

Features

- 3 versions selectable: non-dimmable, 3-in-1 dimming & 3-in-1 dimming + 12V AUX output
- High efficiency up to 94%
- THD <15%
- Output current adjustable via DIP switch and fine-tunable via potentiometer
- CCT adjustable via DIP switch (optional)
- Dims to off (optional and for YD/YJ version)
- Surge protection: L-N: 6kV & L/N-GND: 6kV
- All-round protections: open circuit/short circuit protection
- Flicker free; non-isolated; IP65



Application

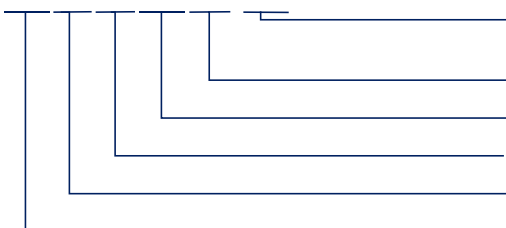
- Highbay light

Descriptions

LF-FHB080YxIV 5X is a constant current LED driver featuring high efficiency, high PF and low THD. It has 3 selectable versions: non-dimmable, 3-in-1 dimming and 3-in-1 dimming + 12V AUX output. There is a potentiometer and 2 DIP switches on the side of LED driver used for adjusting the output current (power) of LED drivers or CCT of luminaires.

Product Model

LF - FHB080 YD / YJ / YE IV 5X



- X: various versions: "D": power adjustable via potentiometer; "B": power adjustable via DIP switch+potentiometer; "T": power+CCT changeable via DIP switch
- YE: non-dimmable
- YJ: 3-in-1 dimming
- YD: 3-in-1 dimming + 12V
- 080: output power: 80W
- F: non-isolated design; HB: for high bay light

Lifud Technology Co., Ltd.

Add.: 3A, 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-FHB080YDIV 5X			LF-FHB080YJIV 5X			LF-FHB080YEIV 5X						
Output	Adjustable Output Current (TYP@220Vdc)	Adjustable via DIP switch and fine-tunable via potentiometer (200-400mA; default setting: 400mA±5%)													
		200mA	LOW	300mA	MID	400mA	HIGH								
	Flicker	According to IEEE Std 1789													
	Changeable CCT (one LED+) (optional)	Adjustable via DIP switch; two-channel output													
		Channel A			Channel A+B				Channel B						
	Output Voltage	180-260Vdc (LED)													
	Output Power	80W max. @180-264Vac													
	Ripple Current	<3% @≤120Hz													
	Start-up Time	230Vac <1S @full load													
	Linear Adjustment Rate	±5% @full load													
	Load Adjustment Rate	±8% @full load													
	Temperature Drift	±3% Tc: 25~75°C@full load													
Input	AC Input Voltage		180-264Vac (rated: 220-240Vac)												
	DC Input Voltage		255-370Vdc (rated: 310-340Vdc)												
	Input Current		0.5A max.												
	Input Frequency		50/60Hz												
	PF		≥0.9/230Vac @60% load												
	THD		≤15% @full load												
	Efficiency	MIN	93.5%/230Vac @200Vdc/400mA				92%/230Vac @200Vdc/400mA				92%/230Vac @200Vdc/400mA				
		TYP	94%/230Vac @200Vdc/400mA				92.5%/230Vac @200Vdc/400mA				92.5%/230Vac @200Vdc/400mA				
		MAX	/												
	In-rush Current		<70A/300uS @230Vac												
	Loading Quantity on Circuit Breaker (PCS)	Model	B10	C10	D10	B16	C16	D16	B20	C20	D20	B25	C25	D25	
		Qty@230Vac±10%	9	15	16	14	24	26	18	30	33	23	38	41	
Standby Power Consumption		≤0.5W @220Vac; dims to off (only for YD version)													
12V AUX Output (for YD only)	Output Voltage		+12Vdc (11-14V)												
	Output Current		200mA max.												
	Dynamic Load		Please make sure that it matches the LED driver.												
	Ripple Voltage		≤1V												
Protections	Surge		L-N: 6kV (2Ω), L/N-PE: 6kV (12Ω), residual pressure ≤2.5KVac												
	Open Circuit		Open-circuit voltage ≤310Vdc												
	Short Circuit		The LED driver will recover by itself and will not be damaged even in the state of short circuit for a long time. (Auto-recovery)												

