

Features

- 0-10V/PWM/Rx dimming +12V
- High efficiency up to 95%
- THD < 15%
- Output current adjustable via programmer
- Dims to off without afterglow
- Surge protection: L-N: 6kV; L/N-GND: 6kV
- Non-isolated; flicker free
- All-round protections: open circuit and short circuit
- IP54; suitable for Class I light fixtures



Applications

· Shoebox light · grow lighting · flood light · wall light

Descriptions

LF-FAA400(PB) is a 3-in-1 dimming + 12V AUX output constant current LED driver. It features software programming of max. current, super-high efficiency, high PF and low THD. It meets the latest European ERP standard and North American DLC standard to meet the different individual needs of customers.

Product Model

LF- FAA 400 (PB)

- PB: built-in grow lighting
- 400: output power: 400W
- A: 3-in-1 dimming + 12V (light sensor optional)
- F: non-isolated design; A: serial number

Lifud Technology Co., Ltd.

Add.: 3AF, Block B, Xingzhan Plaza, No.446, Nanhuan Rd., Shajing St., Bao'an Dist., Shenzhen, Guangdong, China

Factory I: Lifud Gardern-style Industrial Park, Tianfu New Dist., Meishan City, Sichuan, China

Factory II: Lifud Intelligent Manufacture Industrial Park, Zhichuang Rd., Banfu Town, Zhongshan, Guangdong, China

Website: www.lifud.com

Telephone: +86(0)755 8373 9299

Email: sales@lifud.com

■ Electrical Characteristics

Model			LF-FAA400(PB)				
Output	Output Current (adjustable via programmer)		1400-1800mA				
	Default Current		1660mA±5%				
	Output Current (adjustable via DIP switch; optional)		70%-100% @max. output current (set by yourself)				
	Flicker		According to IEEE Std 1789				
	Output Voltage		180-260Vdc (LED)				
	Output Power		400W max.				
	Ripple Current		<3% @≤120Hz				
	Start-up Time		120Vac<1S @full load				
	Linear Adjustment Rate		±5% @full load				
	Load Adjustment Rate		±5% @full load				
	Temperature Drift		±3% @tc 25~75℃				
Input	Input AC Voltage		90-305Vac (rated voltage: 120-277Vac)				
	Input Frequency		50/60Hz				
	Input DC Voltage		127-305Vdc (rated voltage: 169-276Vdc)				
	Input Current		5A Max.				
	PF		≥0.98/120Vac @full load; ≥0.9/277Vac @70% of rated load				
	THD		≤15% @full load				
	Efficiency	MIN	92.5%/120Vac @260Vdc/1530mA; 94.5%/230Vac@260Vdc/1530mA				
		TYP	93%/120Vac @260Vdc/1530mA; 95%/230Vac @260Vdc/1530mA				
		MAX	/				
	Inrush Current		<230A/200uS @230Vac				
	Loading Quantity on Circuit Breaker		Model	B10	C10	B16	C16
			Quantity(pcs)	3	5	5	8
Standby Power Consumption		≤0.5W@220Vac dims to off					
12V AUX Output	Output Voltage		+12Vdc (11-14V)				
	Output Current		200mA max.				
	Dynamic Load		Please make sure that it matches the LED driver.				
	Ripple Voltage		≤1V				
Protection Characteristics	Surge Protection		L-N: 6kV (2Ω); L/N-PE: 6kV (12Ω); residual voltage<2.0KVac				
	Open Circuit Protection		Open-circuit voltage ≤300Vdc				
	Short Circuit Protection		A long-term short circuit will not damage the LED driver. (auto-recovery)				

