

F12 Full-color Light String

Product Features

The product is compact, elegant in appearance, and has excellent luminescence effects for both indoor and outdoor use.

General. Primarily used for exposed luminous characters on advertising signs and small household signs.

It can feature outdoor advertising displays and festive lighting decorations on Christmas trees.

Supports offline operation with the controller and real-time image transmission to the computer such as text, images, etc. Depending on the project requirements, specialized solutions can also be adopted.

The SD card controller plays pre-designed effects.



size of product

product model :	QL-12-LP1903/2811-1FC-12P
Product light source:	Each light source contains one F8 high-brightness RGB LED.
color gamut :	16.77 million RGB composite colors
Color resolution:	3x8bit
Lighting Angle:	160
Lighting:	8LM
Lighting effects:	26LM/W
Centerline distance:	100mm (customizable)
Outer shell material:	transparent PVC
Number of light source connections:	50PCS per string
Light size:	Φ 12X36mm
Weight of the whole lamp:	6g
security certificate :	CE RoHs
levels of protection	Glue IP68
UV protection level	Level 4
working temperature :	-25-45°C
storage temperature :	-40-80°C

Product Specification Sheet

service environment :	Indoor/Outdoor
remarks :	Standard parameters allow for a certain range of errors

Electrical Specifications

working voltage	DC12V
power rating :	0.3W/0.72W
IC model :	1903/WS2811S IC (Customizable)
control method :	Serial control, online or offline
Recommended sources:	DC12V 400W ripple 100mV

Installation and usage precautions:

This lamp should be installed by a professional. Do not operate it while it is still on. Do not pull or stress the connection cable during installation.

The installation position of the lamp should be free from corrosive, explosive, flammable media or dust, and the lamp should avoid violent vibration and impact.

Light fixtures must be used exclusively with the power type specified on the product. Using other power sources may cause damage. For example, this fixture requires a 12V constant-voltage switching power supply, which

distributes power through multiple circuits. Each circuit must use at least 2.5mm² multi-strand copper core wire as per national standards.

Lamp fixtures should be handled with care, installed in sturdy locations, and securely fastened. Regular inspections of installed fixtures are required to ensure the circuit has no insulation issues.

The wire is loose or the connection is not secure.

Light fixtures must be securely wired, and the power cables connected to them must not be overloaded. The current flowing through these cables must not exceed their rated current capacity. When connecting the cables, Ensure a firm contact, good insulation, and waterproof measures!

Light fixtures must be wired according to the specified wire colors to prevent damage. For example, the wiring sequence of this model is: the red wire is the DC12V positive terminal, the green wire is the data line, and the white wire is the DC12V negative terminal. Regarding the input/output terminal interfaces: the white-marked terminal is the GND (ground), and the transparent wire is the data line.

If the connecting wire between the lamps is damaged, it must be replaced with the same type and specification of wire, and it must be operated by professionals to avoid danger.

When using multiple switching power supplies, they must not be connected in parallel to prevent damage. The high-voltage input of each power supply should be connected to its corresponding leakage protection switch to enhance safety.

When installing luminaires, the gap between luminaires should be no less than 2mm. When installing luminous lettering sheets, the gap between holes should also be no less than 2mm.

During installation and debugging, if some lamps fail to light up or change color, check: 1. Whether the power

Product Specification Sheet

supply line voltage is normal; 2. If the voltage is normal, check whether the signal path is properly connected; 3. Especially, whether the signal connection terminal has good contact!

If the installed effect differs from the required effect during installation and debugging, check: 1. Whether the controller is functioning properly, 2. Whether the SD card reader is working correctly (a blinking fault or status light indicates no card detected), 3. Whether the wiring method matches the wiring diagram sequence!

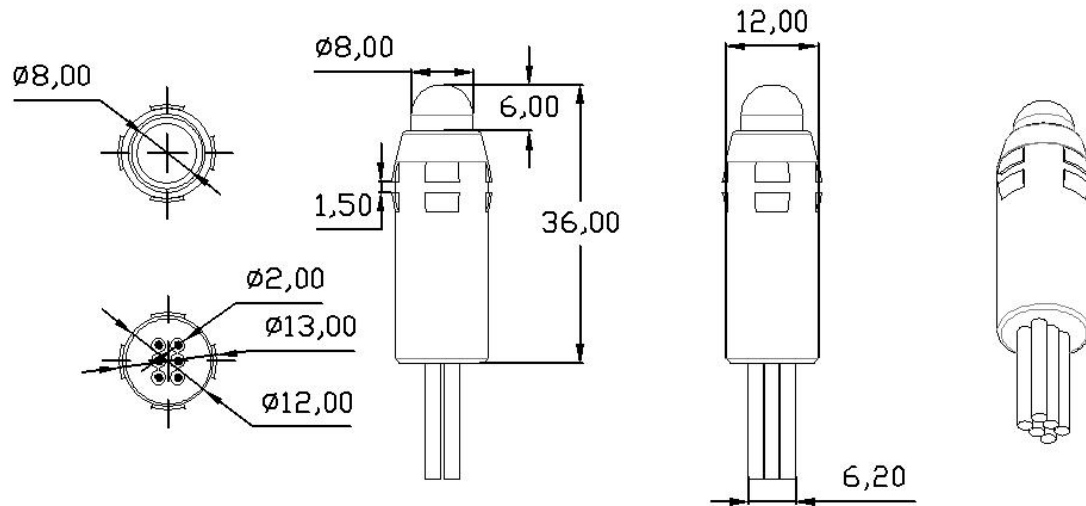
During installation and debugging, if any abnormal vibrations occur in individual or partial lighting fixtures, please check the following: 1. Verify that the controller and lamps share a common negative terminal and maintain proper connections. 2. Ensure signal cables between the controller and fixtures or between fixtures themselves do not exceed 3 meters in length; if they do, an amplifier should be added. 3. Confirm the power supply meets specifications and the ripple voltage stays within acceptable limits. 4. For flickering or vibrating areas, trace the signal connections back to the input points to check for poor contact.

