Intelligent Tunable White LED Driver (Constant Current)

2.25~20W   250~1000mA   9~54Vdc

- Adopt SAMSUNG/COVESTRO V0 flame resistant polycarbonate protective housings with small size and light weight.

- Bluetooth Mesh & Tuya application protocol with high networking capability are reliable and stable.

- Support control IOS or Android devices through Bluetooth connection.

- With soft-on and fade-in dimming function enhancing visual comfort.

- T-PWM™ dimming technology allows continuous and flicker-free images under high-speed shooting.

- 0-100% flicker-free dimming with high frequency exemption level.

- Dimming from 0~100%, down to 0.1%.

- Color temperature unchanged as it dims, brightness also remains the same during color temperature adjustments.

- Innovative thermal management technology protects the power life intelligently.

- Overheat, over voltage , overload, short circuit protection and automatic recovery.

- Suitable for indoor light applications of Ⅰ/Ⅱ/Ⅲ type.

- Up to 50,000-hour life time.

- 5-year warranty (Rubycon capacitor).

Bluetooth®

DIM/CT

T-PWM™
Super depth dimming technology

Flicker-free
IEEE 1789

Dimmable:
0.1%-100%

CCC   CE   SELV   RoHS

T-PWM™ Super depth dimming technology   Flicker-free IEEE1789   Short circuit protection   Overload protection   Overheat protection
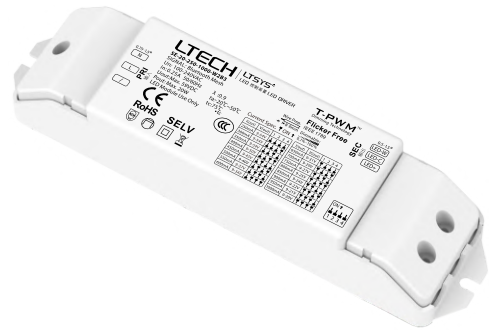
Technical Specs

Wireless type:	Tuya Bluetooth Mesh	Input voltage:	100-240Vac (120-300Vdc)
Output voltage:	9-54Vdc	Frequency:	0/50/60Hz
Max output voltage:	59Vdc	Input current:	115Vac≤0.25A, 230Vac≤0.13A
Output power:	Max. 20W	Power factor:	PF>0.95/115Vac, PF>0.90/230Vac (Full load)
Output current:	250-1000mA	Efficiency:	83%
Flicker level:	No visible flicker/High frequency exemption level	Inrush current:	Cold start10A@230Vac (Test twidth=40 us tested under 50% Ipeak)
Dimming range:	0~100%, dimming down to 0.1%	Anti surge:	L-N: 2kV
LF current ripple (<120Hz):	<1%	Leakage current:	<0.24mA/230Vac
Current accuracy:	±5%	Working temperature:	ta: -20 ~ 50°C tc: 75°C
Ripple & noise:	≤2V	Working humidity:	20 ~ 95%RH, non-condensing
PWM dimming frequency:	≤3600Hz	Vibration:	10~500Hz, 2G 12min/1cycle, 72 min for X, Y and Z axes respectively

Protection

Overheat protection:	Intelligently adjust or turn off the output current if the PCB temperature ≥110°C, and recover automatically
Overload protection:	Shut down the output and recover automatically once it exceeds 1.02 times of the max load power.
Overvoltage protection:	Shut down the output and recover automatically once it exceeds no-load voltage.
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:100MΩ/500VDC/25°C/70%RH
Safety standards:	IEC/EN61347-1, IEC/EN61347-2-13
EMC emission:	EN55015, EN61000-3-2 Class C, IEC61000-3-3
EMC immunity:	EN61000-4-2,3,4,5,6,8,11, EN61547
Strobe test standard:	IEEE 1789

Others

Dimensions(L×W×H):	167×41×32mm	Package size(L×W×H):	168×43×35mm	Gross weight:	160g±10g

LED Current Selection

DIP switch quickly selects multiple current value(See the table below).　　▲ Please set current value when the driver is power-off

DIP switch

	DIP switch									
SE-20-250-1000-W2B3	Output current	250mA	300mA	350mA	400mA	450mA	500mA	550mA	600mA	ON
	Output voltage	9-54V	9-54V	9-54V	9-50V	9-45V	9-40V	9-37V	9-34V	
	Output power	2.25-13.5W	2.7-16.2W	3.15-18.9W	3.6-20W	4.05-20.25W	4.5-20W	4.95-20.35W	5.4-20.4W	
	DIP switch									OFF
	Output current	650mA	700mA	750mA	800mA	850mA	900mA	950mA	1000mA	
	Output voltage	9-31V	9-29V	9-27V	9-25V	9-24V	9-22V	9-21V	9-20V	
	Output power	5.85-20.15W	6.3-20.3W	6.75-20.25W	7.2-20W	7.65-20.4W	8.1-19.8W	8.55-19.95W	9-20W	

