

Features

- High efficiency up to 95%
- THD <15%
- The output current can be adjusted via a DIP switch or a potentiometer
- Can be dimmed to off without afterglow (optional)
- 3 versions: non-dimmable version, 3-in-1 dimming version and 3-in-1 dimming + 12V AUX power supply version
- Flicker free
- Surge protections: L-N: 4kV/6kV (optional) & L/N-GND: 6kV
- IP65



Applications

- High bay light

Descriptions

LF-FHB120Yx/BxIV is a constant current LED driver. It has features of high efficiency, high PF and low THD. And there is a potentiometer and a DIP switch used for adjusting the output current (power) at the side of LED driver to meet diverse needs. Beside, it has all round protections, including over temperature protection, over voltage protection and short circuit protection.

Product Model

LF - FHB 120 YA(BA)IV / YC(BC)IV / YB(BB)IV

- YB/BBIV: non-dimmable (potentiometer/DIP switch)
- YC/BCIV: 3-in-1 dimming (potentiometer/DIP switch)
- YA/BAIV: 3-in-1 dimming + 12V (potentiometer/DIP switch)
- 120: rated power: 120W
- F: non-isolated design; HB: for high bay light

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■ Electrical Characteristics

Model		LF-FHB120YA/BAIV	LF-FHB120YB/BBIV	LF-FHB120YC/BCIV	
Output	Output Current	Adjustable via the potentiometer (Yx series)			
		300mA-500mA (factory default: 480mA)			
		Adjustable via the DIP switch (Bx series)			
		250mA	330mA	420mA	500mA (factory default)
	Output Voltage	180-260Vdc (LED)			
	Output Power	120W max.			
	Modulation Depth	<0.5% @full load			
	Current Tolerance	±8%			
Startup Time	120Vac <1S; 230Vac <0.5S				
Temperature Drift	±3% @Ta 25-60°C				
Input	Input Voltage	100-277Vac (voltage limit: 90-305Vac)			
	DC Input Voltage	141-276Vdc			
	Input Current	1.6A max.			
	PF	≥0.95/230Vac @full load			
	THD	≤15% @full load			
	Efficiency	92.5%/120Vac @full load; 94.5%/230Vac @full load			
	Inrush Current	<80A/350uS @230Vac			
	Standby Power Consumption	≤0.5W @220Vac (optional)			
12V AUX Power Supply (YA/BA Series)	Output Voltage	+12Vdc (11-14V)			
	Output Current	200mA max.			
	Dynamic Load	Please make sure that it matches for the LED driver.			
	Ripple Voltage	≤1V			
Protections	Surge	<input checked="" type="checkbox"/> standard version: L-N: 4kV(2Ω), L/N-PE: 6kV(12Ω) <input type="checkbox"/> enhanced version: L-N: 6kV(2Ω), L/N-PE: 6kV(12Ω)			
	Open Circuit	Open circuit voltage ≤310Vdc			
	Short Circuit	≤15W (The LED driver will recover by itself and will not be damaged even in the state of short circuit for a long time.)			
Environment Descriptions	Operating Temperature	-40°C - +60°C			
	Operating Humidity	0-95%RH (without condensation)			
	Storage Temperature/ Humidity	-40°C - 80°C (6 months in Class I environment); 0-95%RH (without condensation)			
	Atmospheric Pressure	86-106kPa			

