LTSYS

LA-10-100-450-U1L
LA-20-100-700-U1L

Triac/ELV
0-10V

Intelligent LED Driver(Constant Current)

- Metal casing for easy heat dissipation.
- Compact size, easy to install and hide.
- Wide voltage input: 100-277V~.
- Power parameters can be modified via mobile APP using NFC, enabling driver data interaction function.
- Supports leading-edge (Triac) and trailing-edge (ELV) dimming, as well as 0-10V/1-10V/10V PWM/RX dimming. It has strong compatibility and is compatible with various American-standard dimmers such as Lutron and Legrand.
- Dimming range: 0~100%, and the LED can start dimming from 0.01%.
- Soft-on and fade-in dimming function enhances your visual comfort.
- The dimming interface is equipped with photoelectric isolation, complies with the latest safety standards, and is more safe and reliable.
- When the signal is floating, it outputs at full load and can be used as a power supply.
- Innovative thermal management technology intelligently protects the service life of the LED driver.
- Overheat, over voltage, overload, short circuit protection and automatic recovery.
- IP20, suitable for indoor LED lighting fixtures.
- Complies with Type HL, and can be used in North American Class 1, Division 2 environments, such as gas stations, chemical plants, sewage treatment plants, etc.
- Normal service life can reach 100,000 hours.
- Certified to UL Class 2 and Class P.
- Complies with IEEE 1789 and UL 8750 standards.
- 5-year warranty.

* Not for sale or use in China.

6-in-1 Dimming
Triac
ELV
0-10V
1-10V
10V PWM
RX

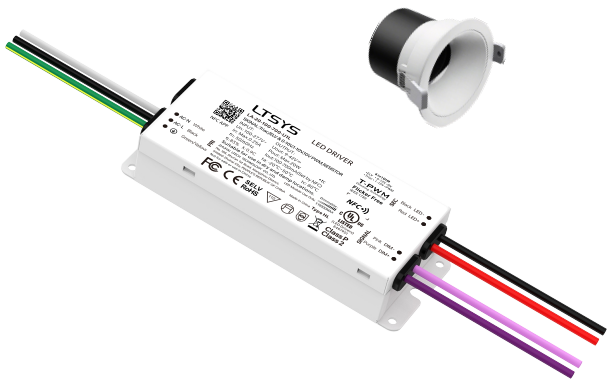
DIM

T-PWM
Dimming Technology

Flicker Free
IEEE1789

Dimmable:
1:10000MAX

NFC



c UL us LISTED (LED Drivers) E497951

Class 2 Class P Type HL SELV RoHS

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

0-10V | Triac/ELV | T-PWM Dimming Technology | Flicker Free IEEE 1789 | NFC Multi current setting | Over voltage protection | Short circuit protection | Over Load protection | Overheat Protection

