



PXS SERIES LED DRIVERS

DL-60Z-X-PXS SPEC V1.6



Features

- Class I structure
- Input voltage: 100-277 V ~ 50/60 Hz
- Efficiency :93%(Typ.)
- Constant power drive and constant current output control mode
- Metal shell structure, protection grade: IP67
- Lightning protection level: differential mode 6kV, common mode 15kV
- Function selection:

Isolated dimming function: off-line programming current regulation,
programmable, compatible with analog three-in-one dimming circuit

Isolation Auxiliary Power supply (X version) :12VDC 300mA

- Lifetime design: 5 years



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-60Z-260X-PXS	100-277V 50/60Hz	60W	180-260Vdc	0.25A	≥93%	≤10%	≥0.95

Note :

1. Test conditions of the above parameters: Ta=25°C, 230Vac input, full load operation for 30 minutes;
2. When the input 100-277VAC, rated power 60W. Please refer to "THE OUTPUT POWER VS INPUT VOLTAGE" curve chart for details.

Input characteristics

Parameter	Min	Typ.	Max	Note
Rated input voltage	100Vac	230Vac	277Vac	
Input voltage range	90Vac	230Vac	305Vac	
Rated frequency	47Hz	50/60Hz	63Hz	
Power factor	-	0.95	-	@230Vac full load
T.H.D.	-	-	10%	@230Vac full load
	-	-	20%	@277Vac 80%load
Input current	-	-	0.7A	@100Vac full load
Inrush current	-	-	70A	230Vac, cold start (25°C)

Output characteristic

Parameter	Min	Typ.	Max	Note
Rated current DL-60Z-260X-PXS	-	0.23A	-	load is 260Vdc
Output current range DL-60Z-260X-PXS	0.12A	-	0.3A	
Output voltage range DL-60Z-260X-PXS	180V	-	260v	Constant power range: 200-260Vdc
Rated power(100-277Vac)	-	60W	-	
No-load voltage DL-60Z-260X-PXS	-	-	350V	
Efficiency@100Vac DL-60Z-260X-PXS	-	89%	-	100% load @100Vac Output current 0.23A, 60W
Efficiency@230Vac DL-60Z-260X-PXS	-	93%	-	100% load @230Vac Output current 0.23A, 60W
Output Current Ripple	-	5%	-	
Accuracy of output current	-8%	-	+8%	100% load
Line regulation	-3%	-	+3%	100% load
Load regulation	-5%	-	+5%	100% load
Starting time	-	-	1000ms	Full load@230Vac

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 $\geq 12V$, the dimming will fail
	Dimming output range	0%	-	100%	Positive logic dimming can be turned off by program setting
	Rated dimming voltage range	0V	-	10V	-
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	0K Ω	-	100K Ω	-
	Dimming output range	0%	-	100%	-
Multiple time-controlled dimming (optional)	MCU control	Set segment dimming function through program			Working mode
	Timer control	It is divided into six segments by default and can be customized			24H to achieve a cycle

Note:

1. Output current of dimming port: 100uA (typical value);
2. The maximum voltage of the dimming port is 12V. If the external power supply voltage exceeds 12V or the signal cable is inverted, the power supply will be damaged;
3. Dimming default setting is three in one positive logic dimming (programmable software can be set to timing dimming, 0-5V or other voltage dimming);
4. When set to positive logic dimming function, applications in the constant power load voltage range can achieve 0V dimming off.
5. When setting negative logic dimming, the default output is 100% when the dimming is suspended. Negative logic dimming cannot be turned off. When the port voltage of the dimming is greater than 10.5V, the maximum power output of the power supply will be achieved.

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 type : when the housing temperature is greater than 90°C, the output power decreases gradually.

Note: Unless otherwise specified, all specifications and parameters shall be measured at the conditions of 230Vac (50Hz), rated load and 25°C of ambient temperature.