Product Size

Unit: mm

167

41

162

32
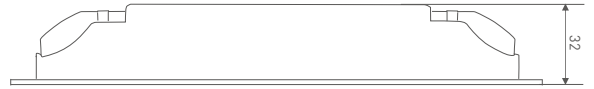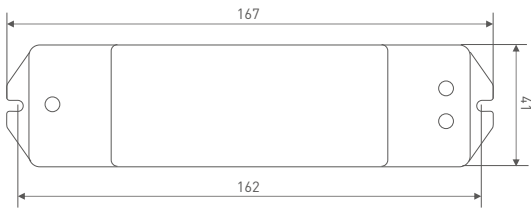
Wiring Diagram

Wireless connection mode

N

L

0.75-1.5▢
N
PRI

LED-W
LED-C
LED+
SEC
0.5-1.5▢

W

C

DIM: 0~100%
CCT: 2700-6500K

Wire diameter: 0.75-1.5▢
Strip length: 8mm-9mm

Wire diameter: 0.5-1.5▢
Strip length: 8mm-9mm

Access the network to control through App and Bluetooth.

**4-wire LED lamp connection**

LED-W
LED-C
LED+

- W
+
- C
+

W
C

Max. 20W
Max. 20W

✳ 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.

20W drivers can be connected with the load of 20W × 2CH. The total power of both channels keeps within 20W.
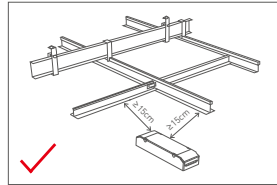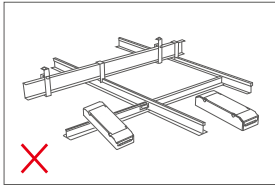
Installation Precautions
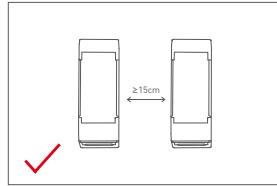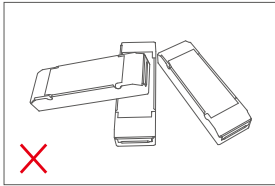
Please do not stack the products. The distance between two products should be ≥15cm so as not to affect heat dissipation and the lifespan of the products.
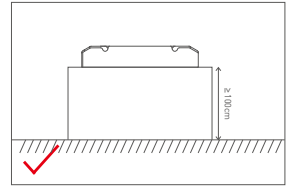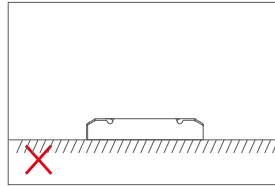
Please do not place the products on the floor. The distance between the product and the floor should be ≥100cm so as to avoid signal interference.

Please do not place the products near a large area of metal objects (such as metal stud ceilings). The distance between the product and the metal object should be ≥15cm so as to avoid signal interference.
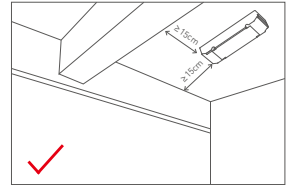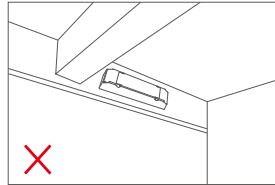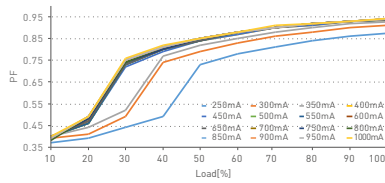
Please do not install the products on beams or near the corners. The distance between the product and the beam or the corner should be ≥15cm so as to avoid signal interference.
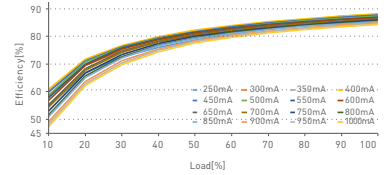
Relationship Diagrams

THD Characteristic Curve
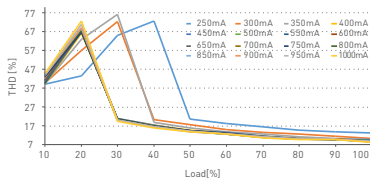
Power Factor Characteristic Curve

