

# Specification

Customer: \_\_\_\_\_

Product Material No. : \_\_\_\_\_

Model No. : **LF-FHB150YF / YG**

Version: **V1.0**

## Customer Approval

Examination	Review	Approve

## LIFUD Approval

Drafting	Review	Approve
Huang Heming	Xiao Hong	Zhong Chunlin

## Model Numbers Chosen by Customer

Full model No.		Full model No.	
Full model No.		Full model No.	

## E.C. List

Version	Description of Change	Engineer	Date
0.1	Initial version	Huang Heming	2018-10-09
1.0	Revised packaging info.	Huang Heming	2019-02-14

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<b>Model</b>	LF-FHB150YF/YG	<b>Series</b>	High Power LED Driver
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## 1. Product Introduction



### Product Features

- Conversion efficiency: up to 94%
- Input voltage: 100-277Vac, THD<15%
- Adjustable output currents (via a potentiometer)
- Auxiliary 12Vdc cable is for powering smart control modules.
- Two options: 3-in-1 dimmable & non-dimmable
- Surge protection: L-N: 4KV; L/N-GND: 6KV; The residual voltage between output terminal and the earth wire is less than 1500V.
  - All-round protection: over temperature protection, over voltage protection, short circuit protection & IP65
  - Flicker free, percent flicker <1%
  - Main application: LED high bay light, UFO high bay light
  - Warranty: 5 years (Please refer to the warranty condition.)
  - Certificate: TUV, CE, CB, ENEC, SAA, RCM, UL, FCC

### Product Description

LF-FHB150Yx series is the 150W LED driver. LF-FHB150YF is dimmable. LF-FHB150YG is non-dimmable. There are EU-standard version and UL-standard version.

Super high efficiency and excellent heat-dissipation properties of FHB help to extend the product lifetime. The high-power-factor FHB makes better use of the power grid. Its low harmonic interference means low interference with the power grid and the electric devices in the circuit. All-round protection design improves the product stability which helps to save users' maintenance cost. This product was equipped with surge protection device, connecting to the earth wire. The surge protection device makes sure the residual voltage between the output terminal and the earth wire is less than 1500V. It can greatly reduce the voltage that may go through the PCBA of the LED light fixture. In this case, even the driver is of non-isolated, the complete light fixture can work stably for sure as long as the PCBA of the light fixture can withstand high voltage of 2000V.

There equips with a potentiometer at the bottom that helps to adjust the output current/power of the product. Various installation options meet diverse needs.

