Saved from manuals.plus.
Open the live page for links to other documents and user manuals.

GLEDOPTO GL-C-620WL

GLEDOPTO Elite Ethernet ESP32 WLED LED Strip Controller User Manual

Model: GL-C-620WL

1. Introduction

Thank you for choosing the GLEDOPTO Elite Ethernet ESP32 WLED LED Strip Controller. This device is designed to provide versatile control over both digital (RGB IC) and analog (PWM CCT/Monochrome) LED strips, offering advanced features like Ethernet and Wi-Fi connectivity, WLED app compatibility, and sound-activated effects. This manual provides detailed instructions for installation, operation, and maintenance to ensure optimal performance and longevity of your controller.

Your browser does not support the video tag.

Video: Overview of the GLEDOPTO Elite ESP32 WLED RGB IC + PWM LED Controller with Ethernet. This video highlights the key features and capabilities of the device.

2. Package Contents

Please check the package for the following items:

- 1 x Elite 1D2P-EXMU Controller
- 1 x User Instruction Manual (this document)
- 1 x 3cm Sticker
- 1 x 5A Pluggable Fuse (Note: Product specifications mention a 20A fuse for protection, but package content lists 5A. Always refer to the device markings for actual fuse rating.)

3. Safety Information

- **Power Supply:** Ensure the power supply voltage (DC 5V-24V) matches the requirements of the controller and connected LED strips. Exceeding the maximum voltage will damage the device.
- **Current Limit:** Do not exceed the total output current of 15A. Overcurrent can trigger the fuse or damage the controller.
- **Indoor Use Only:** This device is designed for indoor use. Do not expose it to moisture, rain, or extreme

temperatures.

- **Ventilation:** Ensure adequate ventilation around the controller to prevent overheating.
- **Installation:** Disconnect power before making any connections or disconnections. Ensure all wiring is secure and correctly polarized.
- **Fuse:** The controller includes a pluggable 20A fuse for overcurrent protection. If the fuse blows, replace it with a fuse of the same rating (20A).

4. Product Overview

The GLEDOPTO Elite Controller features multiple input/output ports and indicators for versatile functionality.

