

Features

- 0-10V/PWM/Rx dimming (max. current settable via software programming)
- 0-10V/PWM/Rx + 12V AUX
- 5 shifts knob dimming + two RJ25 parallel ports
- High efficiency up to 96%
- THD < 15%
- Dims to off without afterglow
- Surge protection: L-N: 6kV; L/N-GND: 10kV
- Non-isolated; flicker free
- All-round protections: over-temperature/open circuit/short circuit
- Suitable for Class I light fixtures



Applications

· High-pole lighting · stadium lighting · UV-LED · fishing lighting · grow lighting

Descriptions

LF-FDA600(PI) is a 3-in-1 dimming + 12V AUX output two-stage constant current LED driver. Its output terminal has 5-shift dimming knob and two RJ25 parallel ports to adjust the current internally or externally. It also features software programming of max. current, super-high efficiency, high PF and low THD.

Product Model

LF - FD A 600 (PI)

- PI: independent grow lighting
- 600: output power: 600W
- A: 3-in-1 dimming + 12V
- F: non-isolated design; D: serial number

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■ Electrical Characteristics

Model			LF-FDA600(PI)				
Output	Output Current (adjustable via software programming)		1800-3000mA				
	Default Current		2400mA±5%				
	Flicker		According to IEEE Std 1789				
	Output Voltage		180-260Vdc (LED)				
	Output Power		600W max. @120-277Vac				
	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-40～90℃				
Input	Input AC Voltage		108-305Vac (rated voltage: 120-277Vac)				
	Input Frequency		50/60Hz				
	Input DC Voltage		152-431Vdc (rated voltage: 170-276Vdc)				
	Input Current		6A max.				
	PF		≥0.9/277Vac @70% of rated load				
	THD		≤15% 120Vac&277Vac @full load				
	Efficiency	MIN	≥93%/120Vac @250V/2400mA; ≥95%/230Vac @250V/2400mA				
		TYP	≥94%/120Vac @250V/2400mA; ≥96%/230Vac @250V/2400mA				
		MAX	/				
	Inrush Current		<80A/3500uS @277Vac				
	Leakage Current		<0.75mA @277Vac				
	Loading Quantity on Circuit Breaker	Model	B10	C10	B16	C16	
		Quantity(pcs)	2	2	3	3	
Stand-by Power Consumption		≤0.5W @230Vac 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: 10kV (12Ω); residual voltage<2.5KVac				
	Open Circuit Protection		Open-circuit voltage ≤310Vdc @120-277Vac				
	Short Circuit Protection		A long-term short circuit will not damage the LED driver.(auto-recovery)				
	Over-temperature Protection		Tc>90℃ @down to 50% of the rated current, flicker-free				
	Leakage Protection (optional)		When the AC leakage current of the positive output terminal or negative output terminal and the lamp body to the ground is greater than 20mA, the leakage protection will be triggered, and the output will be cut off and restored after 10S. If the leakage protection is triggered for three consecutive times, the LED driver will enter the protection state of self-locking without output and then restart when the input is cut off.				

■ Electrical Characteristics

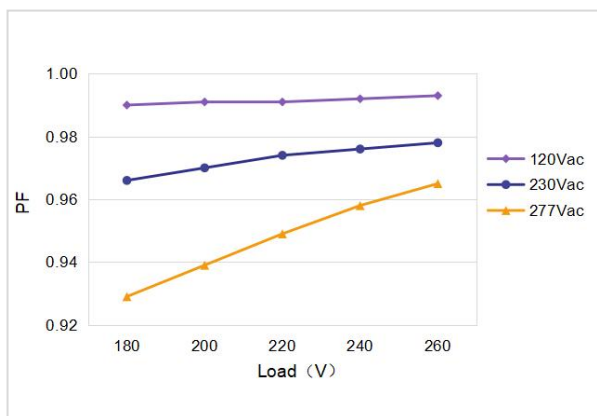
Environment Descriptions	Operating Temperature	-40℃~+45℃, tc-40℃~90℃ @120-277Vac		
	Operating Humidity	0~95%RH (no condensation)		
	Storage Temperature/ Humidity	-40℃~+80℃ (6 months in Class I environment); 0~95%RH (no condensation)		
	Atmospheric Pressure	86~106kPa		
Safety & EMC	Certifications	TUV-ENEC, CE, RCM, SAA, CB, FCC, UL		
	Withstanding Voltage	L-N/PE: 1.6KVac, <5mA, 60S; L-N/DIM: 3KVac, <5mA, 60S; DIM-PE: 1.5KVac, <5mA, 60S		
	Insulation Resistance	L/N-PE, L/N-DIM, DIM-PE: ≥100MΩ@500Vdc/60S/25℃/50%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	Dimming Error	Shift	0%	Dimming error ±5%
			25%	
			50%	
			75%	
			100%	
			EXT	
	IP Rating	/		
	RoHS	RoHS 2.0 (EU) 2015/863		
Warranty	5 years (Tc≤80℃)			
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℃, humidity of 50%, full load and input voltage of 120Vac.			

