

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.

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°C) |

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 | - | 93% | - | full load |

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: 108 μA (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" |

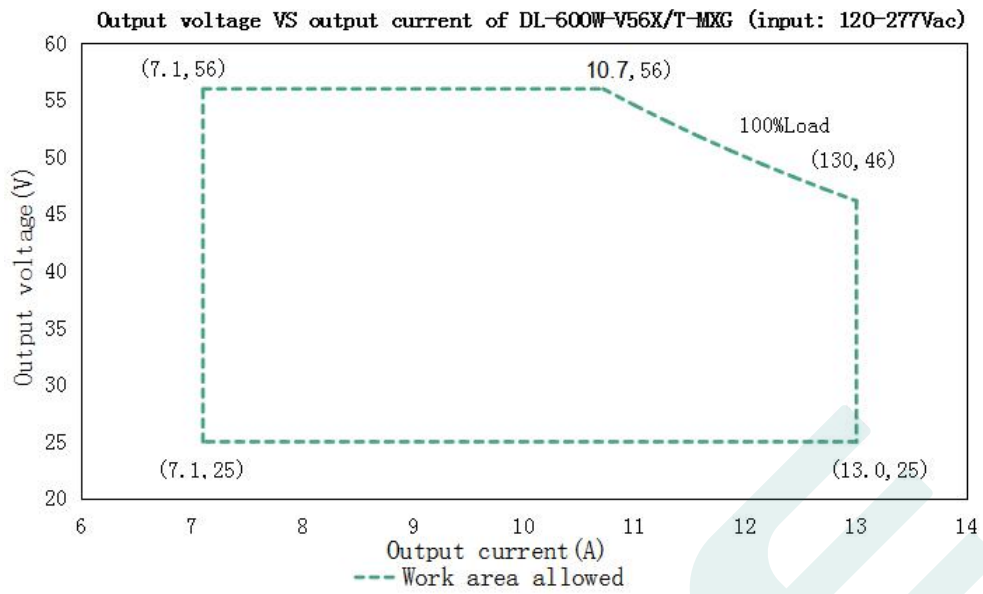
Safety and EMC

| 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 $\pm 6KV$ (2 ohm) ,common mode L, N-PE $\pm 15 KV$ (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:3.75KVac O/P-DIM:1.5KVac |
| Insulation impedance | I/P-PE:100M Ω / 600VDC; I/P-O/P:100M Ω / 600VDC / 25 $^{\circ}C$ / 70% RH |
| Leakage current | <0.7mA@230Vac |

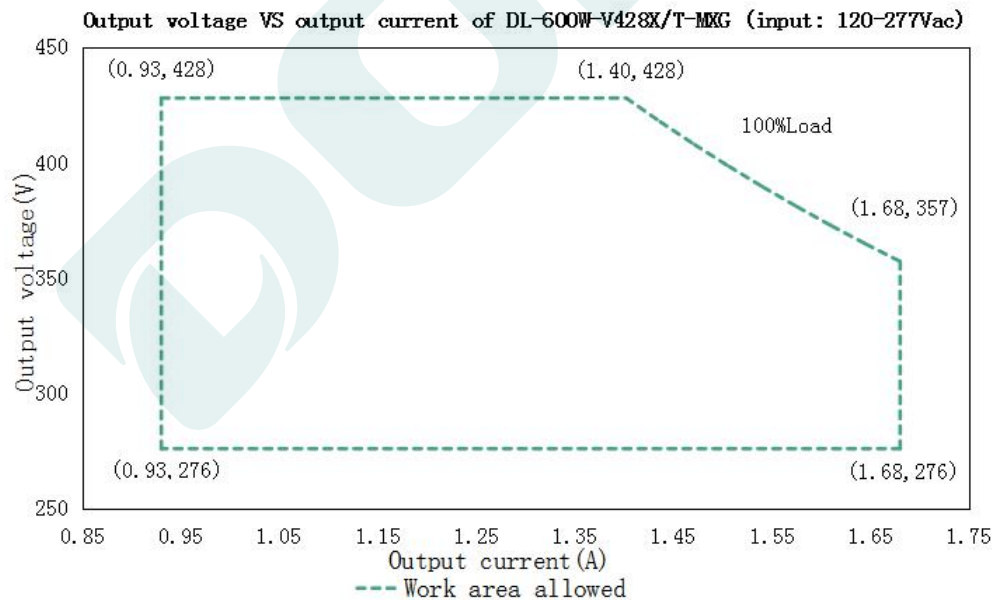
Note:

