

RXG SERIES LED DRIVERS

DL-50W-RXG_V1.0

Guangdong DONE Electronic Technology Co., Ltd

Features

- Class I structure
- Input voltage: 100-277Vac ~ 50/60Hz
- Efficiency :88%(Typ.)
- Constant power drive and constant voltage output control mode
- Metal housing structure, protection grade: IP67
- Lightning protection level: differential mode 4KV, common mode 6KV
- All-round protection: output temperature, output over-voltage, output over-current, short circuit protection
- Standby power consumption: ≤2W
- Functional characteristics:
 - DALI-2 Communication Protocol (Optional D version)
 - 3-in-1 dimming function (Optional S version)
- 5 years warranty



Product introduction

DONE DL-50W-RXG is a series of constant voltage products with output power of 50W. 50W-RXG operates from 90-305Vac, and offers 12、24、36、48Vdc with different voltage. provide DALI-2 communication protocol(Optional D version) and 3-in-1 dimming function(Optional S version) The also provide perfect OTP、OVP、OLP、OCP ,and the product is designed with IP67 protection. The aluminum housing greatly improves the heat dissipation efficiency of the product and increases the reliability of outdoor applications. Provide reliable power supply solutions for outdoor landscape lighting, architectural lighting, and advertising signage lighting.

Model list

Model NO.	Input voltage	Output power	Output voltage	The default current	Eff. (Typ.)	T.H.D	PF
DL-50W-V12-RXG	100-277Vac 50/60Hz	50W	12Vdc	0-4.17A	≥88%	<10%	0.95
DL-50W-V24-RXG	100-277Vac 50/60Hz	50W	24Vdc	0-2.1A	≥88%	<10%	0.95
DL-50W-V36-RXG	100-277Vac 50/60Hz	50W	36Vdc	0-1.4A	≥88%	<10%	0.95
DL-50W-V48-RXG	100-277Vac 50/60Hz	50W	48Vdc	0-1.05A	≥88%	<10%	0.95

Optional: D version (e.g. DL-50W-V24D-RXG)

S version (e.g. DL-50W-V24S-RXG)

Note:

1. Test conditions of the above parameters: Ta=25℃, 230Vac input, full load operation for 30 minutes;
2. Including setting error, linear adjustment rate and load adjustment rate;
3. Power supply is used as a component with terminal equipment. EMC is affected by the whole set of devices. Terminal equipment manufacturers need to re-confirm the EMC for the whole set of devices.

Input characteristics

Parameter	Min	Typ.	Max	Note
Rated input voltage	100Vac 140Vdc	230Vac	277Vac 400Vdc	If the input voltage is lower than 108Vac, the output power should be derated to 80% power
Input voltage range	90Vac	-	305Vac	N/A
Rated frequency	47Hz	50/60Hz	63Hz	N/A
Power factor	-	0.95	-	100% load, 230Vac input
Power factor	-	0.90	-	75% load, 230Vac input
T.H.D.	-	-	10%	100% load, 230Vac input
T.H.D.	-	-	20%	75% load, 230Vac input
Input current	-	-	0.7A	@100Vac full load
Inrush current	-	-	70A	230Vac, cold start (25°C)
16A Circuit breaker The number of power supplies of the same model can be configured	14pcs (Type B circuit breaker) 23pcs (Type C circuit breaker) for 230Vac input			

Output characteristics

Parameter	Min	Typ.	Max	Note
Output current range DL-50W-V12-RXG DL-50W-V24-RXG DL-50W-V36-RXG DL-50W-V48-RXG	0	-	0-4.17A 0-2.1A 0-1.4A 0-1.05A	N/A
Output voltage range DL-50W-V12-RXG DL-50W-V24-RXG DL-50W-V36-RXG DL-50W-V48-RXG	-	12V 24V 36V 48V	-	N/A
Rated power(108-277Vac)	-	50W	-	If the input voltage is lower than 108Vac, the output power should be derated to 80% power
No-load voltage DL-50W-V12-RXG DL-50W-V24-RXG DL-50W-V36-RXG DL-50W-V48-RXG	- -	- -	12.4V 24.5V 36.7V 48.9V	N/A
Efficiency@100Vac DL-50W-V12-RXG DL-50W-V24-RXG DL-50W-V36-RXG DL-50W-V48-RXG	83% 83% 83% 83%	84% 84% 84% 84%	85% 85% 85% 85%	80% load @100Vac
Efficiency@230Vac DL-50W-V12-RXG DL-50W-V24-RXG DL-50W-V36-RXG DL-50W-V48-RXG	86% 86% 86% 86%	87% 87% 87% 87%	88% 88% 88% 88%	full load @230Vac

