LTSYS

LM-60-24-U1D2
LM-60-12-U1D2

DALI Push DIM

Intelligent LED Driver (Constant Voltage)

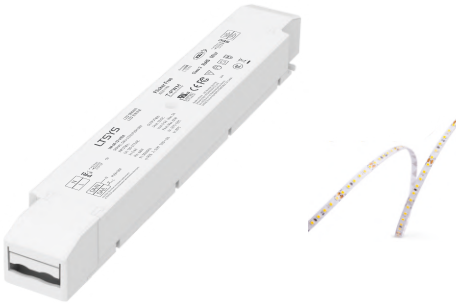
- Small size and light weight. The housing is made from V0 flame retardant PC materials from SAMSUNG/COVESTRO.
- The clamshell design and screwless type for strain-relief. The design of dismountable end cap allows you to adjust the length of housing depending on your needs.
- With soft-on and fade-in dimming function, enhancing your visual comfort.
- High frequency exemption level.
- Dimming from 0~100%, down to 0.1%.
- DALI bus standard IEC62386-101, 102, 207.
- 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.
- 5-year warranty (Rubycon capacitor).

DALI 2

T-PWM
Dimming Technology

Flicker Free
IEEE 1789

Dimmable:
1:1000



c UL us E497951 Type TL 85/82.3°C

Use only within an enclosure.

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

DALI Push DIM

Overheat protection

Over voltage protection

Overload protection

Short circuit protection

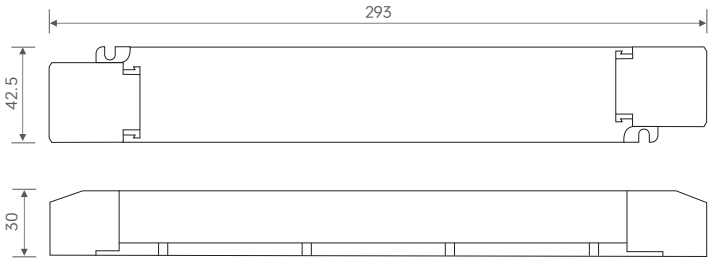
Technical Specs

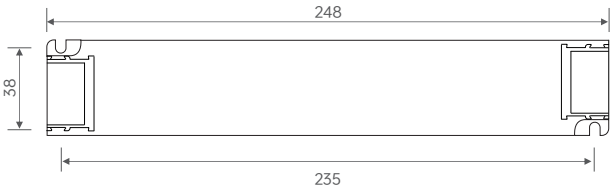
Model		LM-60-24-U1D2	LM-60-12-U1D2
OUTPUT	Output Voltage	24Vdc	12Vdc
	Output Voltage Range	24Vdc±0.5Vdc	12Vdc±0.5Vdc
	Output Current	Max. 2.5A	Max. 5A
	Output Power	Max. 60W	
	Output Power Range	0-60W	
	Strobe Level	High frequency exemption level	
	PWM Frequency	3600Hz	
	Dimming Range	0~100%, down to 0.1%	
	Overload Power Limitation	≥102%	
	Ripple & Noise	Switch ripple≤100mV, noise≤200mV	Switch ripple≤200mV, noise≤400mV
INPUT	Dimming Interface	DALI-2 DT6, Push DIM	
	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.)	91%	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≥28V, and recover automatically	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	CCC China	GB19510.1，GB19510.14，GB19510.213
		UL America	UL8750
		CUL Canada	CSA C22.2 NO. 250. 13
		CE European Union	EN61347-1, EN61347-2-13, EN62384
	EMC Emission	CCC China	GB/T17743，GB17625.1
		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