■ Electrical Characteristics

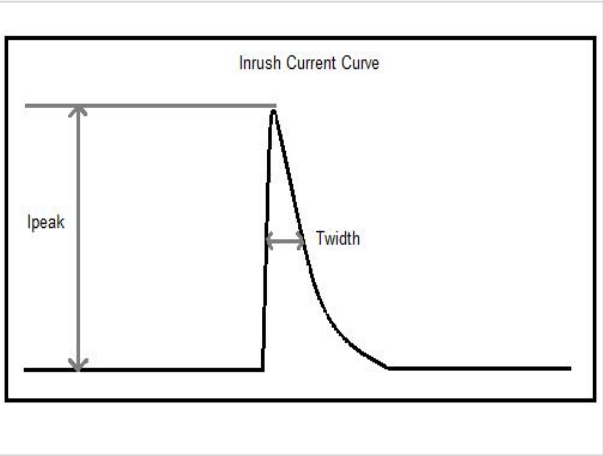
Environment Descriptions	Operating Temperature	Tc: -40°C~+90°C @220-240Vac (If it exceeds 50°C, it should be controlled according to the test temperature.)
	Operating Humidity	0~95%RH (no condensation)
	Storage Temperature/ Humidity	-40°C~+80°C (6 months in Class I environment); 0~95%RH (no condensation)
	Atmospheric Pressure	86~106kPa
Safety and EMC	Certifications	ENEC, CE, RCM, SAA, CB, UKCA
	Withstanding Voltage	L/N-PE: 1.5KVac, <5mA, 60S; L/N-DIM: 3KVac, <5mA, 60S; DIM-PE: 1.5KVac, <5mA, 60S
	Grounding Resistance	≤0.1Ω @25A/60S
	Insulation Resistance	L/N-PE, L/N-DIM, DIM-PE: ≥100MΩ @500Vdc/60S/25°C/50%RH
	Safety Standards	IEC/EN 61347-2-13, IEC/EN 61347-1, IEC/EN 62493 IEC/EN 62384 AS 61347.1, AS 61347.2.13
	EMI	EN 55015, EN 61547, EN 61000-3-2,3
	EMS	According to IEC61000-4-2, 3, 4, 5, 6, 8, 11, 12 CE-EMC/RCM: EN61000-4-2, 3, 4, 5, 6, 11
	ESD	Air 8kV, touch 4kV
Other Parameters	IP Rating	IP65
	RoHS	RoHS 2.0 (EU) 2015/863
	Warranty	5 years (Tc ≤85°C)
	MTBF	>1000Khours@Telcordia SR-332 Issue4
Testing Equipment	AC power source: CHROMA6530, digital power meter: CHROMA66205, oscilloscope: Tektronix DPO3014, DC electronic load: M9712B, LED board, constant temperature and humidity chamber, lightning surge generator: Everfine EMS61000-5B, rapid group pulse generator: Everfine EMS61000-4A, spectroanalyzer: KH3935, hi-pot tester: EEC SE7440, flicker tester (flicker-free coefficient test) Everfine LFA-3000, etc.	
Testing Remark	If there are no special remarks, the above parameters are tested at the ambient temperature of 25°C, humidity of 50%, maximum output 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. It is suggested that user use a slotted screwdriver or a Philips to adjust the output current of LED driver in case that the potentiometer is damaged (the screwdriver should have good insulation at the head, body and handle, and the screwdriver with a 2mm head is recommended as well; what's more, please pay attention that the intensity of torque should not exceed 500g.cm). 5. 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. 6. 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. During the dimming-to-off process, the afterglow current fluctuates, causing a slight flicker, which stabilizes after approximately 5 seconds. It's normal for non-isolated products. To avoid this phenomenon, please choose a light board with lower parasitic capacitance. 7. 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. 8. Please fully inspect the withstanding voltage ability of LEDs and aluminum substrates and the value shall be >2.5kVac.
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■ Product Characteristics Curves (Typical)

