Intelligent LED Driver (Constant Voltage)

- Small size and light weight. Adopt SAMSUNG/COVESTRO V0 flame resistant polycarbonate protective housings.
- Bluetooth 5.0 SIG Mesh 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 your visual comfort.
- The whole dimming process is flicker-free with high frequency exemption level.
- Dimming from 0~100%, down to 0.1%.
- Comply with the EU's ErP Directive, stand-by power consumption<0.5W.
- The secure and reliable design for signal isolation.
- 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.
- 2-year warranty (Rubycon capacitor).

Bluetooth®

Flicker-free
IEEE 1789

Dimmable:
0.1%~100%

Type TL 85/72.3°C
Use only within an enclosure.

FCC ID RoHS SELV Class 2

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

Overheat protection | Over voltage protection | Overload protection | Short circuit protection

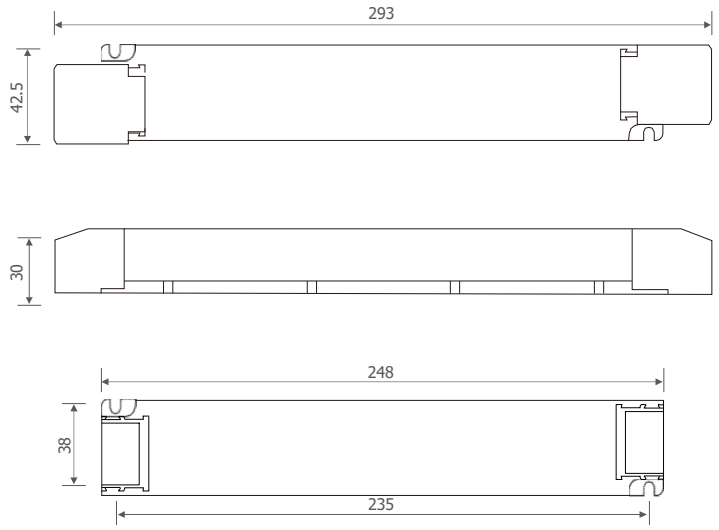
Technical Specs

Model		LM-60-12-U1B2		
OUTPUT	Output Voltage	12Vdc		
	Output Voltage Range	12Vdc ± 0.5Vdc		
	Output Current	Max. 5A		
	Output Power	Max. 60W		
	Output Power Range	0-60W		
	Strobe Level	High frequency exemption level		
	PWM Frequency	3600Hz		
	Dimming Range	0~100%, down to 0.1%		
	Overload Power Limitation	≥102%		
	Ripple & Noise	Switch ripple≤200mV, noise≤400mV		
INPUT	Dimming Interface	Bluetooth 5.0 SIG Mesh		
	Input Voltage	120-277Vac		
	Frequency	50/60Hz		
	Input Current	0.6A/120Vac, 0.35A/230Vac, 0.3A/277Vac		
	Power Factor	PF>0.99/120Vac, PF>0.95/230Vac, PF>0.9/277Vac (at full load)		
	THD	120Vac@THD < 5%, 230Vac@THD < 7%, 277Vac@THD < 10% (at full load)		
	Efficiency (typ.)	90%		
	Standby Power Loss	<0.5W		
	Inrush Current	Cold start 45A/230Vac (Test twidth = 840us under 50% Ipeak)		
	Anti Surge	L-N: 2KV		
	Leakage Current	Max. 0.5mA		
ENVIRONMENT	Working Temperature	ta: -20~50°C tc: 85°C		
	Working Humidity	20-95%RH, non-condensing		
	Storage Temperature,Humidity	-40~80°C, 10-95%RH		
	Temperature Coefficient	±0.03%/°C(-20~50°C)		
	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		
	Overvoltage Protection	Shut down the output when non-load voltage≥14V, and recover automatically		
	Overload Protection	Shut down the output when current load≥102%, and recover automatically		
	Short Circuit Protection	Enter hiccup mode if short circuit occurs, and recover automatically		
SAFETY & EMC	Withstand Voltage	I/P-O/P: 3750Vac		
	Isolation Resistance	I/P-O/P: 100MΩ/500VDC/25°C/70%RH		
	Safety Standards	UL	America	UL8750
		CUL	Canada	CSA C22.2 NO. 250. 13
		CE	European Union	EN61347-1, EN61347-2-13, EN62384
	EMC Emission	UL	America	FCC part 15
		CE	European Union	EN55015, EN61000-3-2, EN61000-3-3, EN61547
	EMC Immunity	EN61000-4-2,3,4,5,6,8,11, EN61547		
	Strobe Test Standard	IEEE 1789		
OTHERS	Gross weight(G.W)	285g±10g		
	Dimensions	293×42.5×30mm(L×W×H)		
	Package size	296×44×33mm(L×W×H)		
	Carton Size	315×230×215mm(L×W×H) 30pcs/ctn 9.35kg±5%/ctn		

