CHANZON HM-00134

CHANZON 3W RGB 6-Pin High Power LED Chip Instruction Manual

Model: HM-00134 | Brand: CHANZON

1. Introduction

This manual provides essential information for the safe and effective use of your CHANZON 3W RGB 6-pin High Power LED Chips. Please read these instructions carefully before installation and operation to ensure optimal performance and product longevity.

2. Product Overview

The CHANZON 3W RGB 6-pin High Power LED Chip is a compact and efficient light-emitting component designed for various lighting applications. Each chip features Red, Green, and Blue emitters, allowing for a wide spectrum of colors when properly driven. Key features include:

- **Power:** 3 Watt (Max)
- **Emitting Color:** RGB (Red Green Blue)
- **Luminous Flux:** R:50-60LM / G:80-90LM / B:40-50LM
- **Chip Construction:** Integrated COB LED Panel with 45mil chips, Double Golden Wire, and Copper Frame for enhanced heat dissipation and durability.
- **Lifespan:** Approximately 50,000 hours under recommended operating conditions.

Figure 2.1: CHANZON 3W RGB 6-pin LED chips as supplied in packaging.

Figure 2.2: Detailed view of a single 3W RGB LED chip, highlighting the individual color emitters.

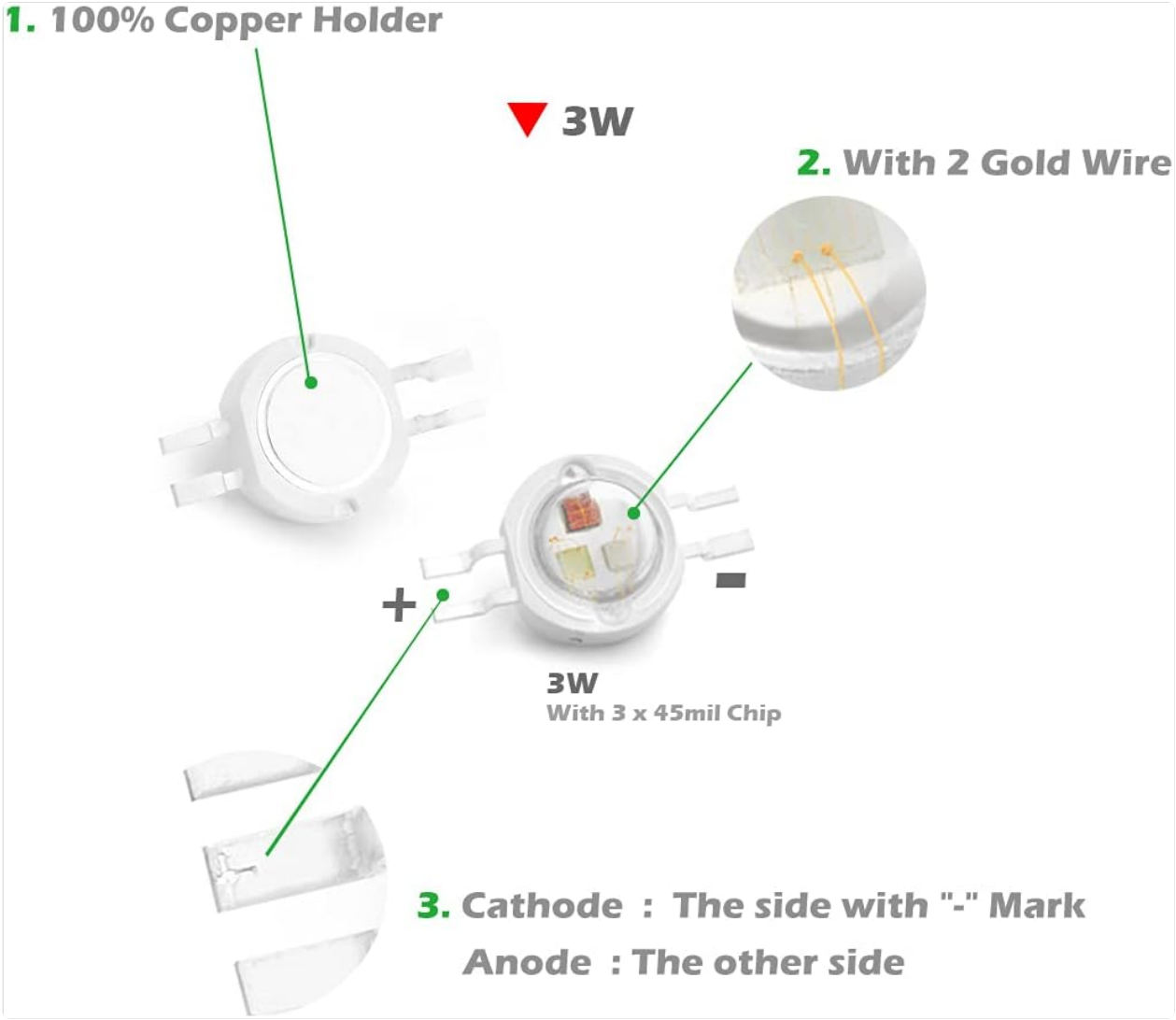


Figure 2.3: Internal components of the LED chip, including the copper holder and gold wire connections. The cathode is marked with a '-' and the anode is the other side.

3. Specifications

Feature	Specification
Brand	CHANZON
Model Number	HM-00134
Light Type	LED
Wattage	3 watts (Max)
Emitting Color	RGB (Red, Green, Blue)
Recommended Current (per color)	300mA - 600mA
Forward Voltage (Red)	2.0-2.4V
Forward Voltage (Green/Blue)	3.0-3.4V
Luminous Flux (Red)	50-60LM
Luminous Flux (Green)	80-90LM

Feature	Specification
Luminous Flux (Blue)	40-50LM
Emitting Angle	120-140 degrees
Average Life	50,000 Hours
Material	Copper (Holder)
Product Dimensions	6.69 x 5.12 x 0.39 inches (Package)
Item Weight	0.634 ounces (Package)

Power	Color	Wavelength	Forward Voltage	Forward Current	Luminous Flux
