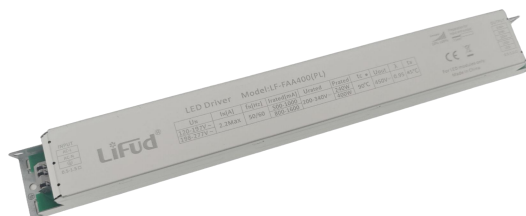


Features

- 0-10V/PWM/Rx dimming+ 12V AUX output
- High efficiency up to 96%
- THD < 15%
- Dims to off without afterglow
- Surge protection: L-N: 6kV; L/N-GND: 6kV
- Non-isolated; flicker free
- All-round protections: open circuit/short circuit
- IP20; suitable for Class I light fixtures



Applications

· Grow lighting · linear light · tri-proof light

Descriptions

LF-FAA400(PL) is a 3-in-1 dimming + 12V AUX output constant current LED driver. It can set the output current offline via the programmer, which can easily adjust the output current (power) of the product. It also features super-high efficiency, high PF and low THD and meets the latest ERP and DLC standards.

Product Model

LF - FA A 400 (PL)

- PL: slim; dims to off without afterglow
- 400: output power: 400W
- A: 3-in-1 dimming + 12V
- F: non-isolated design; A: serial number

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■ Electrical Characteristics

Model			LF-FAA400(PL)				
Output	Output Current (adjustable via programmer)		800-1600mA @198~305Vac; 500-1000mA @90~197Vac				
	Default Current		1600mA±5%				
	Flicker		According to IEEE Std 1789 (20-100% load)				
	Output Current (adjustable via programmer)		31.25%-100% @max. output current(set by programmer LF-SCS080C)				
	Output Voltage		200-340Vdc (LED)				
	Output Power		400W max. @198~277Vac; 240W max. @120~197Vac				
	Ripple Current		<5% @≤120Hz				
	Start-up Time		120Vac<1S @full load; 230Vac<0.5S @full load				
	Linear Adjustment Rate		±5%				
	Load Adjustment Rate		±5%				
	Temperature Drift		±5% (800-1600mA) @tc25~75°C; ±10% (500-1000mA) @tc25~75°C				
Input	Input AC Voltage		90-305Vac (rated voltage: 120-277Vac)				
	Input Frequency		50/60Hz				
	Input DC Voltage		127-305Vdc (rated voltage: 169-277Vdc)				
	Input Current		2.2A max. (120-277Vac)				
	PF		≥0.95/230Vac full load; ≥0.90/277Vac @70% load				
	THD		≤15% @full load				
	Efficiency	MIN	93%/120Vac @340Vdc/706mA; ≥95%/230Vac @340Vdc/1176mA ≥95.5%/277Vac @340Vdc/1176mA				
		TYP	93.5%/120Vac @340Vdc/706mA; ≥95.5%/230Vac @340Vdc/1176mA ≥96%/277Vac @340Vdc/1176mA				
		MAX	/				
	Inrush Current		<120A/450uS @230Vac				
	Loading Quantity on Circuit Breaker	Model	B10	C10	B16	C16	
Quantity(pcs)		4	8	8	13		
Stand-by Power Consumption		≤0.5W @230Vac Dims to off					
12V AUX Output	Output Voltage		+12Vdc (11-14V) @full load				
	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<2KVac				
	Open Circuit Protection		Open-circuit voltage ≤450Vdc				
	Short Circuit Protection		A long-term short circuit will not damage the LED driver.(auto-recovery)				

