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

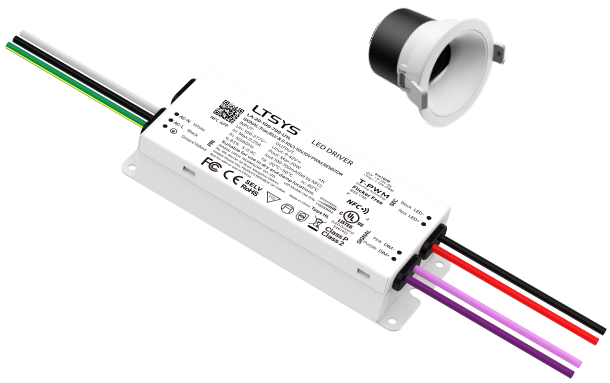
DIM

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

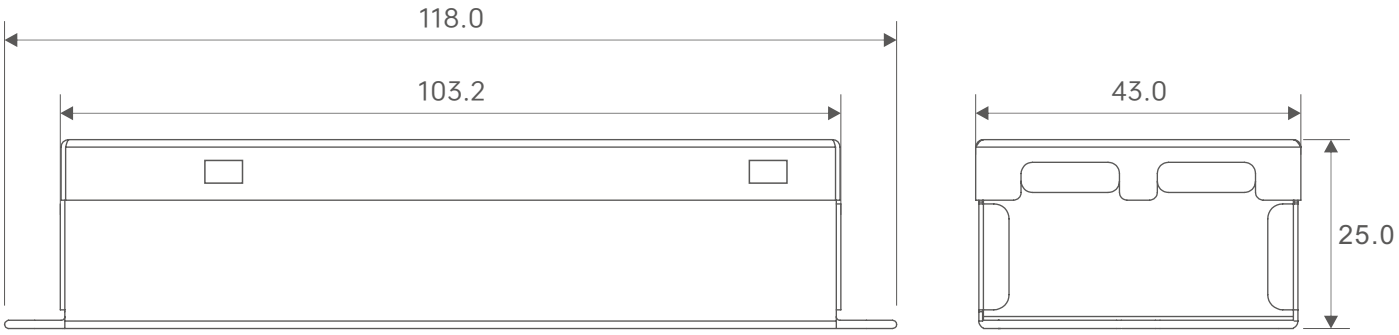
Technical Specs

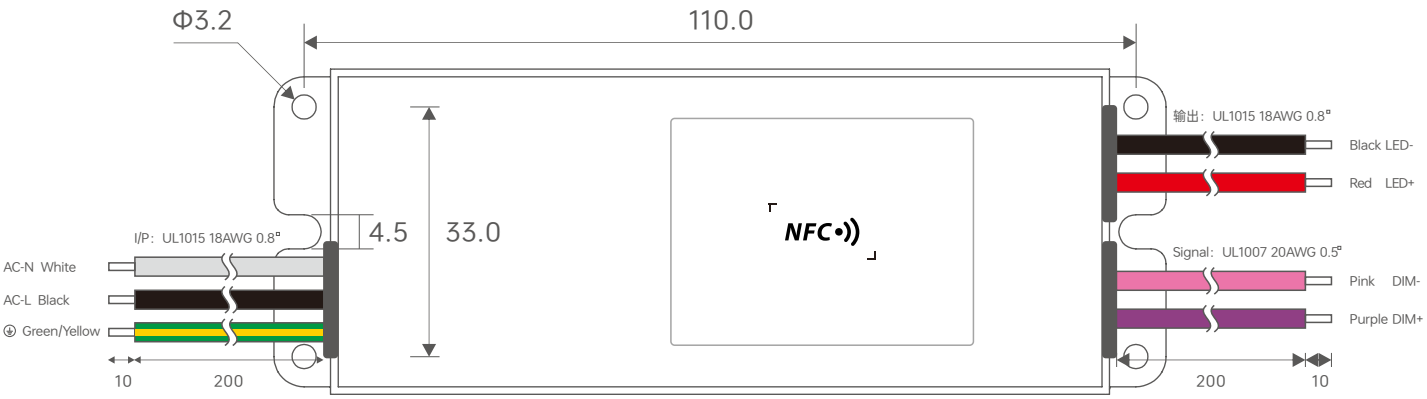
Model		LA-10-100-450-U1L			LA-20-100-700-U1L
Features	Output Type	Constant current			
	Dimming Interface	Triac/ELV,0-10V(1-10V,10V PWM,RX)			
	Output Feature	Isolation			
	Protection Grade	IP20			
	Insulation Grade	Class II (Suitable for class I/ II /III light fixtures)			
OUTPUT	Output Voltage	9-42V⎓			
	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

