Intelligent LED Driver(Constant Current)

- Metal housing for fast and efficient heat dissipation;
- Compact size for easy installation and concealment;
- Ultra-wide voltage input: 100-277V~;
- Matter over Thread certified device, to be used with a Matter hub with Thread border router functionality;
- Supports control via mainstream smart home platforms, including Apple Home, Google Home, Amazon Alexa, SmartThings, etc.;
- Supports voice control via voice assistants including Apple Siri, Google Assistant, Amazon Alexa, Samsung Bixby, etc.;
- Easy pairing via QR code scanning;
- Supports standard Matter OTA updates;
- Supports NFC fast programming; parameters such as dimming fade time, power-on fade time and brightness range can be modified via mobile APP through NFC;
- Dimming range: 0-100%, LED dimmable starting from 0.0001%;
- Equipped with soft start and gradual brightening function for comfortable human eye vision;
- Innovative thermal management technology for intelligent protection of power supply lifespan;
- Over-temperature, over-voltage, over-load and short-circuit protection with automatic recovery;
- IP20 rated, suitable for indoor LED luminaires;
- 100,000-hour lifespan under normal operation;
- UL Class 2 and Class P certified;
- Compliant with IEEE 1789 and UL 8750 standards;
- 5-year warranty period.

* Not for sale or use in China.

matter

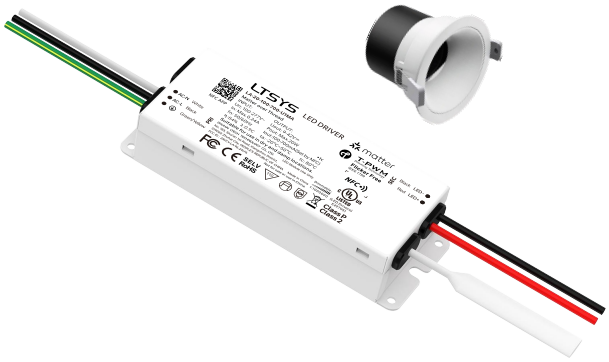
DIM

T-PWM
Dimming Technology

Flicker Free
IEEE 1789

Dimmable:
1:1000000

NFC



c UL us LISTED (LED Drivers) E497951

Class 2 Class P SELV RoHS

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

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-U1MA			LA-20-100-700-U1MA
Features	Output Type	Constant current			
	Dimming Interface	Matter over Thread, Matter 1.4			
	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 0.0001%(Set More levels can be set via mobile APP NFC; Default: 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. 0.11A/115V~, Max.0.06A/230V~, Max. 0.055A/277V~(at full load)			Max. 0.21A/115V~, Max.0.11A/230V~, Max. 0.1A/277V~(at full load)
	Power Factor	PF≥0.95/115V~, PF≥0.9/230V~, PF≥0.9/277V~(at full load)			
	THD	115V~@THD≤10%, 230V~@THD≤15%, 277V~@THD≤20% (at full load)			
	Efficiency (Typ.)	80%(at full load)			84%(at full load)
	Inrush Current	Cold start 15A(Test twidth=152us tested under 50% Ipeak)/230V~			
	Anti Surge	L-N: 2KV L,N-FG: 4KV			
	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.

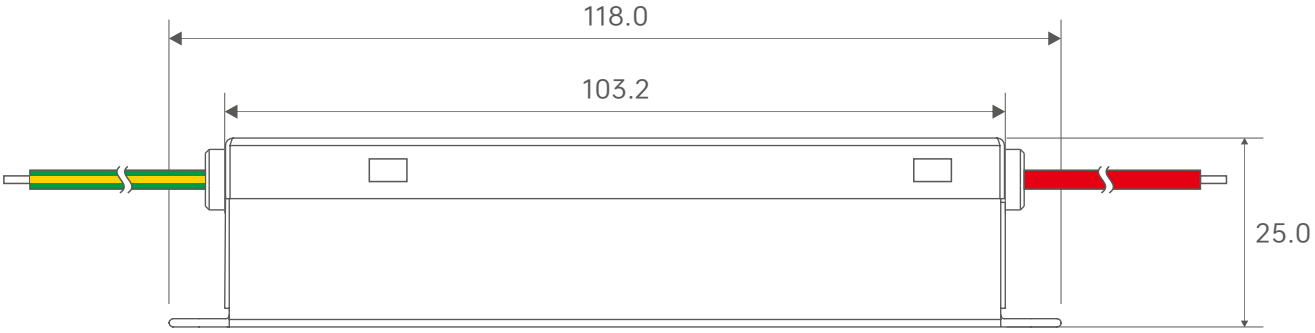
Typical Current Corresponding Parameter Table