■ Electrical Characteristics

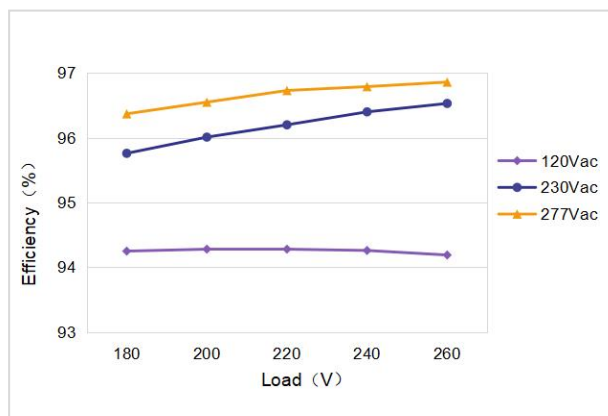
Additional Remarks	1. It is recommended that user install over voltage protection, under voltage protection and surge protection devices in the power supply circuits of light fixtures to ensure electricity safety. 2. The PC cover, casing and end cap for assembling the LED driver in the light fixture 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 does 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. 7. The RJ25 port is not waterproof, so pay attention to the use environment to prevent water from affecting the normal operation of the LED driver. 8. Lamp beads should not be exposed outside. 9. The withstand voltage between LEDs and PCBA should be >2.5KVac.
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■ Product Characteristic Curves