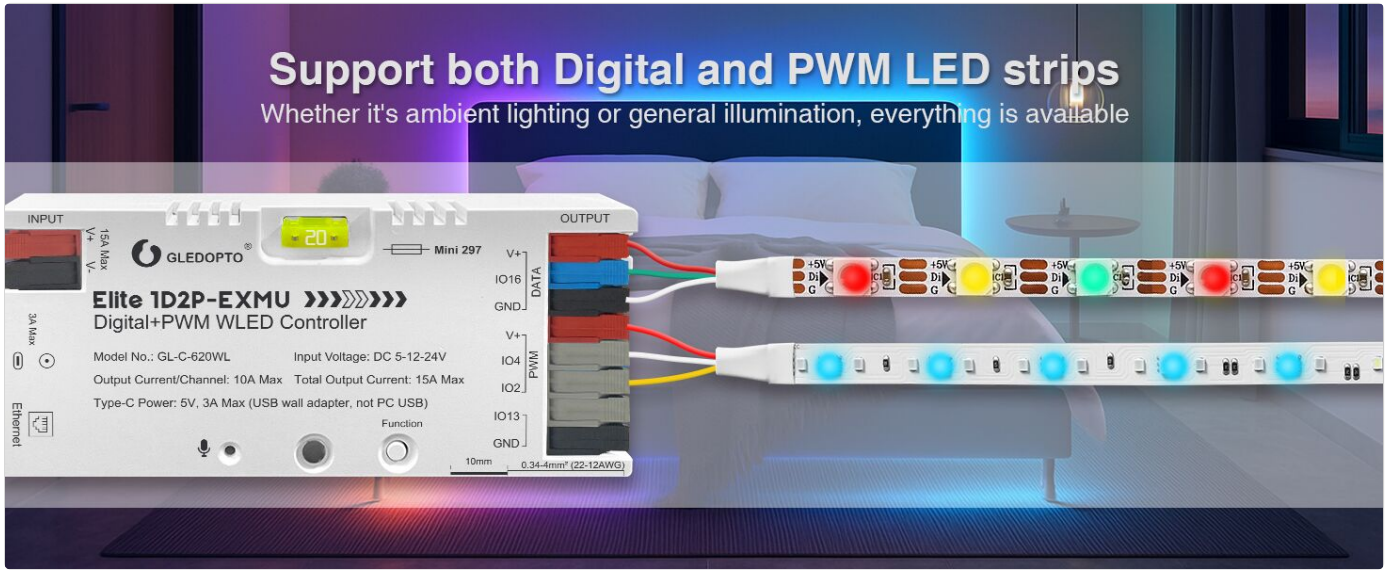


Image: Front view of the GLEDOPTO Elite 1D2P-EXMU Controller, highlighting the input, output, Ethernet port, Type-C port, and function button. The 20A fuse is also visible.

4.1. Key Components

- **Input Terminal:** For DC 5-24V power supply. Supports up to 15A.
- **Output Terminal:** Connects to LED strips. Features dedicated pins for Digital (DATA, GND) and PWM (V+, PWM, IO2, IO13, GND) outputs.
- **Ethernet Port:** For stable wired network connection.
- **Type-C Port:** For 5V/3A power supply (via USB wall adapter, not PC USB) and firmware updates.
- **Function Button:** Used for various operations like network pairing or resetting.
- **I2S PDM Mic:** Built-in high-sensitivity microphone for sound-activated lighting effects.
- **20A Pluggable Fuse:** Provides overcurrent protection for the circuit.

5. Setup & Installation

5.1. Power Connection

The controller supports a wide input voltage range from DC 5V to 24V. You can power the device using:

- **Terminal Block:** Connect your DC power supply (5-24V) to the INPUT V+ and V- terminals. Ensure correct polarity.
- **DC 5.5*2.1mm Jack:** (If available on your model, refer to product images)
- **Type-C Port:** For 5V/3A power supply only. Use a USB wall adapter, not a PC USB port, for stable power.

Caution: Do not connect multiple power sources simultaneously unless specified. Ensure the power supply can

provide sufficient current for both the controller and the connected LED strips (up to 15A total output).

5.2. LED Strip Connection

The controller supports both digital (addressable) and PWM (analog) LED strips. You can connect them simultaneously or separately.