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## 2. Technical Data

	Full Model Number	LF-FHB150YF		LF-FHB150YG
<b>Output</b>	Output Voltage	80-130VDC (LED)	12V±1.5V	80-130VDC (LED)
	Output Current	1.0A - 1.35A (adjusted by a potentiometer)	200mA max.	1.0A - 1.35A (adjusted by a potentiometer)
	Ripple Voltage	<3%		
	Current Tolerance	±5%		
	Start-up Time	120V< 1s, 230V <0.5s		
	Temperature Drift	±3%@ Ta 25-60°C		
	Line Regulation	±3%		
<b>Input</b>	Line Regulation	±3%		
	Input Voltage	100-277Vac (limit voltage: 90-305Vac)		
	Power Factor	≥0.95/230Vac		
	Input Current	1.8A Max		
	Efficiency	≥93%/277Vac @125Vdc 1200mA		
	Inrush Current	<60A/700uS@230Vac		
	Stand-by Power	≤2W		
	Dimming	0-10V, PWM & Resistance dimming signals	Non-dimming	
<b>Protective Feature</b>	Open Circuit Protection	Open circuit voltage≤150V		
	Short Circuit Protection	Hiccup mode (auto-recovery)		
	Over Temperature Protection	No output (auto-recovery)		
<b>Environment Condition</b>	Working Temperature	-40°C - +60°C		
	Working Humidity	20-90%RH (no condensation)		
	Storage Temperature/Humidity	-40°C - 85°C(six months under class I environment); 10-90%RH (no condensation)		
	Atmospheric Pressure	86-106KPa		
<b>Safety &amp; Norm</b>	Certificate	TUV, CE, CB, ENEC, SAA, RCM, UL, FCC		
	Electromagnetic Interference	Comply with EN55015, FCC Part 15		
	Hi-Pot Test	L-N/PG: 1.5KVac, < 5mA, 60s (Remove the screw which is for fixing the earth wire on the housing.)		
	Electro Magnetic Susceptibility	Comply with IEC61000-4-2,3,4,5,6,8,11,12; IEC61547		
	IP Rating	IP65		
	Warranty Condition	5 years (Tc ≤ 73 °C)		
<b>Others</b>	Packing (Weight)	Carton size: 380*365*180 (L*W*H). Net weight: 650g ±5%/pc; 9.1KG ± 5%; 14 pcs/ctn		
<b>Testing Equipment</b>	AC power source: CHROMA66202, 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: TH9201B, stroboscope (flicker index tester) 60N-01, etc.			
<b>Testing Condition</b>	Unless otherwise stated, the electrical parameters above, including the power factor, THD and efficiency, are tested under the ambient temperature 25°C and humidity 50%, input 230Vac and 100% load.			
<b>Additional Remark</b>	<ol style="list-style-type: none"> <li>1. It is recommended that customer should install an over &amp; under voltage protection and surge protection device to ensure safety before connecting to electricity.</li> <li>2. The PC cover, housing, end caps and other parts of the LED driver inside the LED luminaire must conform to UL94 V-0 flammability standard or above.</li> <li>3. As an accessory, the LED driver is not the only factor determining the EMC performance of the LED luminaire. The structure and the wiring of the light fixture are also relevant. Thus it's strongly recommended the LED luminaire manufacturer re-confirms the EMC of the whole LED luminaire.</li> <li>4. It's suggested that the user should use a slotted screwdriver to adjust the output current in case the potentiometer is damaged. The screwdriver with a 2mm slot head is recommended. Torque is no higher than 0.5KNM. Make sure the insulation of the screwdriver is good enough.</li> <li>5. The total output power of the light fixture should NOT exceed the rated max. output power of the driver otherwise LIFUD will NOT provide quality assurance. (Vout * Iout = Pout)</li> </ol>			

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### 3. Dimming Features

#### 3.1 Dim via the built-in potentiometer (adjust the output current)

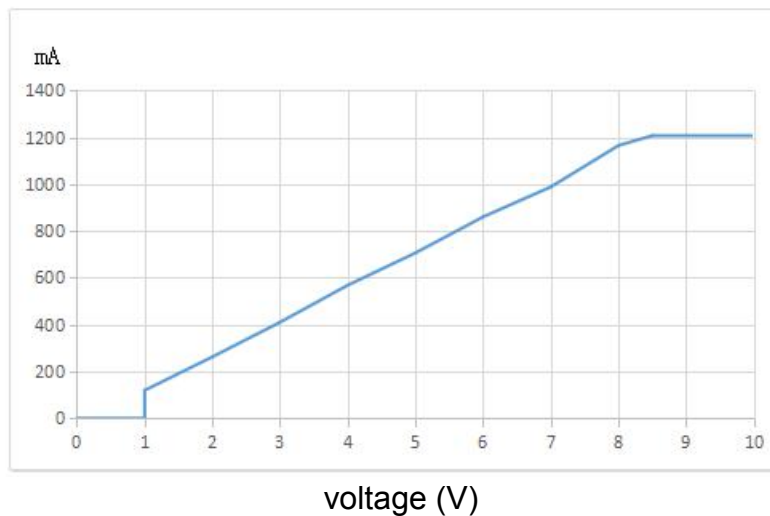
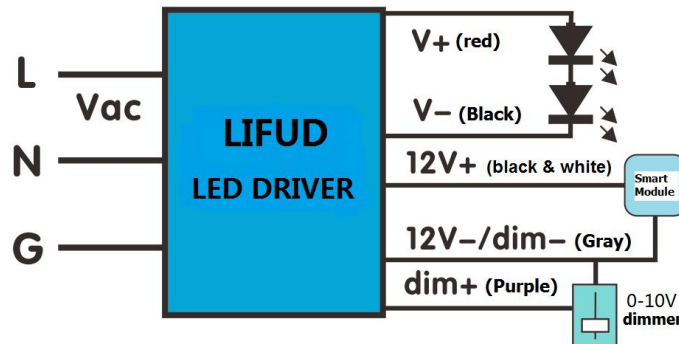
Feature	Min	Rated	Max	Remark
Output current range	1000mA	-	1350mA	The total output power of the light fixture should NOT exceed 150W otherwise LIFUD will NOT provide quality assurance. (Vout * Iout = Pout)

It's suggested that the user should use a slotted screwdriver to adjust the output current in case the potentiometer is damaged. The screwdriver with a 2mm slot head is recommended. Torque is no higher than 0.5KNM. Make sure the insulation of the screwdriver is good enough.

