



MXS SERIES LED DRIVER

DL-680Z-X/J-MXS SPEC V1.0



Features

- Class I type for insulation(pending)
- Input voltage range: 100-277 V ~ 50/60 Hz
- Efficiency :95.5%(Typ.)
- Constant current output ,with power limitation for control mode
- Metal case, protection grade against water and dust: IP67
- Surge level:
 - differential mode :6kV,
 - common mode :15kV
- Function selection:
 - Isolated 3 in 1 dimming
 - Auxiliary source: 12V/250mA
- Lifetime design: 5years



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.	PF
DL-680Z-56X-MXS	100-277V	680W	36-56Vdc	13A	≥95.5%	≤10%	≥0.96
DL-680Z-56J-MXS	50/60Hz						

- Note :**
1. Test conditions: Ta=25°C, under 230Vac input,after running for 30 minutes with full load.
 2. When the input is less than 108Vac, users must reduce the output power to within 400W. The output power within the rated and input voltage range should not be less than 70W.
 3. When the input 120-277VAC, rated power 680W. Please refer to "THE OUTPUT POWER VS INPUT VOLTAGE" curve chart for details.

Input characteristics

Parameter	Min	Typ.	Max	remark
Rated input voltage	100Vac	230Vac	277Vac	Users must reduce the output power to within 400W, when the input voltage is less than 108Vac
Input voltage range	90Vac	-	305Vac	
Rated frequency range	47Hz	50/60Hz	63Hz	
Power factor	-	0.96	-	@230Vac input ,with full load
T.H.D.	-	-	10%	@230Vac input ,with full load
Input current	-	-	6.2A	@120Vac input ,with full load
Inrush current	-	-	150A	230Vac, cold start (25°C)

Output characteristics

Parameter	Min	Typ.	Max	remark
Rated current DL-680Z-56X/J-MXS	-	12.14A	-	
Output current range DL-680Z-56X/J-MXS	11A	-	14.8A	
Output voltage range DL-680Z-56X/J-MXS	36V	-	56V	Constant power voltage range: 46-56V
Rated power(90-108±10Vac)	-	400W	-	Users must reduce the output power to within 400W, when the input voltage is less than 108Vac
Rated power(120-277Vac)	-	680W	-	
No-load voltage DL-680Z-56X/J-MXS	-	-	60V	
Efficiency@120Vac DL-680Z-56X/J-MXS	-	93.5%	-	full load @ 120 vac Output current 12.14A, 680W
Efficiency@230Vac DL-680Z-56X/J-MXS	-	95.5%	-	full load @ 230 vac Output current 12.14A, 680W

Output characteristics

Parameter	Min	Typ.	Max	Note
Current Accuracy	-3%	-	-3%	full load
Output ripple current	-	5% maximum current	-	100% load 20MHZ band Wide ripple current = RMS / Mean value
Line regulation	-3%	-	+3%	full load
Load regulation	-3%	-	+3%	full load
Starting time	-	-	3000ms 2500ms	Full load @120Vac Full load @230Vac
12V output line voltage	10.8V	12V	13.5V	
12V output line current	0mA	-	250mA	The reference is "12--"
Transient peak current of 12V output line @6W	-	-	500mA	In the 5.0ms cycle, the maximum duration of the maximum peak current of 500mA is 2ms, and the average value cannot exceed 250mA

Note: The output current range is limited by the input and output voltages, see the I-V working area for details

Dimming characteristics

Dimming function		Min	Typ.	Max	Instructions
0-10V Dimming (Optional)	Safe operation voltage range	0V	-	12V	Damage may occur if the external voltage is greater than or equal to 12V
	Dimming output range	10%	-	100%	-
	Rated operation voltage range	0V	-	10V	Negative dimming mode can be set through the 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	10%	-	99%	Full power output at 99% duty cycle
Resistor Dimming (Optional)	Rated external resistance value	10KΩ	-	100KΩ	-
	Dimming output range	10%	-	100%	-

Note:

1. Dimming port output current: 108uA(typical value).
2. The dimmer port can withstand a maximum voltage of 12V. If the voltage of the external power supply exceeds 12V or the signal cable is reversed, the power supply may be damaged.

