

MXG SERIES LED DRIVERS

DL-50W-DX-MXG SPEC V1.0

Features

- Class I structure
- Input voltage: 120-277 V ~ 50/60 Hz
- Efficiency :88%(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:
 - DALI-2 communication protocol (IEC62386-101/102/207)
 - Linear dimming, logarithmic dimming, scene control...
 - Auxiliary source: 12V/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. (Typ.)	T.H.D	PF
DL-50W-V56DX-MXG	AC120-277V 50/60Hz	50W	25-56Vdc	1.5A	≥87%	≤10%	≥0.95
DL-50W-V72DX-MXG	AC120-277V 50/60Hz	50W	36-72Vdc	0.7A	≥88%	≤10%	≥0.95

Note :

1. Test conditions of the above parameters: Ta=25℃, 230Vac input, full load operation for 30 minutes;

Input characteristics

Parameter	Min	Typ.	Max	Note	AbN automation
Rated input voltage	120Vac 150Vdc	230Vac	277Vac 420Vdc		
Input voltage range	108Vac		305Vac		
Rated frequency	47Hz	50/60Hz	63Hz		
Power factor	0.95	-	-	@230Vac full load, rated input voltage	
Power factor	0.9	-	-	80%-100% load, 100-277VAC input	
T.H.D.	-	-	10%	@230Vac full load	
T.H.D.	-	-	20%	80%-100% load, 120-277VAC input	
Input current	-	-	0.55A	@120Vac full load	
Inrush current	-	-	70A	230Vac, cold start (25℃)	

Output characteristic

Parameter	Min	Typ.	Max	Note
Rated current				
DL-50W-V56DX-MXG	-	0.9A	-	
DL-50W-V72DX-MXG		0.7A		
Output current range				
DL-50W-V56DX-MXG	0.4A	-	1.7A	
DL-50W-V72DX-MXG	0.5A		1.05A	
Output voltage range				
DL-50W-V56DX-MXG	25V	-	56V	
DL-50W-V72DX-MXG	36V		72V	
Rated power(120-277Vac)	-	50W	-	
No-load voltage				
DL-50W-V56DX-MXG	-	-	75V	
DL-50W-V72DX-MXG			90V	
Efficiency@120Vac				
DL-50W-V56DX-MXG	83%	85%	-	full load @120Vac
DL-50W-V72DX-MXG	84%	86%		

Output characteristic

Parameter	Min	Typ.	Max	Note
Efficiency@230Vac				
DL-50W-V56DX-MXG	85%	87%	-	full load @230Vac
DL-50W-V72DX-MXG	86%	88%		
Output Current Ripple	-	5% Iomax	-	100% load , 20 MHz BW ; Ripple =rms/ average
Accuracy of output current	-5%	-	+5%	full load Constant power range
Line regulation	-3%	-	+3%	full load
Load regulation	-3%	-	+3%	full load
Starting time	300ms	-	1000ms	Full load@120-277Vac
Auxiliary source output voltage	10.8 V	12V	13.2V	-
Auxiliary source output current	0 mA	-	300 mA	Reference ground is "Dim -"
Auxiliary source output 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 250mA

Note: 1.The output current range is limited by the input and output voltage, please refer to "I-V WORKING AREA" for details.

2.When the output voltage is within the constant power range, the current precision is -5% to +5%; when the output voltage is below the constant power range, the current precision is -10% to +10%

Dimming characteristic

Dimming function	Min	Typ.	Max	Instructions
DA+, DA- High voltage level	9.5V	16V	22.5V	
DA+, DA- Low voltage level	-	0V	6.5V	
DA+, DA- Current	-	-	2mA	
Dimming output range	10%Iout	-	100%Iout	

Note:

- 1、DA+, DA- support the maximum 310Vac misconnection.
- 2、The standby power consumption is less than 0.5W when it is turned off.

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℃, the output power decreases gradually.
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 230Vac (50Hz), rated load and 25℃ of ambient temperature;
2. Including setting error, line regulation and load regulation.