- 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

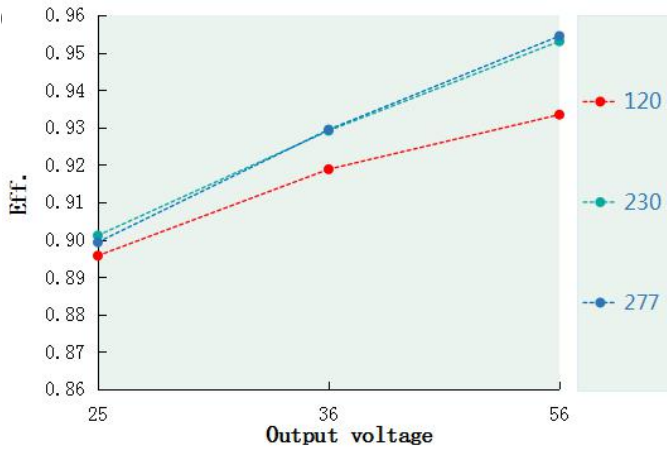


| Load | Output | | | | | | | | |
|----------------------|--------|-------|-------|-------|-------|-------|-------|--------|--------|
| Load working Voltage | 25V | 29V | 33V | 37V | 42V | 45V | 48V | 52V | 56V |
| Io_MAX | 13.0A | 13.0A | 13.0A | 13.0A | 13.0A | 13.0A | 12.5A | 11.54A | 10.71A |
| Po_MAX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

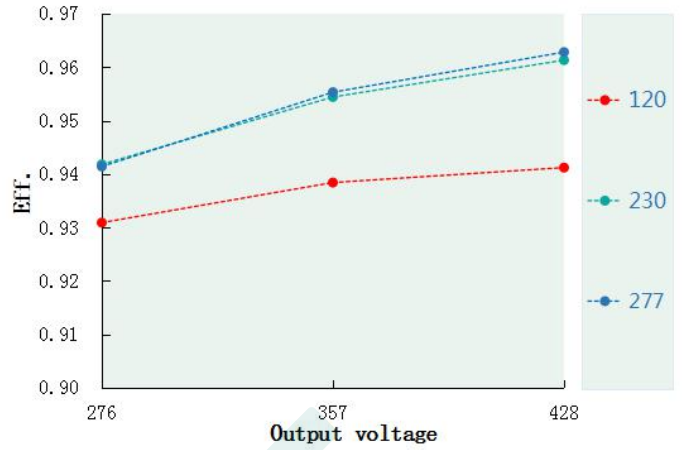


| Load | Output | | | | | | | | |
|----------------------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| Load working Voltage | 276V | 296V | 316V | 336V | 357V | 375V | 396V | 416V | 428V |
| Io_MAX | 1.68A | 1.68A | 1.68A | 1.68A | 1.68A | 1.60A | 1.52A | 1.44A | 1.40A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

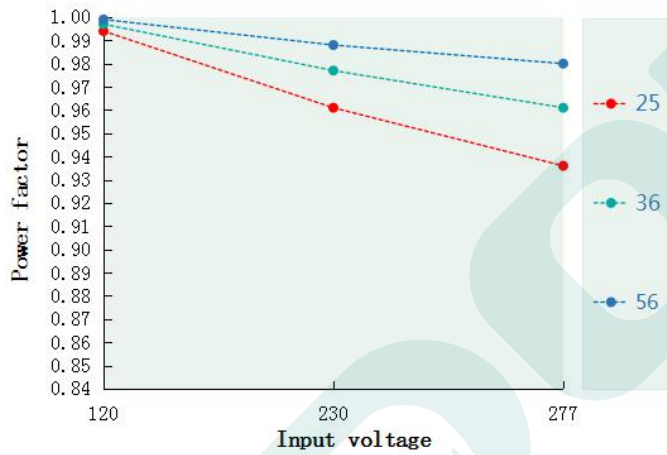
Eff. VS Output voltage(DL-600W-V56X/T-MXG)



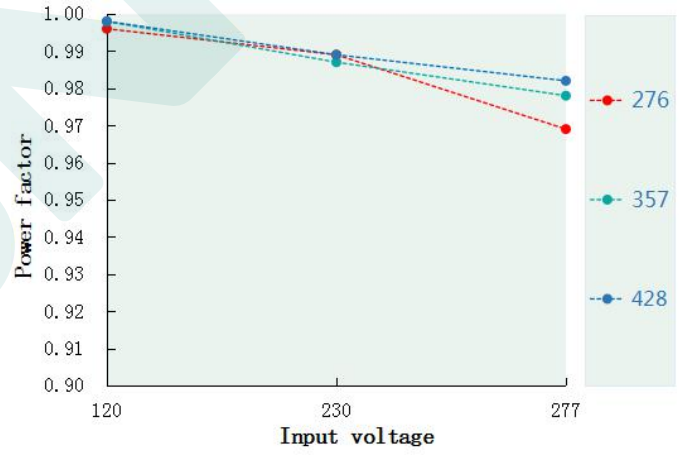
Eff. VS Output voltage(DL-600W-V428X/T-MXG)



