



PLS SERIES LED DRIVER

DL-500W-X/J-PLS SPEC V1.4



Features

- Class I type for insulation(pending)
- Input voltage 120-277 V ~ 50/60 Hz
- Efficiency :96%(Typ.)
- Constant power drive and constant current output control mode
- Metal case, protection grade against water and dust: IP67
- Surge level:
 - differential mode :6kV,
 - common mode :15kV
- Only for X version: standby power≤0.5W@ dim-off state
- Available version:

X version: 1.default dimming method of Isolated 3 in 1 dimmer

2.available DC source:12V- 300mA

- Guaranteed Lifetime: 5 years



Applications

Street 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.	THD.	Power Factor
DL-500W-V260X/J-PLS	120-277V 50/60Hz	500W	180-260Vdc	2.0A	≥96%	≤10%	≥0.97

Note:

1. Test conditions: Ta=25℃, under 230Vac input,after running for 30 minutes with full load.
2. The output power decreases slowly to a half when the Input is below $108 \pm 10\%$ Vac. Please refer to the curve of Input voltage VS output power for detail.
- 3.X, or J indicates that the output is configured with different optional functions. X represents the external three-in-one dimming function (0-10V, PWM, external resistance) + auxiliary power supply function; The letter J represents RJ12 phone line port dimming, knob dimming, cascade dimming. When connecting the network cable to dimmer (Vaux+ 6,12/ DIM+ 5,11/ TXD 3/ RXD 9/ Vaux-/DIM- 1,4,7,10/Communication COM 2,8).

Input characteristics

Parameter	Min	Typ.	Max	remark
Rated input voltage	120Vac	230Vac	277Vac	
Input voltage range	90Vac	230Vac	305Vac	Output power decrease to a half below 120VAC.
Rated frequency range	47Hz	50/60Hz	63Hz	
Power factor	-	0.97	-	@230Vac input ,with full load
T.H.D	-	8%	10%	@230Vac input ,with full load
T.H.D	-	-	20%	@120-277Vac input ,with 60% load
Input current	-	-	5.0A	@120Vac input ,with full load
Inrush current	-	-	120A	230Vac, cold start (25℃)

Note: Test conditions: Ta=25℃.

Output characteristics

Parameter	Min	Typ.	Max	remark
Rated current DL-500W-V260X/J-PLS	-	1.92A	-	With loading 260VDC ,full load
Output current range DL-500W-V260X/J-PLS	1.5A	-	2.5A	
Output voltage range DL-500W-V260X/J-PLS	200V	-	260V	Constant power range
	180V		200V	Constant current range
Available power(90-120Vac)	-	250W	500W	output power decrease to a half when input voltage being less than 108VAC±10%
Rated power(120-277Vac)	-	500W	-	
No-load voltage DL-500W-V260X/J-PLS	-	-	350V	
Efficiency@120Vac DL-500W-V260X/J-PLS	-	93%	-	full load@120Vac Output current 1.92A, 500W
Efficiency@230Vac DL-500W-V260X/J-PLS	-	96.5%	-	full load@230Vac Output current1.92A , 500W

Output characteristics

Parameter	Min	Typ.	Max	Note
Ripple current	-	5%	-	full load
Current Accuracy	-5%	-	+5%	full load
Line regulation	-3%	-	+3%	full load
Load regulation	-3%	-	+3%	full load
Starting time	-	500ms	1000ms	Full load @230Vac
12V output voltage	10.8 V	12V	13.2V	
12V output current	0 mA	-	250 mA	Reference ground is "Dim -"
12V output line 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: The output current is limited by the input and output voltage, please refer to "I-V WORKING AREA" for details.