■ Electrical Characteristics

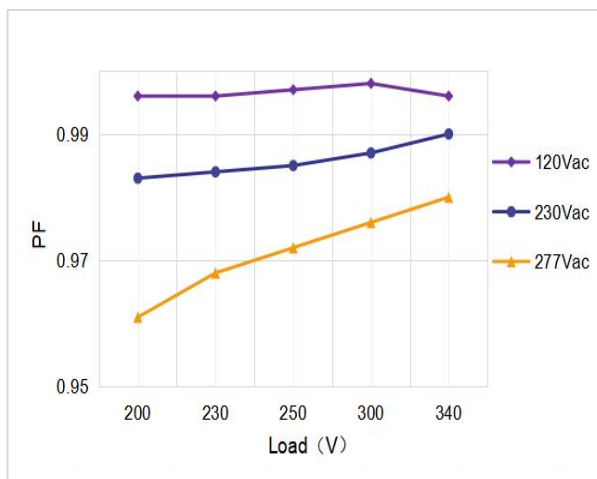
Environment Descriptions	Operating Temperature	-40°C~+45°C
	Operating Humidity	0~95%RH (no condensation)
	Storage Temperature/ Humidity	-40°C~+80°C (6 months in Class I environment); 0~95%RH (no condensation)
	Atmospheric Pressure	86~106kPa
Safety & EMC	Certifications	CE
	Withstanding Voltage	L/N-PE: 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
	Ringin Wave	6kV
	ESD	Air 8kV, touch 4kV
Other Parameters	IP Rating	IP20
	RoHS	RoHS 2.0 (EU) 2015/863
	Warranty	5 years (Tc≤73°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%, max. power and input voltage of 230Vac.	

■ Electrical Characteristics

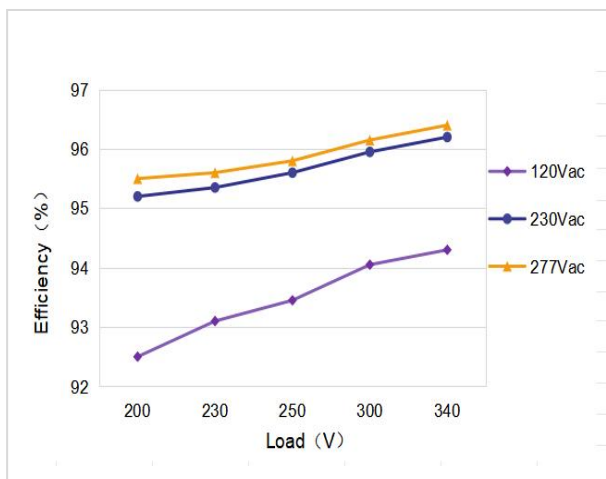
Additional Remarks	★When the input voltage is less than 197Vac, the output current should be reduced. Otherwise, the product will be damaged. For the output power, please see the load derating curve. 1. It is recommended that user install over voltage protection, under voltage protection and surge protection 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. 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. 6. The withstand voltage between LEDs and PCBA should be >2.5KVac. 7. Lifud reserves the right of final interpretation of the above parameters. 8. 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.
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■ Product Characteristic Curves