Output characteristics

Parameter	Min	Typ.	Max	Note
Output voltage Ripple	200mV@UP-12/24VDC 250mV@UP-36/48VDC-			100% load
Accuracy of output voltage	-2%	-	+2%	100% load
Line regulation	-2%	-	+2%	50-100% load@230Vac
Load regulation	-2%	-	+2%	50-100% load@230Vac
Starting time	-	-	500 ms	Full load@230Vac

Protection

Function	Function instructions
Output overload protection	Protection mode:hiccup mode,recovers automatically after fault condition is removed.
Output short circuit protection	Hiccup mode:recovers automatically after fault condition is removed
Over temperature protection	Self-recovery mode : when the housing temperature is greater than 90°C, the output power off.
Output over-voltage protection	output voltage > working voltage 1.08-1.2 times turn-off
Output over-current protection	Output current >1.1-1.5 times turn-off

Safety and EMC

Safety categories	Standard
Safety	EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、EN 62384、EN 62493、GB19510.14
EMC	EN 55015、EN 61000-3-2 、EN 61000-3-3、EN 61547、GB/T 17743、GB 17625.1
DALI-2 protocol standard	IEC62386-101/102/207 (D version)
Surge protection	Differential mode L-N $\pm 4\text{KV}$ (2 ohm) ,common mode L, N-PE $\pm 6\text{KV}$ (12 ohm); Refer to IEC61000-4-5 2014
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:100M Ω / 500VDC; I/P-O/P:100M Ω / 500VDC / 25°C / 70% RH
Leakage current	<0.75mA@277Vac

Environmental

Environmental categories	Parameter
Working temperature	-40 ~ +55°C@108-277Vac, (refer to "Life Curve ")
Working humidity	20 ~ 95% RH, non condensing
Storage temperature、 humidity	-40 ~ +80°C, 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°C)
Lifetime	70,000 hours @Tcase \leq 75°C,230Vac, 100% Load, Please refer to "Tcase VS Lifetime" section

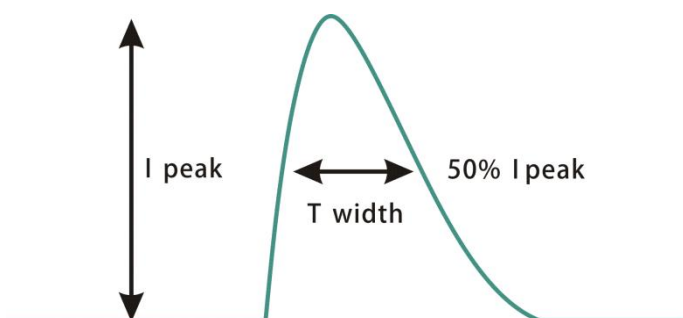
Dimming characteristic

Dimming function		Min	Typ	Max	Instructions
0-10V dimming (optional) S version	Safe applied voltage range	1V	-	12V	When the external voltage is greater than or equal to 12V, the dimming will be damaged
	Dimming output range	10%	-	100%	-
	Rated dimming voltage range	1V	-	12V	-
PWM dimming (optional) S version	PWM High level	9.5V	-	10.5V	-
	PWM Low level	0	-	0.3V	-
	PWM Frequency band	300Hz	-	2000Hz	-
	PWM Duty cycle	10%	-	99%	Full power output at 99% duty cycle
Resistance dimming (optional) S version	Resistance of the external resistor	10K Ω	-	100K Ω	-
	Dimming output range	10%	-	100%	-

Note:

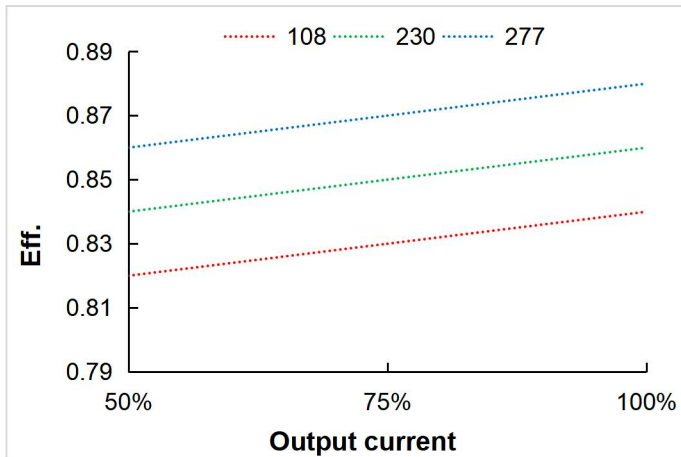
1. Dimming port output current: 108uA(typical value).
2. The dimmer port can withstand a maximum voltage of 12V. If the voltage of the external power supply exceeds 12V or the signal cable is reversed, the power supply may be damaged.
3. The minimum dimming ratio column time; Extinguishable lamp.

Inrush current

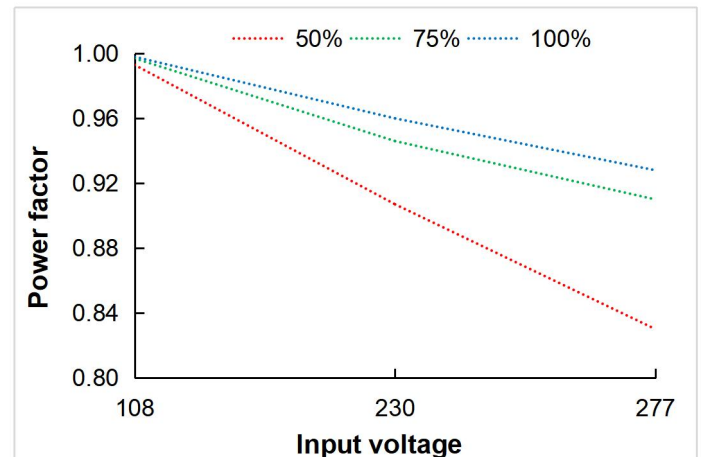


Input voltage	Peak current	T(@50% Peak current)
108Vac	21A	97us
230Vac	54A	103us
277Vac	64.67A	114.5us

