

MXG SERIES LED DRIVERS

DL-600W-MXG SPEC V1.1

Features

- Class I structure
- Input voltage: 120-277 V ~ 50/60 Hz
- Efficiency :95%(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 3 in 1 dimming

- 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-600W-V56X/T-MXG	120-277V	600W	25-56Vdc	11.1A	≥95%	≤7%	≥0.97
DL-600W-V428X/T-MXG	50/60Hz		276-428Vdc	1.5A			

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 to 50%±10%.When the input 120-277VAC,rated power 600W.Please refer to “THE OUTPUT POWER VS INPUT VOLTAGE” curve chart for details.
3. DL-600W-V56/428T-MXG supports the external NTC function. When the temperature of the indicator board rises to a preset threshold, the power output decreases. 10K, BK3350-3399 is recommended for external NTC, Murate NCP18XH103J03RB is recommended (setting required temperature parameters by off-line programming).

Input characteristics

Parameter	Min	Typ.	Max	Note
Rated input voltage	120Vac	230Vac	277Vac	
Input voltage range	90Vac		305Vac	
Rated frequency	47Hz	50/60Hz	63Hz	
Power factor	-	0.97	-	@230Vac full load
T.H.D.	-	-	7%	@230Vac full load
Input current	-	-	6.5A	@120Vac full load
Inrush current	-	-	100A	230Vac, cold start (25℃)

Output characteristic

Parameter	Min	Typ.	Max	Note
Rated current				
DL-600W-V56X/T-MXG	-	10.71A	-	
DL-600W-V428X/T-MXG		1.40A		
Output current range				
DL-600W-V56X/T-MXG	7.1A	-	13.0A	
DL-600W-V428X/T-MXG	0.93A		1.68A	
Output voltage range				
DL-600W-V56X/T-MXG	25V	-	56V	
DL-600W-V428X/T-MXG	276V		428V	
Rated power(90-120Vac)	-	300W	600W	The derating begins when the input voltage is less than $108 \pm 10\%$ Vac
Rated power(120-277Vac)	-	600W	-	
No-load voltage				
DL-600W-V56X/T-MXG	-	-	63V	
DL-600W-V428X/T-MXG			460V	
Efficiency@120Vac				
DL-600W-V56X/T-MXG	-	93%	-	full load
DL-600W-V428X/T-MXG				

Output characteristic

Parameter	Min	Typ.	Max	Note
Efficiency@230Vac DL-600W-V56X/T-MXG DL-600W-V428X/T-MXG	-	95%	-	full load
Accuracy of output current	-3%	-	+3%	
output ripple current	-	5% maximum current	-	100% load 20MHZ band Wide ripple current = RMS / The average
Line regulation	-3%	-	+3%	
Load regulation	-3%	-	+3%	
Starting time		-	1000ms 500ms	Full load@120Vac Full load@230Vac
12V output voltage	10.8 V	12V	13.2V	
12V output current	0 mA	-	250 mA	The reference place 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 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%	-
	Rated dimming voltage range	0V	-	10V	It can be set to negative dimming mode through program setting
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%	-

Note:

- Output current of dimming port: 108uA (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, the output power decreases to 50%±10%.
Output overload protection	Protection mode:hiccup mode,recovers automatically after fault condition is removed.
Output short circuit protection	Reduce current: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 to 50%±10%.
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℃ @201-277Vac, -40 ~ +40℃ @120-200Vac (refer to "Life Curve ")
Working humidity	20 ~ 95% RH, non condensing
Maximum Tc temperature	90℃
Storage temperature, humidity	-40~+85℃, 10 ~ 95% RH
Resistant to vibration	10 ~ 600Hz, 5G 12 min/cycle, X, Y, Z axis 72 min each
MTBF	230Khrs min. MIL-HDBK-217F (Ta=25℃)
Lifetime	70000 h @ housing temperature ≤75 ° c, 230Vac, 80% load, see section "housing temperature and life"