Dimming characteristics

Dimming function		Min	Typ.	Max	Instructions
0-10V Dimming (Optional)	Safe operation voltage range	0V	-	12V	The dimming voltage beyond the range may lead to a critical damage.
	Rated operation voltage range	0V	-	10V	Be negative dimming mode by program setting
	Dimming output range	0%	-	100%	Positive logic dimming can be turned off by program setting
PWM Dimming (Optional)	PWM high level	9.5V	-	10.5V	-
	PWM low level	0V	-	0.3V	-
	Rated dimming frequency	300Hz	-	2000Hz	-
	PWM duty cycle	0%	-	99%	At 99% duty cycle, output full power
Resistor Dimming (Optional)	Rated external resistance value	0KΩ	-	100KΩ	-
	Dimming output range	0%	-	100%	-

Note:

1. Output current of dimming port: 100uA (typical value).
2. The maximum operation voltage for the dimming port is 12V. Wrong voltage beyond this, or a reverse connection, may lead to a critical damage.
3. The default dimming setting of this product is three-in-one, positive logic dimming. Other requirement, such as time-controlled dimming, 0-5V dimming, and so on, please consult the technician for details.
4. Dim-off is only available for positive logic.

Protection

Protection	description
Under voltage protect	When the input voltage is less than $108 \pm 10\%$ VAC, the output power decreases to a half.
Output overload protection	hiccup mode, and automatically recovers after abnormal load conditions being removed
Output short circuit protection	hiccup mode, and automatically recovers after abnormal load conditions being removed
Over temperature protection	When the housing temperature is greater than 90°C , the output power decreases with the increase of the housing temperature

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

Environmental

Environmental categories	Parameter
Working temperature	-40 ~ +40℃ @120-200Vac、-40 ~ +55℃@200-277Vac(refer to "service life curve ")
Safety shell temperature	-40 ~ 90℃
Working humidity	20 ~ 95% RH
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	50Khrs min. MIL-HDBK-217F (Ta=25℃)
Lifetime	70000 h @ housing temperature ≤75 ℃, 230Vac, 100% load, see section "housing temperature and life"

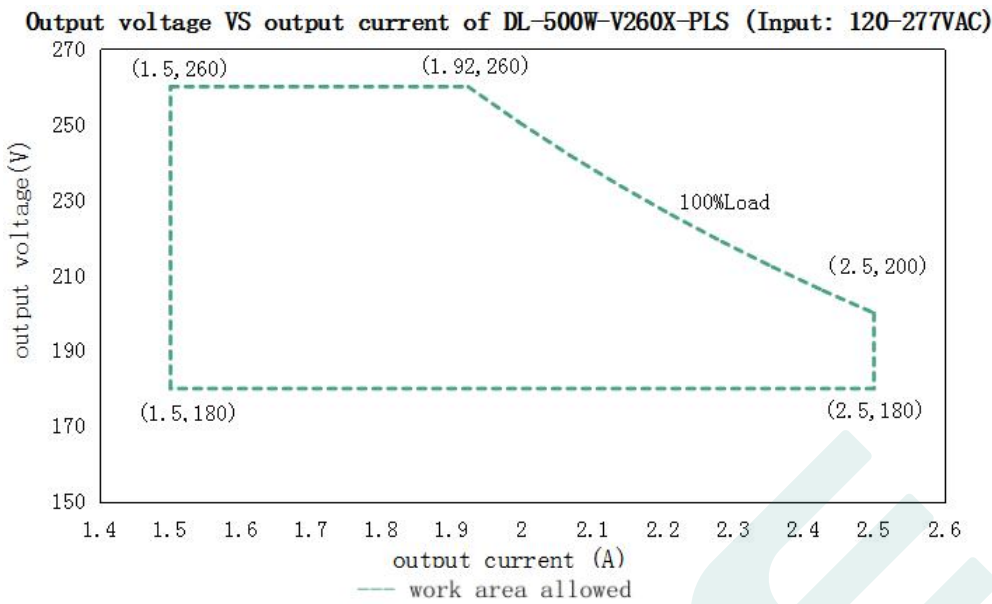
Safety and EMC

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 leve	Differential mode L-N ± 6 KV (2Ω),common mode L, N-PE± 15 KV (12Ω) ;Refer 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:100MΩ / 500VDC; O/P-PE:100MΩ / 500VDC / 25℃/ 70% RH
Leakage current	< 0.7mA @277Vac

Note:

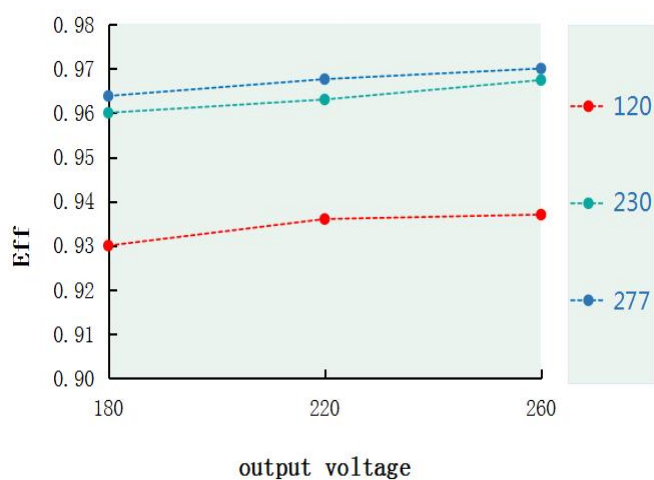
1. Attention! As a component of the whole, the EMC performance of the final product is not only decided by the driver, even if the driver is well-designed and fulfil all the required compliance. The final equipment manufacturers must re-qualify EMC Directive on the complete product.
2. For the driver will be in OVP restart model when it works in no-load, so the driver on-load is recommended.

I-V Working area

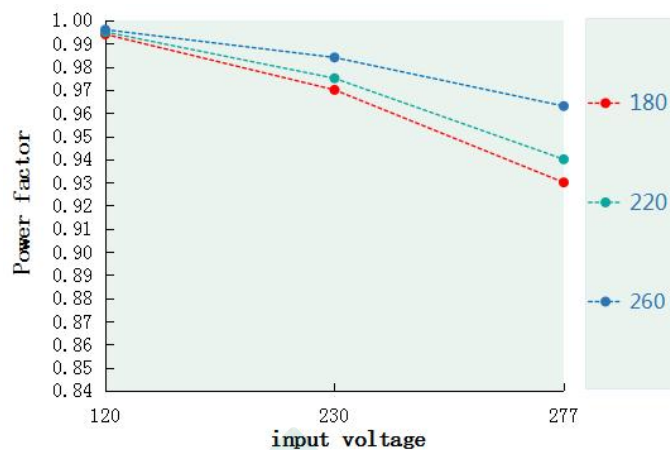


Load		Output							
Load working Voltage	180V	190V	200V	210V	220V	230V	240V	250V	260V
Io_MAX	2.5A	2.5A	2.5A	2.38A	2.27A	2.17A	2.08A	2A	1.92A
Po_MAX	450W	475W	500W	500W	500W	500W	500W	500W	500W

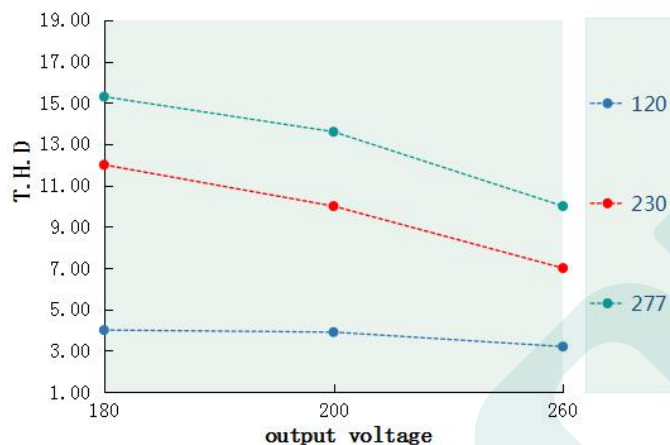
Eff. VS Output voltage DL-500W-V260X/J-PLS



