

Intelligent Tunable White LED Driver (Constant Current)

0.9-12W 100-450mA 9-42Vdc



- Ultra-small, thin and light screwless end cap
- Bluetooth 5.0 SIG Mesh with high networking capability is reliable and stable
- Gain control on iOS or Android devices through Bluetooth connection
- Adding a super tool allows you to set soft start time, lighting status and dimming curves
- Lighting status and dimming curves.
- The housing is made from V0 flame retardant PC materials from SAMSUNG/COVESTRO
- Comply with no-load power consumption of the EU's ErP Directive, standby power consumption < 0.5W.
- With soft-on and fade-in dimming function, enhancing your visual comfort
- T-PWM dimming technology allows continuous and flicker free images under high-speed photography.
- Dimming from 0-100%, down to 0.1%
- With soft-on and fade-in dimming function, enhancing your visual comfort
- Innovative thermal management technology intelligently protects the life of the LED driver.
- Overheat, over voltage , overload, short circuit protection and automatic recovery.
- Multiple current levels and wide voltage range. Suitable for different power of LEDs.
- Suitable for Class I/II/III indoor light fixtures.
- Up to 50,000-hour life time.
- 5-year warranty (Rubycou capacitor).

T-PWM™
Super depth dimming technology

Flicker-free
IEEE 1789
High frequency exemption level

Dimmable:
1000000:1



SELV
RoHS



The certification icon represents on-going certification applications only, and final certification qualification is subject to actual products.



Technical Specs

Model	SE-12-100-450-W2B			
Features	Output Type	Constant Current		
	Dimming Interface	Bluetooth		
	Output Feature	Isolation		
	Protection Grade	IP20		
	Insulation Grade	Class II (Suitable for class I/ II light fixtures)		
INPUT	Output voltage	9-42Vdc		
	Max output voltage	≤48V		
	Output current	100-450mA		
	Output Power	0.9-12W		
	Strobe level	No visible flicker/High frequency exemption level		
	Dimming range	0-100%, down to 0.1%		
	LF current ripple(<120Hz)	<3%		
	Current accuracy	±5%		
	Ripple&noise	≤2V		
	PWM dimming frequency	< 3600Hz		
OUTPUT	Wireless protocol type	Bluetooth 5.0 SIG Mesh		
	DC Voltage Range	120-300Vdc		
	AC Voltage Range	100-240Vac		
	Rated Voltage	115Vac / 230Vac		
	Networked standby	≤0.5W		
	Standby power consumption	≤0.5W		
	Frequency	50/60Hz		
	Input Current	≤0.18A/115Vac		
	Power Factor	PF>0.9C/230Vac , at full load		
	THD	THD<10%/230Vac , at full load		
	No-load power consumption	<0.5W		
	Standby Power Consumption	<0.5W		
	Efficiency (Typ.)	>82%@450mA		
	Inrush Current	Cold start 15A@230Vac (Test twidth=102us tested under 50% Ipeak)		
Anti Surge	L-N: 2kV			
Leakage Current	<0.5mA/230Vac			
ENVIRONMENT	Working Temperature	ta: -20 ~ 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 ~ 45°C]		
	Vibration	10-500HZ, 2G 12min/1cycle 72 min for X,Y and Z axes respectively.		
PROTECTION	Overload Protection	Shut down the output and recover automatically once it exceeds 1.02 times of the rated power		
	Overheat Protection	Intelligently adjust or turn off the current output if the PCB temperature >110°C. When the PCB temperature <90°C, automatically recover normal output		
	Short Circuit Protection	When short circuit occurs, shut down the output and recover automatically		
SAFETY & EMC	Withstand Voltage	I/P-O/P: 3750Vac		
	Insulation Resistance	I/P-O/P: 100MQ/500VDC/25°C/70%RH		
	Safety Standards	CCC	China	GB19510.1, GB19510.14
		TUV	Germany	EN61347-1, EN61347-2-13, EN62493
		CB	CB Member States	IEC61347-1, IEC61347-2-13
		RCM	Australia	AS/NZS61347.1, AS61347-2-13
		CE	European Union	EN61347-1, EN61347-2-13, EN62493
		KC	Korea	KC61347-1 KC61347-2-13
		UKCA	Britain	BS EN61347-1, BS EN61347-2-13, BS EN62493
	EMC Emission	CCC	China	GB/T17743, GB17625.1
		RCM	Australia	EN IEC 55015, EN IEC 61000-3-2, EN61000-3-3
		CE	European Union	EN IEC 5501, EN IEC 61000-3-2, EN61000-3-3
		KC	Korea	KS C 9815, KS C 9547
		UKCA	Britain	BS EN IEC 55015, BS EN IEC 61000-3-2, BS EN 61000-3-3, BS EN 61547
EMC Immunity	EN6100-4-2,3,4,5,6,8,11, EN61547			
Strobe test standard	IEEE 1789			
OTHERS	Life Time	50000 hours		
	Warranty	5 years		