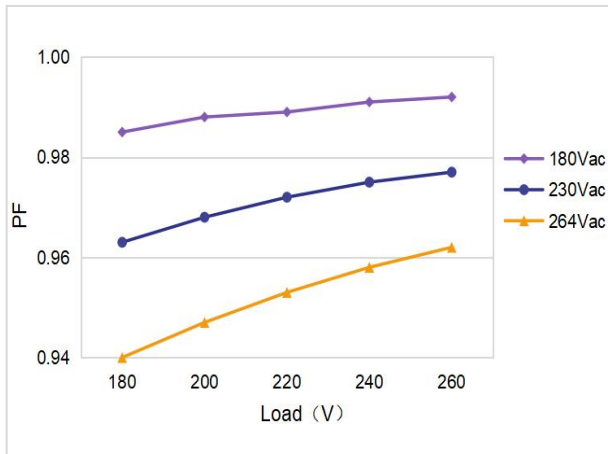
Input Inrush Current



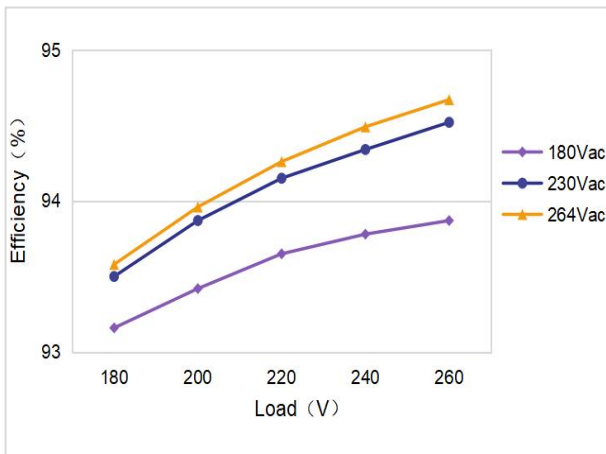
Vin	Ipeak	Twidth
230Vac	52A	180uS

Product Characteristic Curves

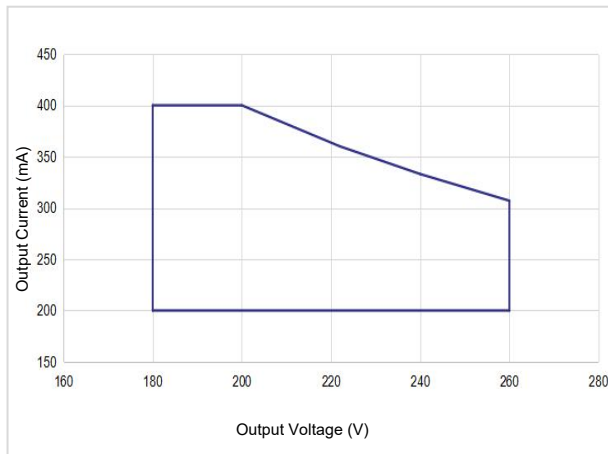
PF Curve



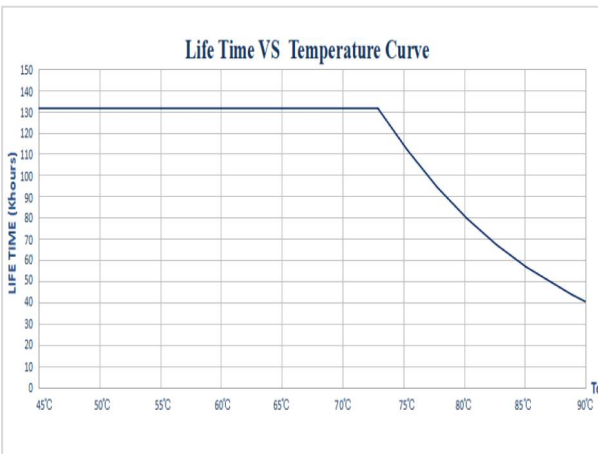
Efficiency Curve



Power Curve



Lifetime Curve



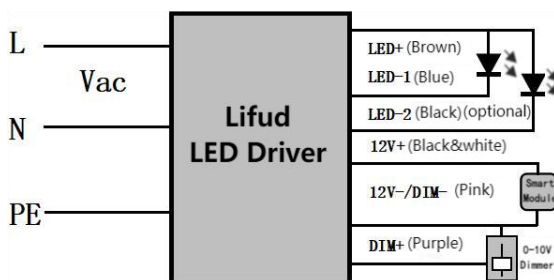
Input: 230Vac/50Hz; output: 200Vdc/400mA
(The chart is for reference only)

Dimming Operation Instructions

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



