

Datasheet

LuxaLight Pixel LED-strip HD108S Digital SPI RGB Protected High Power (5 Volt, 144 LEDs, 5050, IP64)

LS5RGB144HD108SPLX

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Product description

This **LuxaLight** professional digital RGB LED strip is designed for applications where flexible, customized lighting is required, with a high level of control over each individual LED pixel. The strip consists of **144 segments**, each **6.95 mm long**. The **HD108 IC** is **embedded in the 5050 LED housing**, allowing each LED to be individually controlled. This enables detailed light effects and precise color and brightness adjustments. The strip features a **white PCB** and an **IP64 rating**, meaning it is dust-tight and provides protection against **moist environments**, making it suitable for both indoor and outdoor applications. The **high PWM rate of the IC** allows for smooth filming of these pixels with cameras up to **900 fps**, ensuring clear and accurate visual performance. Additionally, it offers **16-bit color resolution**, ensuring highly accurate color representation.

LED Strip Configuration:

- **Voltage:** 5V
- **Number of segments:** 144
- **Length per segment:** 6.95 mm
- **Total LEDs on the strip:** 144 RGB LEDs per meter
- **Adhesive:** The strip is equipped with **4905 VHB (Very High Bond)** tape, ensuring strong and durable adhesion to various surfaces.
- **PCB Color:** White PCB
- **PCB thickness:** The PCB has a thickness of **3 oz/ft²**, providing robust support and efficient heat dissipation.
- **IP Rating:** **IP64**, suitable for **indoor and outdoor applications**, offering protection against dust and moisture.

HD108 IC

The LED strip uses the **HD108 IC**, which is **embedded in the 5050 LED housing**. The **HD108** is an advanced controller that provides PWM dimming (pulse width modulation) for the RGB LEDs, allowing for very smooth and precise control over the color range and brightness. Additionally, the LEDs can be **individually controlled**, enabling detailed light effects and color adjustments.

Key Features of the HD108 IC:

- **Pixel Addressing:** Each LED can be individually controlled for precise color and brightness adjustments.
- **Color Management:** Supports **RGB LEDs**, ensuring optimized color rendering and flexibility for color tuning.
- **Communication:** The IC uses a serial data interface, passing data from the first to the last IC, enabling the integration of long chains of LED strips.
- **Stability and Performance:** The **integrated clock** of the IC, with a **clock drive frequency of 20 MHz**, ensures stable operation by providing a consistent time reference for data transmission. This clock-driven approach minimizes timing errors, signal shifts, and maintains synchronization of the LED strip. It enhances the reliability of the system, even in complex setups, ensuring stable communication and performance even under varying environmental conditions. By regulating communication through the clock, the IC improves the robustness of the system against voltage fluctuations, power irregularities, and other operational inconsistencies. This ensures precise and synchronized control of each individual LED.
- **High PWM Rate (27,000 Hz):** The high PWM rate of the IC allows for smooth pixel filming with cameras up to **900 fps**, providing clear and precise video recording of the LED strip.
- **Color Resolution (16-bit):** The IC features **16-bit color resolution**, offering smooth and fine control over color mixing and accurate color rendering, even at high frame rates.

Technical specifications

General

Brand	LuxaLight
LEDs / meter	144
LED type	5050
Length per reel	2 m
LED strip width	12.00 mm
LED strip thickness	4.00 mm
Dimensions	2.000 × 12 × 4 mm
Mounting	3M tape VHB4905
Warranty	2 years
Lifetime	50000 hours

Lighting

Luminous Flux	1620 lm
Luminous flux red	480 lm
Luminous flux green	696 lm
Luminous flux blue	444 lm
Wave length Red	620~630 nm
Wave length Green	510~525 nm
Wave length Blue	455~470 nm
BIN	3 SDCM
Beam angle	120 °

Electronics

Working voltage	5V
Current / meter	5.76 A / meter
Power consumption per meter	28.80 W / meter

Pinout	Symbol	Function
	V+	V+
	GND	Ground
	D1	Data in
	CL	Clock

Control

IC type	HD108S
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Environmental

