

### Features

- 0-10V/PWM/Rx dimmable (max. current set via software programming)
- High efficiency up to 97%
- Dim to off without afterglow
- Surge protection: L-N: 6kV; L/N-GND: 10kV
- All-round protections: over temperature/open circuit/short circuit
- Suitable for Class I light fixtures
- Flicker free; IP67



### Applications

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

### Descriptions

LF-FDA600 is a 3-in-1 dimming + 12V AUX output two-stage constant current LED driver. It features software programming of max. current, super-high efficiency, high PF and low THD.

### Product Model

LF - FD A 600



- 600: output power: 600W
- A: 3-in-1 dimming + 12V
- F: non-isolated design; D: industrial constant current driver

## ■ Electrical Characteristics

Model		LF-FDA600	
Output	Output Current	1800-3000mA	
	Default Current	3000mA±5%	
	Flicker	Complies with IEEE Std 1789	
	Output Voltage	180-260Vdc (LED)	
	Output Power	600W max. @120-277Vac	
	Start-up Time	120Vac<1S @full load; 230Vac<0.5S @full load	
	Linear Adjustment Rate	±5% @full load	
	Load Adjustment Rate	±5% @full load	
	Temperature Drift	±3% @Ta 25~50°C	
Input	Input Voltage	120-277Vac (voltage limit: 90-305Vac)	
	Input Current	<8A	
	Input Frequency	0/50/60Hz	
	PF	≥0.90/277Vac @full load	
	THD	≤15% 120Vac&230Vac @full load	
	Efficiency	MIN	≥94%/120Vac @200V/3000mA; ≥95.5%/230Vac @200V/3000mA
		TYP	≥94.5%/120Vac @260V/2300mA; ≥96%/230Vac @260V/2300mA
		MAX	≥96.5%/277Vac @260V/2300mA
	Inrush Current	<80A@277Vac	
	Leakage Current	<0.75mA @277Vac	
Standby Power Consumption	≤0.5W@230Vac		
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); DIM+ - DIM-: 1kV; DIM+/DIM- - N-PE: 2kV	
	Open Circuit Protection	Open-circuit voltage ≤310Vdc@120-277Vac	
	Short Circuit Protection	Hiccup mode (auto-recovery)	
	Over Temperature Protection	Tc>90°C @A radiator (L*W*H: 400*200*30) or a radiator with the same volume should be placed on the bottom (down to 50% of the rated current, flicker-free)	
	Earth Leakage Protection (optional)	>10mA (default)	
	Earth Resistance	≤0.1Ω @25A/60S	
	Insulation Resistance	≥100MΩ @I/P-PE O/P-PE: 500Vdc/60S/25°C/70%RH	

### ■ Electrical Characteristics

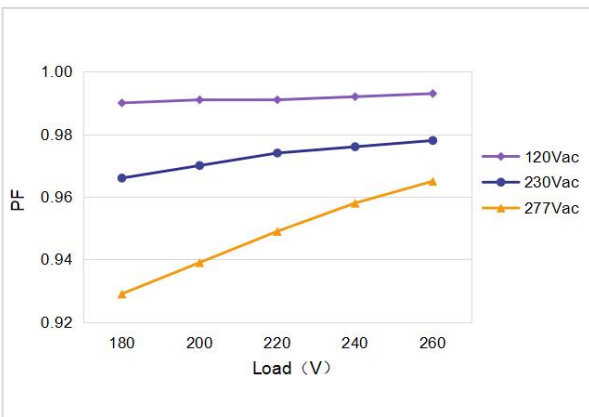
<b>Environment Descriptions</b>	Operating Temperature	-40°C~+40°C@90-108Vac; -40°C~+50°C@120-277Vac A radiator (L*W*H: 400*200*30) or a radiator with the same volume should be placed on the bottom.
	Operating Humidity	0~95%RH (no condensation)
	Storage Temperature/ Humidity	-40°C~+80°C (6 months in Class I environment); 0~95%RH (no condensation)
	Atmospheric Pressure	86~106kPa
<b>Safety &amp; EMC</b>	Certifications	TUV-ENEC、CE、RCM、SAA、CB、UKCA、FCC、UL
	Withstanding Voltage	L-N/PE: 1.5kVac, <5mA, 60S; L-N/DIM: 3kVac, <5mA, 60S; DIM-PE: 500Vac, <5mA, 60S
	Safety Standards	ENEC: EN61347-1: 2015, EN 61347-2-13: 2014/A1: 2017, EN 62384: 2016/A1: 2009 UL: UL8750, CSA 250.13 CE-LVD: EN 61347-2-13: 2014/A1: 2017, EN 61347-1: 2015, EN 62493: 2015 CB: IEC 61347-1: 2015, IEC61347-2-3: 2014, IEC 61347-2-13: 2014/AMD1: 2016 SAA: AS 61347.2-13: 2018 RCM: AS 61347.2-13: 2018
	EMI	CE-EMC/RCM: EN55015, EN61000-3-2, EN61000-3-3 FCC: PART 15 CLASS B @120Vac FCC: PART 15 CLASS A @277Vac
	EMS	CE-EMC/RCM: EN61000-4-2, 3, 4, 5, 6, 11 Complies with IEC61000-4-2, 3, 4, 5, 6, 8, 11, 12; IEC61547
	Ringing Wave	6kV
	ESD	Air 8kV, touch 4kV
<b>Other Parameters</b>	IP Rating	IP67
	RoHS	RoHS 2.0 (EU) 2015/863
	Warranty	5 years (Tc≤85°C)
<b>Test Equipment</b>	Digital power meter: CHROMA66202, oscilloscope: Tektronix DPO3014, DC electronic load: M9712B, LED board, constant temperature and humidity chamber; Everfine EMS61000-5B: Everfine EMS61000-4A, spectroanalyzer: KH3935, Hi-pot tester: EEC SE7440, flicker tester (flicker-free coefficient test) LFA-3000, etc.	
<b>Test Remark</b>	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**