PF Curve

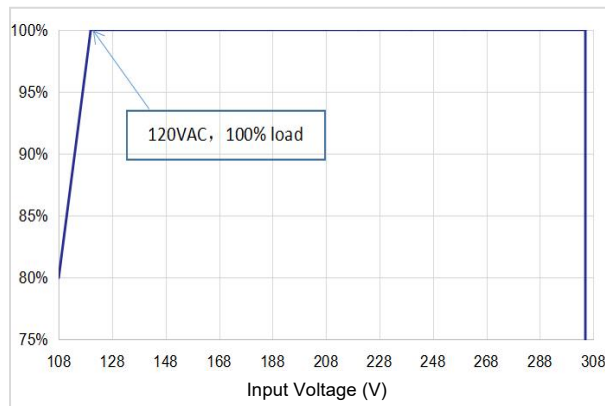


Efficiency Curve

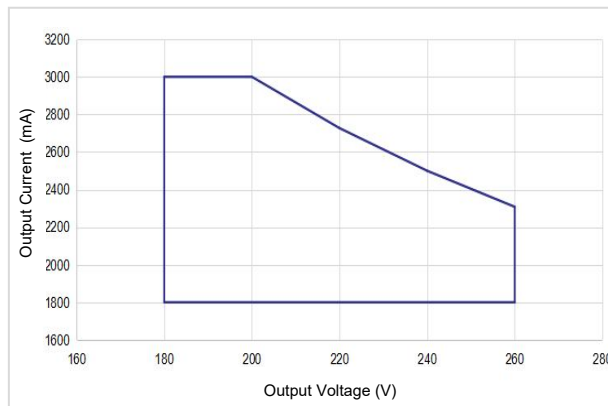


■ Product Characteristic Curves

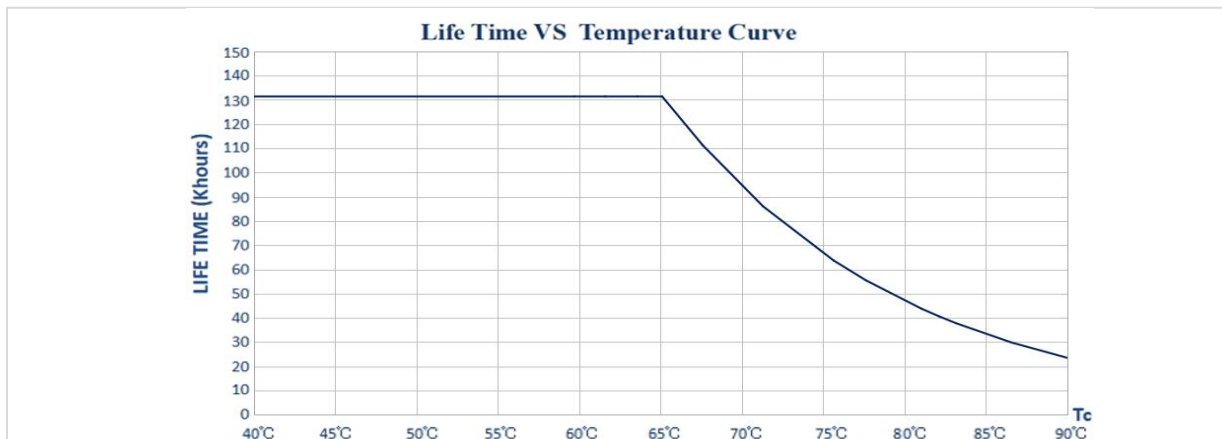
Load Derating Curve



Power Curve



Lifetime Curve



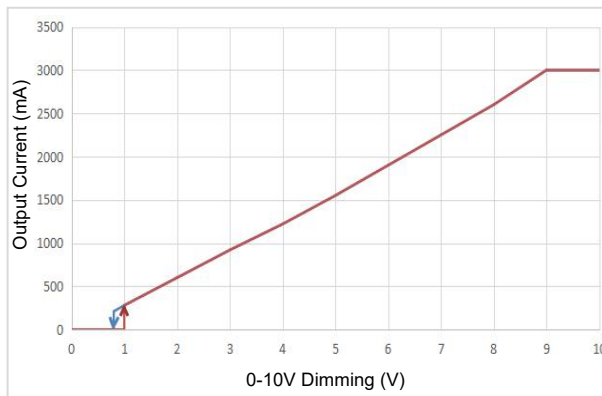
Input: 120Vac/60Hz; output: 200Vdc/3000mA (The chart is for reference only)

■ Dimming Operation Instructions

0-10V Dimming Operations

- 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); maximum is <12%
- DIM+/- (without signal connected): 100% rated current output

Dimming Curve



Input: 230Vac; output: 200Vdc/3000mA
(this data is measured by Lifud 0-10V dimmer and the chart is for reference only)

■ Dimming Operation Instructions

PWM Dimming Operations

- Connect PWM signal to DIM terminal.
- Dimming depth: 10% (typical value); maximum is <12%
- Compatible signal range: 1000-3000(Hz), amplitude: 9-10(V)
- DIM+/- (without signal connected): 100% rated current

Dimming Curve

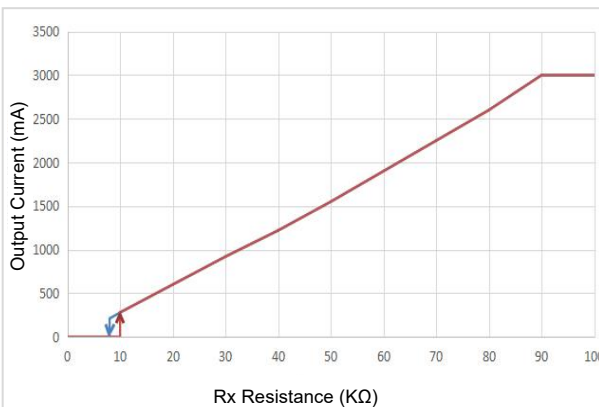


Input: 230Vac; output: 200Vdc/3000mA
(this data is measured by PWM signal generator Tektronix and the chart is for reference only)

Rx Dimming Operations

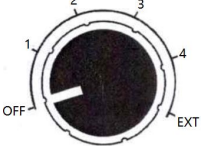
- Connect Rx signal to DIM terminal.
- Range: 0-100K Ω
- Dimming depth: 10% (typical value); maximum is <12%
- DIM+/- (without signal connected): 100% rated current

Dimming Curve

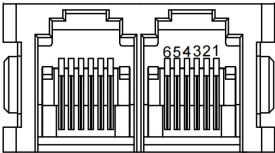


Input: 230Vac; output: 200Vdc/3000mA
(this data is measured by resistance dimmer and the chart is for reference only)

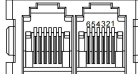
Dimmer Knob Switch

	Knob Switch	OFF	1	2	3	4	EXT
	Function	Dim to off	25%	50%	75%	100%	Switch to external dimming

RJ25 Port

	RJ25 PIN	Definition
	1&6	VPP+
	2&5	DIM+
	3&4	DIM-

Wiring

Symbol	Wiring Definition
AC-L	Live wire (Brown)
AC-N	Neutral wire (Blue)
	Earth wire (Yellow & Green)
LED+	Positive terminal output (Brown)
LED-	Negative terminal output (Blue)
	Earth wire (Yellow & Green)
	Dimmer knob
	RJ25 port

■ Structure & Dimensions (unit: mm; tolerance: ±0.5mm)

Wire Specifications

Type	Input Wire	Output Wire
FDA	3*1.0mm ² Φ8.2±1mm	3*1.0mm ² Φ8.2±1mm
Color	AC-L Brown; AC-N Blue; PE Yellow & Green	LED+ Brown; LED- Blue; PE Yellow & Green
Length	300±10mm (L1)	300±10mm (L2)
Peeled	40±4mm (X1)	40±4mm (X2)
Tinned	10±1.5mm (Y1)	10±1.5mm (Y2)

■ 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.