■ Electrical Characteristics

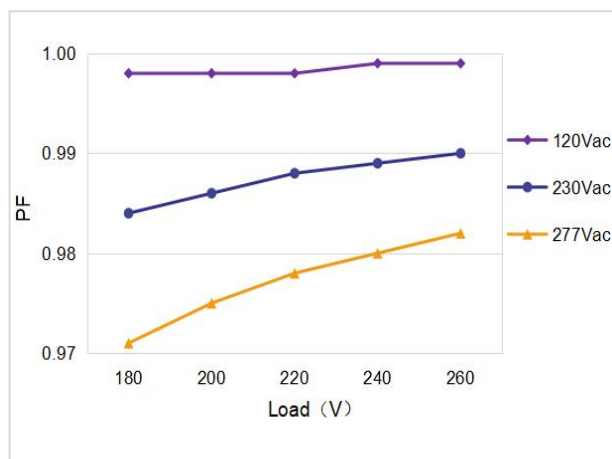
Environment Descriptions	Operating Temperature	-40°C~+90°C @120-277Vac
	Operating Humidity	0~95%RH (no condensation)
	Storage Temperature/ Humidity	-40°C~+80°C (6 months in Class I environment); 0~95%RH (no condensation)
	Atmospheric Pressure	86~106kPa
Safety & EMC	Certifications	TUV-ENEC, CE, RCM, SAA, CB, FCC, UL
	Withstanding Voltage	L-N/PE: 1.5KVac, <5mA, 60S; L-N/DIM: 3KVac, <5mA, 60S; DIM-PE: 1.5KVac, <5mA, 60S
	Insulation Resistance	L/N-PE, L/N-DIM, DIM-PE: ≥10MΩ @500Vdc/60S/25°C/70%RH
	Earth Resistance	≤0.1Ω @25A/60S
	Safety Standards	IEC/EN 61347-2-13, IEC/EN 61347-1, IEC/EN 62493 IEC/EN 62384 AS 61347.1, AS 61347.2.13 UL 8750 CSA C22.2 no.250.13
	EMI	EN 55015, EN 61547, EN 61000-3-2,3 FCC: PART 15 CLASS B @120Vac FCC: PART 15 CLASS A @277Vac
	EMS	CE-EMC/RCM: EN61000-4-2, 3, 4, 5, 6, 11 According to IEC61000-4-2, 3, 4, 5, 6, 8, 11, 12
	Ringing Wave	6kV
	ESD	Air 8kV, touch 4kV
Other Parameters	IP Rating	IP54
	RoHS	RoHS 2.0 (EU) 2015/863
	Warranty	5 years (Tc≤85°C)
	MTBF	>1000Khours@Telcordia SR-332 Issue4
Test Equipment	Digital power meter: CHROMA6530, digital power driver: CHROMA66205, oscilloscope: Tektronix DPO3014, DC electronic load: M9712B, LED board, constant temperature and humidity chamber; lightning surge generator: Everfine EMS61000-5B; fast transient generator: Everfine EMS61000-4A, spectroanalyzer: KH3935, Hi-pot tester: EEC SE7440, flicker tester (flicker-free coefficient test): Everfine LFA-3000, etc.	
Test Remark	If there are no special remarks, the above parameters are tested at the ambient temperature of 25°C, humidity of 50%, full load and input voltage of 230Vac.	

■ Electrical Characteristics

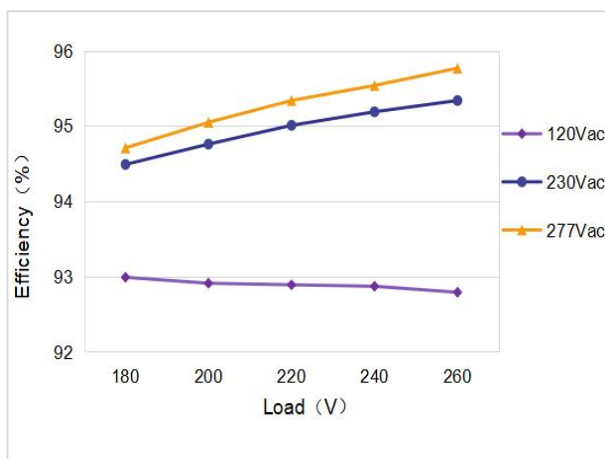
Additional Remarks	1. It is recommended that user install over voltage protection, under voltage protection and surge protection devices in the power supply circuits of light fixtures to ensure electricity safety. 2. The PC cover, casing and end cap for assembling the LED driver in the light fixture must meet the fire rating of UL94-V0 or above. 3. The LED driver used in combination with the end device is one of the accessories of the whole light fixture, and the EMC of the whole light fixture is not only susceptible to the driver itself, but to the LED light fixture and the whole light fixture's wiring. Thus, the manufacturer of LED light fixture should re-confirm the EMC of the whole light fixture before the whole light fixture is finished. 4. When using the LED driver, please pay attention that the total output power should not exceed the maximum rated output power, otherwise the warranty service of LED driver will fail. 5. Because there is parasitic capacitance between LEDs and the PCBA, there will be a slight flicker when the PCBA (the light fixture) is grounded and AC is powered on. It's normal for non-isolated products. To avoid this phenomenon, please choose a light board with lower parasitic capacitance. 6. When conducting withstanding voltage test on LED driver, please short-circuit the input wire L and N; the positive electrode and negative electrode of the output wire; the positive electrode and negative electrode of the dimming wire and AUX power supply. 7. The withstand voltage between LEDs and PCBA should be >2.5KVac. 8. Lifud reserves the right of final interpretation of the above parameters.
----------------------------------	--