* The driver is suitable for connecting resistor current-limiting LED fixture (e.g. LED strip). The inrush current will be dozens of times increased if connecting built-in constant current IC current-limiting LED fixtures, the driver will activate the overloaded protection (hiccups flickering). When you order, please remark controlling the constant current LED fixture (e.g. MR16 lamp, underground light, LED wall washer, constant current LED strip, etc.), so that we can prepare them with special procedures.

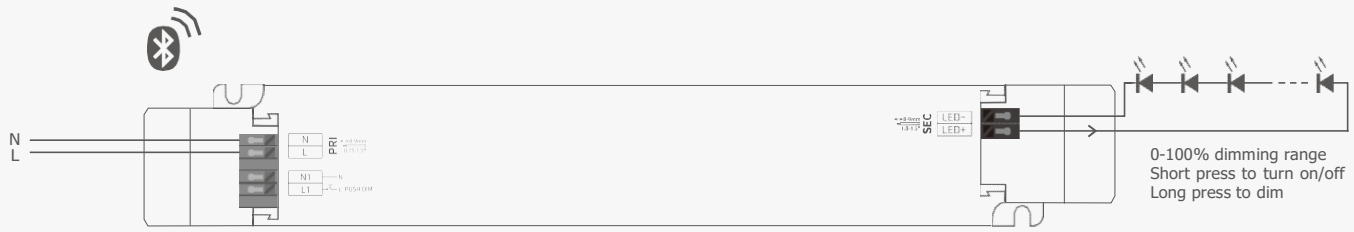
Product Size

Unit: mm



Wiring Diagram

Wireless connection mode



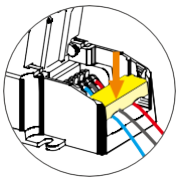
Wire diameter: 0.75-1.5 (20-16AWG)
Strip length: 8-9mm

Wire diameter: 1.0-1.5 (18-16AWG)
Strip length: 8-9mm

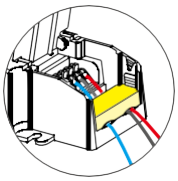
* Access the network to control through App and Bluetooth

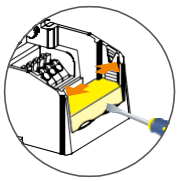
Protective Housing Application Diagram

Tension plate



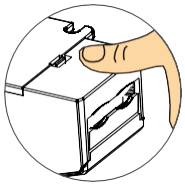
Push the tension plate down to fix the electric wires.

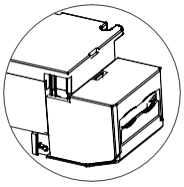


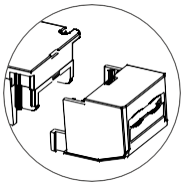


Push the side plate outwards and remove the tension plate by prying it up with a tool at the same time.

Remove the protective housing

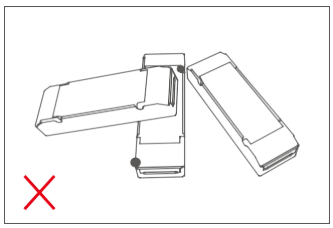


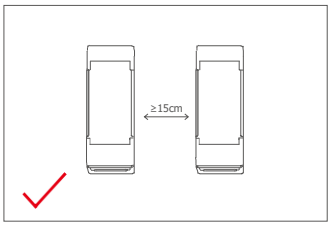




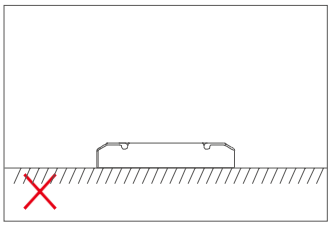
Pull the housing left and right from the bottom to remove it.