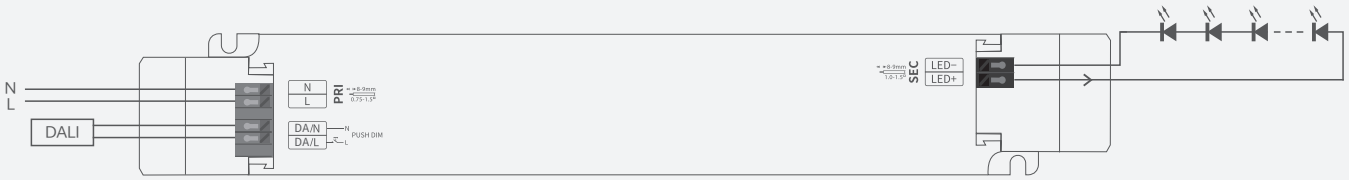
Unit: mm





Wiring Diagram

DALI Connection

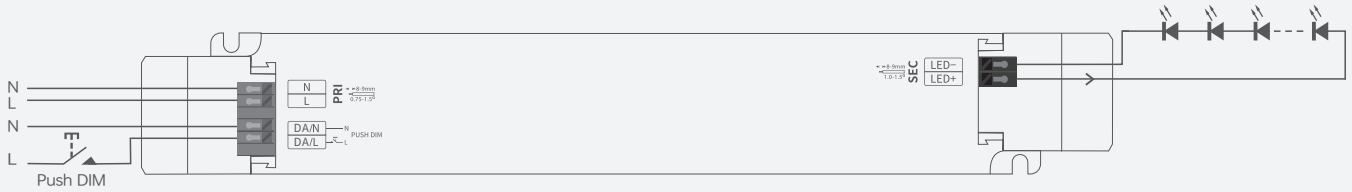


Wire diameter: 0.75-1.5㎡ (20-16AWG)
Strip length: 8-9mm

Wire diameter: 1.0-1.5 ㎡(18-16AWG)
Strip length: 8-9mm

0~100% dimming range

Push DIM Connection



0~100% dimming range
Short press to turn on/off
Long press to dim

＊ Push Dim is invalid under DC voltage input.

＊ Dimming interface priority: DALI first , Push DIM next.

Push DIM



PUSH DIM

Operation Instructions

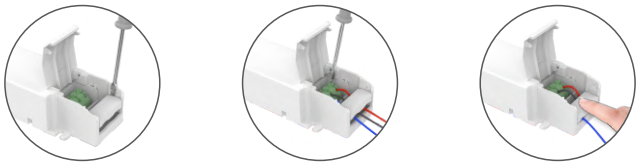
- Short press: on/off control.
- Long press: Adjust brightness +/-; with each subsequent long press, the brightness will adjust in the opposite direction.
- Dimming memory: When switched on again, the light will return to the previously set brightness level.

Synchronous Dimming Reset Operation for Multiple PUSH DIM Dimming Drivers

Long press the dimming push button for more than 15 seconds, all drivers will output 100% brightness.

Protective Housing Application Diagram

Tension plate

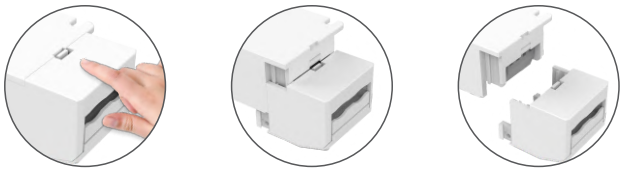


1. Pry up the protecting housing in the side plate position with a tool.

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

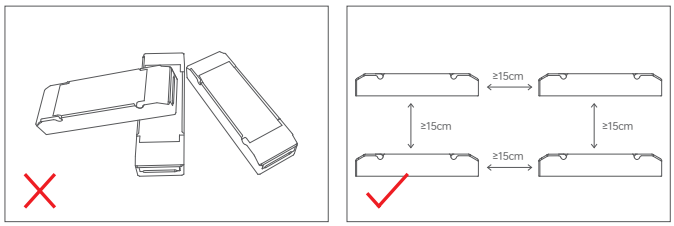
3. Press down the tension plate to fix the the electrical wires, then close the protective housing.