■ Product Characteristic Curves

PF Curve

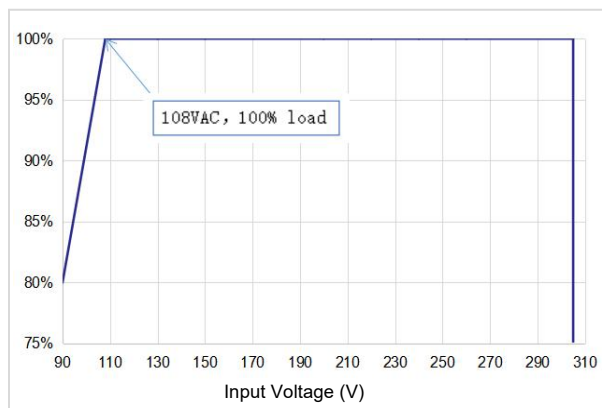


Efficiency Curve

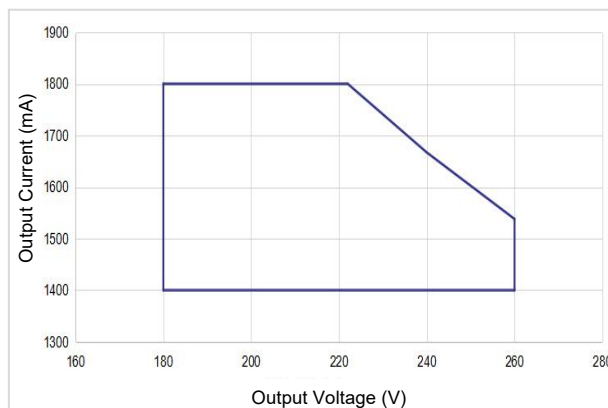


■ Product Characteristic Curves

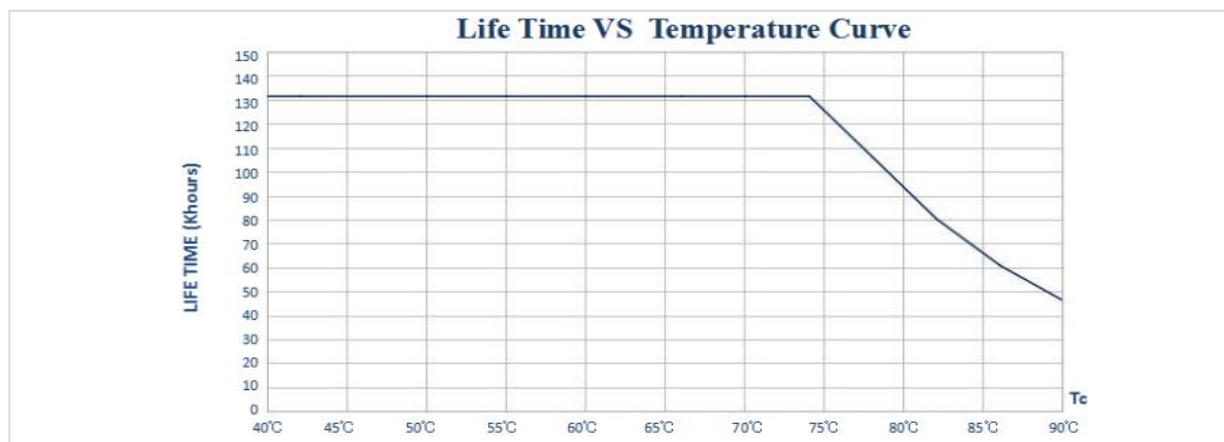
Load Derating Curve



Power Curve



Lifetime Curve



Input: 120Vac/60Hz; output: 222Vdc/1800mA (The chart is for reference only)