This diagram is only for YD version; YJ version has no 12V+; YE version has no 12V+, DIM+ or 12V-/DIM-.

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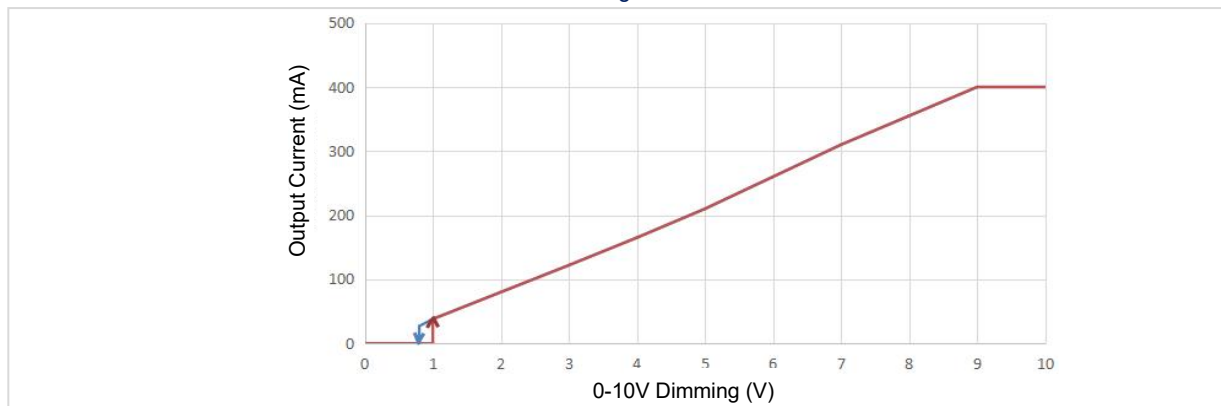
Website: www.lifud.com

Telephone: +86(0)755 8373 9299

Email: sales@lifud.com

■ Dimming Operation Instructions

Dimming Curve

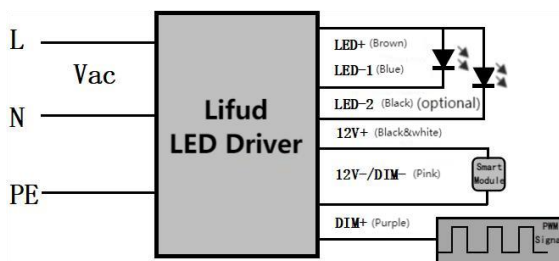


Input: 230Vac; output: 200Vdc/400mA
(this data is measured by Lifud 0-10V dimmer and the chart is for reference only)