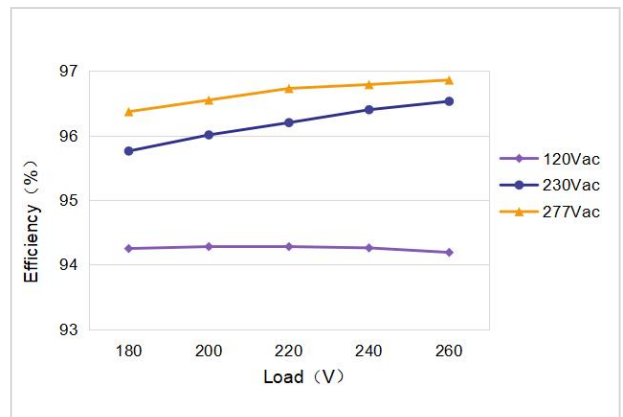
<b>Additional Remarks</b>	<ol style="list-style-type: none"> <li>1. It is recommended that user install over voltage protection, under voltage protection and surge protection devices in the power supply circuits of light fixtures to ensure electricity safety.</li> <li>2. The PC cover, casing and end cap for assembling the LED driver in the light fixture must meet the fire rating of UL94-V0 or above.</li> <li>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.</li> <li>4. When using the LED driver, please pay attention that the total output power not exceed the maximum rated output power, otherwise the warranty service of LED driver would be failed.</li> <li>5. 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.</li> <li>6. The withstand voltage between LEDs and PCBA should be &gt;2.5KVac</li> </ol>
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■ **Product Characteristic Curves**

