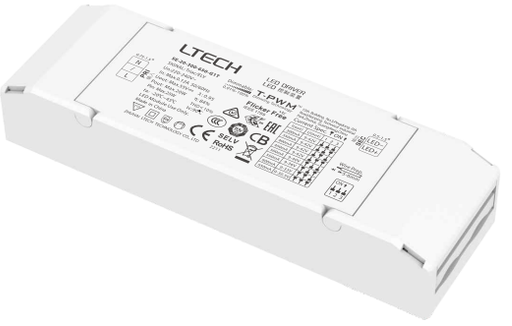
Intelligent LED Driver (Constant Current)

- The housing is made from V0 flame retardant PC materials from SAMSUNG/COVESTRO.
- Small size and light weight. The clamshell design and screwless type for strain-relief.
- Support Leading edge(Triac), Trailing edge(ELV).
- 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 0.01%.
- The whole dimming process is flicker-free with high frequency exemption level.
- Multiple current levels and wide voltage range. Suitable for different power of LEDs.
- Class 2 LED driver, Safety Extra Low Voltage (SELV).
- Innovative thermal management technology intelligently protects the life of the LED driver.
- Overheat, overload, short circuit protection and automatic recovery.
- Suitable for Class Ⅰ / Ⅱ / Ⅲ indoor light fixtures.
- Up to 50,000-hour life time.
- 5-year warranty (Rubycon capacitor).

T-PWM™
Dimming Technology

Flicker Free
IEEE 1789

Dimmable:
0.01%-100%



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

Triac ELV | T-PWM™ Dimming Technology | Flicker Free IEEE 1789 | Multiple Current | Short Circuit Protection | Over Load Protection | Overheat Protection

Technical Specs

Model		SE-20-300-650-G1T		
Features	Output Type	Constant Current		
	Dimming Interface	Triac/ELV		
	Output Feature	Isolation		
	Protection Grade	IP20		
	Insulation Grade	Class II (Suitable for class I/ II /III light fixtures)		
OUTPUT	Output Voltage	9-42Vdc		
	Maximum output voltage	⩽55V		
	Output Current Range	300-650mA		
	Output Power Range	2.7W-20W		
	Dimming Range	0~100%, down to 0.01%		
	Ripple Current	Max.5.0%@Rated current		
	Current Accuracy	±5%		
	PWM Frequency	3600Hz		
INPUT	DC Voltage Range	200-280Vdc		
	Input Voltage	220-240Vac		
	Frequency	50/60Hz		
	Input Current	⩽0.12A/230Vac		
	Power Factor	PF>0.95/230Vac , at full load		
	THD	THD<10%/230Vac , at full load		
	Efficiency (Typ.)	>84%@500mA		
	Inrush Current	Cold start 13A(Test twidth=120us tested under 50% Ipeak)/230Vac		
	Anti Surge	L-N: 2kV		
	Leakage Current	<0.5mA/230Vac		
ENVIRONMENT	Working Temperature	ta: -20 ~ 45°C tc: 90°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 1.02-1.35 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: 100MΩ/500VDC/25°C/70%RH		
	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
		BIS	India	IS 15885(PART 2/SEC 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	IEC 62493 IEC 61547 EH 55015 IEC 61000-3-2, IEC 61000-3-3
	EMC Immunity	EN61000-4-2,3,4,5,6,8,11, EN61547		
ErP	Power Consumption	Standby power consumption		No standby mode
		Networked standby		No networked standby mode (No Phase-cut signal, no power consumption)
		No-load power consumption		Without no-load mode
	Flicker/Stroboscopic Effect	IEEE 1789		Meet IEEE 1789 standard/High frequency exemption level
		CIE SVM		Pst LM⩽1.0, SVM⩽0.4
	DF	Phase factor		DF⩾0.9
OTHERS	Weight(N.W.)	110g		
	Dimensions	127×40×23mm(L×W×H)		