PWM Dimming Operation

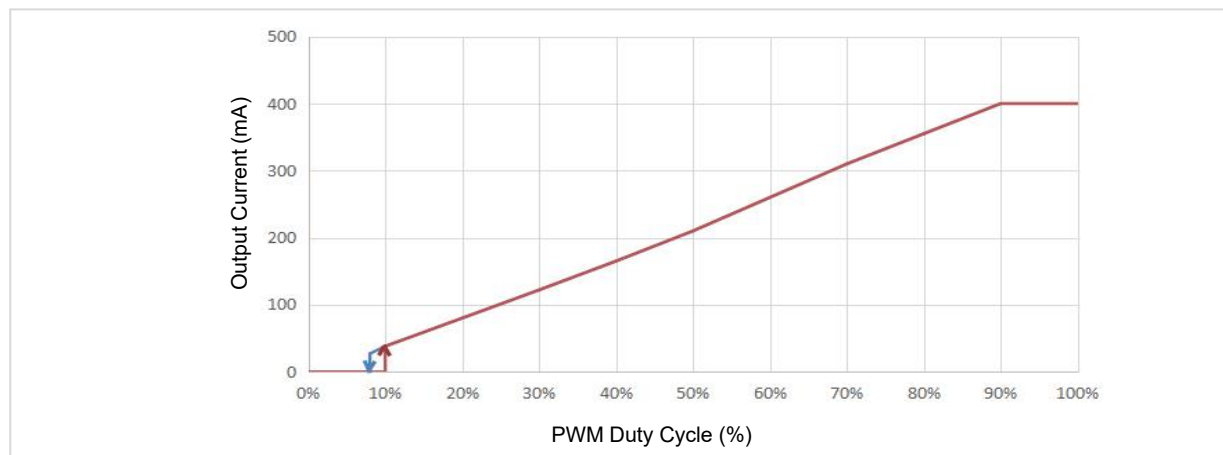
- Connect PWM signal to the DIM terminal.
- Dimming depth: 10% (typical value), the maximum is <12%
- Compatible signal range: 1000-3000(Hz), high: 9.8-10.2(V), low: 0-0.3(V)
- DIM+/- (without signal connected): 100% rated current

Wiring Diagram of PWM Dimming



This diagram is only for YD version; YJ version has no 12V+; YE version has no 12V+, DIM+ or 12V-/DIM-.

Dimming Curve



Input: 230Vac; output: 200Vdc/400mA
(this data is measured by PWM signal generator Tektronix and the chart is for reference only)

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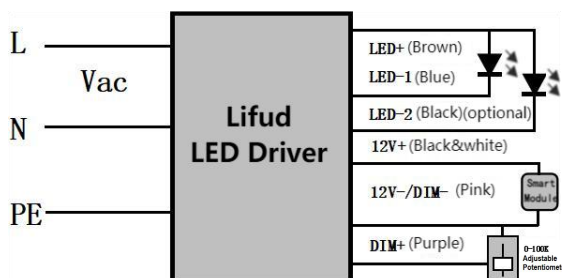
Email: sales@lifud.com

■ Dimming Operation Instructions

Rx Dimming Operation

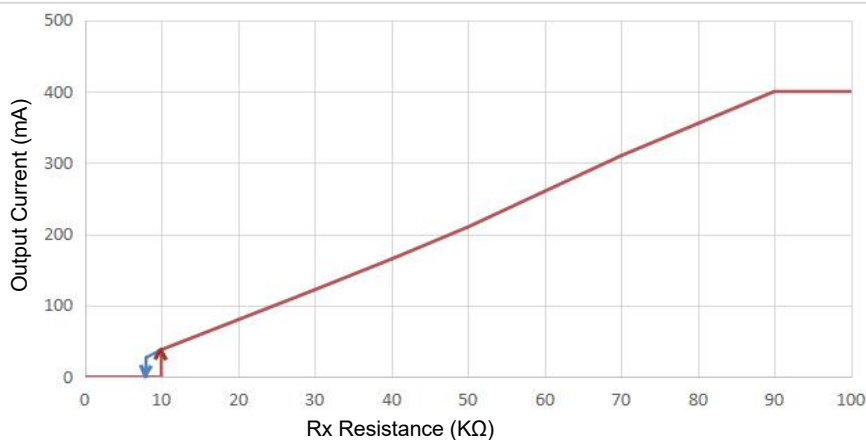
- Connect Rx signal to the DIM terminal.
- Range: 0-100KΩ
- Dimming depth: 10% (typical value), the maximum is <12%
- DIM+/- (without signal connected): 100% rated current