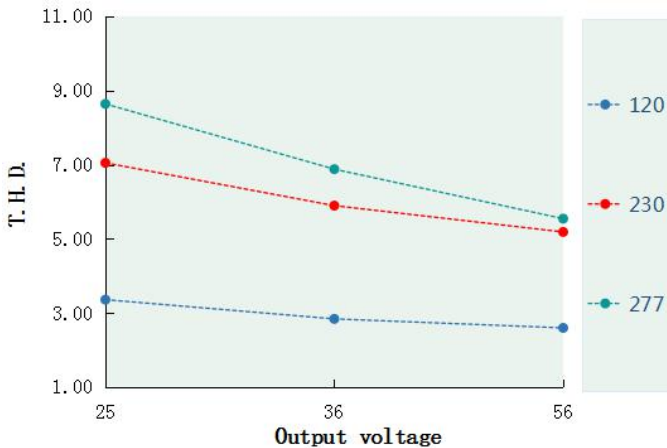
Power factor VS Input voltage(DL-600W-V56X/T-MXG)



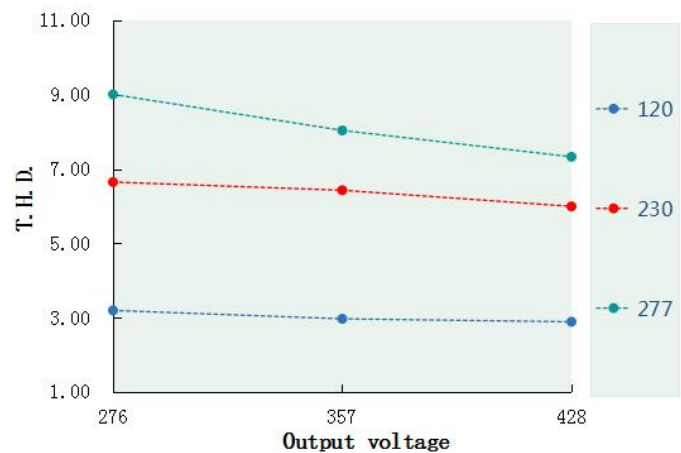
Power factor VS Input voltage(DL-600W-V428X/T-MXG)



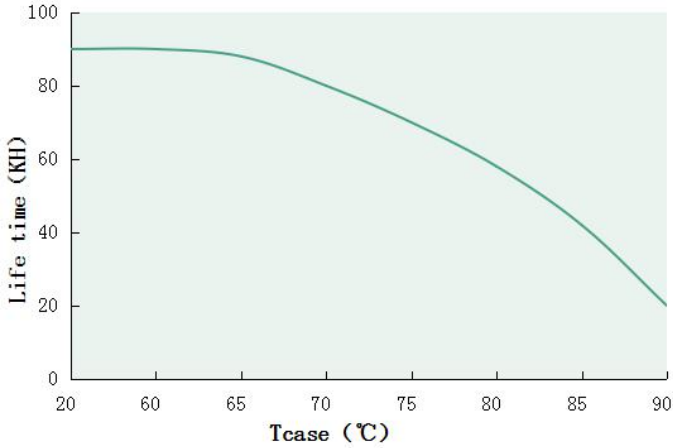
T.H.D. VS Output voltage(DL-600W-V56X/T-MXG)



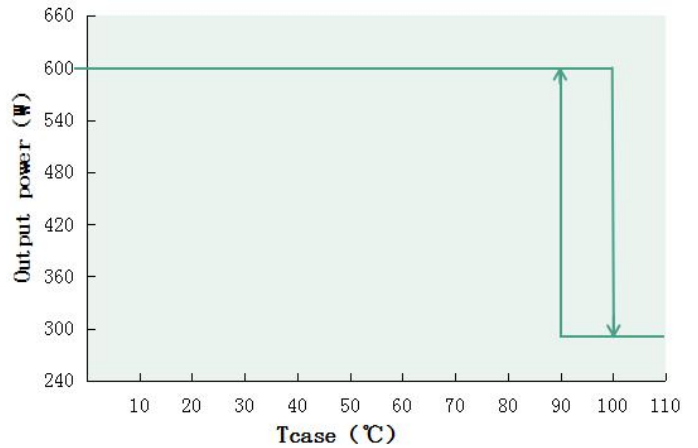
T.H.D. VS Output voltage(DL-600W-V428X/T-MXG)