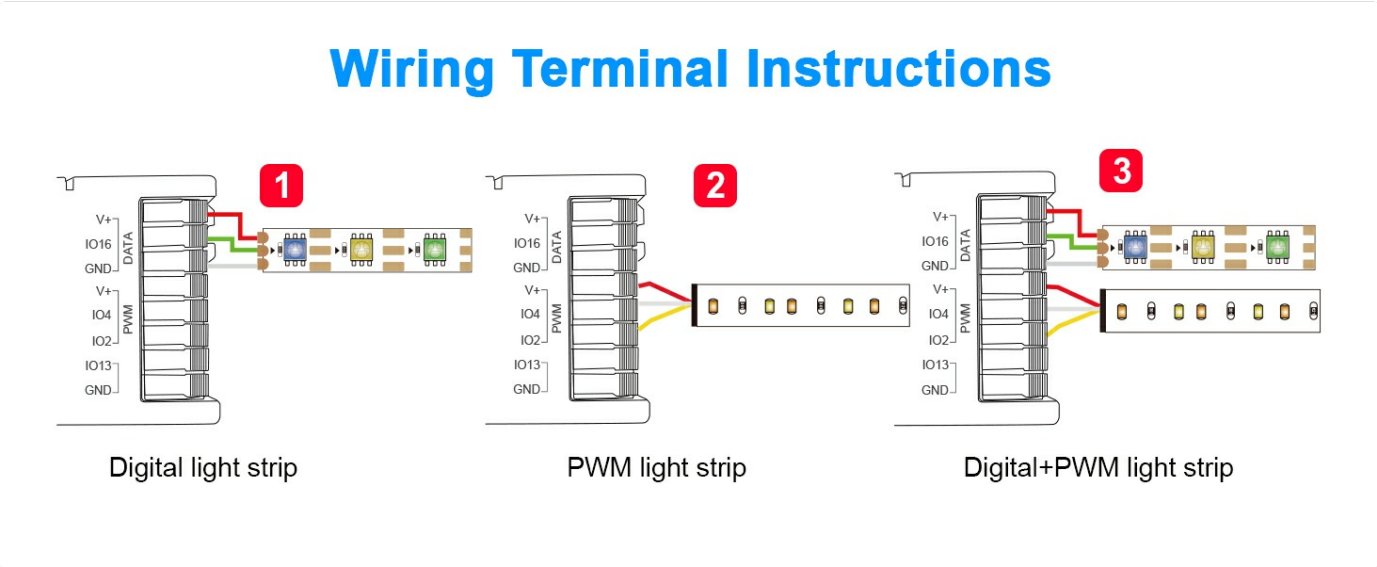


Image: Detailed wiring diagrams for connecting Digital LED strips, PWM LED strips, and a combination of both to the controller's output terminals.

1. **Digital LED Strip (e.g., WS2811, WS2812, SK6812):**
    - Connect the **Data** line of the LED strip to the**DATA** terminal (IO16) on the controller.
    - Connect the **GND** line of the LED strip to a**GND** terminal on the controller.
    - Connect the **V+** line of the LED strip to the**V+** terminal on the controller (or directly to the power supply if using external power for the strip).
2. **PWM LED Strip (e.g., CCT, Monochrome, RGB analog):**
    - Connect the **V+** line of the LED strip to the**V+** terminal on the controller.
    - Connect the control lines (e.g., R, G, B, W, CW, WW) to the**PWM** (IO4), **IO2**, and **IO13** terminals as required by your strip configuration.
    - Connect the **GND** line of the LED strip to a**GND** terminal on the controller.

Important: Ensure all connections are secure. The quick connect port design allows for easy wiring: open the connector upwards, insert the wire, then press down to secure.