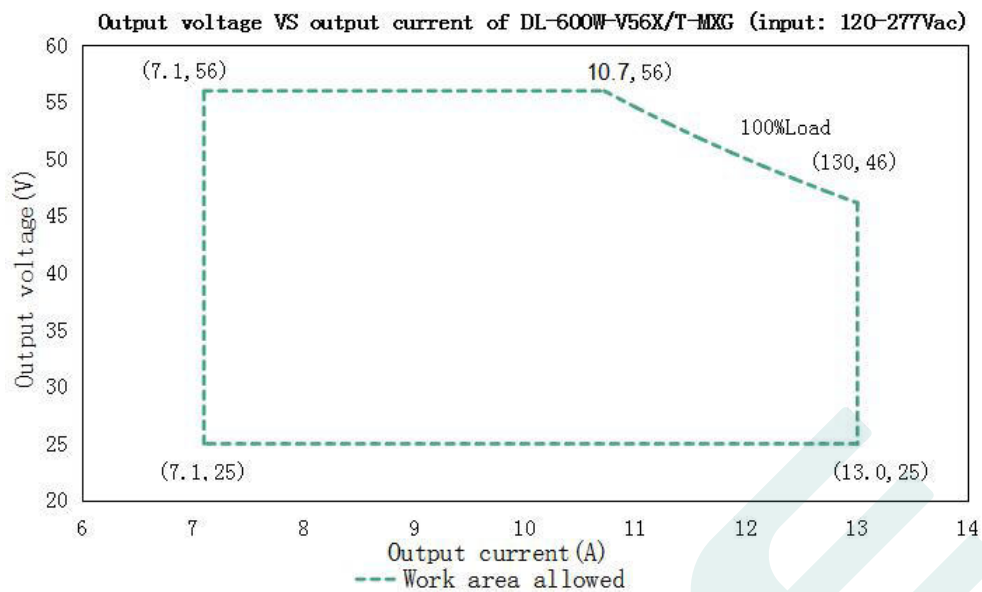
Safety and EMC

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 IEC 55015、EN IEC 61000-3-2 、GB/T 17743、GB17625.1、 EN 61000-3-3、 EN 61547
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 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 / 600VDC; I/P-O/P:100M Ω / 600VDC / 25 $^{\circ}\text{C}$ / 70% RH
Leakage current	<0.7mA@230Vac

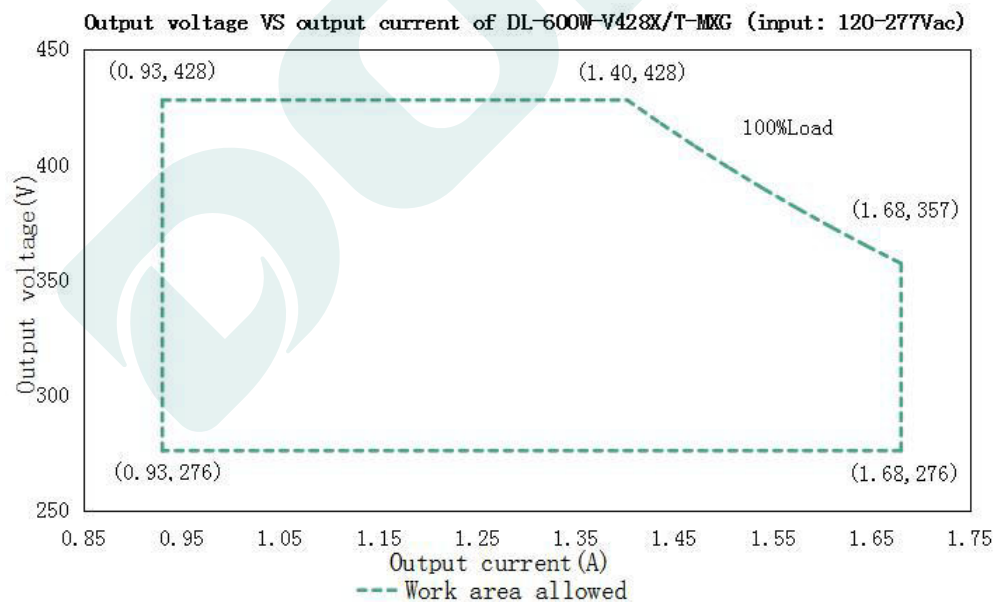
Note:

- 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



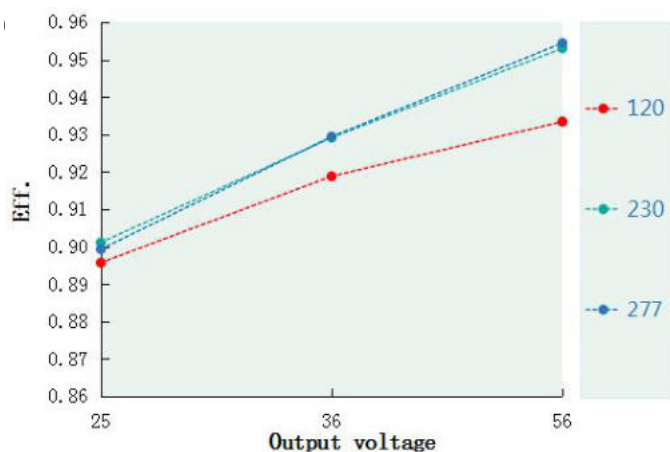
Load	Output								
Load working Voltage	25V	29V	33V	37V	42V	45V	48V	52V	56V
Io_MAX	13.0A	13.0A	13.0A	13.0A	13.0A	13.0A	12.5A	11.54A	10.71A
Po_MAX	325W	377W	429W	481W	546W	585W	600W	600W	600W



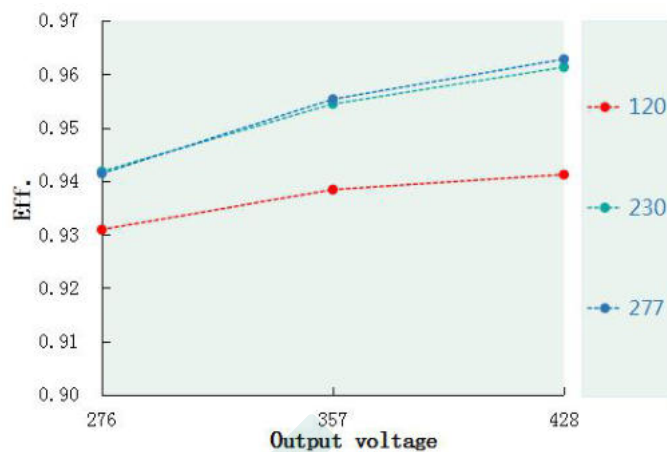
Load	Output								
Load working Voltage	276V	296V	316V	336V	357V	375V	396V	416V	428V
Io_MAX	1.68A	1.68A	1.68A	1.68A	1.68A	1.60A	1.52A	1.44A	1.40A
Po_MAX	464W	497W	531W	564W	600W	600W	600W	600W	600W

