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› GLEDOPTO GL-C-017WL-D ESP32 WLED 4-Channel WiFi LED Controller User Manual

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GLEDOPTO GL-C-017WL-D ESP32 WLED 4-Channel WiFi LED Controller User Manual

Model: GL-C-017WL-D

1. INTRODUCTION

This manual provides detailed instructions for the installation, operation, and maintenance of your GLEDOPTO GL-C-017WL-D ESP32 WLED 4-Channel WiFi LED Controller. This device is designed to control up to four independent LED strips, offering versatile lighting solutions for various applications. It supports 5V, 12V, or 24V LED strips and is compatible with WLED application, Alexa, and Google Home for smart home integration.

2. PRODUCT OVERVIEW

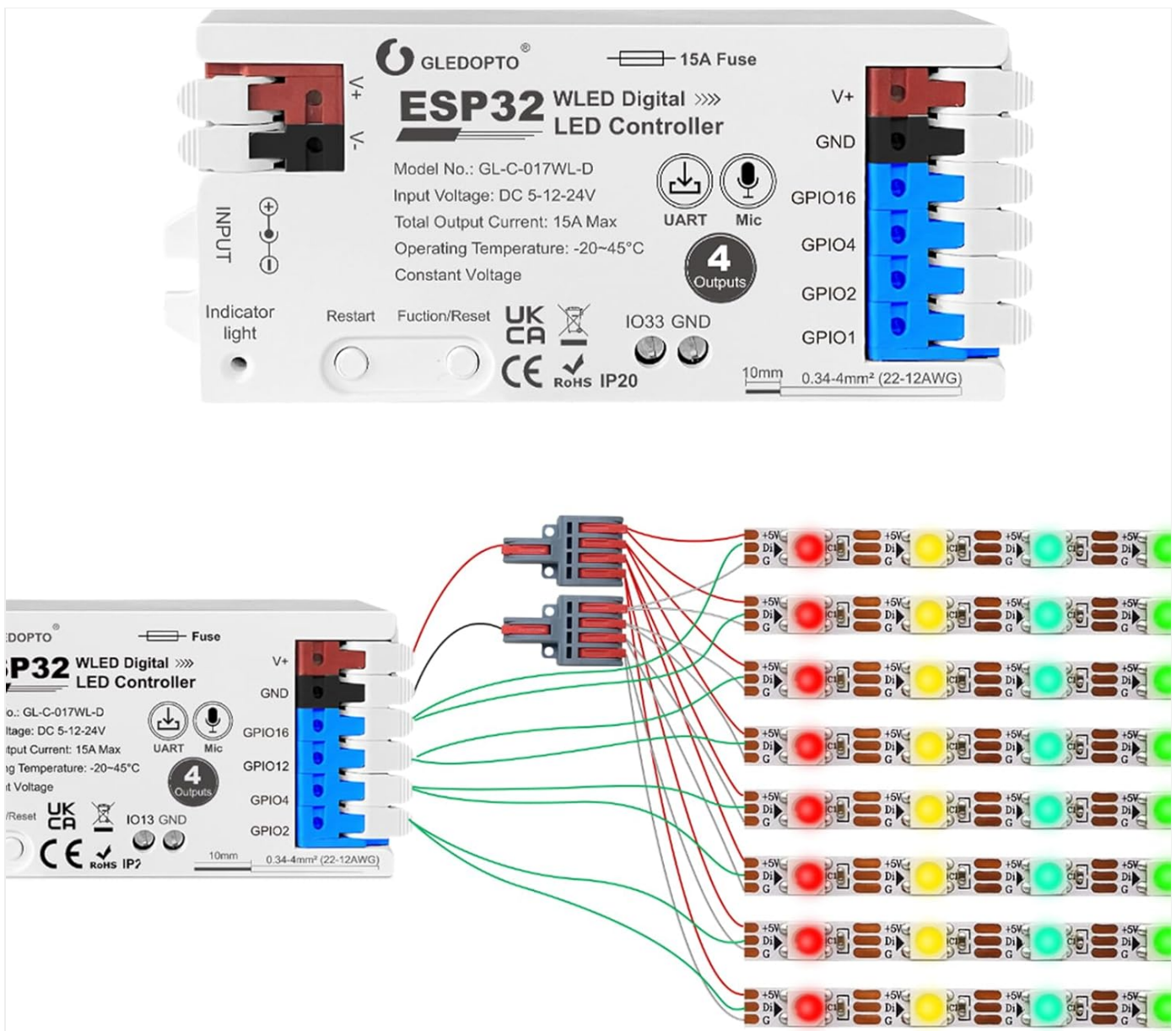


Image: The GLEDOPTO GL-C-017WL-D ESP32 WLED 4-Channel WiFi LED Controller, showing its compact design and connection ports.

2.1 Key Features

- **Multi-Channel Intelligent Control:** Independently control up to 4 LED strips via the WLED application.
- **Smart Home Compatibility:** Seamless integration with Alexa and Google Home for voice control.
- **Wide Voltage Compatibility:** Operates with 5V, 12V, or 24V LED strips, suitable for diverse lighting projects.
- **High Power Output:** Supports a total current of up to 15A, enabling control of longer LED strips without overheating.
- **Easy and Secure Installation:** Features a flame-retardant PC casing and solderless screw terminals for safe and straightforward wiring.
- **Compact Design:** Dimensions of 108x45x18mm for easy integration into any space.