■ Electrical Characteristics

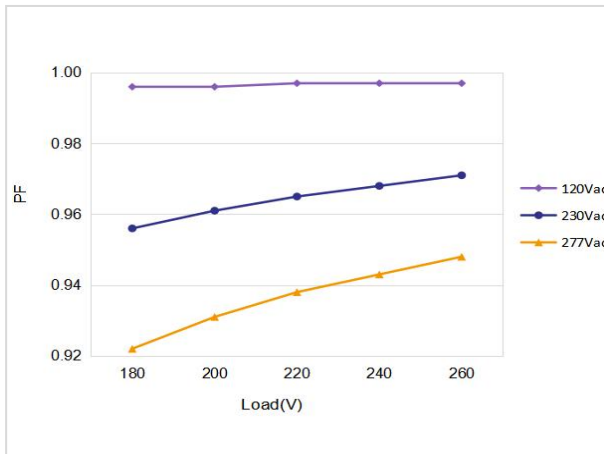
Safety and EMC	Certifications	FCC and UL
	Withstanding Voltage	L-N/PG: 1.5kVac, <5mA, 60S; L-N/DIM: 1.6kVac, <5mA, 60S; DIM/PG: 500Vac, <5mA, 60S
	Safety Standards	UL: UL8750, CSA 250.13
	EMI	FCC: PART 15B
	EMS	Complies with IEC61000-4-2, 3, 4, 5, 6, 8, 11, 12; IEC61547
	Ringing Wave	4kV
	ESD	Air 8kV, touch 4kV (Class B)
Other Parameters	IP Rating	IP65
	RoHS	RoHS 2.0 (EU) 2015/863
	Warranty Condition	5 years (Tc ≤75°C)
	MTBF	> 1000Khours@Telcordia SR-332 Issue4
Testing Equipment	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, withstanding voltage tester: TH9201B, flicker tester (flicker-free coefficient test) 60N-01, etc.	
Testing Remarks	The above parameters are tested at the ambient temperature of 25°C, humidity of 50%, full load and input voltage of 230Vac without any special remarks.	

■ **Electrical Characteristics**

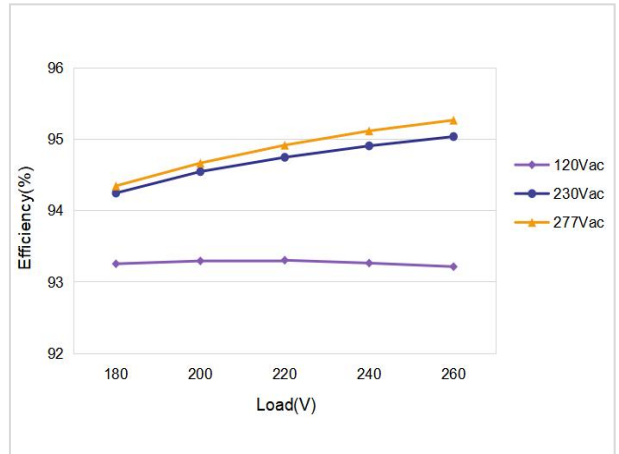
Additional Remarks	<ol style="list-style-type: none"> 1. It is recommended that our client install over voltage protection, under voltage protection and surge protection devices in the power supply circuits of light fixtures to ensure electricity safety. 2. The PC shade, casing and plug for assembling 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 in the whole light fixture, and its EMC 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 performance of LED driver before the whole light fixture is finished. 4. It is suggested that our client use a slotted screwdriver or a Philips to adjust the output current of LED driver, otherwise the potentiometer may be 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 not exceed 0.5KN.m) 5. 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. 6. The withstanding voltage of LED beads and aluminum substrates must > 2.5kVac.
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■ **Product Characteristic Curves**