#### 3.2 0-10V dimming (for LF-FHB150YF only)

Feature	Min	Rated	Max	Remark
Max. voltage of 0-10V dimming wire	0V	-	10.5V	
Output Current of 0-10V dimming wire	200uA	300uA	450uA	Vdim(+)=0V
Dimming range	0%		100%	

Wiring Diagram



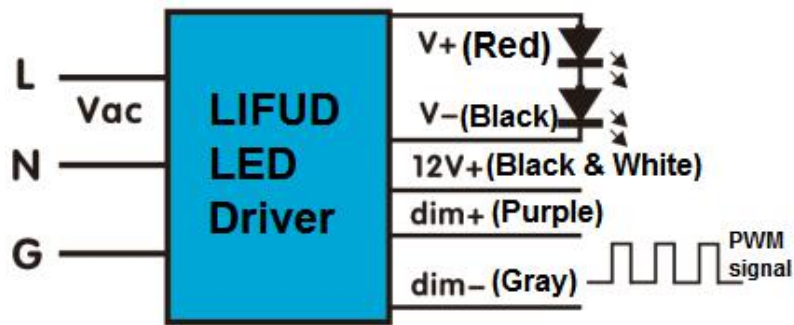
Input: 220Vac, Output: 125V/1200mA (Tested with Lifud 0-10V dimmer. The form is for reference only.)

Remarks: This product is compatible with 0-10V and 1-10V dimmers. Dimming range: 0% -100%

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### 3.3 PWM dimming (for LF-FHB150YF only)

Feature	Min	Rated	Max	Remark
PWM high level	9V	-	11V	
PWM frequency range	900Hz	1KHz	1.1KHz	
PWM duty cycle	0%	-	100%	
Dimming range	0%		100%	

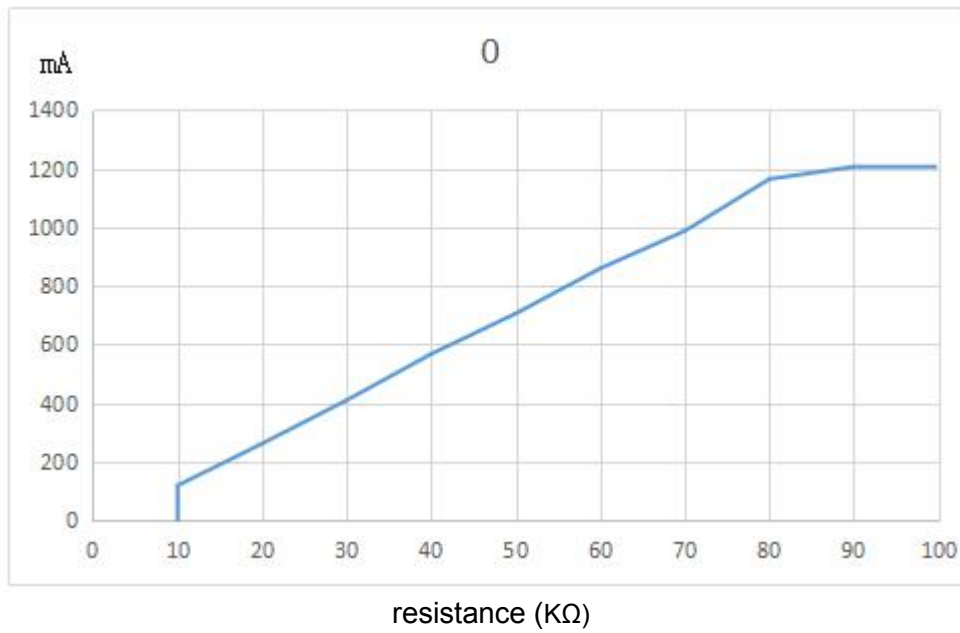
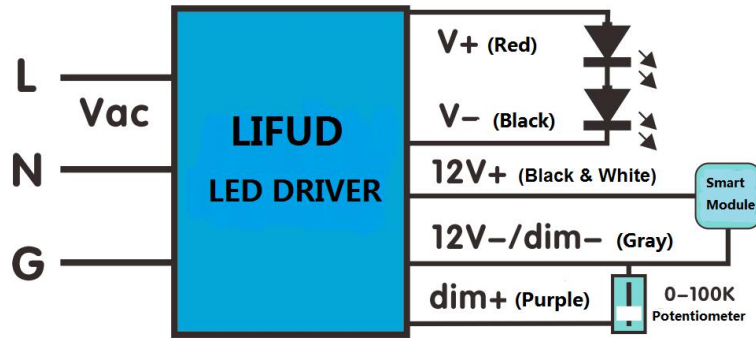


