



MXG SERIES LED DRIVERS

DL-50W-MTG SPEC V1.2



Features

- Class II structure
- Input voltage: 120-277 V ~ 50/60 Hz
- Efficiency :88.5%(Typ.)
- Constant power drive and constant current output control mode
- Metal shell structure, protection grade: IP65
- Lightning protection level: differential mode 6kV, common mode 10kV
- When dimming is off , standby power consumption is less than or equal to 0.5W.(X version only)
- Function selection:
 - Output current is adjusted by external potentiometer (S/X version)
 - Isolation dimming function: three in one dimming (S/X version)
 - Auxiliary power supply: 12V/300mA Auxiliary power supply (X version only)
- 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-50W-V48X-MTG	120-277V	50W	25-48Vdc	1.4 A	≥88.5%	≤10%	≥0.95
DL-50W-V48S-MTG	50/60Hz						

Note :

1. Test conditions of the above parameters: Ta=25℃, 230Vac input, full load operation for 30 minutes;
2. When the input is less than 108Vac,the output power gradually decreases.When the input 120-277VAC,rated power 50W.
 Please refer to “THE OUTPUT POWER VS INPUT VOLTAGE” curve chart for details.

Input characteristics

Parameter	Min	Typ.	Max	Note
Rated input voltage	120Vac	230Vac	277Vac	
Input voltage range	108Vac		305Vac	
Rated frequency	47Hz	50/60Hz	63Hz	
Power factor	-	0.95	-	@230Vac input ,with full load
T.H.D.	-	-	10%	@230Vac input ,with full load
T.H.D.	-	-	20%	@120-277Vac input ,with 65% load
Input current	-	-	0.55A	@120Vac input ,with full load
Inrush current	-	-	70A	230Vac, cold start (25℃)

Output characteristic

Parameter	Min	Typ.	Max	Note
Rated current DL-50W-V48S/X-MTG	- -	1.04A	- -	With loading 48VDC
Output current range DL-50W-V48S/X-MTG	0.625A	- -	1.4A	
Output voltage range DL-50W-V48S/X-MTG	25V	- -	48V	
Rated power(90-120Vac)	-	25W	50W	Start derating to half power when input voltage is less than 108 ±10 Vac
Rated power(120-277Vac)	-	50W	-	
No-load voltage DL-50W-V48S/X-MTG	- -	- -	60V	
Efficiency@120Vac DL-50W-V48S/X-MTG	85%	87%	-	full load@120Vac

Output characteristic

Parameter	Min	Typ.	Max	Note
Efficiency@230Vac DL-50W-V48S/X-MTG	88%	88.5%	-	full load@230Vac
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	@120-277Vac input ,with full load

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 driver works at the rated minimum output current, the current accuracy is -5% -- 7%.

Dimming characteristic

Dimming function		Min	Typ.	Max	Instructions
1-10V Dimming (Optional)	Safe applied voltage range	1V	-	12V	When the external voltage is $\geq 12V$, the dimming will fail
	Dimming output range	10%	-	100%	-
	Rated dimming voltage range	1V	-	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	10%	-	99%	Output full power at 99% duty cycle
Resistor Dimming (Optional)	External resistance value	10K Ω	-	100K Ω	-
	Dimming output range	10%	-	100%	-

Note:

- Output current of dimming port: 100uA (typical value);
- 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 ;
- When Dimming input is 0V in the constant-power range,the lamp can be dim-to-off.
- The default dimming setting is a three-in-one positive logic Dimming; timer dimming,0-10V,0-3.3V,0-5V or other voltage dimming and positive or reverse Logic dimming can be completed by the Done-Power programmer with off-line or on-line mode.