Wiring Diagram of Rx Dimming



This diagram is only for YD version; YJ version has no 12V+; YE version has no 12V+, DIM+ or 12V-/DIM-.

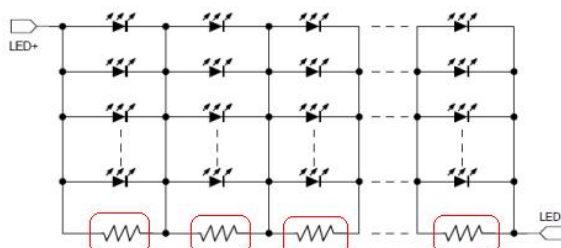
Dimming Curve



Input: 230Vac; output: 200Vdc/400mA
(this data is measured by resistance dimmer and the chart is for reference only)

■ Dimming Operation Instructions

When the dimming signal is 0V, the LED driver has no output, but there exists junction capacitance between the aluminum substrate's copper foil and the grounding wire, which will make the LED beads glow slightly. Thus, it is necessary to respectively attach a resistor to every node of LED beads in parallel, and their resistance should match according to the parameters of aluminum substrate and LED beads. (reference resistance: 3-5K Ω /size: 1206)



■ Structure & Dimensions (unit: mm)

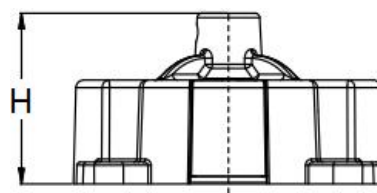
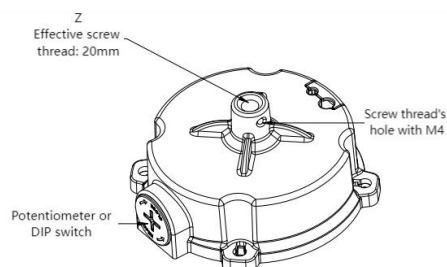
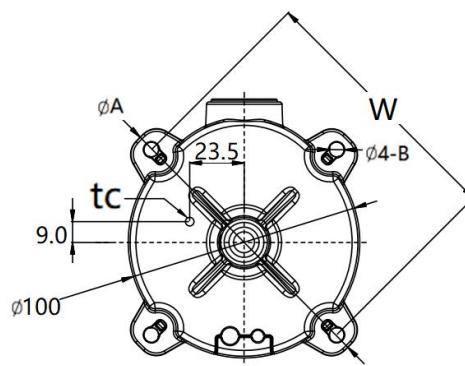
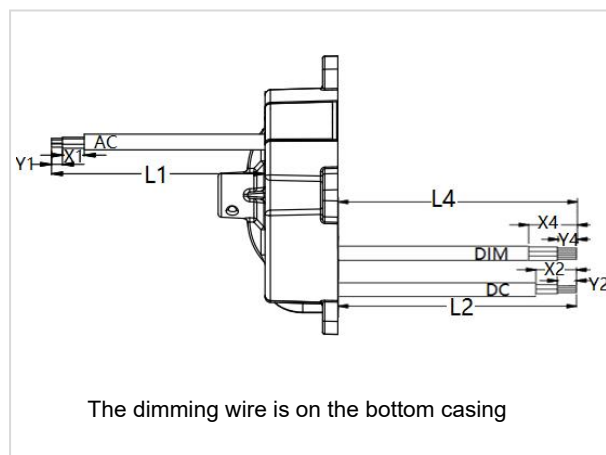
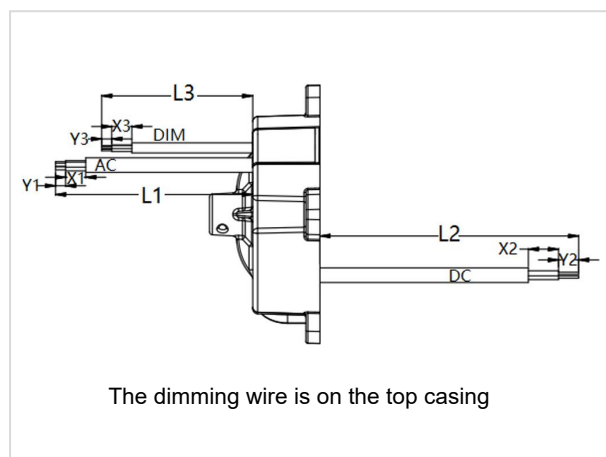
Wire Specifications