Environmental

Environmental categories	Parameter
Working temperature	-40 ~ +40°C@100-200Vac, -40 ~ +55°C @200-277Vac (refer to "Life Curve ")
Max.Case Temp.	-40 ~ 90°C
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	50Khrs min. MIL-HDBK-217F (Ta=25°C)
Lifetime	70,000 hours @Tcase≤75°C,230Vac, 100% Load, Please refer to "Tcase VS Lifetime" section

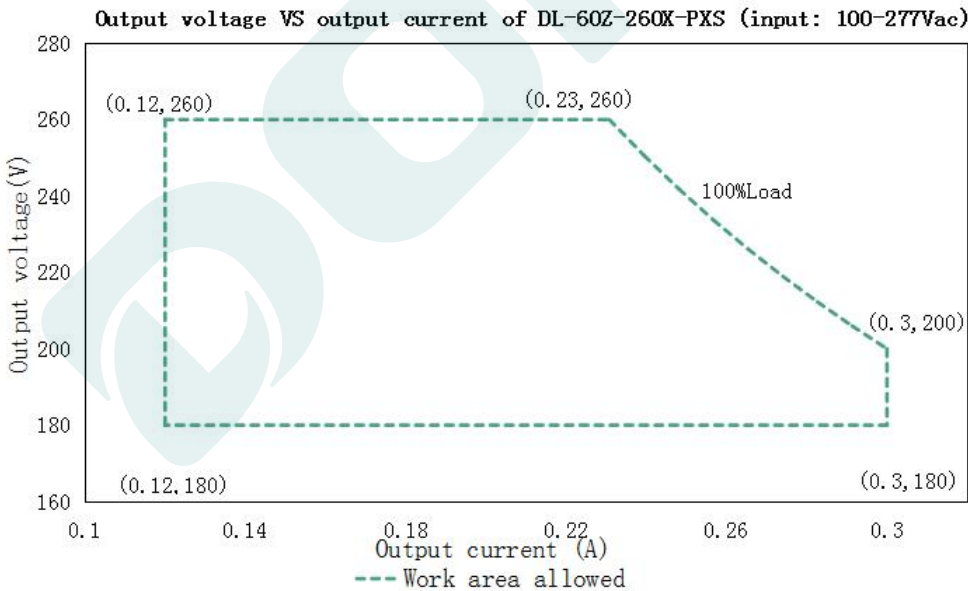
Safety and EMC

Safety categories	Standard
Safety	EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13、EN 62384、UL8750 ；
EMC	EN 55015、EN 61000-3-2 、 EN 61000-3-3
Surge protection	Differential mode L-N $\pm 6\text{KV}$ (2 ohm) ,common mode L , N-PE $\pm 15\text{KV}$ (12 ohm) ； Refer to IEC61000-4-5 2014
High-pot test	I/P-PE :1.5KVac O/P-PE : 1.5KVac I/P-DIM:1.5KVac O/P-DIM:1.5KVac
Insulation impedance	I/P-PE:100M Ω / 500VDC; O/P-PE:100M Ω / 500VDC / 25°C/ 70% RH
Leakage current	<0.7mA@277Vac

Note:

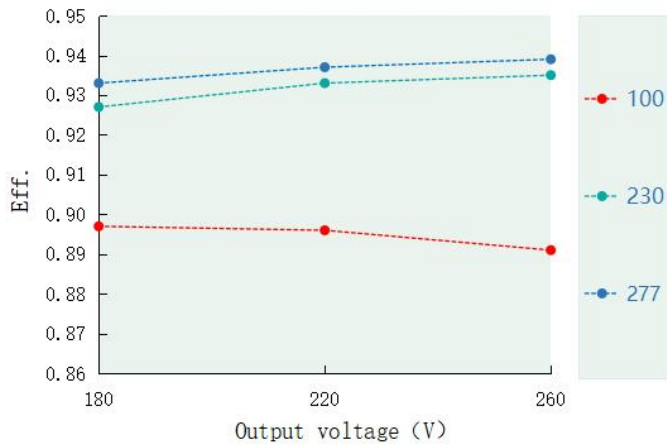
1. Attention! As a component of the whole, the EMC performance of the final product is not only decided by the driver, even if the driver is well-designed and fulfil all the required compliance. The final equipment manufacturers must re-qualify EMC Directive on the complete product.
2. Because of the restart of OVP, to keep well connection of the load is recommended.