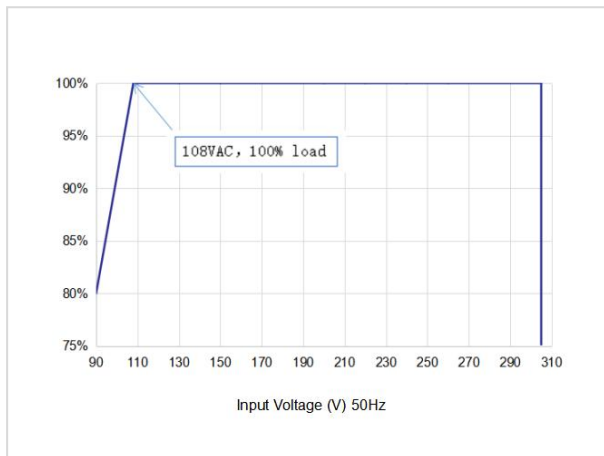
PF Curve



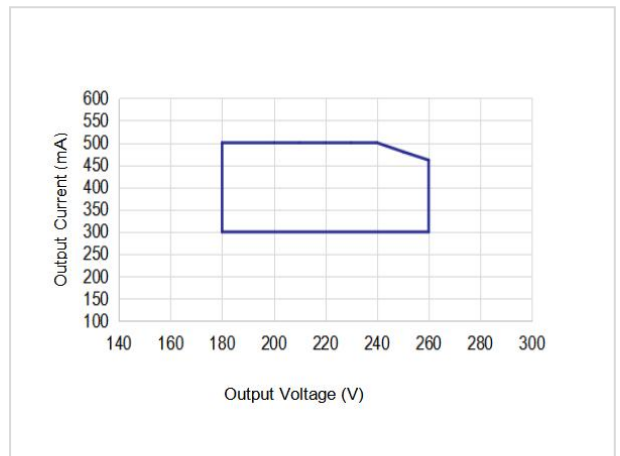
Efficiency Curve



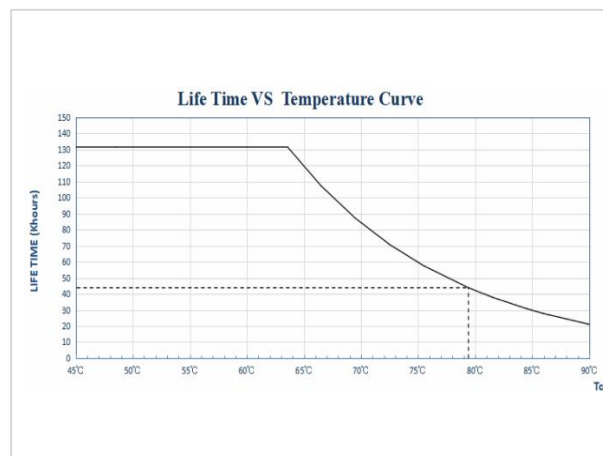
Load Derating Curve



Power Curve



Lifetime Curve



■ Dimming Operation Instructions

The output current can be adjusted via a built-in potentiometer (YA/YB/YCIV)

Parameter	Minimum Value	Typical Value	Maximum Value	Note
Output Current	300mA	-	500mA	The total output power should NOT exceed 120W

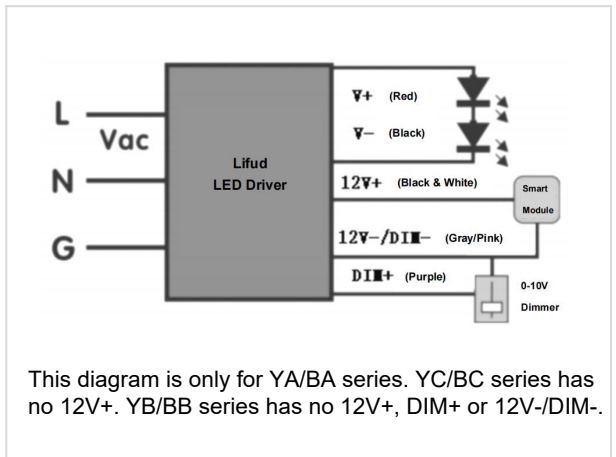
Adjustable output current via a built-in DIP switch (BA/BB/BCIV)

Output Current Adjustment Reference Table				
Output Current	1	2	3	Note
250mA	-	-	-	The total output power should NOT exceed 120W
330mA	-	-	ON	
420mA	-	ON	-	
500mA	ON	-	-	