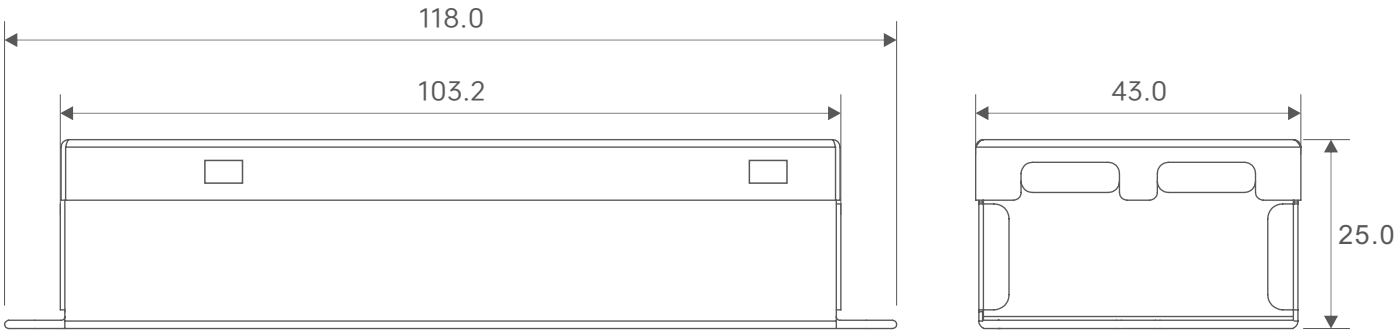
Technical Specs

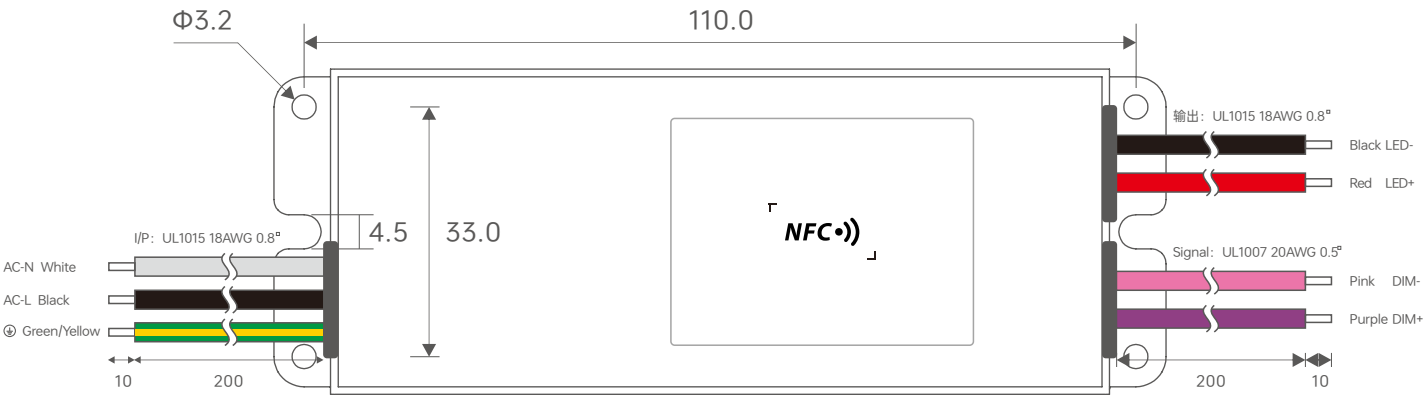
Model		LA-10-100-450-U1L			LA-20-100-700-U1L
Features	Output Type	Constant current			
	Dimming Interface	Triac/ELV,0-10V(1-10V,10V PWM,RX)			
	Output Feature	Isolation			
	Protection Grade	IP20			
	Insulation Grade	Class II (Suitable for class I/ II /III light fixtures)			
OUTPUT	Output Voltage	9-42V⎓			
	Maximum Output Voltage	≤50V⎓			
	Output Current Range	100-450mA(Set higher current via mobile APP NFC; step value down to 1mA; Default: 100mA)			100-700mA(Set higher current via mobile APP NFC; step value down to 1mA; Default: 100mA)
	Output Power Range	0.9-10W			0.9-20W
	Dimming Range	0-100%, down to 0.01%			
	LF Current Ripple	< 5% ((Maximum current for non dimming state)			
	Current Accuracy	±5%			
	PWM Frequency	≤3600Hz			
INPUT	AC Voltage Range	100-277V~			
	Rated Voltage	115V~/230V~/277V~			
	Frequency	50/60Hz			
	Input Current	Max. 0.13A/115V~, Max.0.07A/230V~, Max. 0.06A/277V~(at full load)			Max. 0.24A/115V~, Max.0.13A/230V~, Max. 0.11A/277V~(at full load)
	Power Factor	PF≥0.95/115V~, PF≥0.9/230V~, PF≥0.85/277V~(at full load)			PF≥0.95/115V~, PF≥0.9/230V~, PF≥0.9/277V~(at full load)
	THD	115V~@THD≤20%, 230V~@THD≤25%, 277V~@THD≤30% (at full load)			115V~@THD≤10%, 230V~@THD≤15%, 277V~@THD≤20% (at full load)
	Efficiency (Typ.)	76%(at full load)			83%(at full load)
	Inrush Current	Cold start 15A(Test twidth=152us tested under 50% Ipeak)/230V~			
	Anti Surge	L-N:2KV			
	Leakage Current	Max.0.5mA			
ENVIRONMENT	Working Temperature	ta: -20°C ~ 50°C tc: 75°C			ta: -20°C ~ 50°C tc: 80°C
	Working Humidity	20~95%RH, non-condensing			
	Storage Temperature/Humidity	-40~80°C/10~95%RH			
	Temperature Coefficient	±0.03%/°C(-20°C~50°C)			
	Vibration	10-500Hz, 2G 12min/1cycle, 72 min for X, Y and Z axes respectively			
PROTECTION	Overload Protection	Automatically protect the device when the load exceeds 102% of the rated power. Automatically recover once load is reduced			
	Overheat Protection	Intelligently adjust or turn or the current output if the PCB temperature ≥110°C. When the PCB temperature <90°C, automatically recover normal output			
	Overvoltage Protection	Automatically protect the device when voltage exceeds the no-load voltage. It can be recovered automatically			
	Short Circuit Protection	Enter hiccup mode if short circuit occurs, and recover automatically			
SAFETY & EMC	Withstand Voltage	I/P-O/P:3750V~/1min/ < 5mA, I/P-FG:1750V~/1min/ < 5mA,O/P-FG:500V~/1min/ < 5mA, Signal-FG: 500V~/1min/ < 5mA. ①			
	Insulation Resistance	I/P-O/P: 100MΩ/500V~/1min/25°C/70%RH			
	Safety Standards	CE	European Union	EN61347-1，EN61347-2-13，EN62384	
		UL	America	UL8750，UL1310，Class P	
		CUL	Canada	CSAC22.2 No.250.13	
	EMC Emission	FCC	America	FCC part15B	
		CE	European Union	EN55015，ENIEC61000-3-2，EN61000-3-3，EN61547	
	EMC Immunity	EN61000-4-2,3,4,5,6,8,11,EN61547			
ErP	Flicker/Stroboscopic Effect	IEEE1789	Meet IEEE 1789 standard/High frequency exemption level		
		CIESVM	PstLM≤1.0，SVM≤0.4		
	DF	Phase factor	DF≥0.9		
OTHERS	Weight(N.W.)	275g±10g			
	Dimensions	118×43×25mm(L×W×H)			

①Note: During the I/P-FG withstand voltage test, the gas discharge tube located on the input terminal cover of the driver must be temporarily removed to prevent the functional activation of the gas discharge tube inside the driver (see IEC 60598-1-10.2). After the test is completed, the gas discharge tube must be reinstalled to restore the surge protection function of the power line to ground and ensure reliable contact.

Product Size

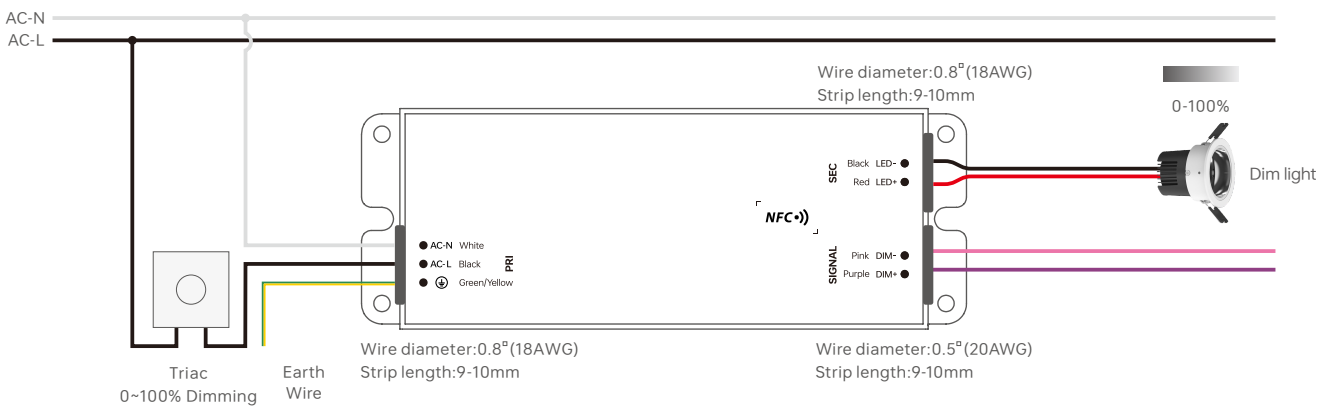
Unit:mm





Wiring Application Diagram

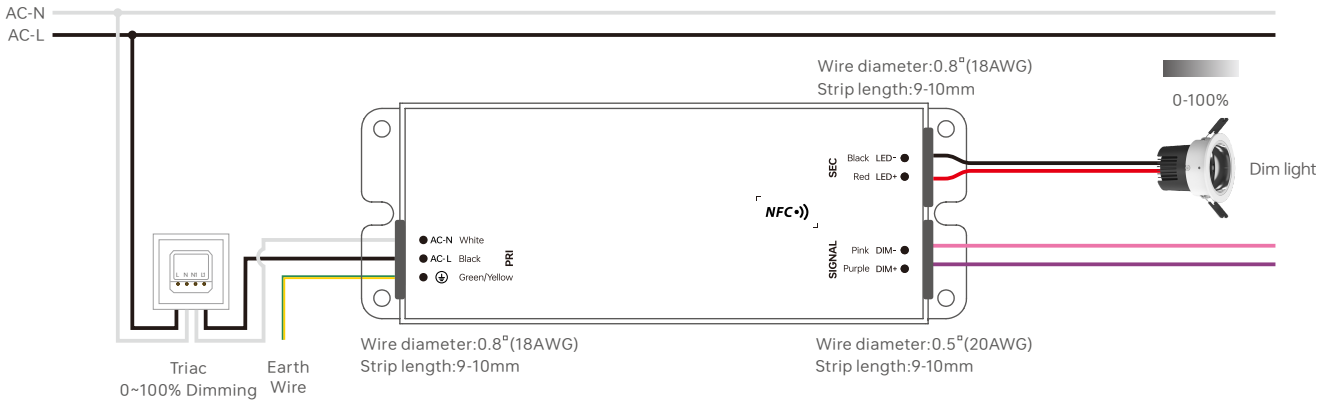
Triac Connection Method



* When using TRIAC dimming, the 0-10V signal must not be short-circuited or grounded; otherwise, the dimming function will be affected.