Protection

Function	Function instructions
Input under-voltage protection	When the input voltage is less than 108Vac, the output power gradually decreases.
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 ")
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℃)

Safety and EMC

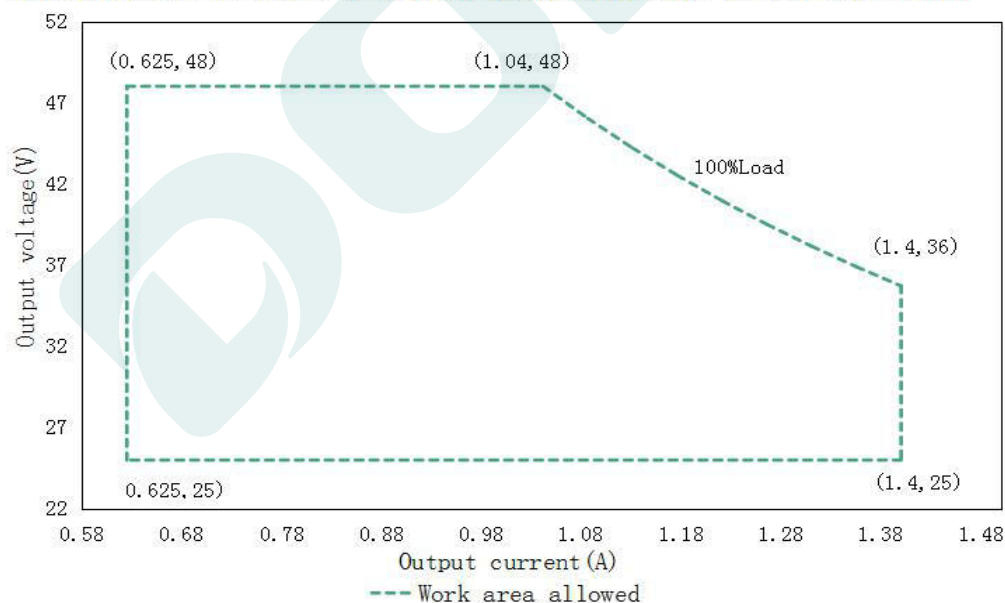
Safety categories	Standard
Safety	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13 UL8750;
EMC	EN 55015、EN 61547、EN 61000-3-2、GB/T 17743、GB17625.1、EN 61000-3-3 FCC Part 15
Surge protection	Differential mode L-N $\pm 6\text{KV}$ (2 ohm), common mode L, N-PE $\pm 10\text{KV}$ (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:3.75KVac O/P-DIM:1.5KVac
Insulation impedance	I/P-PE:100M Ω / 500VDC; I/P-O/P:100M Ω / 500VDC / 25 $^{\circ}\text{C}$ / 70% RH
Leakage current	<0.7mA@277Vac

Note:

- 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.

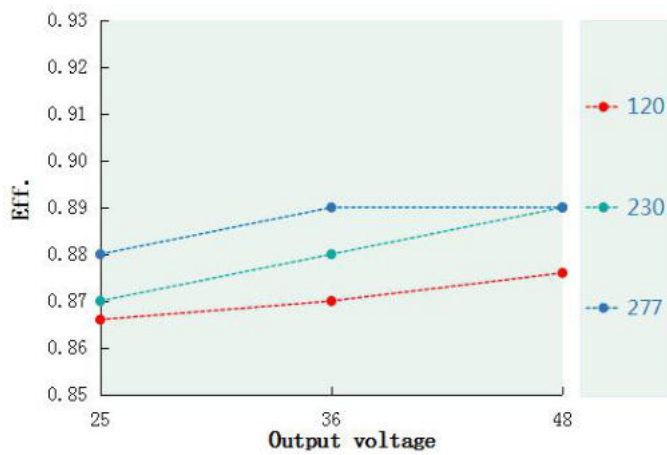
I-V Working area

Output voltage VS output current of DL-5W-V48X/S-MTG (input: 120-277Vac)

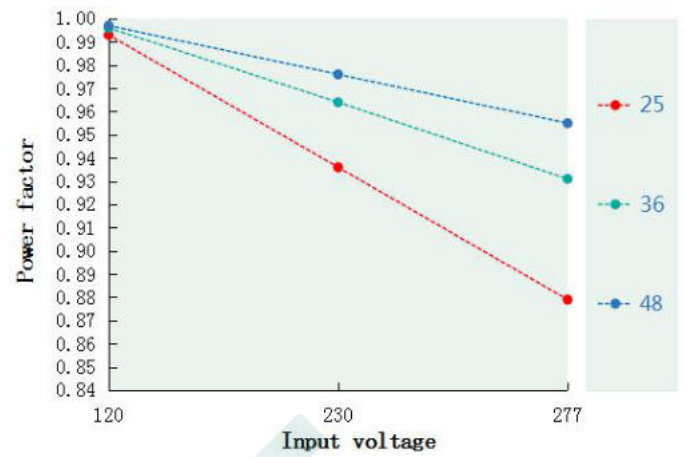


Load	Output						
Load working Voltage	25V	29V	33V	36V	40V	44V	48V
I _o _MAX	1.056A	1.057A	1.055A	1.39A	1.25A	1.14A	1.042A
P _o _MAX	26.4W	30.7W	34.8W	50W	50W	50W	50W

