MUG SERIES LED DRIVERS

DL-800U-MUG SPEC V1.0

GUANGDONG DONE POWER TECHNOLOGY CO.,LTD

Features

• Class I structure

• Input voltage: 277-480 V ~ 50/60 Hz

• Efficiency :95%(Typ.)

• Constant power drive and constant current output control mode

• Metal shell structure, protection grade: IP67

• Lightning protection level: differential mode 6kV, common mode 10kV

• Function selection:

Isolated 3 in 1 dimming

•Lifetime design： 5years

Applications

Road lighting、Industrial lighting、Venue lighting

Floodlight lighting、Landscape lighting 、Plant lighting

Model list

Model NO.	Input voltage	Output power	Output voltage	The default current	Eff.	T.H.D	PF
DL-800U-56X-MUG	277-480V 50/60Hz	800W	25-56Vdc	15A	≥95%	≤7%	≥0.97

Note：

1.Test conditions of the above parameters: Ta=25℃,380Vac input, full load operation for 30 minutes;

2.When the input is less than 249Vac,the output power gradually decreases to 50%±10%.When the input 277-480VAC,rated power 800W.Please refer to “THE OUTPUT POWER VS INPUT VOLTAGE” curve chart for details.

Input characteristics

Parameter	Min	Typ.	Max	Note
Rated input voltage	277Vac	380Vac	480Vac	
Input voltage range	249Vac		528Vac	
Rated frequency	47Hz	50/60Hz	63Hz	
Power factor	-	0.97	-	@380Vac full load
T.H.D.	-	-	7%	@380Vac full load
Input current	-	-	3.8A	@249Vac full load
Inrush current	-	-	100A	380Vac, cold start (25℃)

Output characteristic

Parameter	Min	Typ.	Max	Note
Rated current DL-800U-56X-MUG	- -	14.28A	- -	
Output current range DL-800U-56X-MUG	10.7A	- -	17.4A	
Output voltage range DL-800U-56X-MUG	25V	- -	56V	
Rated power(277-480Vac)	-	800W	800W	The derating begins when the input voltage is less than 228-249Vac
Rated power(277-480Vac)	-	800W	-	
No-load voltage DL-800U-56X-MUG	- -	- -	60V	
Efficiency@120Vac DL-800U-56X-MUG	-	95%	-	full load

Output characteristic

Parameter	Min	Typ.	Max	Note
Efficiency@380Vac DL-800U-56X-MUG	-	95.5%	-	full load
Accuracy of output current	-5%	-	+5%	
output ripple current	-	5% maximum current	-	100% load 20MHZ band Wide ripple current = RMS / The average
Line regulation	-3%	-	+3%	
Load regulation	-3%	-	+3%	
Starting time		- -	1000ms 500ms	Full load@277Vac Full load@480Vac
12V output voltage	10.8 V	12V	13.2V	
12V output current	0 mA	-	300 mA	The reference place is Dim–
12V output line transient peak current @6W	-	-	500 mA	In a 5.0ms cycle, the maximum duration of the maximum peak current of 500mA is 2ms, and the average value must not exceed 300mA

Note: The output current range is limited by the input and output voltage, please refer to “I-V WORKING AREA” for details.

Dimming characteristic

Dimming function		Min	Typ.	Max	Instructions
0-10V Dimming (Optional)	Safe applied voltage range	0V	-	12V	When the external voltage is ≥12V, the dimming will fail
	Dimming output range	0	-	100%	-
	Rated dimming voltage range	0V	-	10V	It can be set to negative dimming mode through program setting
PWM Dimming (Optional)	PWM high level	9.5V	-	10.5V	-
	PWM low level	0V	-	0.3V	-
	PWM frequency band	300Hz	-	2000Hz	-
	PWM duty cycle	0	-	99%	Output full power at 99% duty cycle
Resistor Dimming (Optional)	External resistance value	0KΩ	-	100KΩ	-
	Dimming output range	0	-	100%	-

Note:

1. Output current of dimming port: 108uA (typical value);
2. The maximum withstand voltage of the dimming port is 12V. If the external power supply voltage exceeds 12V or the signal line is reversely connected, the power supply will be damaged.