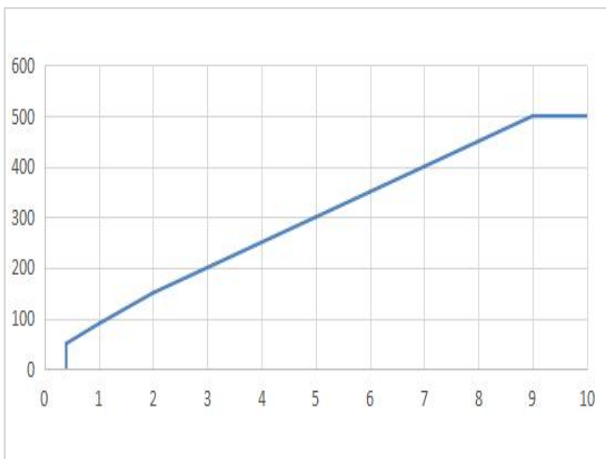
0-10V Dimming Operation

- 0-10V signal is connected to DIM terminal.
- In 0-10V dimming mode, when the input voltage is $0.6V \pm 0.4$, the light turns off. When it's $0.8V \pm 0.4$, the light turns on.
- Dimming depth: 10% (typical value)
- DIM+/- (without signal connected): 100% rated current output

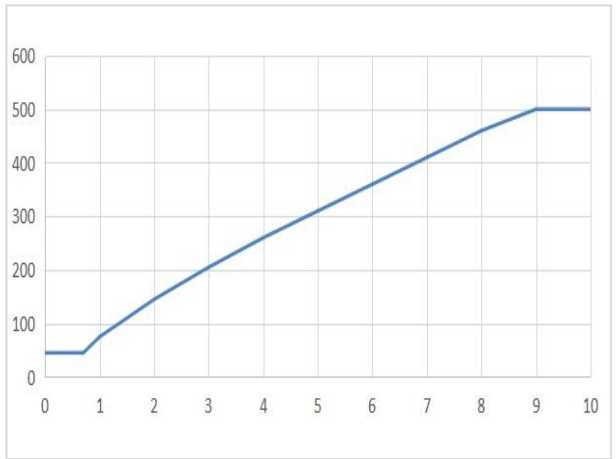
Wiring Diagram of 0-10V Dimming



Dimming Curve of YA/BA Series and Dim-to-Off Version of YC/BC Series



Dimming Curve of YC/BC Series that is not be dimmed to off

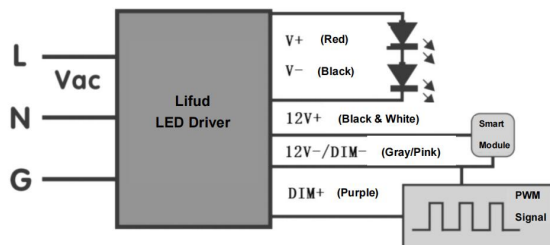


Input: 230Vac, output: 240Vdc/500mA (The data is measured by Lifud 0-10V dimmer and the chart is for reference only)

PWM Dimming Operation

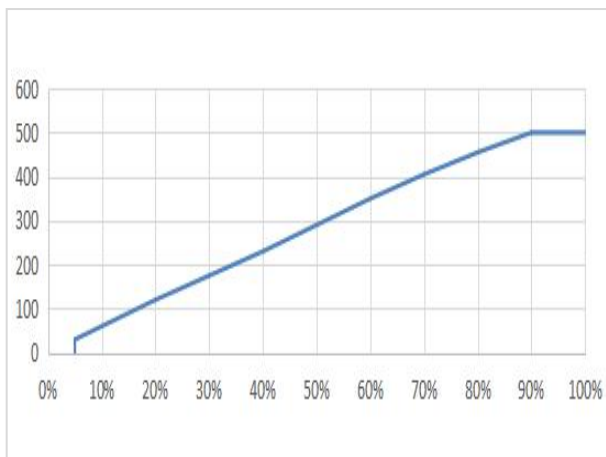
- PWM signal is connected to DIM terminal.
- Dimming depth: 10% (typical value)
- Compatible signal: 1000-3000(Hz), amplitude: 9-10(V)
- DIM+/- (without signal connected): 100% rated current output