Efficiency VS Load

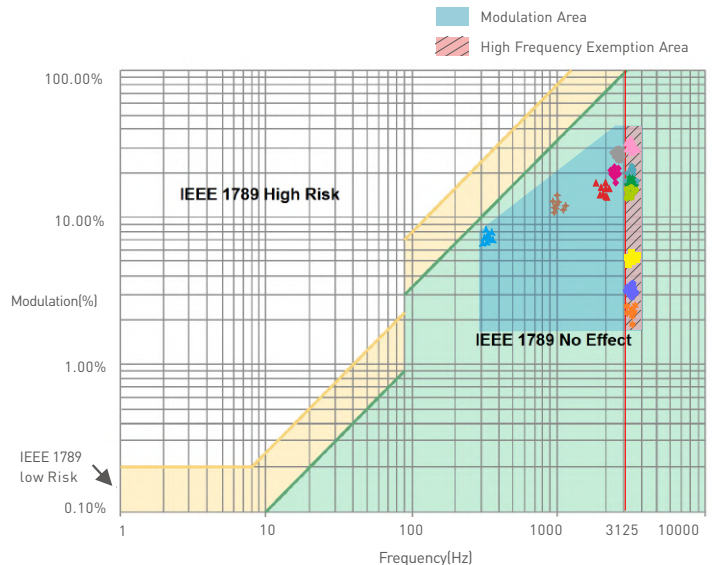## Flicker Test Table

IEEE 1789	
Limit Value of Modulation in Low Risk Areas	
Waveform frequency of Optical output	Limit value [%]
f ≤ 8Hz	0.2
8Hz < f ≤ 90Hz	0.025 × f
90Hz < f ≤ 1250Hz	0.08 × f
f > 1250Hz	Exemption assessment
Limit Value of Modulation in No Effect Areas	
Waveform frequency of Optical output	Limit value [%]
f ≤ 10Hz	0.1
10Hz < f ≤ 90Hz	0.01 × f
90Hz < f ≤ 3125Hz	(0.08/2.5) × f
f > 3125Hz	Exemption assessment (High frequency exemption)

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

Modulation Area
High Frequency Exemption Area

IEEE 1789 High Risk

IEEE 1789 No Effect

IEEE 1789 low Risk

Marks in the right chart are tested results of different current level.

The output frequency is 0Hz in 100% brightness and its corresponding modulation is 0%, which could not be shown in the right chart.

LTECH

App Operating Instructions

1. Register an account

Tuya Smart App is compatible with iOS and Android systems. Scan the QR code below with you mobile phone and follow the prompts to complete the app installation. After installation being completed, you can log in or register an account.

App support

App download

2. Paring instructions

A new user clicks "Me" → "Home Management" → "Create a Home", give a name to your home and confirm your home location, then add the rooms you need. Click "Add Device"—"Auto Scan" and enable permissions for automatically scanning Bluetooth/Wi-Fi/Zigbee/wired devices. Follow the prompts to add the device (Ensure that the device is ready for network connection).
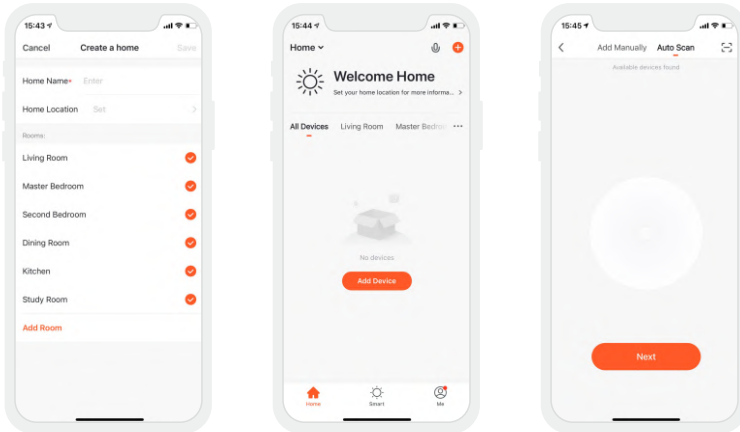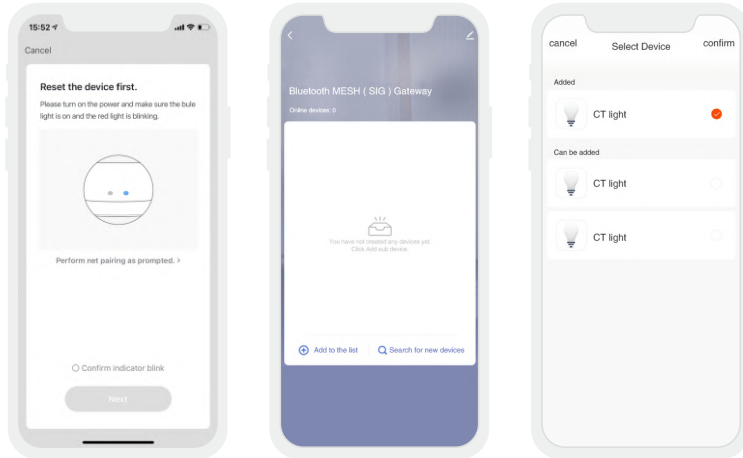
3. Lighting control settings