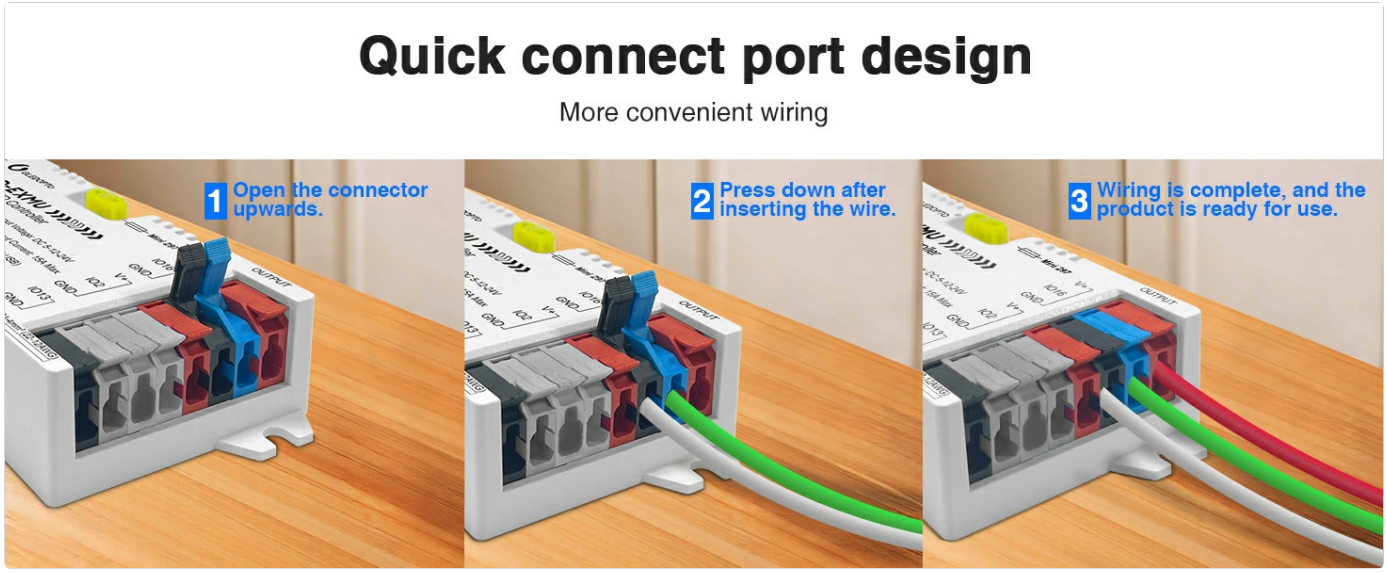


Image: Step-by-step guide on how to use the quick connect port for wiring: 1. Open connector upwards. 2. Press down after inserting wire. 3. Wiring is complete.

5.3. Network Connection

The controller offers both wired Ethernet and wireless Wi-Fi connectivity.



Image: Illustration showing the two ways to connect the controller to a network: via a wired Ethernet cable or wirelessly via Wi-Fi.

1. **Ethernet Connection (Recommended for Stability):**
    - Connect a standard Ethernet cable from your router or network switch to the Ethernet port on the controller.
    - The Ethernet function is pre-configured. Once connected, the controller should automatically obtain an IP address from your network.
    - You can then use the WLED app to control the device without configuring Wi-Fi.
2. **Wi-Fi Connection:**
    - Ensure the controller is powered on.
    - On your smartphone or computer, search for Wi-Fi networks. You should find a network named "WLED-AP" or similar.
    - Connect to this network. A captive portal or browser window should open, prompting you to configure the Wi-Fi settings.
    - Select your home Wi-Fi network (SSID) and enter its password.

- Save the settings. The controller will then connect to your home Wi-Fi network.
- If the portal does not appear, navigate tohttp://4.3.2.1 in your browser while connected to the WLED-AP network.

5.4. WLED App Setup

The GLEDOPTO Elite Controller is fully compatible with the WLED app, available for iOS and Android devices, or via a web interface on PC.

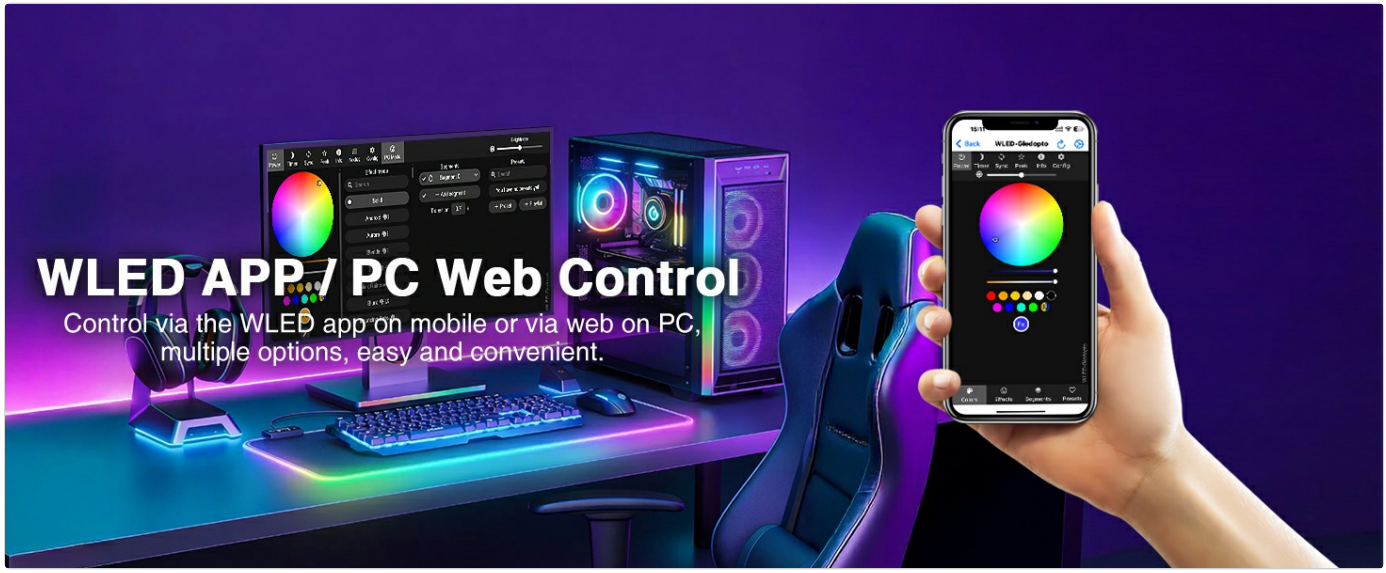


Image: Screenshot of the WLED app on a mobile phone and the WLED web interface on a PC monitor, demonstrating the control options.

