Xiaolei

LA-60-24-U1B
LA-96-24-U1B

Bluetooth 5.0 SIG Mesh

LED Intelligent Dimming Driver(Constant Voltage Type)

- Metal housing for efficient heat dissipation;
- Power parameters can be modified via NFC with a mobile APP to enable driver data interaction;
- Bluetooth 5.0 SIG Mesh communication protocol for strong, reliable and stable networking capability;
- Supports Bluetooth direct connection control for iOS and Android smart devices;
- Equipped with soft start and gradual brightening function for more comfortable human eye perception;
- Dimming range of 0-100%, with LED dimmable starting from 0.0001%;
- Supports online OTA firmware upgrade for devices;
- Innovative thermal management technology for intelligent protection of power supply lifespan;
- Over-temperature, over-voltage, over-load and short-circuit protection with automatic recovery;
- Suitable for indoor Class I, II and III luminaire applications;
- Service life up to 100,000 hours under normal operation;
- 5-year warranty period (utilizing NCC capacitors).

* Not for sale or use in China.

Bluetooth®

DIM

T-PWM
Dimming Technology

Flicker-Free
IEEE 1789

Dimmable:
1:1000000

NFC
STAR-Tech

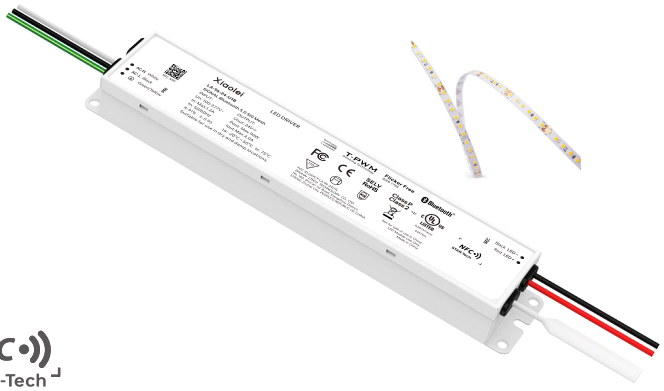
c UL us LISTED
(LED Drivers)
E497951

SELV
RoHS

Class 2

Class P

The certification icon represents undergoing certification applications only, and final certification qualification subject to actual product



PWM Digital Dimming

Flicker Free IEEE 1789

Over voltage protection

Short circuit protection

Over Load protection

Overheat Protection

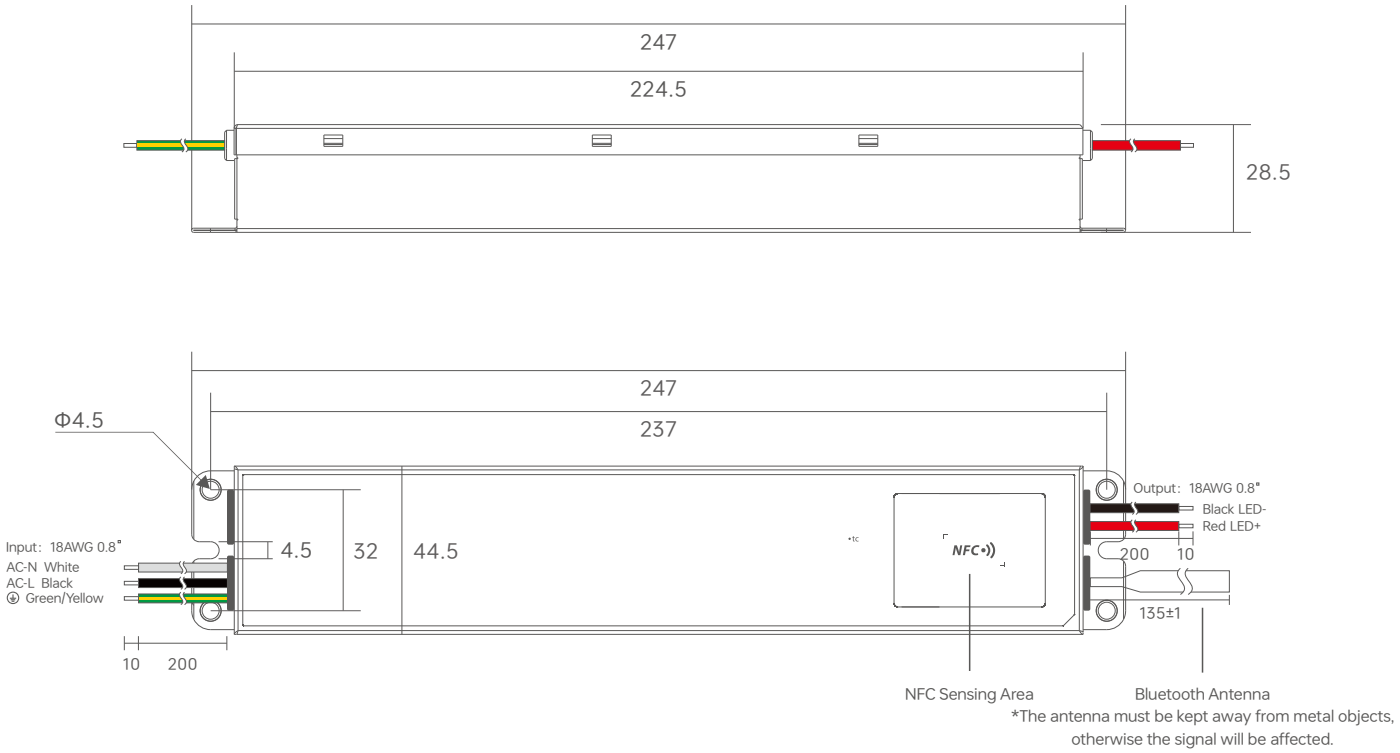
Technical Specs

Model		LA-60-24-U1B			LA-96-24-U1B
Features	Output Type	Constant voltage			
	Dimming Interface	Bluetooth 5.0 SIG Mesh			
	Output Feature	Isolation			
	Protection Grade	IP20			
	Insulation Grade	Class I (Suitable for class I/ II /III light fixtures)			
OUTPUT	Output Voltage	24V⎓			
	Output Voltage Range	24V ± 0.5V⎓			
	Output Current	Max. 2.5A			Max. 4A
	Output Power	Max. 60W			Max. 96W
	Output Power Range	0-60W			0-96W
	Strobe Level	High frequency exemption leve/IEEE1789			
	Dimming Range	0-100%, Dimming Depth: 0.0001% (More gears adjustable via mobile APP NFC, Default: 0.01%)			
	Overload Power Limitation	≥102%			
	Ripple	Switching ripple ≤ 120mV, noise ≤ 500mV			
	PWM Frequency	300-22000Hz			
INPUT	Input AC Voltage	100-277V~			
	Input DC Voltage	220-250V⎓			
	Frequency	0/50/60Hz			
	Input Current	Max. 0.75A/115V~, 0.32A/230V~, 0.29A/277V~(at full load)			Max. 1.2A/115V~, 0.5A/230V~, 0.43A/277V~(at full load)
	Power Factor	PF>0.95/115V~, PF>0.95/230V~ , PF>0.85/277V~(at full load)			PF>0.95/115V~, PF>0.95/230V~, PF>0.9/277V~(at full load)
	THD	115V~@THD<10%, 230V~@THD<15%, 277V~@THD<25% (at full load)			115V~@THD<10%, 230V~@THD<10%, 277V~@THD<15% (at full load)
	No-load Power Consumption	< 3.5W@230V~			
	Efficiency (Typ.)	84%/100V~, 90%/230V~, 90%/277V~			85%/100V~, 91%/230V~, 91%/277V~
	Inrush Current	Cold start 32A(Test twidth=340us tested under 50% Ipeak)/277V~			Cold start 41A(Test twidth=340us tested under 50% Ipeak)/277V~
	Anti Surge	L-N: 2KV，L,N-FG: 4KV			
	Leakage Current	Max. 0.5mA			
ENVIRONMENT	Working Temperature	ta: -20 ~ 50℃ tc: 75℃			
	Working Humidity	20 ~ 95%RH, non-condensing			
	Storage Temperature/Humidity	-40 ~ 80℃, 10~95%RH			
	Temperature Coefficient	±0.03%/℃(-20 ~ 50℃)			
	Vibration	10~500Hz, 2G 12 min/cycle, 72 min for X, Y and Z axes respectively			
PROTECTION	Overheat Protection	Intelligently adjust or turn off the output current if the PCB temperature ≥110℃, and recover automatically			
	Overload Protection	Automatically protect the device when the load exceeds 102% of the rated power. Automatically recover once load is reduced			
	Short Circuit Protection	Enter hiccup mode if short circuit occurs, and recover automatically			
	Overvoltage Protection	Shut down the output when no-load voltage≥28V, and recover automatically			
SAFETY & EMC	Withstand Voltage	I/P-O/P: 3750V~/1min/<5mA, I/P-FG: 1500V~/1min/<5mA, O/P-FG: 500V~/1min/<5mA, Signal - FG: 500V~/1min/<5mA			
	Insulation Resistance	I/P-O/P: 100MΩ/500V~/1min/25℃/70%RH			
	Safety Standards	UL	United States	UL8750，UL1310，Class P	
		CUL	Canada	CSA C22.2 No.250.13	
		CE	European Union	EN61347-1，EN61347-2-13，EN62384	
	EMC Emission	FCC	United States	FCC part15B	
		CE	European Union	EN55015，EN61000-3-2，EN61000-3-3，EN61547	
	EMC Immunity	EN61000-4-2,3,4,5,6,8,11,EN61547			
	Flicker/Stroboscopic Effect	IEEE1789			
OTHERS	Weight(N.W.)	600g±10g			
	Dimensions	247×44.5×28.5mm(L×W×H)			

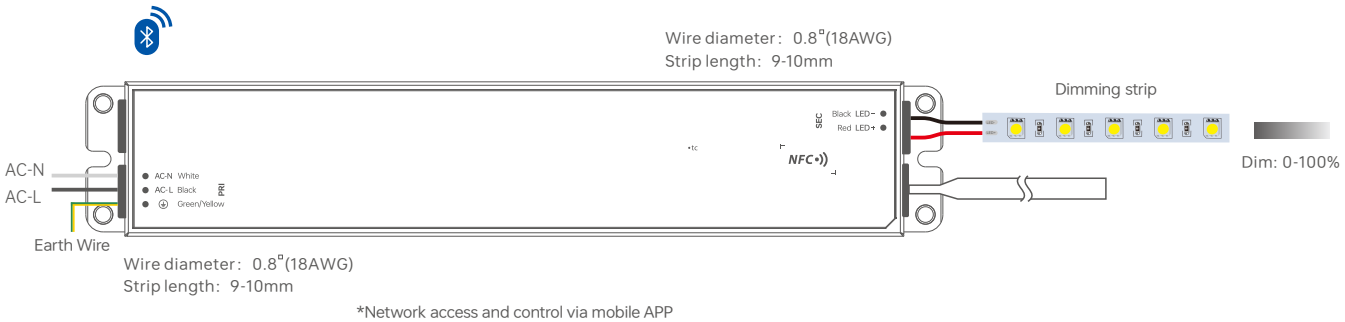
This driver is suitable for connection to resistor-current-limited LED luminaires (e.g., LED strips). Connecting it to luminaires with built-in constant current IC for current limiting will generate an instantaneous surge current dozens of times the normal value, triggering the driver's overload protection (hiccup and flashing). When placing an order, please specify such luminaires with built-in constant current IC for current limiting (e.g., MR16 bulbs, in-ground lights, wall washers, constant current hard LED strips, etc.) to enable the programming of a dedicated firmware for the driver.