Seven

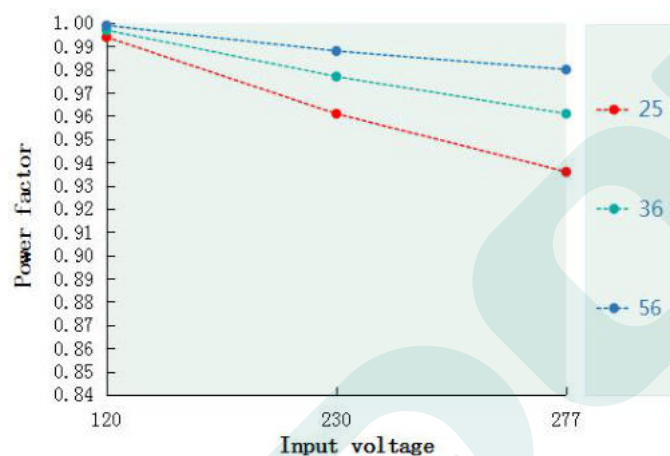
Eff. VS Output voltage(DL-600W-V56X/T-MXG)



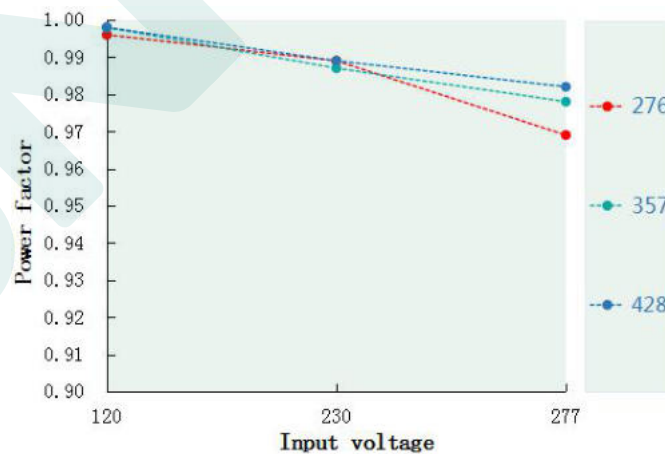
Eff. VS Output voltage(DL-600W-V428X/T-MXG)



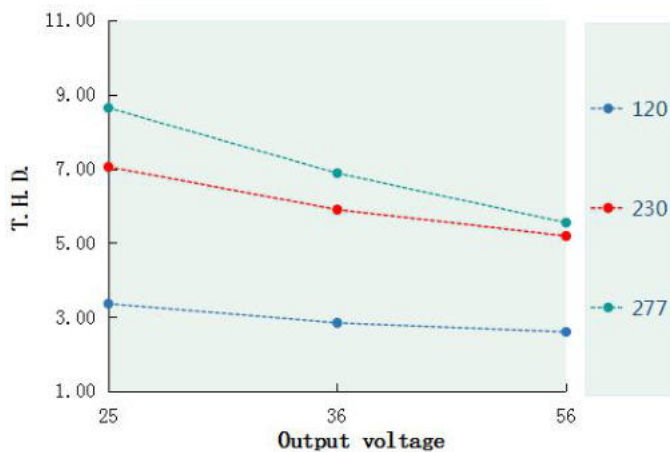
Power factor VS Input voltage(DL-600W-V56X/T-MXG)



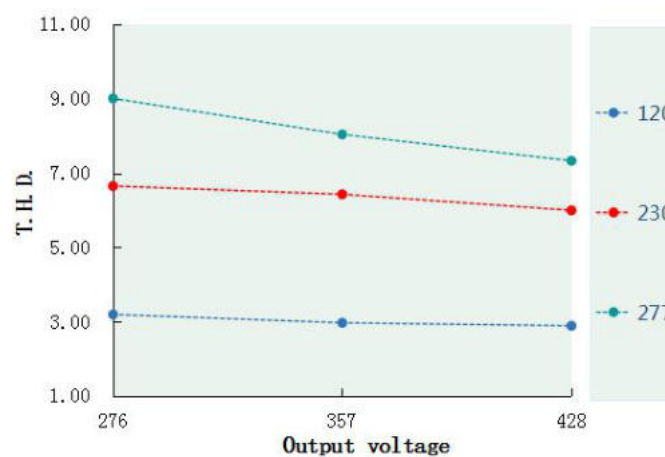
Power factor VS Input voltage(DL-600W-V428X/T-MXG)



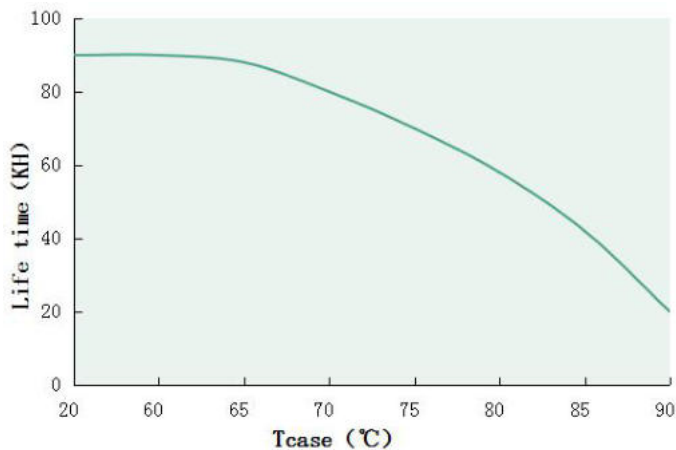
T.H.D. VS Output voltage(DL-600W-V56X/T-MXG)