Environmental

Environmental categories	Parameter
Working temperature	-40 ~ +55℃@200-277Vac, -40 ~ +45℃ @120-200Vac (refer to "Life Curve ")
Max.Case Temp.	-40 ~ 90℃
Working humidity	20 ~ 95% RH, non condensing
Storage temperature、humidity	-40 ~ +80℃, 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	75,000 hours @Tcase≤75℃,230Vac, 80% Load, Please refer to "Tcase VS Lifetime" section

Safety and EMC

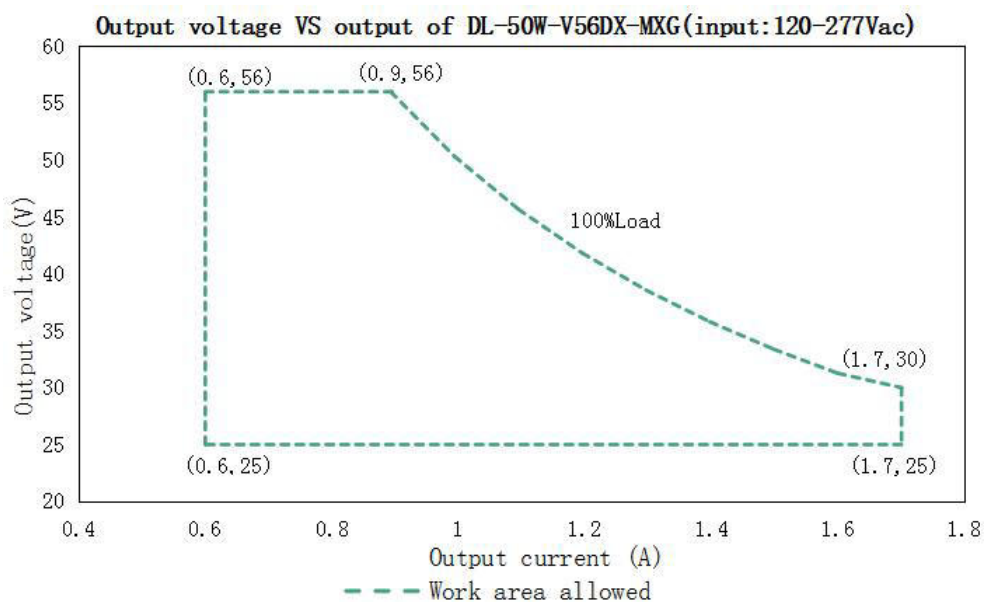
Safety categories	Standard
Safety	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13、EN 62384、 UL8750;
EMC	EN 55015、EN 61000-3-2 、GB/T 17743、GB17625.1、 EN 61000-3-3
Surge protection	Differential mode L-N ±6KV (2 ohm) ,common mode L, N-PE± 15 KV (12 ohm); Refer 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@277Vac
DALI-2 standards	Instruction
DALI-2	IEC 62386-101、 IEC 62386-102、 IEC 62386-207

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.