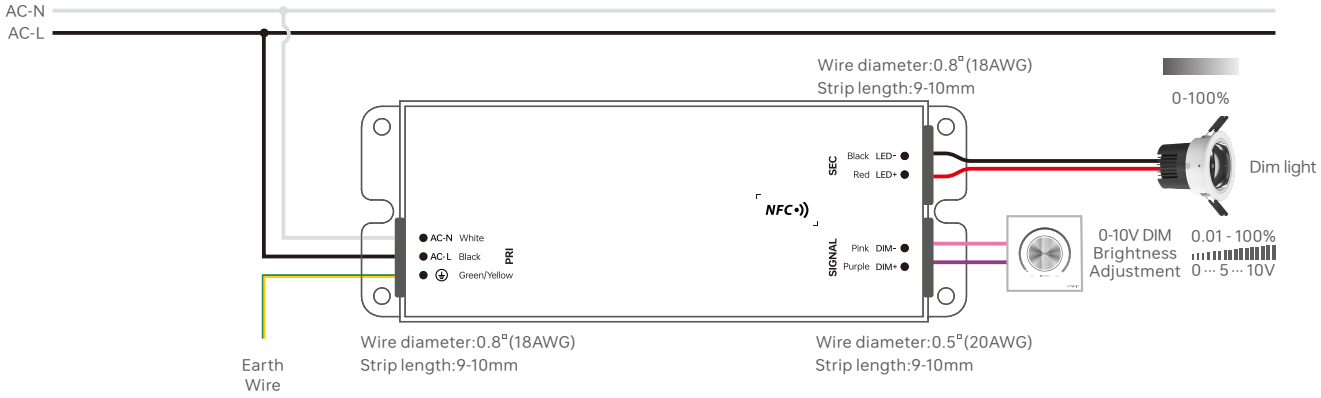
* The 0-10V dimmer and the TRIAC dimmer must not be connected simultaneously.

ELV Connection Method



* When using TRIAC dimming, the 0-10V signal must not be short-circuited or grounded; otherwise, the dimming function will be affected.
* The 0-10V dimmer and the TRIAC dimmer must not be connected simultaneously.

0-10V Connection Method



* The 0-10V dimmer and the TRIAC dimmer must not be connected simultaneously.
* In the same 0-10V dimmer circuit, it is recommended to use only products of the same specification and model to achieve better consistent dimming performance.

Typical Current Corresponding Parameter Table

Model	The typical 8 current data sets below are for reference when selecting LED fixture models. More current levels can be set by NFC using mobile APP with 100-450mA adjustable in 1mA step							
LA-10-100-450-U1L	Output Current	100mA	150mA	200mA	250mA	300mA	350mA	400mA	450mA
	Output Voltage	9-42Vdc	9-42Vdc	9-42Vdc	9-40Vdc	9-33Vdc	9-28.5Vdc	9-25Vdc	9-22Vdc
	Output Power	0.9-4.2W	1.35-6.3W	1.8-8.4W	2.25-10W	2.7-9.9W	3.15-9.975W	3.6-10W	4.05-9.9W

Model	The typical 13 current data sets below are for reference when selecting LED fixture models. More current levels can be set by NFC using mobile APP with 100-700mA adjustable in 1mA step							
LA-20-100-700-U1L	Output Current	100mA	150mA	200mA	250mA	300mA	350mA	400mA	450mA
	Output Voltage	9-42Vdc	9-42Vdc	9-42Vdc	9-42Vdc	9-42Vdc	9-42Vdc	9-42Vdc	9-42Vdc
	Output Power	0.9-4.2W	1.35-6.3W	1.8-8.4W	2.25-10.5W	2.7-12.6W	3.15-14.7W	3.6-16.8W	4.05-18.9W
	Output Current	500mA	550mA	600mA	650mA	700mA	/		
	Output Voltage	9-40Vdc	9-37Vdc	9-34Vdc	9-31Vdc	9-29Vdc			
	Output Power	4.5-20W	4.5-20.35W	4.5-20.4W	4.5-20.15W	4.5-19.95W			

Recommended TRIAC-Compatible Dimmers

Manufacturer	Lutron	Lutron	Lutron	Lutron	MAXXIMA	Legrand	Legrand
Model	DNG-600P	MACL-153M	DVCL-253P	SCL-153P-WH	DM620	WSCL450W	LS600

* The above list contains recommended dimmers for TRIAC testing. For TRIAC dimmers not included in the recommended list, they can only be used after actual testing confirms no abnormalities; there are no compatibility issues with 0-10V dimmers.

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).

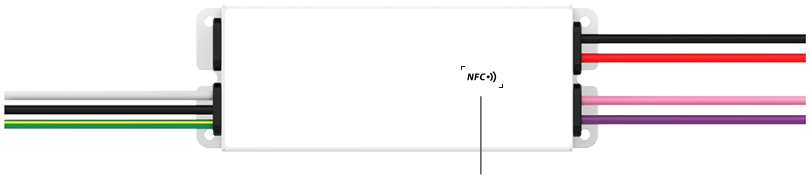
∗ Before you begin setting the parameters of the driver, please make sure the driver is powered off .

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.

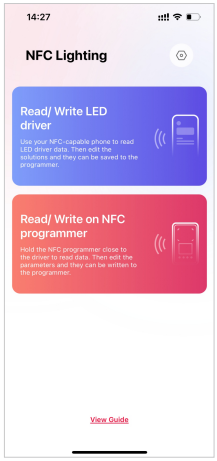


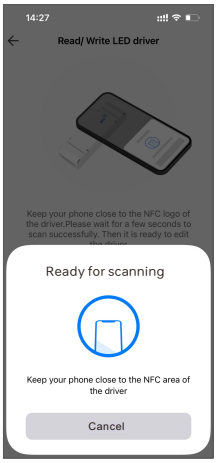
2.Edit the parameters

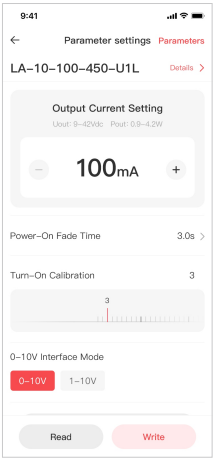
Click【Parameter settings】to edit more advanced parameters such as output current, power-on fade time, turn-on calibration, and 0-10V interface mode.