1. **Download the WLED App:** Search for "WLED" in your device's app store.
2. **Add Controller:**
   - Open the WLED app.
   - Tap the "+" icon or "Add" button to discover devices.
   - The app should automatically detect your GLEDOPTO controller if it's on the same network.
   - If not, you may need to manually add it by entering its IP address. You can find the IP address from your router's connected devices list.
3. **Web Interface:** Open a web browser on a device connected to the same network and enter the controller's IP address (e.g., http://192.168.1.100).

6. Operation

6.1. WLED App Control

The WLED app provides comprehensive control over your LED strips:

- **Color Selection:** Choose from a wide spectrum of colors using the color wheel or predefined palettes.
- **Dynamic Effects:** Select from over 100 built-in dynamic effects to create various lighting moods.
- **Segment Control:** Divide your LED strip into multiple segments and control each segment independently with different colors and effects.
- **Brightness & Speed:** Adjust the overall brightness and the speed of dynamic effects.
- **Presets:** Save your favorite lighting configurations as presets for quick recall.
- **Sync Lighting:** Synchronize lighting effects across multiple WLED controllers on the same Wi-Fi network.



Image: Screenshot of the WLED app demonstrating segmented color control, allowing users to personalize each strip segment with different colors.

6.2. Sound-Activated Effects (I2S PDM Mic)

The built-in I2S PDM high-sensitivity microphone allows the LED effects to sync with music or ambient sounds.

- Navigate to the "Sound Reactive" or "Audio" section within the WLED app.
- Select desired audio-reactive effects. The LEDs will respond to the rhythm and intensity of the sound.



Image: A family enjoying music with LED lights reacting to the sound, illustrating the I2S PDM high-sensitivity microphone feature.

6.3. Energy Saving Relay Function

The controller integrates an energy-saving relay to reduce standby power consumption. When the LED strip is turned off, the relay cuts power to the strip, preventing current leakage.



Image: A visual comparison showing high standby power consumption without the relay versus low standby power consumption with the energy-saving relay enabled, along with WLED app settings.

Your browser does not support the video tag.

Video: Demonstration of how the relay switch cuts standby power, showing power consumption differences with and without the relay enabled.

Note: Upgrading or resetting the firmware may result in the loss of some configurations. If the relay is not properly configured, the light strip may fail to light up when powered on. Refer to WLED documentation for relay GPIO settings.

6.4. Firmware Updates

The controller's firmware can be updated via two methods:



Image: Illustration showing a laptop connected to the controller via a Type-C cable for firmware updates, and a mention of updating via the WLED app.

1. **Type-C UART (USB to Serial):**
    - Connect the controller to your computer using a Type-C USB cable.
    - Follow the instructions on the GLEDOPTO website for flashing firmware via UART: gledopto.com/wled_flash.html
2. **WLED App (Over-The-Air - OTA):**

- Ensure the controller is connected to your network.
- Within the WLED app or web interface, navigate to the "Config" or "Update" section.
- Follow the on-screen prompts to perform an OTA update. Firmware releases can be found at: github.com/GLEDOPTO/WLED/releases

7. Maintenance

- **Cleaning:** Use a soft, dry cloth to clean the controller. Do not use liquid cleaners or solvents.
- **Environment:** Keep the controller in a dry, well-ventilated area, away from direct sunlight, high temperatures, and humidity.
- **Fuse Replacement:** If the 20A fuse blows, disconnect power, carefully remove the old fuse, and replace it with a new 20A fuse of the same type. Do not use a fuse with a higher rating.

