

Features

- 0-10V/PWM/Rx dimmable (max. current settable via software programming)
- High efficiency up to 96%
- Dims to off without afterglow
- Surge protection: L-N: 6kV; L/N-GND: 10kV
- All-round protection: over temperature/open circuit/short circuit
- Suitable for Class I light fixtures
- Flicker free; IP67



Applications

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

Descriptions

LF-FDA420 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 420



- 420: output power: 420W
- A: 3-in-1 dimming + 12V
- F: non-isolated design; D: industrial constant current driver

■ Electrical Characteristics

Model		LF-FDA420								
Output	Output Current	1600-2100mA								
	Default Current	2100mA±5%								
	Flicker	According to IEEE Std 1789								
	Output Voltage	180-260Vdc (LED)								
	Output Power	420W max. @120-277Vac								
	Ripple Current	<3% @≤120Hz								
	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 AC Voltage	90-305Vac (rated voltage: 120-277Vac)								
	Input DC Voltage	127-305Vdc (rated voltage: 170-276Vdc)								
	Input Current	<4A								
	Input AC Rated Frequency	50/60Hz								
	PF	≥0.90/277Vac @full load								
	THD	≤15% 120Vac&230Vac @full load								
	Efficiency	MIN	≥93%/120Vac @260V/1600mA; ≥95%/230Vac @260V/1600mA							
		TYP	≥93.5%/120Vac @260V/1600mA; ≥95.5%/230Vac @260V/1600mA							
		MAX	≥96%/277Vac @260V/1600mA							
	Inrush Current	<80A@277Vac								
	Leakage Current	<0.75mA @277Vac								
	Loading Quantity on Circuit Breaker	Model	B10	C10	B16	C16				
		Quantity(pcs)	3	5	5	8				
	Standby 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); 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*30mm) or a radiator with the same volume should be placed on the bottom (down to 50% of the rated current, flicker-free)								
	Leakage Protection (optional)	If the AC leakage current of the positive or negative pole of the output end and the light fixture to the ground is greater than 20mA, the leakage protection is triggered and the output is cut off for about 10S, and then the output is restored; if the leakage protection is triggered three times in succession, the driver will enter a self-locking protection state with no output until the input is cut off and restarted to restore.								

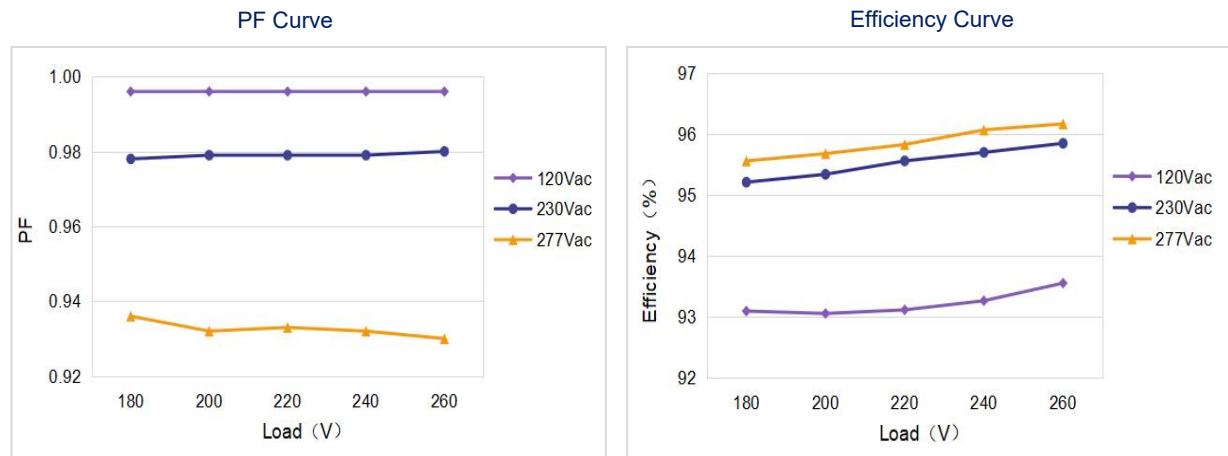
■ Electrical Characteristics

Environment Descriptions	Operating Temperature	-40°C~+40°C@90-108Vac; -40°C~+50°C@120-277Vac A radiator (L*W*H: 400*200*30mm) 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
Safety & EMC	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: 1.5KVac, <5mA, 60S
	Insulation Resistance	L/N-PE, L/N-DIM, DIM-PE: $\geq 100M\Omega$ @500Vdc/60S/25°C/50%RH
	Earth Resistance	$\leq 0.1\Omega$ @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	IP67
	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