Protection

Protection	description
Over Load Protection	Protection mode: hiccup restart mode. After abnormal load conditions are removed, the system automatically recovers
Output short circuit protection	Hiccup mode, automatically recovered after abnormal conditions are removed
Over temperature protection	Self-recovery type; When the casing temperature is greater than 90°C, the output power decreases with the casing temperature increasing.
Output Over-voltage protection	Protection mode: The output voltage adopts dual loop control, when one feedback fails, the other can still control the output voltage below 60V

Note:

1. Unless otherwise specified, all parameters should be measured at the condition of 230Vac (50Hz) input ,with rated load ,and ambient temperature of 25°C.
- 2.Includes setting error, linear adjustment rate and load adjustment rate.

Environmental

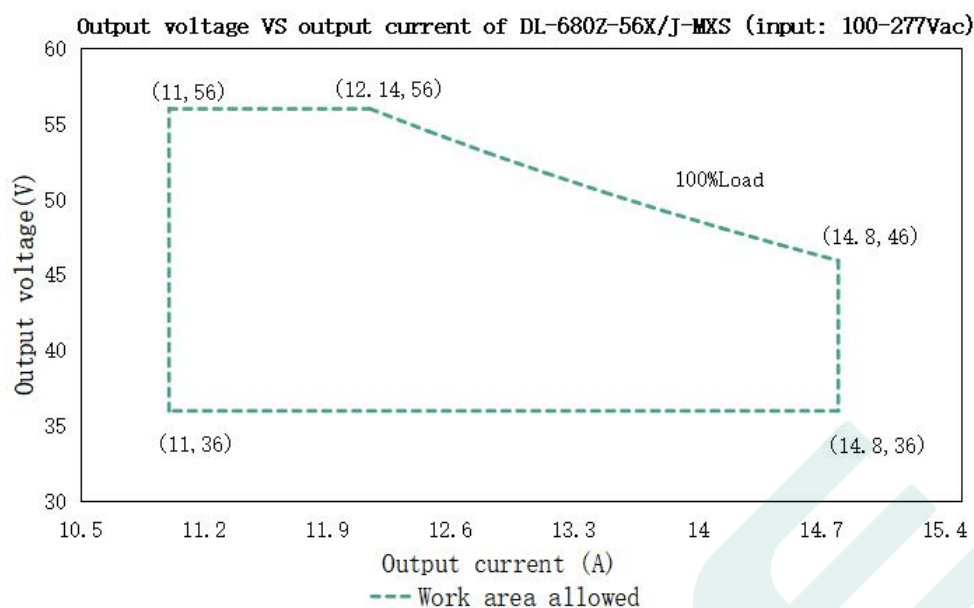
Environmental categories	Parameter
Working temperature	-40 ~ +55 °C@ 200-277VAC, 100-200Vac -40 ~ +40°C, users must reduce the output power to within 400W, when the input voltage is less than 108Vac
Safety shell temperature	-40 ~ 90°C
Working humidity	20 ~ 95% RH
Storage temperature、humidity	-40~+80°C, 10 ~ 95% RH
Resistant to vibration	10 ~ 500Hz, 5G 12 min/cycle, X, Y, Z axis 72 min each
MTBF	50Khrs min. MIL-HDBK-217F (Ta=25°C)
Lifetime	50000 h @ housing temperature ≤75 ° c, 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 IEC 55015、EN IEC 61000-3-2、EN 61000-3-3
Surge leve	Differential mode L-N ±6KV (2 ohm) ,common mode L , N-PE± 15KV (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:1.5KVac O/P-DIM:1.5KVac
Insulation impedance	I/P-PE:100MΩ / 500VDC; O/P-P/E:100MΩ / 500VDC / 25°C/ 70% RH
Leakage current	<0.7mA@277Vac

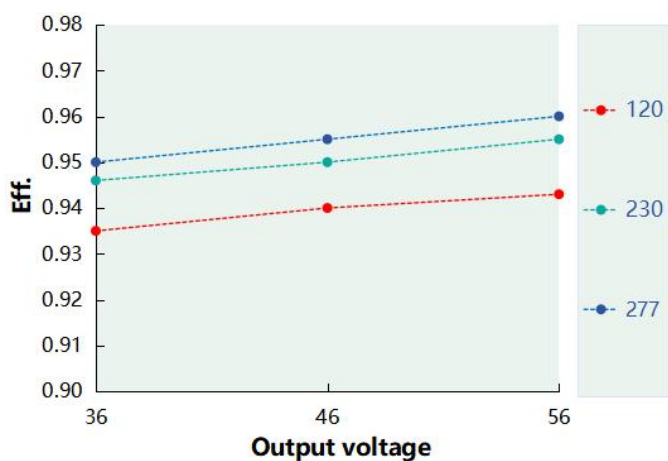
Note: Attention! As a component of the whole, the EMC performance of the final product is not only decided by the driver, even if the driver is well-designed and fulfil all the required compliance. The final equipment manufacturers must re-qualify EMC Directive on the complete product.