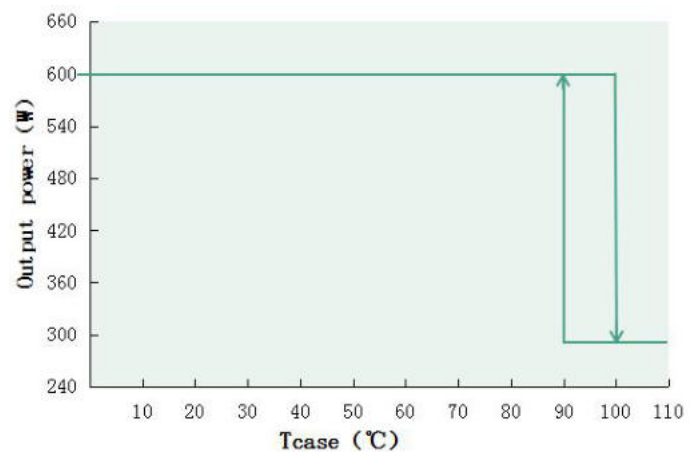
T.H.D. VS Output voltage(DL-600W-V428X/T-MXG)



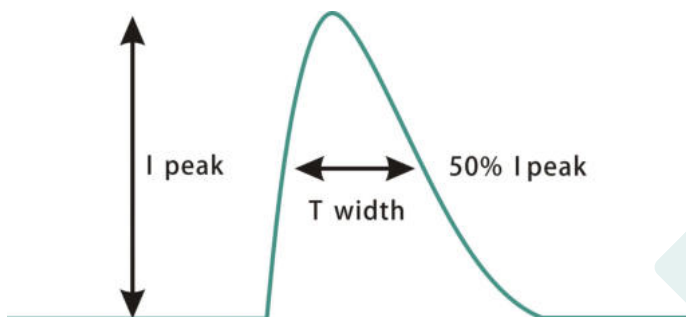
Tcase VS Lifetime(DL-600W-V56X/T-MXG)



Output power VS Tcase (DL-600W-MXG)

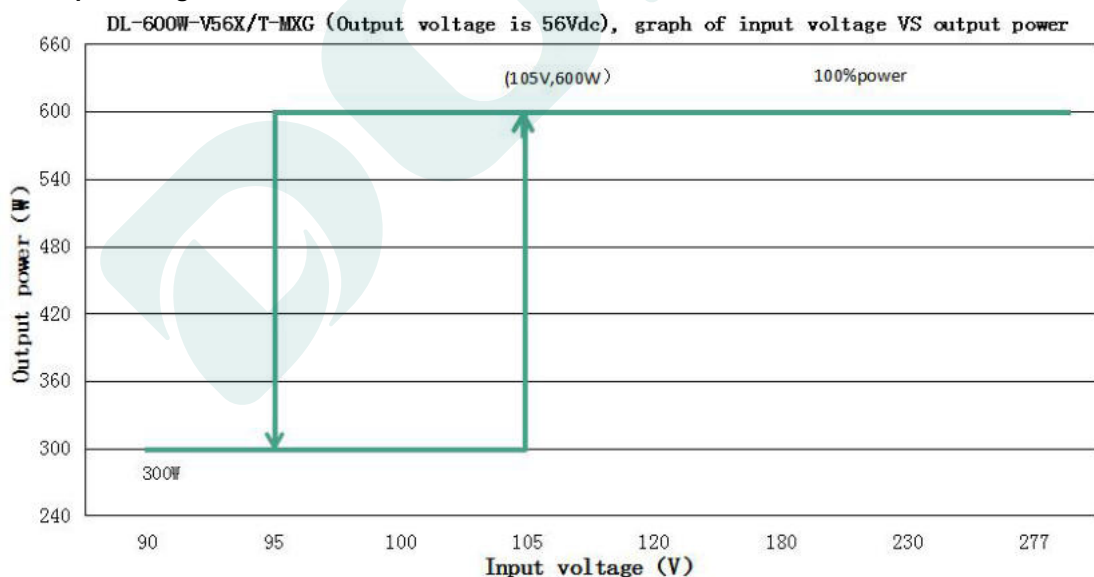


Inrush Current(DL-600W-MXG)