Product Size

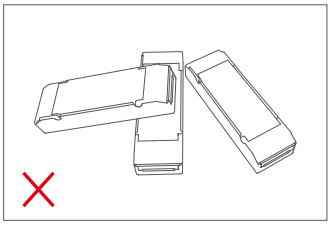
Unit: mm

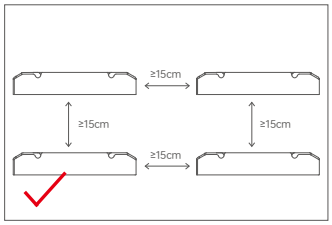


Wiring Diagram

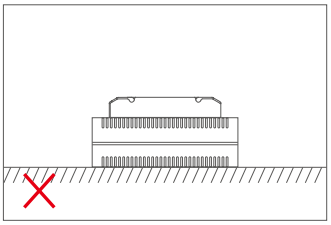


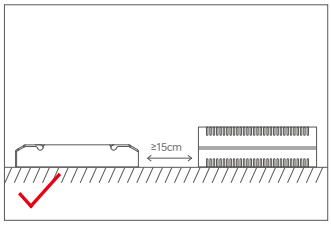
Installation Precautions



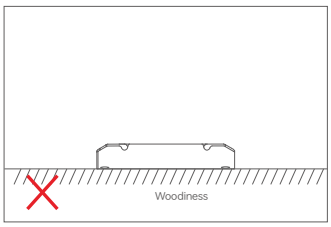


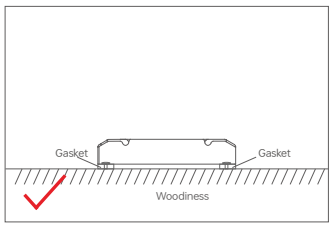
Please do not stack the products. The distance between two products should be ≥15cm so as not to affect heat dissipation and the lifespan of the products.



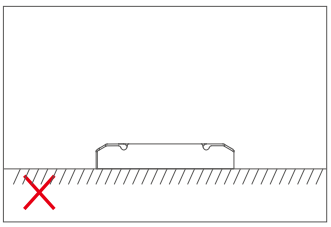


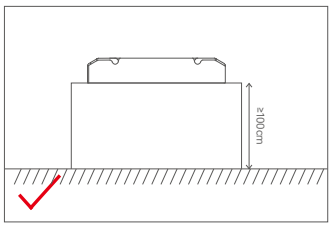
Please do not place the products on the floor. The distance between the product and the floor should be ≥100cm so as to avoid signal interference.





Do not fix the product tightly against the wooden board with screws. Please add a washer ≥7 mm thick under the mounting screws to leave a gap for effective heat dissipation, so as to avoid affecting the heat dissipation and service life of the product.





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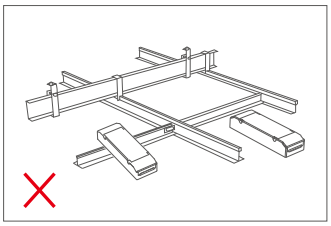
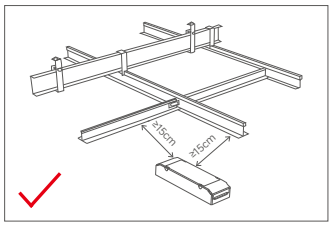
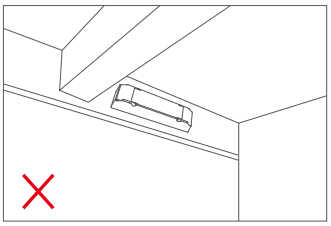
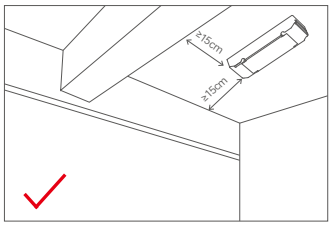




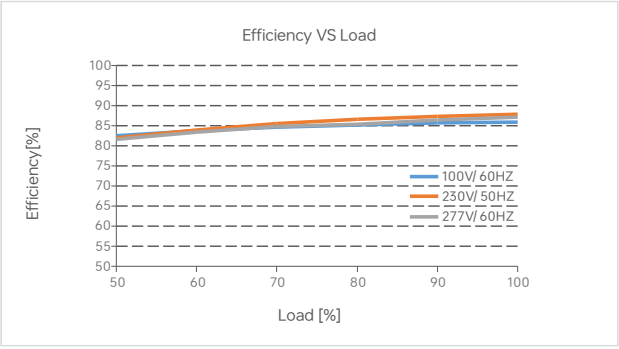
Do not allow the product to come into large-area contact with metal objects (e.g. keel frames). The separation distance shall be ≥15 cm to avoid signal interference affecting operation.

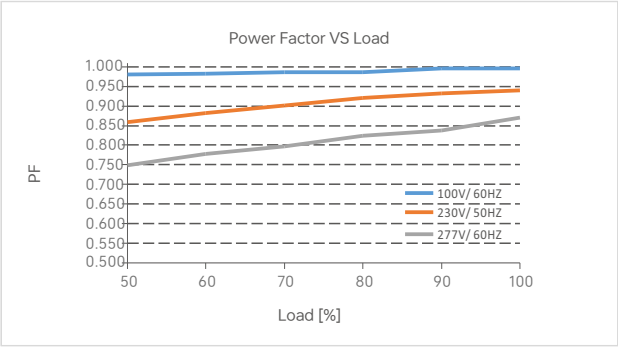


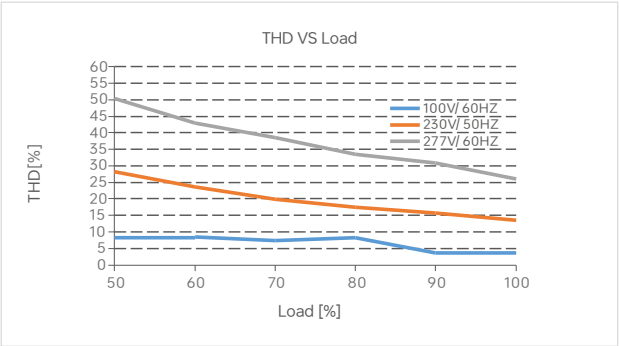


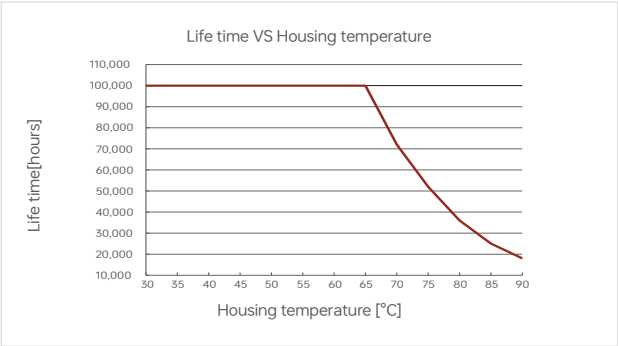
Please do not install the products on beams or near the corners. The distance between the product and the beam or the corner should be ≥15cm so as to avoid signal interference.

Relationship Diagrams

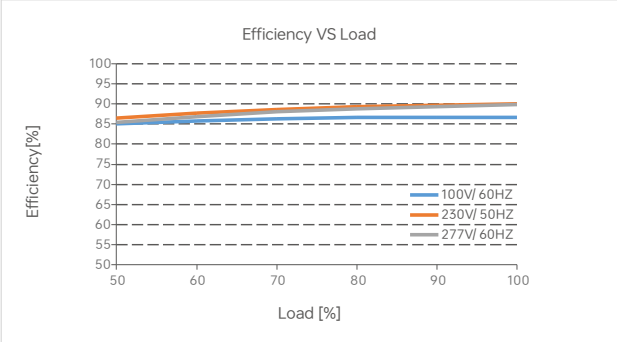


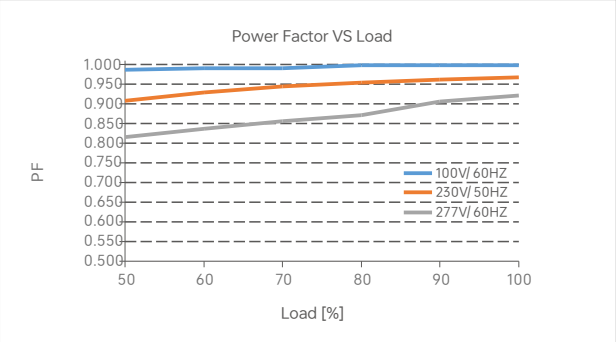


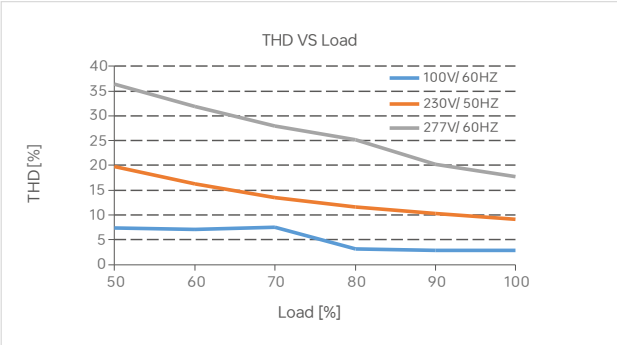


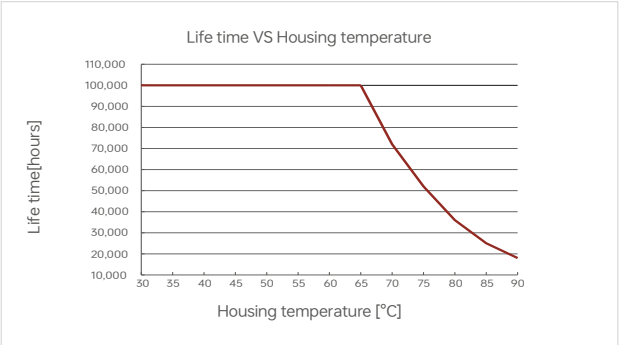


Relationship Diagrams









LA-96-24-U1B

Surge Current & Corresponding Miniature Circuit Breaker (MCB) Load Capacity Table

MCB Model	B10	B13	B16	B20	B25	C10	C13	C16	C20	C25	D10	D13	D16	D20	D25
Maximum Load Capacity	20	26	32	40	50	23	30	37	47	58	27	34	42	53	66

Remarks:

1. Test Conditions: Cold start 32A(Test twidth=340us tested under 50% Ipeak)/277V~(LA-60-24-U1B); Cold start 41A(Test twidth=340us tested under 50% Ipeak)/277V~(LA-96-24-U1B)
2. The number of supported drivers may vary depending on the brand and model of the MCB.
3. It is recommended not to exceed the specified load capacity during on-site installation. The actual load should be determined based on field conditions.
4. If the ambient temperature exceeds 30°C or multiple MCBs are installed side by side, the number of installed drivers must be reduced and recalculated accordingly.
5. Electricians typically use Type B MCBs for residential lighting and Type C MCBs for commercial lighting applications.
6. Different testing equipment may yield variations in measured current peaks and pulse widths. Always use professional-grade instruments for accurate testing.