PF Curve

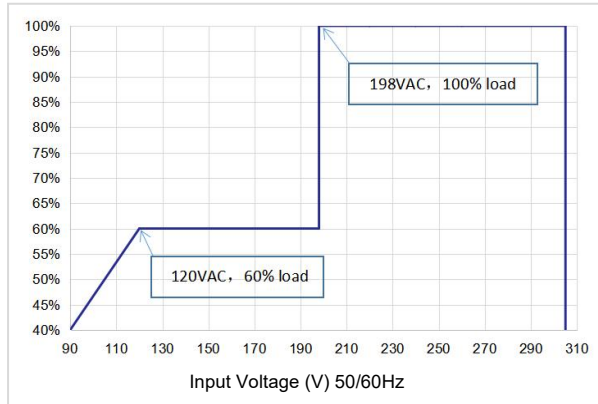


Efficiency Curve

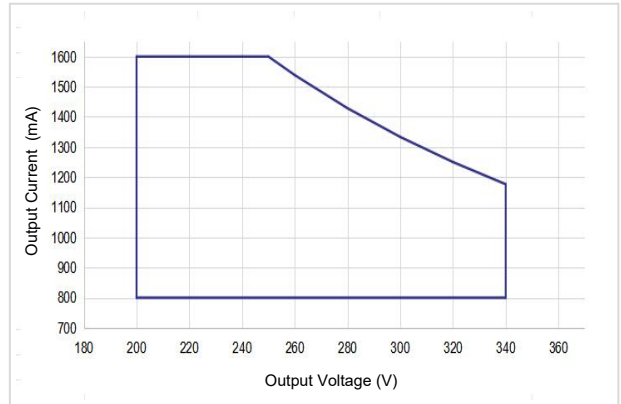


Product Characteristic Curves

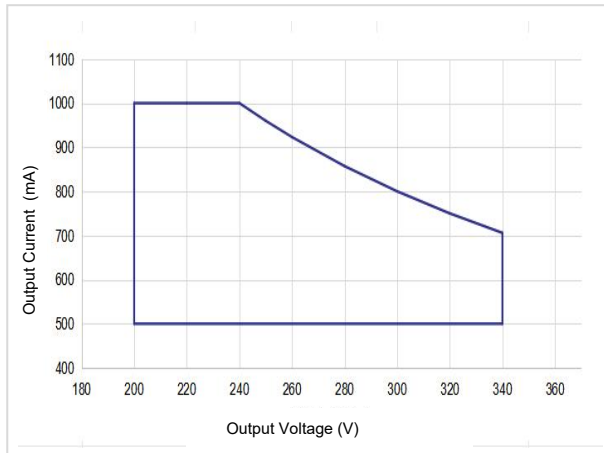
Load Derating Curve



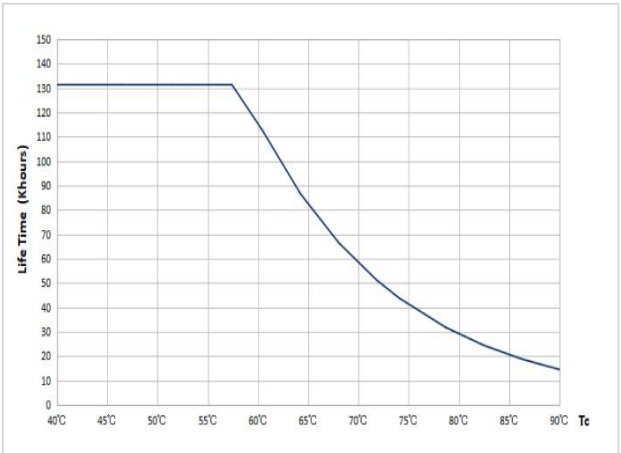
Power Curve (800-1600mA @198~277Vac)



Power Curve (500-1000mA @120~197Vac)



Lifetime Curve



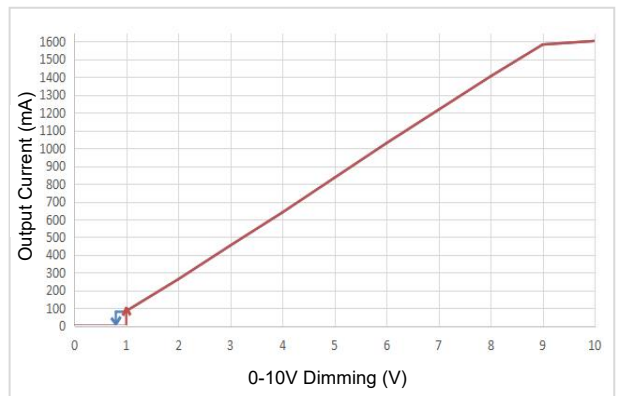
Input: 230Vac/60Hz; output: 250Vdc/1600mA (The chart is for reference only)