I-V Working area

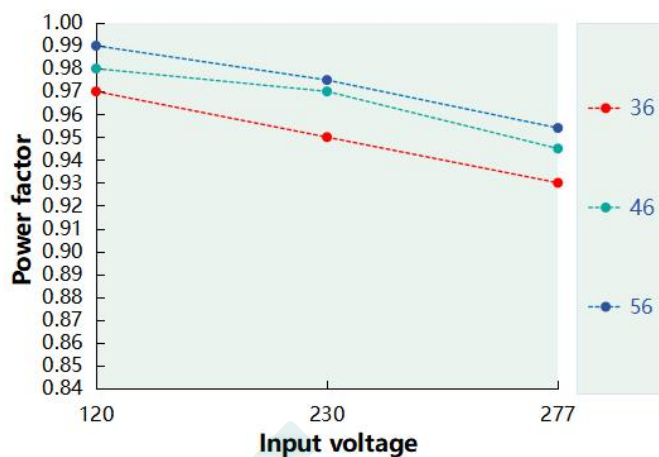


Load	Output							
Load working Voltage	36V	39V	42V	46V	48V	51V	53V	56V
Io_MAX	14.8A	14.8A	14.8A	14.8A	14.2A	13.3A	12.8A	12.14A
Po_MAX	533W	577W	622W	680W	680W	680W	680W	680W

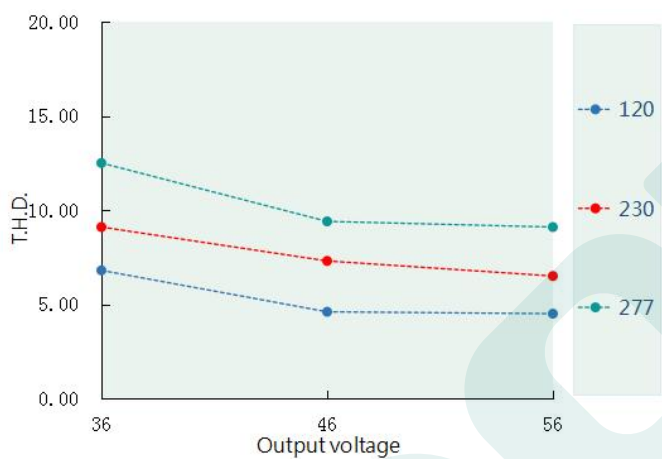
Eff. VS Output voltage(DL680Z-56X/J-MXS)



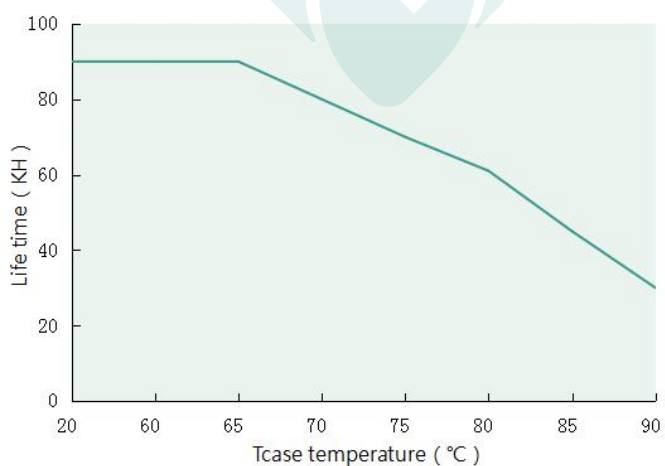
Power factor VS Input voltage(DL680Z-56X/J-MXS)