Remove the protective housing

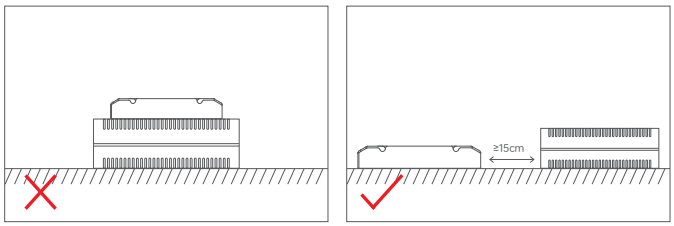


Pull the housing left and right from the bottom to remove it.

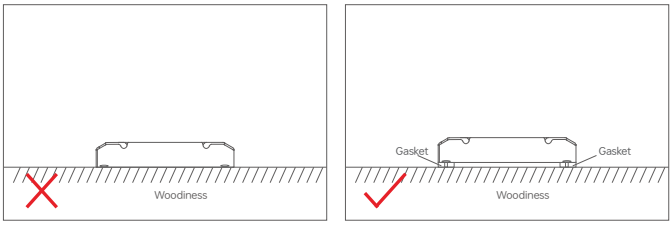
Installation Precautions



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.

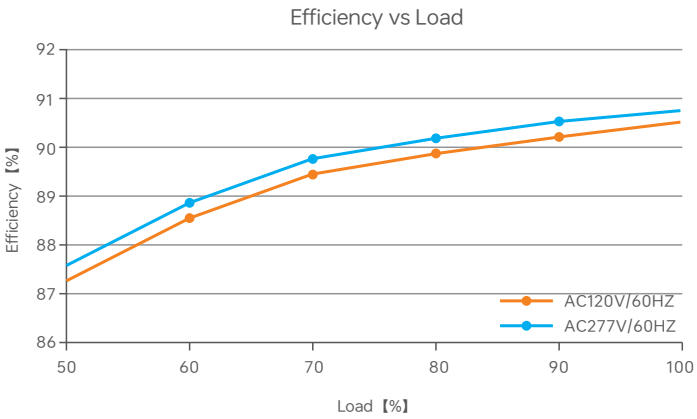


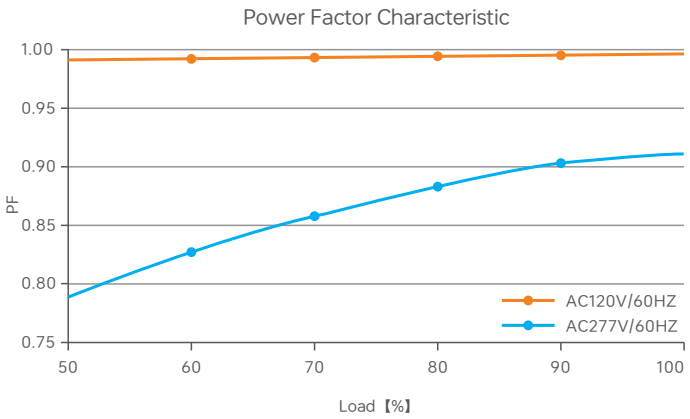
Do not place the product on top of a power supply.The distance between the product and the power supply should be ≥15 cm so as not to affect heat dissipation and the lifespan of the product.