- **Integrated Microphone:** Allows LED effects to synchronize with music.
- **UART Download:** Supports firmware download via Type-C port for customization.
- **Reliable Circuitry:** Includes a TI level shifter IC for stable signal transmission and a 15A fuse for overload protection.

2.2 Supported LED Strip Types

The controller supports most addressable LED strip types, including but not limited to WS2812B, SM16703P, SK6812, WS2813, WS2811, WS2815, GS8208, and TM1814.



Image: A visual guide displaying different types of addressable LED strips compatible with the controller, alongside a smartphone showing the WLED app interface.

2.3 Package Contents

Verify that all items are present in the package:

- ESP32 WLED Digital LED Controller x 1
- Connect cables x 1
- User Instruction Manual x 1
- One-to-four terminal blocks x 2
- 3cm Sticker x 1

Package Included

The contents of the package



1



2



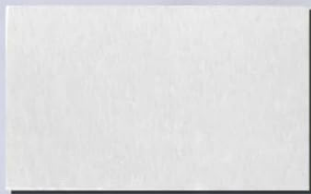
3



4



5



6

- 1 Packaging Box x 1
- 2 ESP32 WLED Digital LED Controller x 1
- 3 Connect cables x 1
- 4 User Instruction x 1
- 5 One-to-four terminal blocks x 2
- 6 3cm Sticker x 1

Image: Contents of the GLEDOPTO GL-C-017WL-D package, including the controller, cables, terminal blocks, sticker, and manual.

3. SETUP AND INSTALLATION

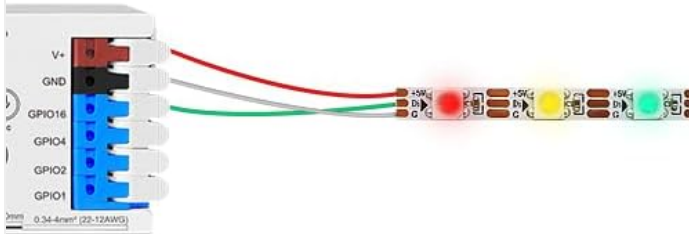
3.1 Wiring Diagram

Connect your LED strips to the controller according to the number of strips you intend to use. Ensure correct polarity (V+ and GND) and connect the data lines (GPIO1, GPIO2, GPIO4, GPIO16) to the corresponding data input of your LED strips.