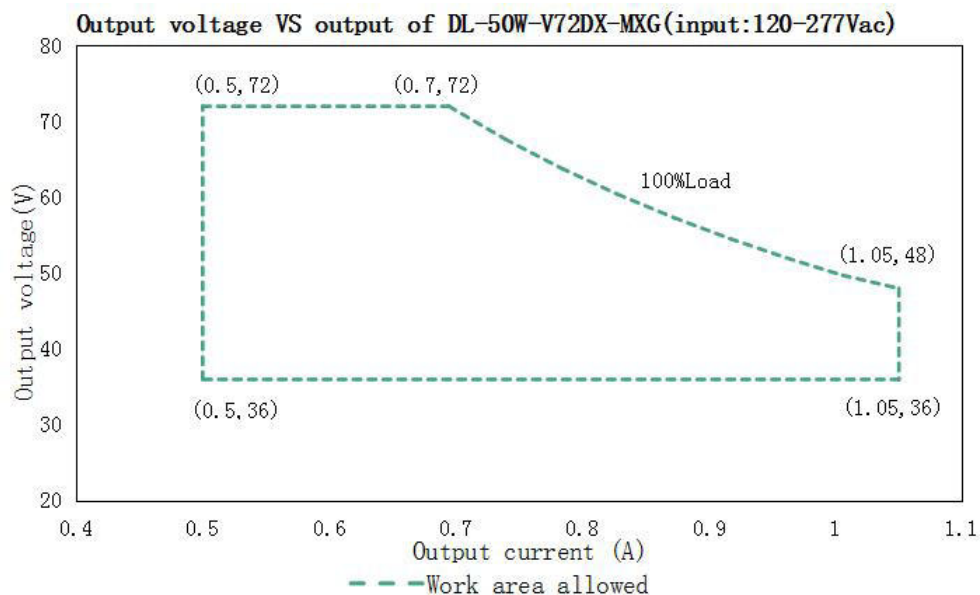
2.DALI part:101、 102、 207

I-V Working area



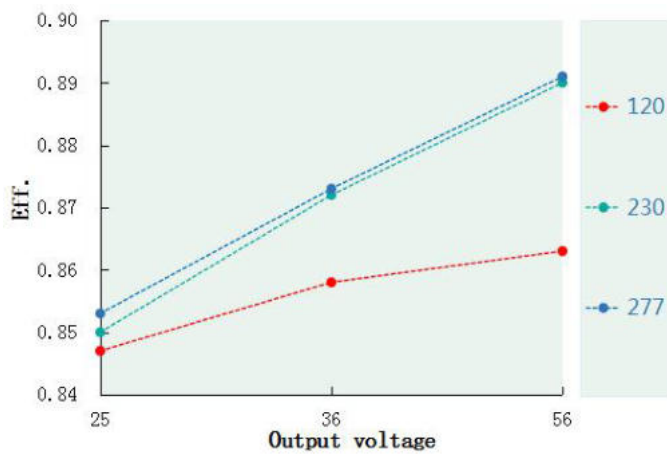
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Load	Output								
Load working Voltage	25V	29V	33V	36V	40V	44V	48V	52V	56V
Io_MAX	2.3A	2.3A	2.27A	2.08A	1.88A	1.70A	1.56A	1.44A	1.34A
Po_MAX	57.5W	66.7W	75W	75W	75W	75W	75W	75W	75W

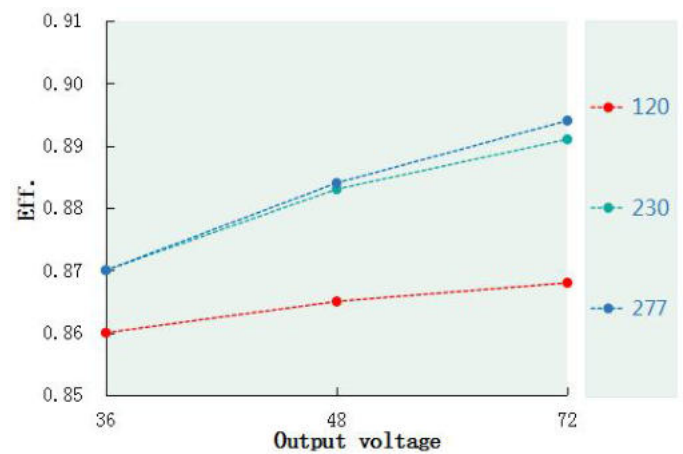


Load	Output								
Load working Voltage	54V	60V	66V	72V	78V	84V	90V	96V	102V
Io_MAX	1.05A	1.05A	1.05A	1.05A	0.96A	0.89A	0.83A	0.78A	0.73A
Po_MAX	56.7W	63W	69.3W	75.6W	75W	75W	75W	75W	75W

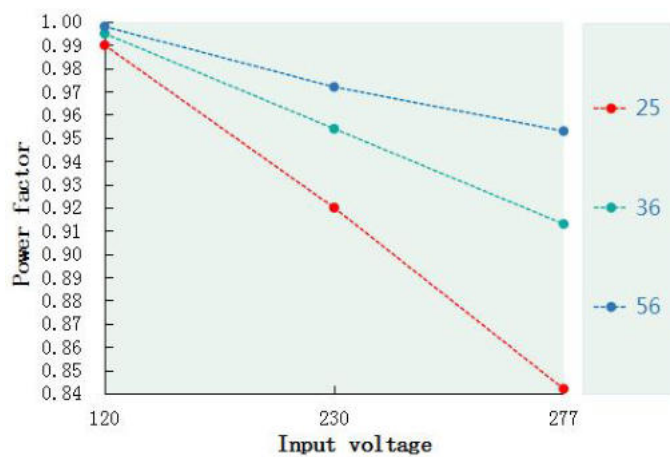
Eff. VS Output voltage(DL-50W-V56DX-MXG)



