Intelligent Tunable White LED Driver (Constant Current)

- Ultra-slim, thin and light; the design of screwless end housing
- The housing is made from V0 flame retardant PC materials that SAMSUNG/ COVESTRO uses.
- Comply with the no-load power consumption of the EU's ErP Directive, standby power consumption<0.5W.
- Soft-on and fade-in dimming function enhances your visual comfort.
- T-PWM™dimming technology allows continuous and flicker-free images under high-speed shooting.
- Dimming from 0~100%, down to 0.01%.
- 0-100% flicker-free dimming with high frequency exemption level.
- Innovative thermal management technology intelligently protects the power life.
- Overvoltage, overload, short circuit protection and automatic recovery.
- Multiple current levels & wide voltage, suitable for different power LEDs.
- Class 2 LED driver, Safety Extra Low Voltage(SELV).
- Suitable for indoor light applications of Ⅰ/Ⅱ/Ⅲ type.
- Up to 50000-hour life time.
- 5 -year warranty (Rubycon capacitor).

T-PWM™
Super depth dimming technology

Flicker-free
IEEE 1789

Dimmable:
0.01-100%

DIM/CT

SELV RoHS Class 2

(The certification icons represent on-going certification applications only, and final certification qualification is subject to actual products.)

DALI | T-PWM Super depth dimming technology | Flicker-free IEEE 1789 | Multiple Current | Over voltage protection | Short circuit protection | Overload protection | Overheat protection

Technical Specs

Model		SE-12-100-450-W2D		
FEATURES	Output Type	Constant Current		
	Dimming Type	DALI		
	Output Feature	Isolation		
	Protection Grade	IP20		
	Insulation Grade	Class II (Suitable for class I and class II light fixtures)		
OUTPUT	Output Voltage	9-42Vdc		
	Max Output Voltage	≤48V		
	Output Current	100-450mA		
	Load Power Range	0.9W-12W		
	Strobe Level	No visible flicker/High frequency exemption level		
	Dimming Range	0~100%, down to 0.01%		
	LF Current Ripple(<120Hz)	<3%		
	Current Accuracy	±5%		
	Ripple & Noise	≤2V		
	PWM Frequency	<3600Hz		
INPUT	Dimming Interface	DALI-2, DT6/DT8		
	DC Voltage Range	120-300Vdc		
	AC Voltage Range	100-240Vac		
	Rated Voltage	115Vac / 230Vac		
	Frequency	50/60Hz		
	Input Current	≤0.18A/115Vac		
	Power Factor	PF>0.9/230Vac (Foll load)		
	THD	THD<10%/230Vac (Foll load)		
	Efficiency	>82%@450mA		
	No-load Power Consumption	<0.5W		
	Standby Power Loss	<0.5W		
	Inrush Current (typ.)	Cold start15A@230Vac (Test twidth=102 us 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:500VdC/25°C/70%RH≥100MΩ		
	Safety Standards	CCC	China	GB19510.1, GB19510.14
		TUV	Germany	EN61347-1, EN61347-2-13, EN62493
		CE	European Union	EN61347-1, EN61347-2-13, EN62384
		KC	Korea	KC61347-1, KC61347-2-13
		RCM	Australia	AS61347-1, AS61347-2-13
		ENEC	Europe	EN61347-1, EN61347-2-13, EN62384
		CB	CB member states	IEC61347-1, IEC61347-2-13
		EAC	Russia	IEC61347-1, IEC61347-2-13
	EMC Emission	CCC	China	GB/T17743, GB17625.1
		CE	European Union	EN55015, EN61000-3-2, EN61000-3-3, EN61547
		KC	Korea	KN15, KN61547
		RCM	Australia	EN55015, EN61000-3-2, EN61000-3-3, EN61547
		EAC	Russia	IEC62493, IEC61547, EH55015
	EMC Immunity	EN61000-4-2,3,4,5,6,8,11, EN61547		
	Strobe Test Standard	IEEE 1789		
	DALI Bus Standard	IEC62386-101,102,207,209		
OTHERS	Lifetime	50000 hour		
	Warranty	5 years		