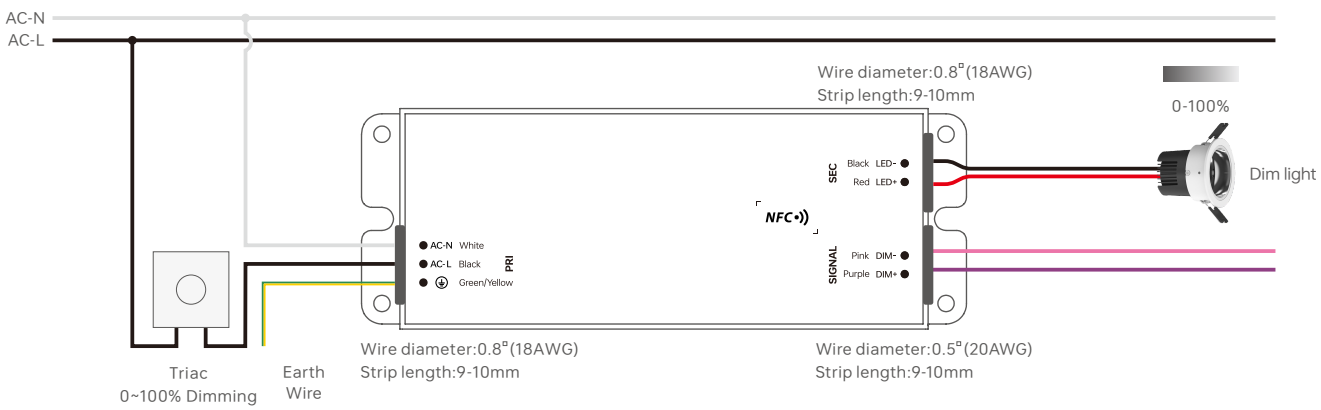
Unit:mm





Wiring Application Diagram

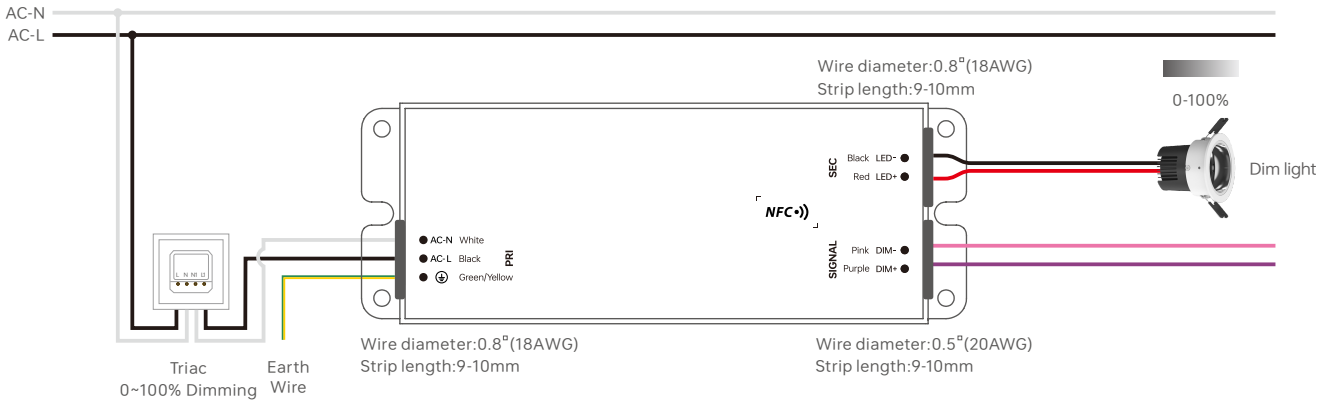
Triac Connection Method



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

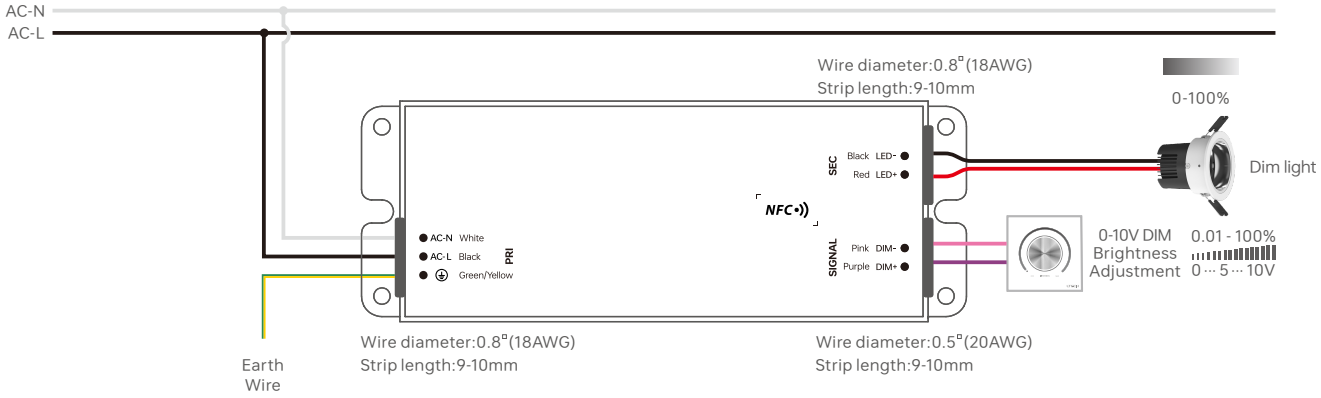
* The 0-10V dimmer and the TRIAC dimmer must not be connected simultaneously.

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).

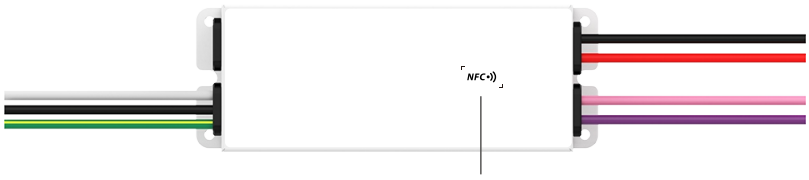
∗ Before you begin setting the parameters of the driver, please make sure the driver is powered off .