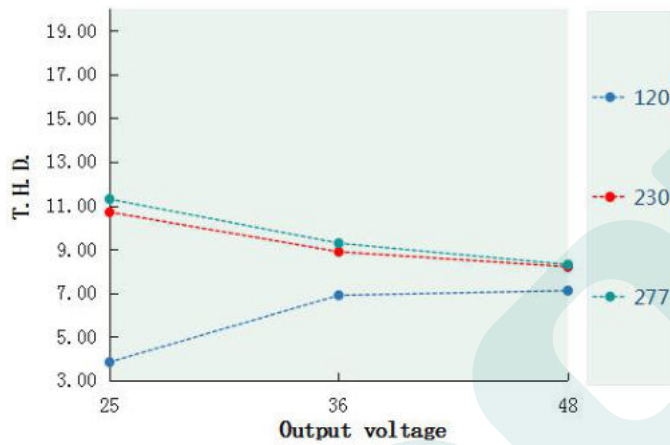
Eff. VS Output voltage(DL-50W-V48S/X-MTG)



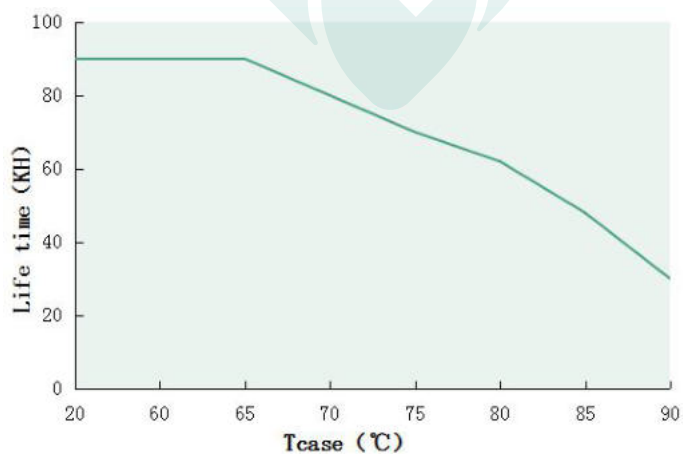
Power factor VS Input voltage(DL-50W-V48S/X-MTG)



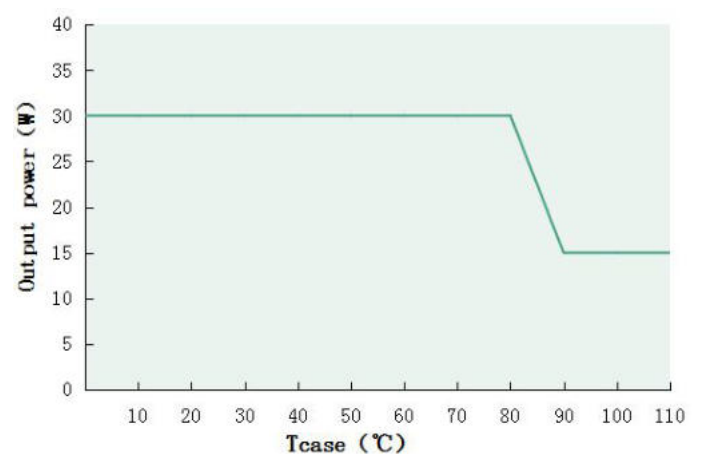
T.H.D. VS Output voltage(DL-50W-V48S/X -MTG)