Input: 220Vac, Output: 125V/1200mA (Tested with standard PWM signal generator: RIGOL. The form is for reference only.)

### 3.4 Resistance dimming (for LF-FHB150YF only)

Feature	Min	Rated	Max	Remark
Resistance	0Ω	-	100KΩ	
Dimming range	0%	-	100%	

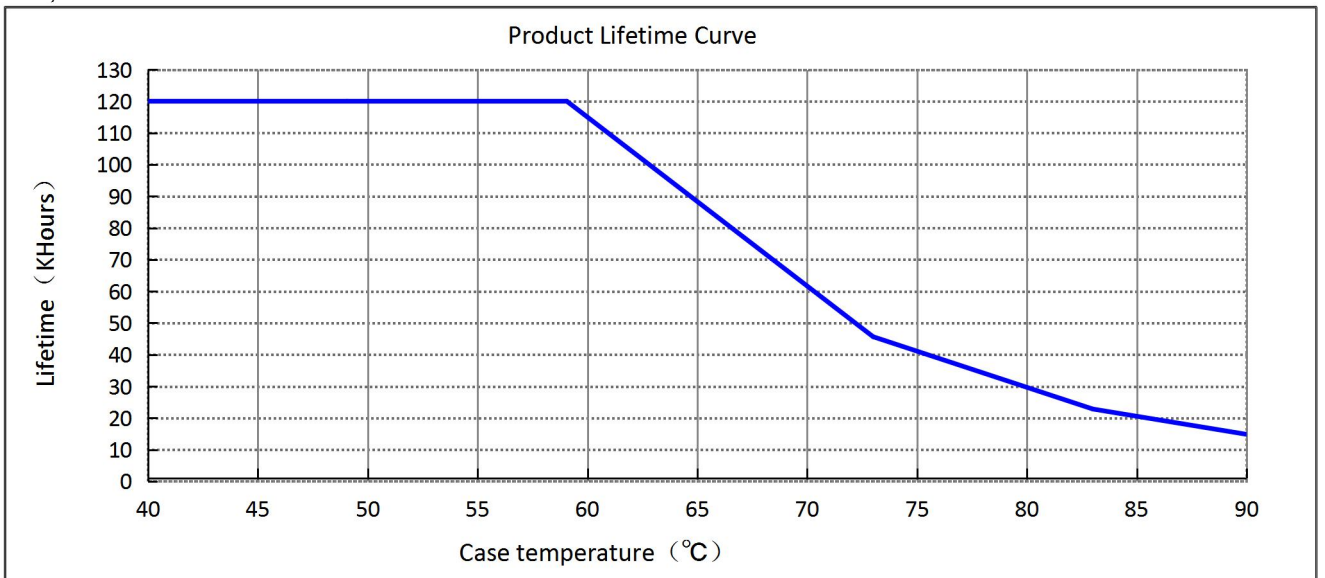
**Wiring Diagram**



Input: 220Vac, Output: 125V/1200mA (Tested with LEVITON dimmer. The form is for reference only.)