LED Current Selection

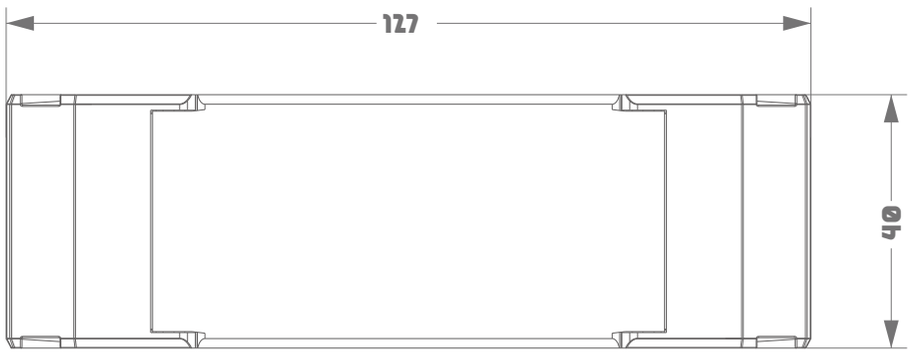
DIP Switch

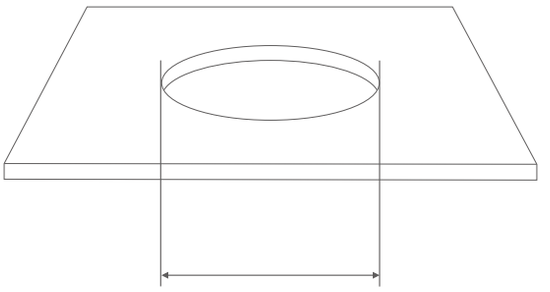
SE-20-300-650-G1T	DIP Switch									ON / OFF
	Output Current	300mA	350mA	400mA	450mA	500mA	550mA	600mA	650mA	
	Output Voltage	9-42V	9-42V	9-42V	9-42V	9-40V	9-36V	9-33V	9-30.5V	
	Output Power	2.7-12.6W	3.15-14.7W	3.6-16.8W	4.05-18.9W	4.5-20W	4.95-19.8W	5.4-19.8W	5.85-19.82W	

* 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 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 LEDs.

Product Size

Unit: mm

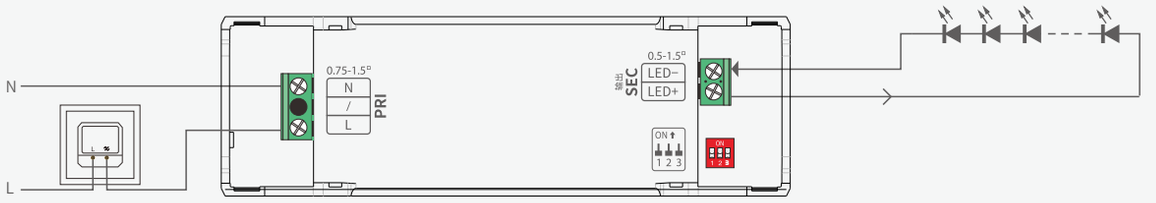




Minimum hole size: φ48mm (1,89")

Wiring Diagram

Triac Connection

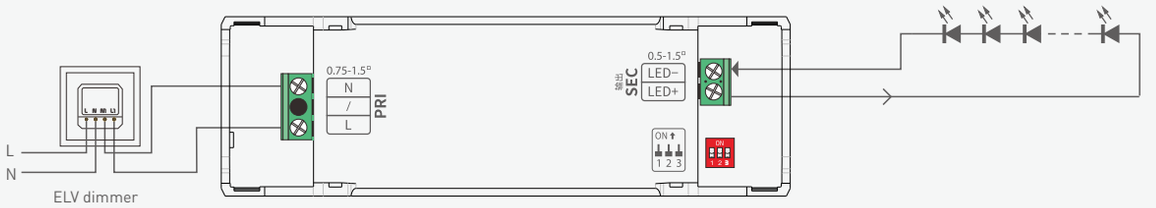


Triac dimmer
0-100% dimming range

Wire diameter: 0.75-1.5□(22-16AWG)
Strip length: 5-6mm

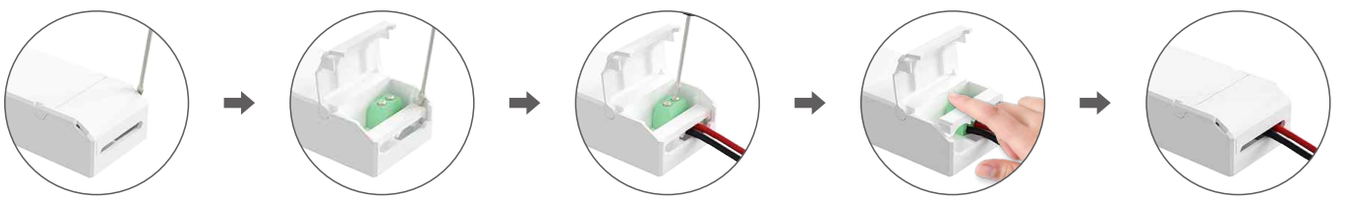
Wire diameter: 0.5-1.5□(22-16AWG)
Strip length: 5-6mm