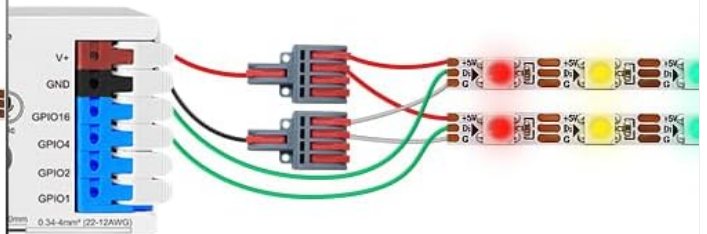
Wiring Diagram

Choose the correct wiring according to the number of light strips

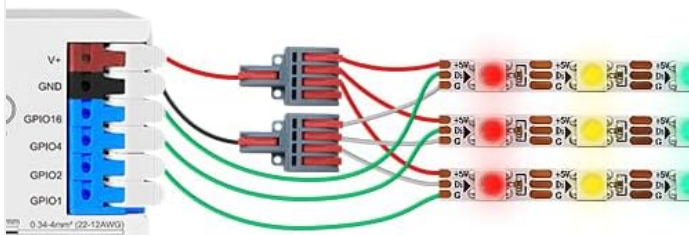
One light strip



Two light strips



Three light strips



Four light strips

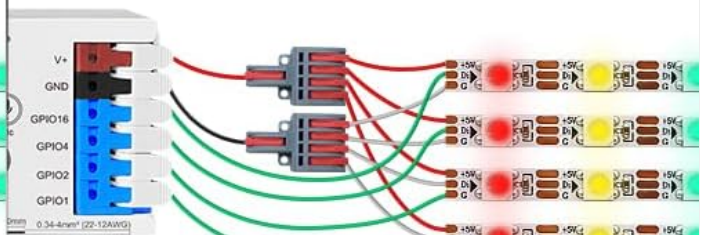
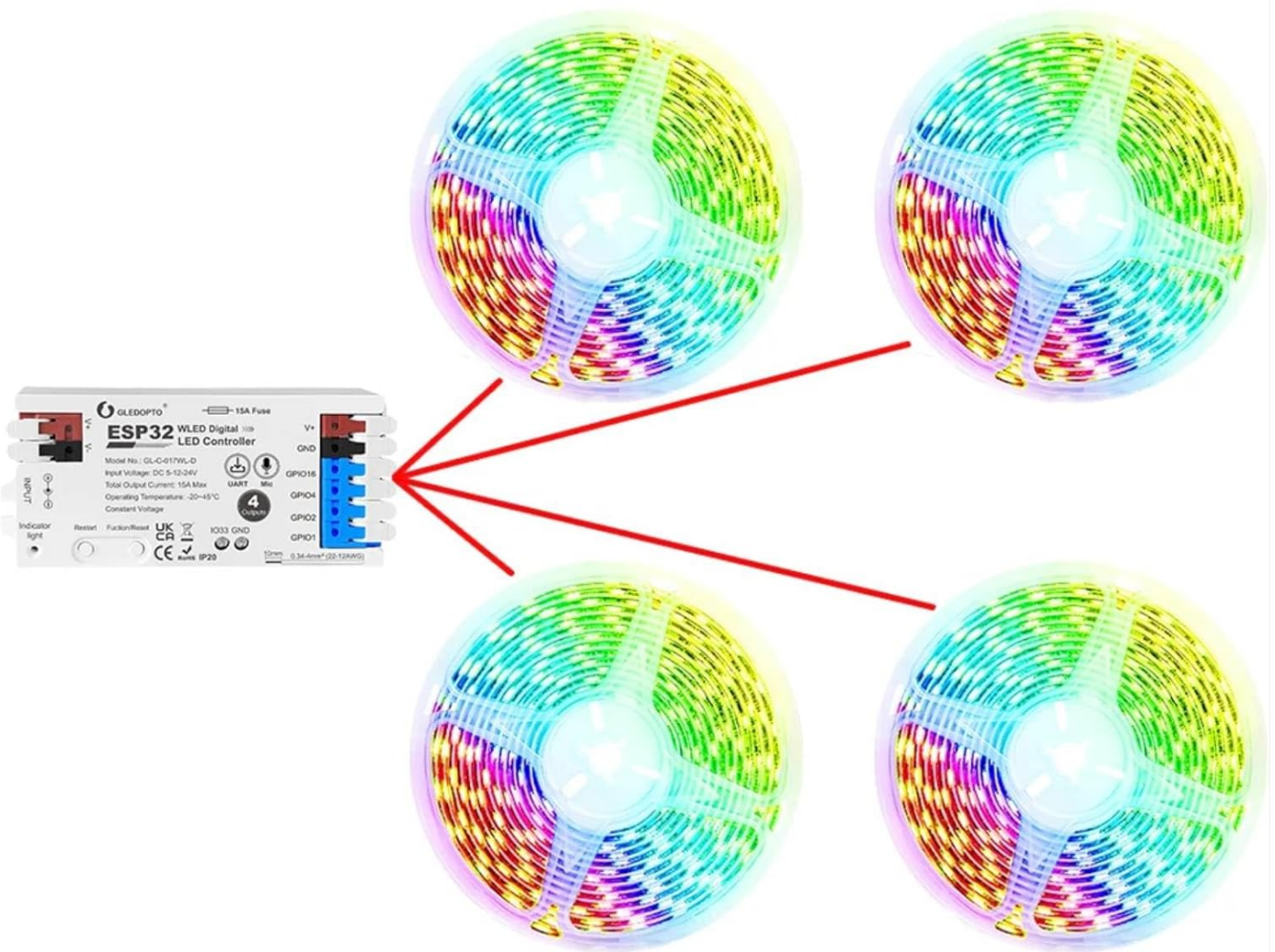