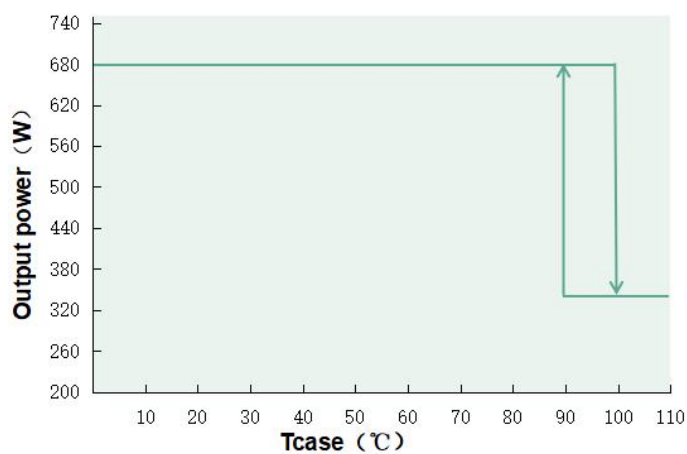
T.H.D. VS Output power(DL680Z-56X/J-MXS)



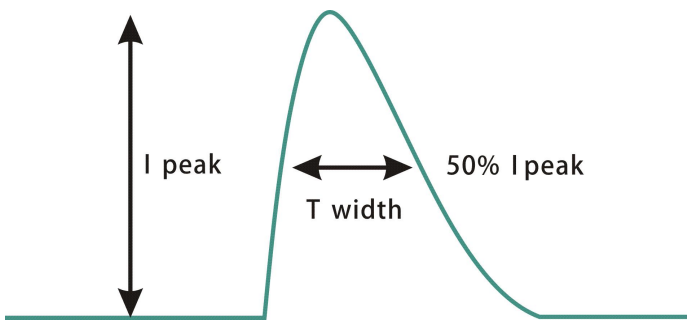
Tcase VS Lifetime(DL680Z-56X/J-MXS)



Output power VS Tcase (DL680Z-56X/J-MXS)

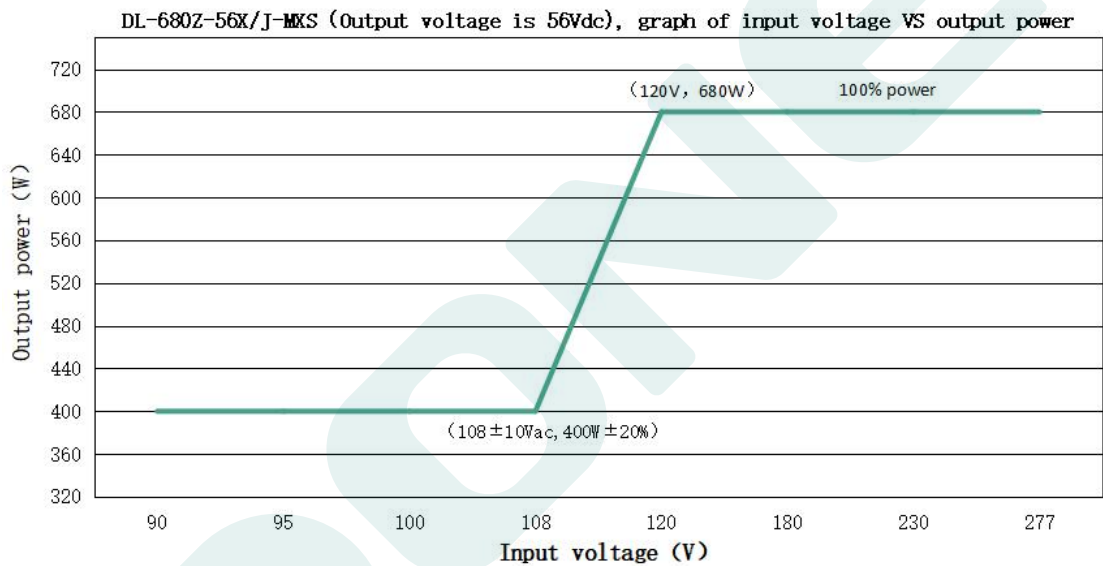


Input surge current(DL-680Z-56X/J-MXS)



Input voltage	Peak current	T(@50% Peak current)
120Vac	150A	2000us
230Vac	170A	1600us
277Vac	190A	5000us

Output power VS Input voltage



DL-680Z-56X/J-MXS (the rated output current & power under different input voltage)								
Input Voltage	90Vac	95Vac	100Vac	108Vac	120Vac	180Vac	230Vac	277Vac
Iout	11A	11A	11A	11A	12.14A	12.14A	12.14A	12.14A
Pout	400W	400W	400W	400W	680W	680W	680W	680W

Note: Users must reduce the output power to within 400W, when the input voltage is less than 108Vac, but the user should not be less than 70W when using it.

