

The logo for DONE, featuring the word "DONE" in a bold, teal, sans-serif font. The letter "D" is stylized with a white circular element on its left side. The logo is contained within a white rounded square with a thin teal border.

MTG SERIES LED DRIVERS

DL-100W-V48S/X-MTG SPEC V1.2

Features

- Class I structure
- Input voltage: 120-277 V ~ 50/60 Hz
- Efficiency :90%(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)

Isolated 3 in 1 dimming (S/X version)

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-100W-V48S-MTG	120-277V	100W	25-48Vdc	2.8A	≥90%	≤10%	≥0.95
DL-100W-V48X-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 100W.
 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	-	-	full load @230Vac
Power factor	0.9	-	-	65%-100% load, 100-277VAC input
T.H.D.	-	-	10%	@230Vac full load
T.H.D.	-	-	20%	65%-100% load, 120-277VAC input
Input current	-	-	1.1A	@120Vac full load
Inrush current	-	-	70A	230Vac, cold start (25°C)

Output characteristic

Parameter	Min	Typ.	Max	Note
Rated current DL-100W-V48S/X-MTG	-	2.1A	-	Load 48VDC
Output current range DL-100W-V48S/X-MTG	1.5A	-	2.8A	-
Output voltage range DL-100W-V48S/X-MTG	25V	-	48V	Constant power range 36-48VDC
Rated power(90-120Vac)	-	50W	100W	The derating begins when the input voltage is less than 108Vac
Rated power(120-277Vac)	-	100W	-	
No-load voltage DL-100W-V48S/X-MTG	-	-	60V	-
Efficiency@120Vac DL-100W-V48S/X-MTG	87.5%	89%	-	full load @120Vac

Output characteristic

Parameter	Min	Typ.	Max	Note
Efficiency@230Vac DL-100W-V48S/X-MTG	88.7%	90%	-	full load@230Vac
Accuracy of output current	-5%	-	+5%	full load
Output ripple current	-	5% Iomax	-	100% load , 20 MHz BW ; Ripple =rms/ average
Line regulation	-3%	-	+3%	full load
Load regulation	-5%	-	+5%	full load
Starting time	300 ms	-	1000 ms	Full load@120-277Vac
Standby input power	-	-	0.5W	

Note: 1.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
1-10V 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	-
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:

- 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 ;

Protection

Function	Function instructions
Input under-voltage protection	When the input voltage is less than 108Vac $\pm 10\%$, 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°C, 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°C of ambient temperature;
2. Including setting error, line regulation and load regulation.

Environmental

Environmental categories	Parameter
Working temperature	-40 ~ +55°C @200-277Vac, -40 ~ +45°C @120-200Vac (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	230Khrs min. MIL-HDBK-217F (Ta=25°C)
The life time	75,000 hours @T case $\leq 75^{\circ}\text{C}$, 230Vac, 80% Load, Please refer to "T case VS Lifetime" section

Safety and EMC

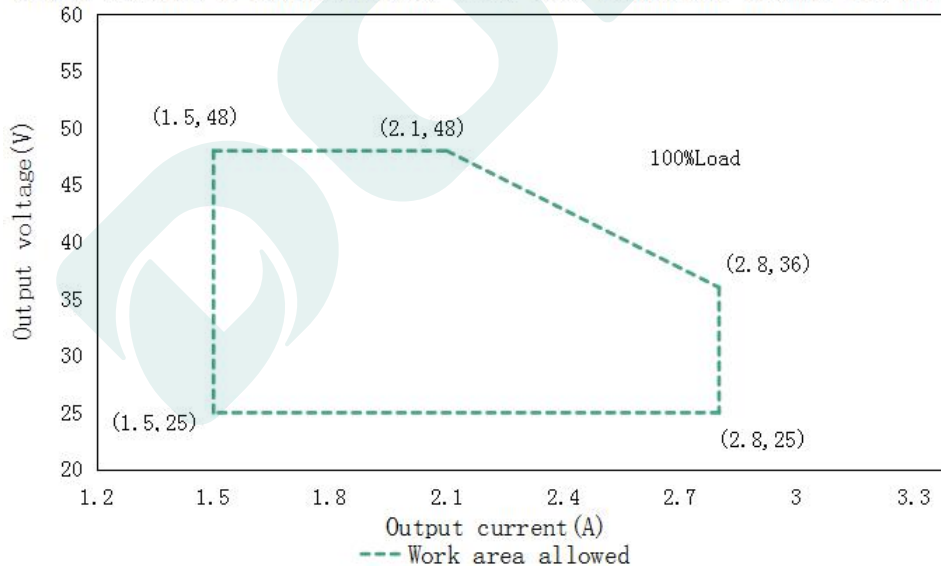
Safety categories	Standard
Safety	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13 UL8750;
EMC	EN 55015、EN 61547、EN 61000-3-2、GB/T 17743、GB17625.1、EN 61000-3-3 FCC Part 15
Surge protection	Differential mode L-N $\pm 6\text{KV}$ (2 ohm), common mode L, N-PE $\pm 10\text{KV}$ (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:

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.