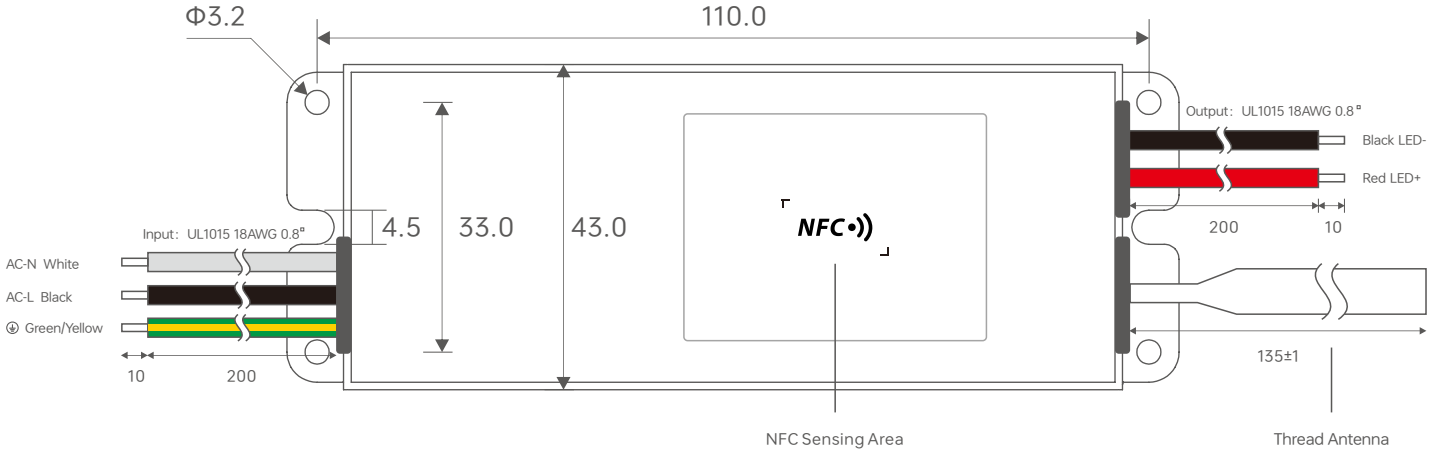
Model	The typical 8 current data sets below are for reference when selecting LED fixture models. More current levels can be set by NFC using mobile APP with 100-450mA adjustable in 1mA step								
LA-10-100-450-U1MA	Output Current	100mA	150mA	200mA	250mA	300mA	350mA	400mA	450mA
	Output Voltage	9-42Vdc	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-U1MA	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			