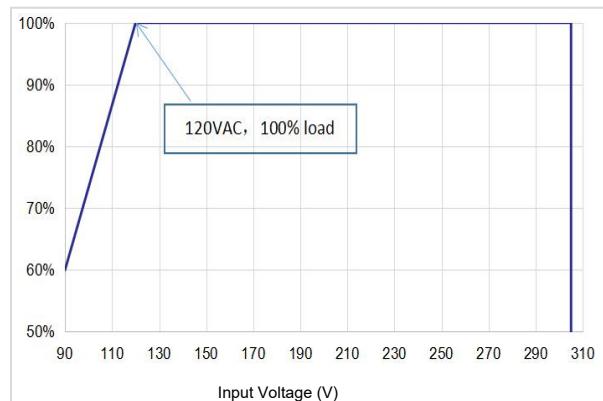
Additional Remarks	<ol style="list-style-type: none">1. It is recommended that user install over voltage protection, under voltage protection and surge protection devices in the power supply circuits of light fixtures to ensure electricity safety.2. The PC cover, casing and end cap for assembling the 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-confirmed 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 would be failed.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.
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■ Product Characteristic Curves

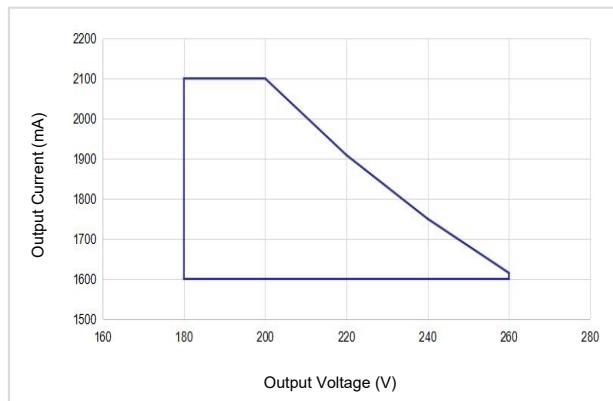


■ Product Characteristic Curves

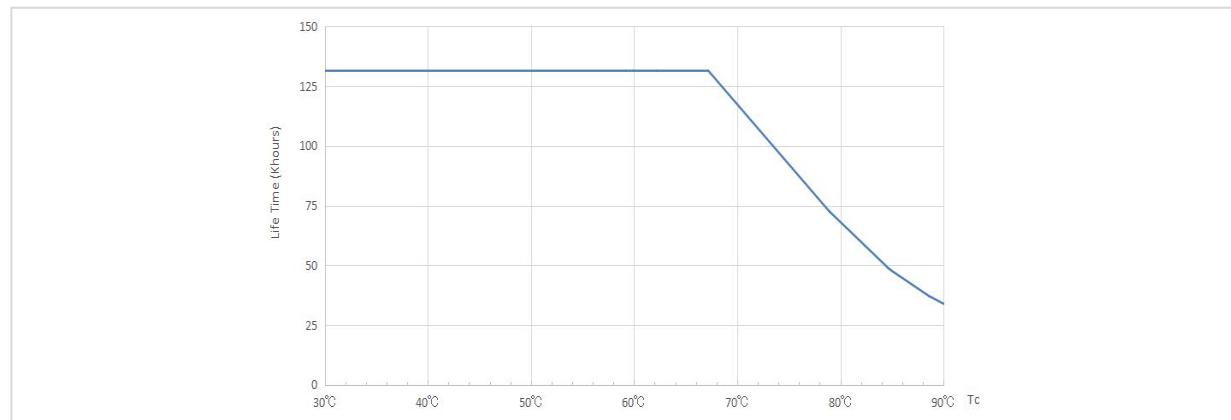
Load Derating Curve



Power Curve



Lifetime Curve



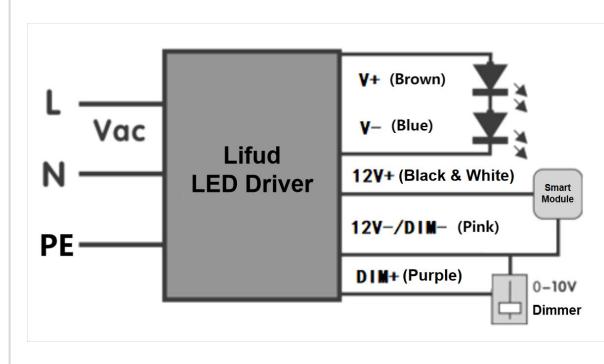
Input: 230Vac/50Hz; output: 200Vdc/2100mA
 (The chart is for reference only)

■ Dimming Operation Instructions

0-10V Dimming Operations