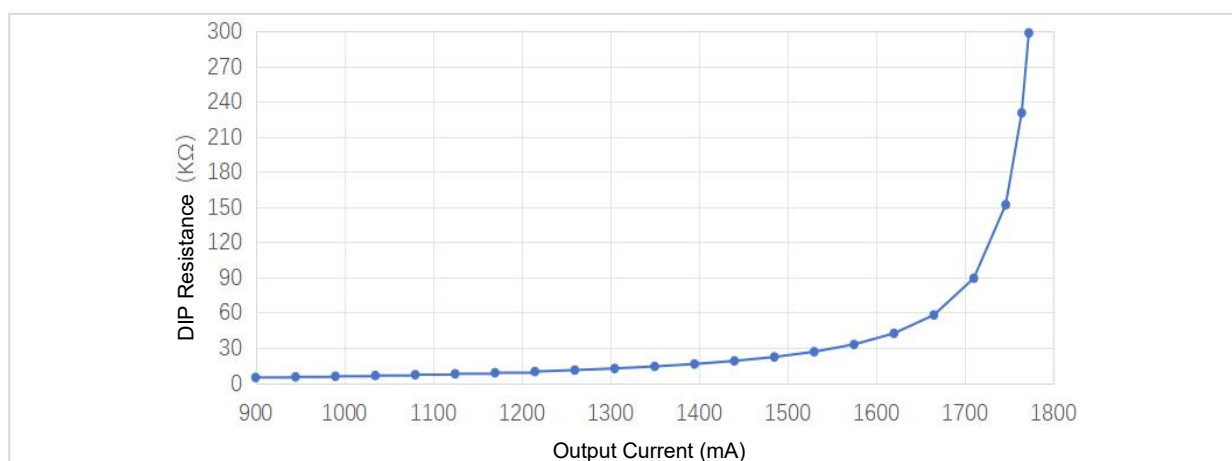
■ Dimming Operation Instructions

Output current adjustable via programmer

Parameter	Min.	Default	Max.	Note
Output Current	1400mA	1660mA	1800mA	Total output power≤400W

The initial current of FAA or FAC version (DIP switch version) is adjustable via the potentiometer; B (blue wire) is connected to DIP switch module (the adjustable current via the DIP switch is susceptible to the one via the potentiometer). Besides, the DIP switch resistance (adjustable resistance via the DIP switch) ranges from 4.7KΩ to 300KΩ. Therefore, when user set the output current of LED driver, the adjustment is supposed to range from 70% to 100% of the maximum current so as to meet certifications' standards.