Wiring Diagram of PWM Dimming

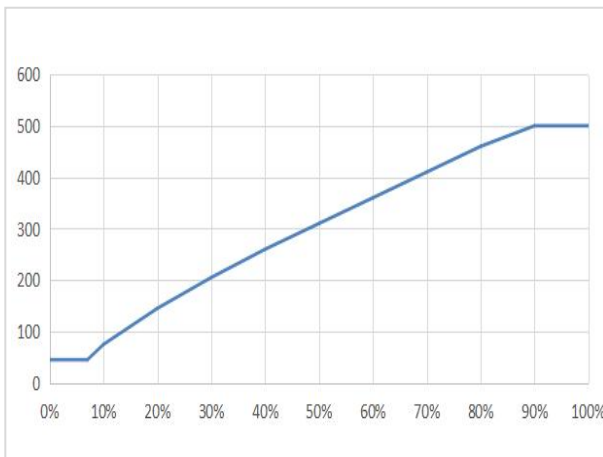


This diagram is only for YA/BA series. YC/BC series has no 12V+. YB/BB series has no 12V+, DIM+ or 12V-/DIM-.

Dimming Curve of YA/BA Series and Dim-to-Off Version of YC/BC Series



Dimming Curve of YC/BC Series that is not be dimmed to off

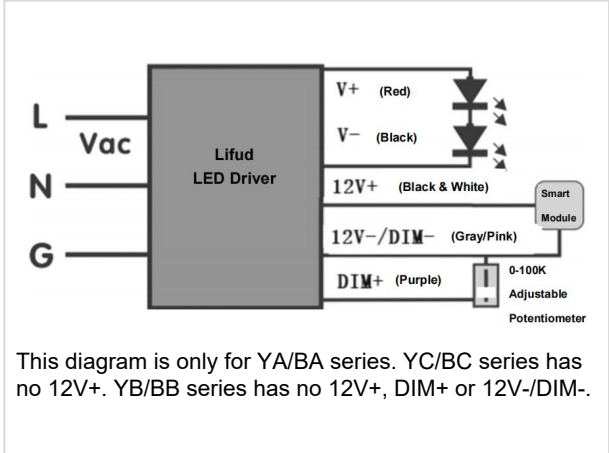


Input: 230Vac, output: 240Vdc/500mA (The data is measured by PWM signal generator RIGOL and the chart is for reference only)

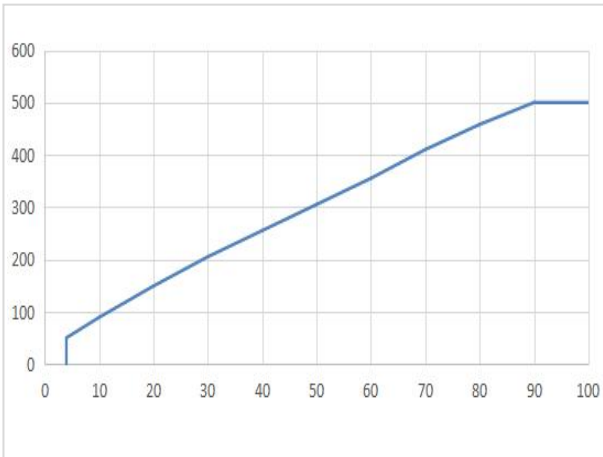
Rx Dimming Operation

- Rx signal is connected to DIM terminal.
- Range: 0-100KΩ
- DIM+/- (without signal connected): 100% rated current output