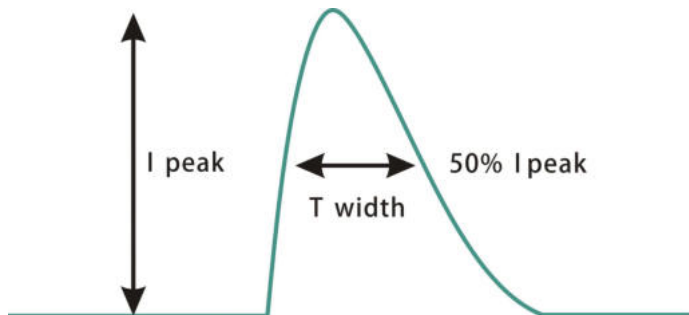
Tcase VS Lifetime(DL-50W-S/X-MTG)



Output power VS Tcase (DL-50W-S/X-MTG)

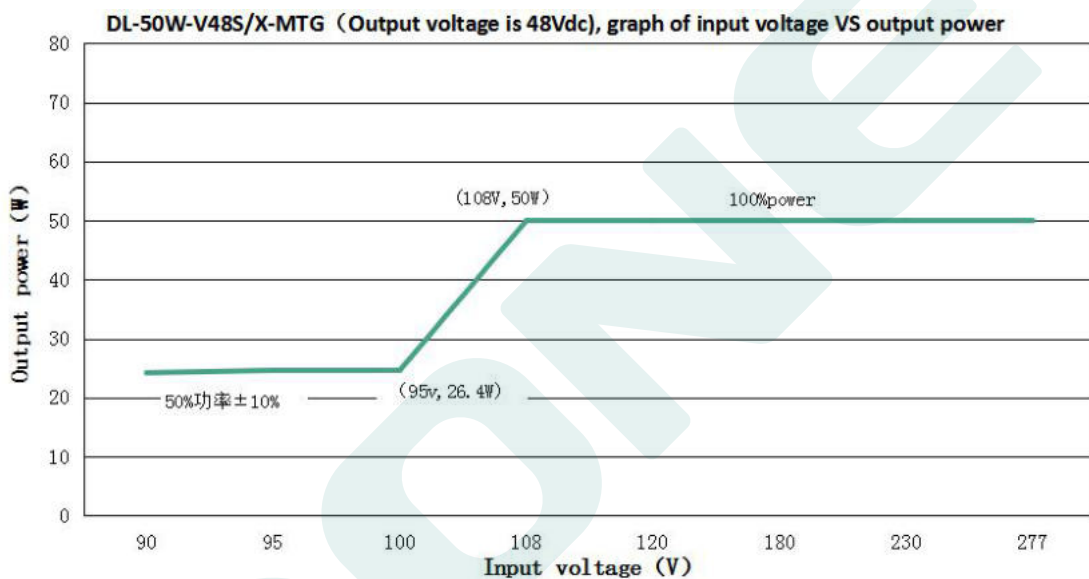


Inrush Current(DL-50W-S/X-MTG)



Input voltage	Peak current	T(@50% Peak current)
120Vac	26.67A	6us
230Vac	53.33A	2.52us
277Vac	62.67A	5.80us

Output power VS Input voltage



DL-50W-V48X-MTG (When the output voltage is 48Vdc, the rated output current value and output power corresponding to different input voltage)

Input Voltage	90Vac	95Vac	100Vac	108Vac	120Vac	180Vac	230Vac	277Vac
Iout	0.505A	0.512A	0.512A	1.030A	1.024A	1.032A	1.032A	1.024A
Pout	26.2W	26.4W	26.4W	50.2W	50.2W	50.2W	50.2W	50.2W

Note:

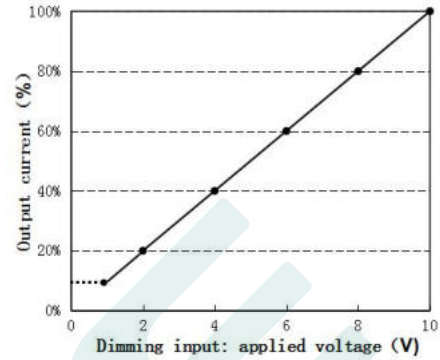
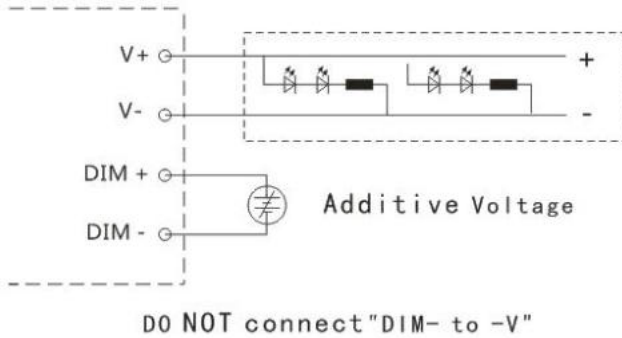
1. Input voltage will fluctuate, resistance error and other factors. At the decrease or increase of power ($V_{in}=108V_{ac}$), it will move left and right, with the range of 108V .
2. When the input voltage is 90-108Vac, the output power range is $18.2W \pm 20\%$.