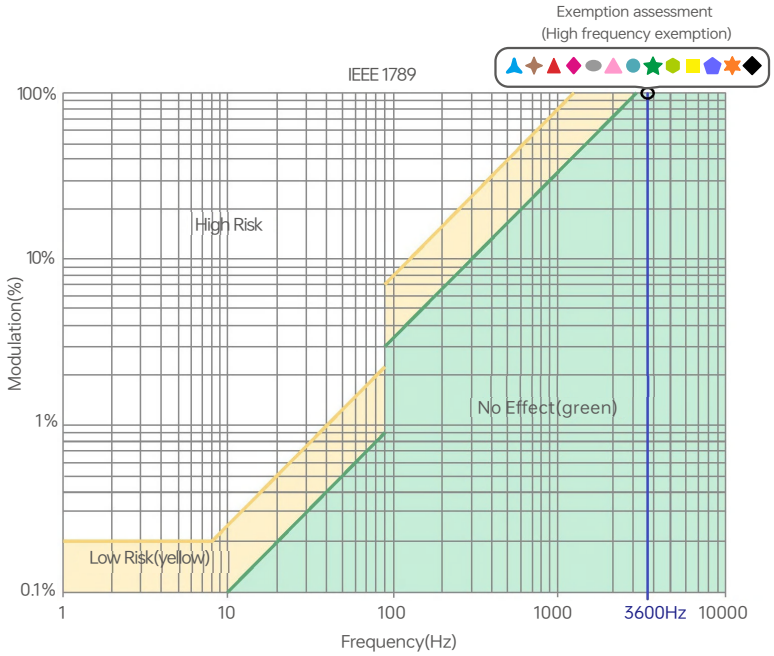
Flicker Test Table

IEEE 1789

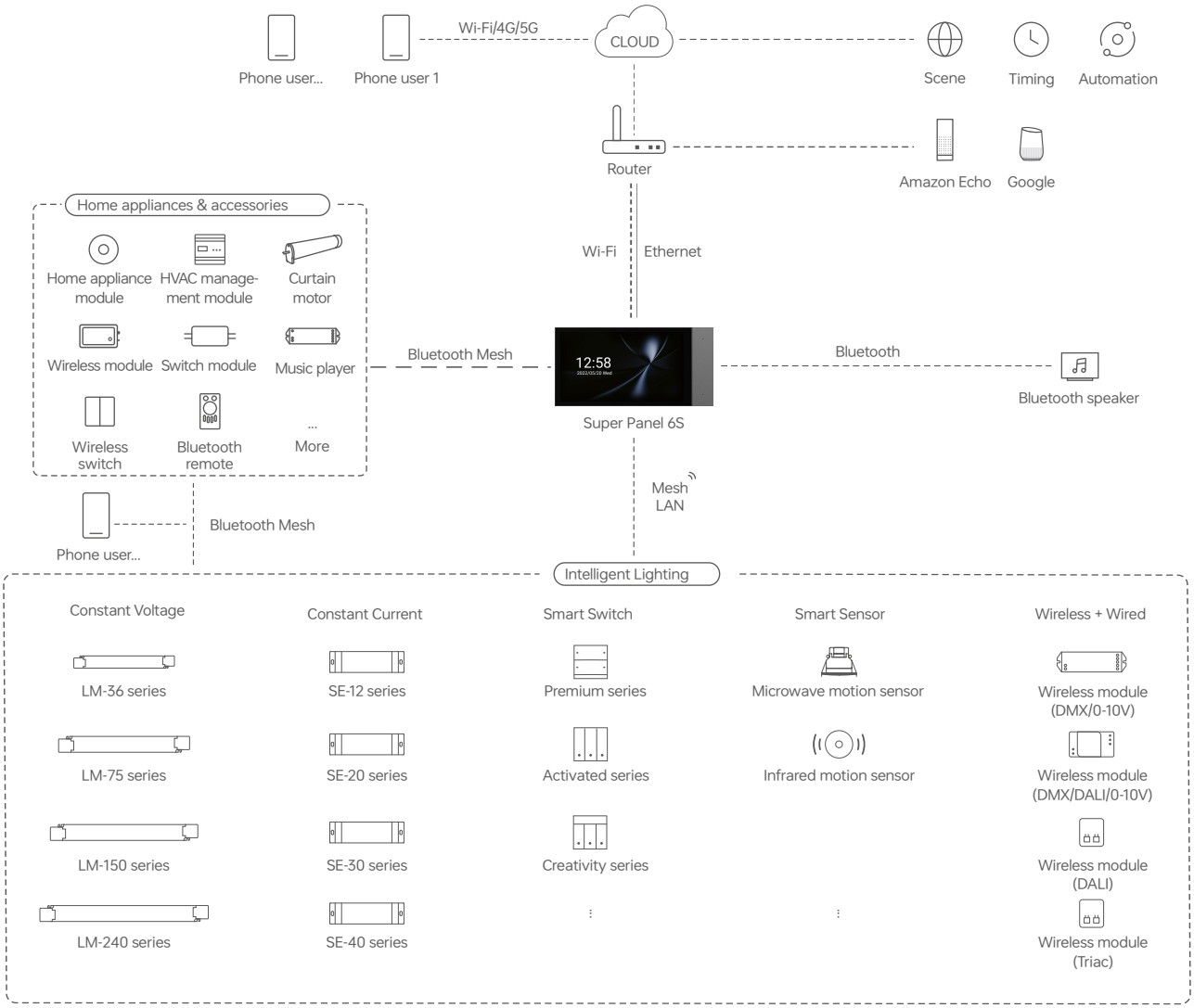
Limit Value of Modulation in Low Risk Areas	
Waveform frequency of Optical output (f)	Limit value (%)
f ≤ 8Hz	0.2
8Hz < f ≤ 90Hz	0.025 × f
90Hz < f ≤ 1250Hz	0.08 × f
f > 1250Hz	Exemption assessment
Limit Value of Modulation in No Effect Areas	
Waveform frequency of Optical output (f)	Limit value (%)
f ≤ 10Hz	0.1
10Hz < f ≤ 90Hz	0.01 × f
90Hz < f ≤ 3125Hz	(0.08/2.5) × f
f > 3125Hz	Exemption assessment (High frequency exemption)

Brightness

- 0.1%
- 1%
- 5%
- 10%
- 20%
- 30%
- 40%
- 50%
- 60%
- 70%
- 80%
- 90%
- 100%

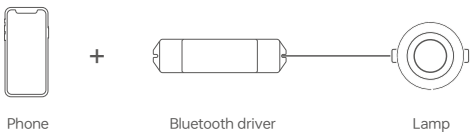


Recommend Applications



Recommend Applications

1. Achieve fast dimming control.



2. Both App and remote can control the driver after connecting the remote to the driver with App.

3. Both App and Super Panel 6S can control the driver simultaneously after connecting the Super Panel 6S to the driver with App. By connecting the Super Panel to network, you are allowed to control the driver, cloud scenes and automation remotely with App.

4. More applications of intelligent control are waiting for you to set up.

List of Compatible Devices

Smart Gateway: Serves as the control center of a smart home, enabling interconnection between Bluetooth devices and the cloud, as well as managing and controlling scenes and automation. It realizes remote control of smart devices such as Bluetooth-driven power supplies and switch panels.


SP-GW-12S


SP-GW-6S


SP-GW-BLE


SP-GW-4S


G4 MAX

CG-KIT: Enables the access of Bluetooth-driven power supplies to Apple Home via HomeKit, and also to all IoT platforms supporting the standard Matter protocol through Matter Bridge, including Apple Home, Google Home, Amazon Alexa, Samsung SmartThings, etc.


CG-KIT

Smart Switch: Can control the on/off, dimming and color tuning of Bluetooth-driven power supplies. When used with a smart gateway, it can realize functions such as App remote control, scene linkage/automation.


S1


S2


S3


S4


S6


S6-B


SQ


SQ-B


S1 PRO


S2 PRO


S3 PRO


S6 PRO


SQ PRO


G4


G4 PRO


S4M


S8M


EB1


EB2


EB5


EB6


EB8


UB1


UB2


UB4


UB5


UB8

Remote Control: Can control the on/off, dimming and color tuning of Bluetooth-driven power supplies. When used with a smart gateway, it can realize functions such as scene linkage.


GQ PRO


GQ MAX


GQ


GQX


B1


B2


B5

B8

R8

RC4-BLE

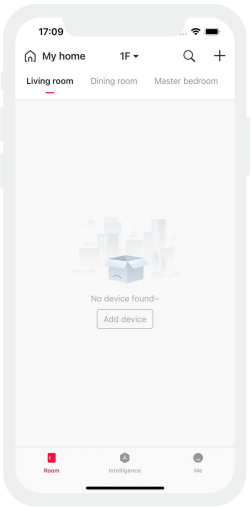
Use with Bluetooth L-Home APP

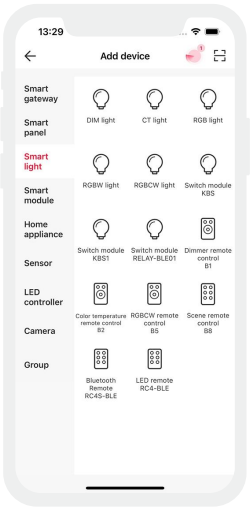
1. Register an account

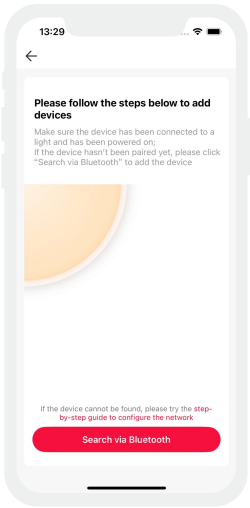
The App is available on iOS or Android devices. Scan the QR code below with you mobile phone and follow the prompts to complete the App installation. Open the App to log in or register an account.