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.

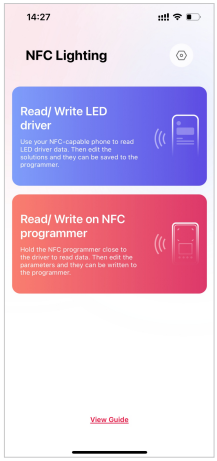


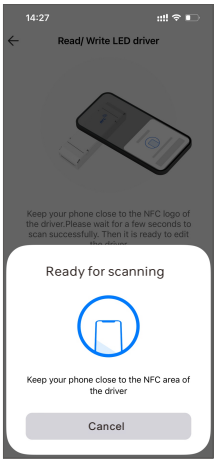
2.Edit the parameters

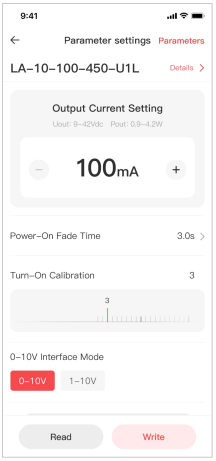
Click【Parameter settings】to edit more advanced parameters such as output current, power-on fade time, turn-on calibration, and 0-10V interface mode.

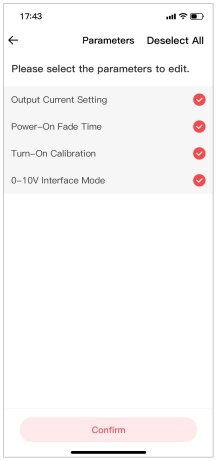
3.Write to the driver

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.