Protection

Function	Function instructions
Input under-voltage protection	When the input voltage is less than 249Vac, the output power decreases to 50%±10%.
Output overload protection	Protection mode:hiccup mode,recovers automatically after fault condition is removed.
Output short circuit protection	Reduce current:recovers automatically after fault condition is removed
Over temperature protection	Self-recovery type：when the housing temperature is greater than 90℃, the output power decreases to 50%±10%.
Output over-voltage protection	Protection mode: Hiccup mode or clamped in output highest voltage , the product is not damaged，LED driver works normally after fault condition is removed.

Note:

1. Unless otherwise specified, all specifications and parameters shall be measured at the conditions of 380Vac (50Hz), rated load and 25℃ of ambient temperature;
2. Including setting error, line regualtion and load regualtion.

Environmental

Environmental categories	Parameter
Working temperature	-40 ~ +55℃@341-480Vac, -40 ~ +40℃ @277-340Vac (refer to "Life Curve ")
Working humidity	20 ~ 95% RH, non condensing
Maximum Tc temperature	90℃
Storage temperature、humidity	-40~+85℃, 10 ~ 95% RH
Resistant to vibration	10 ~ 500Hz, 5G 12 min/cycle, X, Y, Z axis 72 min each
MTBF	230Khrs min. MIL-HDBK-217F (Ta=25℃)
Lifetime	70000 h @ housing temperature ≤75 ° c, 380Vac, 80% load, see section "housing temperature and life"

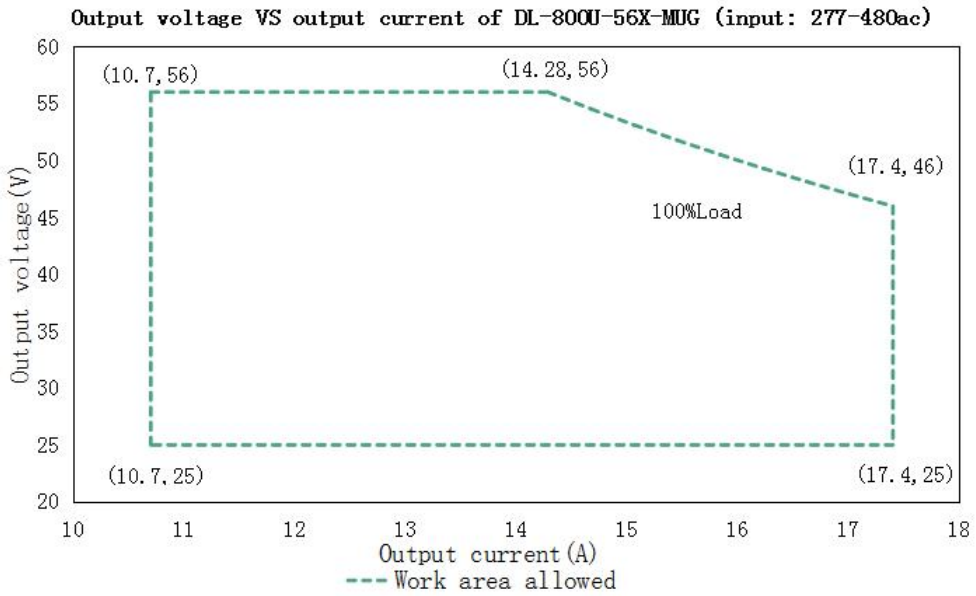
Safety and EMC

Safety categories	Standard
Safety	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13 UL8750;
EMC	EN IEC 55015、EN IEC 61000-3-2 、GB/T 17743、GB17625.1、 EN 61000-3-3、EN 61547
Surge protection	Differential mode L-N ±6KV（2 ohm）,common mode L，N-PE± 10 KV (12 ohm)；Refer to IEC61000-4-5 2014 Criterion B
High-pot test	I/P-O/P:3.75KVac I/P-PE :1.5KVac O/P-PE : 0.5KVac I/P-DIM:1.5KVac O/P-DIM:1.5KVac
Insulation impedance	I/P-PE:100MΩ / 500VDC; I/P-O/P:100MΩ / 500VDC / 25℃/ 70% RH
Leakage current	<0.7mA@480Vac