DIP Switch



LED Current Selection

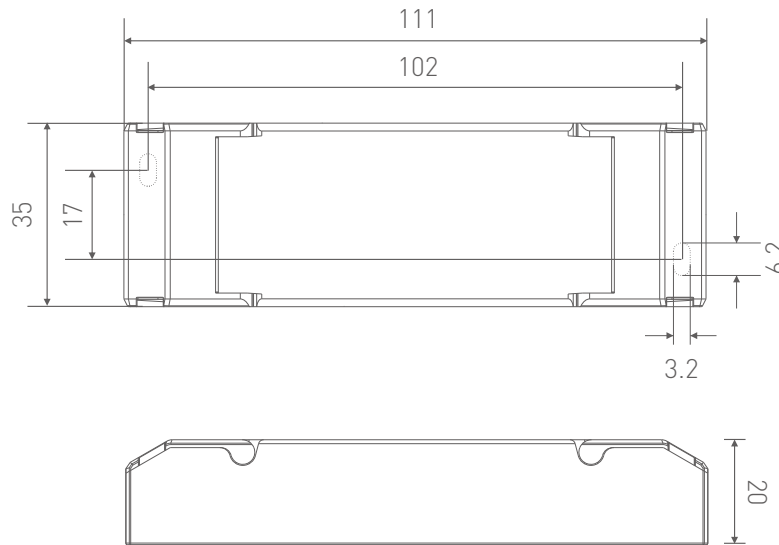
8 current levels are optional by DIP switch setting

SE-12-100-450-W2B	DIP Switch													ON OFF
	Output Current	100mA	150mA	200mA	250mA	300mA	350mA	400mA	450mA					
Output Voltage	9-42V	9-42V	9-42V	9-42V	9-40V	9-34V	9-30V	9-27V						
Output Power	0.9-4.2W	1.35-6.3W	1.8-8.4W	2.25-10.5W	2.7-12W	3.15-11.9W	3.6-12W	4.05-12.15W						

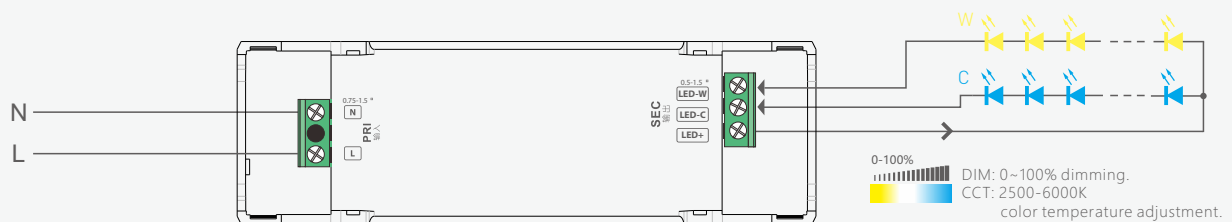
- * After setting the current via DIP switches, power off and then power on the driver to make the new current setting effective.
- * E.g. LED 3W/pcs: 9-42V can power 3-14pcs LEDs in series, 9-27V can power 3-9pcs LEDs, the max quantity of LEDs in series will be subject to the actual voltage of LEDs.