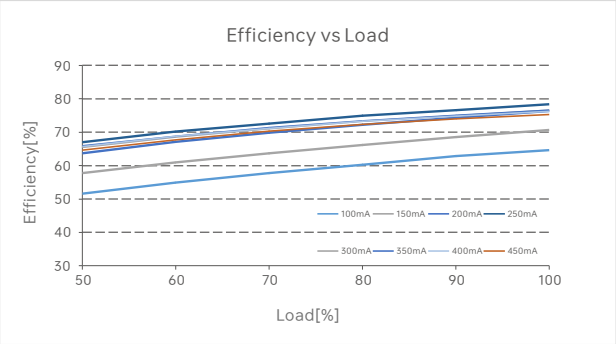


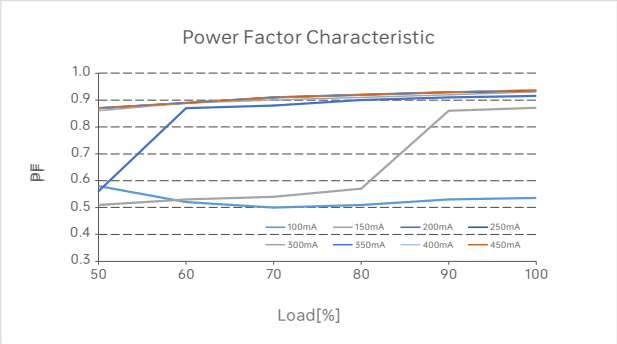


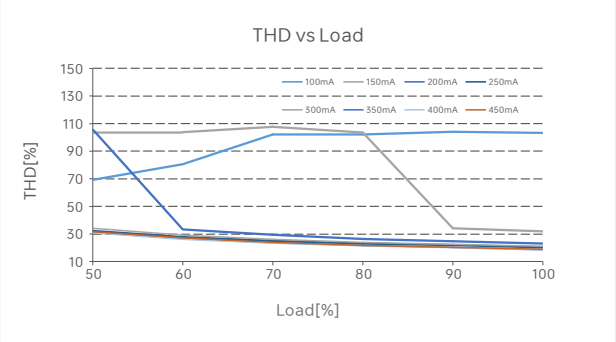


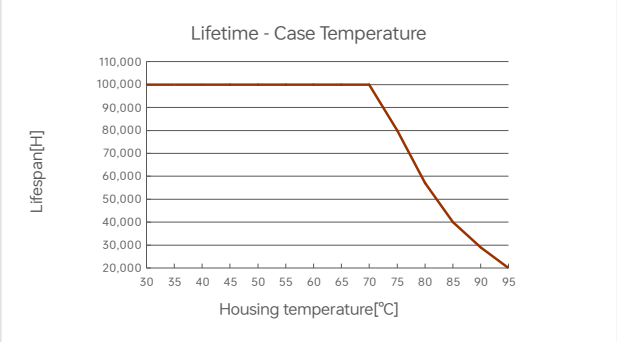


Relationship Diagrams

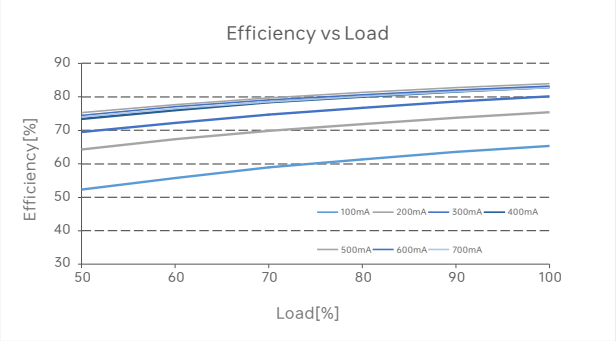


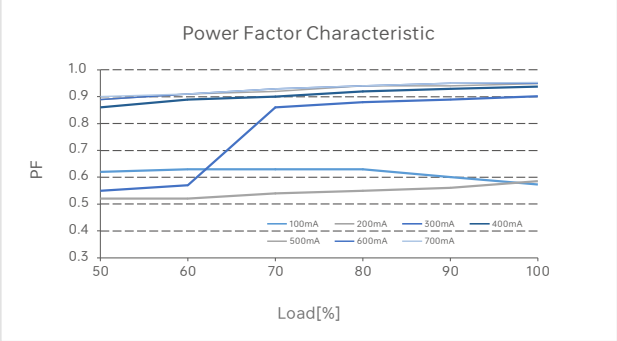


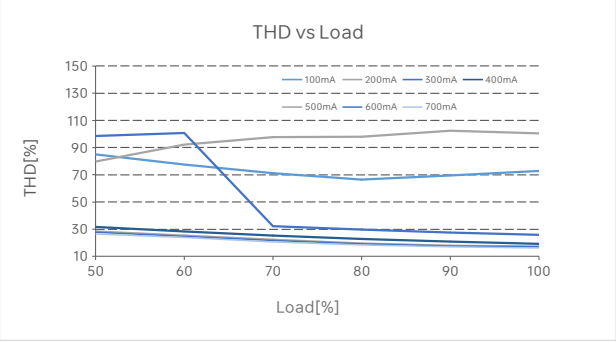


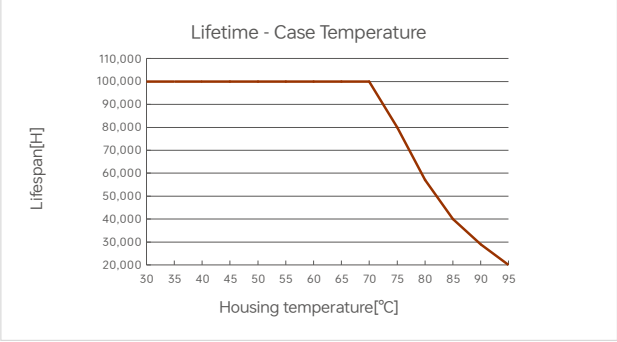


LA-10-100-450-U1L









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

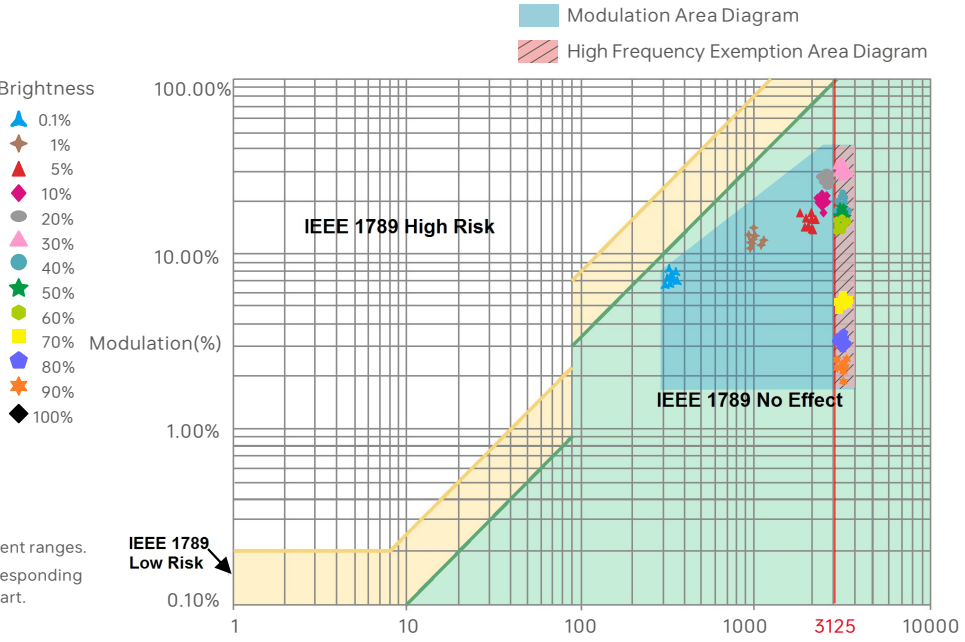
Remarks:

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

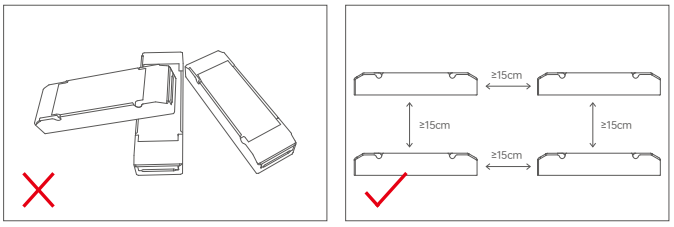
IEEE 1789

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)

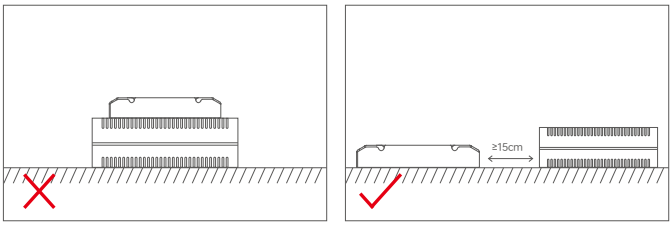


Marks in the right chart were tested results of different current ranges.
The output frequeny is 0Hz in 100% brightness and its corresponding modulation is 0%, which could not be shown in the right chart.

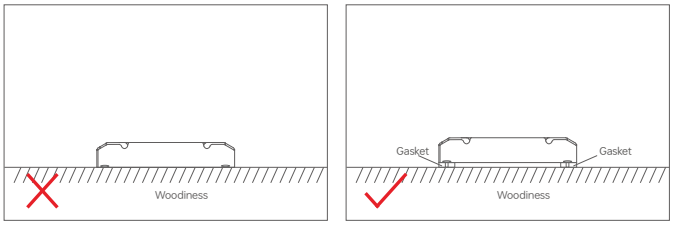
Installation Precautions



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.