I-V Working area

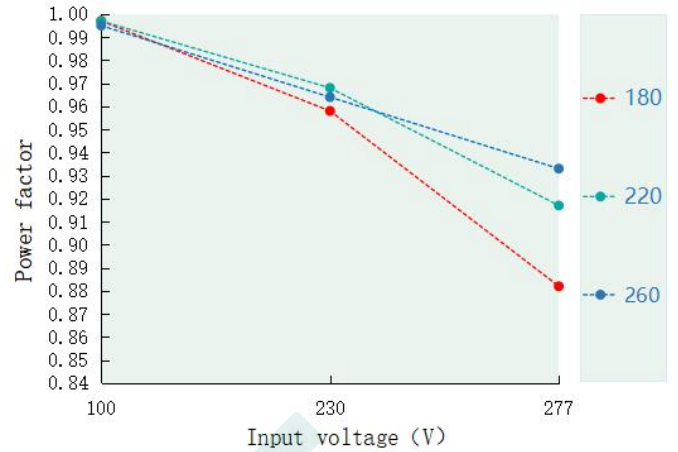


Load	Output								
Load working Voltage	180V	190V	200V	210V	220V	230V	240V	250V	260V
Io_MAX	0.3A	0.3A	0.3A	0.286A	0.273A	0.26A	0.25A	0.24A	0.23A
Po_MAX	54W	57W	60W	60W	60W	60W	60W	60W	60W

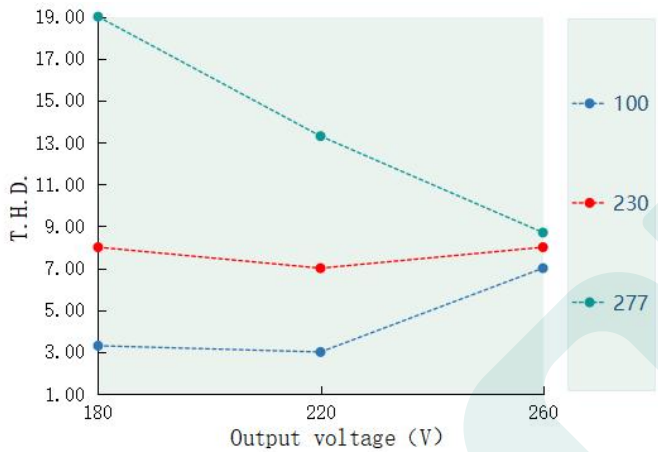
Eff. VS Output voltage(DL-60Z-260X-PXS)



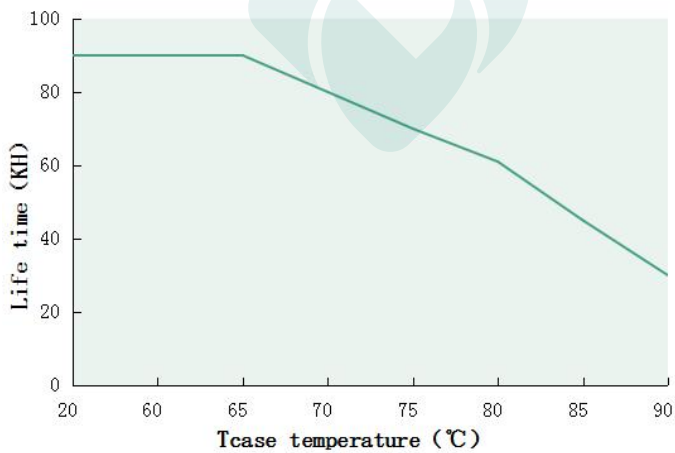
Power factor VS Input voltage(DL-60Z-260X-PXS)