Note:

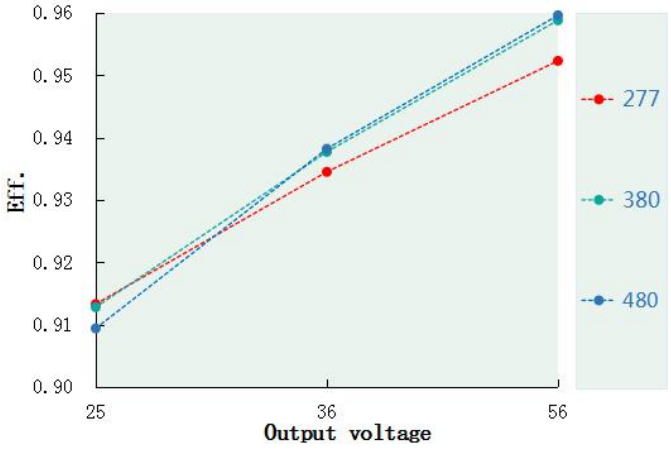
1.The driver is considered as a component that will be operated in combination with the final equipment. Since EMC performance will be affected by the complete installation,the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.

I-V Working area

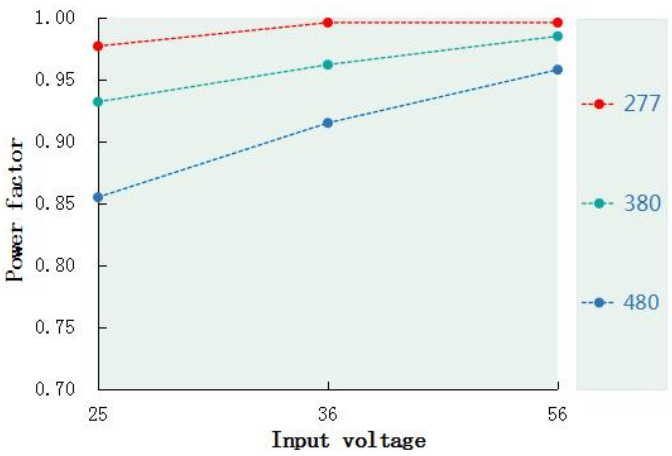


Load	Output								
Load working Voltage	25V	29V	33V	37V	42V	45V	48V	52V	56V
Io_MAX	17.4A	17.4A	17.4A	17.4A	17.4A	17.4A	16.67A	15.38A	14.28A
Po_MAX	435W	505W	574W	644W	730W	783W	800W	800W	800W

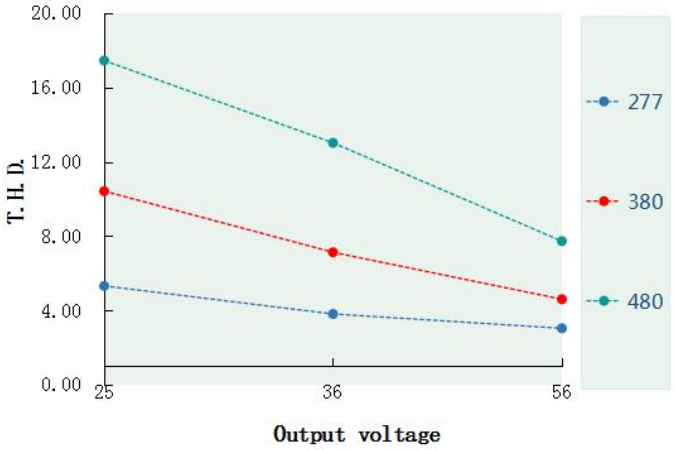
Eff. VS Output voltage(DL-800U-56X-MUG)