**4. Product Lifetime Curve**

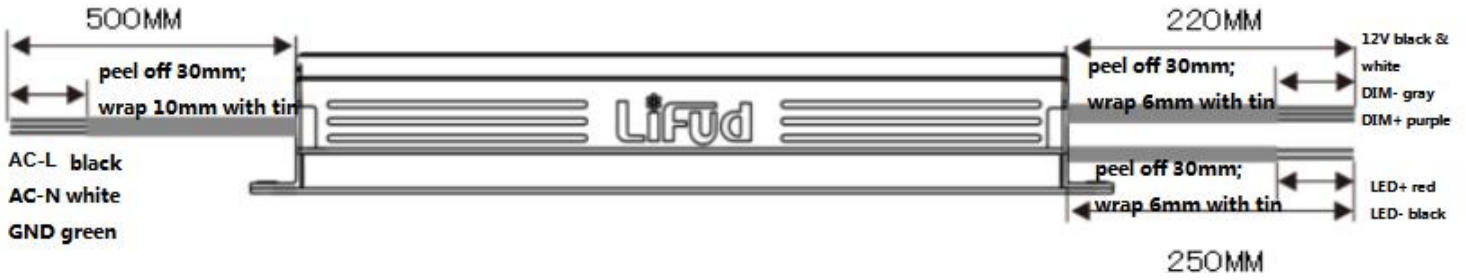
The curve below illustrates the driver's lifetime data when the LED driver's Max. case temperature reaches 40°C, 50°C, 60°C, 70°C, 80°C and 85°C.



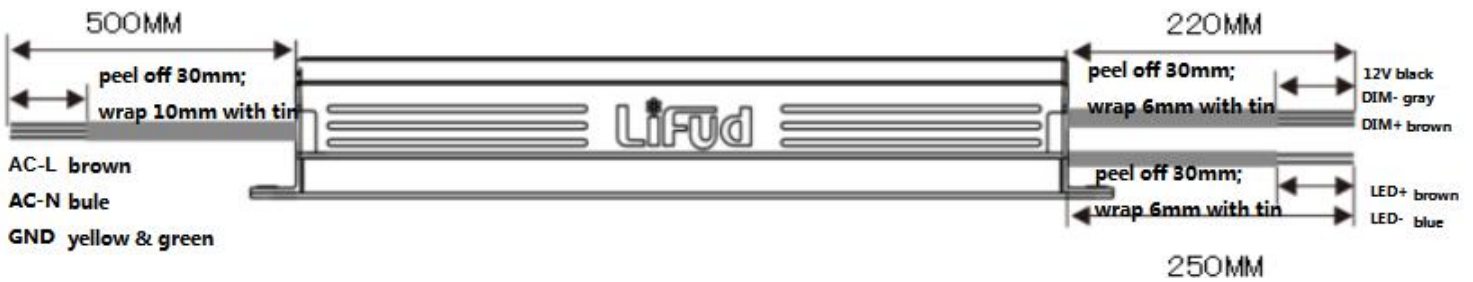
<b>Model</b>	LF-FHB150YF/YG	<b>Series</b>	High Power LED Driver
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**5. Dimensional Drawing (Unit: mm ± 0.5mm)**

