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› LCFOCUS 1W Blue High Power LED Chip (10 Pcs) - LC-1B-G30 Instruction Manual

LCFOCUS LC-1B-G30

LCFOCUS 1W Blue High Power LED Chip (10 Pcs) - LC-1B-G30 Instruction Manual

Model: LC-1B-G30

1. INTRODUCTION

Thank you for choosing the LCFOCUS 1W Blue High Power LED Chip. This manual provides essential information for the safe and effective use of your LED chips. Please read these instructions carefully before installation and operation to ensure optimal performance and longevity of the product.



Image 1: Packaging of the LCFOCUS 1W Blue High Power LED Chips, indicating key specifications and quantity.

2. SAFETY INFORMATION

- **Static Electricity:** Handle LED chips with care to avoid damage from static electricity or voltage surges. It is recommended to use anti-electrostatic gloves and take other static-prevention measures.
- **Heat Management:** High power LEDs generate heat. An adequate heat sink system is mandatory to maintain the LED's operating temperature below 60°C (140°F). Failure to do so will significantly reduce the lifespan and performance of the LED.
- **Polarity:** Observe correct polarity (+ Anode, - Cathode) when connecting the LED chips. Incorrect connection can cause

damage. Refer to the markings on the LED for positive and negative terminals.

- **Power Supply:** Always use a constant current LED driver specifically designed for high-power LEDs. Using an incorrect power supply can lead to overheating and premature failure.
- **Eye Protection:** Do not look directly into the illuminated LED. The intense light can cause eye strain or damage.

3. PRODUCT OVERVIEW

The LCFOCUS LC-1B-G30 is a 1-watt blue high-power LED chip designed for various applications requiring intense blue light. Each chip features a dual gold wire and a copper bracket for enhanced reliability and heat dissipation. This package contains 10 pieces.

Key Features:

- **Power:** 1 Watt
- **Emitted Color:** Blue (460-465 nm wavelength)
- **Luminous Flux:** 20-30 Lumens
- **Forward Voltage (Vf):** 3.0-3.4 Volts DC
- **Recommended Forward Current (If):** 350 mA
- **Emission Angle:** 140 degrees
- **Construction:** High-quality integrated chip with dual gold wire and copper bracket.
- **Lifespan:** Approximately 50,000 hours (with proper heat management).

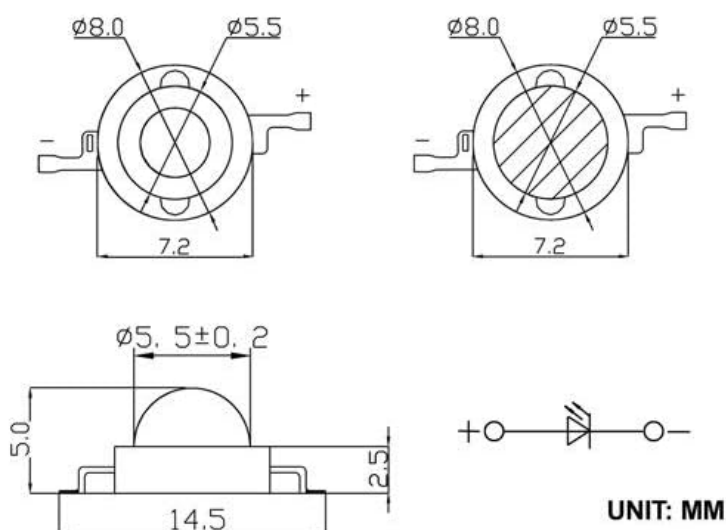
4. SPECIFICATIONS

LC-1B-G30

HIGH POWER LED CHIP

LCFOCUS

- * Power: 1 Watt
- * Color: Blue
- * WL: 460-465nm
- * Lumen: 20-30LM
- * Chip: 30*30mil



ABSOLUTE MAXIMUM RATING @ TA=25°C

PARAMETER	SYMBOL	MAXIMUM RATING	UNIT
CONTINUOUS FORWARD CURRENT	IF	350	mA
PEAK FORWARD CURRENT (1/10 DUTY CYCLE, 0.1MS PULSE WIDTH)	IFP	500	mA
REVERSE VOLTAGE	VR	5	V
POWER DISSIPATION	PD	1	W
ELECTROSTATIC DISCHARGE	ESD	1000	V
OPERATING TEMPERATURE RANGE	TOPR	-25°C to +85°C	
STORAGE TEMPERATURE RANGE	TSTG	-35°C to +105°C	
LEAD SOLDERING TEMPERATURE (3MM FROM THE BASE OF THE EPOXY BULB)	TSOL	360°C	