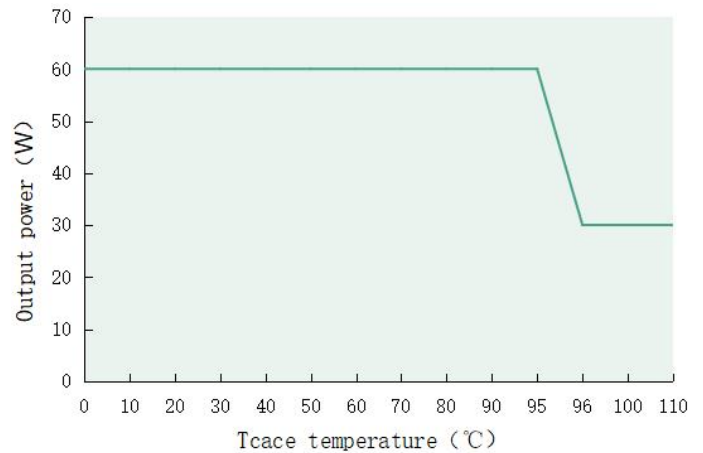
T.H.D. VS Output voltage(DL-60Z-260X-PXS)



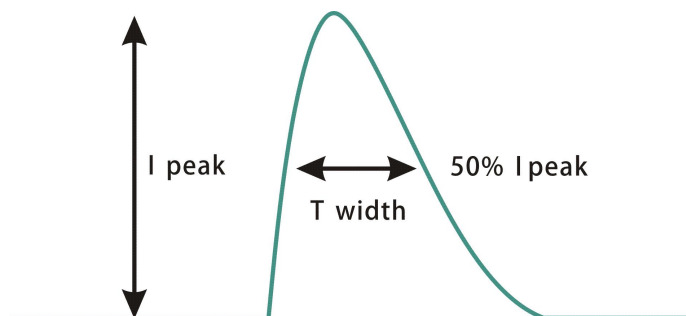
Tcase temperature VS Lifetime(DL-60Z-260X-PXS)



Output power VS Tcase temperature(DL-60Z-260X-PXS)

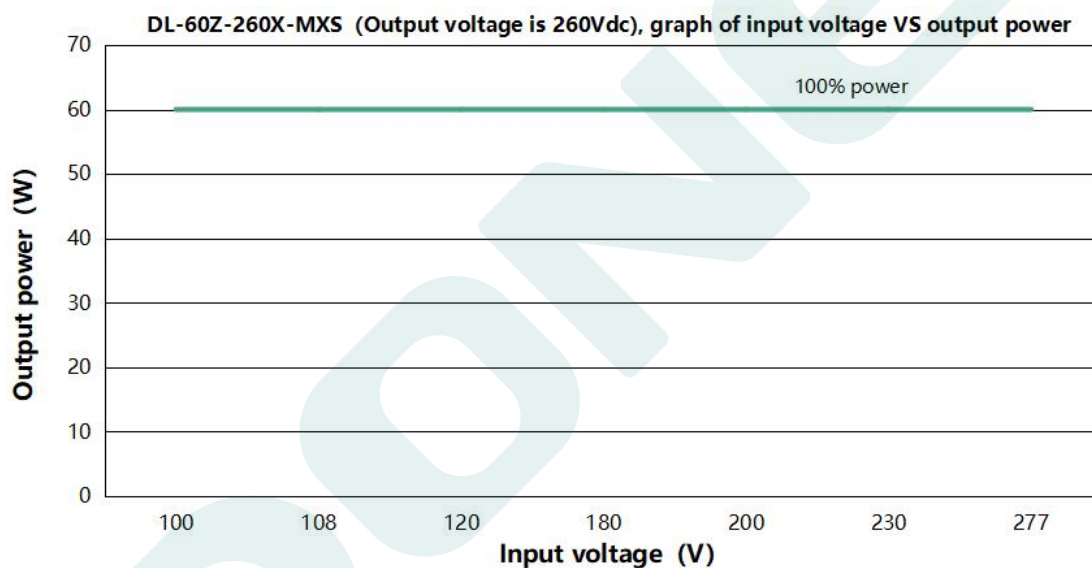


Inrush current(DL-60Z-260X -PXS)



Input voltage	Peak current	T(@50% Peak current)
120Vac	48.4A	25us
230Vac	48.4A	305us
277Vac	49A	359us

Output power VS Input voltage



DL-60Z-260X-PXS (When the output voltage is 260Vdc, the rated output current value and output power corresponding to different input voltage)