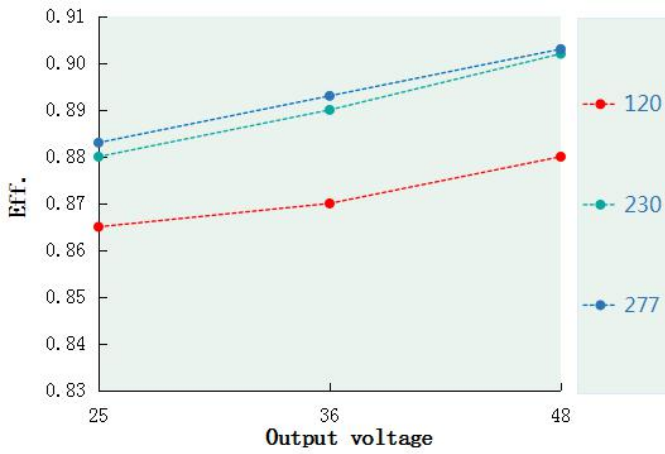
I-V Working area

Output voltage VS output current of DL-100W-V48S/X-MTG (input: 120-277Vac)

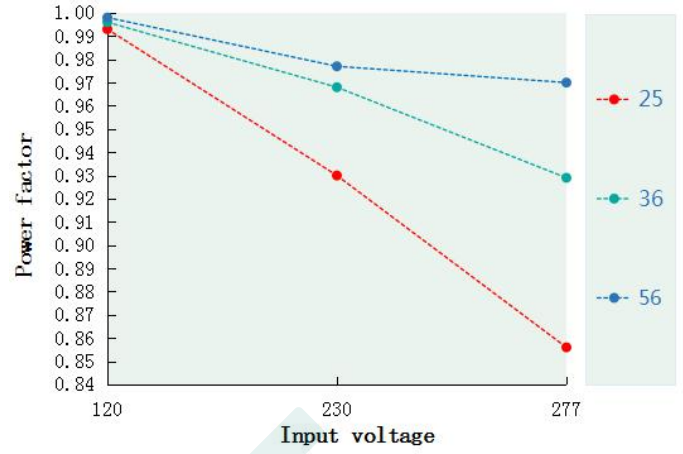


Load	Output								
Load working Voltage	20V	25V	30V	33V	36V	39V	42V	45V	48V
Io_MAX	2.108A	2.108A	2.108A	2.108A	2.780A	2.60A	2.405A	2.250A	2.113A
Po_MAX	41.95W	52.56W	63.24W	69.65W	100.3W	101.5W	101.1W	101.5W	101.5W

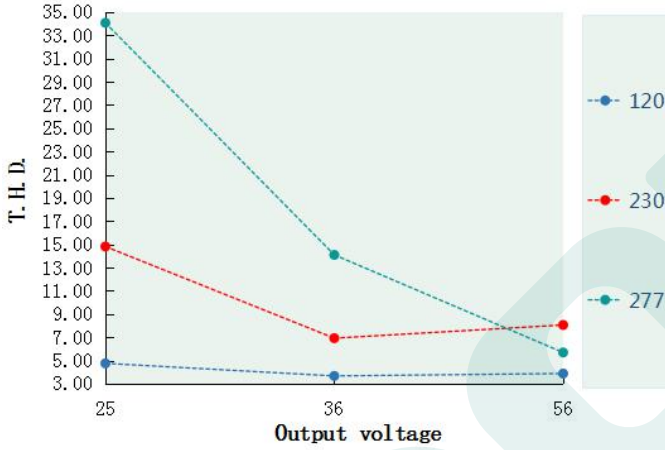
Eff. VS Output voltage(DL-100W-V48S/X-MTG)