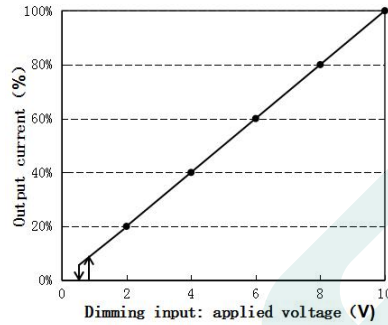
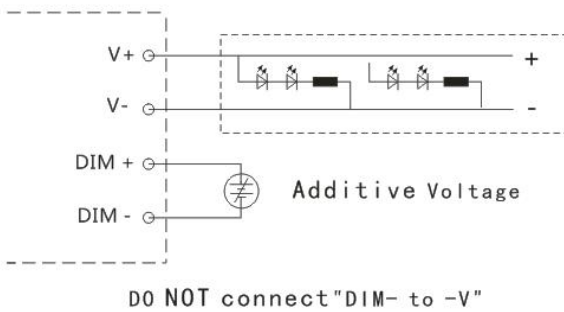
Dimming function

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

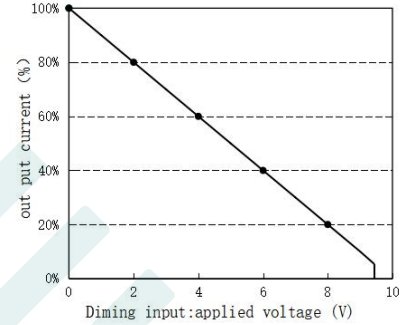
A. To adjust the output current, applying one of the three methods between DIM+ and DIM- : a resistor of 0-100K, or any voltage of 0-10V , or a PWM signal with amplitude of 10V.

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

• With 0-10V dimming voltage(for both logic,negative and positive):

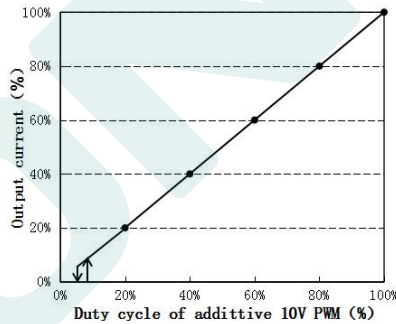
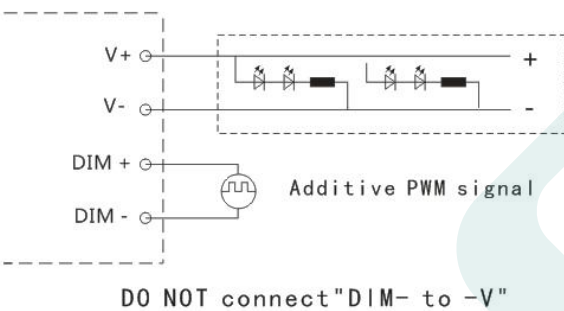


Positive logic dimming curve

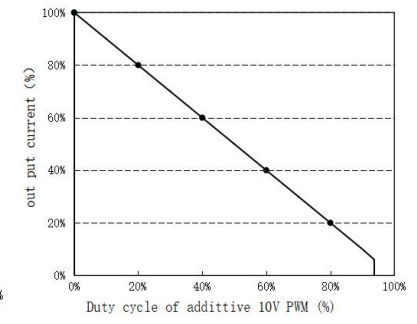


Negative logic dimming curve

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

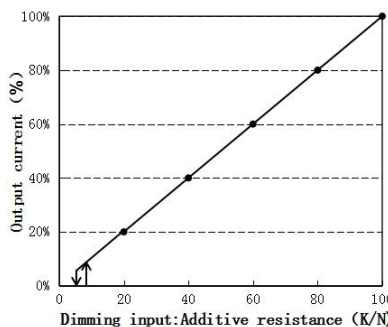
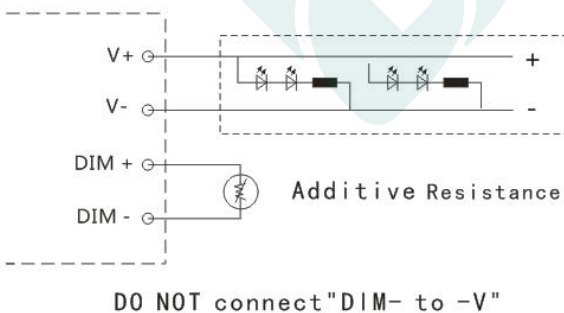