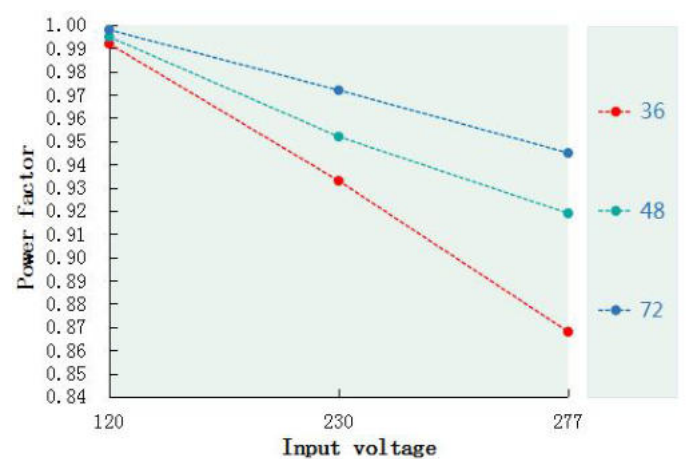
Eff. VS Output voltage(DL-50W-V72DX-MXG)



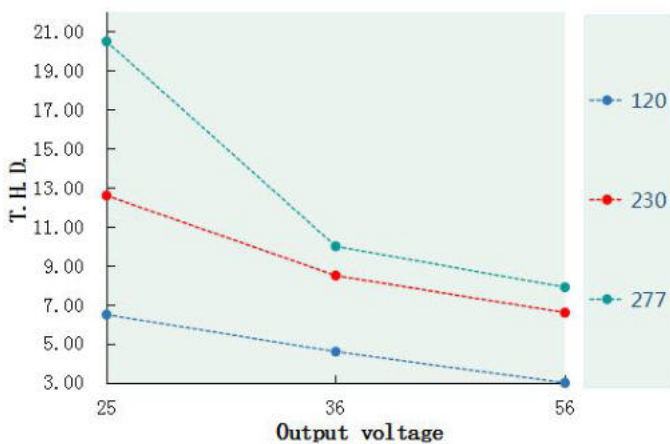
Power factor VS Input voltage(DL-50W-V56DX-MXG)



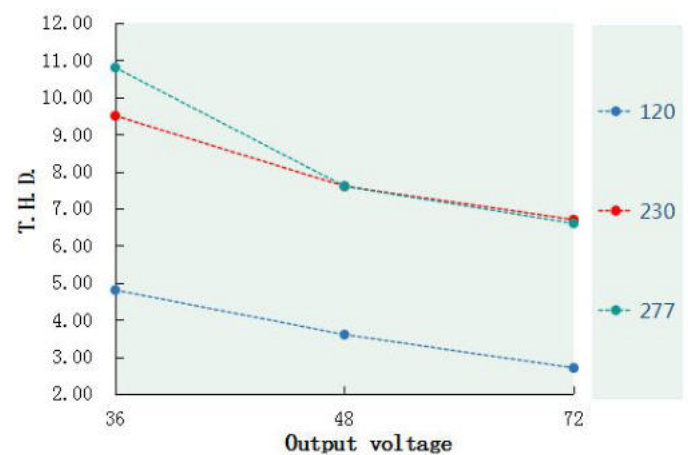
Power factor VS Input voltage(DL-50W-V72DX-MXG)



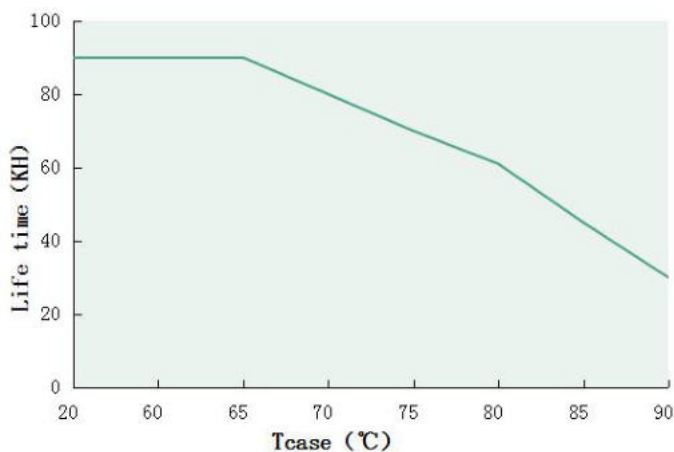
T.H.D. VS Output voltage(DL-50W-V56DX-MXG)