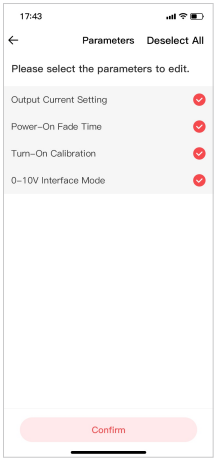
3.Write to the driver

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.

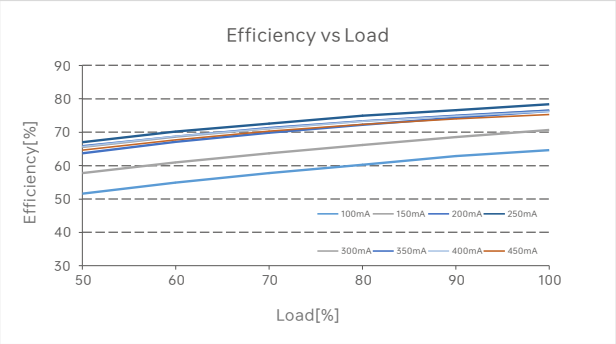


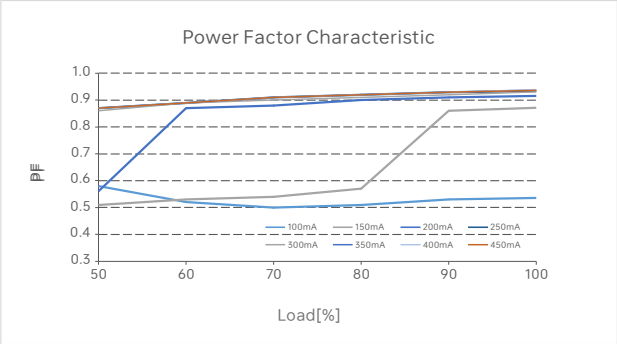


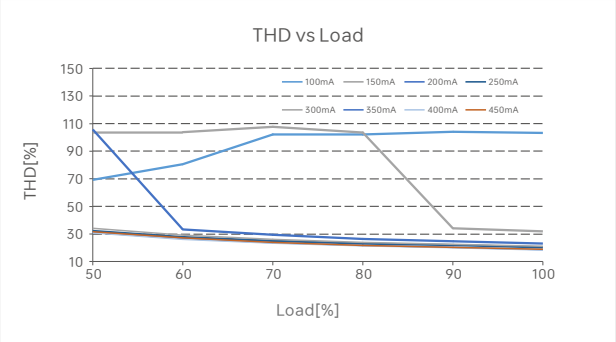


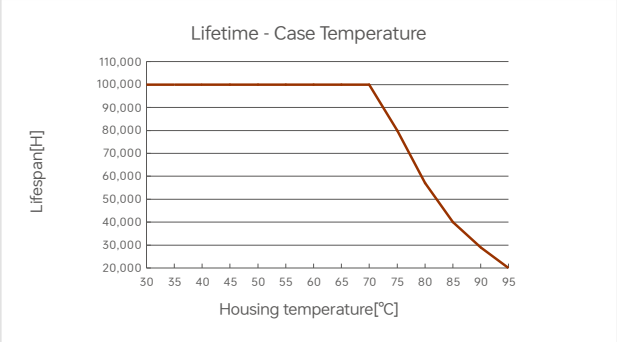


Relationship Diagrams

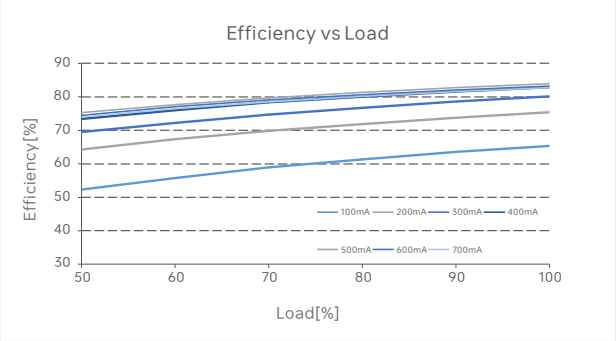


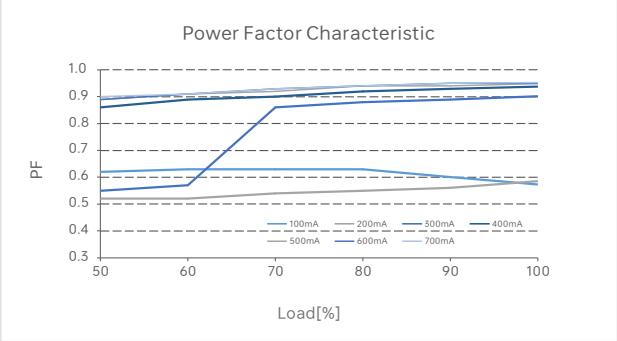


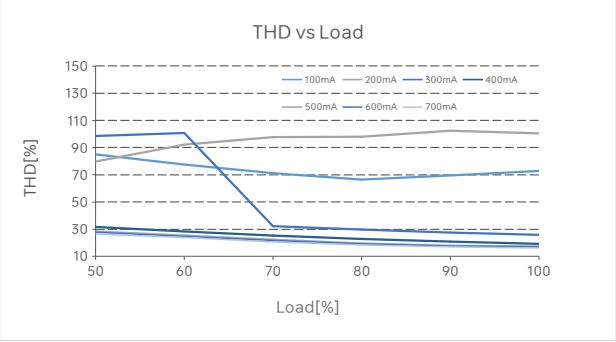


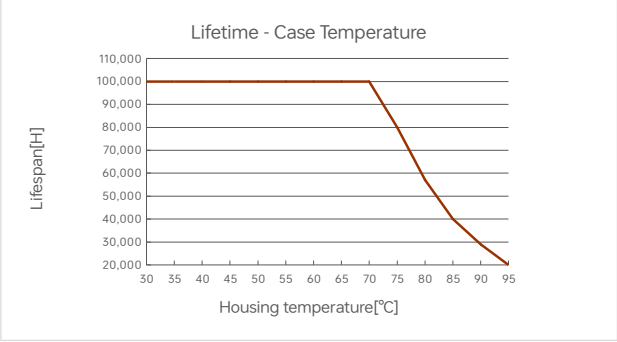


LA-10-100-450-U1L









LA-20-100-700-U1L

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

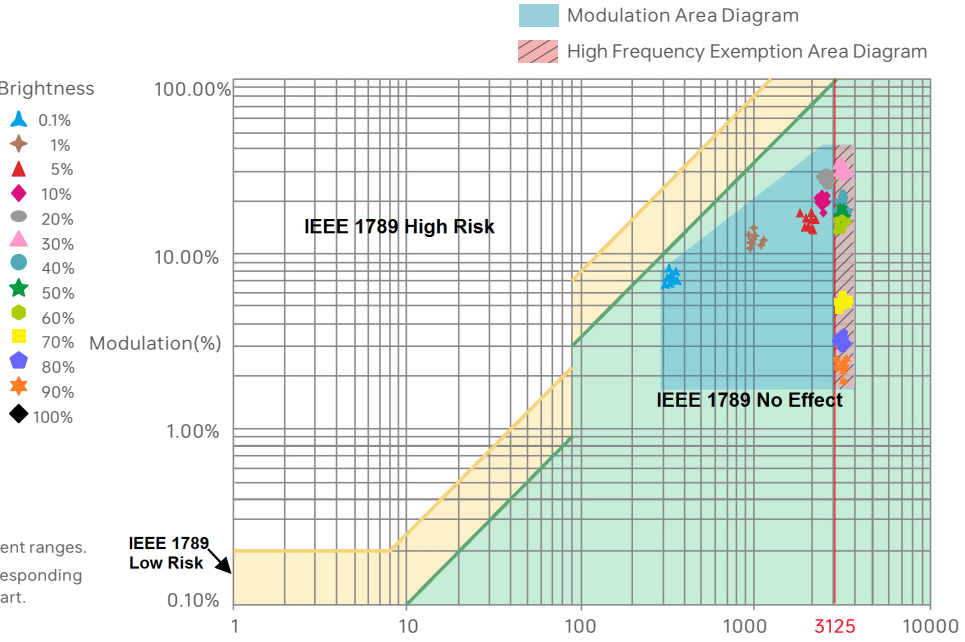
Remarks:

1. Test Conditions: Cold start 15A(Test twidth=152us tested under 50% Ipeak)/230V~
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 Sheet

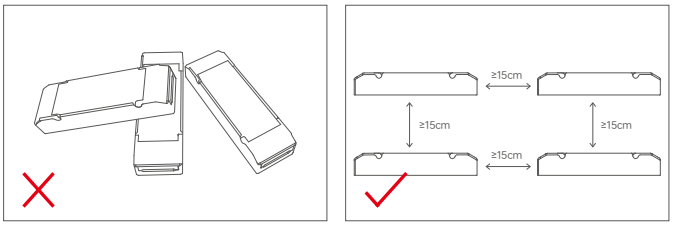
IEEE 1789

Limit of modulation in low risk area	
Waveform frequency of optical output	limit (%)
$f \leq 8Hz$	0.2
$8Hz < f \leq 90Hz$	$0.025 \times f$
$90Hz < f \leq 1250Hz$	$0.08 \times f$
$f > 1250Hz$	Exemption assessment
Limit of modulation in no effect area	
Waveform frequency of optical output	limit (%)
$f \leq 10Hz$	0.1
$10Hz < f \leq 90Hz$	$0.01 \times f$
$90Hz < f \leq 3125Hz$	$(0.08/2.5) \times f$