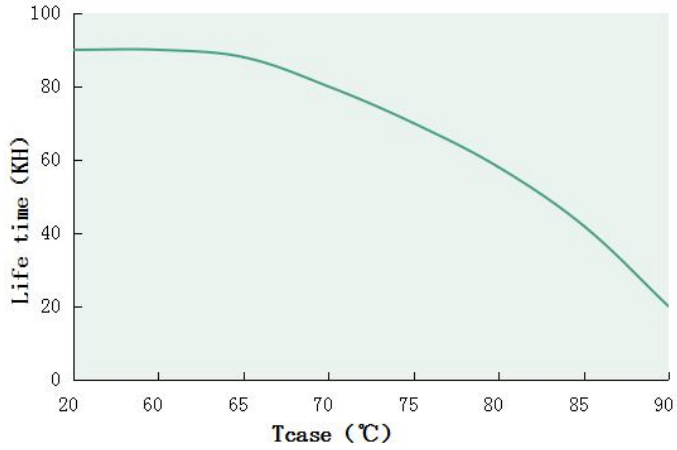
Power factor VS Input voltage(DL-800U-56X-MUG)



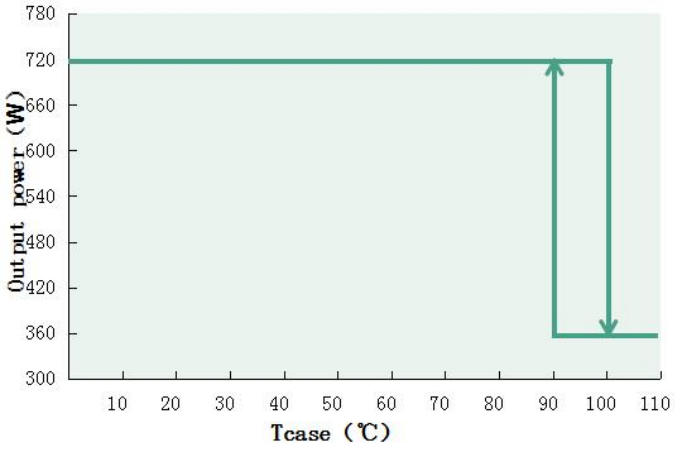
T.H.D. VS Output voltage(DL-800U-56X-MUG)



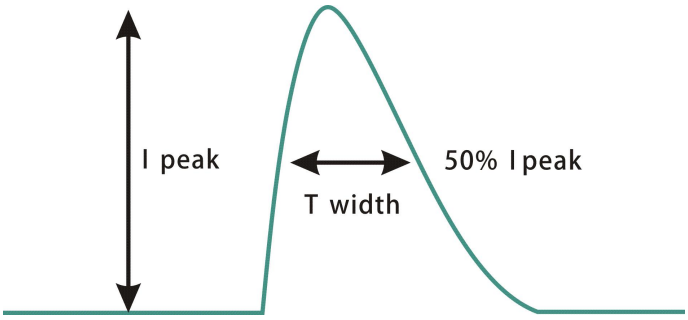
Tcase VS Lifetime(DL-800W-MUG)



Output power VS Tcase (DL-800W-MUG)