After paring up your device, click the device you add and adjust to your desired lighting status by brightness changing and color temperature adjustment. In "Settings", there are also lighting alarm clock (Tuya Bluetooth Gateway needs to be added) and countdown functions.
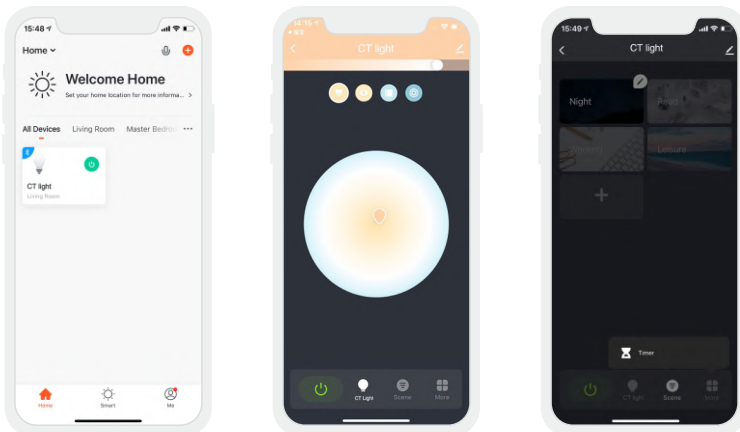
4. Remote control and automation

4.1 Remote control: Add Tuya Bluetooth MESH (SIG) Gateway by search bluetooth devices, and follow the prompts to configure the gateway to the network. After configuring the network, access the gateway interface and click "Add to the list" or "Search for new devices" to add the device to the gateway, and then the device can be controlled remotely.

4.2 Automation settings: After adding Tuya Bluetooth MESH SIG) Gateway , you'll be able to control the lighting remotely by clicking "Automation" in the "Smart" menu. In "Automation", set up conditions from weather, location and timing to other device status so as to trigger the lighting effects you preset and realize the lighting automation.
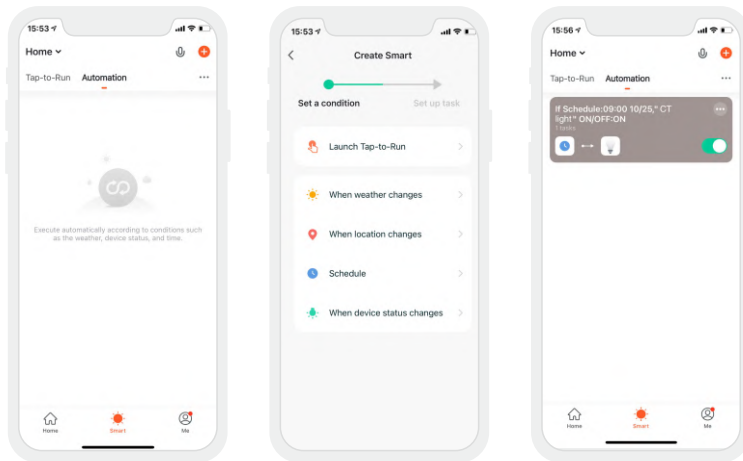
Reset the device (Reset to factory defaults)

When the driver is power-on, turn it off and after 15s turn it on. After 2s, turn it off again. Repeat the same operation 5 times and then turn on the driver again. When the lamp is flashing (2 flashes/s), reset the device successfully.

Turn it on 2s

Turn it off 15s

Under the driver being power-on

Turn it off ——15s—— Turn it on ——2s—— ......

(Repeat 5 times)
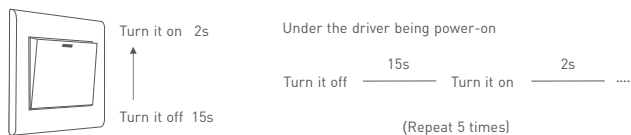
Attentions

- 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 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.

Update Log

Version	Updated Time	Update Content	Updated by
A0	2021.03.11	Original version	Liu Weili
A1	2021.12.10	Update the product silk screen and add installation precautions	Liu Weili