ELV Connection



ELV dimmer
0-100% dimming range

Protective Housing Application Diagram



1. Use a tool to pry up the protective housing on the side panel.

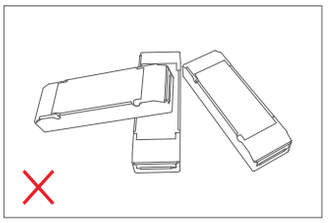
2. Pry up the protective housing in the side plate position with a tool.

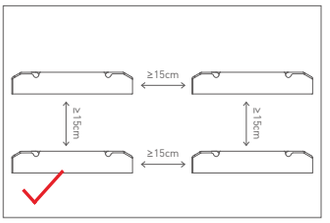
3. Connect to electrical wires with a screwdriver as wiring diagram shows.

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

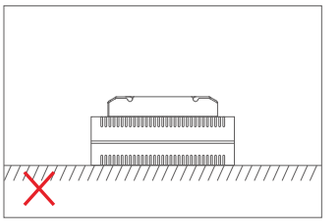
5. Close the protective housing.

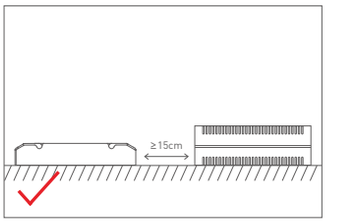
Installation Precautions





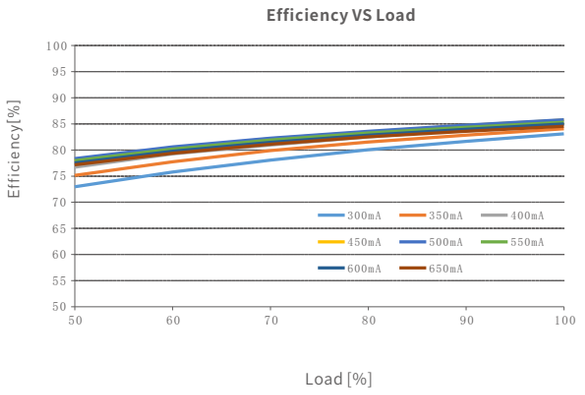
Please do not stack the products. The distance between two products should be ≥15cm so as not to affect heat dissipation and the lifespan of the products.