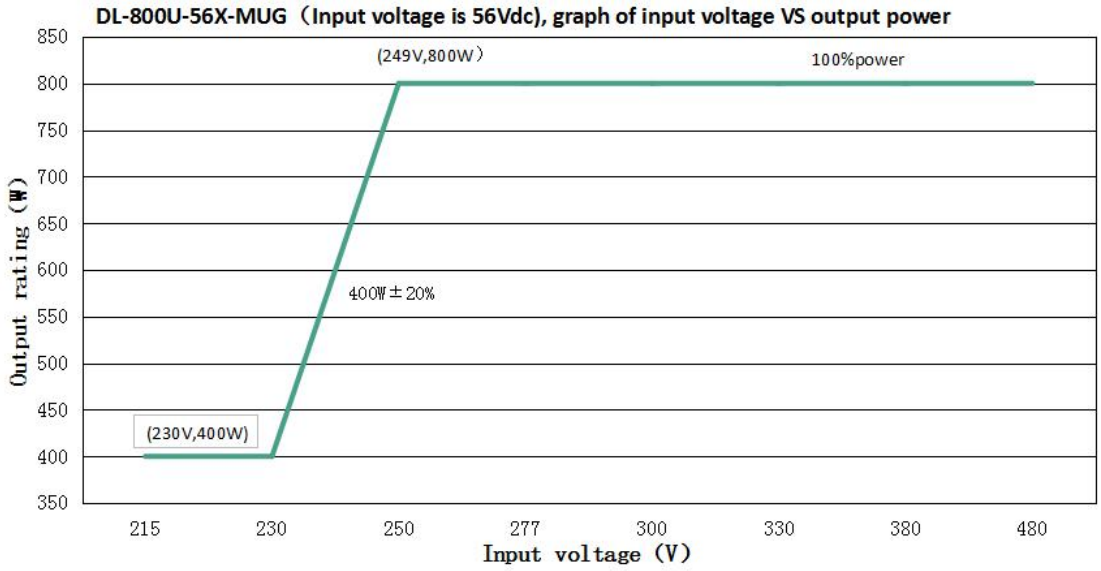


Inrush Current(DL-800W-MUG)



Input voltage	Peak current	T(@50% Peak current)
277Vac	24A	2000us
380Vac	40A	3000us
480Vac	51A	5000us

Output power VS Input voltage



DL-800U-56X-MUG(When the output voltage is 56Vdc, the rated output current value and output power corresponding to different input voltage)								
Input Voltage	220Vac	230Vac	240Vac	249Vac	277Vac	330Vac	380Vac	480Vac
Iout	7.14A	7.14A	7.14A	14.28A	14.28A	14.28A	14.28A	14.28A
Pout	400W	400W	400W	800W	800W	800W	800W	800W

Note:

1.Input voltage will fluctuate,resistance error and other factors.At the decrease or increase of power (Vin=249Vac),it will move left and right,with the range of 249V±10% .

2.When the input voltage is 228-249Vac,the output power range is 360W±10%.

Dimming operation

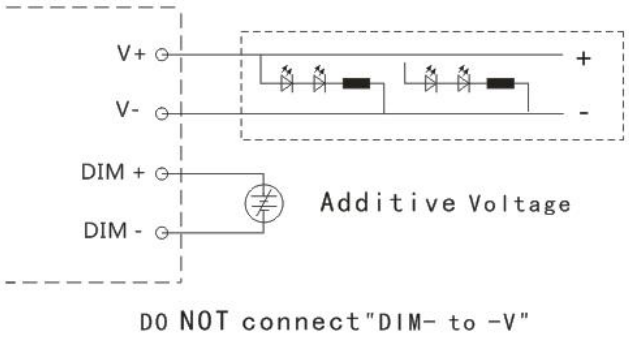
※ Three-in-one dimming function

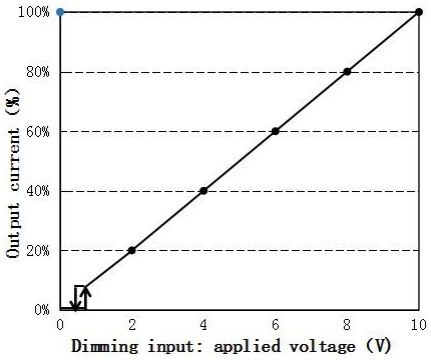
The method of dimming (P)

A. connect a resistor 0-100K or 0-10V DC voltage or 10V PWM signal between DIM+ and DIM- to adjust the output current.

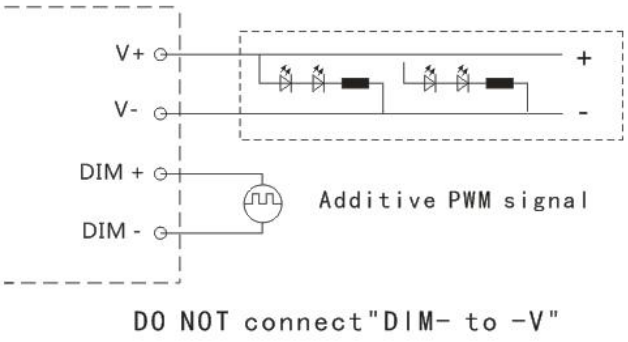
B. output current of dimming port: 108uA (typical value).