$f > 3125Hz$	Exemption assessment (High frequency exemption)

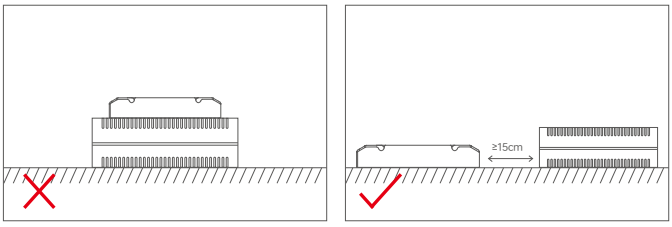


Marks in the right chart were tested results of different current ranges.
The output frequeny is 0Hz in 100% brightness and its corresponding modulation is 0%, which could not be shown in the right chart.

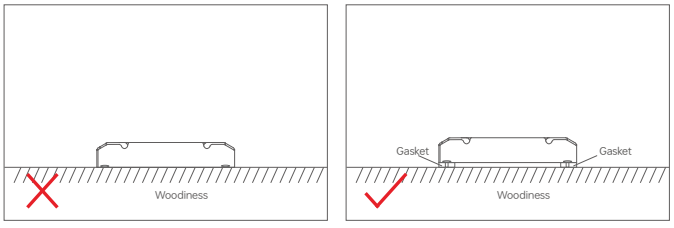
Installation Precautions



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.

Packaging Specifications

Model	LA-10-100-450-U1L、LA-20-100-700-U1L
Packaging Box Dimensions	152×60×35mm（L×W×H）

Packaging Image

Inner Packaging Box

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

- Products shall be installed by qualified professionals.
- 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.

LED智能调光驱动器(恒流型)

- 金属外壳，易于散热快;
- 体积小巧，易于安装隐藏;
- 超宽电压输入100-277V~;
- 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;
- 支持前沿(Triac)，后沿(ELV)调光，支持0-10V / 1-10V / 10V PWM / RX调光，兼容性强，可兼容路创、罗格朗等多种美规调光器;
- 调光范围0-100%, LED从0.01%开始调光;
- 带软启动渐亮功能，让人眼视觉更舒服;
- 调光接口具备光电隔离，符合最新的安规标准，更安全可靠;
- 信号悬空时，满载输出，可作为电源使用;
- 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;
- IP20，适用于室内LED灯具;
- 符合 Type HL，可用于北美Class 1，Division 2的场合，如加油站，化工厂，污水处理厂等;
- 常规使用下寿命可达10万小时;
- 通过了UL Class 2，Class P认证;
- 符合IEEE1789、UL8750标准;
- 5年保修期;