Image: Detailed wiring diagrams illustrating connections for one, two, three, and four LED light strips to the controller.

With 4 Outputs

Use one controller to easily connect and control four LED strips.



Note:Independent control requires setting up segment control in the WLED app.

Image: Visual representation of the controller connected to four separate LED strips, highlighting its multi-output capability.

3.2 Quick Connect Port Design

The controller features quick-connect terminals for easy and secure wire connections. The recommended stripping length for wires is 10mm.

1. Open the connector upwards.
2. Insert the stripped wire into the terminal.
3. Press down on the connector to secure the wire.

Quick connect port design

More convenient wiring

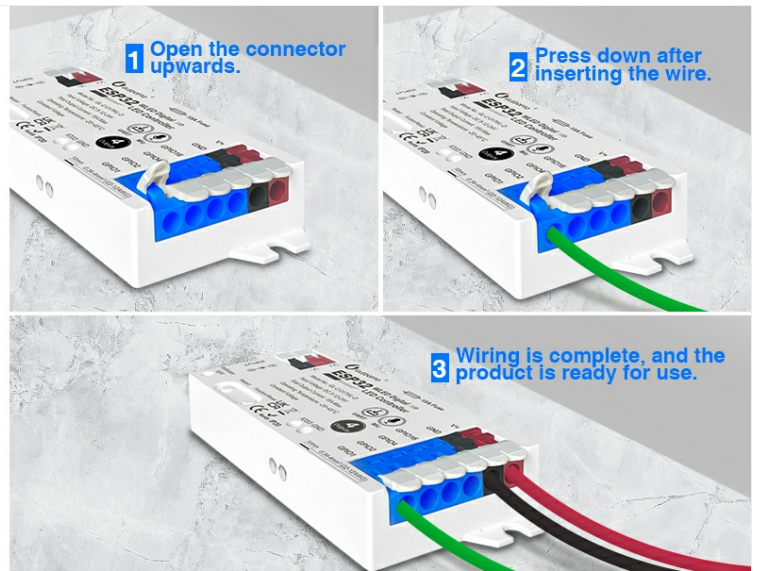


Image: Step-by-step illustration of how to use the quick connect ports for wiring, showing opening, inserting, and securing the wire.