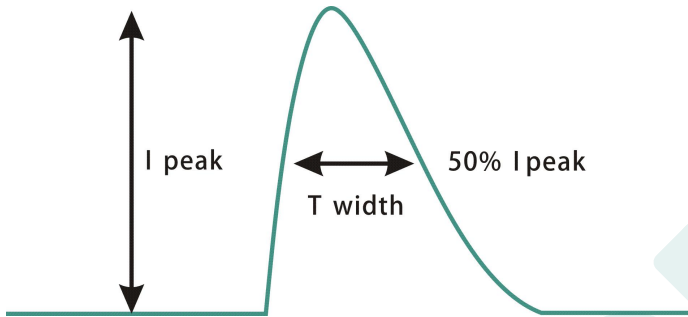
Tcase VS Lifetime(DL-600W-V56X/T-MXG)



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

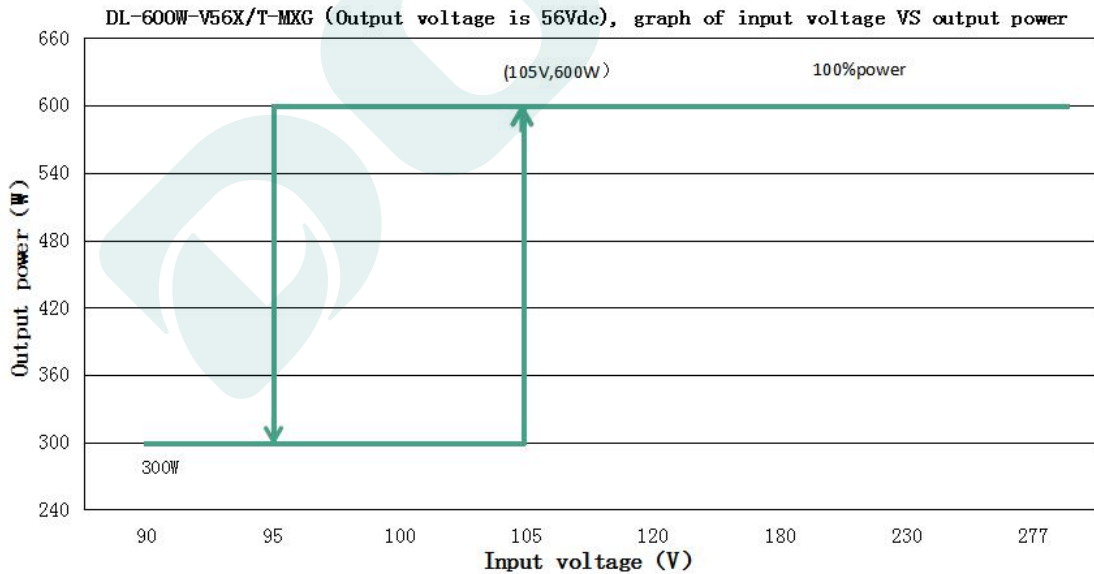


Inrush Current(DL-600W-MXG)



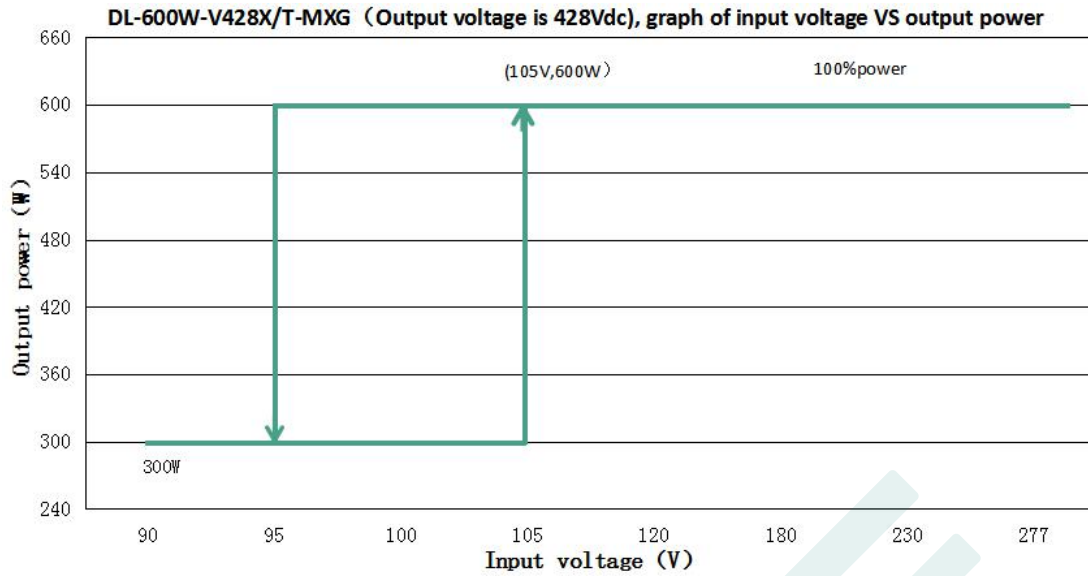
| Input voltage | Peak current | T(@50% Peak current) |
|---------------|--------------|----------------------|
| 120Vac | 24A | 2000us |
| 230Vac | 35A | 5000us |
| 277Vac | 48A | 3500us |