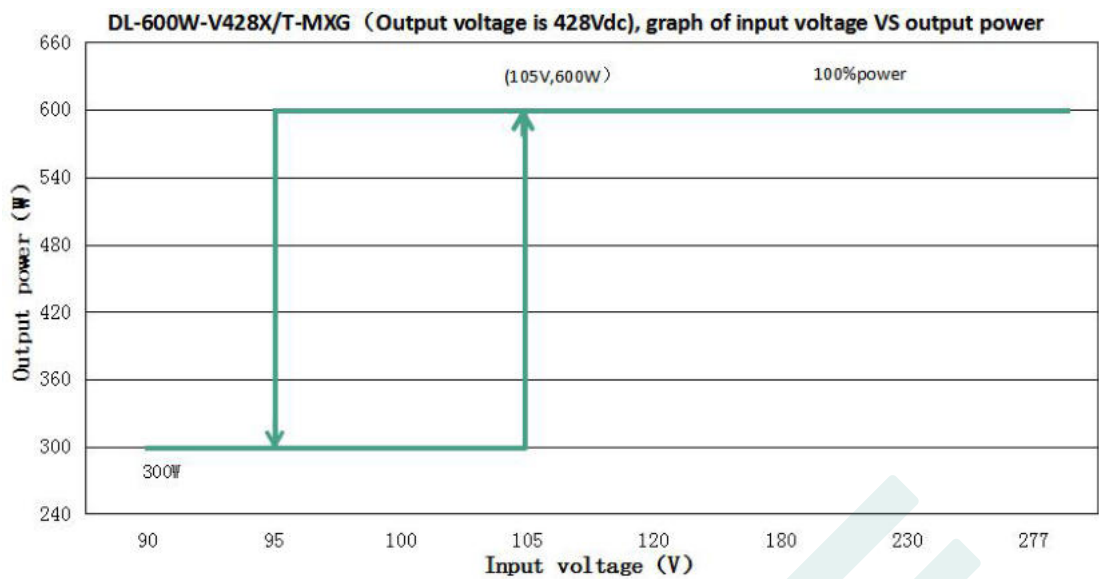
Input voltage	Peak current	T(@50% Peak current)
120Vac	24A	2000us
230Vac	35A	5000us
277Vac	48A	3500us

Output power VS Input voltage



DL-600W-V56X/T-MXG (When the output voltage is 56Vdc, the rated output current value and output power corresponding to different input voltage)

Input Voltage	90Vac	96Vac	100Vac	106Vac	120Vac	180Vac	230Vac	277Vac
Iout	5.36A	5.36A	5.36A	10.71A	10.71A	10.71A	10.71A	10.71A
Pout	300W	300W	300W	600W	600W	600W	600W	600W



DL-600W-V428X/T-MXG (When the output voltage is 428Vdc, the rated output current value and output power corresponding to different input voltage)

Input Voltage	90Vac	95Vac	100Vac	105Vac	120Vac	180Vac	230Vac	277Vac
Iout	0.70A	0.70A	0.70A	1.40A	1.40A	1.40A	1.40A	1.40A
Pout	300W	300W	300W	600W	600W	600W	600W	600W

Note:

1.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±10% .

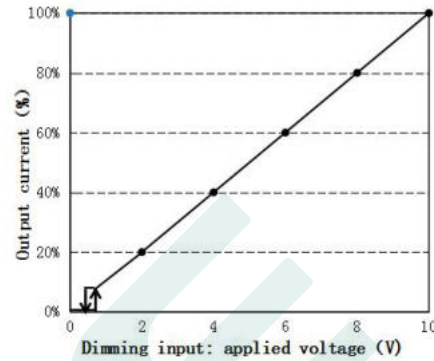
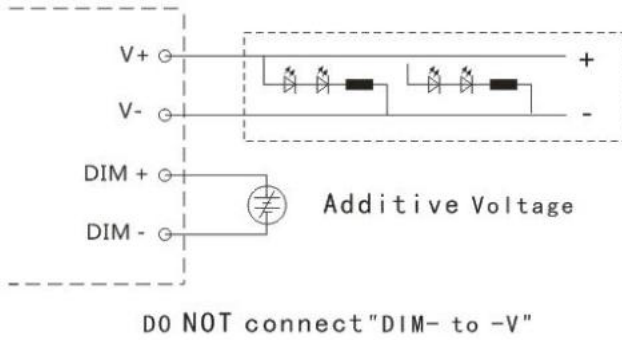
2.When the input voltage is 90-106Vac,the output power range is 300W±10%.

Dimming operation

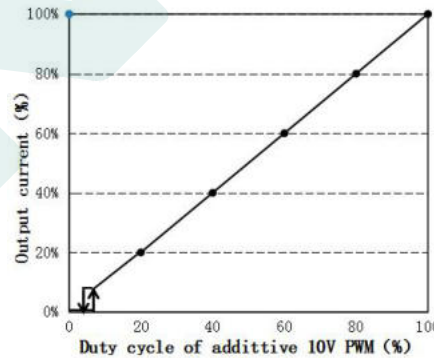
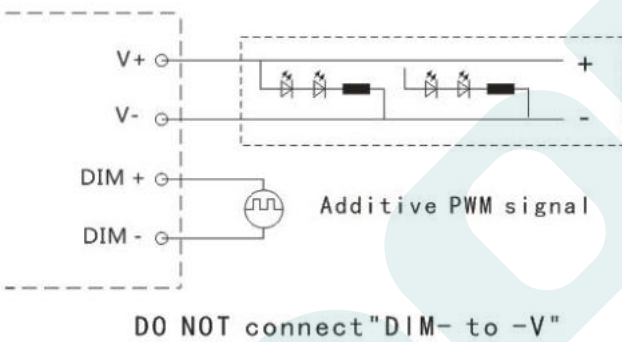
※ Three-in-one dimming function (X/T version)

- 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: 108uA (typical value).