2. Paring instructions

Open the APP and create a home if you are a new user. Click “+” icon in the upper right corner and access the “Add Device” list, then follow the prompts to add the device. Pick “Smart lighting-DIM light” from the list and follow the prompts to power on the device firstly. Make sure the device is not connected to the network. Then click ”Bluetooth Search” and follow the prompts to add the device.

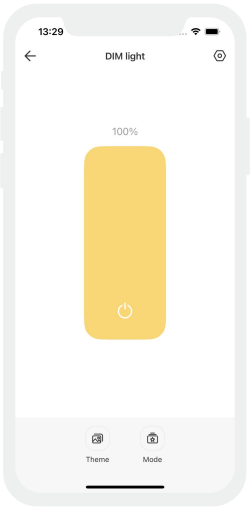


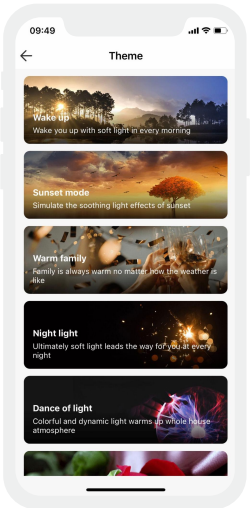


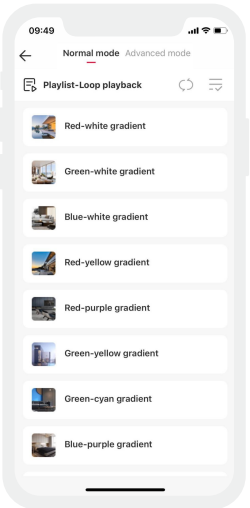


3. Control interface settings

After pairing up your device, go to the control interface. You'll be able to achieve your desired lighting effects by changing brightness and color temperature. Click “Theme” and you'll easily switch to multiple theme lighting effects with one tap. Click “Mode” and the App provides you editable advanced modes. Customize dynamic modes to put you into a more colorful life.

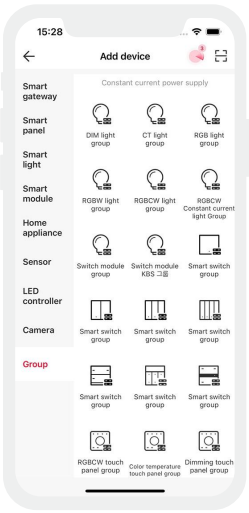


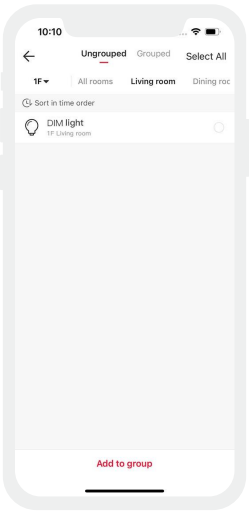


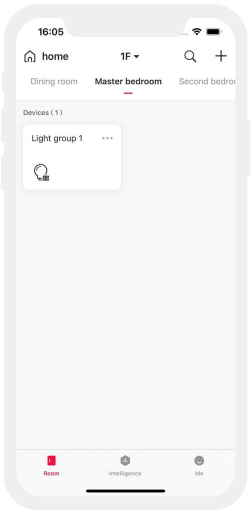


4. Light groups

Users are able to combine the same type of light fixtures into a group to control them simultaneously. Once you create the group, you can set the dim level more easily. Pick “Group-DIM light group”from the list. Follow the prompts to rename the group and click ”Next” to pick the lights you are going to group together and click “Save”.

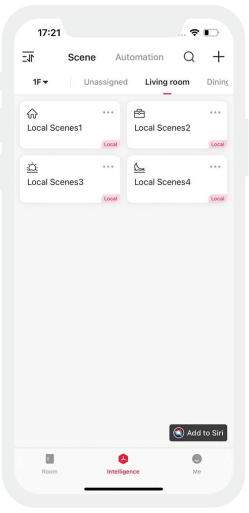


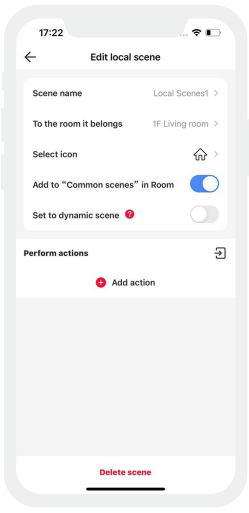


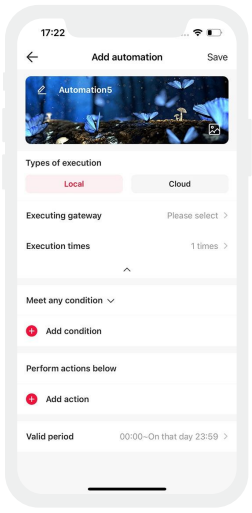


5. Advanced functions

This driver can be linked up with gateway function devices (such as Super Panel 12S) to achieve the advanced functions from local scenes and cloud scenes to automation.

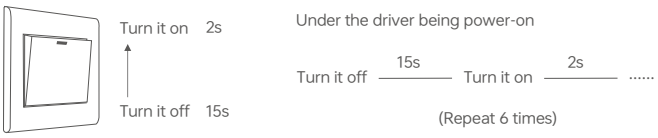




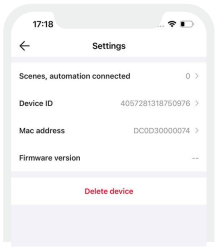


Reset the Device (Reset to Factory defaults)

Method 1: Ensure the driver is connected to the light fixture and is in a constantly lit state. Use a switch to continuously power on and off the driver 6 times (each power-off time is 15 seconds, and power-on time is 2 seconds). After the sixth power-on time of 2 seconds, the light fixture will flash 3 times, indicating that the driver has been restored to the factory settings.



Method 2: Ensure the device is powered on and online, open the L-Home APP, locate the device and access its settings interface, then tap the Delete Device button. When the interface prompts "Deletion Successful", it indicates the device has been restored to factory settings.



Method 3: Power off the device, open the NFC Lighting APP and tap Read/Write Smart Power Supply on the home page. On the Parameter Editing page, tap Restore Factory Settings; a write button will pop up on the interface. After a successful write, power the device back on and it will be restored to factory settings.

More Features

STAR-Tech

- It has achieved an innovative breakthrough of no power-on required and no on-site debugging required. Staff can deploy smart home solutions in advance, preconfigure network access, grouping, scenarios, and other settings in the early stage, which greatly shortens the project cycle and reduces project costs.

Device Replacement

- When a device is damaged, lost, or offline, you can select a device of the same model to replace it. The new device will synchronize the configuration of the old one, including name, group, mode, scene, automation, and more.

Device Log

- Record the operation logs of the device.

Fade Time

- Power-on fading time: The fading time for the light to go from off to on when the device is powered on.
- Light-on fading time: The fading time for the light to go from off to on when the light fixture is turned on.
- Light-off fading time: The fading time for the light to go from on to off when the light fixture is turned off.
- Scene fading time: The fading time for the light's brightness and color during scene switching.

Power-On State

- The state maintained by the device (full brightness / off / memory / custom) when the device is powered on.

Dimming Depth

- The default dimming depth is 0.01%, with a maximum dimming depth of 0.0001%.

Brightness Range

- Customizable adjustable brightness range.

FAQs

1. What should I do if device addition fails?
1.1 Ensure the device is powered on normally and in an activated state;
1.2 Ensure the device to be added has not been added to any other account. If it has, manually restore it to factory settings;
1.3 Ensure the mobile phone and the device are as close as possible, with a recommended distance of no more than 20 meters;
1.4 If the device has been forcibly deleted, manually restore it to factory settings first, then add the device again.

2. What should I do if the device goes offline?
2.1 Please check if the device is powered on normally;
2.2 Please check if the router is working properly and the network is smooth;
2.3 If using remote control, please check if the mobile phone network is working properly and the network is smooth.

3. How to perform remote control / set up cloud scenes?
To use remote control / add and set up cloud scenes, it is necessary to use the company's super panel together.

4. How to Share a Device?
Please go to "My" -> "Family Management", select the family for which you want to share devices, then click "Add Member". Follow the prompts to add the family member or friend with whom you want to share the device to this family, and the sharing process will be completed.

5. Inconsistent dimming for light films or groups in the same area?
There may be differences between hardware of different models. It is necessary to use the same model for group dimming to achieve better dimming consistency.

Use the NFC Lighting APP

Scan the QR code below with your mobile phone and follow the prompts to complete the APP installation (According to performance requirements, you need to use a NFC-capable Android phone, or an iphone 8 and later that are compatible with iOS 13 or higher).

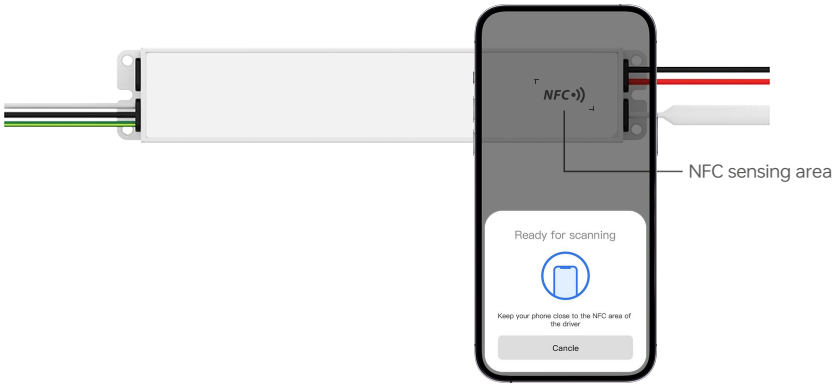
∗ Before you begin setting the parameters of the driver, please make sure the driver is powered off .

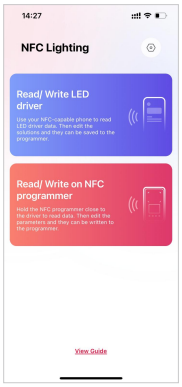
Read/Write the LED driver

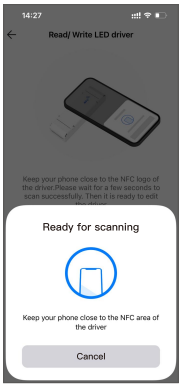
Use your NFC-capable phone to read LED driver data, then edit the parameters and they can be directly written to the driver.

1.Read the LED driver

On the APP home page, click【Read/Write LED driver】, then keep the programmer's sensing area close to the NFC sensing area of the driver to read the driver parameters.