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 |

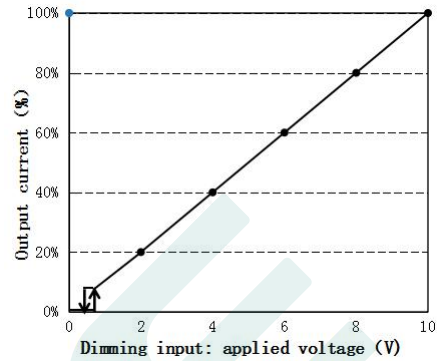
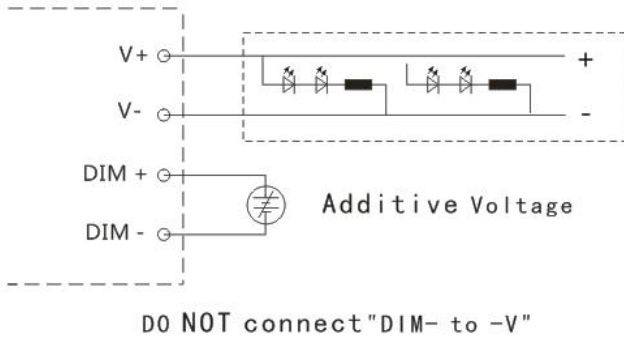
- Note:**
- 1.Input voltage will fluctuate,resistance error and other factors.At the decrease or increase of power ($V_{in}=108V_{ac}$),it will move left and right,with the range of $108V \pm 10\%$.
 - 2.When the input voltage is 90-106Vac,the output power range is $300W \pm 10\%$.

Dimming operation

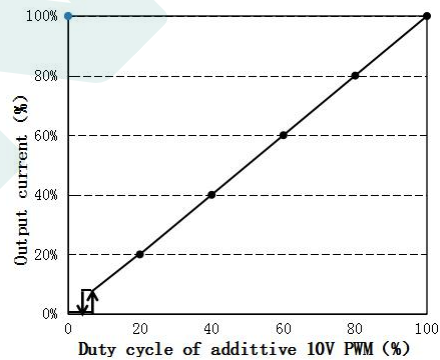
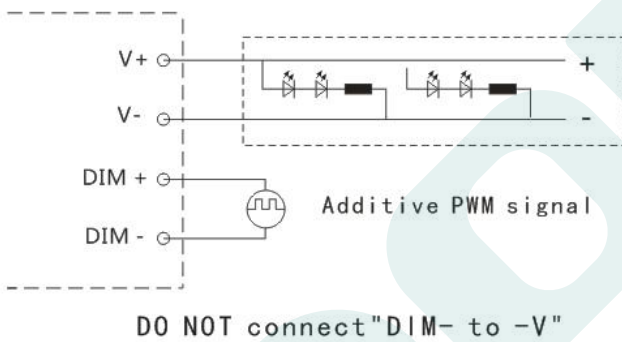
※ Three-in-one dimming function (X/T version)

- 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).

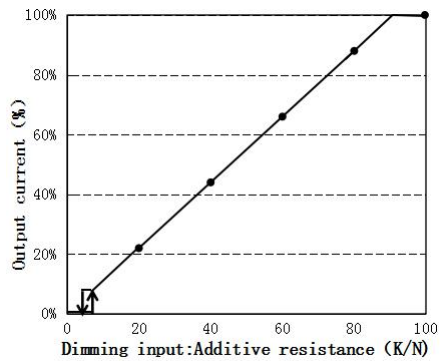
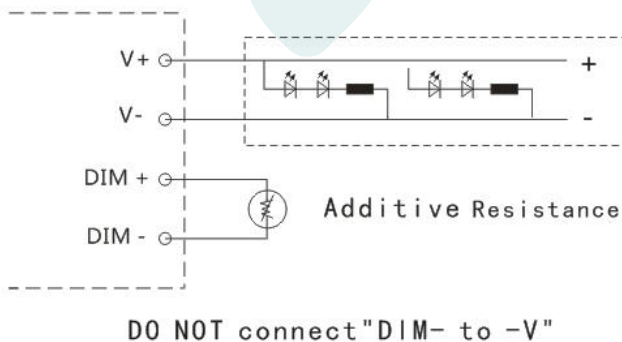
◎ With an applied voltage of 0-10V:



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



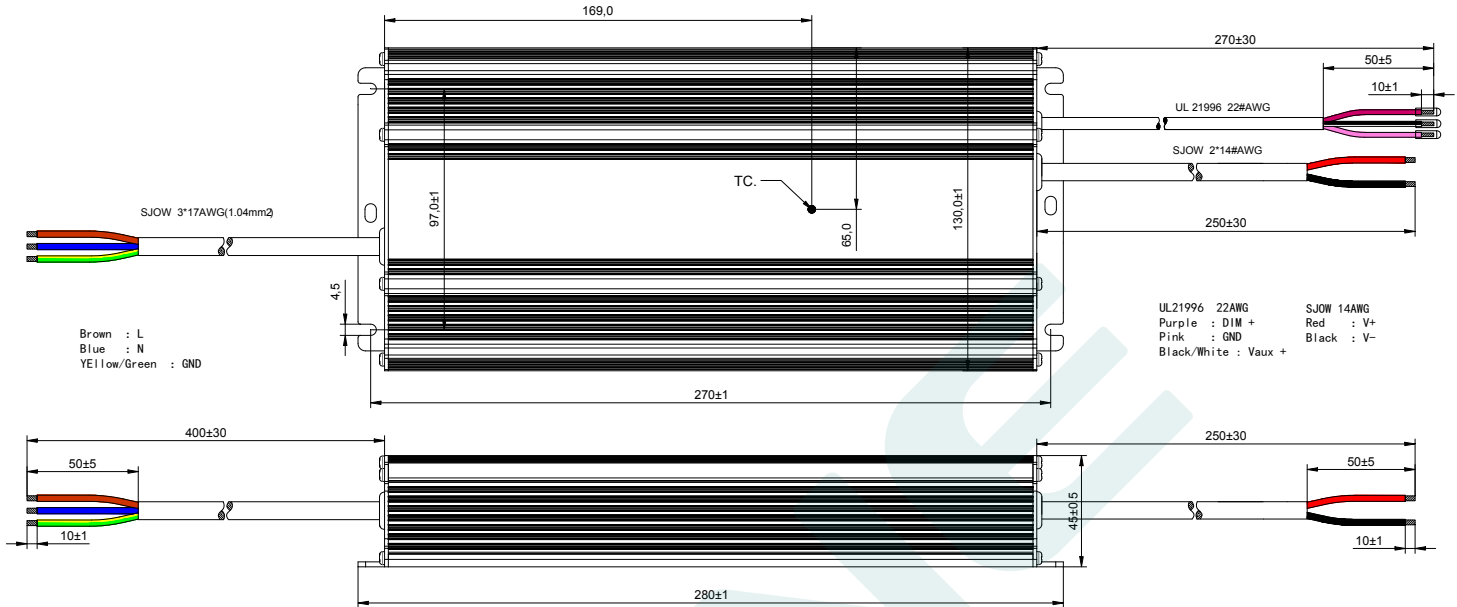
◎ With an additional 0-100K resistor:



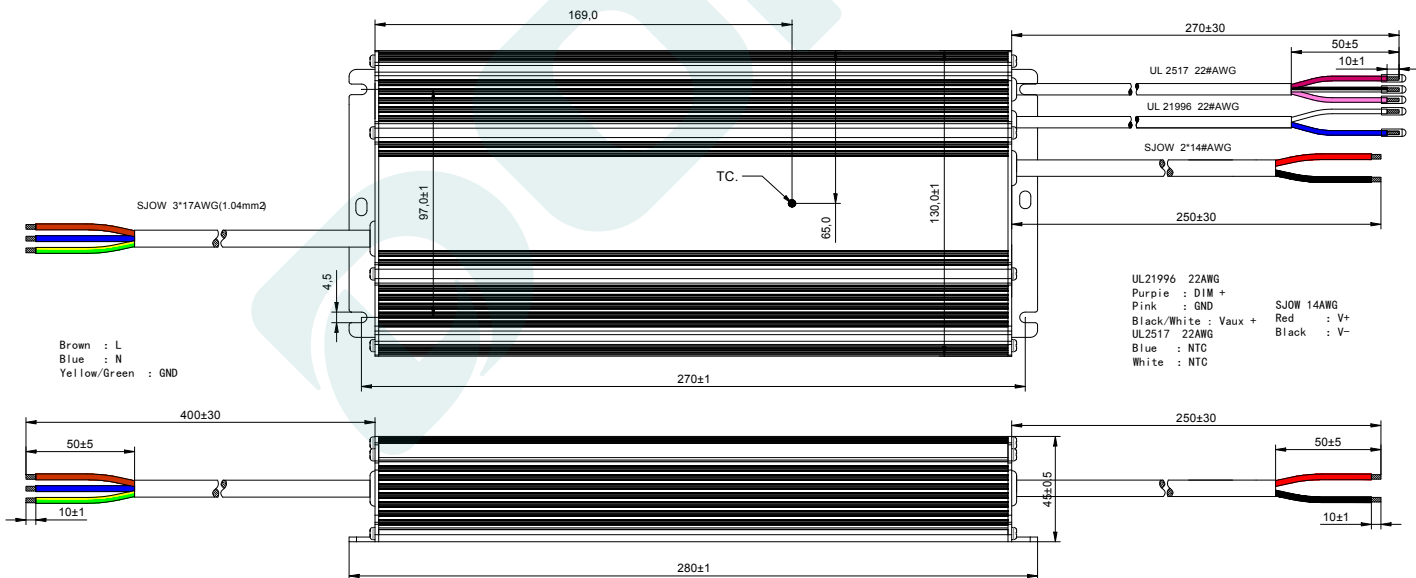
Mechanical specification

Size (mm) L280mm*W130mm*H45mm

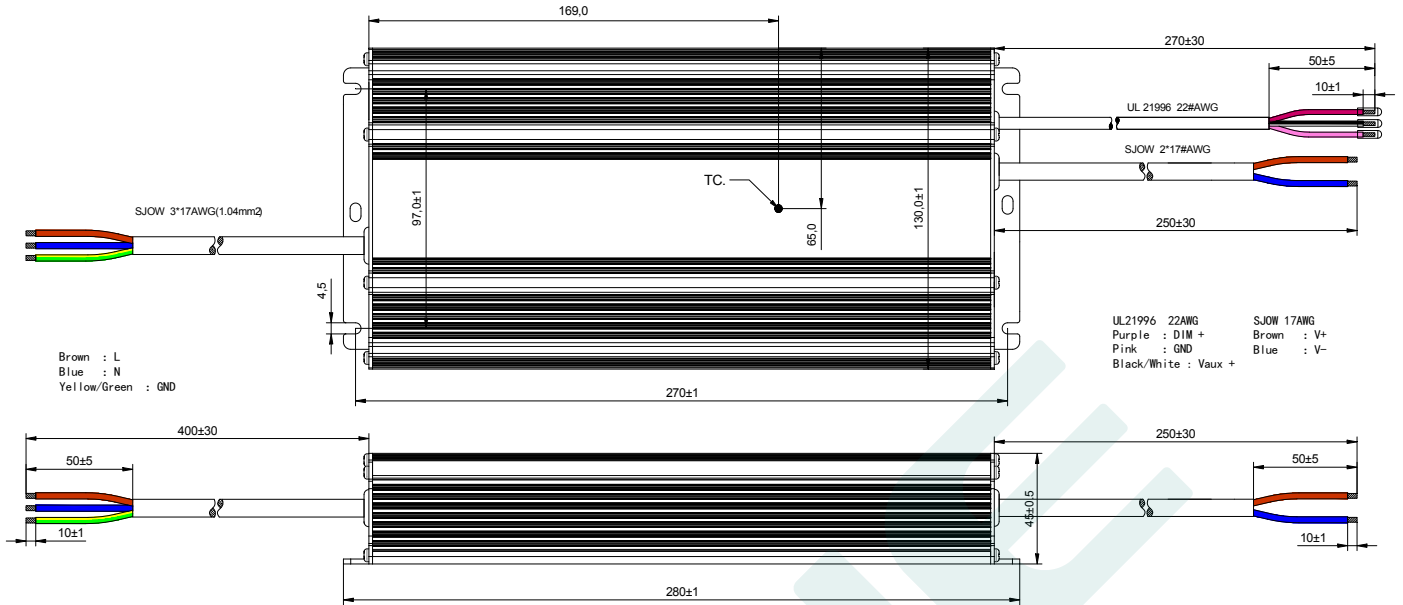
DL-600W-V56X-MXG



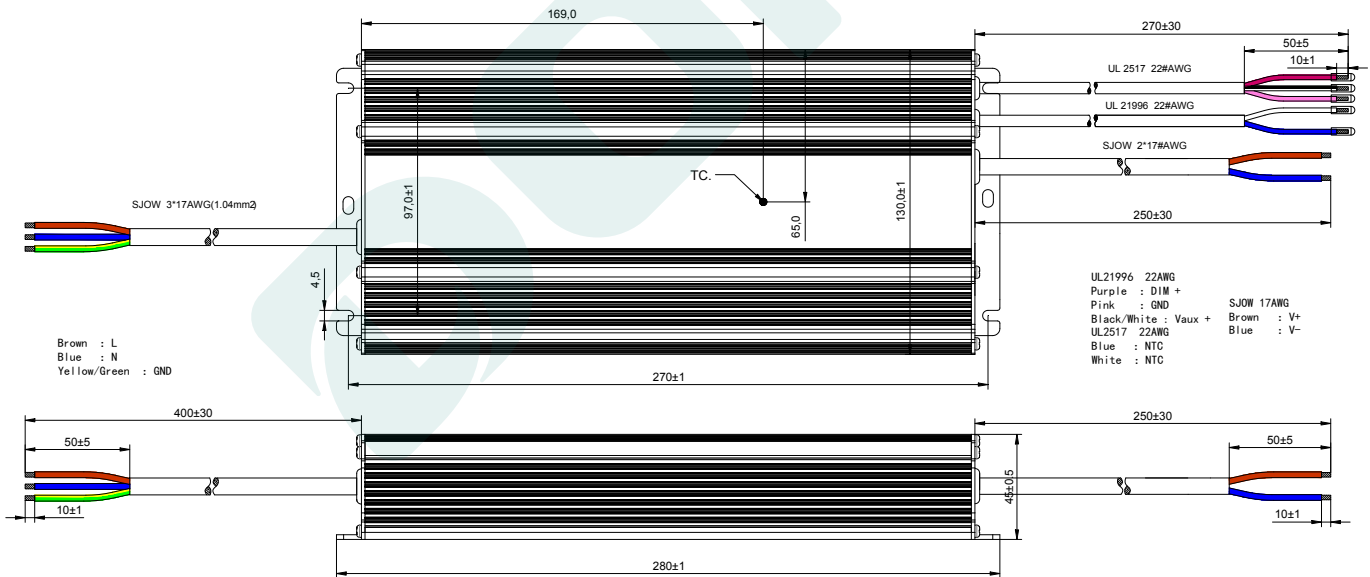
DL-600W-V56T-MXG



DL-600W-V428X-MXG