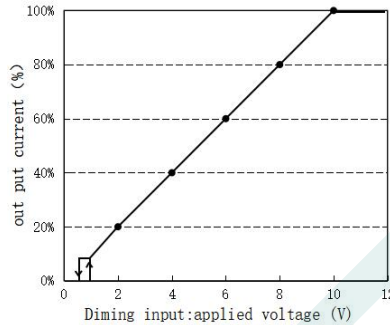
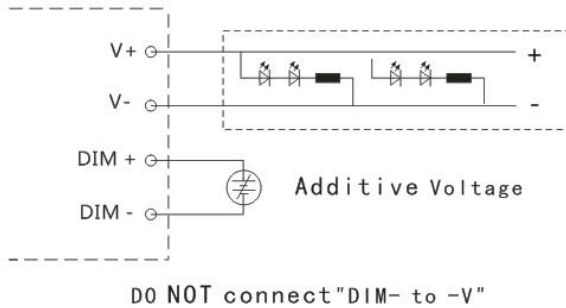
Input Voltage	100Vac	108Vac	120Vac	180Vac	200Vac	230Vac	277Vac
Iout	0.23A	0.23A	0.23A	0.23A	0.23A	0.23A	0.23A
Pout	60W	60W	60W	60W	60W	60W	60W

Dimming operation

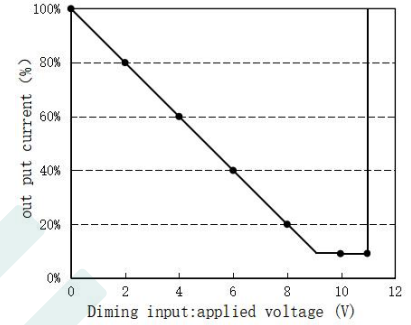
※ Three-in-one dimming function (X version only)

- 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: 100uA (typical value).

• With an applied voltage of 0-10V:

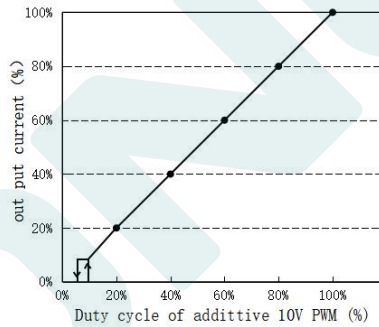
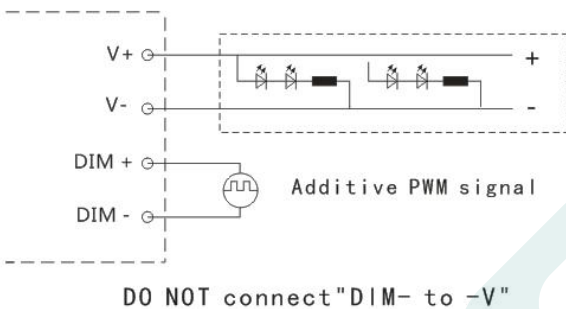


positive logic dimming curve

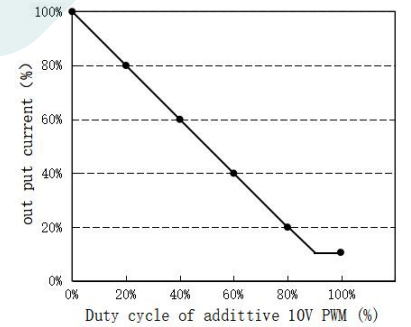


negative logic dimming curve

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

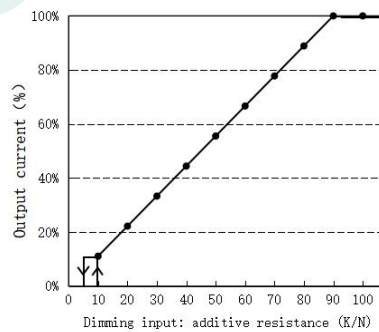
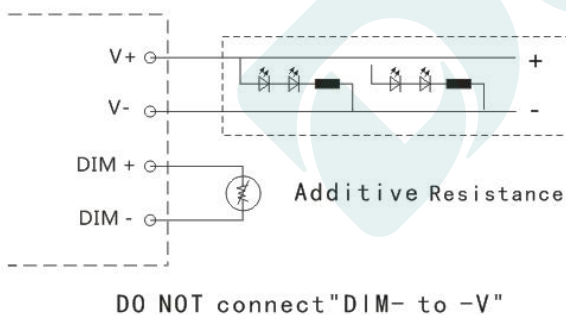