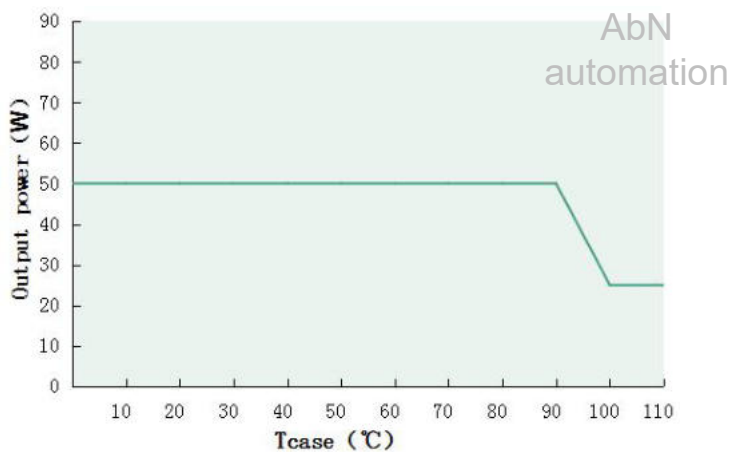
T.H.D. VS Output voltage(DL-50W-V72DX-MXG)



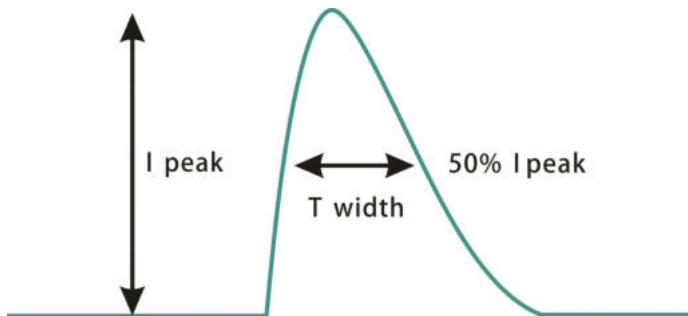
Tcase VS Lifetime(DL-50W-DX-MXG)



Output power VS Tcase (DL-50W-DX-MXG)



Inrush current(DL-50W-DX-MXG)

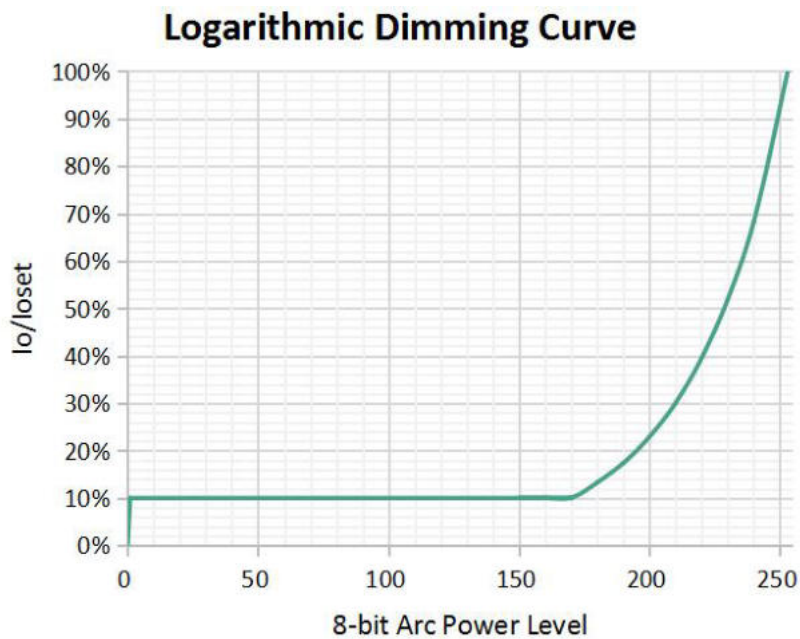


Input voltage	Peak current	T(@50% Peak current)
120Vac	22A	174us
230Vac	42A	172us
277Vac	50.6A	194us