Product Size

Unit: mm

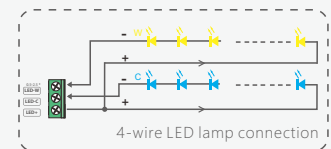


Wiring Diagram

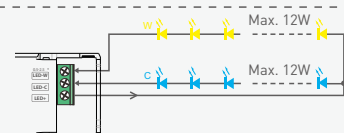


Wire diameter: 0.75-1.5^φ (22-16AWG)
Strip length: 4.5-5mm

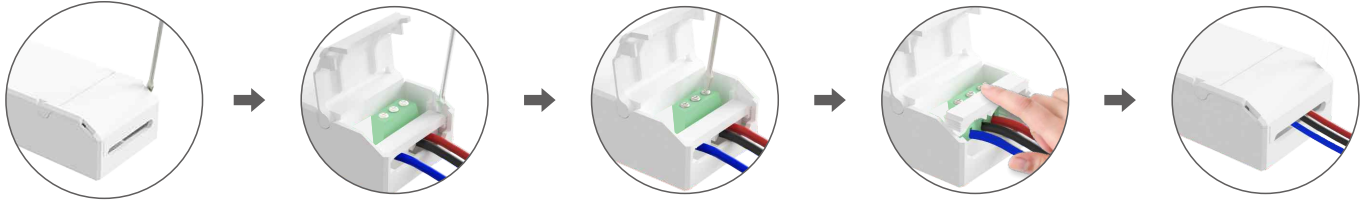
Wire diameter: 0.5-1.5^φ (22-16AWG)
Strip length: 4.5-5mm



- * With the constant power program design, brightness remains the same during color temperature adjustments. Drivers can be connected with the load twice the rated power.
12W drivers can be connected with the load of 12W × 2CH. The total power of both channels keeps within 12W.

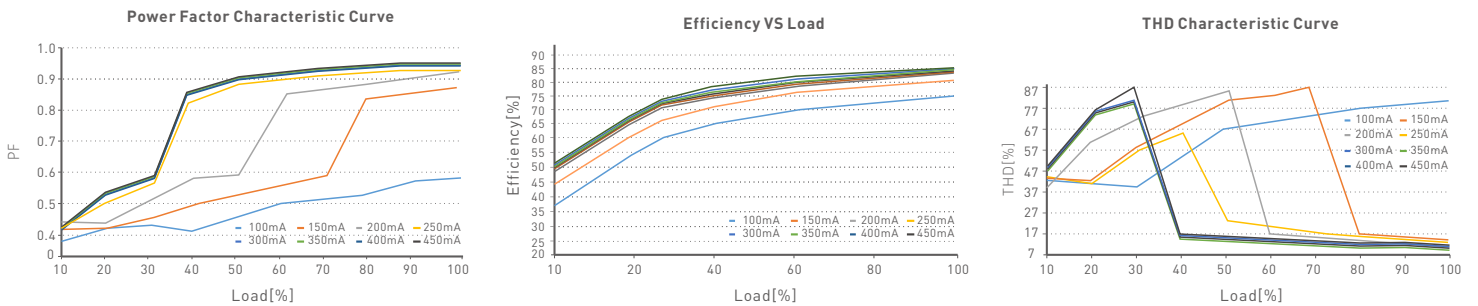


Protective Housing Application Diagram



1. Pry up the protective housing in the side plate position with a tool.
2. Pry up the side edge of the tension plate with a tool to remove it.
3. Use a screwdriver to connect electrical wires as wiring diagram shows.
4. Press down the tension plate to fix the electrical wires.
5. Close the protective housing.

