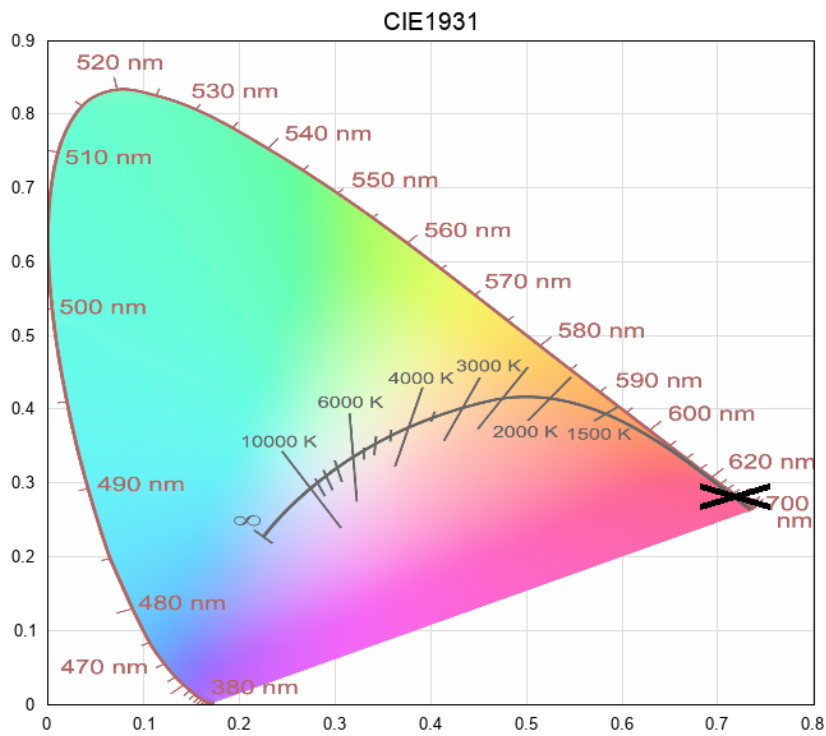
EN60598-1
EN62031
IEC62471

Measurement results

irradiance - 600-700-red (24V)



cie1931



While LuxaLight has made every reasonable effort to ensure the accuracy of the information in this brochure, LuxaLight does not guarantee that it is error - free, nor does LuxaLight make any other representation, warranty or guarantee that the information is accurate, correct, reliable or current. LuxaLight reserves the right to make any adjustments to the information contained herein at any time without notice. LuxaLight expressly disclaims all implied warranties regarding the information contained herein, including, but not limited to, any implied warranties of merchantability or fitness for a particular purpose. The dimensions in this catalogue are for reference purposes only and are subject to change without notice. Specifications are subject to change without notice. Consult LuxaLight for the latest dimensions and design specifications.