Product Size

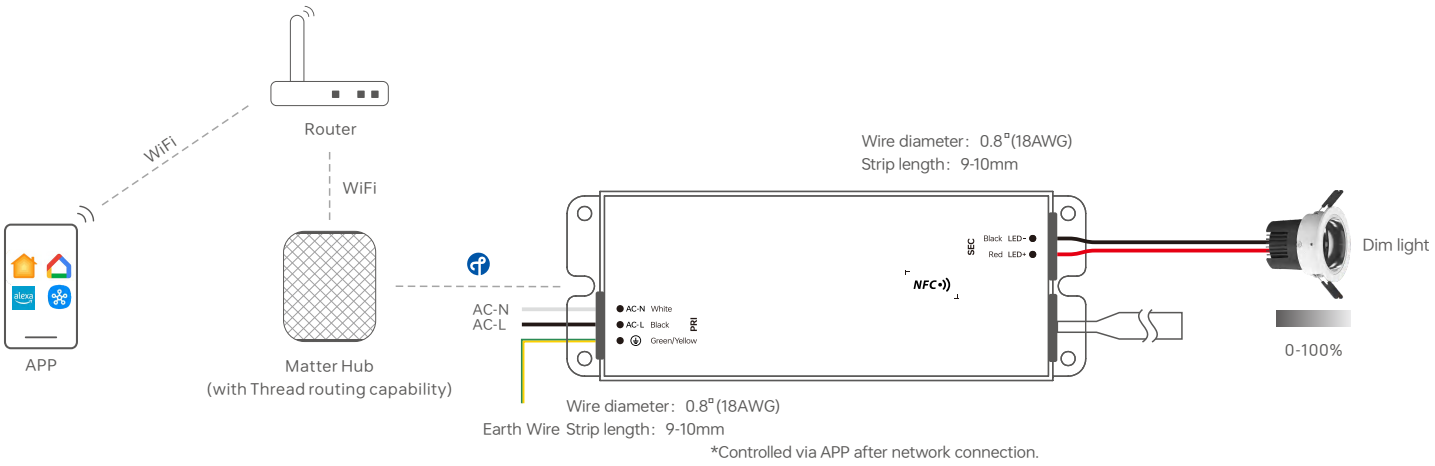
Unit:mm



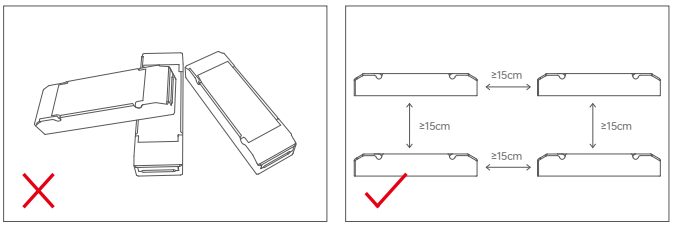


*The antenna must be kept away from metal, otherwise the signal will be affected.

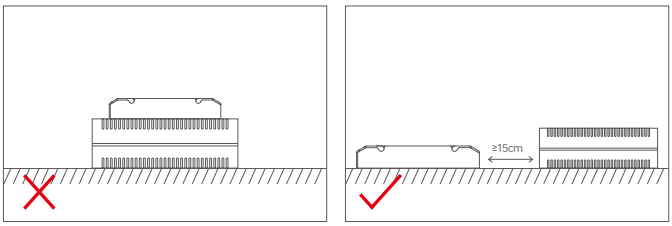
Connectivity Diagram



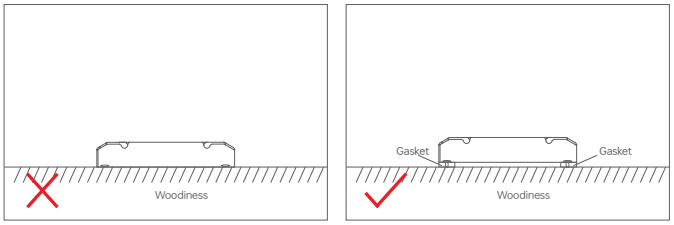
Installation Precautions



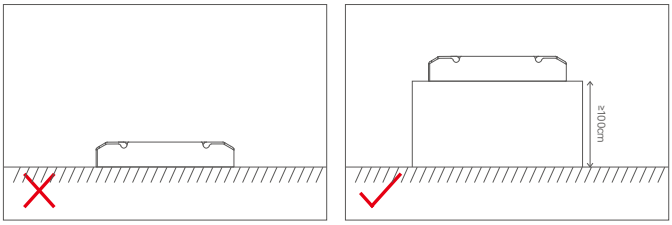
Please do not stack the products. The distance between two products should be ≥15cm so as not to affect heat dissipation and the lifespan of the products.