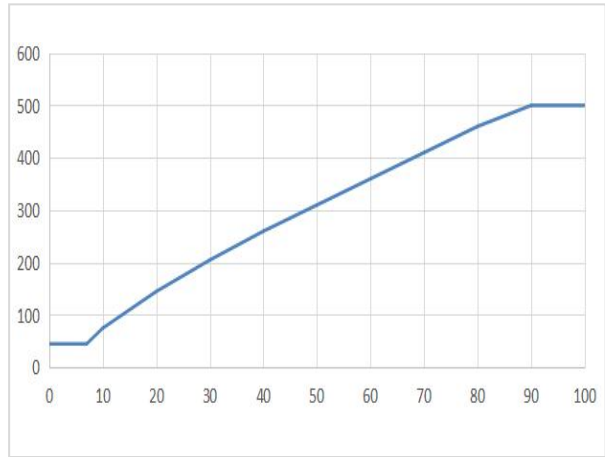
Wiring Diagram of Rx Dimming



Dimming Curve of YA/BA Series and Dim-to-Off Version of YC/BC Series



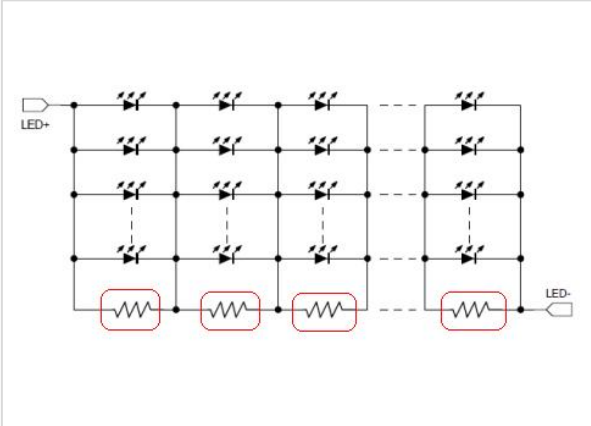
Dimming Curve of YC/BC Series that is not dimmed to off



Input: 230Vac, output: 240Vdc/500mA (The data is measured by LEVITON dimmer and the chart is for reference only)

Dim-to-Off Operation

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 bead glow slightly. Thus, it is necessary to attach a 3-5KΩ resistor (resistor size: 1206) to LED beads in series connection, and the connection method is as shown in the right figure.



■ Structure & Dimensions (unit: mm)