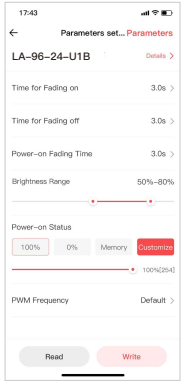


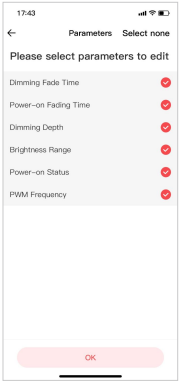




2. Edit parameters

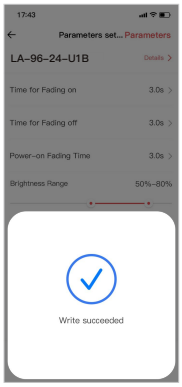
Click on [Parameter Management] to edit more advanced parameters such as Time for Fading on, Time for Fading off, Power-on Fading Time, Brightness Range, Power-on Status and PWM Frequency.





3. Write to the drive

After completing the parameter settings, click 【Write】in the upper right corner, and keep the programmer's sensing area close to the NFC sensing area of the driver, so the parameters can be written to the driver



Packaging Specification

Model	LA-60-24-U1B/LA-96-24-U1B
Packaging size	273×60×35mm（L×W×H）
Packaging box size	290×200×145mm（L×W×H）
Quantity	5 PCS per layer；2 layers per box；10 PCS per box
Weight	0.65kg per PC；7kg±5% per box

Packaging Style Drawing

Inner packaging box

Full box packaging

Transportation and Storage

1. Transportation

Products can be shipped via vehicles, boats and planes.

During transportation, products should be protected from rain and sun. Please avoid severe shock and vibration during the loading and unloading process.

2. Storage

The storage conditions should comply with the Class I Environmental Standards. The products that have been stored for more than six months are recommended to be re-inspected and can be used only after they have been qualified.

Attentions

- Product installation and commissioning should be done by a qualified professional.
- LTECH products are and not lightningproof non-waterproof (special models excepted). Please avoid the sun and rain. When installed outdoors, please ensure they are mounted in a water proof enclosure or in an area equipped with lightning protection devices.
- Good heat dissipation will prolong the working life of products. Please ensure good ventilation.
- Please check if the working voltage used complies with the parameter requirements of products.
- The diameter of wire used must be able to load the light fixtures you connect and ensure the firm wiring.
- Before you power on products, please make sure all the wiring is correct in case of incorrect connection that causes damage to light fixtures.
- If a fault occurs, please do not attempt to fix products by yourself. If you have any question, please contact your suppliers.

* This manual is subject to changes without further notice. Product functions depend on the goods. Please feel free to contact our official distributors if you have any question.

Warranty Agreement

- Warranty periods from the date of delivery: 5 years.
- Free repair or replacement services for quality problems are provided within warranty periods.

Warranty exclusions below:

- Beyond warranty periods.
- Any artificial damage caused by high voltage, overload, or improper operations.
- Products with severe physical damage.
- Damage caused by natural disasters and force majeure.
- Warranty labels and barcodes have been damaged.
- No any contract signed by LTECH.

1. Repair or replacement provided is the only remedy for customers. LTECH is not liable for any incidental or consequential damage unless it is within the law.
2. LTECH has the right to amend or adjust the terms of this warranty, and release in written form shall prevail.

ZHUHAI LTECH TECHNOLOGY CO., LTD.

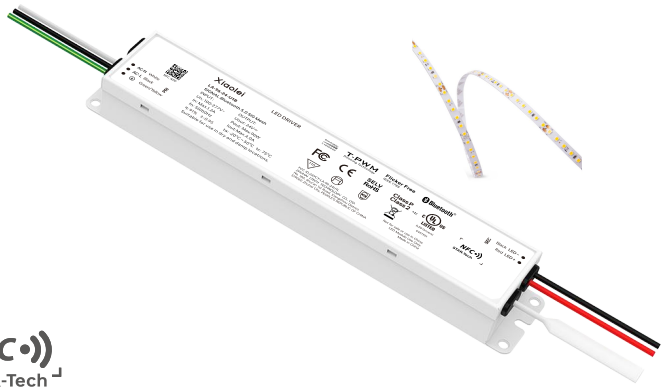
Address: No. 183, Shui'an 1st Road, Xiangzhou District, 519060 Zhuhai City, PEOPLE'S REPUBLIC OF CHINA

Website：www.xiaolei.com.cn

LED智能调光驱动器(恒压型)

- 金属外壳，易于散热;
- 使用手机APP通过NFC可更改电源参数，实现驱动器数据交互功能;
- Bluetooth 5.0 SIG Mesh通信协议，组网能力强，可靠稳定;
- 支持iOS和安卓智能设备蓝牙直连控制;
- 带软启动渐亮功能，让人眼视觉更舒服;
- 调光范围0-100%, LED从0.0001%开始调光;
- 支持线上OTA升级设备固件;
- 创新的热管理技术，智能保护电源寿命;
- 过温、过压、过载、短路保护，可自动恢复;
- 适合室内I、II、III类灯具应用;
- 常规使用下寿命可达10万小时;
- 5年保修期（采用黑金刚电容）;

* 本产品禁止在中国境内销售使用。



Bluetooth®

调光

T-PWM
超深度调光技术

无频闪
IEEE1789
高频豁免考核级别

Dimmable:
1:1000000

NFC
STAR-Tech

c UL us LISTED (LED Drivers) E497951

FC CE SELV RoHS Class 2 Class P

认证图标仅代表产品正在进行这一系列的认证申请，认证资质以产品实物为准。

PWM 数字调光 | 无频闪 IEEE 1789 | 过压保护 | 短路保护 | 过载保护 | 过温保护

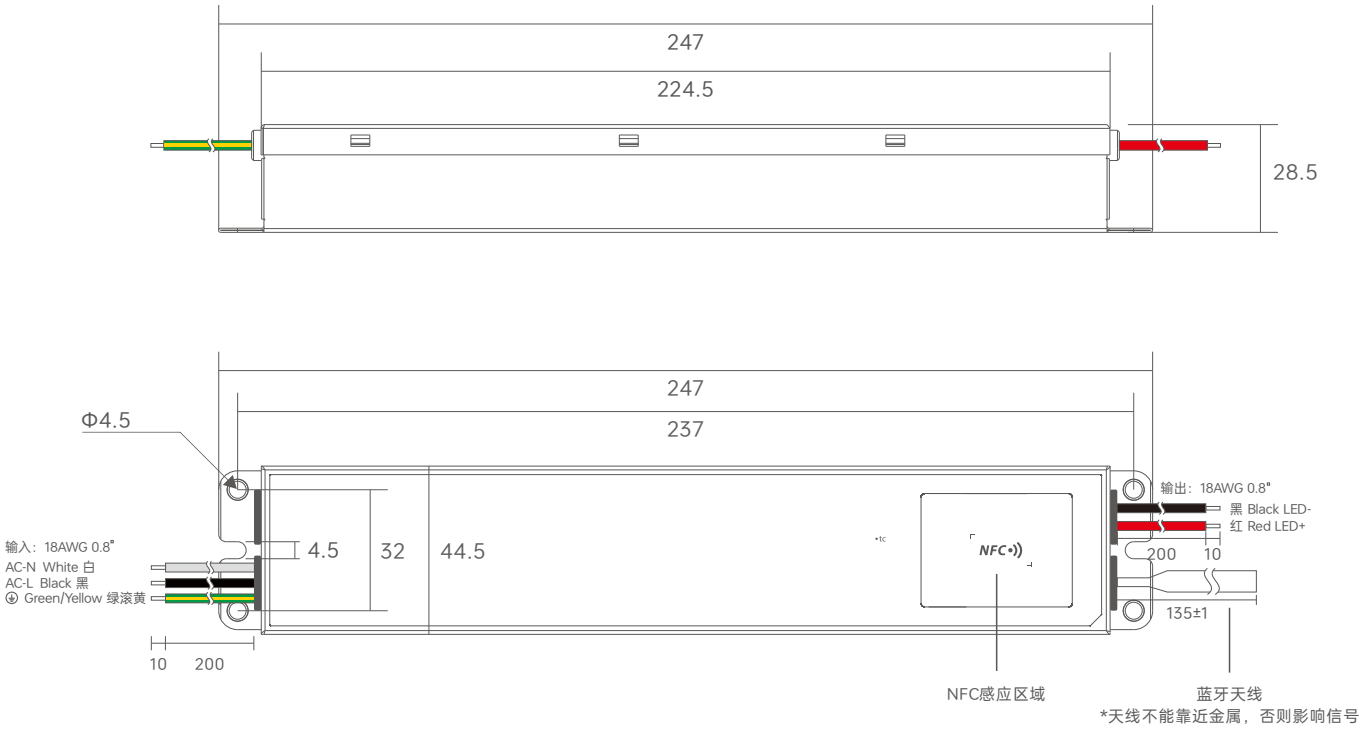
技术参数

型号		LA-60-24-U1B			LA-96-24-U1B
特征	输出类型	恒压			
	调光接口	Bluetooth 5.0 SIG Mesh			
	输出特征	隔离			
	防护等级	IP20			
	绝缘等级	I类(适用于室内I、II、III类灯具)			
输出	输出电压	24V⎓			
	输出电压范围	24V ± 0.5V⎓			
	输出电流	Max. 2.5A			Max. 4A
	输出功率	Max. 60W			Max. 96W
	输出功率范围	0-60W			0-96W
	频闪级别	高频豁免考核级别/IEEE1789			
	调光范围	0-100%，调光深度：0.0001%(通过手机APP NFC设置更多档位, 默认:0.01%)			
	过功率限制	≥102%			
	纹波与噪声	开关纹波≤120mV，噪声≤500mV			
	PWM调光频率	300-22000Hz			
输入	输入交流电压	100-277V~			
	输入直流电压	220-250V⎓			
	频率范围	0/50/60Hz			
	输入电流	Max. 0.75A/115V~, 0.32A/230V~, 0.29A/277V~(满载)			Max. 1.2A/115V~, 0.5A/230V~, 0.43A/277V~(满载)
	功率因数	PF>0.95/115V~, PF>0.95/230V~ , PF>0.85/277V~(满载)			PF>0.95/115V~, PF>0.95/230V~, PF>0.9/277V~(满载)
	总谐波失真THD	115V~@THD<10%, 230V~@THD<15%, 277V~@THD<25% (满载)			115V~@THD<10%, 230V~@THD<10%, 277V~@THD<15% (满载)
	空载功耗	< 3.5W@230V~			
	效率(Typ.)	84%/115V~, 90%/230V~, 90%/277V~			85%/115V~, 91%/230V~, 91%/277V~
	浪涌电流	冷启动，32A(在50%Ipeak下测试twidth=340us)/277V~			冷启动，41A(在50%Ipeak下测试twidth=340us)/277V~
	抗浪涌	L-N: 2KV，L,N-FG: 4KV			
	漏电流	Max. 0.5mA			
环境	工作温度	ta: -20 ~ 50°C tc: 75°C			
	工作湿度	20 ~ 95%RH, 无冷凝			
	储存温度/湿度	-40 ~ 80°C, 10~95%RH			
	温度系数	±0.03%/°C(-20 ~ 50°C)			
	耐振动	10-500HZ, 2G 12分钟/周期，X，Y，Z轴各72分钟			
保护	过温保护	根据PCB温度超标情况(≥110°C)，智能调节电流输出或关闭，可自动恢复			
	过载保护	负载电流≥102%, 关闭输出，可自动恢复			
	短路保护	输出线路短路进入打嗝模式，可自动恢复			
	过压保护	空载电压≥28V, 关闭输出，可自动恢复			
安规和电磁规格	耐压	输入对输出：3750V~/1min/ < 5mA, 输入对地(FG)：1500V~/1min/ < 5mA, 输出对地(FG)：500V~/1min/ < 5mA, 信号对地(FG)：500V~/1min/ < 5mA			
	绝缘阻抗	输入对输出：100MΩ/500V~/1min/25°C/70%RH			
	安全规范	UL	美国	UL8750，UL1310，Class P	
		CUL	加拿大	CSA C22.2 No.250.13	
		CE	欧盟	EN61347-1，EN61347-2-13，EN62384	
	电磁兼容发射	FCC	美国	FCC part15B	
		CE	欧盟	EN55015，EN61000-3-2，EN61000-3-3，EN61547	
	电磁兼容抗扰度	EN61000-4-2,3,4,5,6,8,11,EN61547			
	频闪测试	IEEE1789			
其他	产品重量	600g±10g			
	产品尺寸	247×44.5×28.5mm(L×W×H)			