positive logic dimming curve

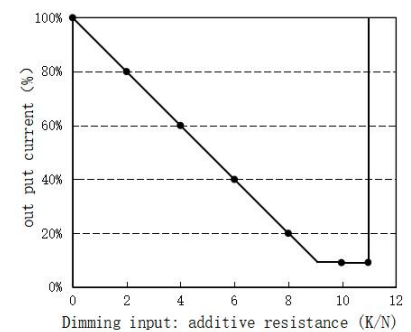


negative logic dimming curve

• With an additional 0-100K resistor:



positive logic dimming curve



negative logic dimming curve

Note:

1. Positive and negative logic dimming can be programmed.
2. Dimming off only applies to positive logic. For other requirements, please contact technical personnel.



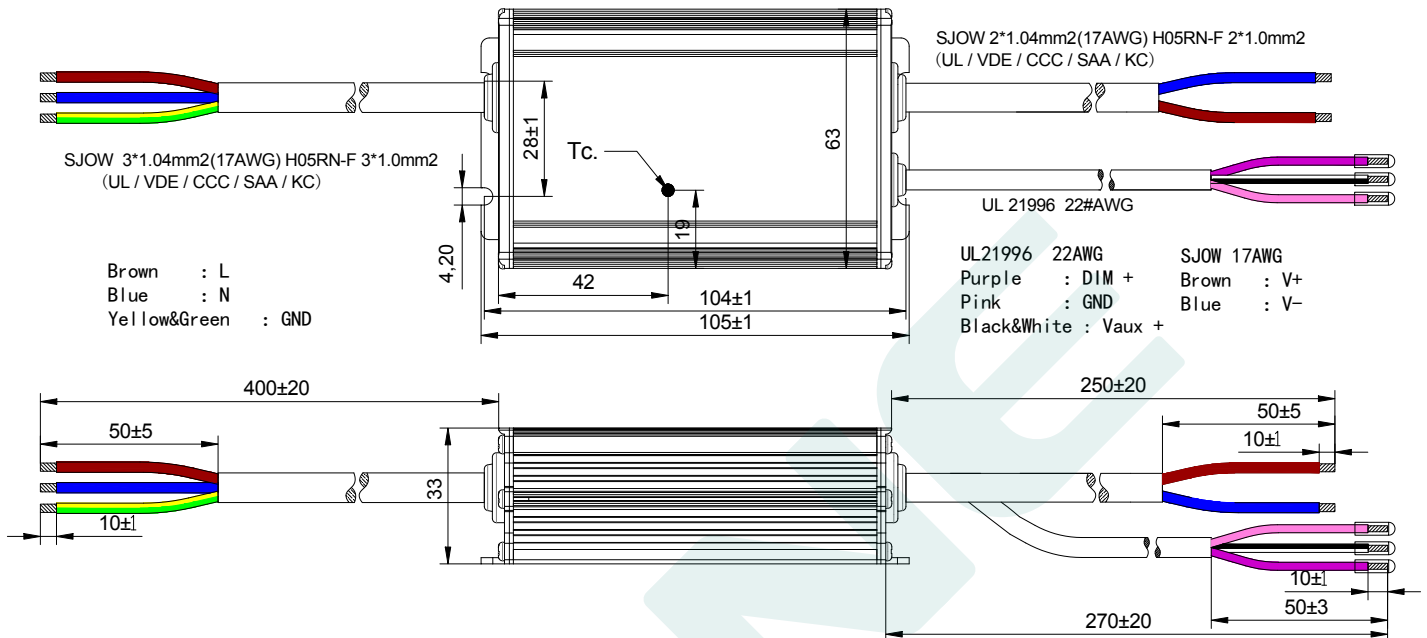
Caution:

1. It is recommended to design LED beads in series first and then in parallel.
2. There is no excessive heat-dissipating copper foil left on the aluminum substrate.
3. The creepage distance of the aluminum substrate wiring > 5mm.
4. The creepage distance between LED+ and LED- on the aluminum substrate > 2.5mm.
5. The insulation level of the LED lamp board should meet the requirements of reliability design. The recommended withstand voltage between the LED lamp beads and the aluminum substrate is 100% full inspection > 3.5KVAC.
6. The final right of interpretation of the parameters above belongs to Guangdong Done Power Technology Co., Ltd.