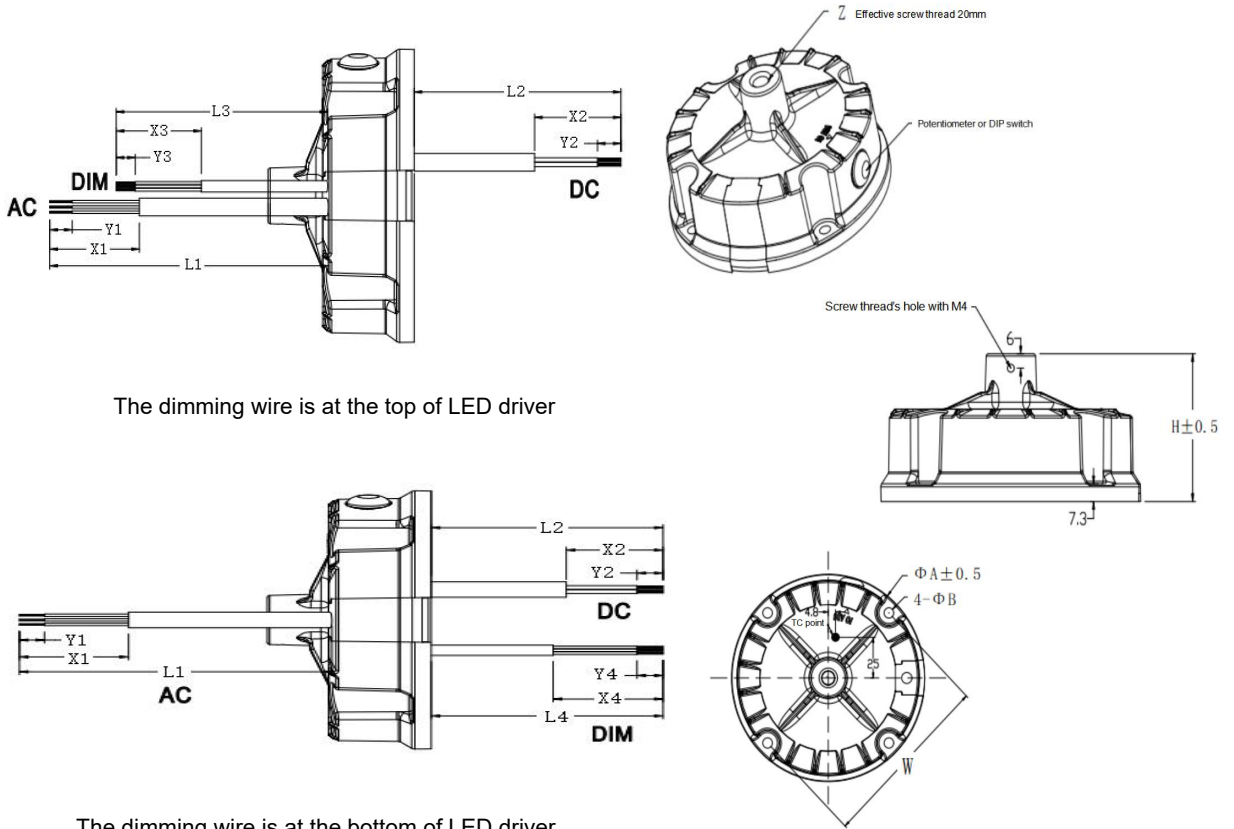
Wire Specifications

Type	Input Wire Specification	Output Wire Specification	Dimming Wire & AUX Power Supply Wire
YA/BA	3*18AWG $\Phi 7.8 \pm 1\text{mm}$	2*18AWG $\Phi 7.7 \pm 1\text{mm}$	3*22AWG $\Phi 5.0 \pm 1\text{mm}$
YB/BB	3*18AWG $\Phi 7.8 \pm 1\text{mm}$	2*18AWG $\Phi 7.7 \pm 1\text{mm}$	/
YC/BC	3*18AWG $\Phi 7.8 \pm 1\text{mm}$	2*18AWG $\Phi 7.7 \pm 1\text{mm}$	2*22AWG $\Phi 4.5 \pm 1\text{mm}$
Color	AC-L Black; AC-N White; PG Green	LED+ Red; LED- Black	DIM+ Purple; DIM- Pink or Gray (optional); +12V Black & White
Length	$300 \pm 10\text{mm}$ (L1)	$200 \pm 8\text{mm}$ (L2)	$280 \pm 8\text{mm}$ (L3)
			$200 \pm 8\text{mm}$ (L4)
Peeled	$40 \pm 4\text{mm}$ (X1)	$35 \pm 4\text{mm}$ (X2)	$40 \pm 4\text{mm}$ (X3/X4)
Tinned	$10 \pm 1.5\text{mm}$ (Y1)	$10 \pm 1.5\text{mm}$ (Y2)	$10 \pm 1.5\text{mm}$ (Y3/Y4)

Appearance and Dimensions

Description	Symbol	Unit (mm)
Casing Diameter	A	$\Phi 127.3$
Diameter of Fixed Screw Hole	4-B	$\Phi 6.4$
Diameter of Assembly Hole	W	113
Ring's Hole	Z	M10*1.5
Casing Height	H	61.4

■ Structure & Dimensions (unit: mm)



Note: the external casing with a bracket hole is selectable.

■ Packaging Specifications

Model	LF-FHB120YA/YB/YC/BA/BB/BCIV
Carton Size	570×380×175mm (L×W×H)
Quantity	15 pcs/layer; 1 layer/ctn; 15 pcs/ctn
Weight	0.722±0.1 kg/pc; 11.9±1.5 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 Tecnology Co., Ltd. reserves the right to interpret any contents of this specification.