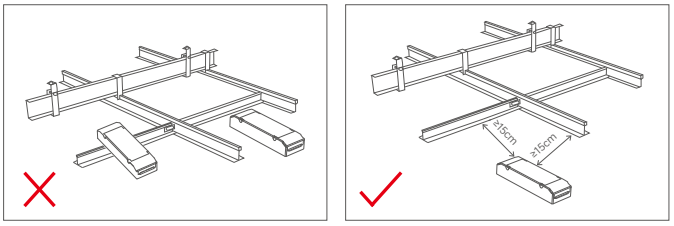
Please do not place the products on the floor. The distance between the product and the floor should be ≥100cm so as to avoid signal interference.



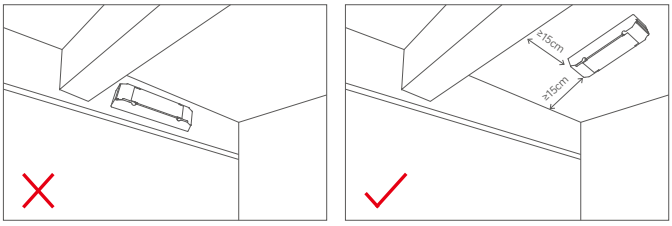
Do not fix the product tightly against the wooden board with screws. Please add a washer ≥7 mm thick under the mounting screws to leave a gap for effective heat dissipation, so as to avoid affecting the heat dissipation and service life of the product.



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.

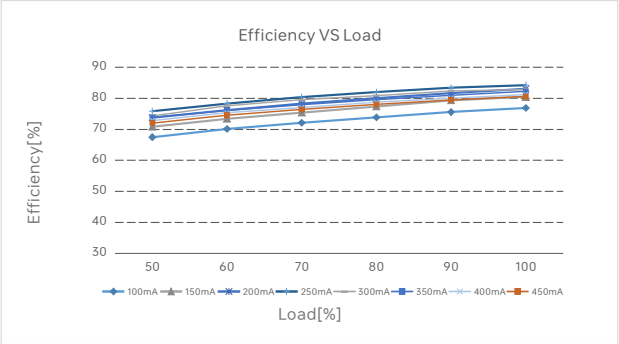


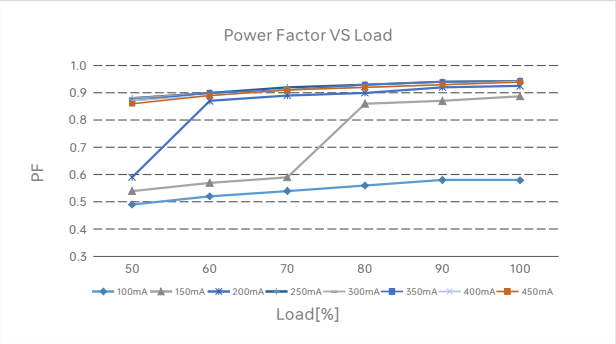
Do not allow the product to come into large-area contact with metal objects (e.g. keel frames). The separation distance shall be ≥15 cm to avoid signal interference affecting operation.

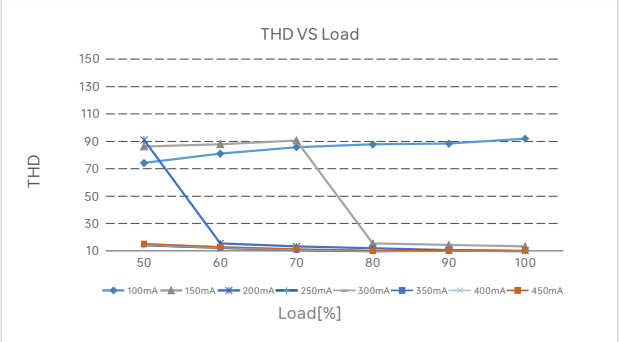


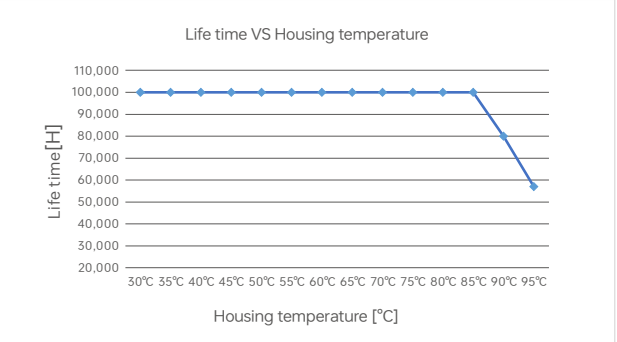
Please do not install the products on beams or near the corners. The distance between the product and the beam or the corner should be ≥15cm so as to avoid signal interference.