* 本产品禁止在中国境内销售使用。

6合1调光
Triac
ELV
0-10V
1-10V
10V PWM
RX

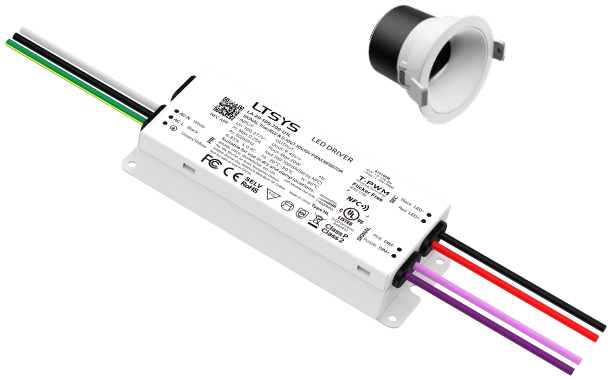
调光

T-PWM
超深度调光技术

无频闪
IEEE1789
高频豁免考核级别

Dimmable:
1:10000MAX

NFC



c UL us LISTED (LED Drivers) E497951 FC CE Class 2 Class P Type HL SELV RoHS

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。

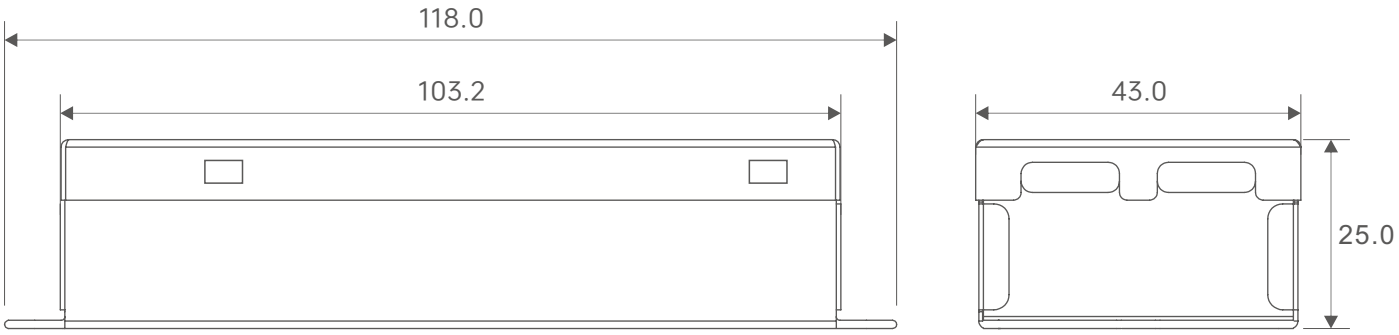
技术参数

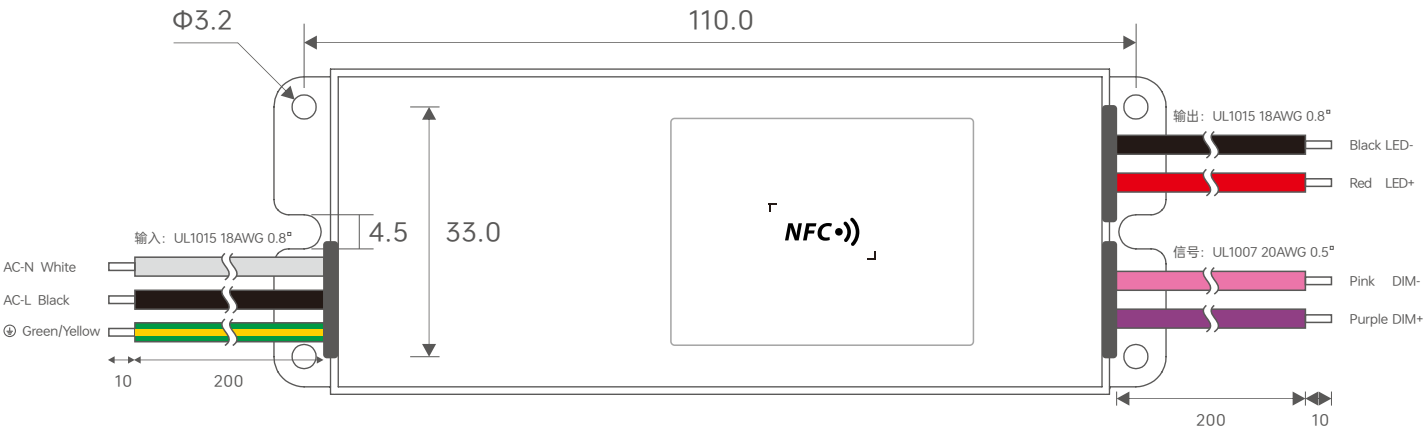
型号		LA-10-100-450-U1L			LA-20-100-700-U1L
特征	输出类型	恒流			
	调光接口	Triac/ELV,0-10V(1-10V,10V PWM,RX)			
	输出特征	隔离			
	防护等级	IP20			
	绝缘等级	II类(适用于室内I、II、III类灯具)			
输出	输出电压	9-42V⎓			
	最大输出电压	≤50V⎓			
	工作电流范围	100-450mA(通过手机APP NFC设置更多电流, 步进值低至1mA; 默认:100mA)			100-700mA(通过手机APP NFC设置更多电流, 步进值低至1mA; 默认:100mA)
	负载功率范围	0.9W-10W			0.9W-20W
	调光范围	0-100%，调光深度: Max. 0.01%			
	电流纹波	< 5% (非调光状态)			
	电流精度	±5%			
	PWM调光频率	≤3600Hz			
输入	交流电压范围	100-277V~			
	额定电压	115V~/230V~/277V~			
	频率范围	50/60Hz			
	输入电流	Max. 0.13A/115V~，Max.0.07A/230V~，Max. 0.06A/277V~(满载)			Max. 0.24A/115V~，Max.0.13A/230V~，Max. 0.11A/277V~(满载)
	功率因数	PF≥0.95/115V~，PF≥0.9/230V~，PF≥0.85/277V~(满载)			PF≥0.95/115V~，PF≥0.9/230V~，PF≥0.9/277V~(满载)
	谐波THD	115V~@THD≤20%，230V~@THD≤25%，277V~@THD≤30% (满载)			115V~@THD≤10%，230V~@THD≤15%，277V~@THD≤20% (满载)
	效率(Typ.)	76%(满载)			83%(满载)
	浪涌电流	冷启动，15A(在50%Ipeak下测twidth=152us)@230Vac			
	抗浪涌	L-N:2KV			
	漏电流	Max.0.5mA			
环境	工作温度	ta: -20°C ~ 50°C tc: 75°C			ta: -20°C ~ 50°C tc: 80°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°C~50°C)			
	耐振动	10-500HZ，2G 12分钟/周期，X, Y, Z轴各72分钟			
保护	过载保护	负载超过额定功率≥1.02倍时自动保护，减轻负载自动恢复			
	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；PCB温度 < 90°C时，可自动恢复正常输出			
	过压保护	超过空载电压值进入保护，可自行恢复			
	短路保护	输出线路短路进入打嗝模式，可自动恢复			
安规和电磁规格	耐压	输入对输出：3750V~/1 min / < 5mA，输入对地(FG)：1750V~/1 min / < 5mA，输出对地(FG)：500V~/1 min / < 5mA ①			
	绝缘阻抗	输入对输出：100MΩ/500V~/1 min /25°C/70%RH			
	安全规范	CE	欧盟	EN61347-1，EN61347-2-13，EN62384	
		UL	美国	UL8750，UL1310，Class P	
		CUL	加拿大	CSAC22.2 No.250.13	
	电磁兼容发射	FCC	美国	FCC part15	
		CE	欧盟	EN55015，ENIEC61000-3-2，EN61000-3-3，EN61547	
	电磁兼容抗扰度	EN61000-4-2,3,4,5,6,8,11,EN61547			
ErP	频闪/频闪效应	IEEE1789		满足无影响/高频豁免考核级别	
		CIESVM		PstLM≤1.0，SVM≤0.4	
	DF	相位因素		DF≥0.9	
其他	产品重量	275g±10g			
	产品尺寸	118×43×25mm(L×W×H)			

①备注:当输入对地(FG)进行耐压测试时，位于驱动器输入端的气体放电管需要被临时性地移除，以防止驱动器内部的气体放电管功能性动作(参见 IEC 60598-1-10.2)。待测试完成后，必须被重新安装以恢复电力线对地的浪涌保护功能，并且确保可靠性接触。