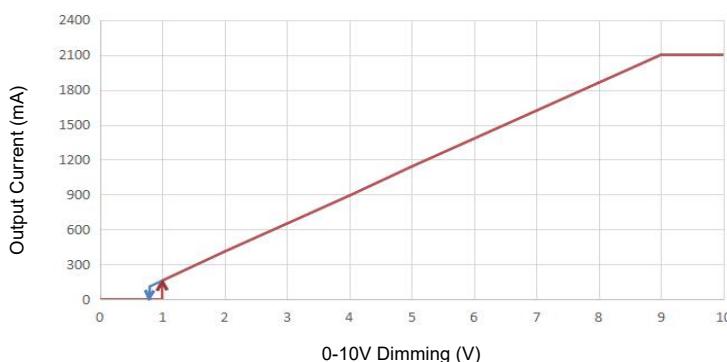
- Connect 0-10V signal to DIM terminal.
- In 0-10V dimming mode, when the input voltage is $0.8V \pm 0.15$, the light turns off; when it's $1.0V \pm 0.15$, the light turns on.
- Dimming depth: 10% (typical value); the maximum is <12%
- DIM+/- (without signal connected): 100% rated current output

Wiring Diagram of 0-10V Dimming



■ Dimming Operation Instructions

Dimming Curve

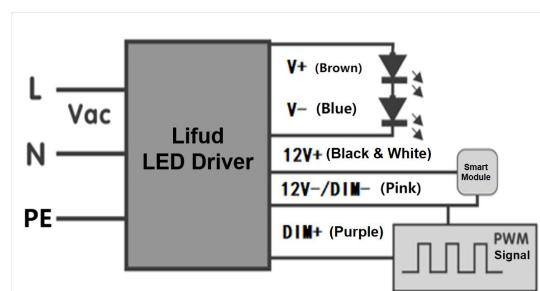


Input: 230Vac; output: 200Vdc/2100mA
 (this data is measured by Lifud 0-10V dimmer and the chart is for reference only)

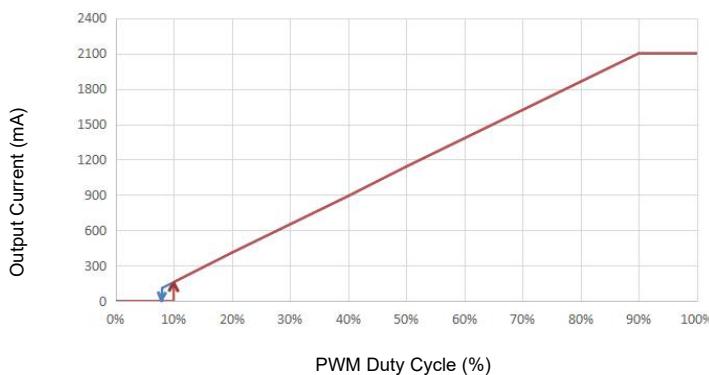
PWM Dimming Operations

- Connect PWM signal to DIM terminal.
- Dimming depth: 10% (typical value); 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



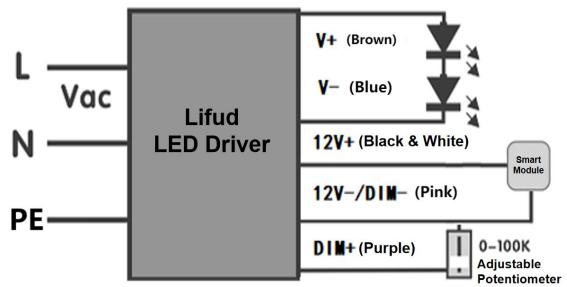
Input: 230Vac; output: 200Vdc/2100mA
 (this data is measured by PWM signal generator Tektronix and the chart is for reference only)