LED Current Selection

DIPswitch

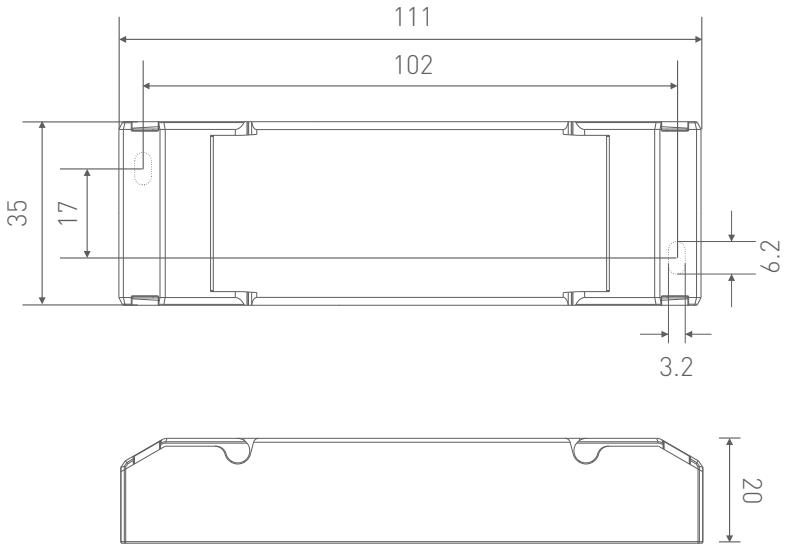
	DIP Switch	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	1 2 3	ON OFF
SE-12-100-450-W2D	Output Current	100mA	150mA	200mA	250mA	300mA	350mA	400mA	450mA	
	Output Voltage	9-42V	0-42V	9-42V	9-42V	9-40V	9-34V	9-30V	9-27V	
	Output Power	0.9-4.2W	1.35-6.3W	1.8-8.4W	2.25-10.5W	2.7-12W	3.15-11.9W	3.6-12W	4.05-12.15W	

✻ Before setting the current via the DIP switches, confirm that the LED driver is powered off. To make the current setting effective, you need to power on the driver again. (Note: If you do not power off the driver before setting the current, it may cause damage to the light fixture.)

✻ E.g. LED 3V/pcs: 9-42V can power 3-14pcs LEDs in series, 9-21.5V can power 3-7pcs LEDs, the max quantity of LEDs in series will be subject to the actual voltage of LED.

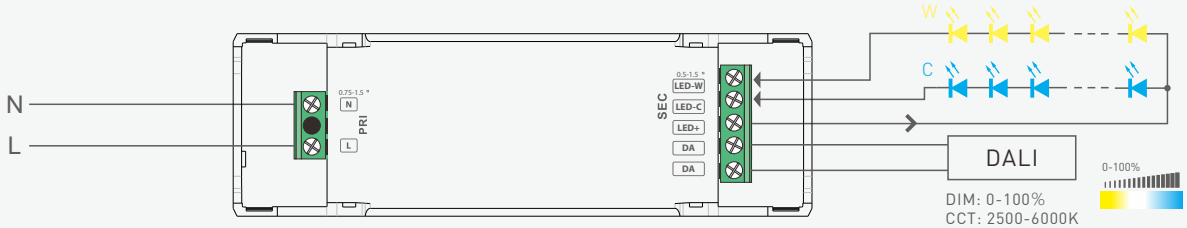
Product Size

Unit: mm



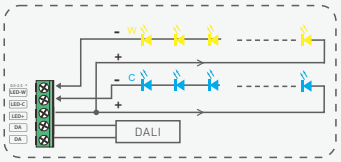
Wiring Diagram

DALI Connection Mode



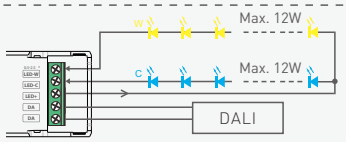
Wire diameter:0.75-1.5□(22-16AWG)
Strip length:4.5mm-5mm

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

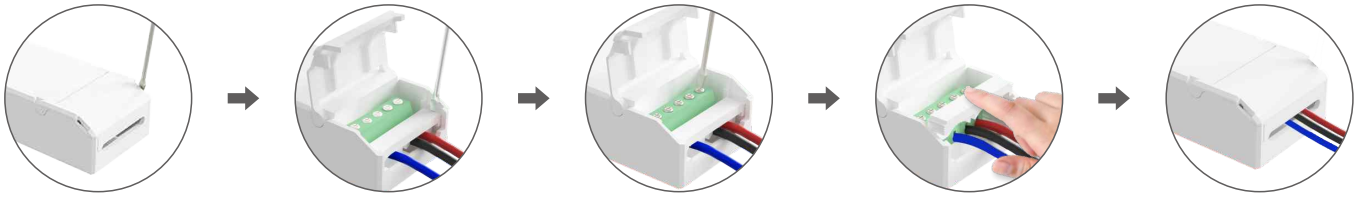


4-wire LED lamp connection

✻ 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 Drawings



1.Pry up the protective housing in the side plate position with a tool.