Dimming operation

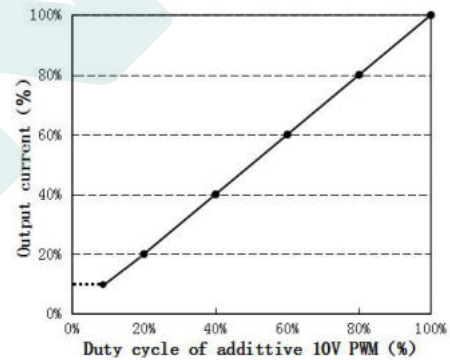
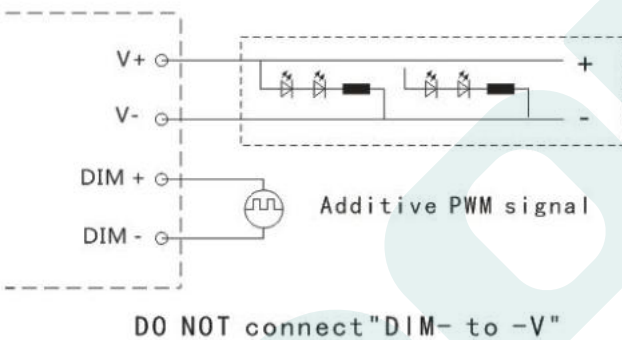
※ Three-in-one dimming function (P version only)

- A. connect a resistor 10-100K or 1-10V DC voltage or 10V PWM signal between DIM+ and DIM- to adjust the output current.
B. output current of dimming port: 100uA (typical value).

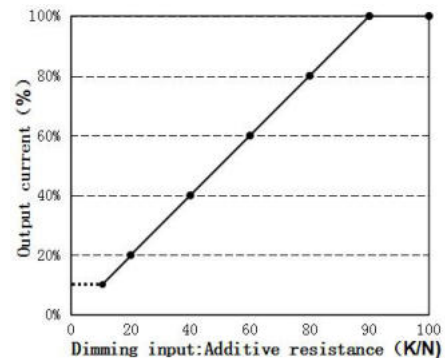
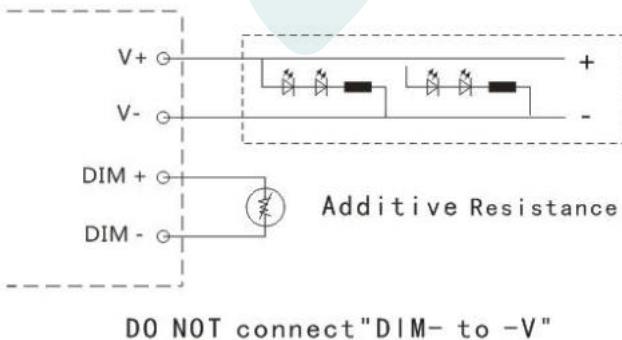
◎ With an applied voltage of 1-10V:



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



◎ With an additional 10-100K resistor:



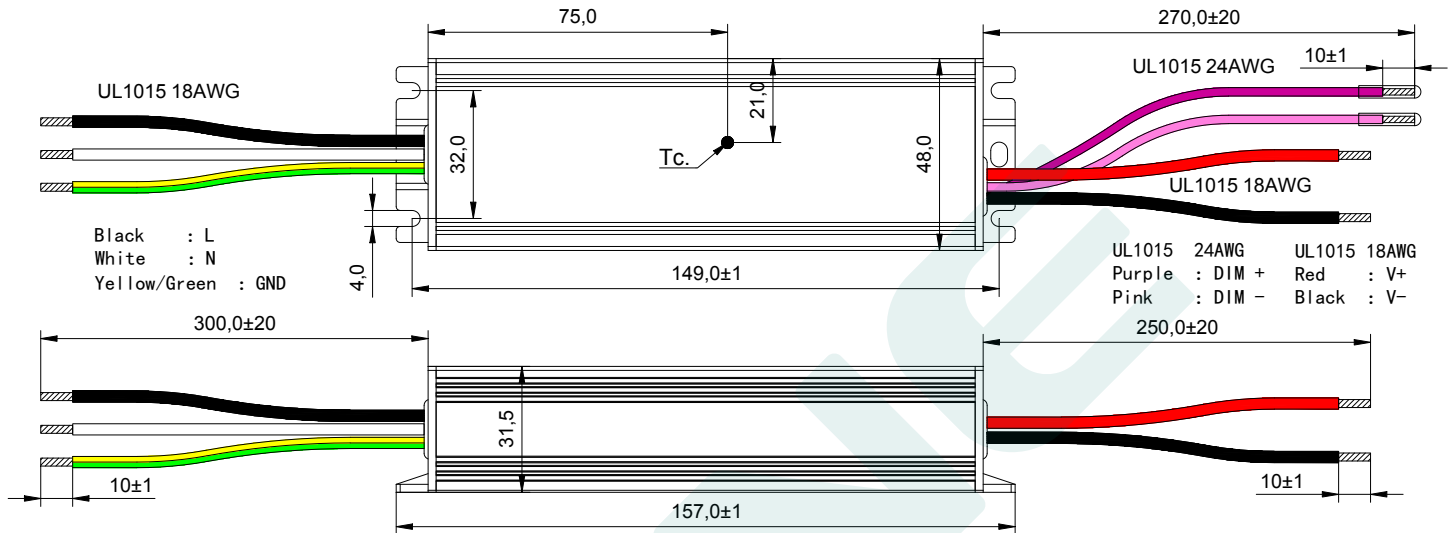
Remark:

When Dimming input is 0V in the constant-power range, the lamp can be dim-to-off.