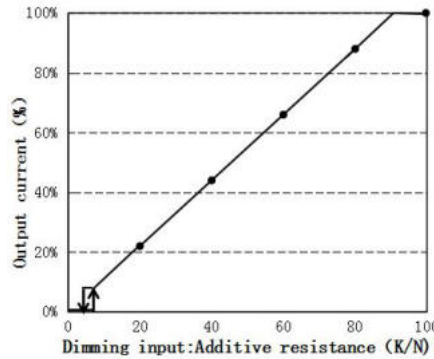
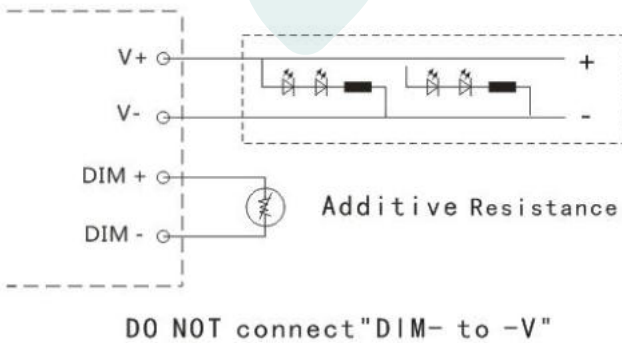
◎ With an applied voltage of 0-10V:



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



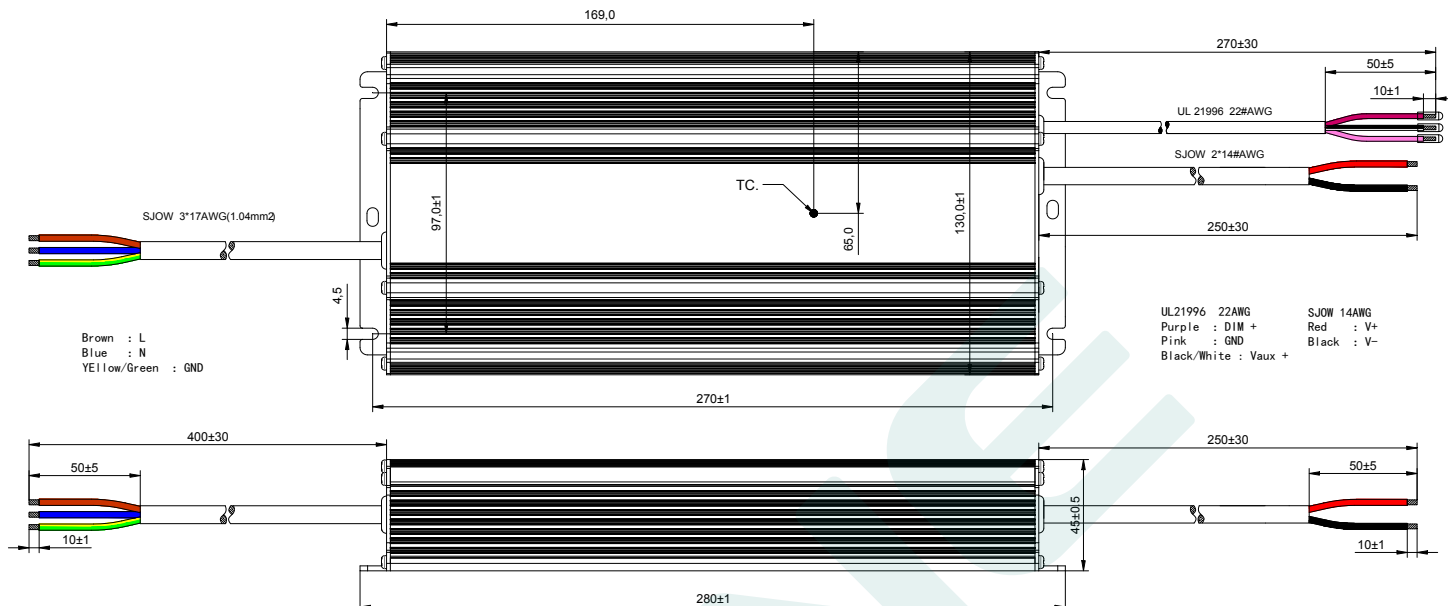
◎ With an additional 0-100K resistor:



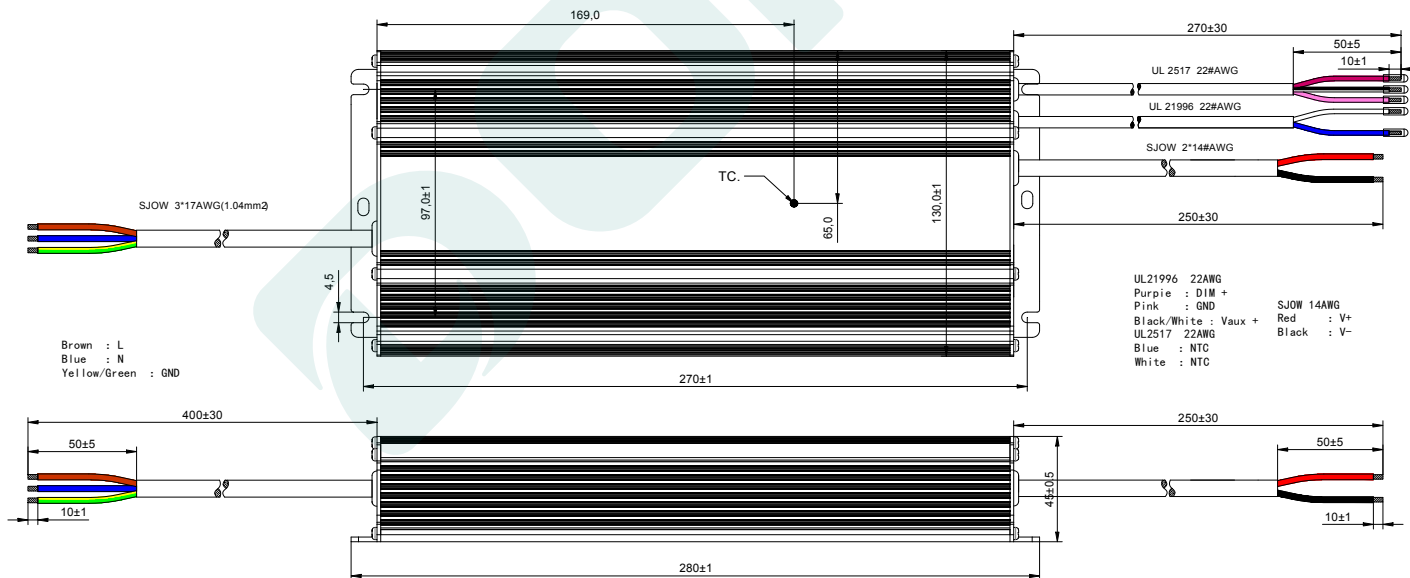
Mechanical specification

Size (mm) L280mm*W130mm*H45mm

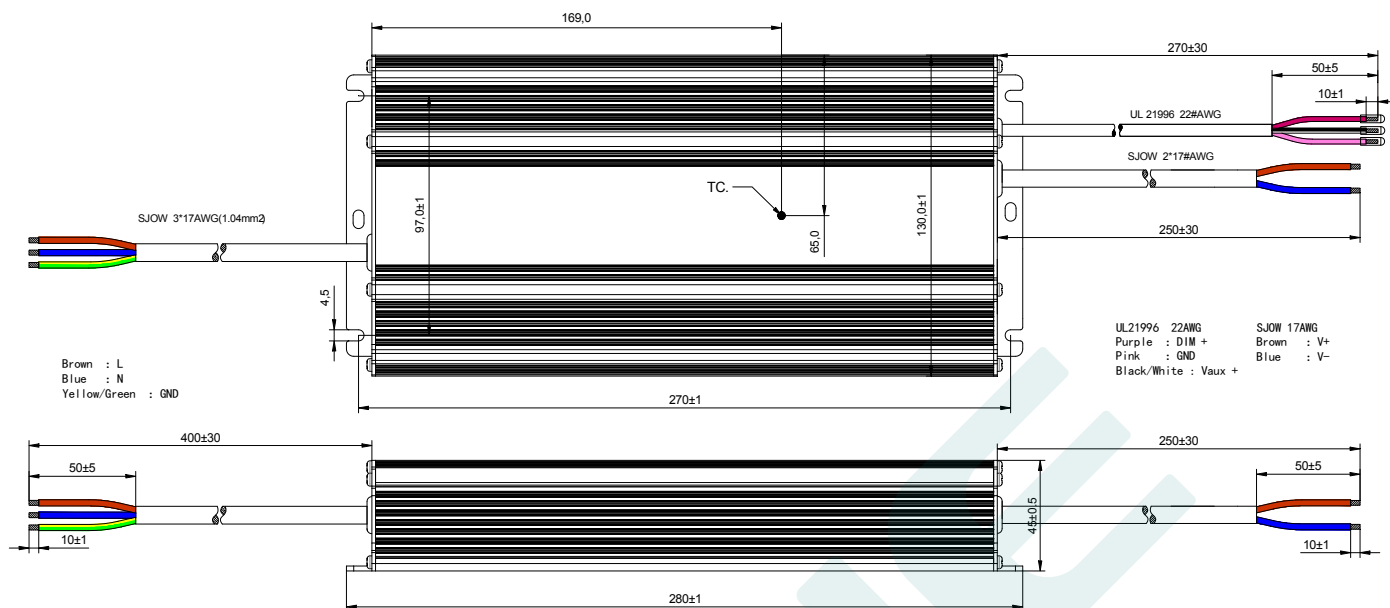
DL-600W-V56X-MXG



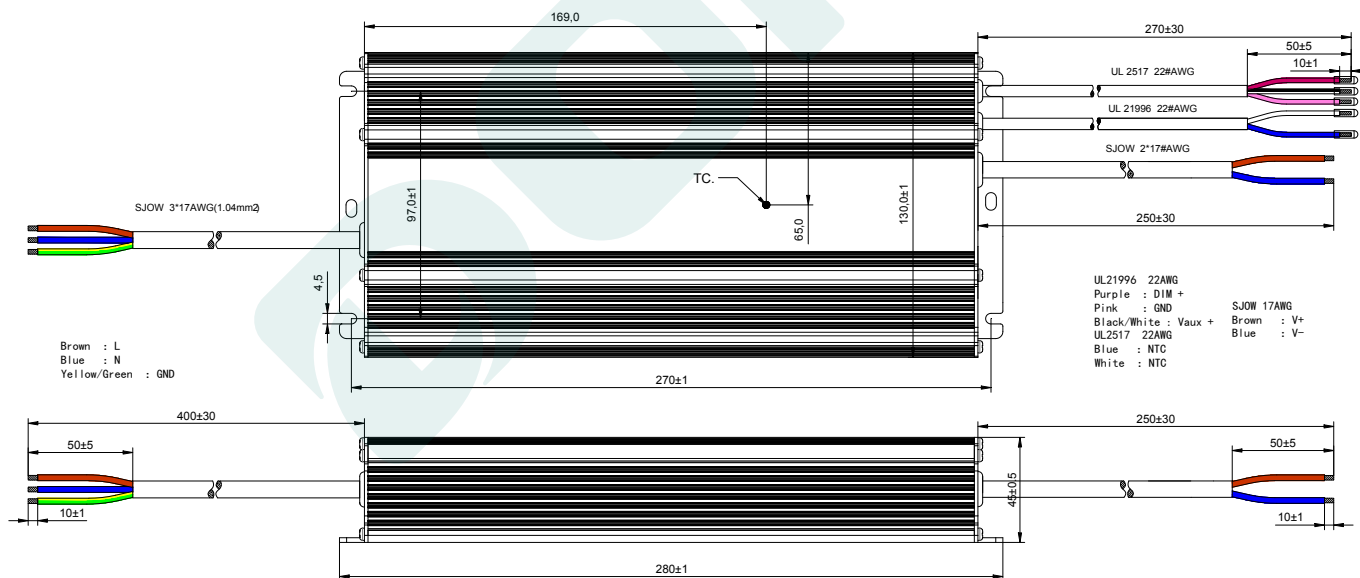
DL-600W-V56T-MXG



DL-600W-V428X-MXG



DL-600W-V428T-MXG



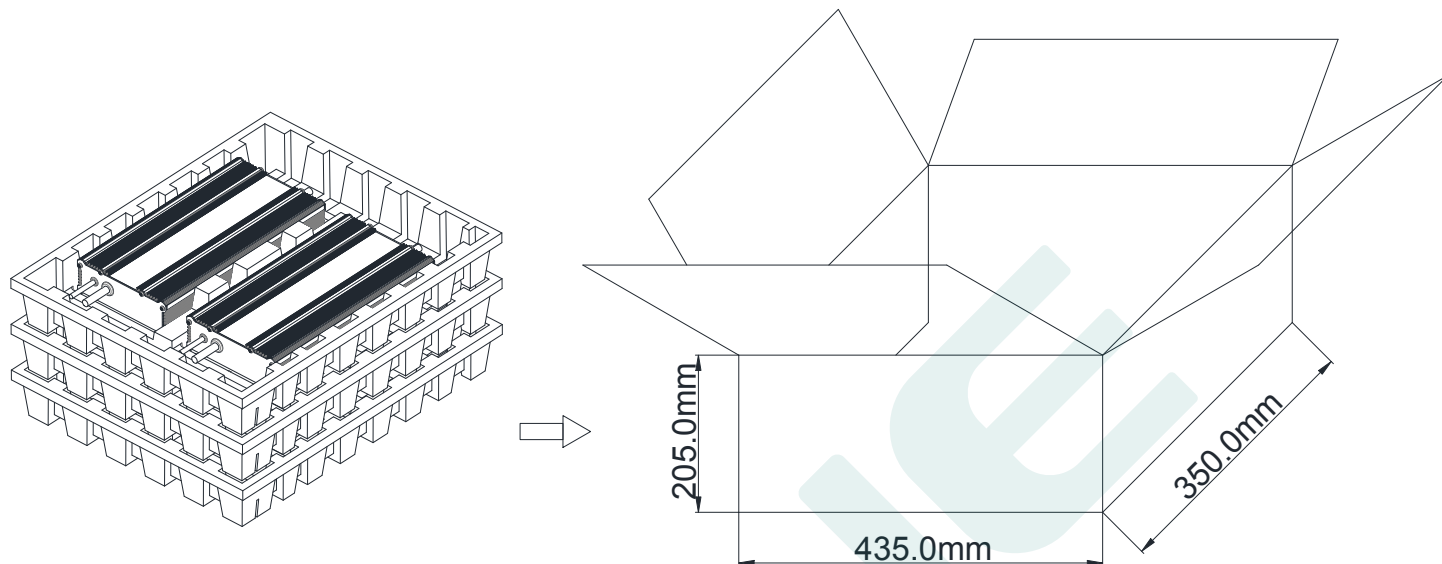
Weight

Weight

3150g

Packaging

Packaging (mm) L435*W350*H205



Note: One Carton 3 layers and 2 pcs each layer, total 6pcs/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
2022.12.01	Initial version.	V1.0	
2022.7.25	Add high voltage models	V1.1	蒋洪 2023.08.02 14:05:52 +08'00' 李强 LQ 2023.08.02 14:13:36 +08'00'

MANUFACTRUER		
EDIT	CHECK	APPROVE
彭少龙 PSL 2023.08.01 11:20:42 +08'00'	郭照康 GZK 2023.08.01 11:26:43 +08'00'	张鸿生 数字签名者：张鸿生 DN：cn=张鸿生,o,ou, email=978425630@qq.co m,c=<无 日期：2023.08.02 14:41:45 +08'00'