Positive logic dimming curve

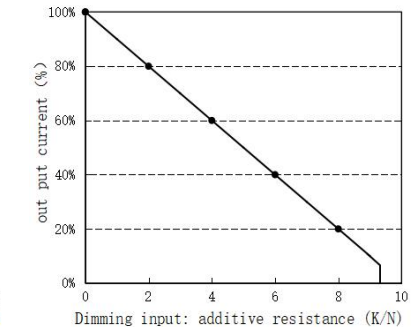


Negative logic dimming curve

• With an additional 10-100K resistor:



Positive logic dimming curve



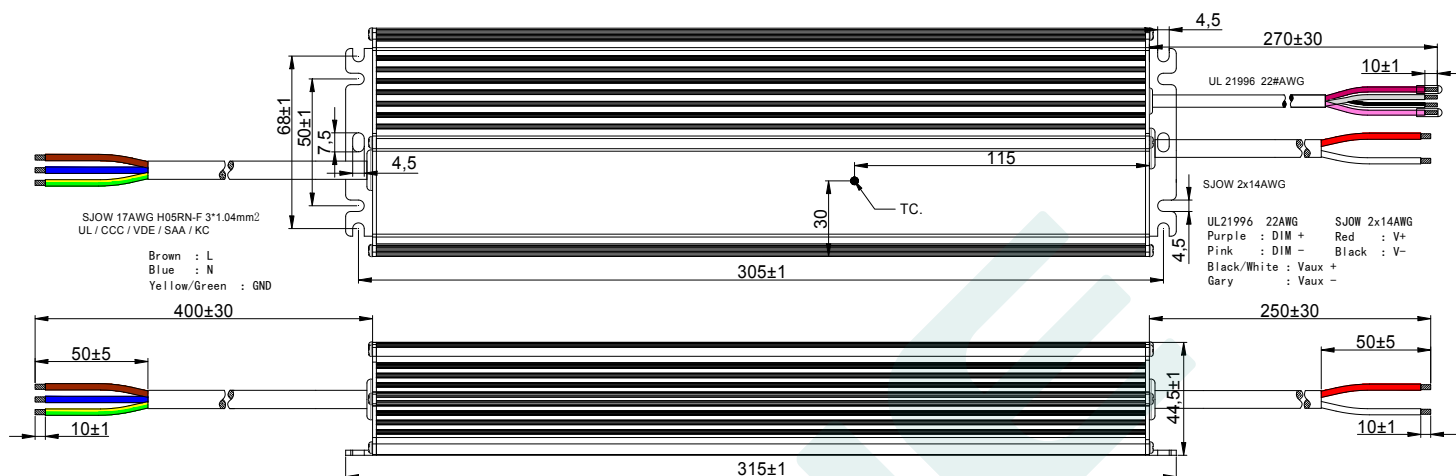
Negative logic dimming curve

Remark: Both operation way, of positive logic or negative logic, can be selected by program.