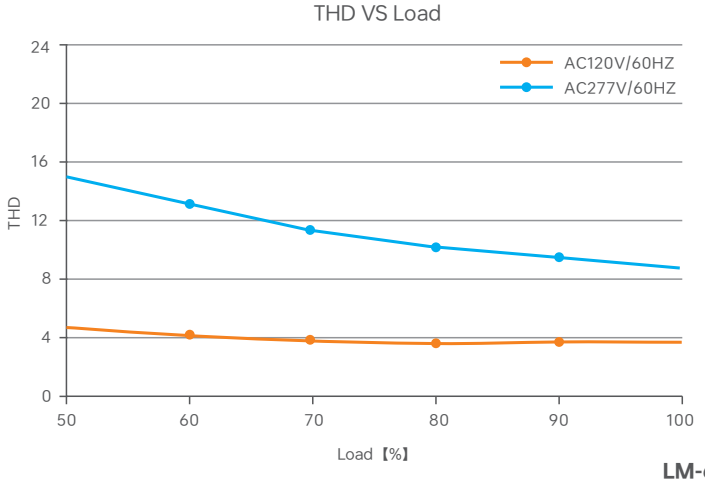


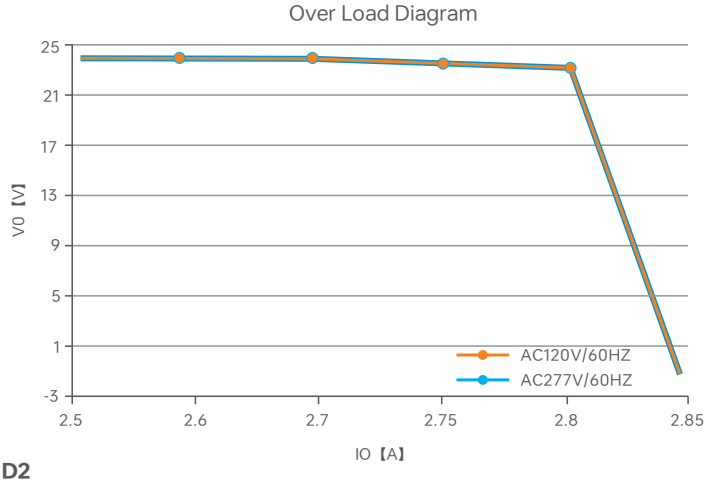
Do not fix the product tightly against the wooden board with screws. Please add a washer ≥7 mm thick under the mounting screws to leave a gap for effective heat dissipation, so as to avoid affecting the heat dissipation and service life of the product.