During installation and commissioning, if color deviation occurs during mixing, check: 1) Whether the power supply line from the power source to the lamp meets the requirements (at least 2.5 m² multi-strand pure copper

wire); 2) Whether the power supply is evenly distributed to multiple lamps with uniform arrangement!

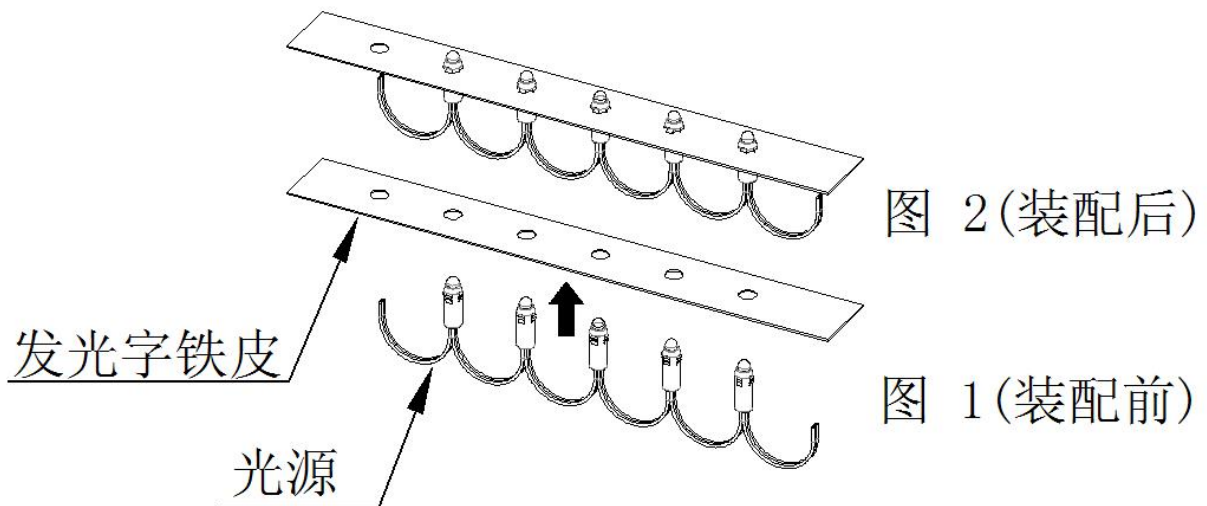
When installing and debugging, configure the power supply at 80% of its actual power to ensure reliable long-term operation of the lamp. For example, for a 400W power supply, set the lamp power to 320W (400x80%).

Product dimensions



Installation and construction diagram

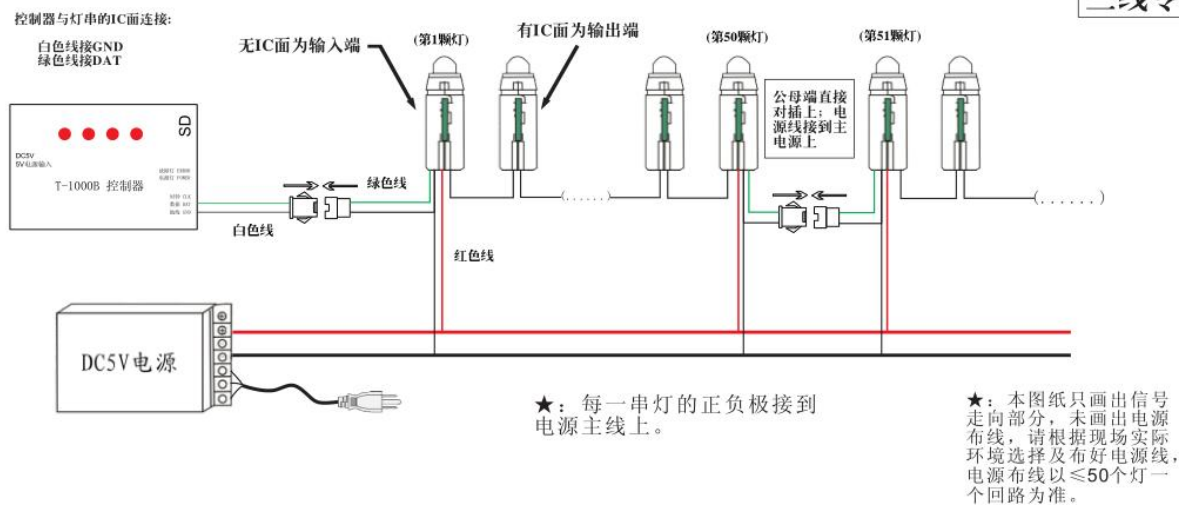
Install the lamp using a 12mm diameter hole (using a punching machine or laser). Insert the lamp from the inside out according to the pre-made engineering drawings, then connect the wires. The thickness must not exceed 2mm.



Wiring Diagram

Product Specification Sheet

三线专用



Packaging information

Per pack	Weight per pack	Each outer box	carton size	Gross weight per box
200 pcs	1.2KG	200pcs	505x460x335mm	31.5 kg



50PCS per string, 200PCS per vacuuum per string, 200PCS per vacuum-packed | 200PCS per vacuum-packed bag, 5000PCS per carton

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50PCS
50PCS per string,