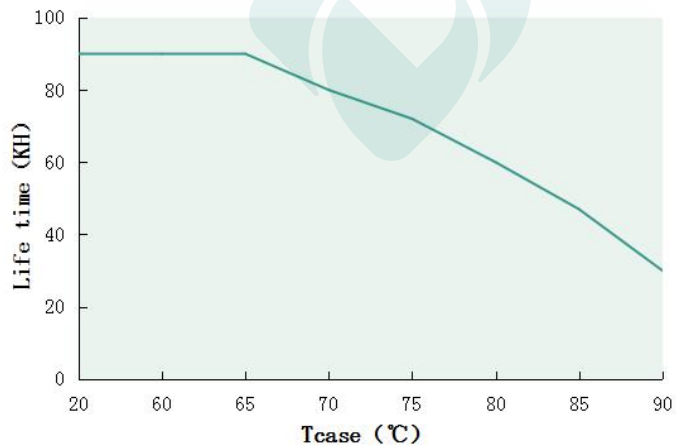
Power factor VS Input voltage DL-500W-V260X/J-PLS



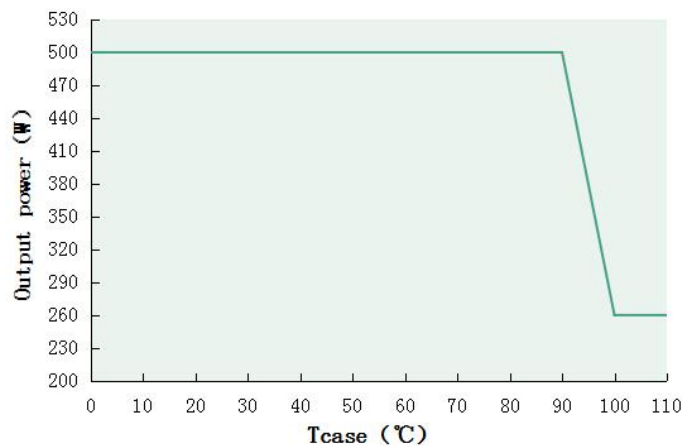
T.H.D VS Output power DL-500W-V260X/J-PLS



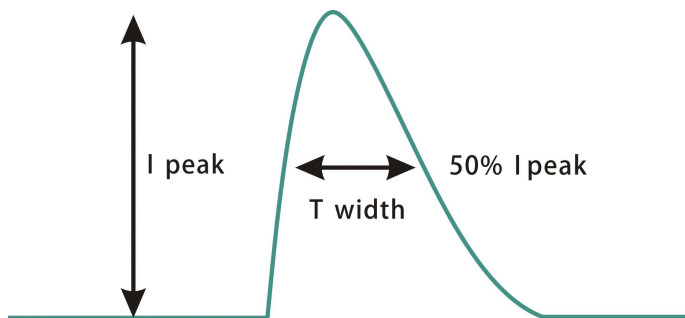
Tcase VS Lifetime(DL-500W-V260X/J-PLS)



Output power VS Tcase(DL-500W-V260X/J-PLS)