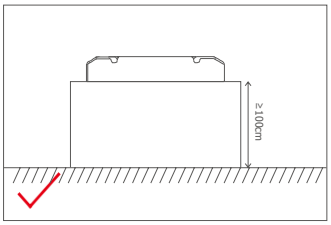
Installation Precautions



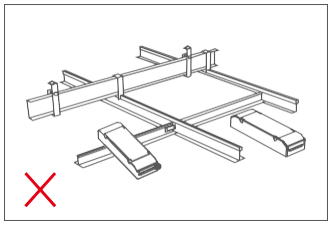


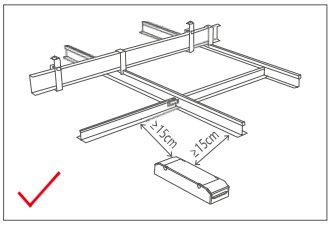
Please do not stack the products. The distance between two products should be ≥15cm so as not to affect heat dissipation and the lifespan of the products.



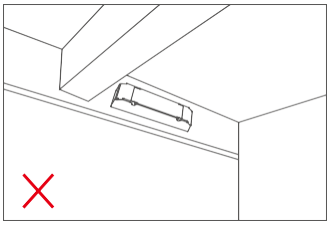


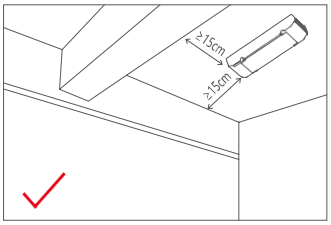
Please do not place the products on the floor. The distance between the product and the floor should be ≥100cm so as to avoid signal interference.





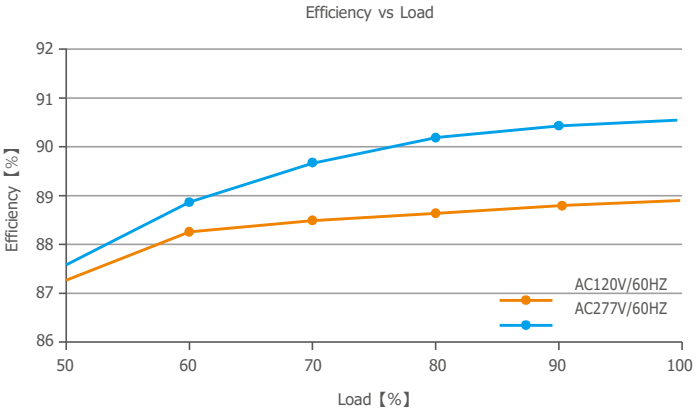
Please do not place the products near a large area of metal objects (such as metal stud ceilings). The distance between the product and the metal object should be ≥15cm so as to avoid signal interference.