3W	Warm White	3000-3500K	3.0-3.4V	560-700mA	260-280LM
	Natural White	4000-4500K	3.0-3.4V	560-700mA	260-280LM
	White	6000-6500K	3.0-3.4V	560-700mA	260-280LM
	Cool White	10000-15000K	3.0-3.4V	560-700mA	260-280LM
	Red	620-625nm	2.0-2.4V	400-500mA	60-70LM
	Blue	460-470nm	3.0-3.4V	400-500mA	50-60LM
	Cyan	490nm	3.0-3.4V	400-500mA	60-70LM
	Green	520-525nm	3.0-3.4V	400-500mA	140-160LM
	Yellow	590-592nm	2.0-2.4V	400-500mA	90-100LM
	Amber	595-600nm	2.0-2.4V	400-500mA	90-100LM
	Orange	600-605nm	2.0-2.4V	400-500mA	90-100LM
	Pink	/	2.0-2.4V	400-500mA	80-90 LM
	UV	395-400nm	3.0-3.4V	400-500mA	80-110LM
	Royal Blue	440-450nm	3.0-3.4V	400-500mA	50-60LM
	Deep Red	660nm	2.0-2.2V	400-500mA	80-90LM
	Full Spectrum	380-840nm	3.0-3.4V	400-500mA	90-100LM
	IR(730nm)	730nm	1.8-2.2V	400-500mA	/
	IR(850nm)	850nm	1.4-1.8V	400-500mA	/
	IR(940nm)	940nm	1.2-1.6V	400-500mA	/
	RGB(4pin/6pin)	R: 620-625nm G: 520-525nm B: 460-470nm	R:2.0-2.2V G:3.0-3.2V B:3.0-3.2V	600mA	R:40-50LM G:70-80LM B:30-40LM
	RGBW(8pin)	R: 620-625nm G: 520-525nm B: 460-470nm W: 6000-6500K	R:2.0-2.2V G:3.0-3.2V B:3.0-3.2V W:3.0-3.2V	R:280-350mA G:280-350mA B:280-350mA W:280-350mA	R:40-50LM G:70-80LM B:30-40LM W: 110-120LM

Figure 3.1: Detailed electrical and optical specifications for various LED chips, including RGB.

4. Setup and Installation

Proper setup is crucial for the performance and lifespan of your LED chips. These are high-power components and require careful handling.

4.1 Wiring

- The CHANZON 3W RGB 6-pin LED chip has separate pins for Red, Green, and Blue channels. Each color channel must be driven independently.
- Identify the positive (anode +) and negative (cathode -) terminals for each color. The cathode is typically marked with a '-' sign on the LED's bracket.
- Connect each color channel to a dedicated constant current LED driver.

4.2 Heat Management

These LED chips generate heat during operation. Adequate heat dissipation is mandatory to prevent overheating and premature failure.