PF Curve

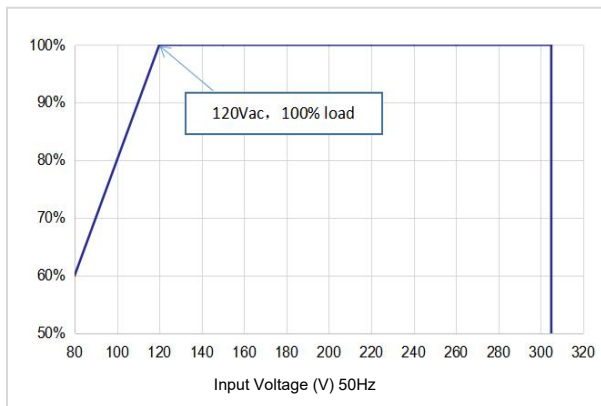


Efficiency Curve

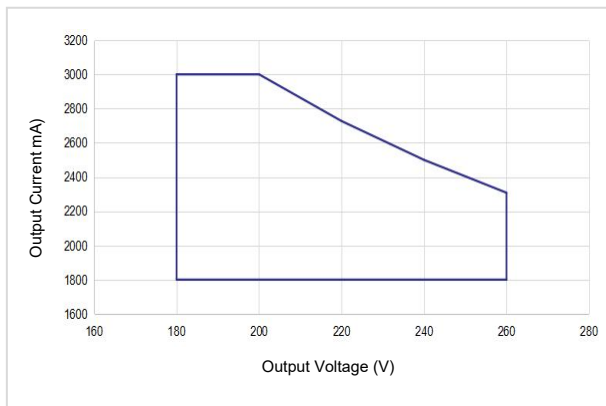


■ **Product Characteristic Curves**

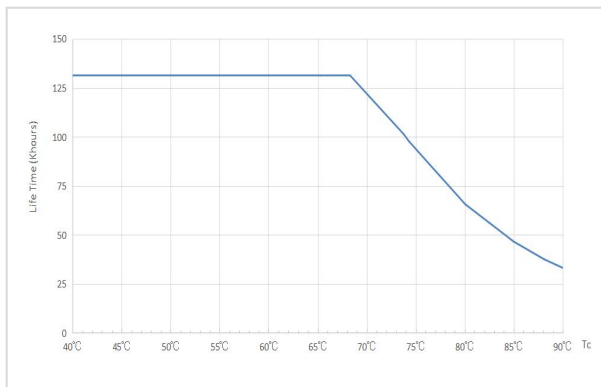
Load Derating Curve



Power Curve



Lifetime Curve



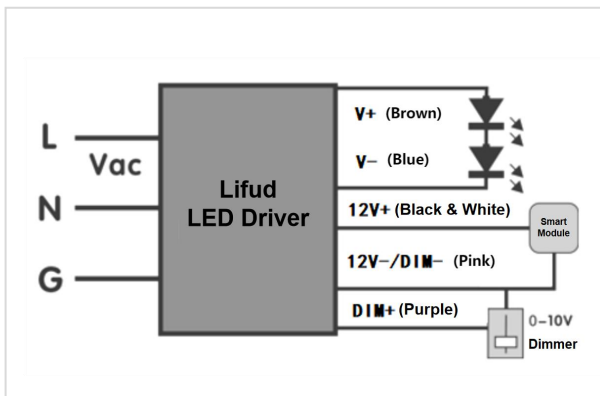
Input: 277Vac/50Hz; output: 200Vdc/3000mA  
(The chart is for reference only)

■ **Dimming Operation Instructions**

0-10V Dimming Operations

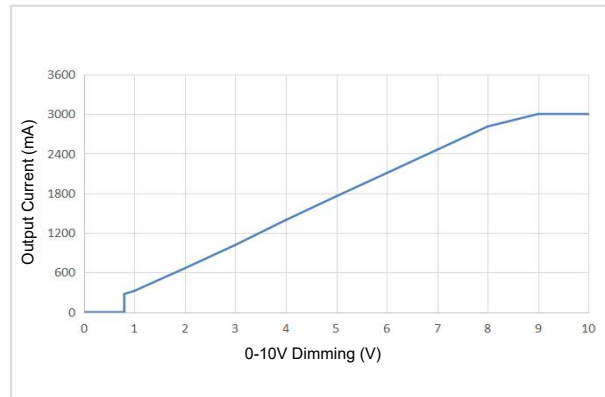
- Connect 0-10V signal to DIM terminal.
- In 0-10V dimming mode, when the input voltage is  $0.8V \pm 0.15$ , the light turns off; when it's  $1.0V \pm 0.15$ , the light turns on.
- Dimming depth: 10% (typical value); maximum is <12%
- DIM+/- (without signal connected): 100% rated current output

Wiring Diagram of 0-10V Dimming



■ **Dimming Operation Instructions**

Dimming Curve

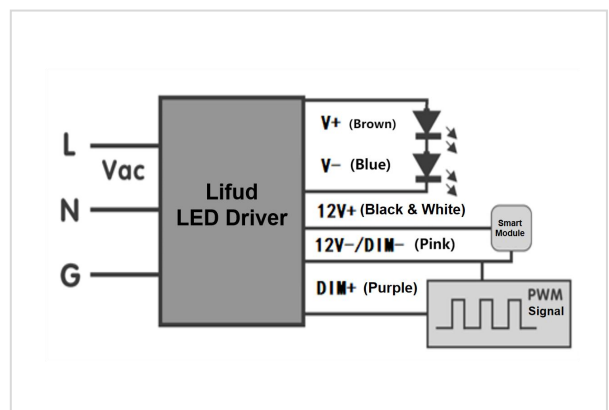


Input: 230Vac; output: 200Vdc/3000mA  
 (this data is measured by Lifud 0-10V dimmer and the chart is for reference only)

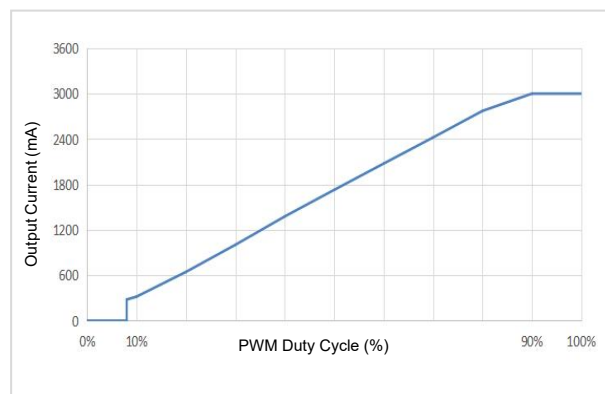
**PWM Dimming Operations**

- Connect PWM signal to DIM terminal.
- 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