Mechanical specification

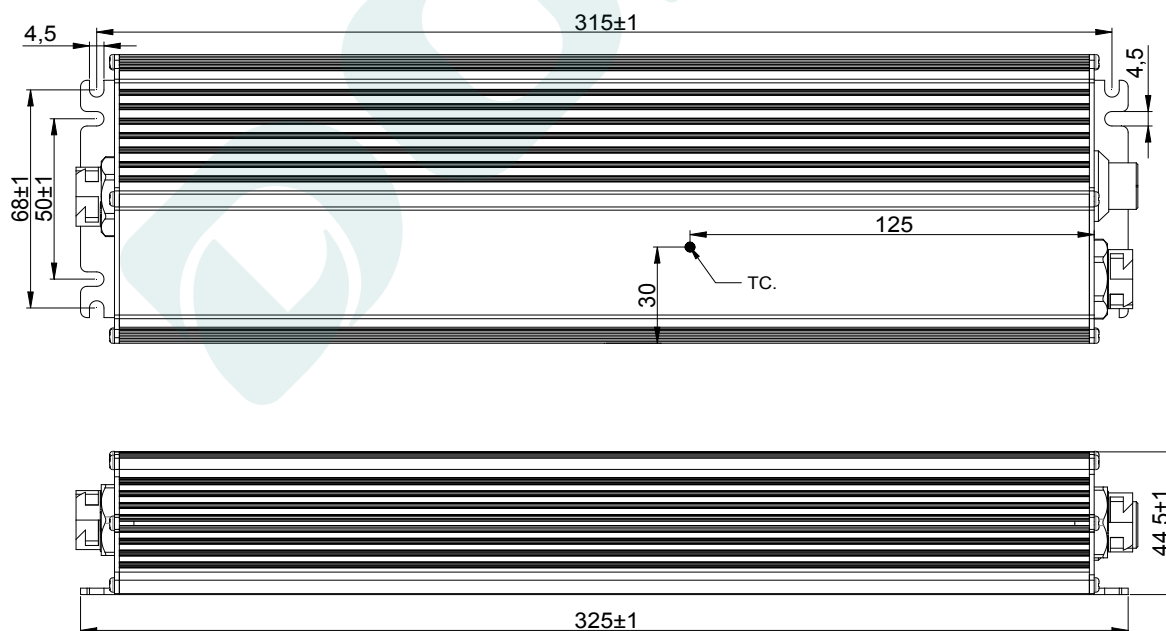
Size (mm) L315*W90*H44.5

DL-680Z-56X-MXS



Size (mm) L325*W90*H44.5

DL-680Z-56J-MXS

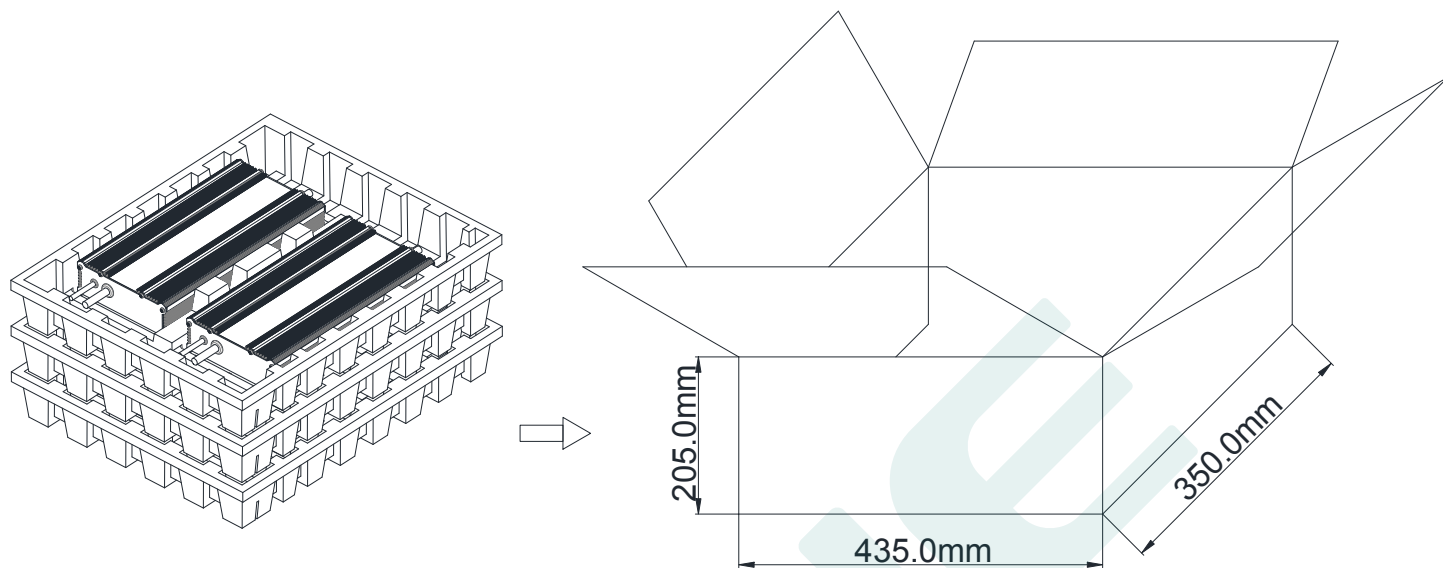


Weight

Weight 2580g

Packaging

Packaging (mm) L435*W350*H205



Note: One Carton 3 layers and 2 pcs each layer, total 6pcs/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
2025.1.16	Initial version.	V1.0	

MANUFACTRUER		
EDIT	CHECK	APPROVE