3.3 Power Supply Connection

Connect a compatible DC 5-24V power supply to the INPUT terminals (V+ and V-). Ensure the power supply voltage matches the voltage requirements of your LED strips.

4. OPERATING INSTRUCTIONS

4.1 WLED Application Control

The GLEDOPTO GL-C-017WL-D controller is designed to work with the WLED application. Download the WLED app on your smartphone or tablet. Follow the in-app instructions to connect to your controller via WiFi. The WLED app allows for extensive customization of lighting effects, colors, and brightness.

- **Independent Control:** For independent control of multiple LED strips, configure segment control within the WLED app.
- **Sync Setting:** Use the sync feature in the WLED app to synchronize lighting effects across multiple controllers or segments.

Sync setting

Synchronized light effects

Before Sync

After Sync



*One controller cannot control several LED strips separately

Image: A smartphone screen displaying the WLED application interface with options for synchronizing light effects, showing "Before Sync" and "After Sync" states.

4.2 Voice Control (Alexa & Google Home)

Integrate your GLEDOPTO controller with Amazon Alexa or Google Home for convenient voice control. Refer to the WLED documentation or your smart home assistant's setup guide for specific instructions on linking the WLED device.

4.3 Microphone Function

The controller includes a built-in microphone, enabling the LED strips to react and synchronize with ambient music or sounds. Activate this feature through the WLED application to enjoy dynamic lighting effects that follow the rhythm of your audio.

Microphone function

Can follow the rhythm of the music



Image: An indoor scene with LED strips displaying dynamic lighting effects, illustrating the microphone function's ability to synchronize lights with music.

4.4 WLED Remote Control Support

The controller supports a dedicated WLED remote control (sold separately). This remote offers a long transmission distance and stable signal for convenient physical control of your LED lighting.