Relationship Diagrams

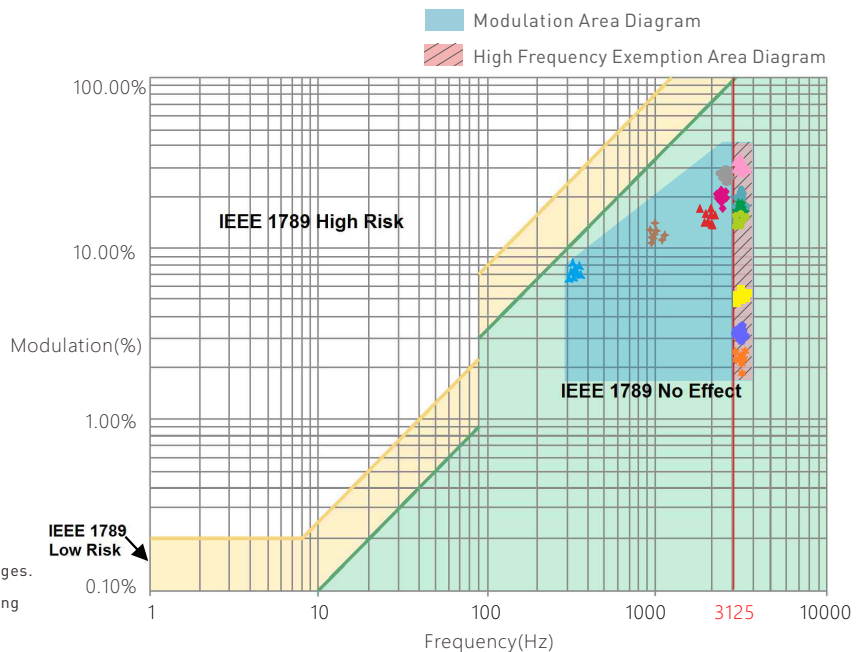


Flicker Test Form

IEEE 1789

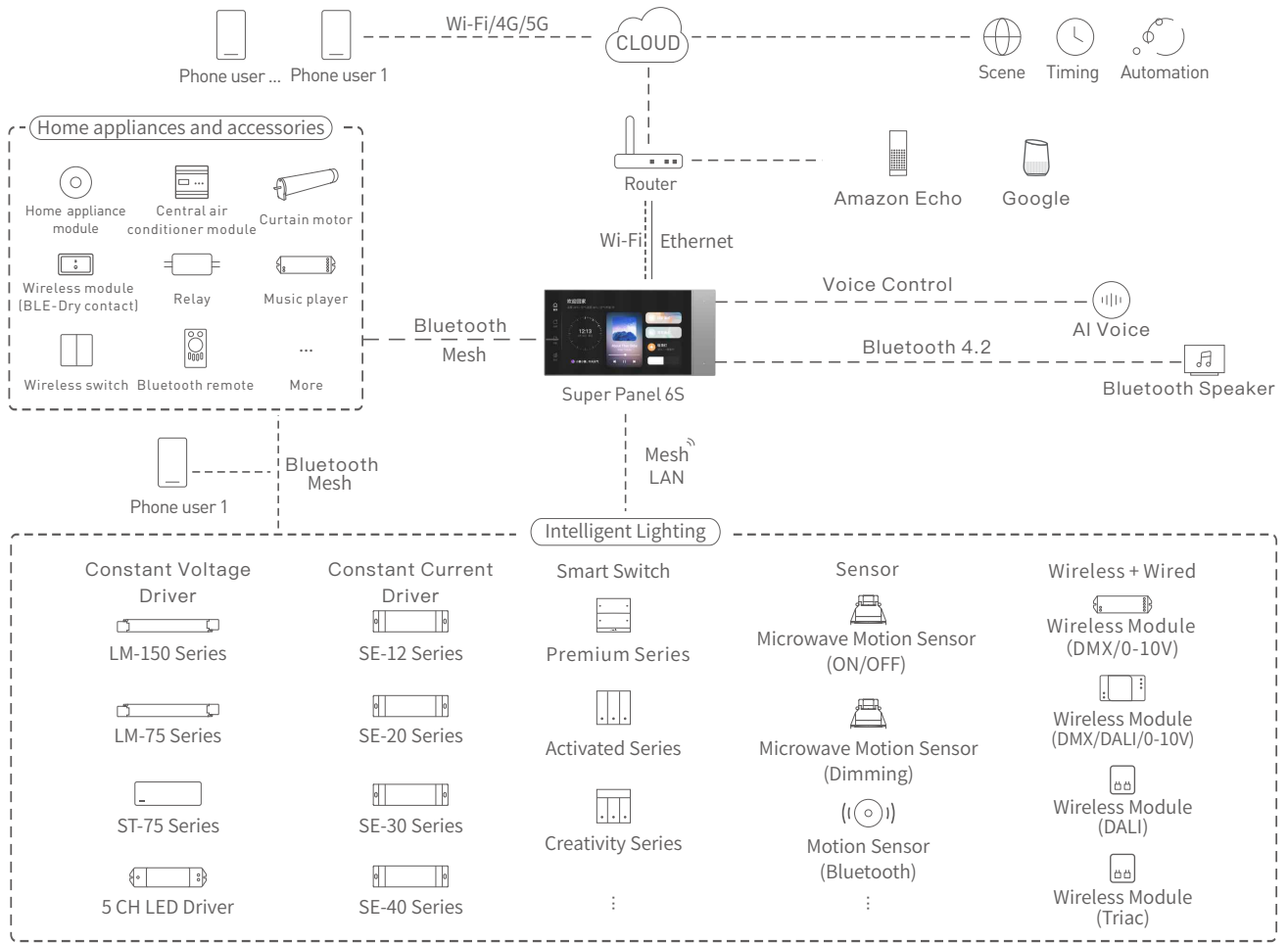
Limit of Modulation in low risk area	
Waveform frequency of Optical output	Limit [%]
$f \leq 8\text{Hz}$	0.2
$8\text{Hz} < f \leq 90\text{Hz}$	$0.025 \times f$
$90\text{Hz} < f \leq 1250\text{Hz}$	$0.08 \times f$
$f > 1250\text{Hz}$	Exemption assessment
Limit of Modulation in no effect area	
Waveform frequency of Optical output	Limit [%]
$f \leq 10\text{Hz}$	0.1
$10\text{Hz} < f \leq 90\text{Hz}$	$0.01 \times f$
$90\text{Hz} < f \leq 3125\text{Hz}$	$[0.08/2.5] \times f$
