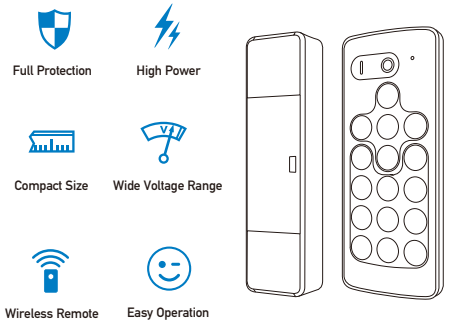
Rayrun

Wireless Remote Control

# RGB LED Controller

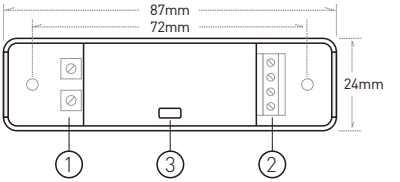
Model: N30




## Introduction

N30 RGB LED controller is designed to drive constant voltage LED products with common anode connection in voltage range of DC5-24V. The main unit works with a RF remote controller, user can setup RGB LED color, brightness and dynamic modes on the remote controller, the main unit is powered by DC power supply and receives remote controller commands to drive LED fixtures.

## Dimension




## Wiring & Indicator

### 1. Power supply input

Install positive power cable into the terminal marked with '+' and negative power cable into the terminal marked with '-'. The controller can accept DC power from 5V to 24V, the output voltage is the same as the power supply, so please make sure the LED rated voltage is same as the power supply.



### 2. LED output

Connect LED fixtures to this terminal. Install LED common anode cable into the terminal marked with '+' and each channel LED cables into the terminal marked with R, G, B. Please make sure the LED rated voltage is same as the power supply and each channel's maximum load current is below the controller rated current.

The controller will run into protection if the output been overloaded or short circuited. The indicator will flash red color and stop working in this case, Please check the wiring and load current to remove the fault.

### 3. Work status indicator

This indicator shows all working status of the controller. It displays different events as following:

**Steady green**: Normal working.
**Single green blink**: Command received.
**Long single green blink**: Mode or color cycle edge.
**Long single yellow blink**: Brightness or speed limit.
**Red flash**: Overload protection.
**Yellow flash**: Over heat protection.
**Green flash 3 times**: New remote controller paired.

## Functions

### 4. Turn ON / OFF

Press 'I' key to turn on unit or press 'O' key to turn off. Main unit will memorize the on/off status and will restore to the previous status on next power on.



Please use remote controller to turn on the unit if it was switched to off status before power cut.

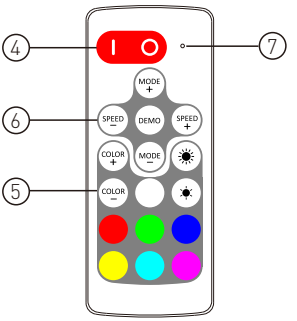
### 5. Static RGB color setting

The keys in this area set the RGB static color and brightness.

Press the colored keys to set the RGB LEDs to correspond color as shortcut.

For other static colors, please press (COLOR +) and (COLOR −) keys to select from the preset library colors.

Press (☀) and (☀) keys to adjust color brightness.



### 6. Dynamic mode setting

These keys control the RGB dynamic modes. Press (MODE +) and (MODE −) keys to select dynamic modes and press (SPEED +) and (SPEED −) keys to set the running speed of the dynamic modes.

Press (DEMO) key to play the dynamic modes in loop with each mode repeating for 3 times.

### 7. Remote indicator

This indicator blinks when remote controller is working. If the indicator flash slowly when pressing keys, it means the remote battery is nearly empty and please change the battery in this case. The battery model is CR2032.

## Operation

### 8. Using the remote controller

Please pull out the battery insulate tape before using. The RF wireless remote signal can pass through some nonmetal barrier. For proper receiving remote signal, please do not install the controller in closed metal parts.

### 9. Pair a new remote controller

The remote controller and main unit is 1 to 1 paired as factory default. It's possible to pair maximum 5 remote controllers to one main unit and each remote controller could be paired to any main unit.

User could pair a new remote controller to main unit by following two steps:



1). Plug off the power of main unit and plug in again after more than 5 seconds.

2). Press (SPEED +) and (SPEED −) keys simultaneously for about 3 seconds, within time of 10 seconds after the main unit powered on.

### 10. Keep current remote only

In some cases, one main unit might be paired with several remote controllers but extra remote controllers are no longer needed. User could simply pair the current using remote to main unit again, then the main unit will dis-pair all other remote controllers and recognize current one only.

### 11. Protection

The main unit has full protection function for wrong wiring, output short circuit, overload and overheat. The controller will protect itself from damage at these extreme conditions and could automatically recover when working condition is good.

To avoid the protection, please ensure the LED fixtures are capable for constant voltage driving and in rated range, the cables are well connected and insulated. Also please install the controller with good ventilation and heat dissipation condition.