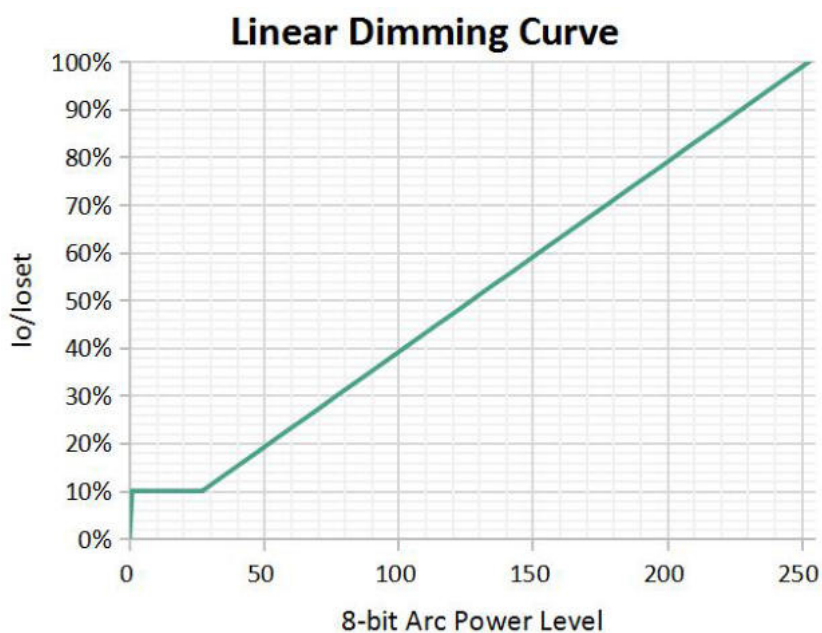


Dali-2 dimming curve

Logarithmic Dimming Curve



Linear Dimming Curve



Note:

- 1.Factory default logarithmic dimming.