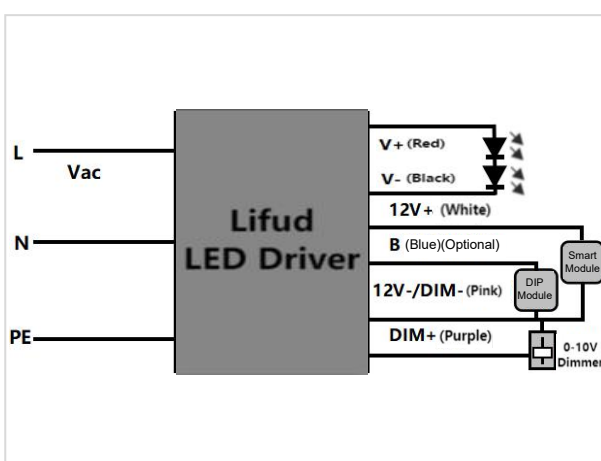
DIP Resistance and Output Current Curve



0-10V Dimming Operation

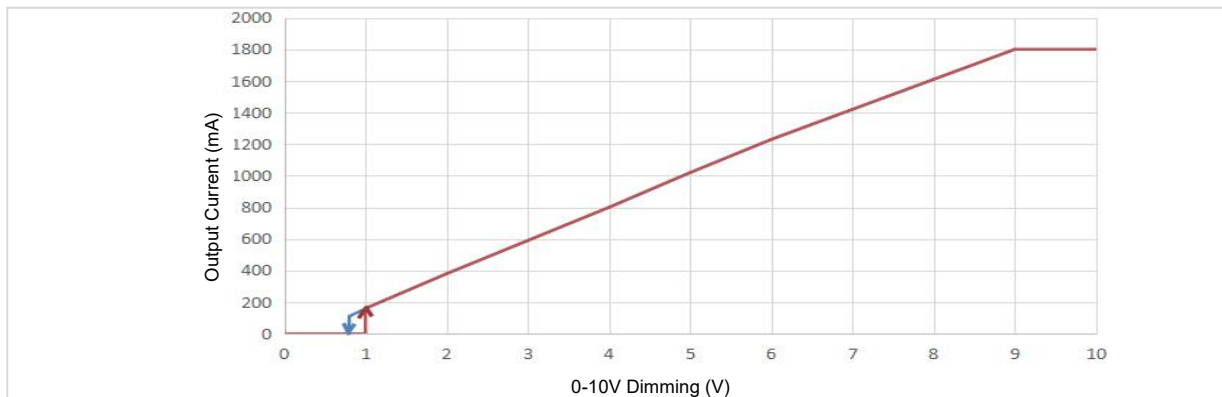
- Connect 0-10V signal to DIM terminal
- In 0-10V dimming mode, when the input voltage is $0.8V \pm 0.15$, the light turns off; when it's $1.0V \pm 0.15$, the light turns on.
- Dimming depth: 10% (typical value), the maximum is <12%
- DIM+/- (without signal connected): 100% rated current output

Wiring Diagram of 0-10V Dimming



■ Dimming Operation Instructions

Dimming Curve



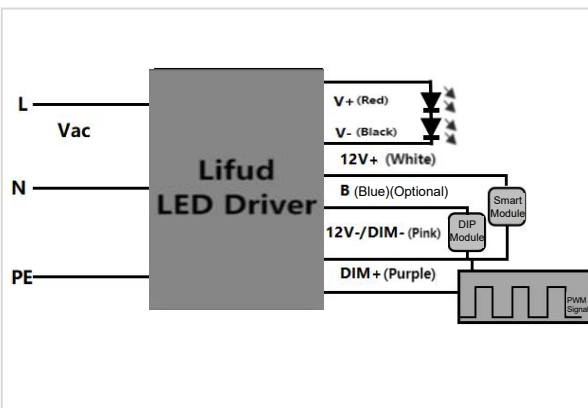
Input: 230Vac; output: 222Vdc/1800mA

(this data is measured by Lifud 0-10V dimmer and the chart is for reference only)

PWM Dimming Operations

- Connect PWM signal to DIM terminal.
- When the input duty cycle is $8\% \pm 1.5\%$, the light turns off; when it's $10\% \pm 1.5\%$, the light turns on.
- Dimming depth: 10% (typical value); the maximum is $<12\%$
- Compatible signal range: 1000-3000(Hz), amplitude: 9-10(V)
- DIM+/- (without signal connected): 100% rated current

Wiring Diagram of PWM Dimming



Dimming Curve



Input: 230Vac; output: 222Vdc/1800mA

(this data is measured by PWM signal generator Tektronix and the chart is for reference only)

Lifud Technology Co., Ltd.

Add.: 3AF, Block B, Xingzhan Plaza, No.446, Nanhuan Rd., Shajing St., Bao'an Dist., Shenzhen, Guangdong, China

Factory I: Lifud Gardern-style Industrial Park, Tianfu New Dist., Meishan City, Sichuan, China

Factory II: Lifud Intelligent Manufacture Industrial Park, Zhichuang Rd., Banfu Town, Zhongshan, Guangdong, China