**Wiring Diagram of PWM Dimming**



Dimming Curve



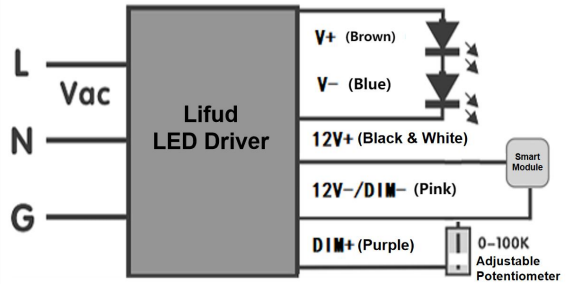
Input: 230Vac; output: 200Vdc/3000mA  
 (this data is measured by Lifud PWM signal generator RIGOL and the chart is for reference only)

**■ Dimming Operation Instructions**

Rx Dimming Operations

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

Wiring Diagram of Rx Dimming



Dimming Curve



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

**■ Structure & Dimensions (unit: mm; tolerance: ±2.0mm)**

Wire Specifications

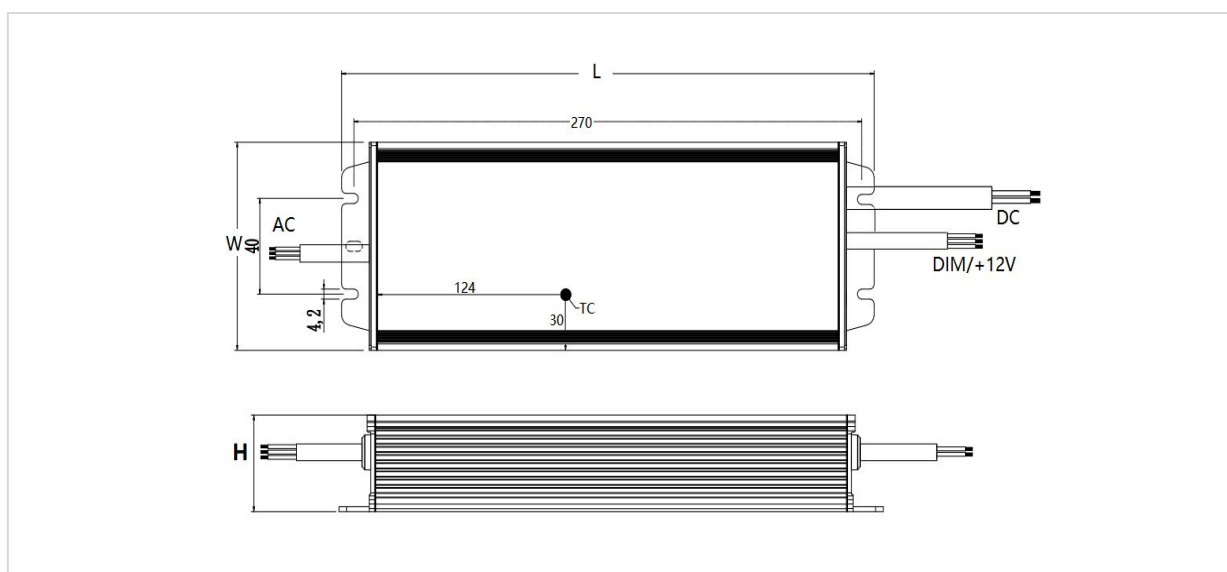
Type	Input Wire	Output Wire	Dimming Wire & AUX Output Wire
FDA	3*1.0 2 Φ8.2±1mm	2*1.0 2 Φ7.7±1mm	3*22AWG Φ5.0±1mm
Color	AC-L Brown; AC-N Blue; PE Yellow & Green	LED+ Brown; LED- Blue	DIM+ Purple; DIM- Pink; +12V Black & White
Length	300±10mm	300±10mm	250±10mm
Peeled	40±5mm	35±5mm	40±5mm
Tinned	10±1.5mm	10±1.5mm	15±1.5mm

■ **Structure & Dimensions (unit: mm; tolerance: ±2.0mm)**

Casing Dimensions

Description	Symbol	Unit (mm)
Length	L	280
Width	W	69.5
Height	H	36.6

Structure Diagram



■ **Packaging Specifications (TBD)**

Model	LF-FDA600
Carton Size	465*365*185mm (L*W*H)
Quantity	3 pcs/layer; 3 layers/ctn; 9 pcs/ctn
Weight	1.756±0.1 kg/pc; 17.55±1.0 kg/ctn



## ■ 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 of 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 contents of this specification.