Relationship Diagrams

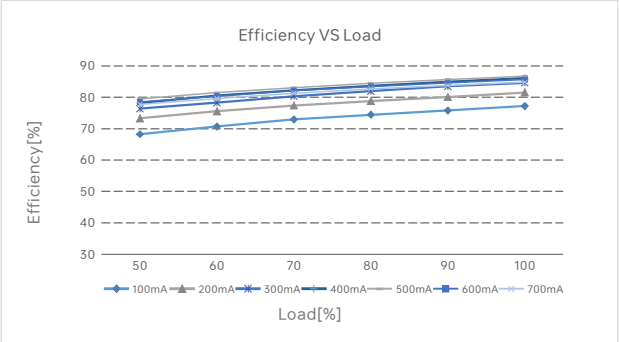


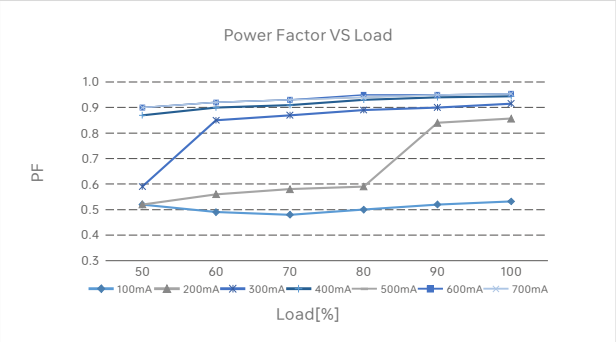


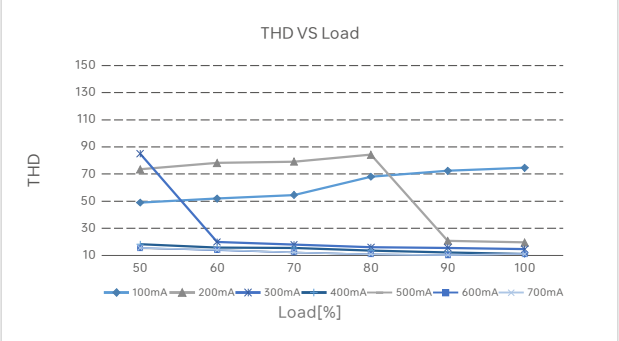


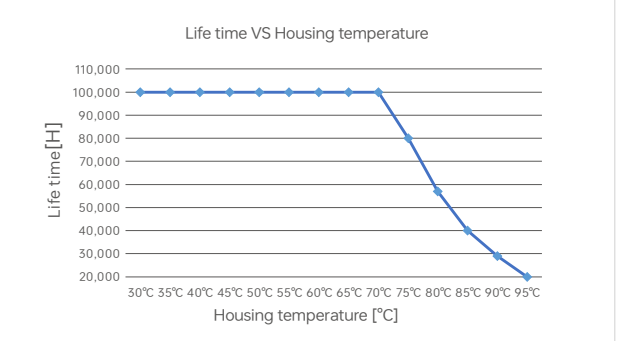


LA-10-100-450-U1MA









LA-20-100-700-U1MA

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.