ELECTRICAL / OPTICAL CHARACTERISTIC @ TA=25°C

PARAMETER	SYMBOL	Min.	Typ.	Max.	UNIT	Test Condition
FORWARD VOLTAGE	VF	3.0	3.2	3.4	V	IF=350mA
LUMINOUS FLUX	Φ	20	25	30	Lm	IF=350mA
CHROMATICICTY COORDINATES	X		/		/	IF=350mA
	Y		/		/	IF=350mA
WAVELENGTH	WL	460	462.5	465	nm	IF=350mA
REVERSE CURRENT	IR	0		10	μA	VR=5V
COLOR-RENDERING INDEX	Ra		/		/	
VIEWING ANGLE	2Θ1/2			140	Dge	IF=350mA
RECOMMEND FORWARD CURRENT	IF(REC)			350	mA	

Image 2: Technical datasheet providing detailed specifications and ratings for the LC-1B-G30 LED chip.

LCFOCUS LC-1B-G30 LED Chip Specifications

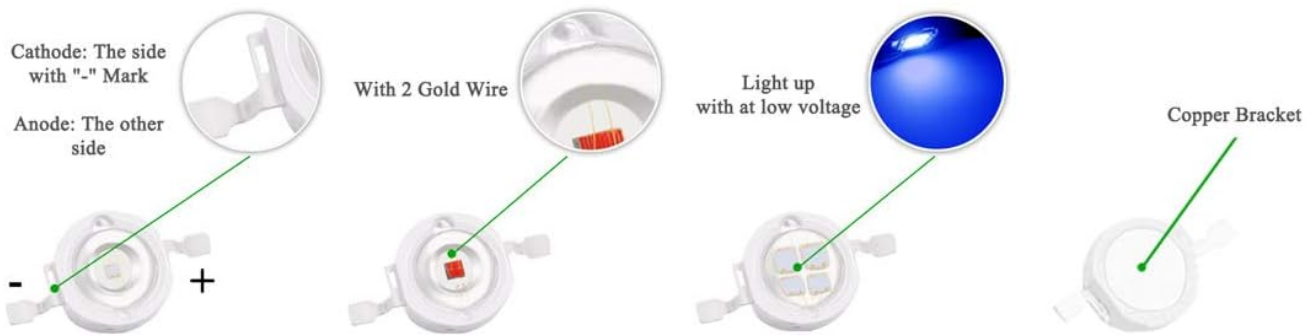
Parameter	Value	Unit
Model Number	LC-1B-G30	-
Power	1	Watt
Emitted Color	Blue	-
Wavelength (WL)	460-465	nm
Luminous Flux (Φ)	20-30	Lumens
Recommended Forward Current (IF)	350	mA
Forward Voltage (VF)	3.0-3.4	Volts
Emission Angle	140	Degrees
Operating Temperature Range	-25 to +85	°C
Storage Temperature Range	-35 to +105	°C
Lead Soldering Temperature (3mm from TNE base of the epoxy bulb)	360	°C
Lifespan	50,000	Hours
Shipping Weight (10 pcs)	0.027	kg

5. INSTALLATION AND SETUP

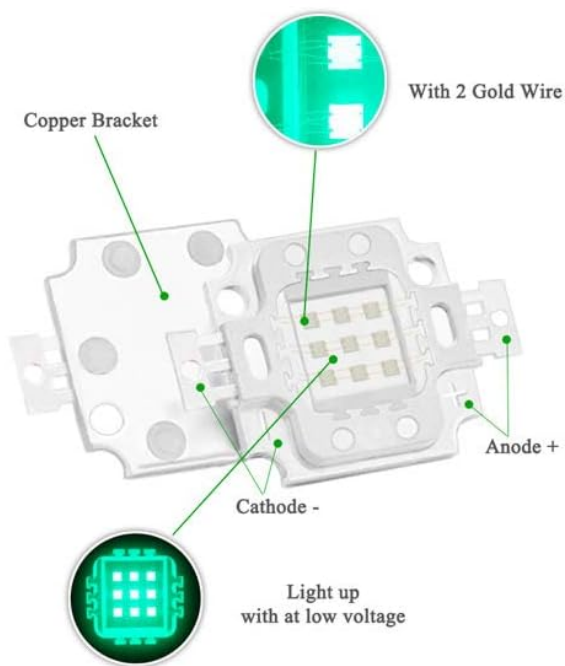
Proper installation is crucial for the performance and longevity of your LED chips. Follow these steps carefully:

- Prepare Work Area:** Ensure your workspace is clean, dry, and free of static electricity. Use anti-static mats and wrist straps if available.
- Identify Polarity:** Locate the positive (+) and negative (-) markings on the LED chip. The positive terminal is typically marked with a '+' or a longer lead (if applicable), while the negative terminal is marked with a '-' or a shorter lead. Refer to Image 3 for visual guidance.
- Mounting to Heat Sink:** The LED chip **must** be mounted onto an appropriate heat sink. Apply a thin, even layer of thermal paste between the LED chip's base and the heat sink to ensure efficient heat transfer. Secure the LED chip firmly to the heat sink.
- Wiring:** Connect the positive (+) terminal of the LED chip to the positive output of your constant current LED driver. Connect the negative (-) terminal of the LED chip to the negative output of the driver. Ensure all connections are secure and insulated.
- Power Supply:** Connect the constant current LED driver to its power source according to the driver's instructions. Ensure the driver's output current matches the recommended 350mA for this LED chip.

▼ 1W / 3W / 5W



▼ 10W



▼ 20-100W

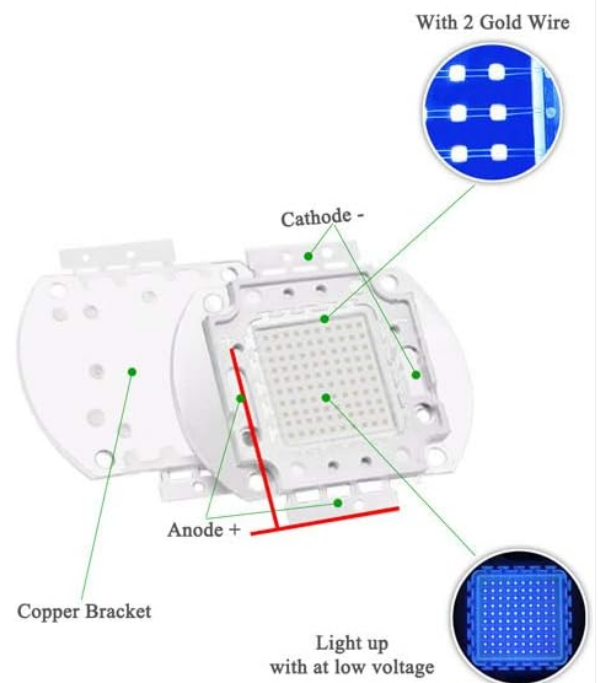


Image 3: Polarity identification for various LED chip wattages, showing anode (+) and cathode (-) connections.

6. OPERATION

Once properly installed and connected to a suitable constant current LED driver, the LED chip can be powered on. The LED will emit blue light within the 460-465 nm wavelength range. Monitor the operating temperature to ensure it remains below 60°C (140°F) for optimal performance and lifespan.

7. MAINTENANCE

LED chips generally require minimal maintenance. However, adhering to the following guidelines will help ensure their long-term performance:

- **Temperature Monitoring:** Regularly check that the heat sink system is functioning correctly and the LED's operating temperature does not exceed 60°C (140°F). Dust accumulation on the heat sink can reduce its efficiency.
- **Cleanliness:** Keep the LED chip's surface clean and free from dust or debris. Use a soft, dry cloth for cleaning. Avoid using abrasive materials or harsh chemicals.

- **Connection Integrity:** Periodically inspect all electrical connections to ensure they remain secure and free from corrosion.

8. TROUBLESHOOTING

If your LED chip is not functioning as expected, consider the following common issues:

- **LED Not Lighting Up:**
 - Check power supply: Ensure the constant current LED driver is receiving power and is functioning correctly.
 - Check polarity: Verify that the LED chip is connected with the correct positive (+) and negative (-) polarity.
 - Check connections: Ensure all wires are securely connected and there are no loose contacts.
 - Check for damage: Inspect the LED chip for any visible physical damage.
- **LED Dim or Flickering:**
 - Check power supply: Ensure the LED driver is providing the correct current (350mA) and voltage (3.0-3.4V). An underpowered or unstable driver can cause dimming or flickering.
 - Check for overheating: If the LED is overheating due to inadequate heat sinking, its performance can degrade, leading to dimming. Ensure the operating temperature is below 60°C.
- **Short Lifespan:**
 - Overheating is the most common cause of premature LED failure. Re-evaluate your heat sink solution and ensure the operating temperature is consistently below 60°C.
 - Incorrect current: Supplying too much current to the LED will drastically shorten its lifespan. Always use a constant current driver matched to the LED's specifications.

9. WARRANTY AND SUPPORT

Specific warranty information for this product is not provided in the available documentation. For any technical support or inquiries, please refer to the retailer or the manufacturer, LCFOCUS, through their official channels.

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Name

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question