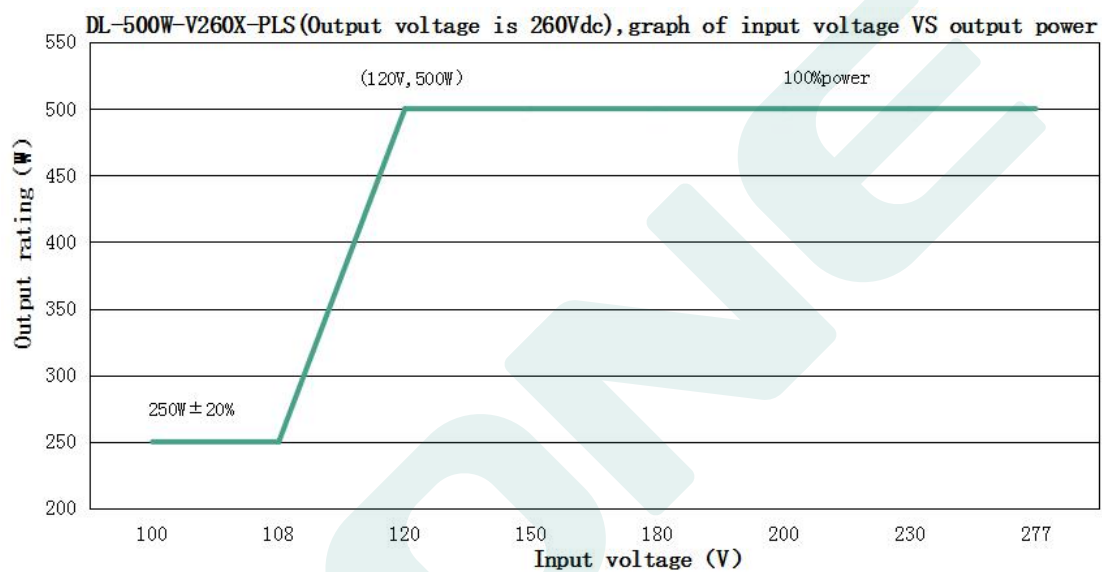


Input Inrush current(DL-500W-V260X/J -PLS)



Input voltage	Peak current	T (@50% Peak current)
120Vac	40.8A	456us
230Vac	56.7A	460us
277Vac	96A	470us

Output power VS Input voltage



DL-500W-V260X-PLS (For output 260Vdc, the rated output current & power under different input voltage)

Input Voltage	108Vac	120Vac	150Vac	180Vac	200Vac	230Vac	250Vac	277Vac
I _{out}	0.96A	1.92A	1.92A	1.92A	1.92A	1.92A	1.92A	1.92A
P _{out}	250W	500W	500W	500W	500W	500W	500W	500W

Note : When the input voltage is below $108 \pm 10V_{ac}$, the output power decreases to $250W \pm 20\%$.

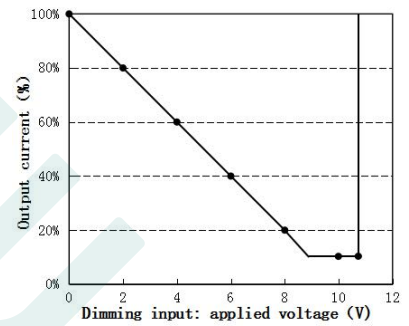
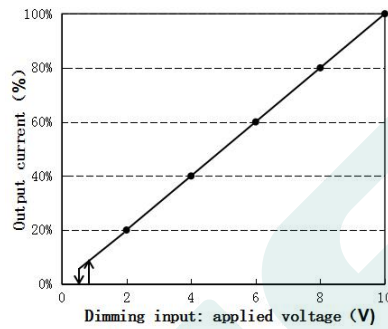
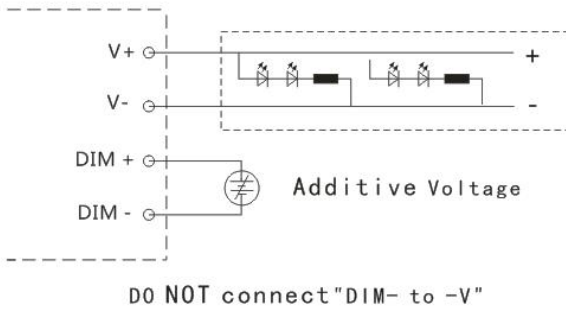
Dimming function

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

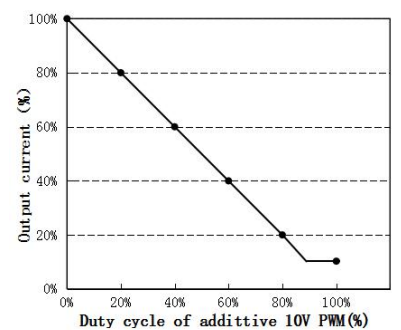
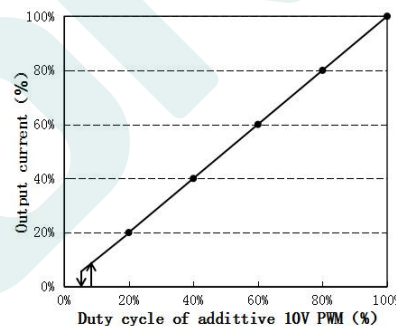
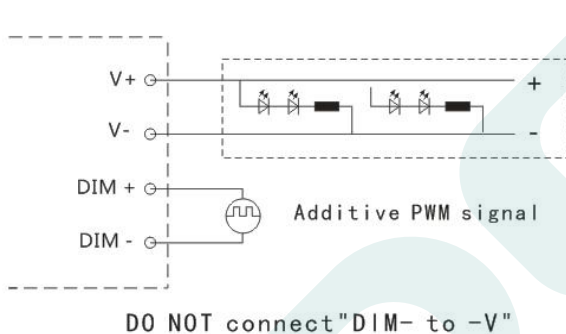
A. To adjust the output current, applying one of the three methods between DIM+ and DIM- : a resistor of 0-100K, or any voltage of 0-10V , or a PWM signal with amplitude of 10V. .