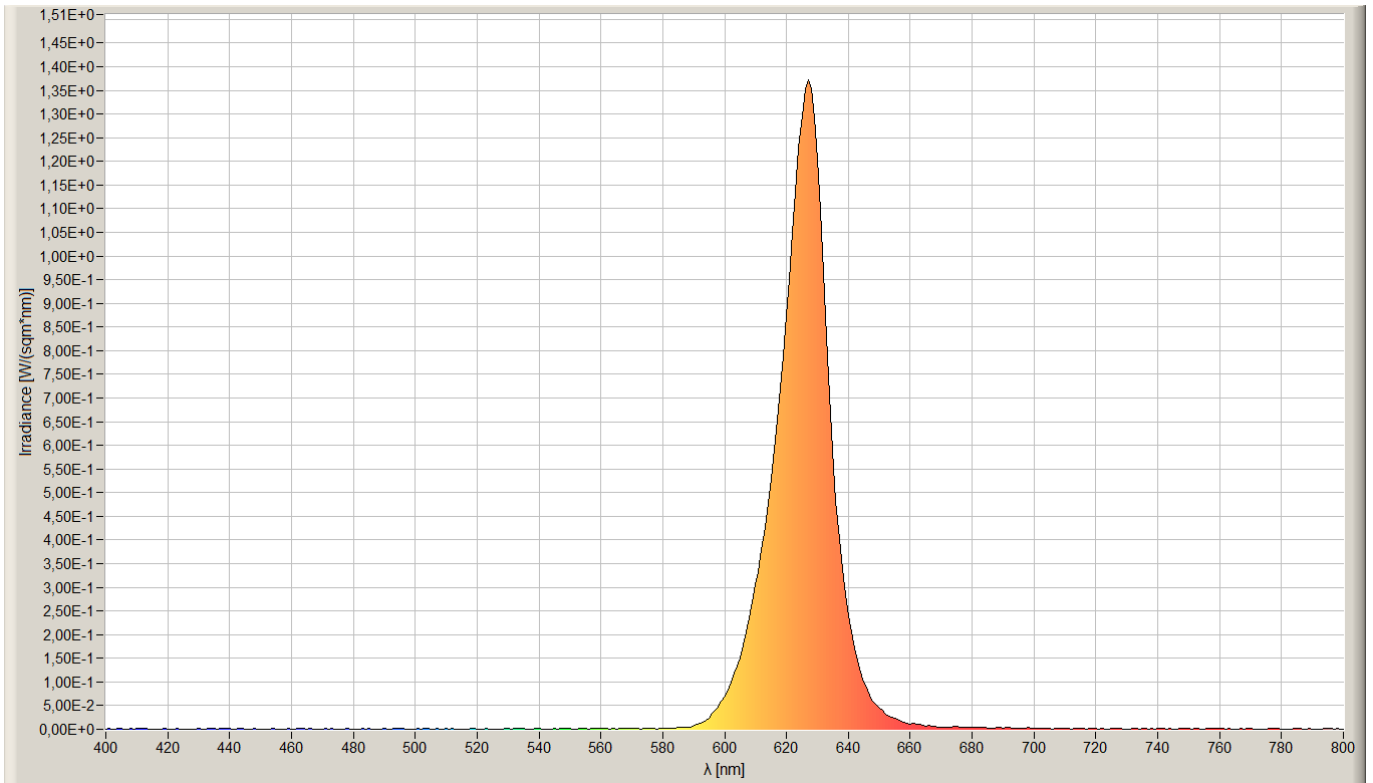
Operating temperature	-20 ~ +60 °C
Storage temperature	-40 ~ +80 °C
IP class	IP 64

Directives - standards - certificates

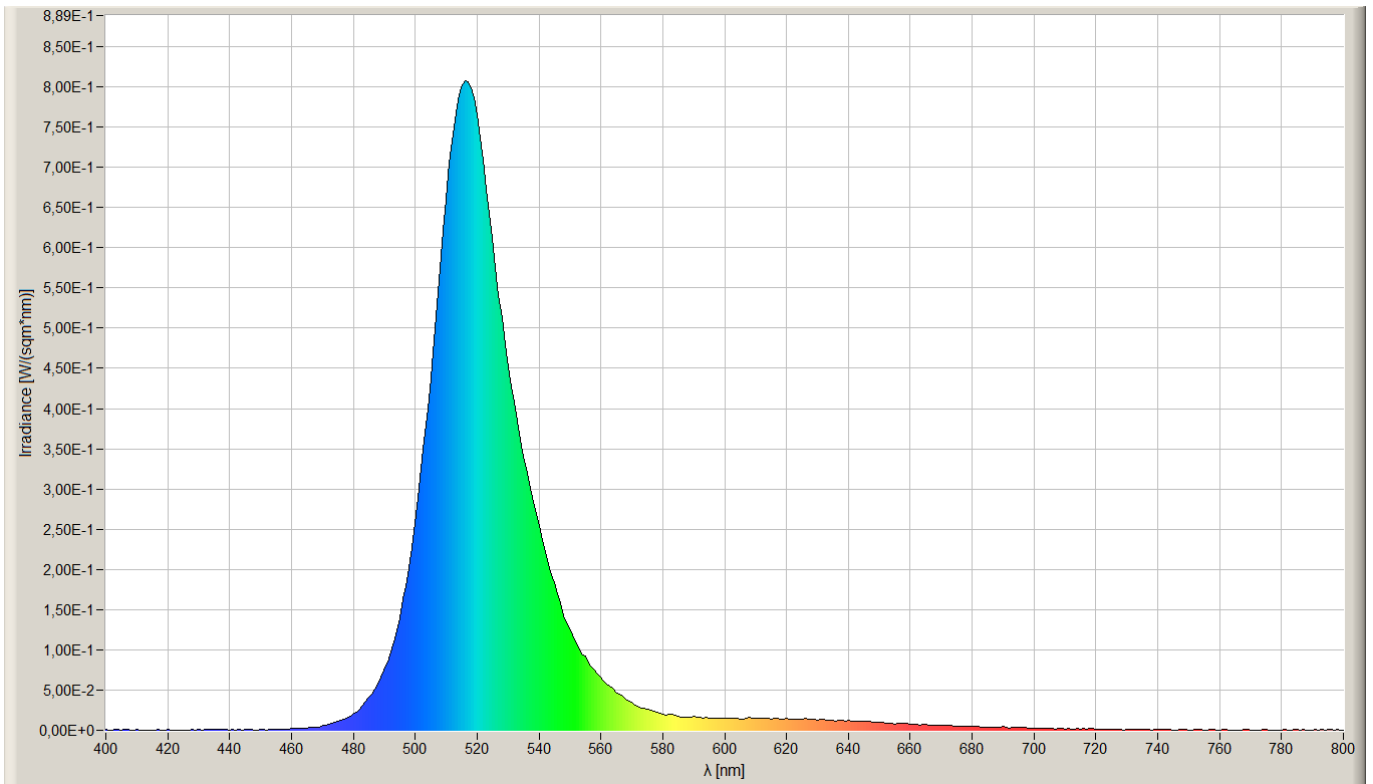
Directives	RoHS CE
Safety standards	EN60598-1 EN62031 IEC62471