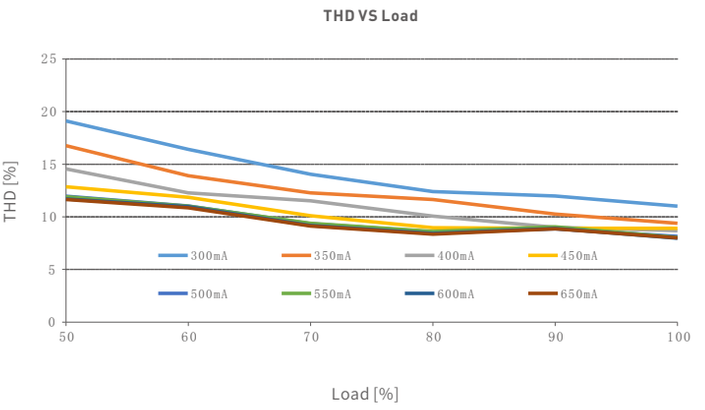


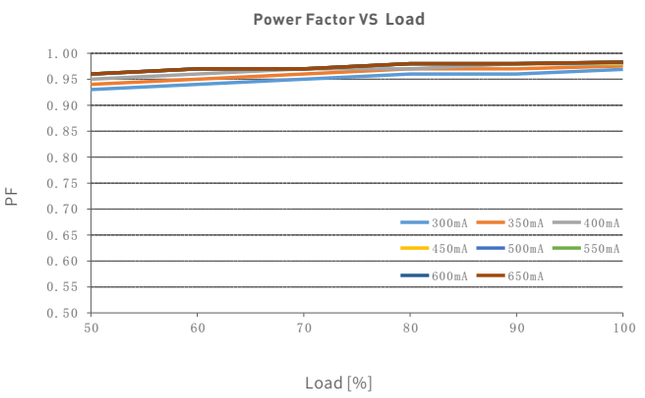


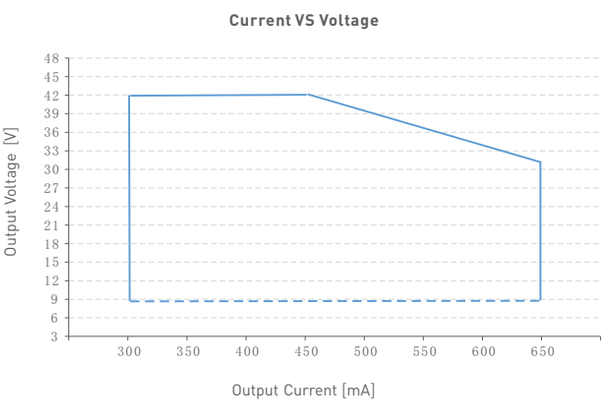
Please not place the products on LED drivers. The distance between the product and the driver should be ≥15cm so as not to affect heat dissipation and shorten the lifespan of the products.

Relationship Diagrams









SE-20-300-650-G1T

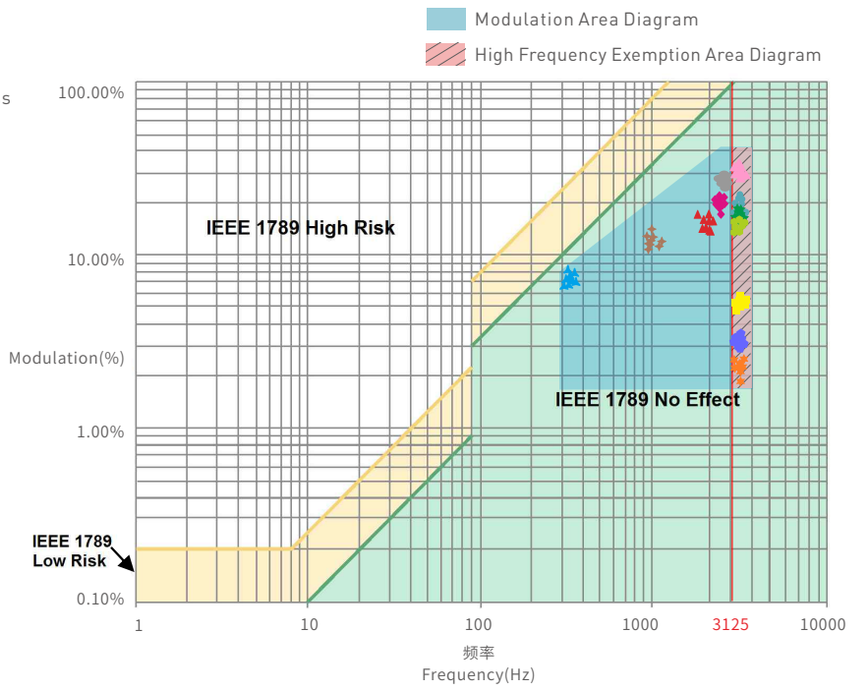
Flicker Test Form

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)

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.

Packaging Specifications

Model	SE-20-300-650-G1T
Carton Dimensions	290×275×106mm(L×W×H)
Quantity	20 PCS/Layer; 2 Layers/Carton; 40 PCS/Carton
Weight	0.11kg/PC; 5.2kg±5%/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 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

- This product must be installed and adjusted by a qualified professional.
- This product is 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 life the product. Please install the product in a environment with good ventilation.
- When you install this product, please avoid being near a large area of metal objects or stacking them to prevent signal interference.
- Please keep the product away from a intense magnetic field, a high pressure area or a place where lightning is easy to occur.
- Please check whether the working voltage used complies with the parameter requirements of the product.
- Before you power on the product, please make sure all the wiring is correct in case of incorrect connection that may cause a short circuit and damage the components, or trigger a accident.
- If a fault occurs, please do not attempt to fix the product by yourself. If you have any question, please contact the supplier.

✻ 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	2022.11.09	Original version	Yang Weiling