本款驱动器适合连接电阻限流的LED灯具(如LED灯条)。如果连接内置恒流IC限流的灯具，会产生几十倍的瞬间浪涌电流，导致驱动器会执行过载保护(打嗝频闪)。下单时这类内置恒流IC限流的灯具需要注明(如MR16灯杯、地埋灯、洗墙灯、恒流硬灯条等)，以便烧写特殊程序。

尺寸图

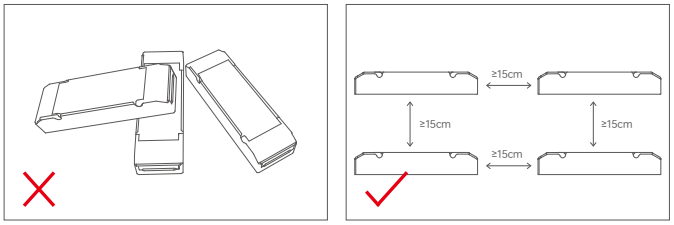
单位：mm



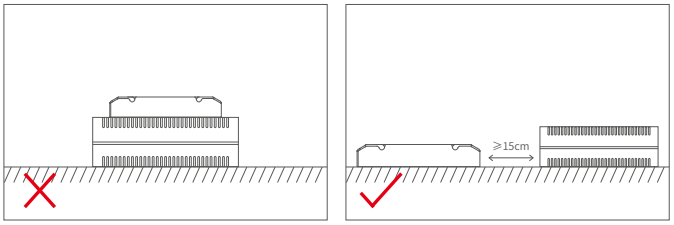
接线应用图

*通过手机APP入网控制

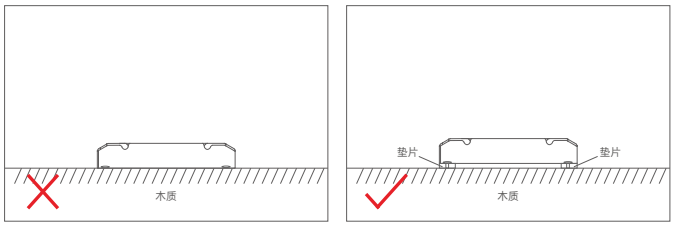
安装注意事项



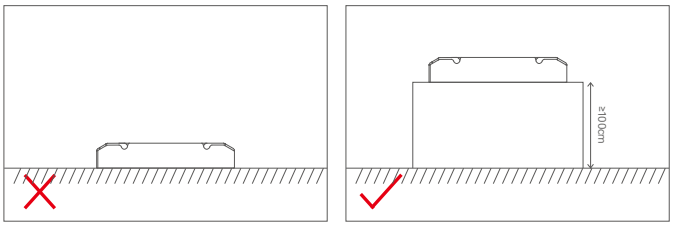
请勿将产品堆叠摆放，产品与产品间隔距离应≥15cm，避免影响产品散热和使用寿命。



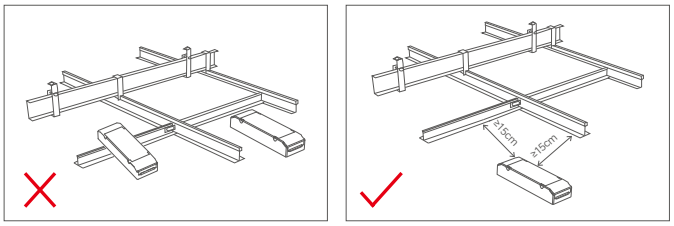
请勿将产品置于电源上方，产品与电源间隔距离应≥15cm，避免影响产品散热而减少使用寿命。



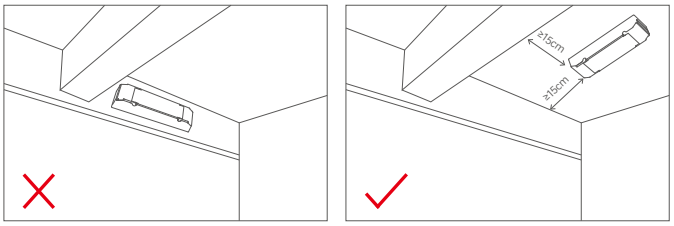
请勿将产品螺丝固定紧贴于木板，应在固定螺丝下增加≥7mm的垫片，留点空隙可以有效散热，避免影响产品散热和使用寿命。



请勿将产品放置在地面上。产品与地面之间的距离应≥100cm， 以免信号干扰影响使用。

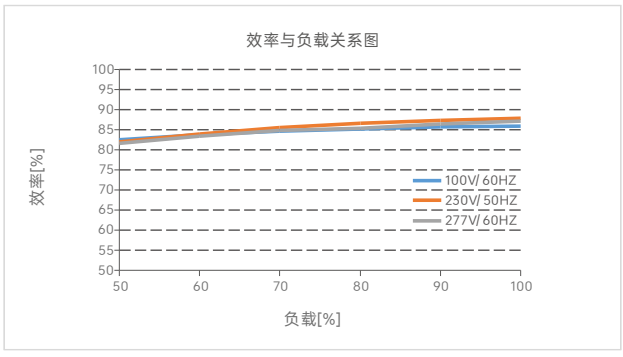


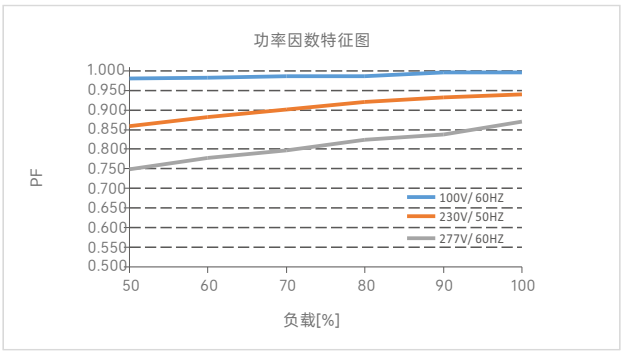
请勿将产品大面积接触金属物体(如：龙骨架)， 间隔距离应≥15cm， 以免信号干扰影响使用。

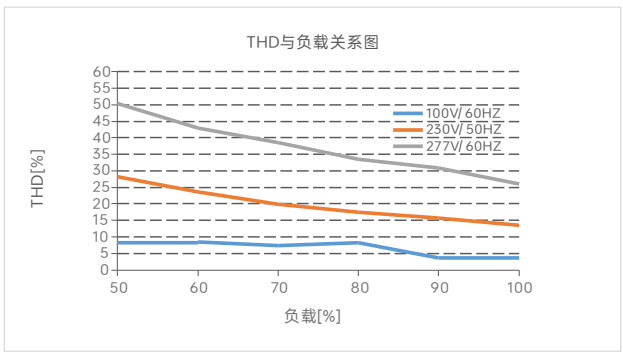


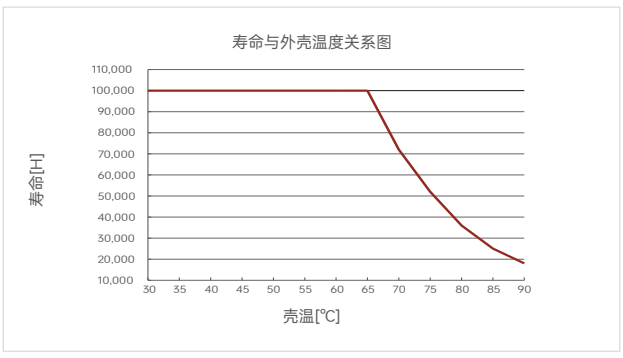
请勿将产品安装在横梁、墙角等位置， 间隔距离应≥15cm， 以免信号干扰影响使用。

关系图表

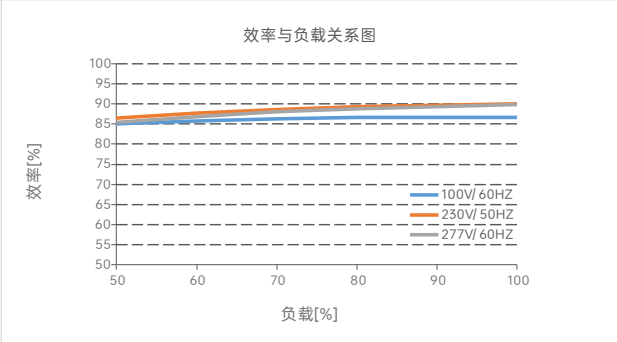


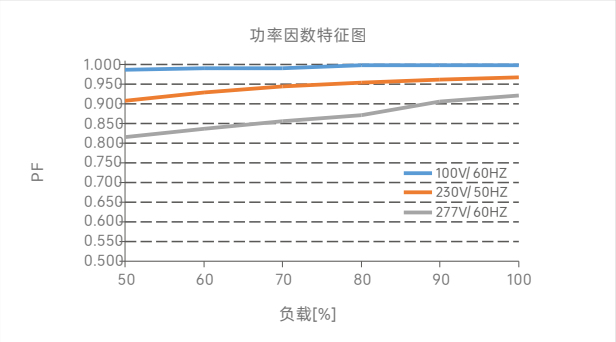


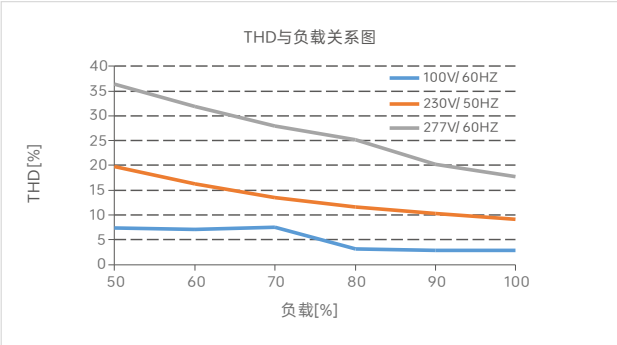


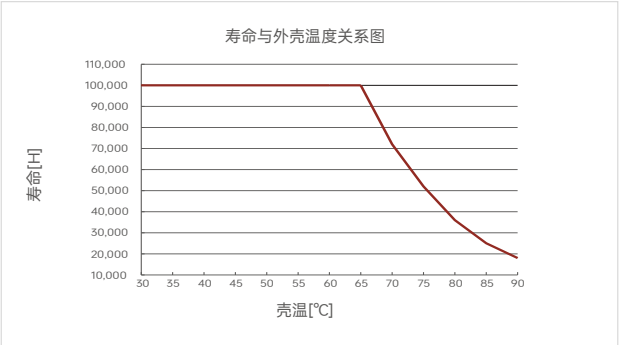


关系图表









LA-96-24-U1B

浪涌电流&对应的微型断路器(MCB)下挂载的数量对应表

微型断路器型号	B10	B13	B16	B20	B25	C10	C13	C16	C20	C25	D10	D13	D16	D20	D25
最大带载数量	20	26	32	40	50	23	30	37	47	58	27	34	42	53	66