Relationship Diagrams

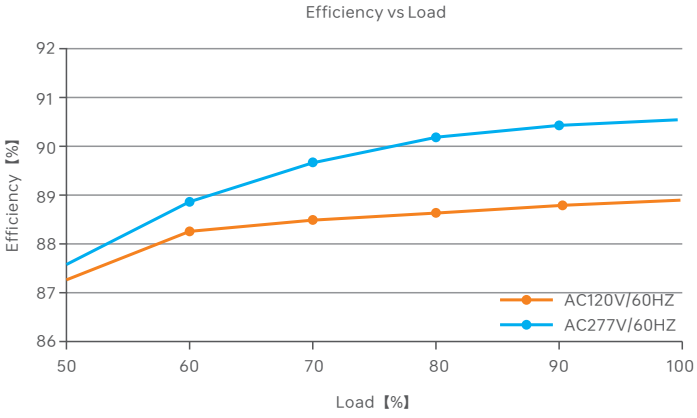


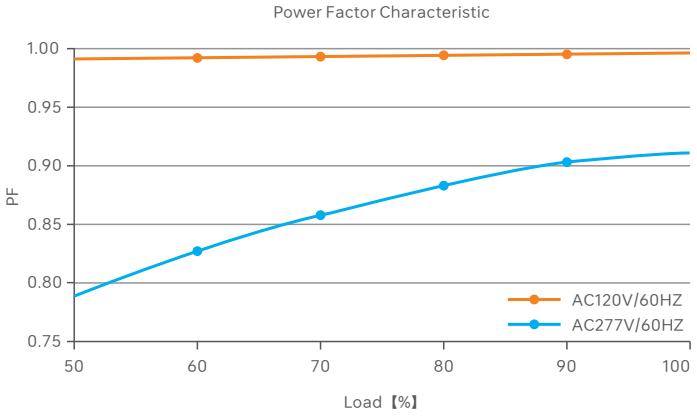


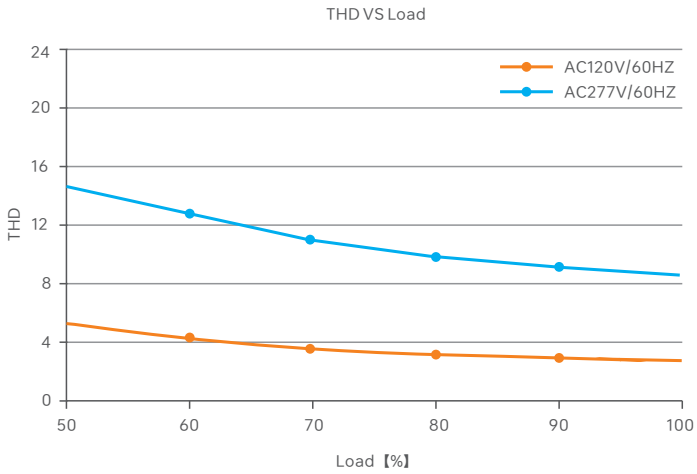


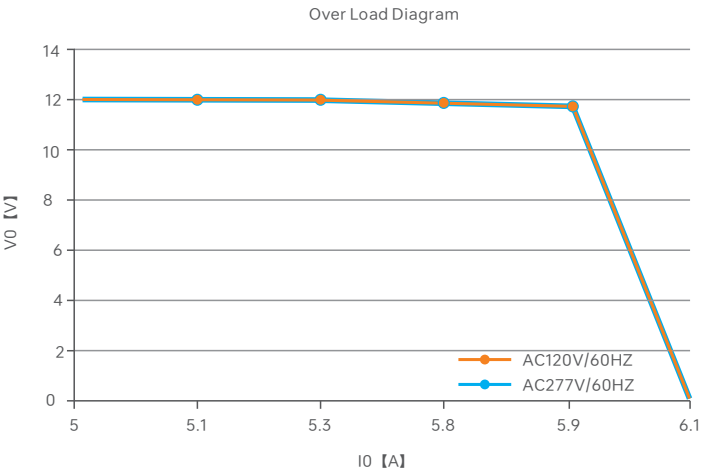


LM-60-24-U1D2









LM-60-12-U1D2

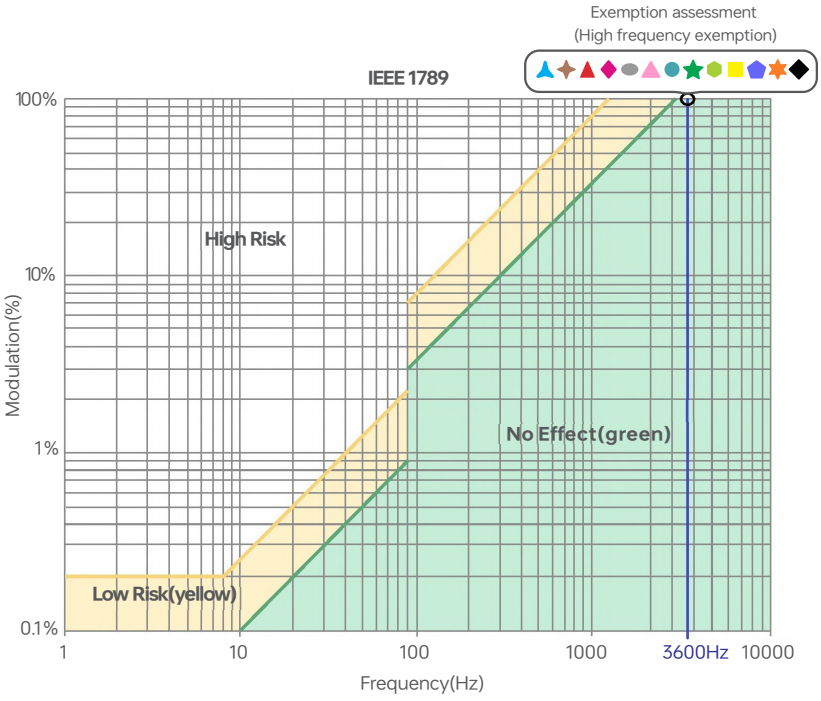
Flicker Test Table

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.

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.