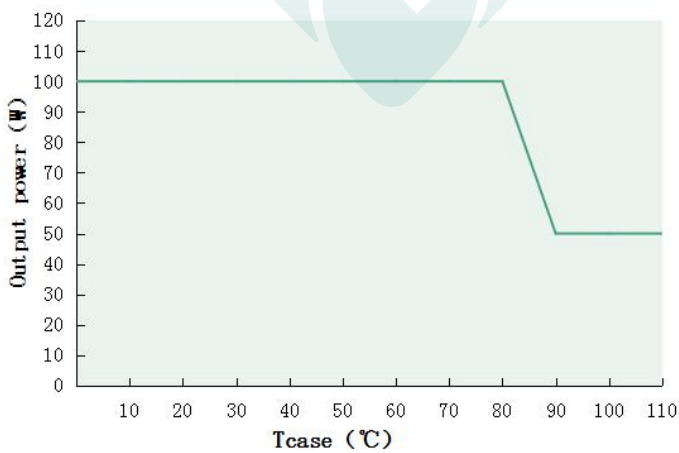
Power factor VS Input voltage(DL-100W-V48S/X-MTG)



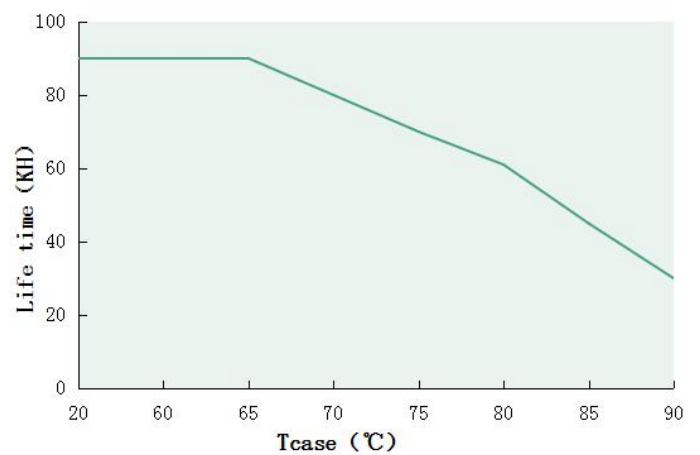
T.H.D. VS Output voltage(DL-100W-V48S/X-MTG)



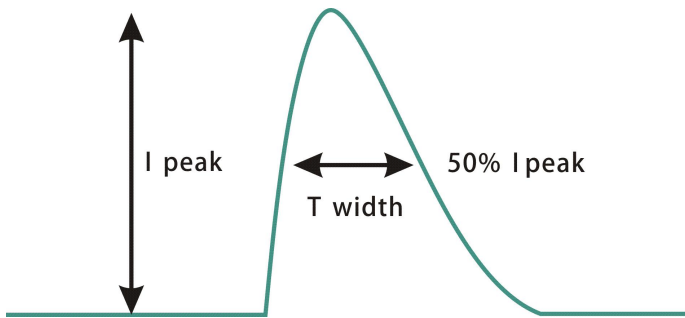
Output power VS T case (DL-100W-V48S/X-MTG)



T case VS Lifetime(DL-100W-V48S/X-MTG)