备注：
1. 本数据测试条件：冷启动，32A(在50%Ipeak下测twidth=340us)@277V~(LA-60-24-U1B)；冷启动，41A(在50%Ipeak下测twidth=340us)@277V~(LA-96-24-U1B)
2. 对于不同品牌和型号的微型断路器，驱动器的数量会有所不同；
3. 现场安装时建议不要超过上述数量，具体负载量以现场安装为准；
4. 当微型断路器的安装环境温度超过30℃或多个微型断路器并排安装时，安装的驱动器数量将减少，这需要重新计算；
5. 电工通常考虑将B型MCB用于家用照明，将C型MCB用于商业照明；
6. 不同仪器设备测试出来的电流峰值和脉冲宽度有差异，请使用专业仪器设备测试；

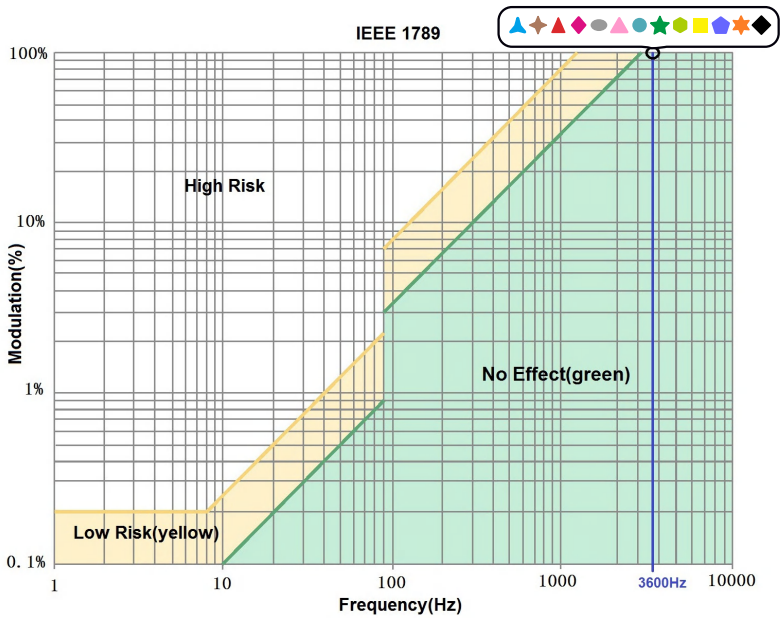
频闪测试表

IEEE 1789

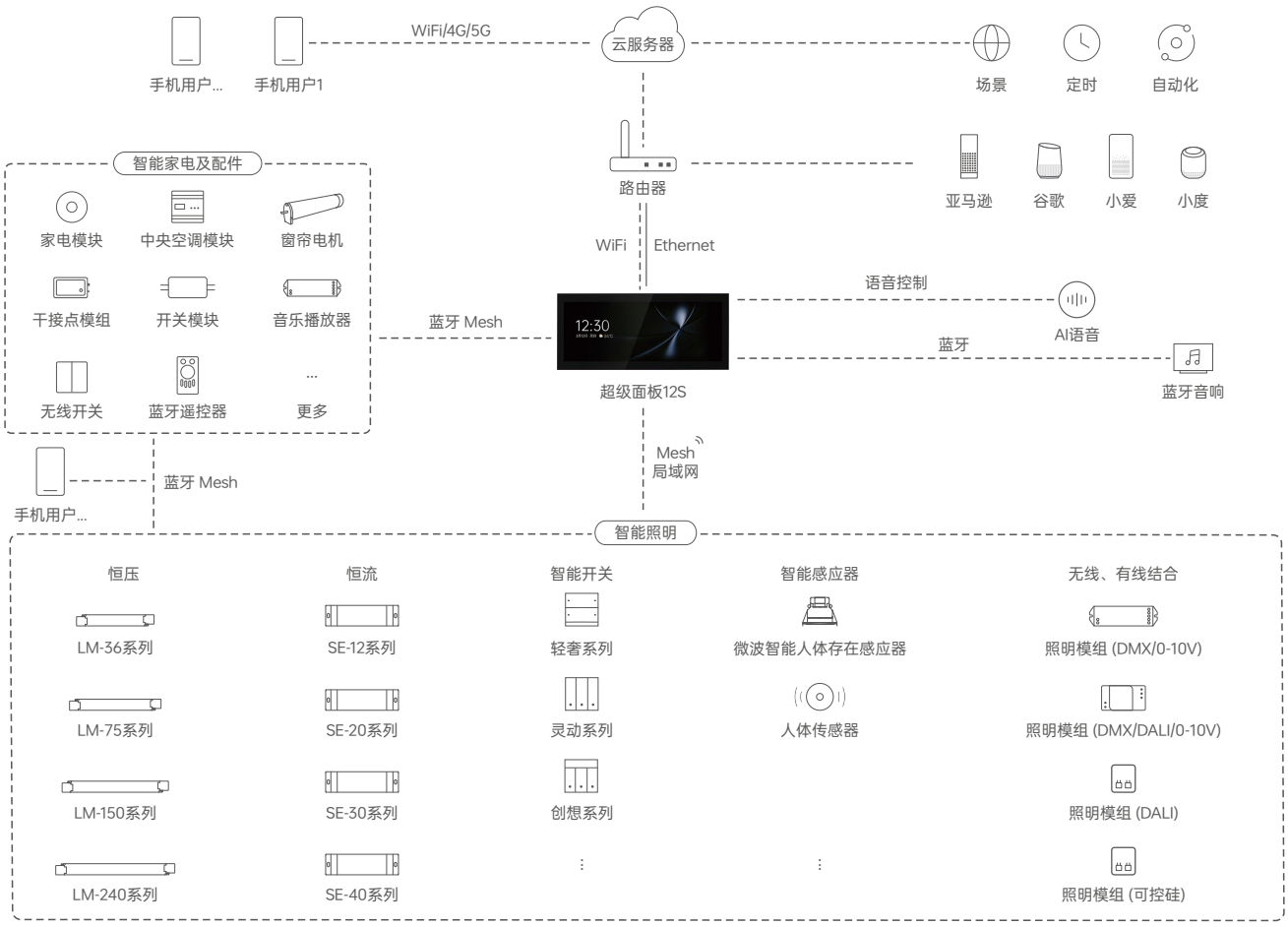
低风险区域（Low Risk）的波动深度（Modulation）限值	
光输出波形频率 *f*	限值（%）
f ⩽ 8Hz	0.2
8Hz < *f* ⩽ 90Hz	0.025 × *f*
90Hz < *f* ⩽ 1250Hz	0.08 × *f*
f > 1250Hz	免除考核
无风险区域（No Effect）的波动深度（Modulation）限值	
光输出波形频率 *f*	限值（%）
f ⩽ 10Hz	0.1
10Hz < *f* ⩽ 90Hz	0.01 × *f*
90Hz < *f* ⩽ 3125Hz	(0.08/2.5) × *f*
f > 3125Hz	免除考核（高频豁免）

亮度
0.1%
1%
5%
10%
20%
30%
40%
50%
60%
70%
80%
90%
100%

免除考核(高频豁免)

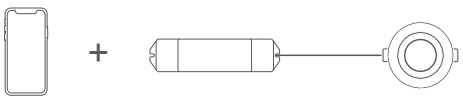


系统图

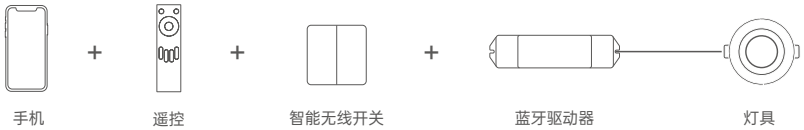


推荐应用控制方式

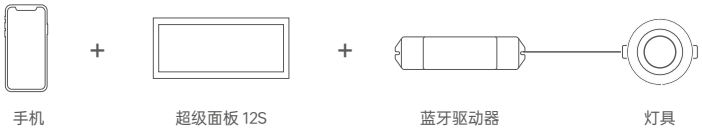
1、快速实现本地调光。



2、通过APP设置遥控关联驱动后，可实现APP与遥控两种控制方式控制驱动。



3、通过APP设置面板关联驱动，可实现APP与面板同时控制。并能够通过面板联网，可实现APP远程控制驱动，云场景，自动化联动功能。



4、.....智能控制，更多应用搭配等您来设置。

可搭配的设备清单

智能网关：是智能家庭控制中心，用于蓝牙设备和云端之间的互联互通，以及管理和控制场景和自动化，实现远程控制蓝牙驱动电源，开关面板等智能设备。


SP-GW-12S


SP-GW-6S


SP-GW-BLE


SP-GW-4S


G4 MAX

CG-KIT：可以把蓝牙驱动电源通过HomeKit接入 Apple Home，也可以通过Matter Bridge的方式接入所有支持标准Matter协议的IOT平台，包括Apple Home，Google Home， Amazon Alexa，Samsung Smart Things等。