- Always mount the LED chip onto a suitable heat sink system. The working temperature of the chip should remain below 60°C (140°F).
- Use thermal paste or a thermal adhesive between the LED chip's base and the heat sink to ensure efficient heat transfer.
- Consider using active cooling (e.g., a fan) for applications where high ambient temperatures or continuous operation at maximum power are expected.

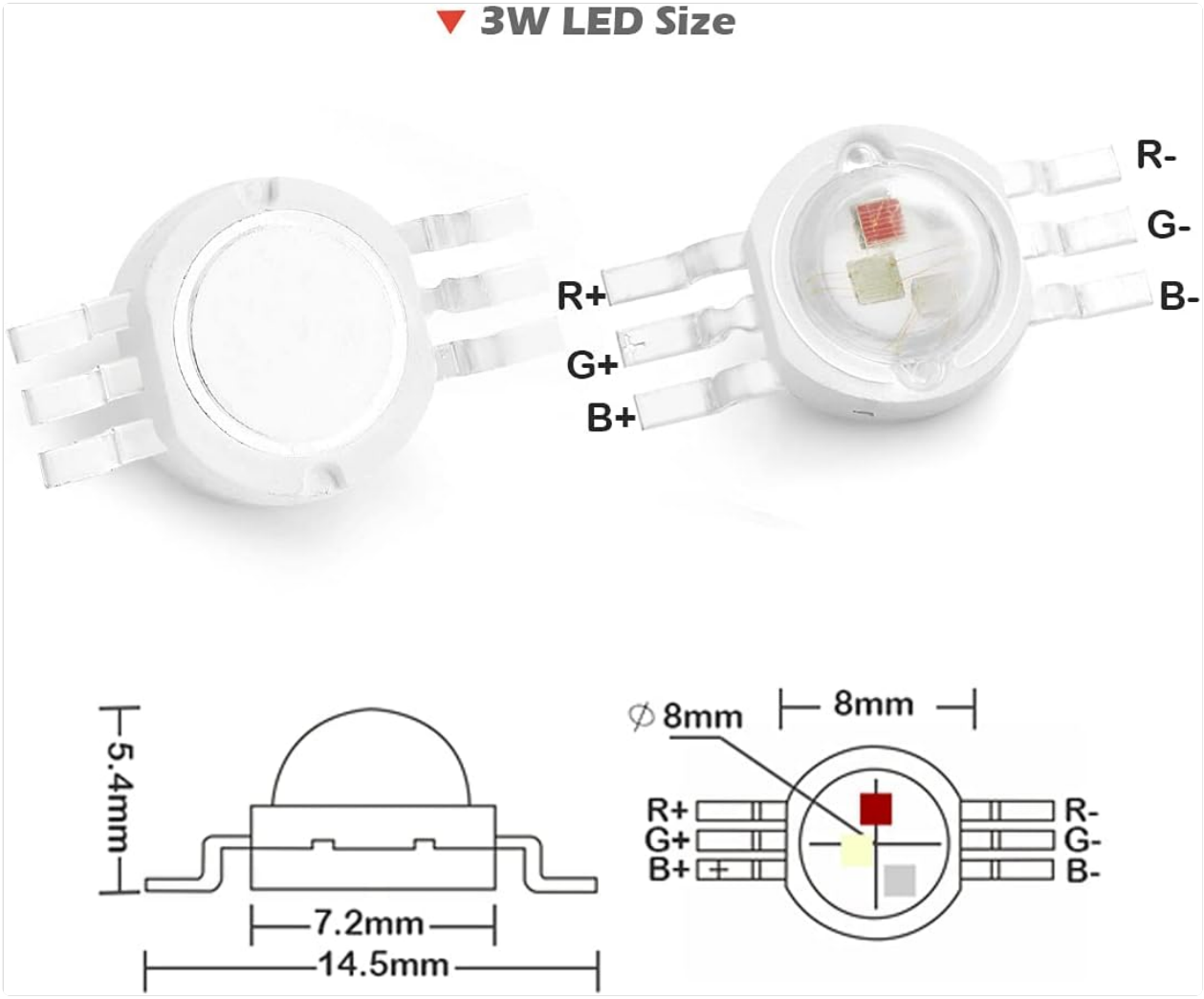


Figure 4.1: Dimensions and pin configuration for the 3W LED chip, indicating positive terminals for Red, Green, and Blue.