B. output current of dimming port: 100uA (typical value).

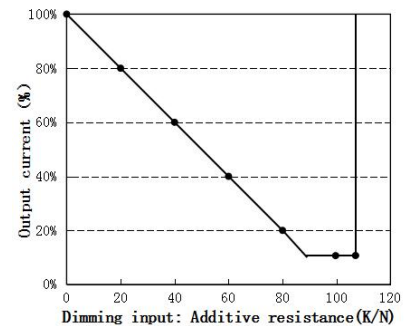
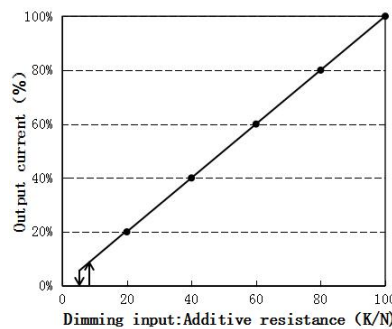
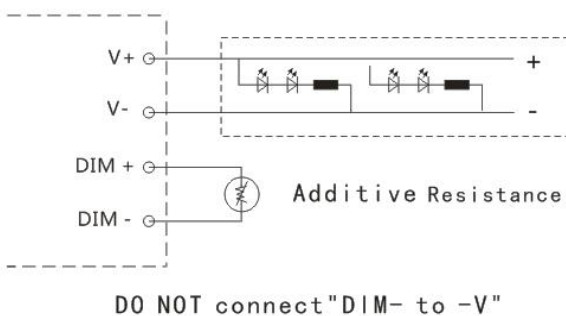
◎ With 0-10V dimming voltage:



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



◎ With an additional 0-100K resistor:



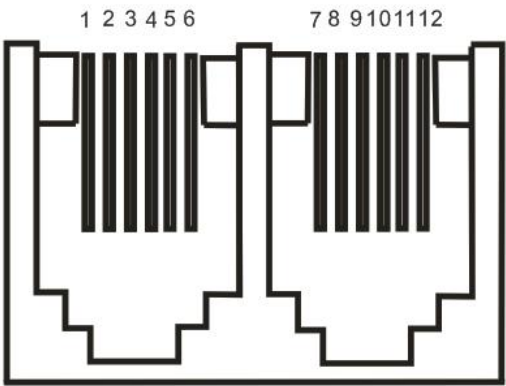
Note:

- Both operation way, of positive logic or negative logic, can be selected by program.
- The dimming-off suits for positive logic only. The other requests could contact the technician.

J-type dimming mode

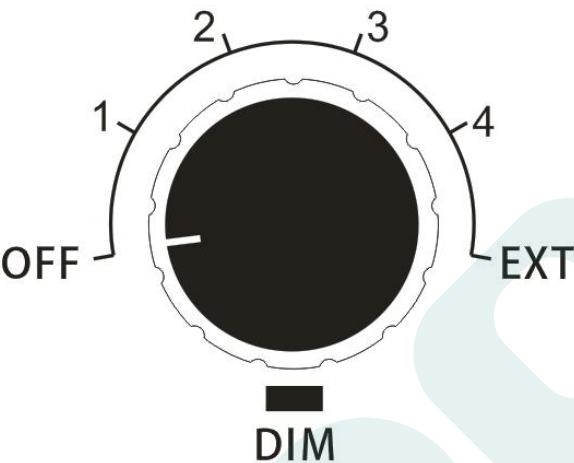
DIM_OUT

DIM_IN



RJ12 PIN	定义
3	TXD
9	RXD
5/11	DIM+
2/8	Communication COM
6/12	Vaux+
1/4/7/10	Vaux-/DIM-

RJ12 JACK



开关	定义
Off	Turn off
1	25%loset
2	50%loset
3	75%loset
4	100%loset
EXT	External dimming

The J-type power supply does not have light dimming, but only has dimming knob and RJ12 interface. When the dimming knob is not set to EXT in master-slave cascading mode, the RJ12 interface can receive 3-in-1 dimming signal. The function of the RJ12 interface is the same as that of the X type light dimming.