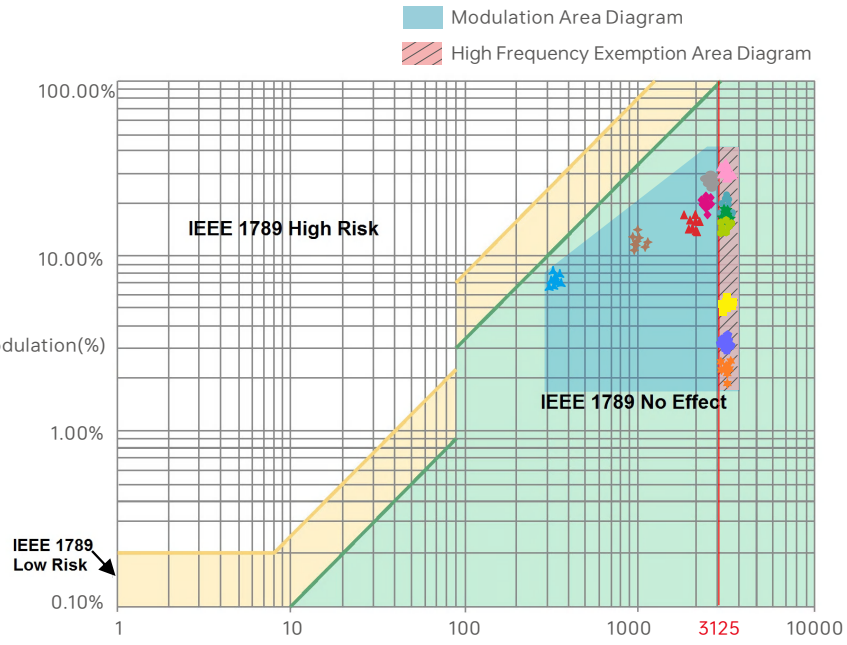
Flicker Test Sheet

IEEE 1789

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

Brightness

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



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.

Add to Matter Platform Instructions

1. This device supports control via major smart home platforms, including Apple Home, Amazon Alexa, Google Home, SmartThings, and others.
2. To connect Matter over Thread devices, you need a Matter hub supporting Thread border router functionality from major platforms. Refer to the image below for compatible models.

Apple Home	SmartThings	Google Home	Amazon Alexa
Apple HomePod (second-gen)	Aeotec SmartThings Smart Home Hub	Google Nest Hub (2nd Gen)	Amazon Echo (4th-gen)
Apple HomePod Mini	Samsung SmartThings Station	Google Nest Hub Max	Amazon Echo Hub
Apple TV 4K (2nd gen)	Samsung SmartThings Hub Dongle	Google Nest Wifi Pro	Amazon Echo Show 8 (3rd-gen)
Apple TV 4K (3rd gen,128 GB)	Samsung SmartThings Hub v3	Google TV Streamer (4K)	Amazon Eero 6, Pro 6, 6 Plus, Max 7 etc.

3. This guide uses Apple Home as an example. First, prepare an iPhone (iOS 16.2 or later) or iPad (iPadOS 16.2 or later) with the latest firmware, along with an Apple HomePod mini also running the latest firmware. Then connect your iPhone or iPad to your home Wi-Fi network, launch the Apple Home app, and follow Apple's instructions to set up the HomePod mini.

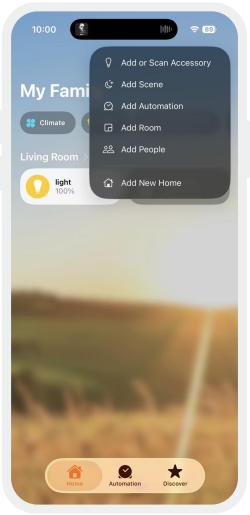
*For iPhone models 16 and above, no Matter hub is required; devices can be added directly.

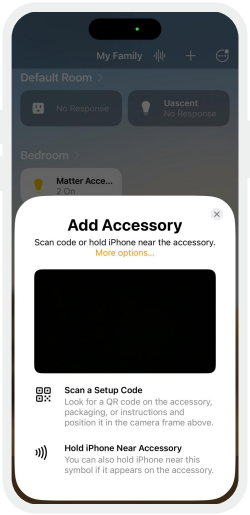
Adding Steps (Using Apple Home as an Example)

1.Add Accessory

Open the Apple Home app, tap Add or Scan Accessory, and add the device to the Home app by scanning the QR code label on the device, as shown below.