Website: www.lifud.com

Telephone: +86(0)755 8373 9299

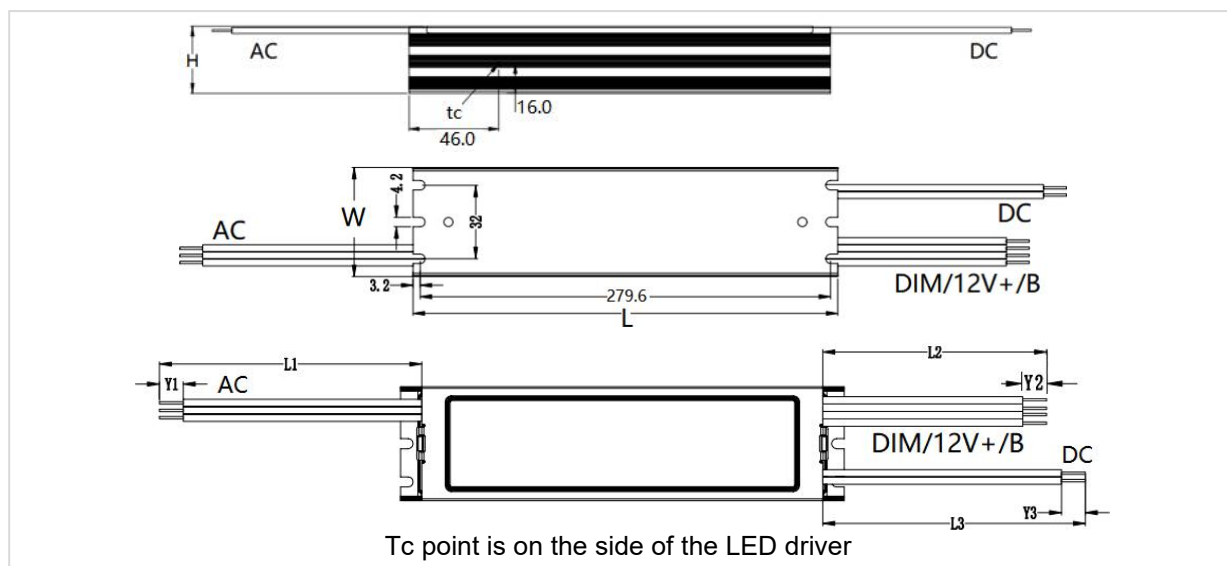
Email: sales@lifud.com

■ Structure & Dimensions (unit: mm; tolerance: $\pm 0.5\text{mm}$)

Casing Dimensions

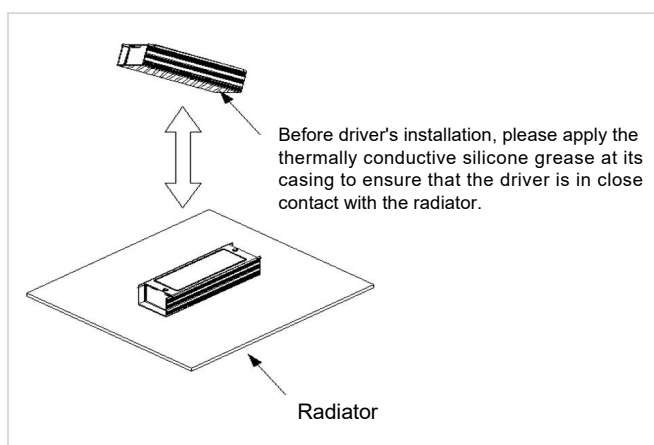
Description	Symbol	Unit (mm)
Length	L	286
Width	W	47.6
Height	H	34

Structure Diagram



■ Heat Dissipation Instruction

It is well-advised to apply the thermally conductive silicone grease between the radiator on the light fixture and LED driver so as to ensure that the driver is in close contact with the light fixture. Moreover, the casing temperature (T_c) shall not exceed $+90^\circ\text{C}$.



■ Packaging Specifications

Model	LF-FAA400(PB)
Carton Size	400×325×140mm (L×W×H)
Quantity	5 pcs/layer; 2 layers/ctn; 10 pcs/ctn
Weight	0.835±0.1 kg/pc; 9.85±1.0 kg/ctn

LiFud Technology Co., Ltd.

Add.: 3AF, Block B, Xingzhan Plaza, No.446, Nanhuan Rd., Shajing St., Bao'an Dist., Shenzhen, Guangdong, China

Factory I: LiFud Gardern-style Industrial Park, Tianfu New Dist., Meishan City, Sichuan, China

Factory II: LiFud Intelligent Manufacture Industrial Park, Zhichuang Rd., Banfu Town, Zhongshan, Guangdong, China

Website: www.lifud.com

Telephone: +86(0)755 8373 9299

Email: sales@lifud.com

■ Transportation and Storage

1. Transportation

- Suitable transportation means: vehicles, boats and aeroplanes.
- In transit, it is necessary to prepare awnings for rain or sun protection. Moreover, please keep civilized loading and unloading to prevent the vibration or impact on LED driver as much as possible.

2. Storage

- The storage of LED driver shall conform to the standard of Class I environment. When using LED drivers which have been stored for more than 6 months, please re-test them firstly. Do not use them unless they are tested to be qualified.

Cautions

- Please use Lifud LED driver according to its parameters in the specification, otherwise the LED driver may malfunction.
- Using any incompatible light fixtures or those that have not been certified may cause fire, explosion or other risks.
- Man-made damage is beyond the scope of Lifud warranty service.

Remark: Lifud Technology Co., Ltd. reserves the right to interpret any content of this specification.