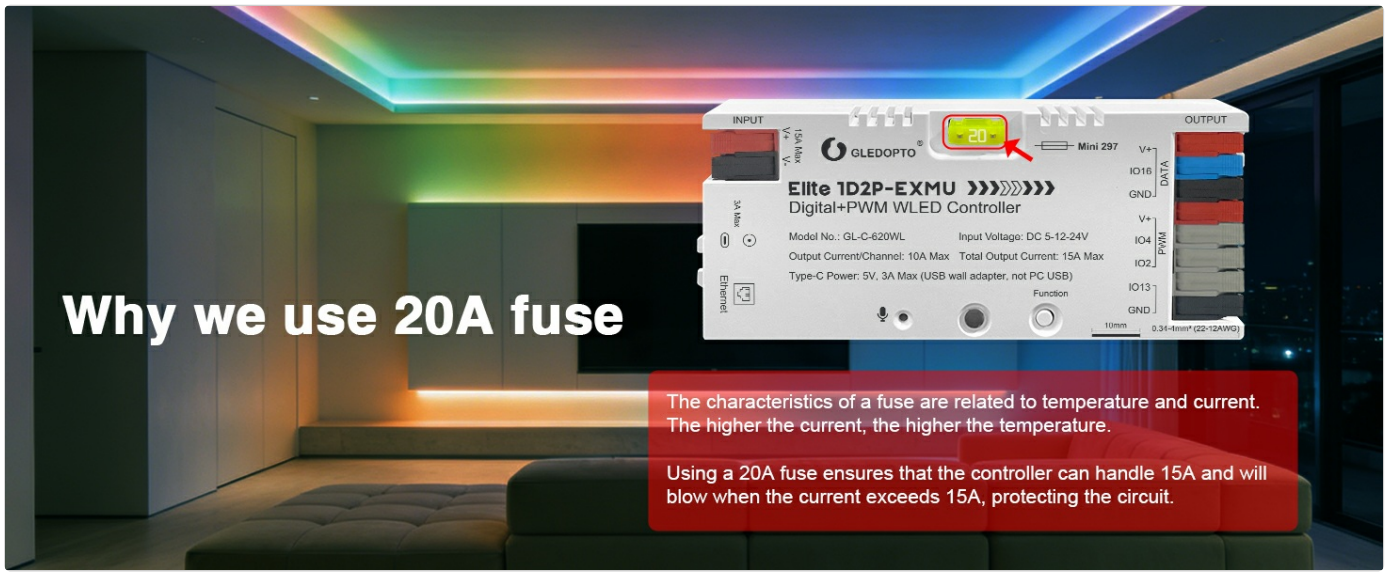


Image: Diagram explaining the purpose of the 20A fuse: it ensures the controller can handle 15A and blows when current exceeds 15A, protecting the circuit.

8. Troubleshooting

Problem	Possible Cause	Solution
LEDs not lighting up.	No power, incorrect wiring, blown fuse, relay misconfiguration.	Check power supply, verify wiring polarity and connections, replace fuse if blown, check relay settings in WLED.
Controller not found in WLED app.	Not connected to network, wrong network, firewall.	Ensure controller is connected to the same Wi-Fi/Ethernet network as your device. Restart controller and app. Check router settings. Try manual IP entry.
LEDs flicker or behave erratically.	Insufficient power, loose connections, data signal interference.	Ensure power supply is adequate for the length/type of LED strip. Secure all connections. Use proper data line length and shielding if necessary.
Sound-activated effects not working.	Microphone disabled, incorrect settings, low sound input.	Check WLED app settings for microphone input and audio reactive effects. Ensure sufficient sound is present near the controller.

Problem	Possible Cause	Solution
Cannot update firmware.	Network issue (OTA), incorrect USB driver/connection (Type-C).	For OTA, ensure stable network connection. For Type-C, ensure correct drivers are installed and the cable is functional. Try a different USB port.