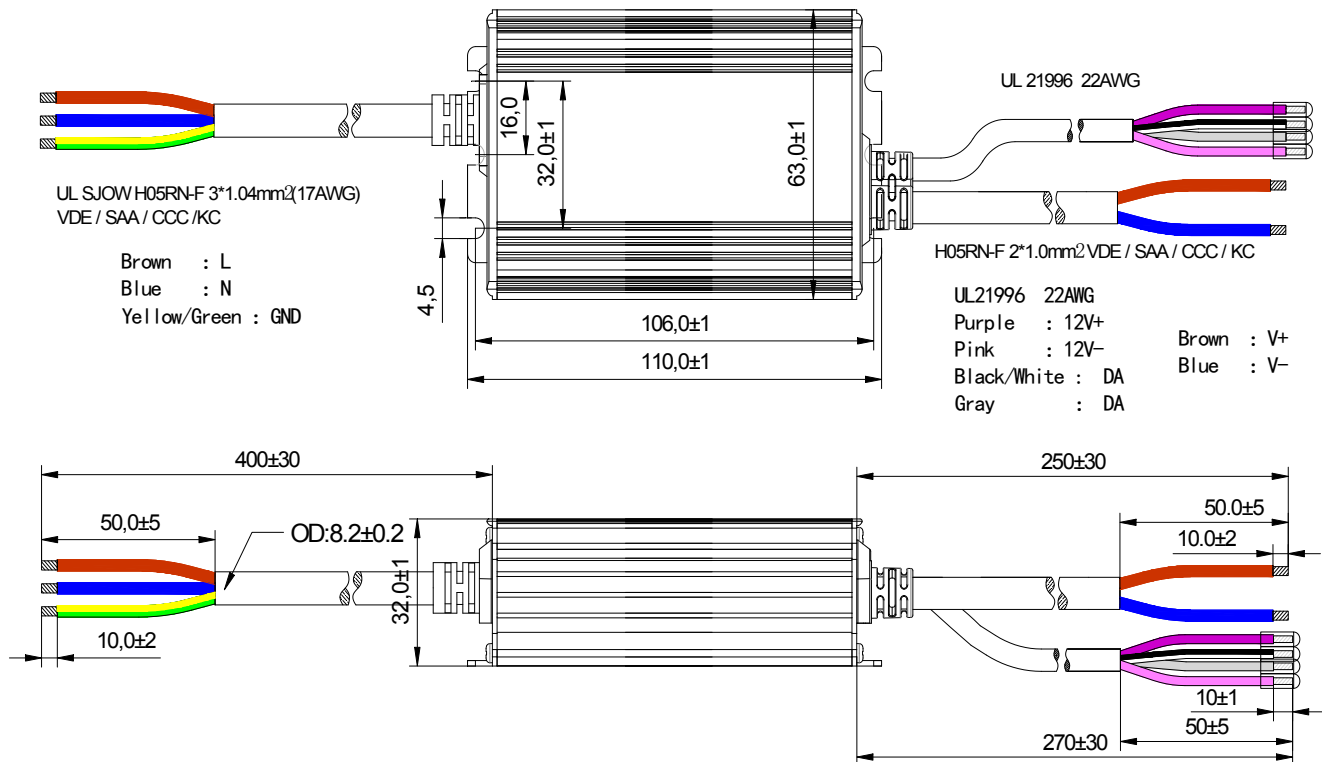
Mechanical specification

Size (mm) L110*W63*H32

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DL-50W-V56DX-MXG

DL-50W-V72DX-MXG

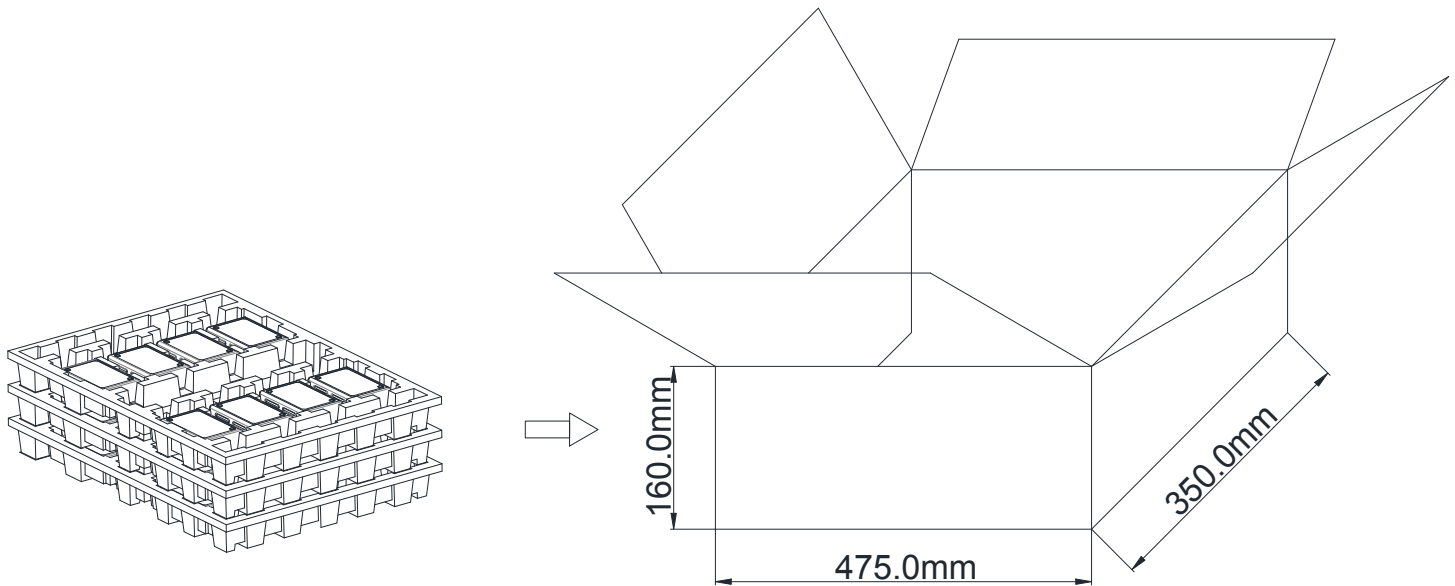


Weight

Weight 430 g

Packaging

Packaging (mm) L475*W350*H205



Note: One Carton 3 layers and 8 pcs each layer, total 24pcs/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
2023.08.30	Initial version.	V1.0	

MANUFACTRUER		
EDIT	CHECK	APPROVE