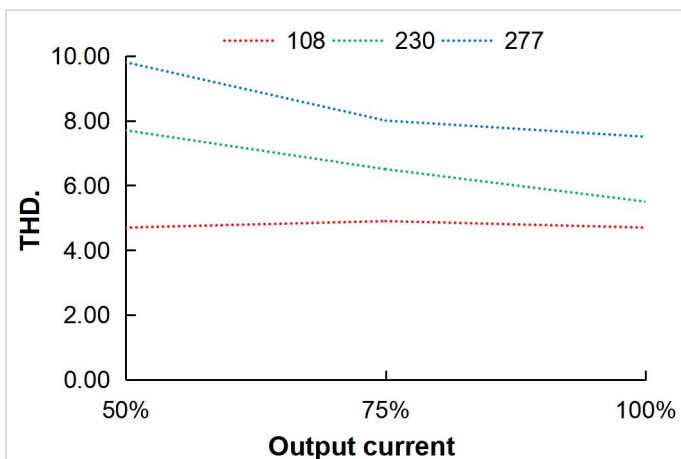
DL-50W-RXG Parametric curves



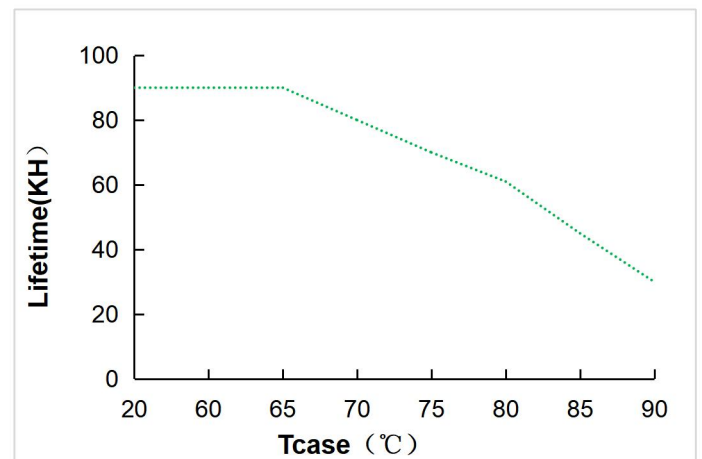
Eff. VS Output current



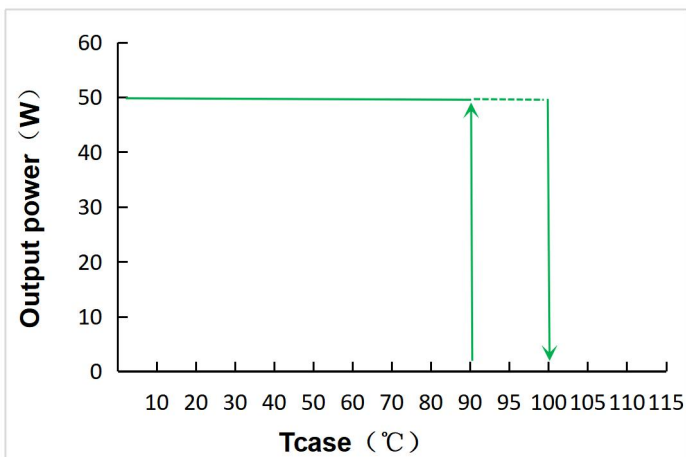
Power factor VS Input voltage



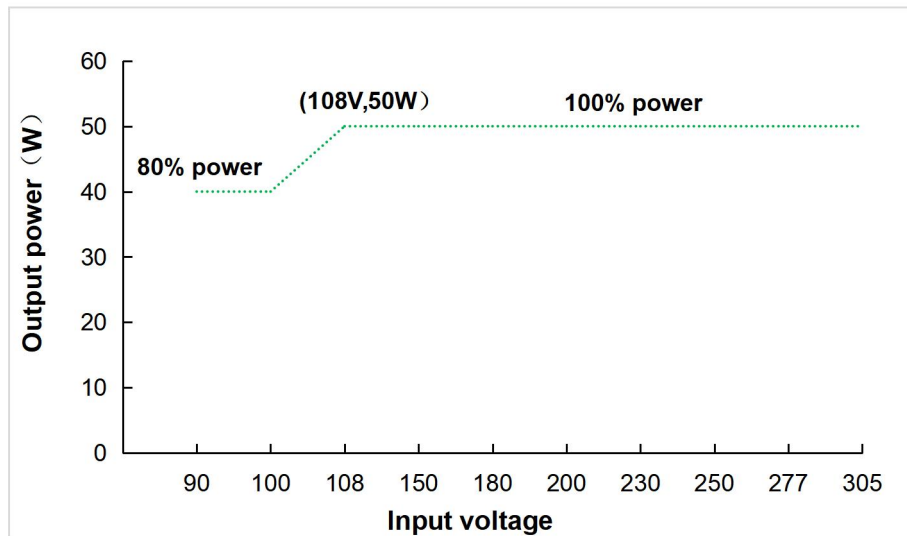
T.H.D. VS Output current



Lifetime VS Tcase



Output power VS Tcase

DL-50W-RXG Parametric curves**Output power VS Input voltage**

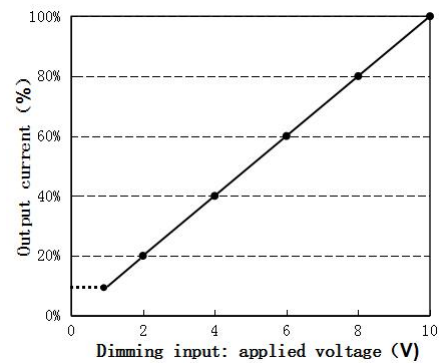
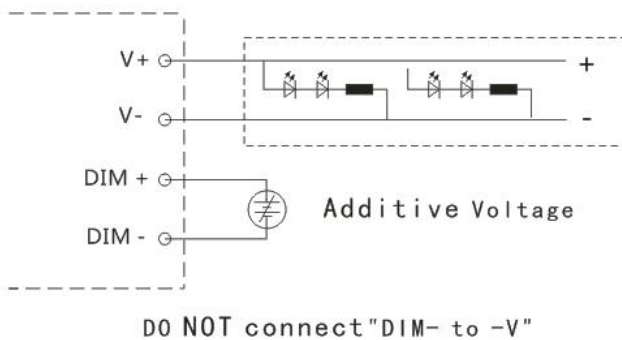
Note: If the input voltage is lower than 108Vac, the output power should be derated to 80% of the load.