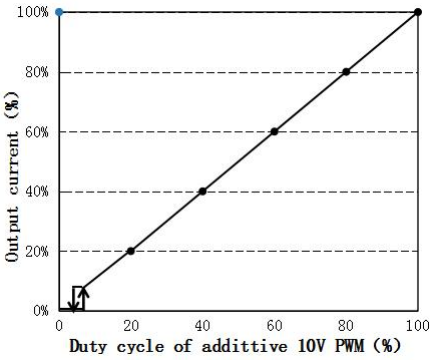
◎ With an applied voltage of 0-10V:



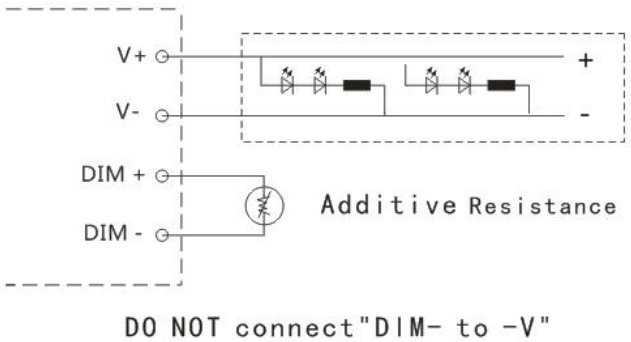


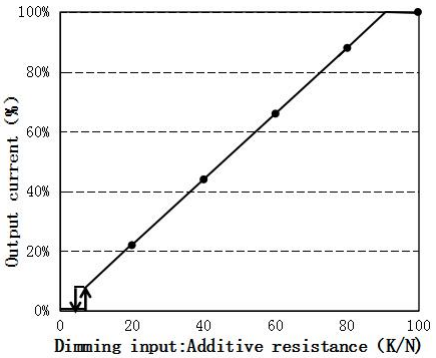
◎ Applying additive 10V PWM signal（Frequency range：300Hz-2K Hz）：





◎ With an additional 0-100K resistor:

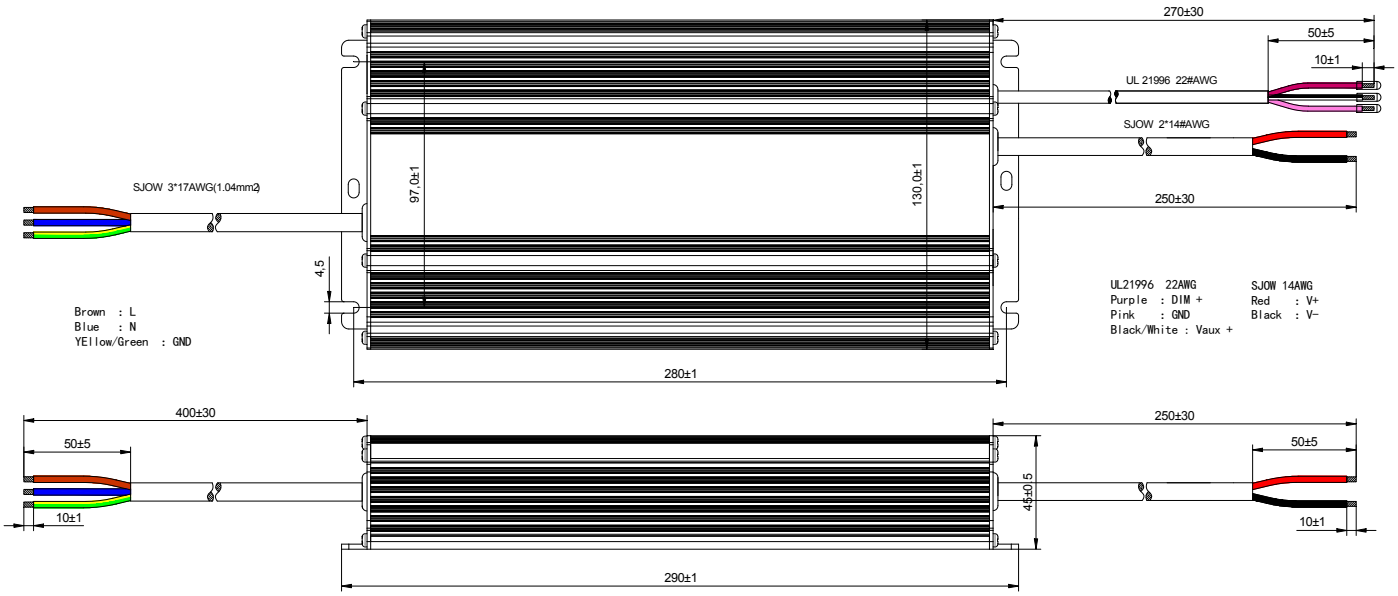




Mechanical specifiation

Size（mm）	L290mm*W130mm*H45mm

DL-800U-56X-MUG

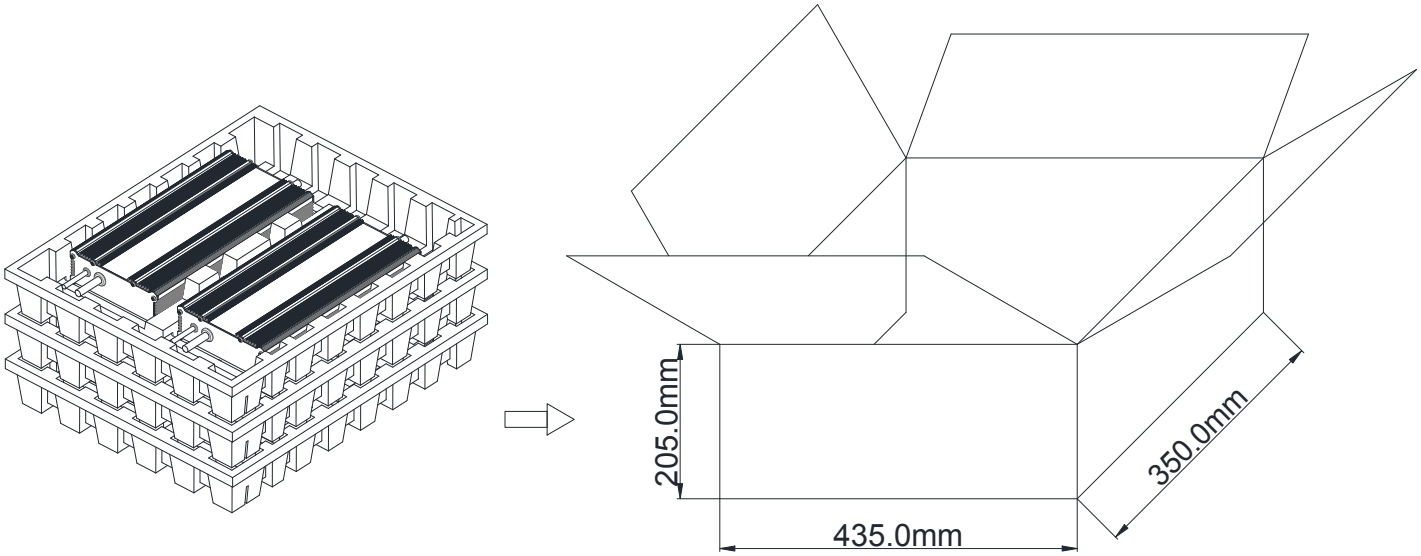


Weight

Weight	3480 g

Packaging

Packaging（mm）	L435*W350*H205



Note：One Carton 3 layers and 2 pcs each layer, total 6pcs/carton.

Note:

1. According to the certificate obtained by the LED DRIVER, the LED DRIVER with the English label is sold in Europe, America and India.
2. The LED DRIVER with Chinese label is only used for China market.

Version

DATE	DESCRIPTION	REV.	CHECK
2023.12.8	Initial version.	V1.0	

MANUFACTRUER		
EDIT	CHECK	APPROVE