5. Operating Instructions

To operate the CHANZON 3W RGB 6-pin LED chips, follow these guidelines:

- **Power Supply:** Use a constant current LED driver. Each color (Red, Green, Blue) requires its own current path.
- **Current Control:** The recommended current for each color is 300mA. The maximum current is 600mA per color. Exceeding the maximum current can damage the LED.
- **Voltage Requirements:** Ensure your driver provides the correct forward voltage for each color: Red (2.0-2.4V), Green (3.0-3.4V), Blue (3.0-3.4V).
- **Color Mixing:** To achieve various colors, adjust the current supplied to each Red, Green, and Blue channel independently using a suitable controller (e.g., PWM controller).

Video 5.1: An overview of the CHANZON 3W LED Chip, demonstrating its features and potential applications.

6. Maintenance

These LED chips are designed for long-term reliability with minimal maintenance. However, proper care ensures their extended lifespan:

- **Cleanliness:** Keep the LED surface clean and free from dust or debris. Use a soft, dry cloth for cleaning. Avoid abrasive materials or harsh chemicals.
- **Thermal Management:** Regularly check that the heat sink is free from obstructions and that the LED chip is securely attached to it. Ensure proper airflow if active cooling is used.
- **Environmental Conditions:** Operate the LEDs within their specified temperature and humidity ranges. Avoid exposure to excessive moisture or corrosive environments.

7. Troubleshooting

If you encounter issues with your CHANZON 3W RGB 6-pin LED chips, consider the following:

- **LED Not Lighting Up:**
  - Verify power supply connections and polarity (anode/cathode).
  - Ensure the constant current driver is functioning correctly and providing the specified current and voltage.
  - Check for any loose wiring or damaged components.
- **Flickering or Dimming:**
  - This often indicates insufficient power or overheating. Check the power supply and heat sink.
  - Ensure the current is within the recommended range (300mA per color).
  - Inspect for poor solder joints or intermittent connections.
- **Excessive Heat:**
  - Confirm the LED is properly mounted to an adequate heat sink with thermal paste.
  - Reduce the operating current if the temperature exceeds 60°C (140°F).
  - Ensure sufficient airflow around the heat sink.
- **Incorrect Color Output:**
  - Verify that each RGB channel is receiving the correct current from its respective driver.
  - Check the control signals if using a color mixing controller.

8. Applications

The versatility of CHANZON 3W RGB 6-pin LED chips makes them suitable for a wide array of applications, including:

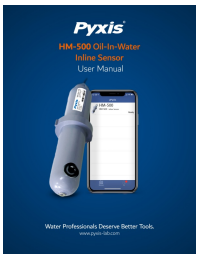
- LED Light Bulbs
- Cast Lights
- Floodlights
- Stage Lights

- Underwater Lamps
- Projection Lamps
- Plant Grow Lights
- UV Curing Lamps (with appropriate UV LED chips)
- Mining Lamps
- DIY Lighting Projects

Video 8.1: Demonstration of various CHANZON LED chip types and their potential uses in different lighting applications.

Related Documents - HM-00134

	TERMOFOL Heating Mat Installation Guide and Technical Specifications This guide provides comprehensive instructions for installing TERMOFOL heating mats, covering technical data, safety zones, installation steps, first start-up, and user obligations. Includes detailed specifications for TF-HM series models.
	Heiman Fire Safety Products Catalogue - Smoke Alarms, CO Detectors, and More Explore the comprehensive range of Heiman fire safety products, including smoke alarms, carbon monoxide detectors, heat alarms, smart gateways, remote controllers, and conventional fire alarm systems. Featuring advanced technology, certifications, and quality assurance.
	Hamoki HM-A Series Spiral Mixer Instruction Manual Comprehensive instruction manual for the Hamoki HM-A Series Spiral Mixers, covering technical specifications, features, safety precautions, installation, operation, maintenance, troubleshooting, and disposal. Models include HM-20A, HM-30A, HM-40A, HM-50A, and HM-60A.
	HIKMICRO B Series Handheld Thermography Camera Quick Start Guide Get started quickly with the HIKMICRO B Series Handheld Thermography Camera. This guide provides essential information on setup, operation, and safety for thermal imaging applications.

	Pyxis HM-500 Series Oil-In-Water Inline Sensor User Manual Comprehensive user manual for the Pyxis HM-500 Series Oil-In-Water Inline Sensors, detailing installation, setup, calibration, maintenance, and troubleshooting for accurate oil concentration measurement in water using fluorescence technology.
	Icom HM-169, HM-184, HM-170GP, HM-171GP Series: Waterproof Speaker Microphone User Guide Explore the features, specifications, and operating instructions for Icom's HM-169, HM-184, HM-170GP, and HM-171GP series waterproof and GPS speaker microphones. Learn about their robust design, audio quality, and GPS capabilities for reliable communication.