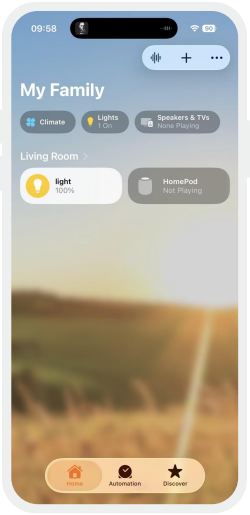
*Alternatively, add via NFC: Open the Home app, bring it close to the device's NFC sensing area for recognition and network connection.

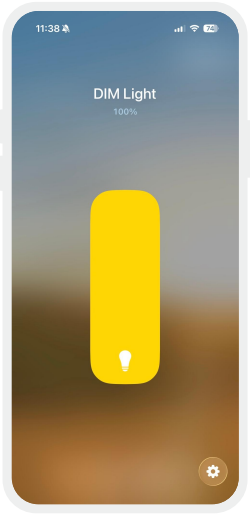




2.Control the Device

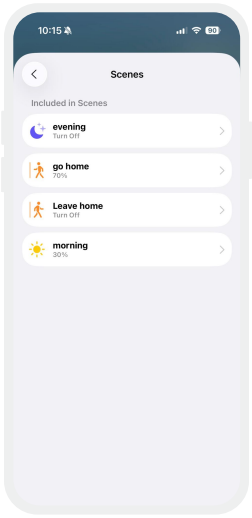
After the device has been successfully added, tap the device icon to turn it ON/OFF; tap the device card to enter the brightness control interface.

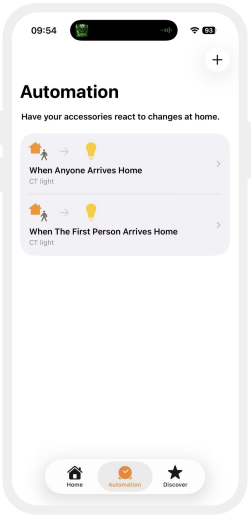




3. Advanced Functions

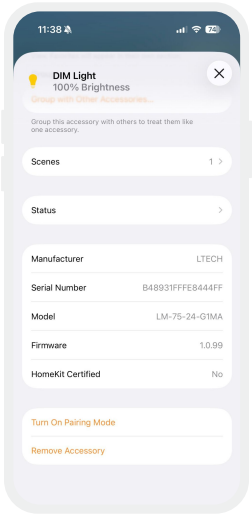
Supports creating groups, scenes, automation, remote control and timer control. The device can also be controlled via Siri voice commands.

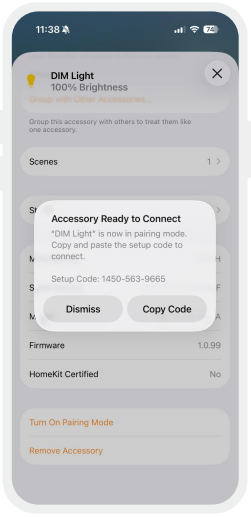




4.Multi-Ecosystem Network Configuration

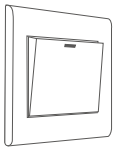
If the product needs to be added to two or more ecosystems, you may go to the device settings page, tap Enable Pairing Mode, obtain the pairing code, and add it to third-party platforms.





Reset to the defaults

Ensure the device is connected to the light and the light stays on steadily. Turn the power off and on 6 times in a row using the switch: (Turn off for 15 seconds, Turn on for 2 seconds)After the 6th time you turn it on (leave it on for 2 seconds), the light will flash 5 times. This means the device has been successfully restored to factory settings.



Turn it on 2s

Turn it off 15s

Under the driver being power-on

Turn it off —15s— Turn it on —2s— ……

(Repeat 6 times)

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).