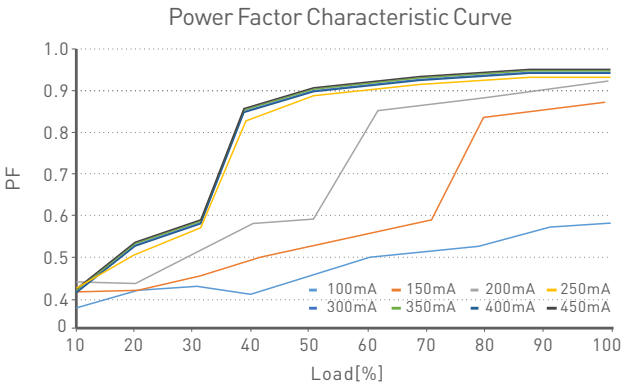
2.Pry up the side edge of the tension plate with a tool to remove it.

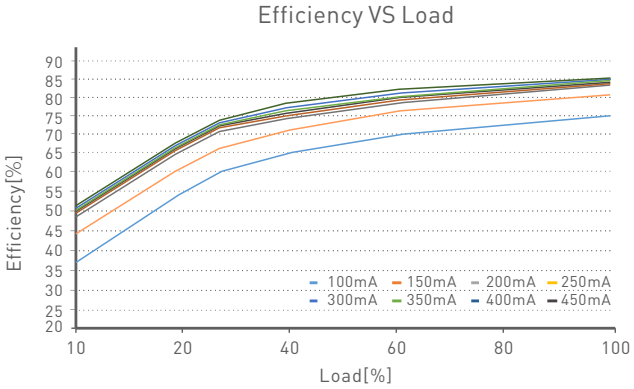
3.Use a screwdriver to connect electrical wires as wiring diagram shows.

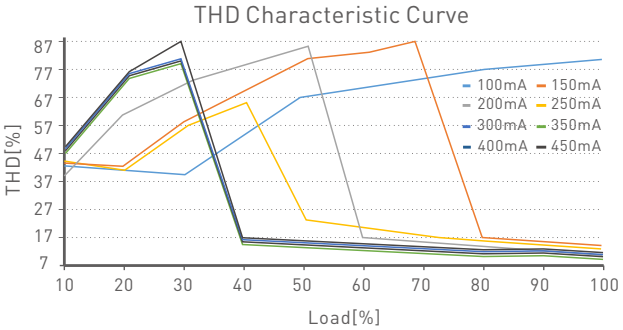
4.Press down the tension plate to fix the electrical wires.

5.Close the protective housing.

Relationship Diagrams





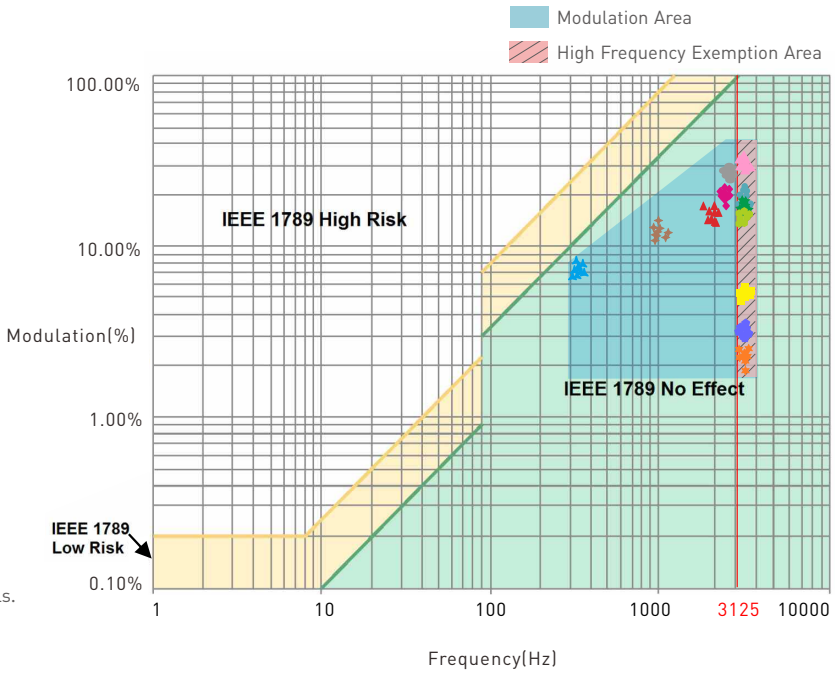


Flicker Test Table

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%



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

Packaging Specifications

Model	SE-12-100-450-W2D
Carton Dimension	260×235×195mm (L×W×H)
Quantity	20 PCS/Layer; 5 Layers/Carton; 100 PCS/Carton
Weight	0.077 kg/PC; 8.9 kg/Carton

Packaging Image

Inner Packaging Box

Carton Packaging

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 Environment 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 : 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	2021.06.10	Original version	Xu Shujun
A1	20230203	Update the product screen print	Yang Weiling