Measurement results

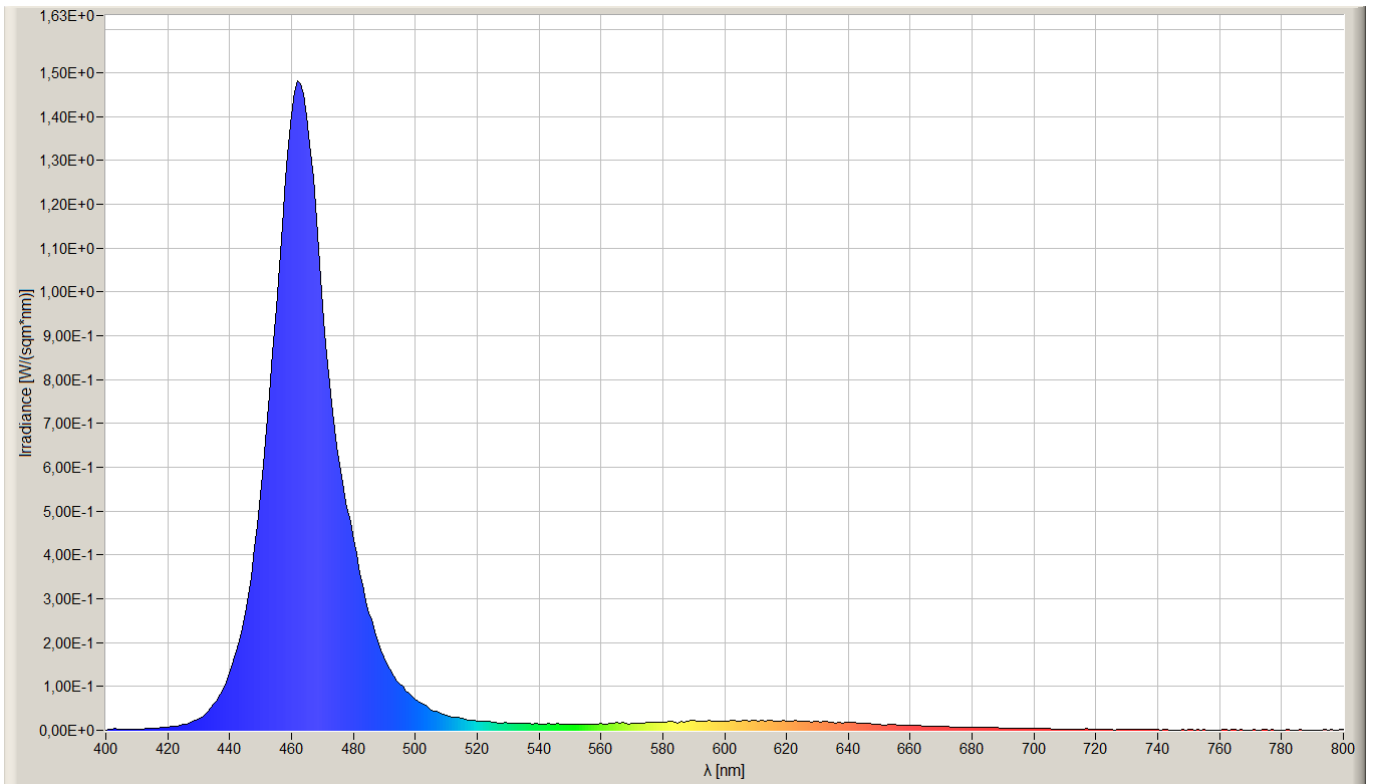
Red



Green



Blue



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