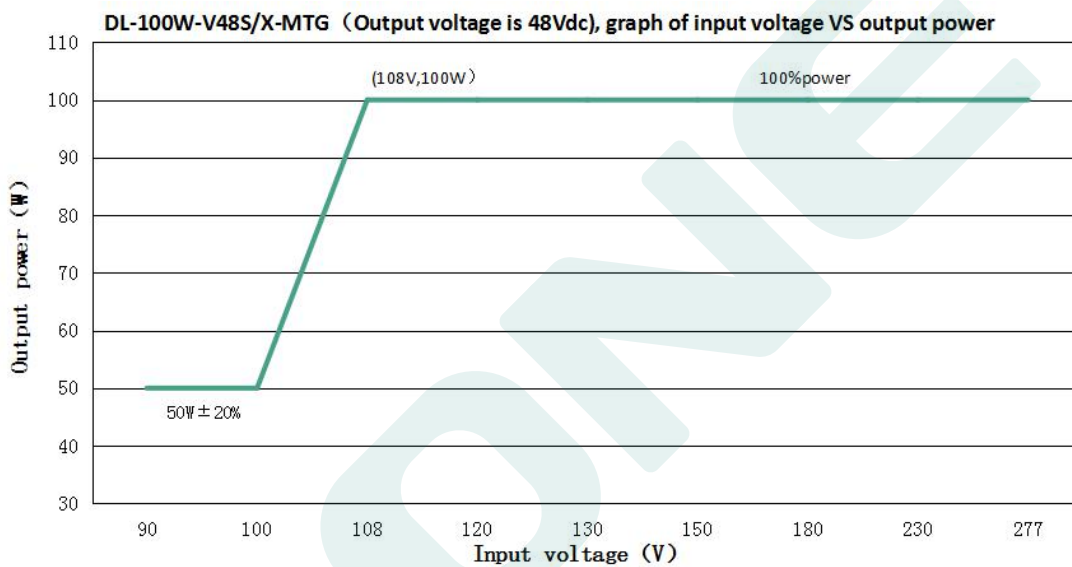


Inrush current(DL-100W-V48S/X-MTG)



Input voltage	Peak current	T(@50% Peak current)
120Vac	120Vac	10.30A
230Vac	230Vac	32.80A
277Vac	277Vac	52.20A

Output power VS Input voltage



DL-100W-V48S/X-MTG (When the output voltage is 48Vdc, the rated output current value and output power corresponding to different input voltage)

Input Voltage	100Vac	120Vac	130Vac	150Vac	180Vac	200Vac	230Vac	277Vac
Iout	1.05A	2.1A	2.1A	2.1A	2.1A	2.1A	2.1A	2.1A
Pout	50.9W	100.9W	100.9W	100.9W	100.9W	100.9W	100.9W	100.9W

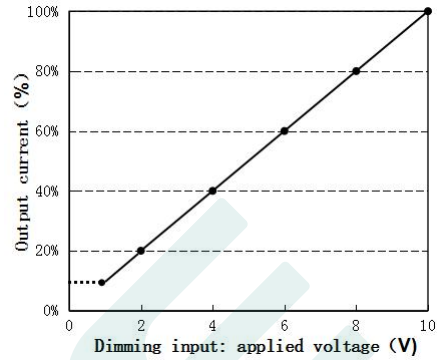
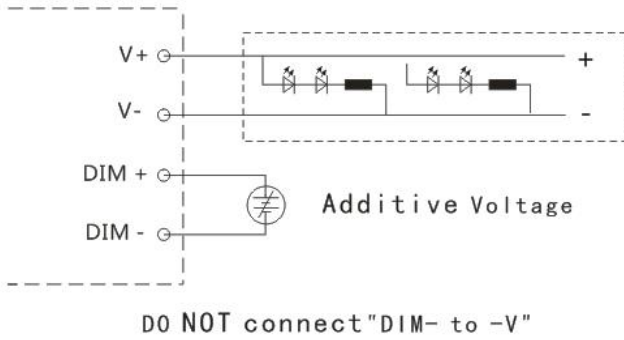
- Note:**
- Input voltage will fluctuate, resistance error and other factors. At the decrease or increase of power (Vin=108Vac), it will move left and right, with the range of 108V .
 - When the input voltage is 90-108Vac, the output power range is 50W±20%.

Dimming operation

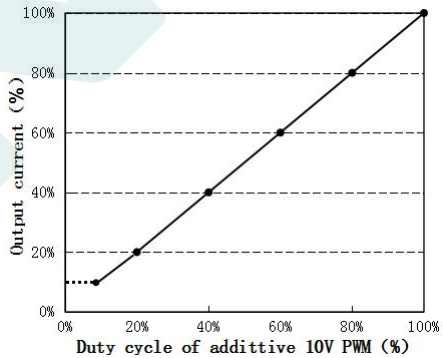
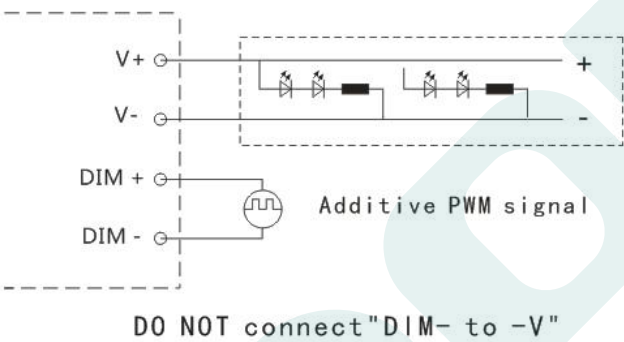
※ **Three-in-one dimming function (S/X version only)**

- 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).