Connect multiple power supplies that have an RJ12 port to each other in the following mode: Connect the DIM_OUT port to the DIM_IN port of the next power supply. The power supply that is not connected to the DIM_OUT port is the host. The power supply that is connected to the DIM_OUT port is the slave power supply. Adjust the dimming knob of the host, and other slave power sources will also be dimmed along with the host power supply. Regardless of the slave knob switch in any state, all states of the slave as the master.

Note:

1. RJ12 port is not waterproof. Pay attention to the operating environment to avoid the influence of water on the power supply.
2. The J-type power supply can only be cascaded with the same defined parameters as RJ12. When the number of cascades exceeds 6, do not short-circuit the output of the auxiliary power supply (Vaux+,Vaux-); otherwise, the expansion ports and cables may be damaged.



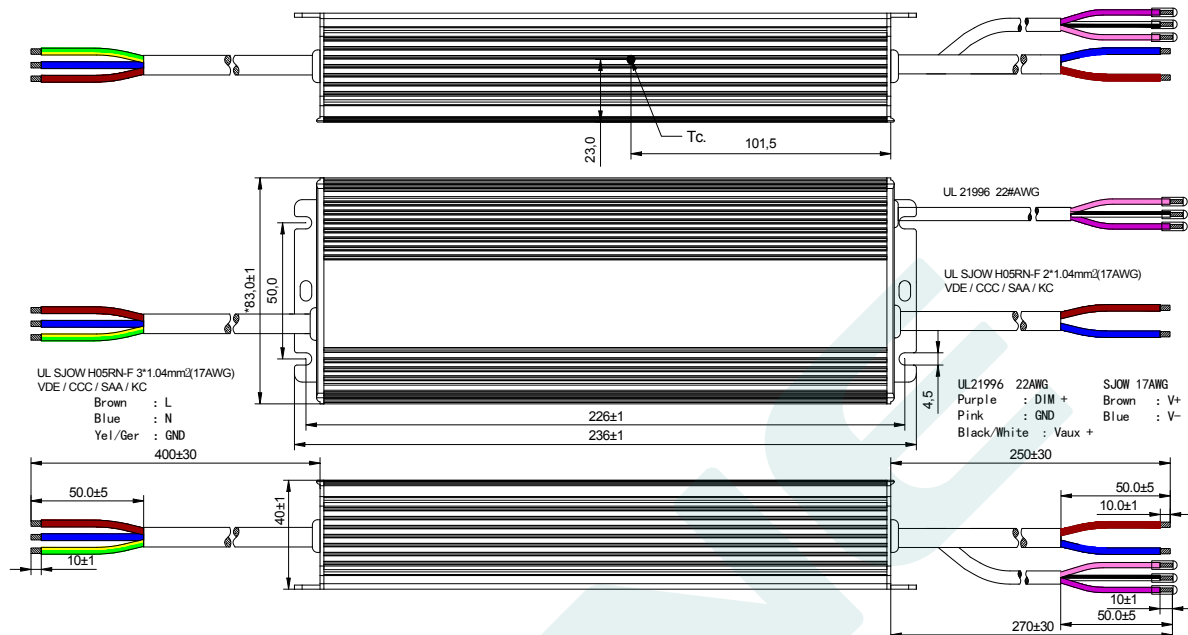
Caution:

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

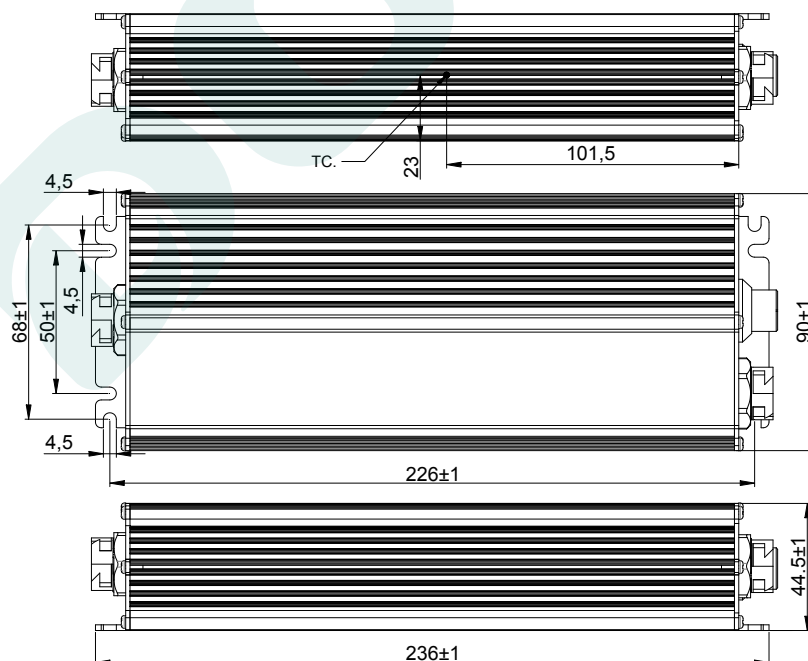
Size (mm) L236mm*W83mm*H40mm

DL-500W-V260X-PLS



Size (mm) L236mm*W90mm*H44.5mm

DL-500W-V260J-PLS

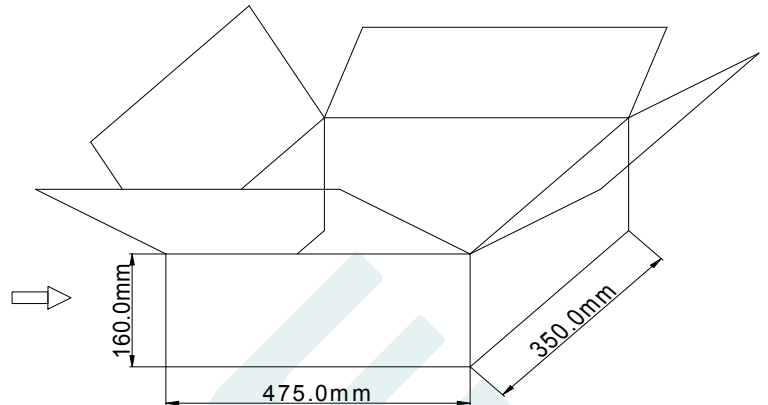
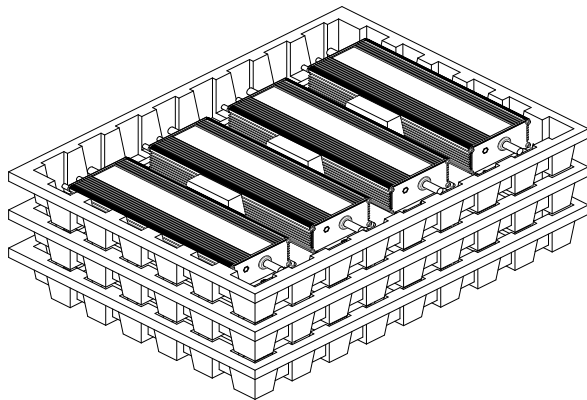


Weight

Weight 1450 g

Packaging

Packaging (mm) 475*350*160



Note: One Carton 3 layers and 4 pcs each layer, total 12pcs/carton.

Note:

1. According to the qualified certificate of the LED DRIVER, that with English label is for sale in Europe, America and India.
2. That with Chinese label are used for Chinese market.

Version

Date	Description	REV.	Check
2023.1.2	Initial version	V1.0	
2023.10.31	Add Tc point	V1.1	
2024.8.26	Add J-type power supply	V1.2	
2025.7.24	Add caution on page 12	V1.3	
2025.12.5	Modify mechanical specification	V1.4	

MANUFACTRUER		
EDIT	CHECK	APPROVE