## Specification

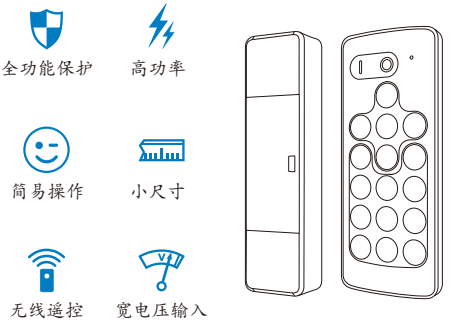
| Model | N30 |
|---|---|
| Dynamic mode | 34 modes |
| Static color | 30 colors |
| PWM grade | 4000 steps |
| Color brightness grade | 5 levels |
| Speed grade | 10 levels |
| Direct color select | 7 direct keys |
| Overload protection | Yes |
| Overheat protection | Yes |
| Working voltage | DC 5-24V |
| Remote frequency | 433.92MHz |
| Remote control distance | >15m at open area |
| Rated output current | 3x4A |
| Controller dimension | 87x24x15mm |

Rayrun

RF无线遥控

# RGB LED控制器

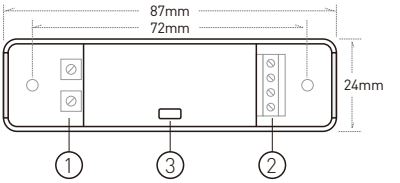
**型号: N30**




## 简介

N30 RGB LED控制器用来驱动电压范围为5V到24V的恒压LED产品。用户可以通过卡片式射频遥控器来调节RGB LED灯具颜色、亮度和动态模式。控制器需要直流电源供电，并根据接收遥控器命令驱动LED灯具，实现颜色、亮度和动态模式调节功能。

## 尺寸




## 接线&指示灯

### 1. 电源输入

控制器可接受电压为5V到24V的直流电源供电，将正极电源线安装到标有“+”的端子，将负极电源线安装到标有“-”的端子。控制器的输出电平与电源输入电压相同，请确保LED灯具额定电压与电源相同，且电源的功率满足控制器和灯具的需求。

为确保安全，请在断电的情况下连接电缆。



### 2. LED输出

将LED灯具连接到端子。将LED共阳线连接到标有“+”的端子，将各颜色 LED 电缆连接到标有 R、G、B 的端子。请确保 LED 额定电压与电源相同，并且每个通道的最大负载电流低于 控制器额定电流。

如果输出出现过载或短路的情况，控制器将进入保护状态。此时指示灯会闪烁红色并停止工作，请检查接线和负载电流以排除故障。

### 3. 状态指示灯

该指示灯显示控制器的工作状态，指示灯与控制器工作状态的对应关系如下：

绿色常亮：正常工作。
绿色单闪：收到命令。
绿色慢闪：模式或颜色循环边缘。
黄色慢闪：亮度或速度极限。
红色闪烁：过载保护。
黄色闪烁：过热保护。
绿色闪烁 3 次：新遥控器配对成功。

## 功能

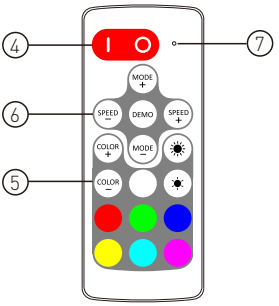
### 4. 开/关

按“I”键开启灯光，按“O”键关闭。控制器会记忆断电前的开关状态，如果在断电前为关机状态，下次通电后请使用遥控器开机。



### 5. 静态RGB颜色调节

这个区域的按键可以调节RGB静态颜色和亮度。按下颜色快捷键可以将LED灯具调节为相应的颜色。按COLOR+和COLOR-可以从预设的颜色库中调节颜色。按☀☀键可以调高或调低亮度。




### 6. RGB动态效果

按 MODE+ 和 MODE- 可以选择动态模式，按 SPEED+ 键和 SPEED- 键可以调节动态模式的运行速度。

按 DEMO 键激活动态演示模式，控制器将按每个动态模式重复 3 次的方式循环演示动态效果。

### 7. 遥控器指示灯

按下遥控器按键时，该指示灯会快速闪烁。如果指示灯慢闪，说明遥控器电池电量已耗尽，请更换遥控器电池（CR2032型纽扣电池）。

## 操作方法

### 8. 使用遥控器

使用前请拔出遥控器电池绝缘片。RF无线遥控信号可以穿过一定的非金属屏障。为了保证控制器的接收效果，请勿将控制器安装在有大面积金属遮挡的位置。

### 9. 与新遥控器配对

遥控器和控制器出厂默认为1对1的配对状态。1个控制器最多可配对5个遥控器，而遥控器可配对到任意的控制器。

如需配对新遥控器，请按以下两个步骤操作：

1）断开控制器电源，并在超过5 秒后重新通电。

2）在控制器通电后的10秒内，同时按新遥控器SPEED+ SPEED-键约3秒钟。

配对成功后，控制器指示灯将闪烁3次提示配对完成。



### 10. 保留当前遥控器并清除其他遥控器

在控制器已与多个遥控器配对，而仅想保留当前遥控器的情况下，可以将正在使用的遥控器与控制器再进行一次配对操作，此后控制器将清除其他已配对的遥控器而仅保留当前使用的遥控器。

### 11. 保护功能

本控制器具有完善的保护功能，可以最大程度的防止因接线错误、负载短路、过载或过热而引起的产品损坏。当发生以上异常状态时，控制器将停止工作，同时指示灯会闪烁黄色或者红色。当工作状态良好时，控制器会尝试恢复正常工作。

当控制器进入保护状态时，请检查指示灯的状态，在不同的闪烁状态下应检查相应的故障：

**红色闪烁**：请检查输出电缆是否短路、负载电流是否过高，并请确保灯具为恒压类型且兼容PWM调光方式。

**黄色闪烁**：请检查控制器的安装环境以及负载功率、并确保控制器散热条件良好且负载功率在额定范围之内。



## 规格

| 型号 | N30 |
|---|---|
| 动态模式 | 34级 |
| 静态颜色 | 30种 |
| PWM分辨率 | 4000级 |
| 亮度可调级数 | 5级 |
| 速度可调级数 | 10级 |
| 颜色快捷键 | 7个 |
| 过载保护 | 有 |
| 过热保护 | 有 |
| 工作电压 | DC 5-24V |
| 遥控器工作频率 | 433.92MHz |
| 遥控器工作距离 | 空旷地带>15米 |
| 额定输出电流 | 3x4A |
| 控制器尺寸 | 87x24x15mm |