CG-KIT

智能面板：可控制蓝牙驱动电源开/关，调光调色；支持本地场景等功能。


S1


S2


S3


S4


S6


S6-B


SQ


SQ-B


S1 PRO


S2 PRO


S3 PRO


S6 PRO


SQ PRO


G4


G4 PRO


S4M


S8M


EB1


EB2


EB5


EB6


EB8


UB1


UB2


UB4


UB5


UB8

遥控器：可控制蓝牙驱动电源开/关，调光调色；支持本地场景等功能。


GQ PRO


GQ MAX


GQ


GQX


B1


B2


B5

B8

R8

RC4-BLE

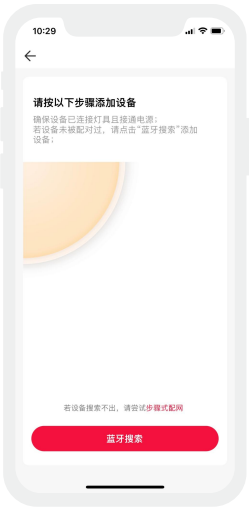
APP操作说明

1. 账号注册

APP兼容iOS和Android系统，通过手机扫描下方二维码，按提示完成APP安装,安装后即可进行登录/注册操作。

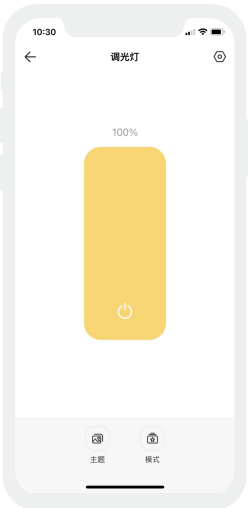
2. 配对操作

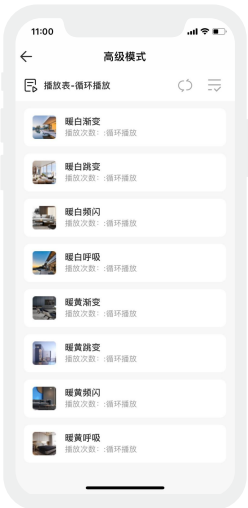
新用户创建家庭后，点击右上角“+”进入添加设备列表，选择“智能照明-调光灯”后，按照界面提示，先将设备接通电源，确保设备处于未入网状态。点击“蓝牙搜索”后，按照提示完成添加设备。



3. 控制界面设置

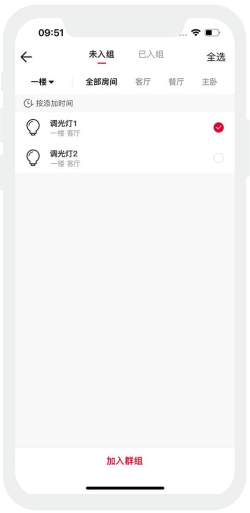
配对完成后，进入控制界面，可以通过调节亮度达到想要的灯光效果。点击“主题”，进入【主题】界面，可一键切换多种主题灯光效果。点击”模式”，具有可编辑的高级模式。自定义动态模式，让您的生活更加丰富多彩。

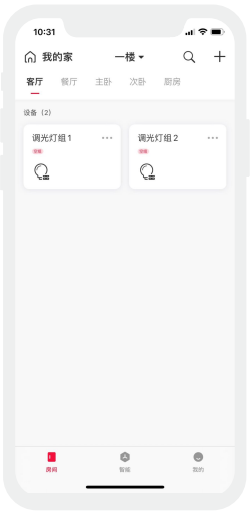




4. 灯具群组

同类型的灯具可以组成群组，用户可以对群组进行调光等操作，操作更便利。在添加设备列表中选择“群组—调光灯组”，按照界面提示编辑灯组名称后，点击“下一步”，勾选您要组成群组的设备，点击“加入群组”即可。



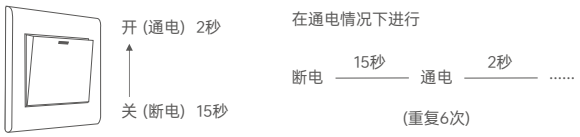


5. 高级功能

本产品可以通过与具有网关功能的设备联动，如超级面板12S。可实现本地场景、云场景、自动化等高级功能。

重置设备 (恢复出厂设置)

方法一：确保驱动已接灯具且处于常亮状态下，使用开关让驱动连续断通电6次（每次断电时间15秒，通电2秒），第六次通电2秒后，灯具闪烁3次，即表示驱动已恢复到出厂设置状态。



方法二：确保设备已接通电源且处于在线状态，打开L-Home APP，找到该设备并进入其设置界面，点击“删除设备”按钮。当界面提示“删除成功”时，即表示已恢复到出厂设置。

方法三：将设备断电，打开NFC Lighting APP，点击首页“读/写智能电源”后，在“编辑参数”页点击“恢复出厂设置”，界面弹出写入按钮，写入成功后，将设备重新上电，设备即恢复到出厂设置状态。

更多功能

星际技术

- 实现了免通电、免现场调试的创新突破。工作人员可以在前期提前部署智能家居方案，预设入网、分组、场景等，极大地缩短了工程周期，降低了工程成本。（使用L-Home APP通过NFC感应设置）

设备替换

- 当设备损坏、丢失或离线时，可以选择同型号设备进行替换。新设备将同步旧设备的配置，包括名称、群组、模式、场景、自动化等。

设备日志

- 记录设备的操作日志。

渐变时间

- 通电渐变时间：当设备通电时，灯光由灭到亮的渐变时间
- 开灯渐变时间：当打开灯具时，灯光由灭到亮的渐变时间
- 关灯渐变时间：当关闭灯具时，灯光由亮到灭的渐变时间
- 场景切换时间：场景切换中，灯光亮度，颜色的渐变时间

通电状态

- 当设备通电时，设备保持的状态（全亮/不亮/记忆/自定义）

调光深度

- 默认为万分之一，最高可实现百万分之一的调光深度。

亮度范围

- 自定义可调节的亮度范围。

常见问题

1. 设备添加失败怎么办？
1.1 确保设备正常通电，并且处于激活状态；
1.2 需要添加的设备未被其他账号添加过，如被添加过，请手动恢复出厂；
1.3 确保手机与设备两者尽量靠近，建议不超过20米；
1.4 如设备已被强制删除，请手动恢复出厂，然后重新添加设备。

2. 设备离线怎么办？
2.1 请检查设备是否正常通电；
2.2 请检查路由器是否工作正常，网络畅通；
2.3 如使用远程控制，请检查手机网络是否工作正常，网络畅通。

3. 如何远程控制/云场景设置？
如需远程控制/添加云场景设置，需搭配本司超级面板方可使用。

4. 如何共享设备？
请在“我的”—“家庭管理”，进入需要共享的家庭，点击“添加成员”，请按提示将需要设备共享的家人/朋友加入该家庭即完成共享。

5. 用于灯膜或同一个区域群组调光不一致？？
不同型号硬件之间会有差异，需要用同一型号群组调光以达到更好的调光一致性。

搭配 NFC Lighting APP 使用

通过手机扫描下方二维码， 按提示完成APP安装。

(因性能需求，要求手机型号苹果：iPhone 8及以上、且操作系统iOS13及以上； 安卓：具备NFC功能机型)

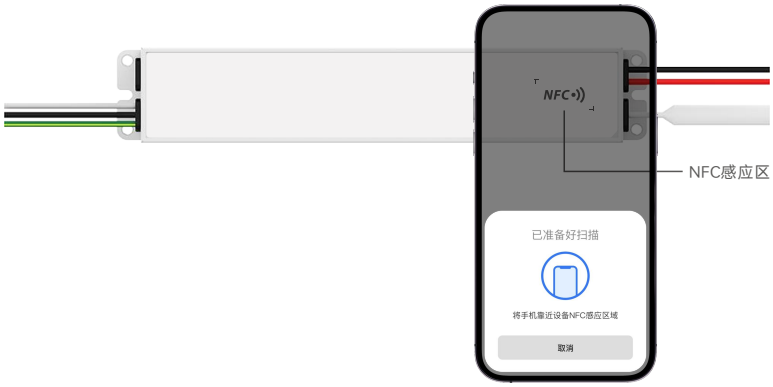
＊ 设置驱动器参数时，必须在驱动器断电情况下进行操作。

读/写智能电源

使用手机， 通过NFC读取驱动器信息， 根据需求设置参数后， 可直接写入驱动器。

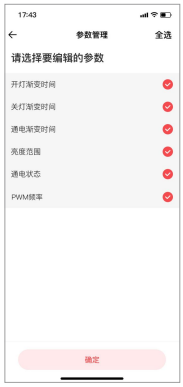
1. 读取驱动器

在APP “首页” 点击 【读/写智能电源】， 将手机感应区域靠近驱动器NFC感应区， 读取驱动器参数。



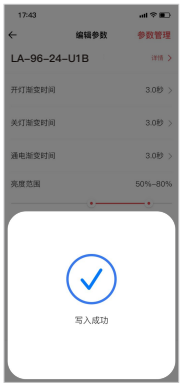
2. 编辑参数

点击【参数管理】可编辑开灯渐变时间、关灯渐变时间、通电渐变时间、通电状态、PWM频率等更多高级参数。



3. 写入驱动器

参数设置完成后， 点击【写入】， 将手机感应区域靠近驱动器NFC感应区， 即可写入驱动器成功修改参数。



包装规格

型号	LA-60-24-U1B/LA-96-24-U1B
包装盒尺寸	273×60×35mm（L×W×H）
包装箱尺寸	290×200×145mm（L×W×H）
数量	5个/层；2层/箱；10个/箱
重量	0.65kg/个；7kg±5%/箱

包装样式图

包装盒

整箱包装

运输和贮存

1.运输

产品适用车、船、飞机交通运输工具运输。

在运输中，应使用遮蓬进行防雨和防晒，并保持文明装卸，不应有剧烈振动、撞击等。

2.贮存

贮存符合 I 类环境的规定。贮存期限超过6个月的产品建议重新检验，合格后方可使用。

注意事项

- 请由具有专业资格的人员进行调试安装。
- 雷特产品（专有型号除外）不能防水，需避免日晒雨淋，如安装在户外，请用防水箱。
- 良好的散热条件会延长产品的使用寿命，请把产品安装在通风良好的环境。
- 请检查使用的工作电压是否符合产品的参数要求。
- 使用的电线直径大小必须能足够负载连接的LED灯具，并确保接线牢固。
- 通电调试前，应确保所有接线正确，以避免因接线错误而导致灯具损坏。
- 如果发生故障，请勿私自维修；如果有疑问，请联系供应商。

✻ 本说明书的内容如有变更，恕不另行通知。若内容与您使用的功能有所不同，则以实物为准。如有疑问，请与供应商联系。

保修条例

- 自出厂之日起保修服务期为5年。
- 在保修服务期内出现产品质量问题雷特科技将给予免费修理或更换服务。

非保修条例：

属下列情况不在免费保修或更换服务范围之内：

- 已经超出保修服务期；
- 过高电压、超负载、操作不当等人为造成的损坏；
- 产品外形严重损坏或变形；
- 自然灾害以及人力不可抗拒原因造成的损坏；
- 产品保修标签和产品唯一条形码损坏；
- 无雷特科技签订的合同或发票凭证。

1. 修理或更换是雷特科技对客户的唯一补救措施。雷特科技不承担任何附带引起的损害赔偿责任，除非在适用法律范围之内。

2. 雷特科技享有修正或调整本保修条款的权利，并以书面形式发布为准。

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