$f > 3125\text{Hz}$	Exemption assessment [High frequency exemption]

- Brightness
- ▲ 0.1%
 - ◆ 1%
 - ▲ 5%
 - ◆ 10%
 - 20%
 - ▲ 30%
 - 40%
 - ★ 50%
 - 60%
 - 70%
 - ▲ 80%
 - ★ 90%
 - ◆ 100%



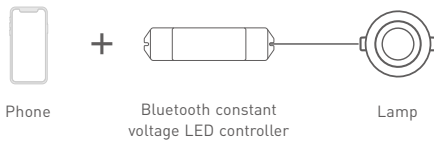
Marks in the right chart were tested results of different current ranges. The output frequency is 0Hz in 100% brightness and its corresponding modulation is 0%, which could not be shown in the right chart.

Application Diagram

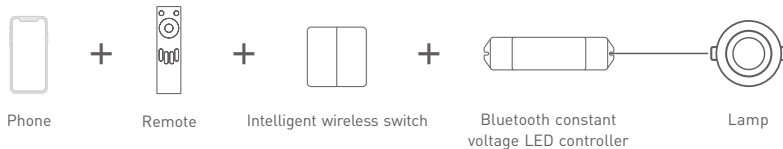


Recommended Applications

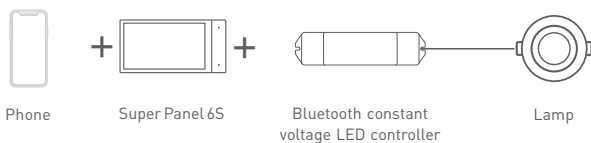
1、 Achieve fast dimming control.