**LF-FHB150YF (UL-standard version)**



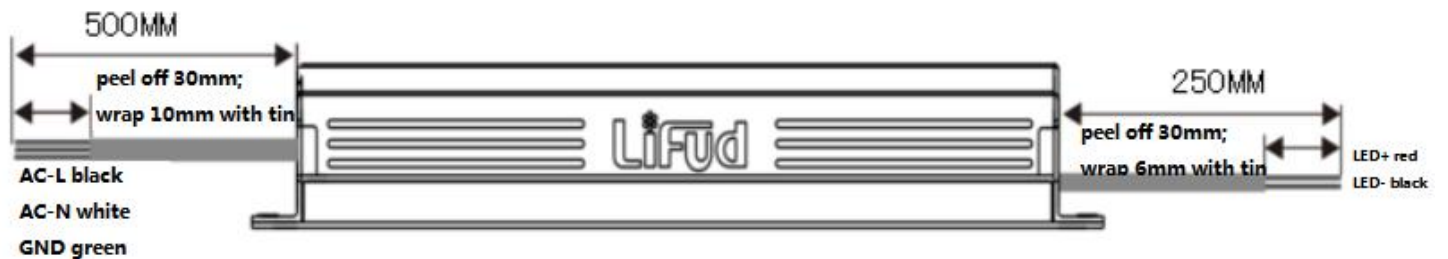
**LF-FHB150YF (EU-standard version)**



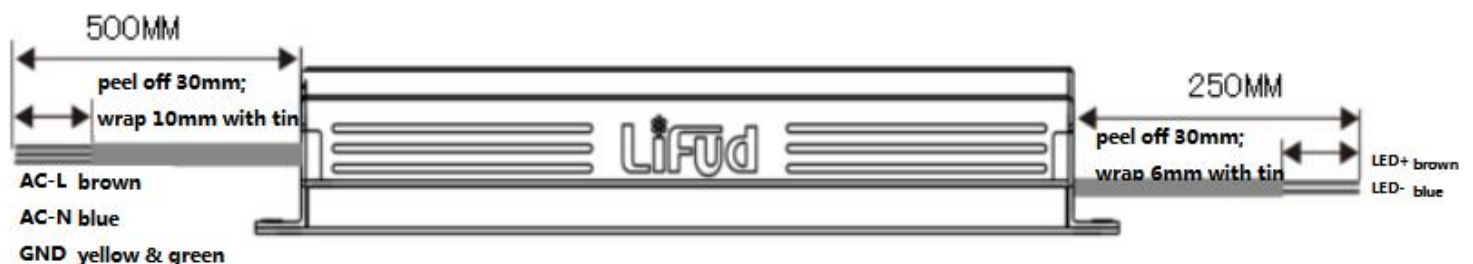
(UL-standard version) cable specification: input cable 3\*18AWG ØD7.8mm;  
dimming cable 3\*22AWG ØD5.0mm;  
output cable 2\*18AWG ØD7.7mm.

(EU-standard version) cable specification: input cable 3\*1.0mm<sup>2</sup> ØD7.2mm;  
dimming cable 3\*1.0mm<sup>2</sup> ØD7.2mm;  
output cable 2\*1.0mm<sup>2</sup> ØD6.8mm.

**LF-FHB150YG (UL-standard version)**



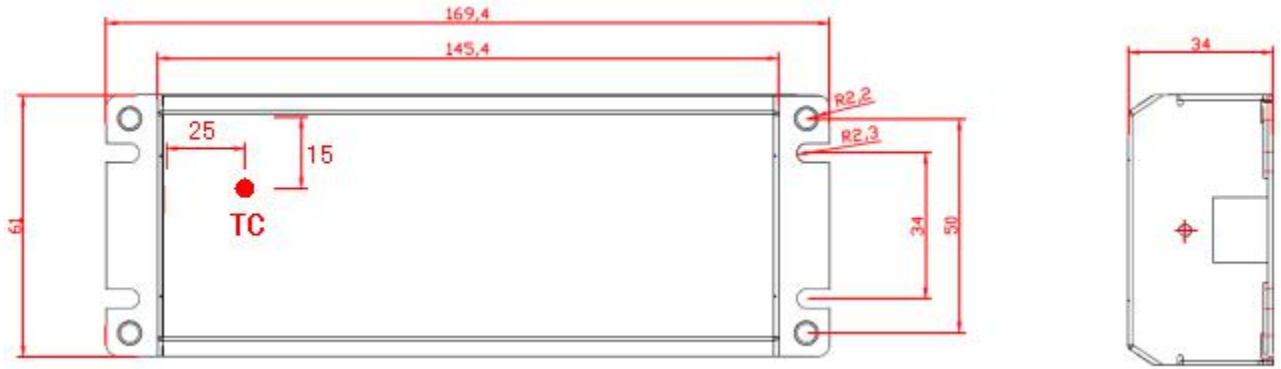
**LF-FHB150YG (EU-standard version)**



<b>Model</b>	LF-FHB150YF/YG	<b>Series</b>	High Power LED Driver
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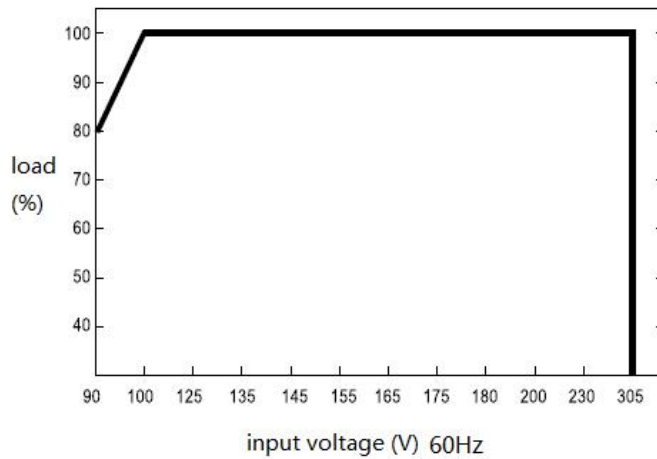
(UL-standard version) cable specification: input cable 3\*18AWG ØD7.8mm; output cable 2\*18AWG ØD7.7mm.