Dimming operation

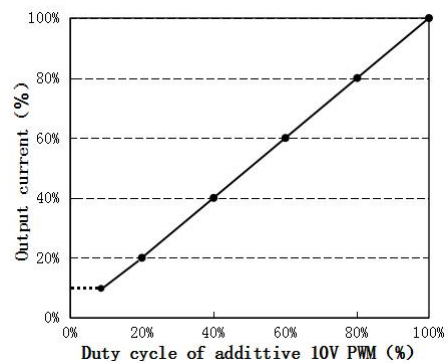
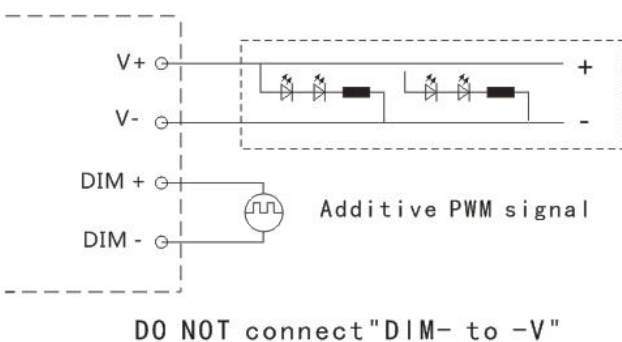
3-in-1 Dimming function (S version)

- a. The output current can be adjusted by connecting a resistor 10-100K or 1-10V DC voltage or 10V PWM signal between DIM+ and DIM-.
- b. Dimmer port output current: 108uA (typical value).

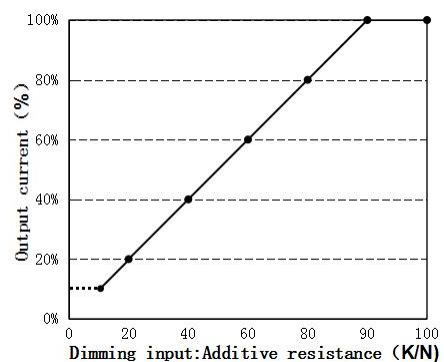
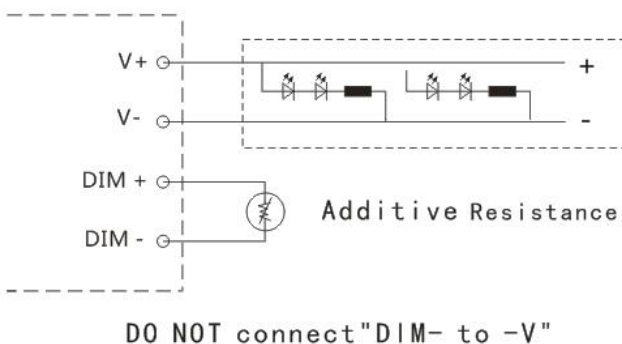
◎ With applied 0-10V voltage:



◎ With an external 10V PWM signal (frequency range: 300Hz-2K Hz):



◎ With an external 0-100K resistor:



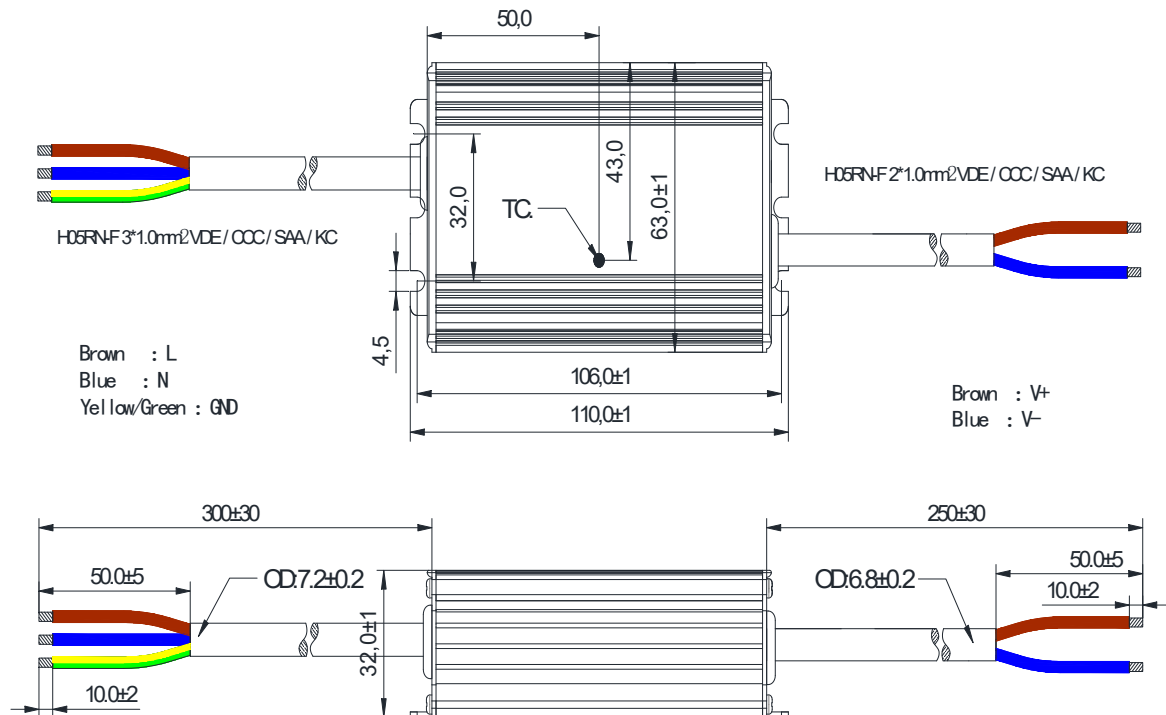
Mechanical specification

Size (mm)