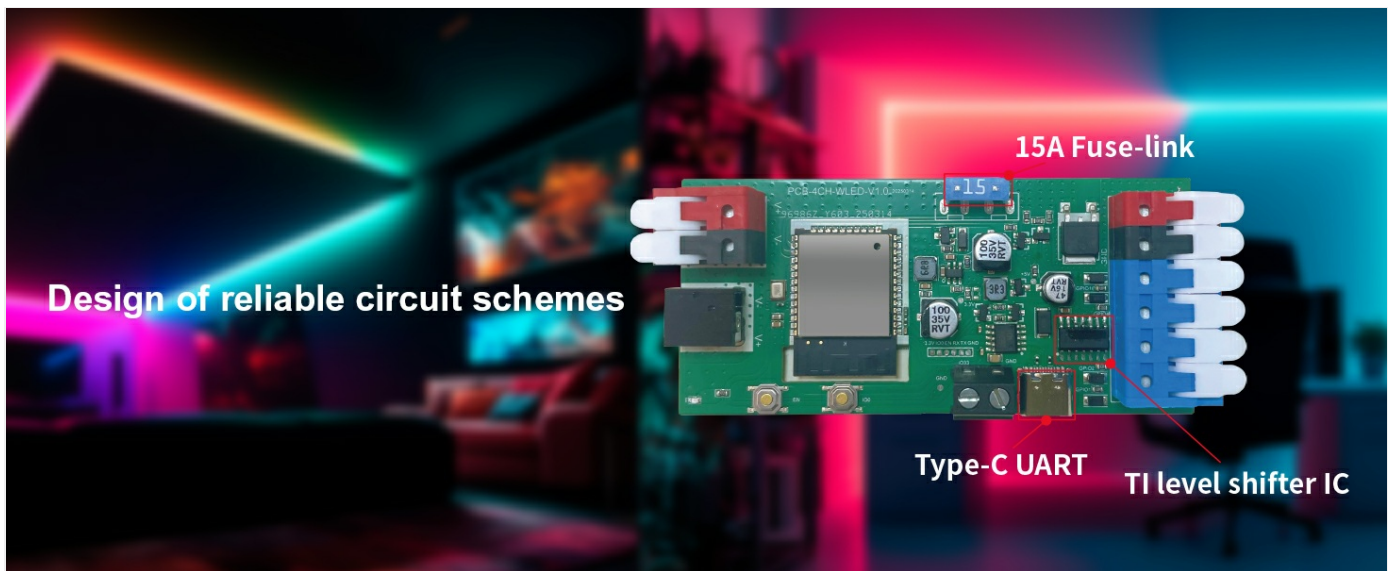


Image: A hand holding a WLED remote control, demonstrating its use for controlling LED strip lighting in a room setting.

5. MAINTENANCE

The GLEDOPTO LED Controller requires minimal maintenance. Keep the device clean and free from dust. Ensure proper ventilation to prevent overheating. Do not expose the controller to moisture or extreme temperatures. For cleaning, use a dry, soft cloth. Do not use liquid cleaners or solvents.

6. TROUBLESHOOTING

- **LEDs not lighting up:**
 - Check power supply connection and ensure it matches the LED strip voltage.
 - Verify all wiring connections (V+, GND, data lines) are secure and correct.
 - Ensure the LED strips are functional.
 - Check the 15A fuse on the controller.
- **Controller not connecting to WLED app:**
 - Ensure the controller is powered on and within WiFi range.
 - Verify your smartphone is connected to the same WiFi network as the controller.
 - Restart the controller and your WLED app.
 - Check your router settings for any restrictions.
- **Incorrect lighting effects:**
 - Review WLED app settings for segment configuration and effect selection.
 - Ensure the correct LED strip type is configured in the WLED app if applicable.

If issues persist, consider performing a firmware re-download via the Type-C UART port or contacting GLEDOPTO support.

7. SPECIFICATIONS

Product parameters

Craftsman spirit, quality is guaranteed

Model No.:
GL-C-017WL-D

Total Output Current:
15A Max

Material:
Flame Retardant PC

Suggested Wire Type:
0.34-4mm² (22-12AWG)

N.W.:
53.4g

Size:
108x45x18mm

Input voltage:
DC 5-12-24V

Protocol:
WiFi

Operating Temperature:
-20~45°C

Stripping Length:
10mm

G.W.:
86.6g



Image: A diagram detailing the product parameters and physical dimensions of the GLEDOPTO GL-C-017WL-D controller.

Feature	Detail
Model No.	GL-C-017WL-D
Input Voltage	DC 5-24V
Total Output Current	15A Max
Protocol	WiFi
Material	Flame Retardant PC
Operating Temperature	-20~45°C
Suggested Wire Type	0.34-4mm ² (22-12AWG)
Stripping Length	10mm
Net Weight (N.W.)	53.4g
Gross Weight (G.W.)	86.6g
Dimensions	108 x 45 x 18 mm
Special Feature	WiFi Multi-Channel LED Controller, Compatible with Alexa and Google Home
Included Components	Controller, Connect cables, User manual, One-to-four terminal blocks, 3cm Sticker

8. WARRANTY AND SUPPORT

GLEDOPTO products are designed for reliability and performance. This product comes with a standard manufacturer's warranty. Please refer to the warranty card included in your package or visit the official GLEDOPTO website for detailed warranty terms and conditions. For technical support, troubleshooting assistance, or inquiries about spare parts, please contact GLEDOPTO customer service through their official channels.

Spare parts availability: 3 Years (as per product specifications).

9. PRODUCT VIDEO DEMONSTRATION

Your browser does not support the video tag.

Video: A demonstration of LED lights changing colors, showcasing the dynamic capabilities of the GLEDOPTO LED Controller.