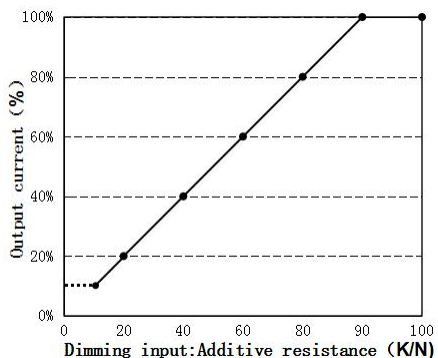
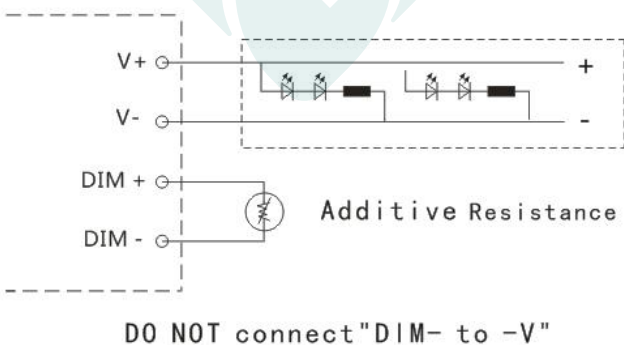
◎ **With an applied voltage of 0-10V:**



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



◎ **With an additional 0-100K resistor:**



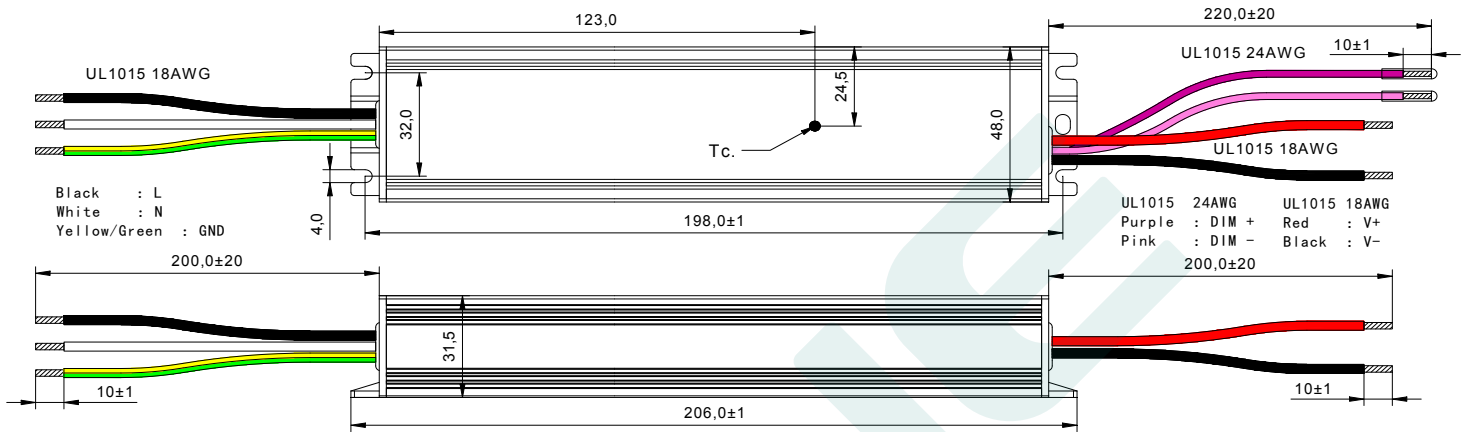
Remark:

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

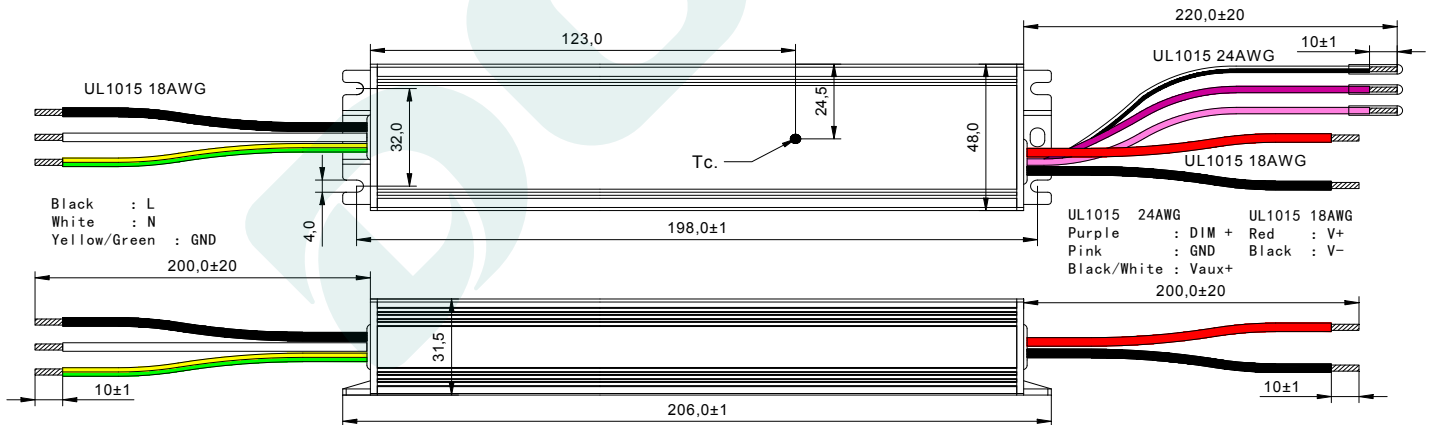
Mechanical specification

Size (mm) L206*W48*H31.5

General product dimension drawing
DL-100W-V48S-MTG



General product dimension drawing
DL-100W-V48X-MTG

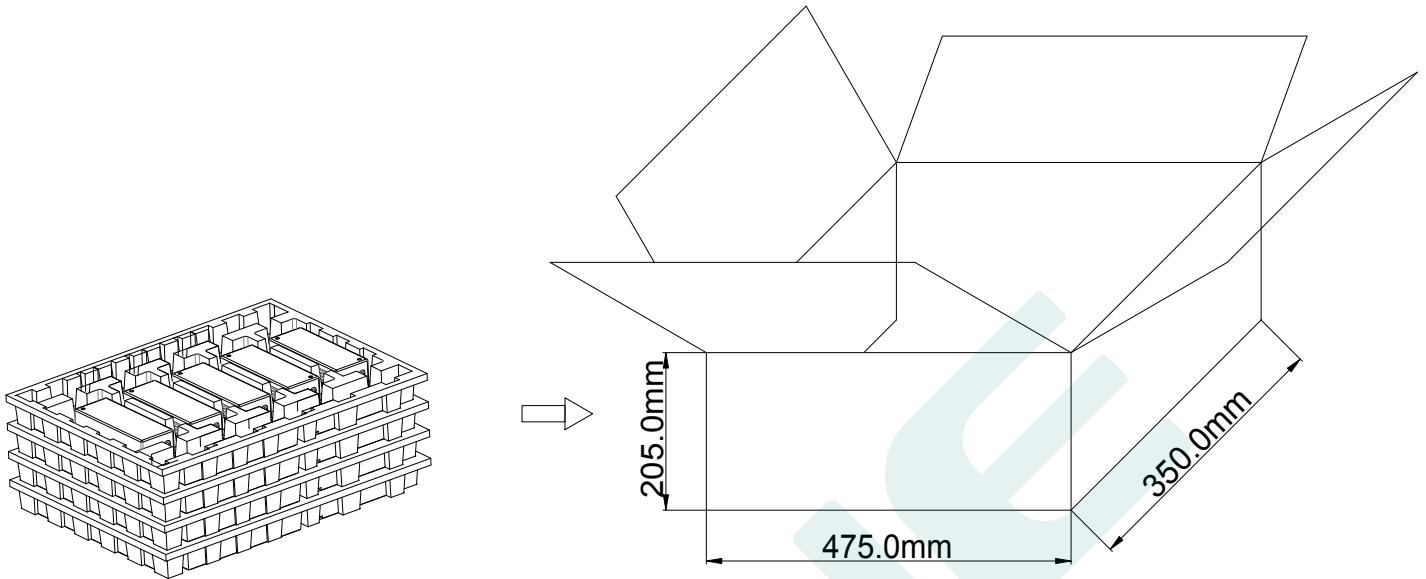


Weight

Weight 640 g

Packaging

Packaging (mm) L475*W350*H205



Note: One Carton 4 layers and 5 pcs each layer, total 20pcs/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
2022.6.8	Initial version.	V1.0	
2022.6.17	1. Modify the product model on page 2. 2. Modify the safety label on page 2	V1.1	
2022.10.25	1.Modify the description of dimming 1-10 on page 4	V1.2	

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EDIT

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APPROVE

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