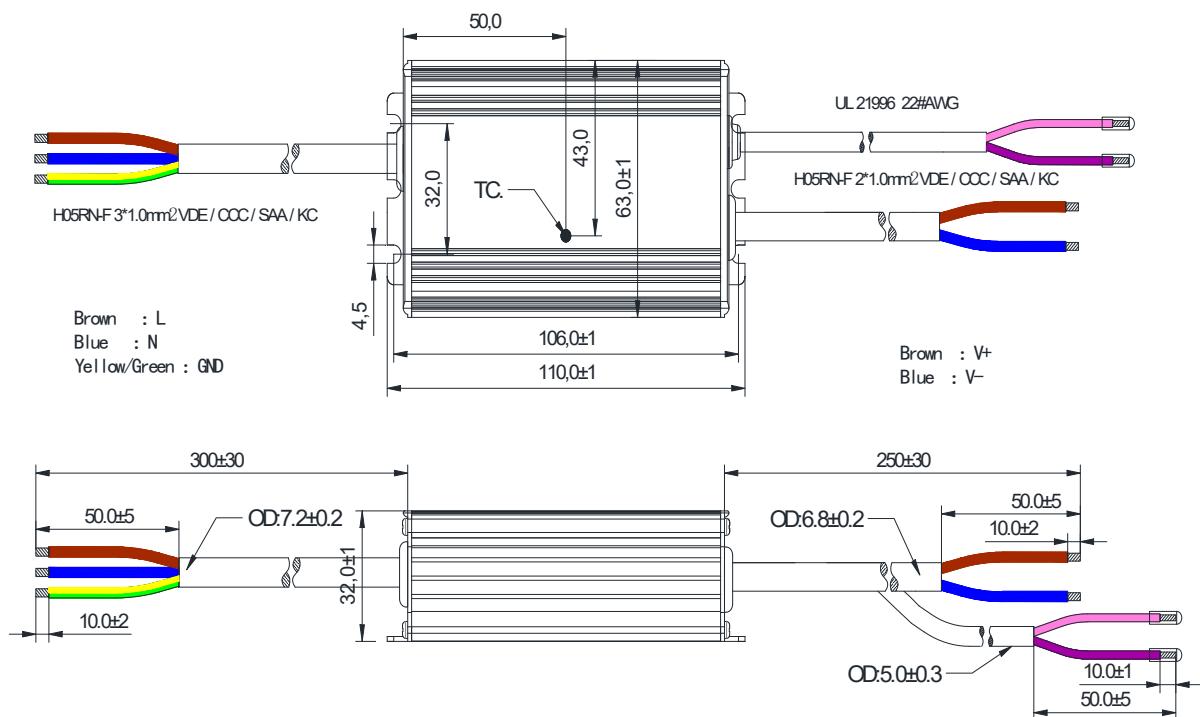
L110mm*W63mm*H32mm

0.406KG

DL-50W-RXG

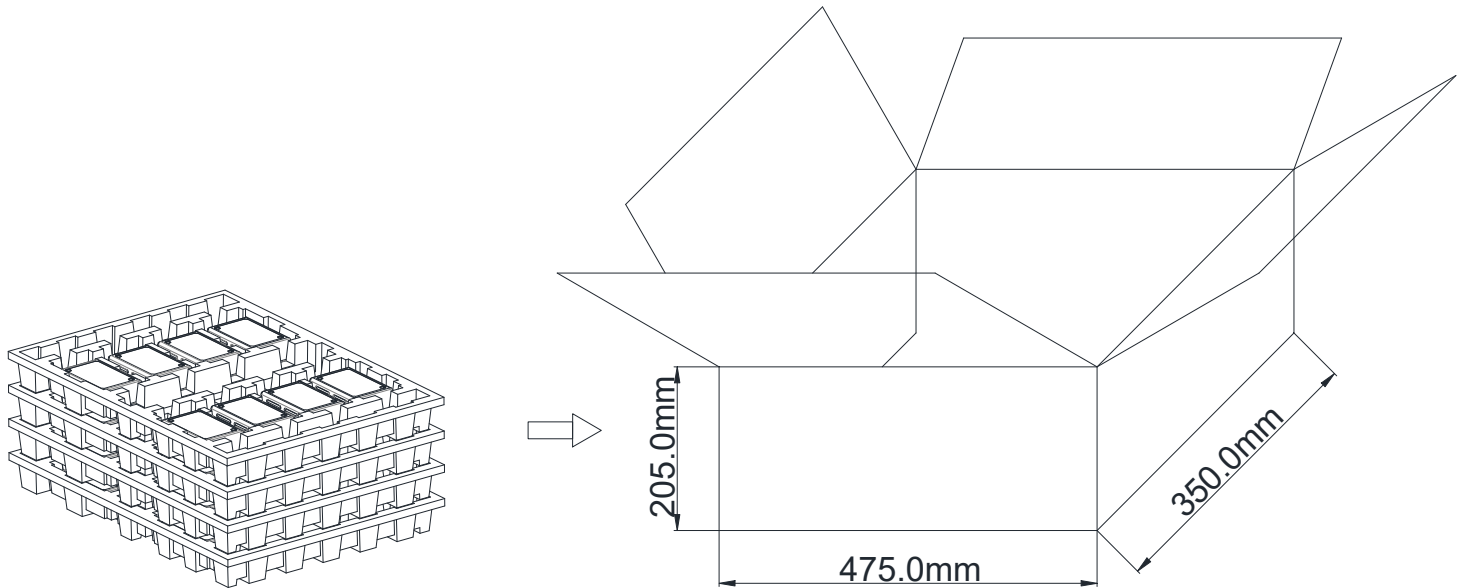


DL-50W-S/D-RXG



Packaging

Packaging (mm) L475*W350*H205



Note: One Carton 4 layers and 8pcs each layer, total 32pcs/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
2024.08.15	Initial version.	V1.0	

MANUFACTURER

EDIT

CHECK

APPROVE