2、 Both the App and the remote can control the controller after linking up the remote with the controller via the App.



3、 Both the App and the Super Panel can control the controller after linking up the Super Panel with the controller via the App. By connecting the Super Panel to the network, you are allowed to remotely control the controller, cloud scenes and automation via the App.



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

Other Instructions

If the controller works with a remote, gateway ,intelligent wireless switch or other items ,please refer to related manuals.

App Operating Instructions

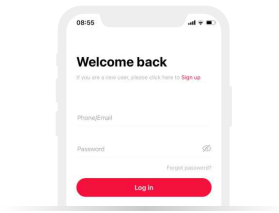
1. Register an account

Scan the QR code below with you mobile phone and follow the prompts to complete the app installation.



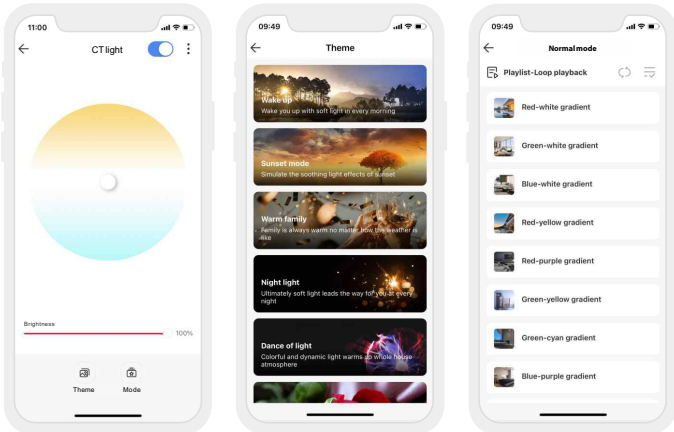
Scan and download the App

1.2 Open the App and log in or register an account.



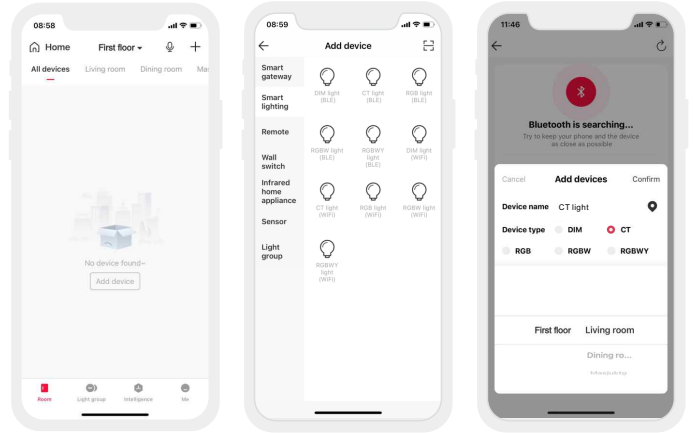
3. Control interface settings

After pairing up your device, go to the control interface. You'll be able to achieve your desired lighting effects by changing brightness, colors 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.



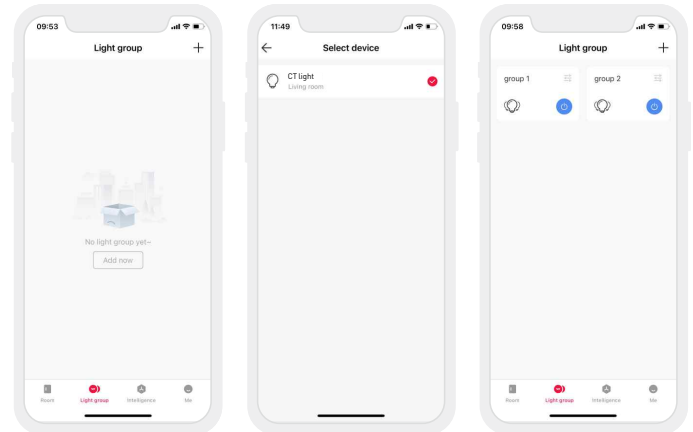
2. Control interface settings

Create a home if you are a new user. Click "+" icon in the upper right corner and access the "Add Device" list. Pick "Smart lighting -CT light (BLE)" from the list and select the light fixture type you want to add. Follow the prompts on the App. Power on the device firstly, and make sure the device is not connected to network. Then click "Bluetooth Search" and follow the prompts to add the device.