DL-600W-V428T-MXG

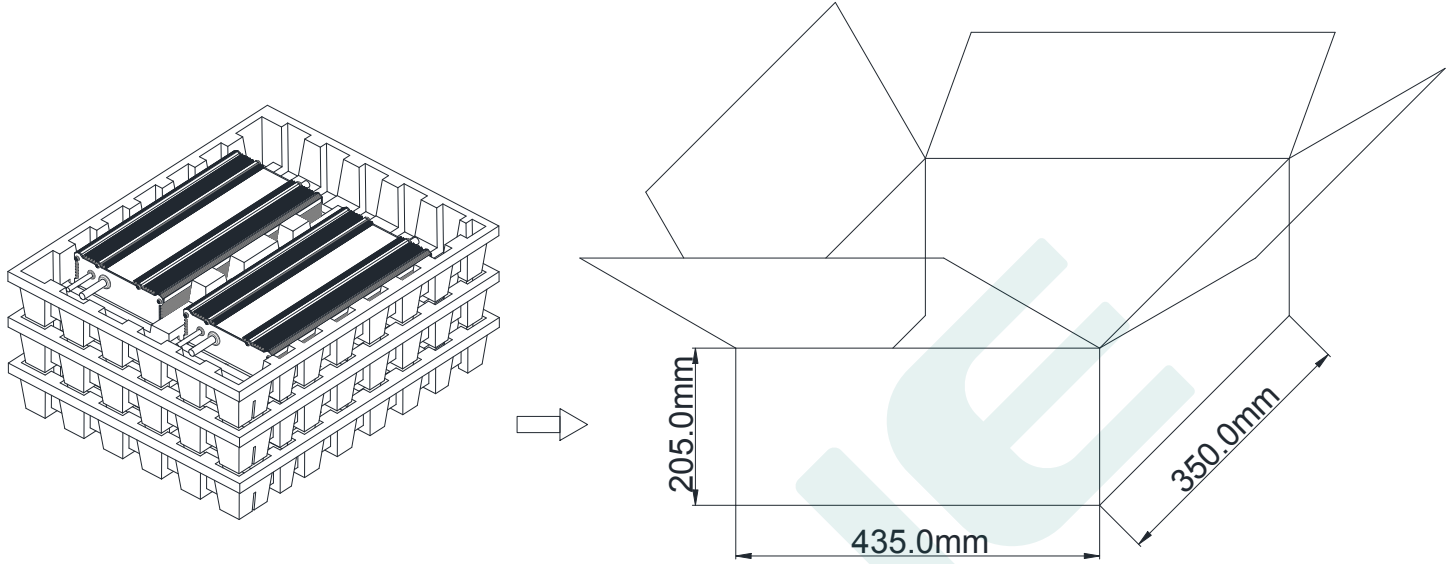


Weight

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 | |
| | | | |
| | | | |

MANUFACTRUER

| EDIT | CHECK | APPROVE |
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