(EU-standard version) cable specification: input cable 3\*1.0mm<sup>2</sup> ØD7.2mm; output cable 2\*1.0mm<sup>2</sup> ØD6.8mm.



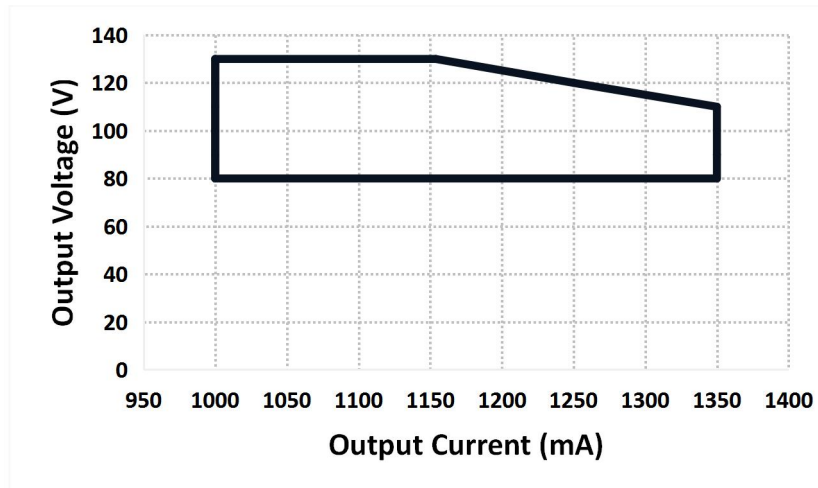
The red spot above is the TC spot.

## 6. Load Derating Curve



※ Reduce the output when the input voltage is low.

## 7. Power Curve

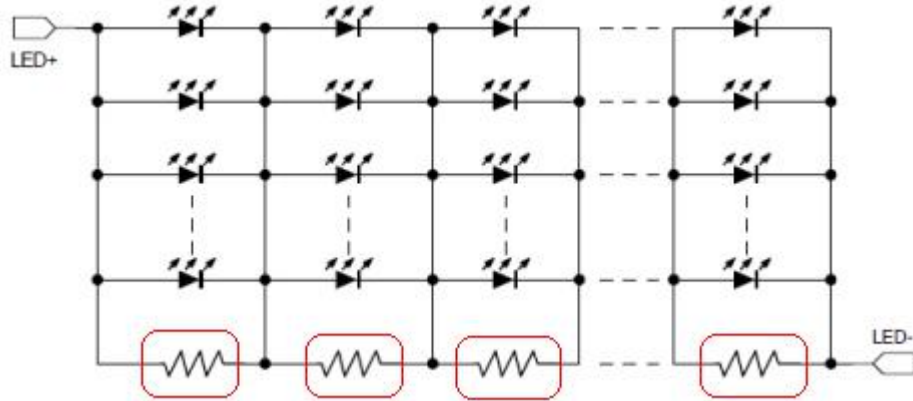




## 8. Attention

### (1) Statement of Dimming and Turing-Off

When the dimming signal is of 0V, the driver has no output. But there will be junction capacitance between the copper foil of the PCB and the earth wire which cause the slight brightness of the LEDs. Therefore, it's necessary to connect one 1206 SMD, 3-5kΩ resistor, to each circuit in parallel. The circuit is shown as below.



### (2) Requirements to the PCB

- A. The PCBA should be able to withstand OVER 2KVac;
- B. The distance between the circuit (copper foil) of the PCB and the aluminium plate should be OVER 3.5mm.

### (3) About the Dimming Cable

- A. When the dimming function is not wanted, the DIM+, DIM- and 12V cables can be left vacant but they cannot be of short-circuit with each other. Otherwise the output power will be influenced.
- B. The DIM+, DIM- and 12V cables cannot be connected to direct voltage when it's over 15V. They cannot be connected to AC power, neither. Otherwise the product will be damaged.