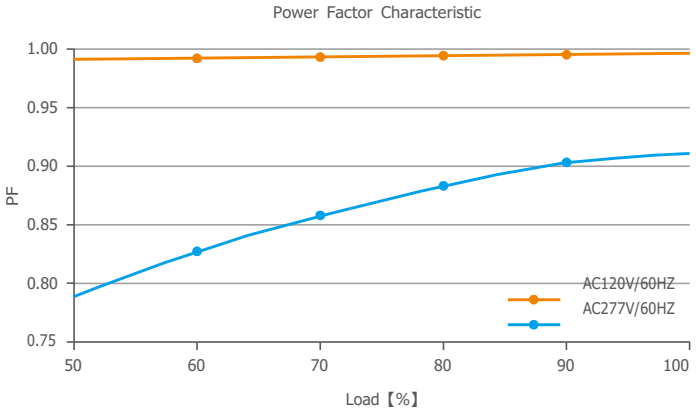


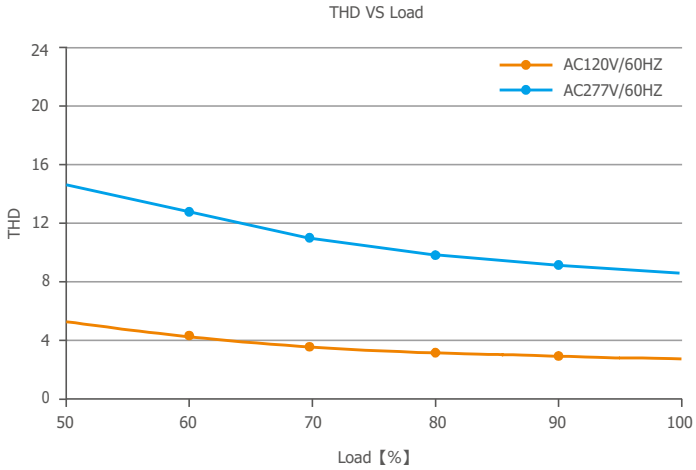


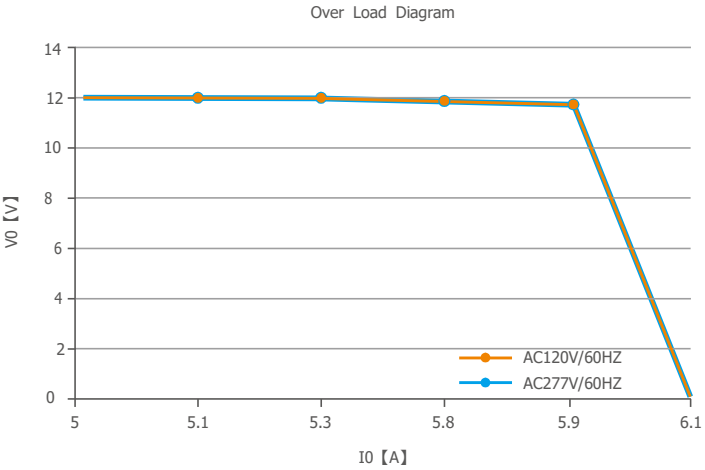
Please do not install the products on beams or near the corners. The distance between the product and the beam or the corner should be ≥15cm so as to avoid signal interference.

Relationship Diagrams









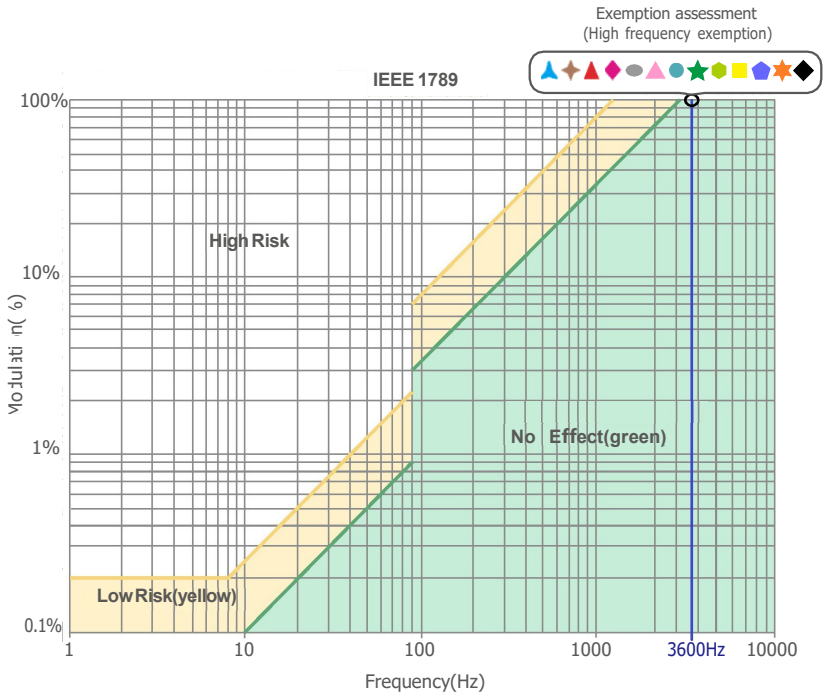
Flicker Test Table

IEEE 1789

Limit Value of Modulation in Low Risk Areas	
Waveform frequency of Optical output (f)	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 (f)	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.

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.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-- Reorient or relocate the receiving antenna.
-- Increase the separation between the equipment and receiver.
-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-- Consult the dealer or an experienced radio/TV technician for help.

To maintain compliance with FCC's RF exposure guidelines, the distance must be at least 20cm between the radiator and your body, and fully supported by the operating and installation configurations of the transmitter and its antenna(s).

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.