9. Specifications

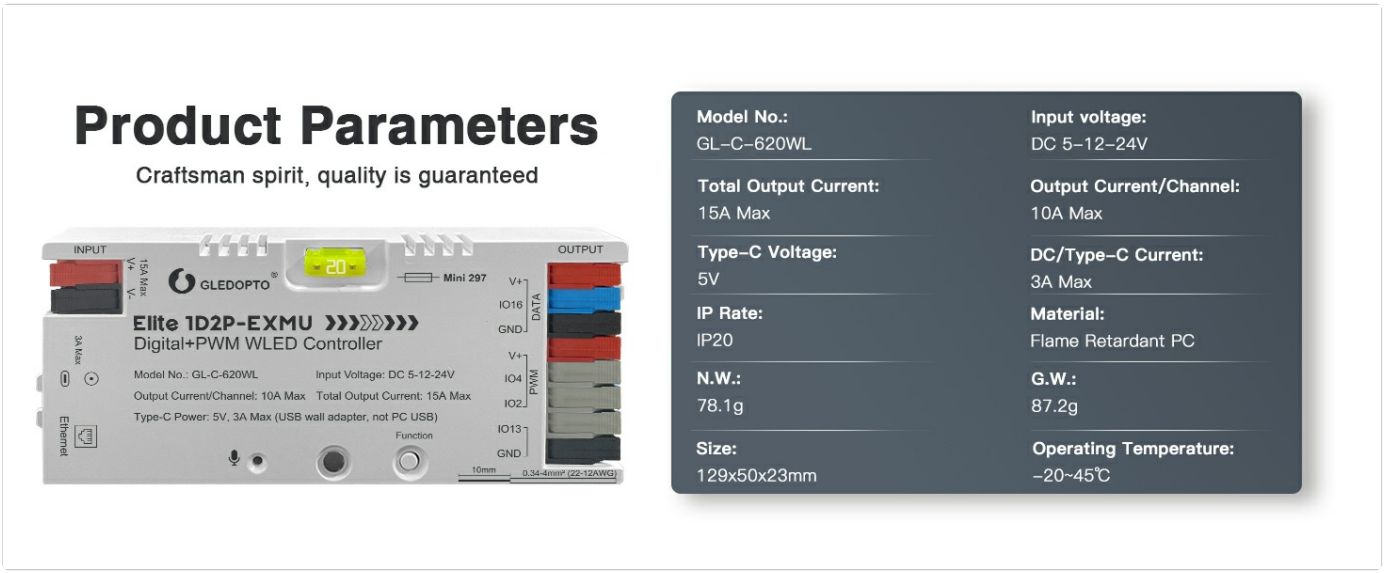


Image: Detailed product parameters for the GLEDOPTO Elite 1D2P-EXMU Controller.

Parameter	Value
Model No.	GL-C-620WL
Input Voltage	DC 5-24V
Total Output Current	15A Max
Output Current/Channel	10A Max
Type-C Voltage	5V
DC/Type-C Current	3A Max
IP Rate	IP20 (Indoor Use Only)
Material	Flame Retardant PC
Net Weight (N.W.)	78.1g
Gross Weight (G.W.)	87.2g
Size	129x50x23mm
Operating Temperature	-20~45°C
Connectivity Protocol	Ethernet, WiFi
Controller Type	Amazon Alexa, App Control, Remote Control, Voice Control

10. Warranty & Support

This GLEDOPTO product comes with a**2-year manufacturer's warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use.
The warranty does not cover:

- Damage caused by improper installation, operation, or maintenance.
- Damage caused by unauthorized modification or repair.
- Damage caused by accidents, abuse, misuse, or natural disasters.
- Normal wear and tear.

For technical support, warranty claims, or further assistance, please contact GLEDOPTO customer service through their official website or your point of purchase. Please have your model number (GL-C-620WL) and proof of purchase ready.

© 2023 GLEDOPTO. All rights reserved.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

Name

Anonymous

Email

you@example.com

After a successful submission, we securely hash the supplied account or form email before sending it to Microsoft Advertising for conversion attribution. Privacy details.

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

Open the live page

https://manuals.plus/asin/B0GQYB6FMW

More documents and user manuals: **https://manuals.plus/**