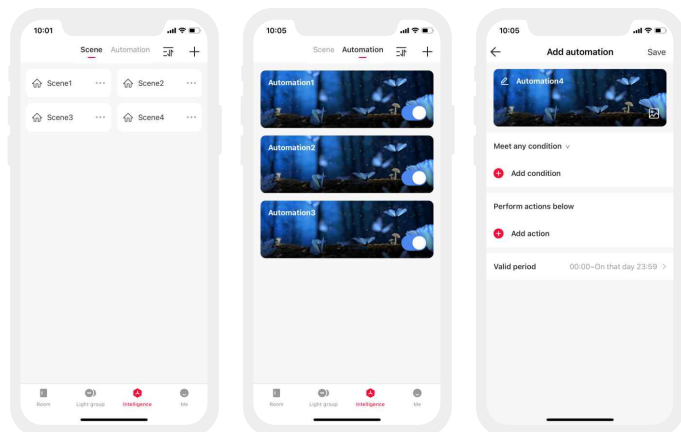
4. Light groups

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 or change color temperature more easily. Switch to "Group" menu and click "+" icon in the upper right corner. Follow the prompts to rename the group and click "Next" to pick the lights you are going to group together and to save them.



5. Advanced functions

The driver can be linked up with gateway function devices (such as LTECH Super Panel) to achieve the advanced functions from cloud scenes to automation.



Packaging Specifications

Model	SE-12-100-450-W2B
Carton Dimensions	260×235×195mm (L×W×H)
Quantity	20 PCS/Layer; 5 Layers/Carton; 100 PCS/Carton
Weight	0.077 kg/PC; 15.75 kg/Carton

Packaging Image



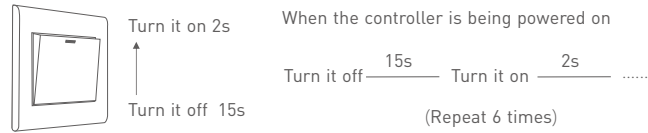
Inner Packaging Box



Carton Packaging

How to reset a device (reset it to factory defaults)

Make sure the controller is connected to a lamp and keep the lamp on. Turn the controller off with the switch and after 15s turn it on. After 2s, turn it off again. Repeat the same operation 6 times. When the lamp flashes 5 times, the controller has been set to factory defaults.



FAQs

1. What should I do if I fail to add the device?

- 1.1 Please make sure the device is powered on normally .
- 1.2 Please make sure the device hasn't been added by any other account. If it has, please reset to factory defaults manually.
- 1.3 The recommended distance between the mobile phone and the device is no more than 20 meters.
- 1.4 If the device has been forced to delete, please reset to factory defaults manually and then add the device again.

2. What should I do if the device disconnects from the network?

- 2.1 Please make sure the device is powered on normally.
- 2.2 Please make sure Bluetooth on your phone is turned on.
- 2.3 If you control the device remotely, please make sure your phone network runs smoothly.

3. How to control remotely and set cloud scenes?

Remote control and cloud scenes can be achieved only by working with LTECH Super Panel.

4. How to share control of your home devices?

Please go to "Me" - "Home Management" and access the home you want to share. Click "Add Member" and follow the prompts to add members to your home.

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 non-waterproof (special models excepted). Please avoid the sun and rain. When installed outdoors, please ensure it is mounted in a water proof enclosure.
- Good heat dissipation will extend 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 : 2 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.

Update Log

Version	Updated Time	Update Content	Updated by
A0	2022.08.30	Original version	Yang Weiling