尺寸图

单位：mm





接线应用图

Triac 连接方式

* 使用可控硅调光时，0-10V信号不能短路或接地，否则影响调光
* 0-10V调光器与可控硅调光器不可同时接入

ELV 连接方式

* 使用可控硅调光时，0-10V信号不能短路或接地，否则影响调光
* 0-10V调光器与可控硅调光器不可同时接入

0-10V 连接方式

* 0-10V调光器与可控硅调光器不可同时接入；
* 在同一个0-10V调光器回路，建议只使用同一个规格型号的产品，以达到更佳的一致性调光效果。

典型电流对应参数表

型号	典型8组电流数据供选型参考，均可通过手机APP NFC设置更多电流，可设置范围在100-450mA，电流步进值低至1mA							
LA-10-100-450-U1L	输出电流	100mA	150mA	200mA	250mA	300mA	350mA	400mA	450mA
	输出电压	9-42Vdc	9-42Vdc	9-42Vdc	9-40Vdc	9-33Vdc	9-28.5Vdc	9-25Vdc	9-22Vdc
	输出功率	0.9-4.2W	1.35-6.3W	1.8-8.4W	2.25-10W	2.7-9.9W	3.15-9.975W	3.6-10W	4.05-9.9W

型号	典型13组电流数据供选型参考，均可通过手机APP NFC设置更多电流，可设置范围在100-700mA，电流步进值低至1mA							
LA-20-100-700-U1L	输出电流	100mA	150mA	200mA	250mA	300mA	350mA	400mA	450mA
	输出电压	9-42Vdc	9-42Vdc	9-42Vdc	9-42Vdc	9-42Vdc	9-42Vdc	9-42Vdc	9-42Vdc
	输出功率	0.9-4.2W	1.35-6.3W	1.8-8.4W	2.25-10.5W	2.7-12.6W	3.15-14.7W	3.6-16.8W	4.05-18.9W
	输出电流	500mA	550mA	600mA	650mA	700mA	/		
	输出电压	9-40Vdc	9-37Vdc	9-34Vdc	9-31Vdc	9-29Vdc			
	输出功率	4.5-20W	4.5-20.35W	4.5-20.4W	4.5-20.15W	4.5-19.95W			

可控硅适配调光器推荐

制造商	路创	路创	路创	路创	MAXXIMA	罗格朗	罗格朗
型号	DNG-600P	MACL-153M	DVCL-253P	SCL-153P-WH	DM620	WSCL450W	LS600

* 以上清单为可控硅测试推荐调光器，未推荐的可控硅调光器需根据实际测试确认无异常后使用；0-10V无兼容性问题。

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

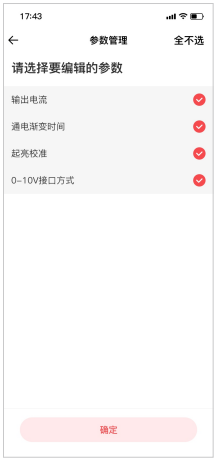
在APP“首页”点击 【读/写智能电源】， 将手机感应区域靠近驱动器NFC感应区， 读取驱动器参数。

2. 编辑参数

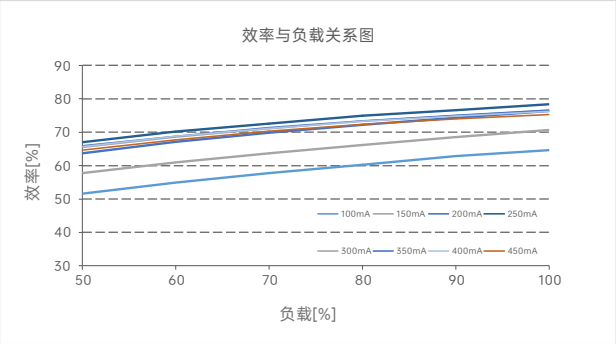
点击【参数管理】可编辑输出电流、通电渐变时间、起亮校准、0-10V接口方式等更多高级参数。

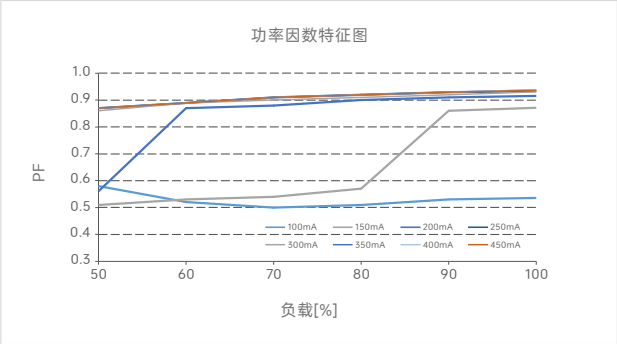
3. 写入驱动器

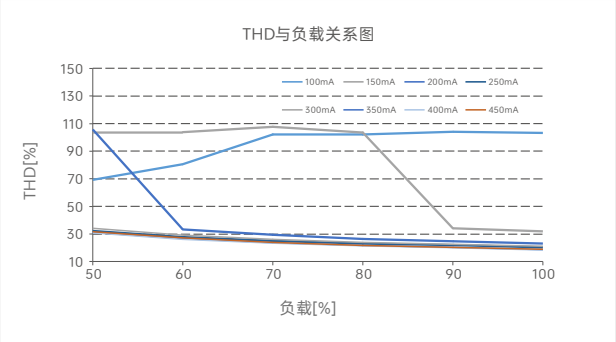
参数设置完成后， 点击【写入】， 将手机感应区域靠近驱动器NFC感应区， 即可写入驱动器成功修改参数。