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



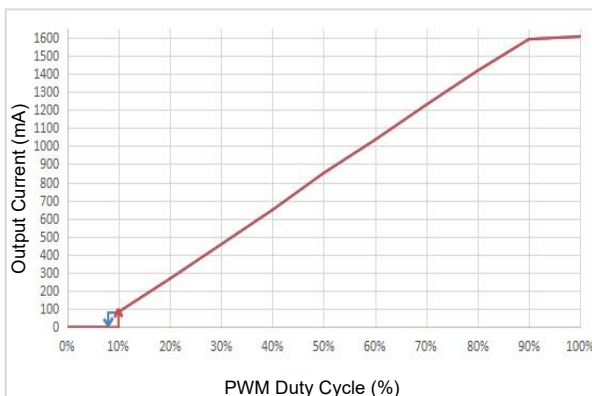
Input: 230Vac; output: 250Vdc/1600mA
(this data is measured by Lifud 0-10V dimmer and the chart is for reference only)

■ 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 output

Dimming Curve

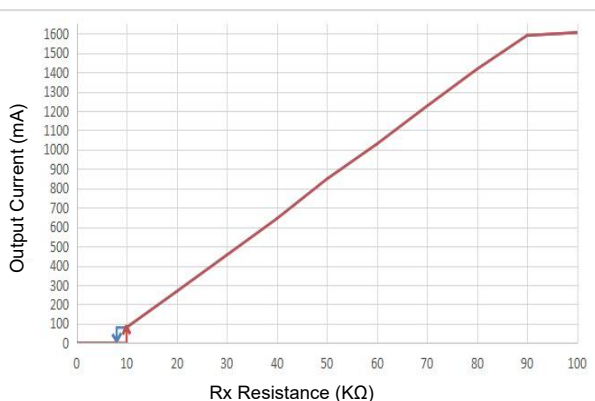


Input: 230Vac; output: 250Vdc/1600mA
(this data is measured by PWM signal generator Tektronix and the chart is for reference only)

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 output

Dimming Curve

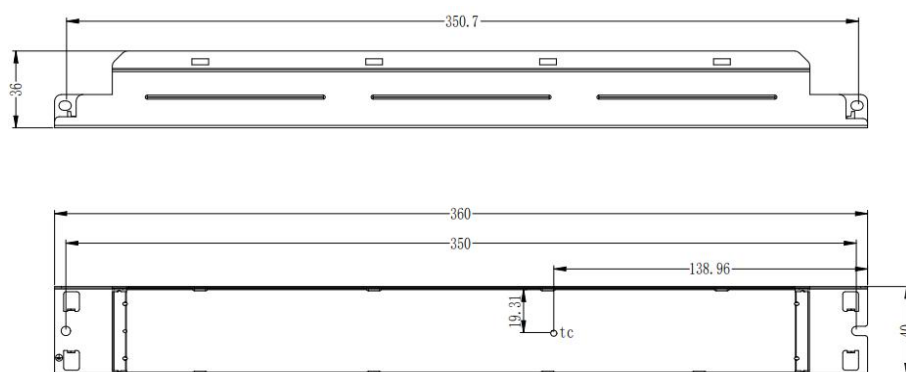


Input: 230Vac; output: 250Vdc/1600mA
(this data is measured by resistance dimmer and the chart is for reference only)

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

Wire Specifications

Name	Symbol	Unit (mm)
Length	L	360
Width	W	40
Height	H	36
Mounting hole spacing, length	I	350
Casing material	Color-coated sheet	
Casing color	White	



The tc point is located at the top of the LED driver

■ Product Terminal

Input		Output	
AC-L	AC live wire input	DIM+	Positive terminal input of dimming
AC-N	AC neutral wire input	DIM-	Negative terminal input of dimming / Negative terminal output of 12V AUX
	Earth wire	12V+	Positive terminal output of 12V AUX
		LED-	Negative terminal output of LED driver
		LED+	Positive terminal output of LED driver