Mechanical specification

Size (mm) L105*W63*H33

DL-60Z-260X-PXS

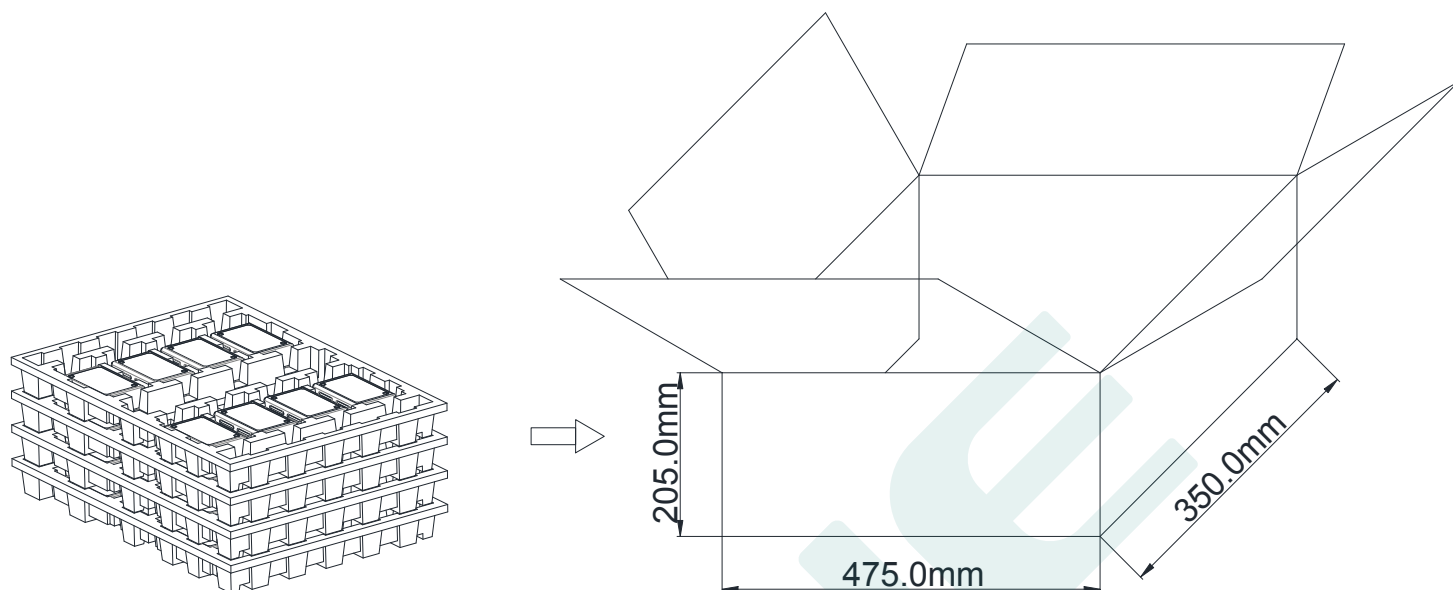


Weight

Weight 440 g

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 and India.
2. The LED DRIVER with Chinese label is only used for China market.

Version

DATE	DESCRIPTION	REV.	CHECK
2024.3.16	Initial version.	V1.0	
2024.5.11	Modified default current	V1.1	
2024.7.2	Modify positive logic dimming curve	V1.2	
2024.11.7	Increase TC., change installation hole size	V1.3	
2024.11.26	Modify weight	V1.4	
2025.4.11	Update cable description	V1.5	
2025.7.28	Add caution on page 10	V1.6	

MANUFACTRUER		
EDIT	CHECK	APPROVE