Type	Input Wire	Output Wire 1	Output Wire 2 CCT Changeable via DIP Switch (optional)	Dimming Wire & AUX Output Wire
YD	3*1.0mm ² Φ 7.2 $\pm$ 1mm	2*1.0mm ² Φ 6.8 $\pm$ 1mm	3*1.0mm ² Φ 7.2 $\pm$ 1mm	3*22AWG Φ 5.0 $\pm$ 1mm
YJ	3*1.0mm ² Φ 7.2 $\pm$ 1mm	2*1.0mm ² Φ 6.8 $\pm$ 1mm	3*1.0mm ² Φ 7.2 $\pm$ 1mm	2*22AWG Φ 4.5 $\pm$ 1mm
YE	3*1.0mm ² Φ 7.2 $\pm$ 1mm	2*1.0mm ² Φ 6.8 $\pm$ 1mm	3*1.0mm ² Φ 7.2 $\pm$ 1mm	/
Color	AC-L Brown; AC-N Blue; PE Yellow & Green	LED+ Brown; LED-1 Blue	LED+ Brown; LED-1 Blue; LED-2 Black	DIM+ Purple; DIM- Pink; +12V Black & White
Length	300 $\pm$ 10mm (L1)	200 $\pm$ 8mm (L2)	200 $\pm$ 8mm (L2)	280 $\pm$ 8mm (L3) 200 $\pm$ 8mm (L4)
Peeled	40 $\pm$ 4mm (X1)	35 $\pm$ 4mm (X2)	35 $\pm$ 4mm (X2)	40 $\pm$ 4mm (X3/X4)
Tinned	10 $\pm$ 1.5mm (Y1)	10 $\pm$ 1.5mm (Y2)	10 $\pm$ 1.5mm (Y2)	10 $\pm$ 1.5mm (Y3/Y4)

■ Structure & Dimensions (unit: mm)

Overall Appearance

Description	Symbol	Unit (mm)
Casing Diameter	A	$\Phi 127.5 \pm 0.5$
Diameter of Fixed Screw Hole	4-B	$\Phi 6.4 \pm 0.2$
Diameter of Assembly Hole	W	113 ± 0.5
Ring's Hole	Z	M10*1.5
Casing Height	H	54.9 ± 0.5



■ Packaging Specifications

Model	LF-FHB080YD/YJ/YEIV
Carton Size	570*380*160mm (L*W*H)
Quantity	15 pcs/layer; 1 layer/ctn; 15 pcs/ctn
Weight	0.54±0.1 kg/pc; 9.6±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.
- 1. When using the products which have been stored for more than 6 months, please re-test their electrical parameters firstly by powering on. Do not use them unless they are tested to be qualified.
- 2. When using the products which have been stored for 6 to 12 months, please run them on power for more than 2 hours firstly.
- 3. When using the products which have been stored for more than 12 months, please conduct an actual assessment of quality risks firstly. Direct use is not recommended.

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.