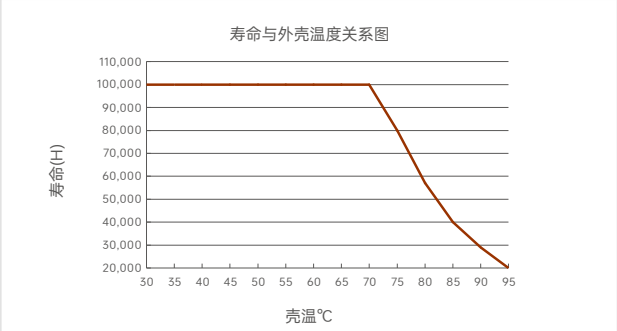


关系图表

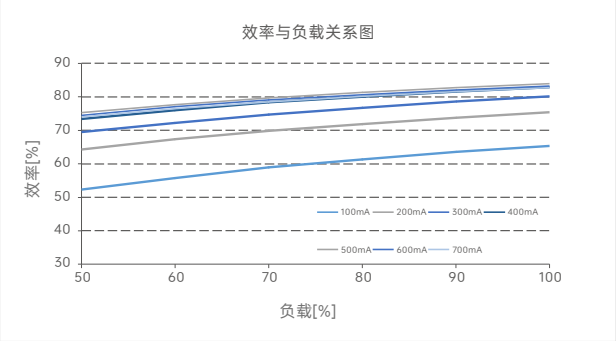


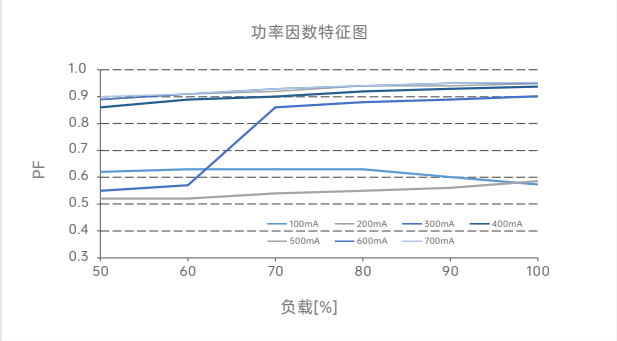


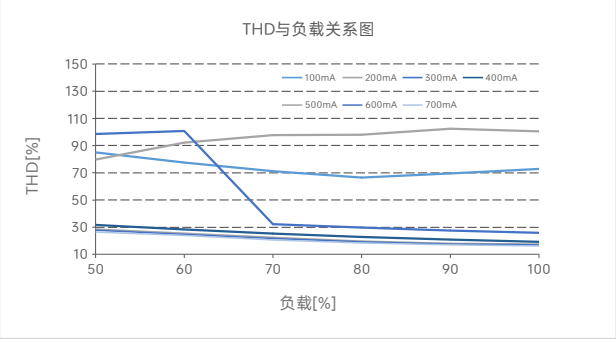


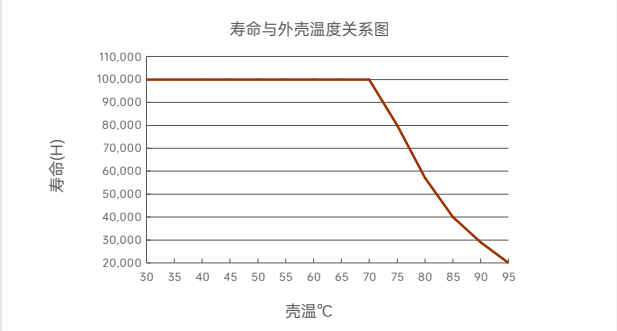


LA-10-100-450-U1L









LA-20-100-700-U1L

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，15A(在50%Ipeak下测试twidth=152us)/230V~
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；

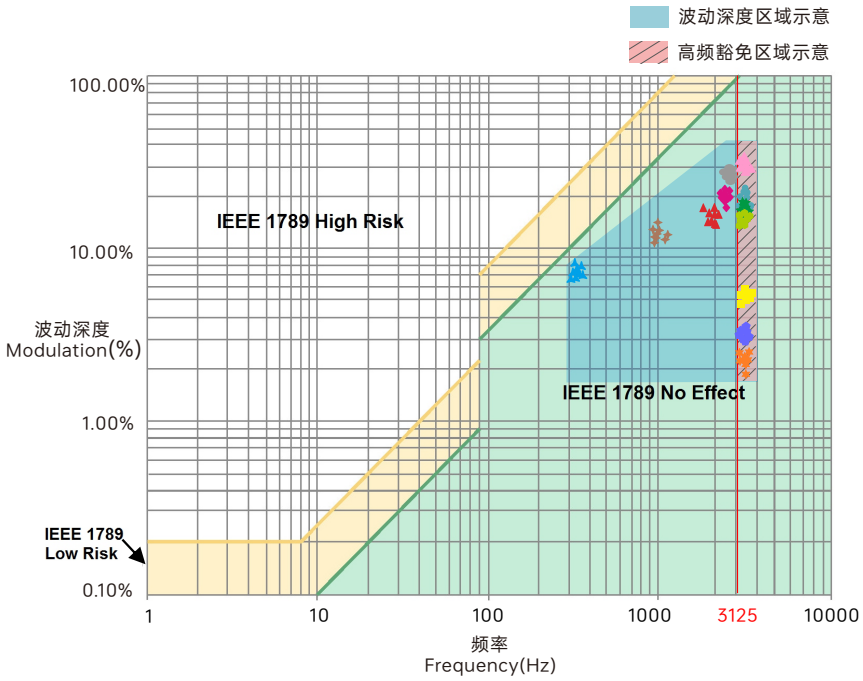
频闪测试表

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（%）
$f \le 8Hz$	0.2
$8Hz < f \le 90Hz$	$0.025 \times f$
$90Hz < f \le 1250Hz$	$0.08 \times f$
$f > 1250Hz$	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（%）
$f \le 10Hz$	0.1
$10Hz < f \le 90Hz$	$0.01 \times f$
$90Hz < f \le 3125Hz$	$(0.08/2.5) \times f$
$f > 3125Hz$	免除考核（高频豁免）

亮度

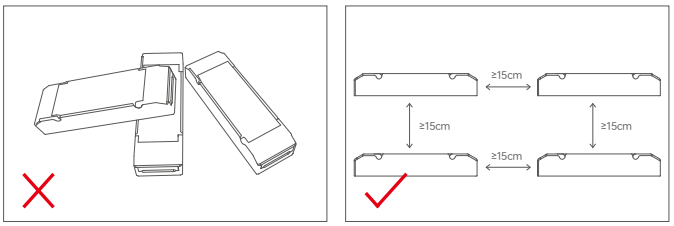
- 0.1%
- 1%
- 5%
- 10%
- 20%
- 30%
- 40%
- 50%
- 60%
- 70%
- 80%
- 90%
- 100%



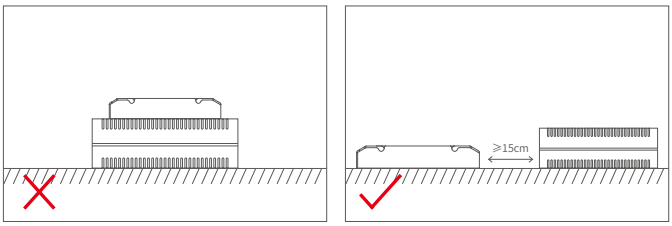
右图标识为不同电流档的测试结果。

100%亮度时输出频率为0Hz，对应波动深度为0%，无法在右图中示意。

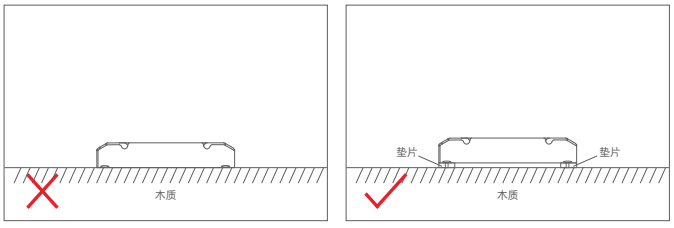
安装注意事项



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。

包装规格

型号	LA-10-100-450-U1L、LA-20-100-700-U1L
包装盒尺寸	152×60×35mm（L×W×H）

包装样式图

内包装盒

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，请用防水箱和防雷装置。
- 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。