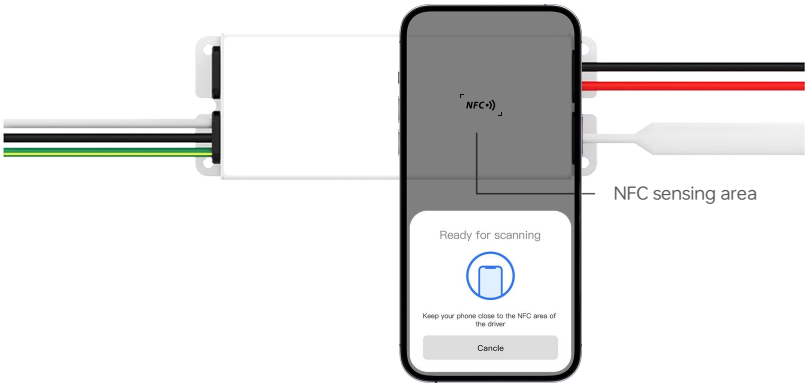
∗ Before you begin setting the parameters of the driver, please make sure the driver is powered off .

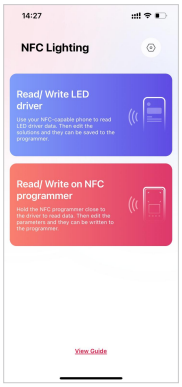
Read/Write the LED driver

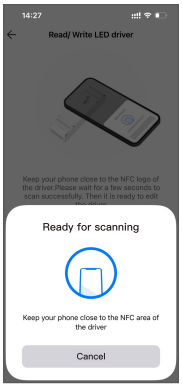
Use your NFC-capable phone to read LED driver data, then edit the parameters and they can be directly written to the driver.

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.

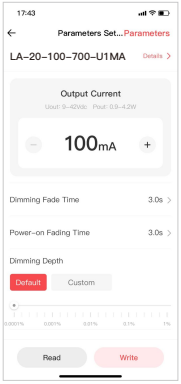


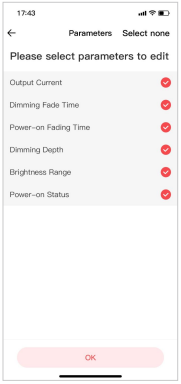




2.Edit the parameters

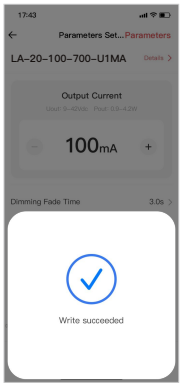
Click【Parameter settings】to edit more advanced parameters such as output current, dimming fade time, power-on fade time, Dimming Depth, brightness range, power-on state.





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.



Packaging Specifications

Model	LA-10-100-450-U1MA、LA-20-100-700-U1MA
Packaging Box Dimensions	152×60×35mm（L×W×H）

Packaging Image

Inner Packaging Box

FAQ

This product is designed in compliance with the Matter protocol standard. As the protocol is still in the early stage of industry development and limited by the current version, some functions, performance and network connection stability may be subject to further optimization.
Product performance is subject to the current version of the Matter protocol. Our company will continuously upgrade and optimize product functions and performance in line with official updates. Please kindly note.

1. What should I do if the large number of Matter devices managed by the Matter hub gateway causes unstable connections and control?
1.1 It is recommended that each hub gateway add no more than 40 Matter devices.
1.2 It is recommended that the hub gateway remain powered on at all times; otherwise, the device reconnection time will be long.
1.3 Routers of different brands and performances have a certain impact on the number of devices managed by the Matter hub. It is recommended to choose a high-performance router.

2. What should I do if packet loss occurs during group control switching or dimming, and the app status flips back and forth?
It is recommended to keep the number of devices in a group within 10 units.

3. What should I do if the device goes offline and cannot recover after a long period of inactivity?
It is recommended to power the device off and on again to reconnect.

4. What should I do if adding the device still fails after restoring it to factory settings?
Please try powering the device off and on again before adding it.

5. Common reasons for failed device addition caused by router issues.
5.1 The router must have the IPv6 option enabled.
5.2 The router must have the "Brute-force network attack prevention" option disabled.
5.3 Do not connect to the guest Wi-Fi; connect to the main Wi-Fi network instead.

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.