■ Programming Diagram

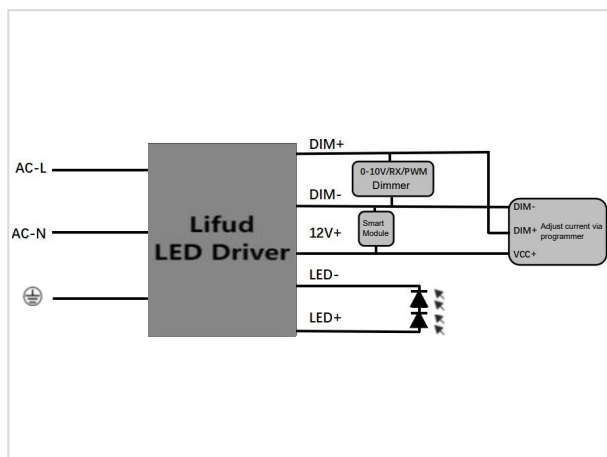
Dimming via programmer (adjusting the current)

Parameter	Min.	Default	Max.	Remark
Output Current	500mA (< 197V _{ac}) 800mA (> 198V _{ac})	960mA (< 197V _{ac}) 1600mA (> 198V _{ac})	1000mA (< 197V _{ac}) 1600mA (> 198V _{ac})	Total output power ≤240W (120-197V _{ac}) Total output power ≤400W (198-277V _{ac})

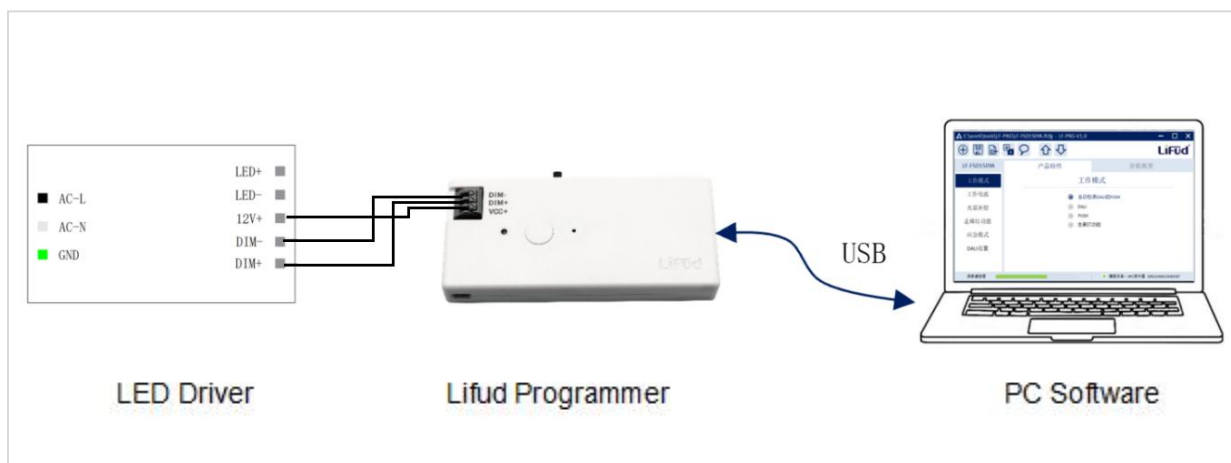
Download the software LF-FAA400_PL to set the default current via Lifud programmer LF-SCS080C

Notice: When using the Lifud programmer, the LED driver can be programmed without power. For specific wiring, see the parameter settings wiring diagram.

■ Wiring Diagram



■ Parameter Settings Wiring Diagram



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■ Packaging Specifications

Model	LF-FAA150(PL)
Carton Size	420*305*225mm (L*W*H)
Quantity	5 pcs/layer; 4 layers/ctn; 20 pcs/ctn
Weight	0.56 ±0.1 kg/pc; 13.2 ±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.
- When the input voltage is less than 180Vac, the output power needs to be derated. Otherwise, the product will be damaged. See the load derating curve for output power. 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.