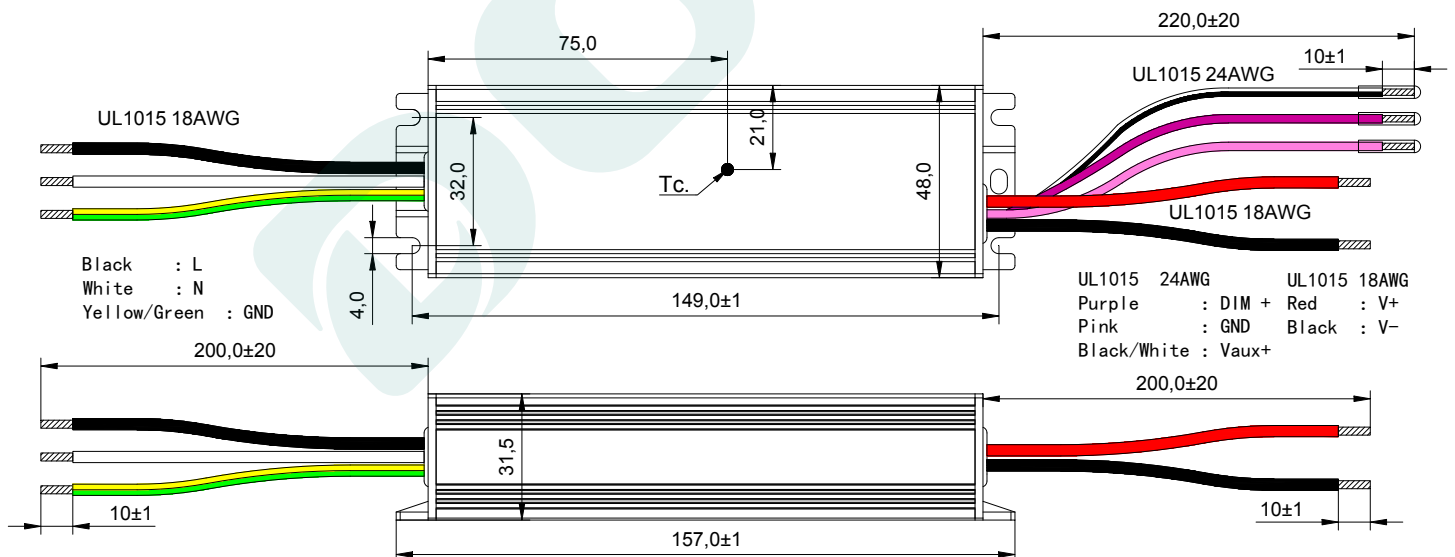
Mechanical specification

Size (mm) L157*W48*H31.5

General product dimension drawing
DL-50W-S-MTG



DL-50W-X-MTG

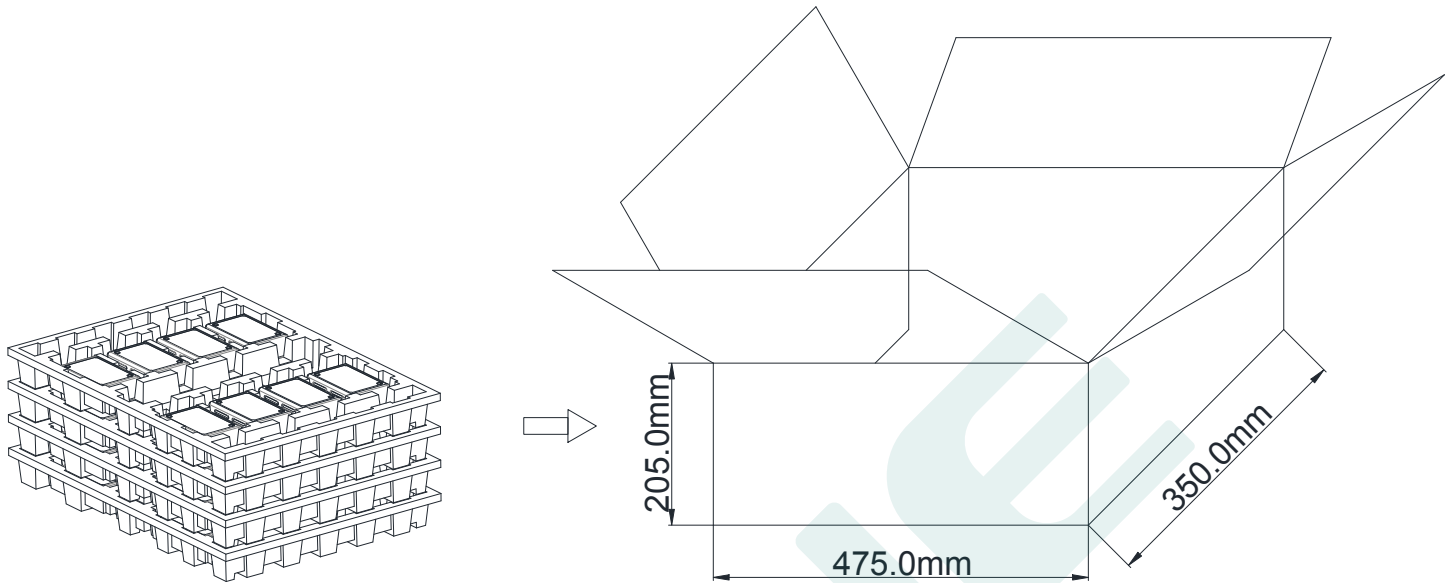


Weight

Weight 490 g

Packaging

Packaging (mm) L475*W350*H205



Note: One Carton 4 layers and 8 pcs 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
2022.04.20	Initial version.	V1.0	
2022.7.25	In V1.0, the Class I structure was written, and now the Class II structure is changed.	V1.1	
2022.10.25	1.Modify the description of dimming 1-10 on page 4	V1.2	 2022.10.25 15:51:12 +08'00' ZHANGTINGWEI 2022.10.26 08:22:21 +08'00'

MANUFACTURER

EDIT	CHECK	APPROVE
 LZ 2022.10.25 14:54:09 +08'00'	 2022.10.25 15:10:08 +08'00'	