■ Dimming Operation Instructions

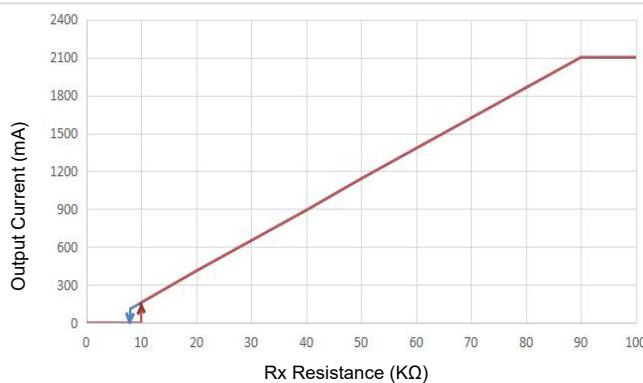
Rx Dimming Operations

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

Wiring Diagram of Rx Dimming



Dimming Curve



Input: 230Vac; output: 200Vdc/2100mA
(this data is measured by resistance dimmer and the chart is for reference only)

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

Wire Specifications

Type	Input Wire	Output Wire	Dimming Wire & AUX Output Wire
FDA	3*1.0mm ² $\Phi 8.2 \pm 1\text{mm}$	2*1.0mm ² $\Phi 7.7 \pm 1\text{mm}$	3*22AWG $\Phi 5.0 \pm 1\text{mm}$
Color	AC-L Brown; AC-N Blue; PE Yellow & Green	LED+ Brown; LED- Blue	DIM+ Purple; DIM- Pink; +12V Black & White
Length	300 $\pm 10\text{mm}$ (L1)	300 $\pm 10\text{mm}$ (L2)	250 $\pm 10\text{mm}$ (L3)
Peeled	40 $\pm 5\text{mm}$ (X1)	35 $\pm 5\text{mm}$ (X2)	40 $\pm 5\text{mm}$ (X3)
Tinned	10 $\pm 1.5\text{mm}$ (Y1)	10 $\pm 1.5\text{mm}$ (Y2)	15 $\pm 1.5\text{mm}$ (Y3)

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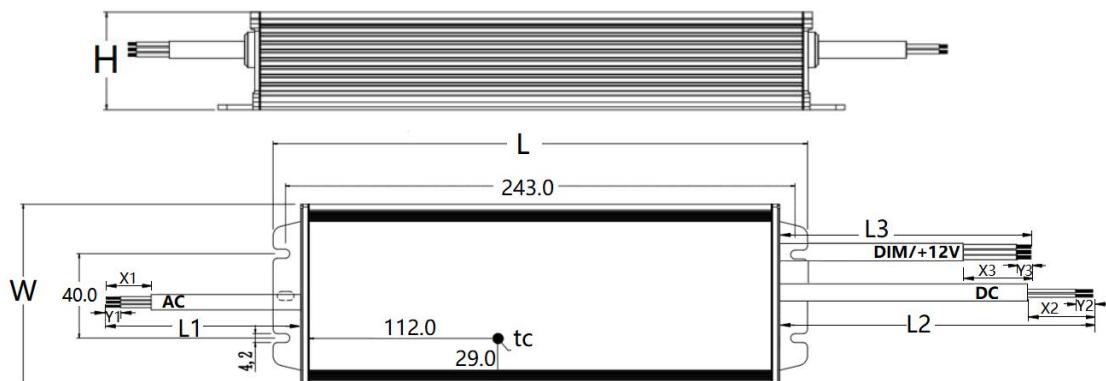
Email: sales@lifud.com

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

Casing Dimensions (tolerance: $\pm 0.2\text{mm}$)

Description	Symbol	Unit (mm)
Length	L	253
Width	W	69.5
Height	H	36.6

Structure Diagram



Tc point is at the top of the casing

■ Packaging Specifications

Model	LF-FDA420
Carton Size	465*365*185mm (L*W*H)
Quantity	4 pcs/layer; 3 layers/ctn; 12 pcs/ctn
Weight	1.0 ± 0.1 kg/pc; 13.5 ± 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 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.