

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.

MXK SERIES LED DRIVERS

DL-165H-P/X-MXK SPEC V1.0

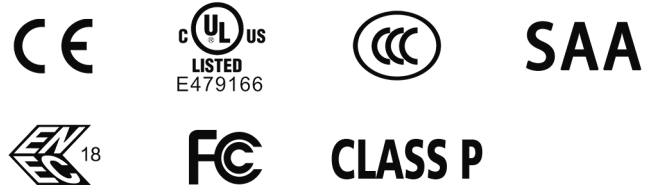
Features

- Suitable for class I/II luminaires
- Input voltage: AC 200-277 V ~ 50/60 Hz
- Efficiency: 93%(Typ.)
- Constant power drive and constant current output control mode
- Plastic shell structure, protection grade: IP20
- Lightning protection level: differential mode 6kV, common mode 10kV
- Function selection:
 - Isolated 3 in 1 dimming
 - Auxiliary source: 24V/125mA (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. (Typ.)	T.H.D	PF
DL-165H-V235P-MXK	AC 200-277V	165W	104-235Vdc	0.7A	≥93%	≤10%	≥0.95
DL-165H-V235X-MXK	50/60Hz						

Note:

1. Test conditions of the above parameters: Ta=25°C, 230Vac input, full load operation for 30 minutes;
2. When the input is less than 180Vac±10%, the output power gradually decreases. When the input 200-277Vac, rated power 165W. Please refer to “THE OUTPUT POWER VS INPUT VOLTAGE” curve chart for details.

Input characteristics

Parameter	Min	Typ.	Max	Note
Rated input voltage	200Vdc	230Vac	277Vac	
Input voltage range	180Vac	-	305Vac	
Rated frequency	47Hz	50/60Hz	63Hz	
Power factor	0.95	-	-	full load, rated input voltage
Power factor	0.9	-	-	65%-100% load, 200-277VAC input
T.H.D.	-	-	10%	@230Vac full load
T.H.D.	-	-	20%	65%-100% load, 200-277VAC input
Input current	-	-	1.5A	@200Vac full load
Inrush current	-	-	70A	230Vac, cold start (25°C)

Output characteristic

Parameter	Min	Typ.	Max	Note
Rated current DL-165H-V235P/X-MXK	-	0.7A	-	
Output current range DL-165H-V235P/X-MXK	0.5A	-	1.05A	
Output voltage range DL-165H-V235P/X-MXK	104V	-	235V	
Rated power(165-180Vac)	-	82.5W	165W	The derating begins when the input voltage is less than 180Vac ±10%
Rated power(180-277Vac)	-	165W	-	
No-load voltage DL-165H-V235P/X-MXK	-	-	300V	
Efficiency@200Vac DL-165H-V235P/X-MXK	90%	91%	-	full load @200Vac

Output characteristic

Parameter	Min	Typ.	Max	Note
Efficiency@230Vac DL-165H-V235P/X-MXK	91%	93%	-	full load @230Vac
Output Current Ripple	-	5% I _{omax}	-	100% load, 20 MHz BW; Ripple =rms/ average
Accuracy of output current	-3%	-	+3%	full load Constant power range
Line regulation	-3%	-	+3%	full load
Load regulation	-3%	-	+3%	full load
Starting time	300 ms	-	1000 ms	Full load@200-277Vac
24V Auxiliary source output voltage	22.8V	24V	25.2V	-
24V Auxiliary source output current	0 mA	-	125 mA	Reference ground is "Dim -"
24V Auxiliary source output transient peak current @6W	-	-	250 mA	In a 5.0ms cycle, the maximum duration of the maximum peak current of 250mA 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%	-
Multiple time-controlled dimming (optional)	MCU control	Set segment dimming function through program		Working mode	
	Timer control	It is divided into six segments by default and can be customized		24H to achieve a cycle	

Note:

1. Output current of dimming port: 100uA (typical value);
2. The X version is 0-10V dimming, and the P version is 1-10V dimming (0V can be turned off). The maximum voltage of the dimming port is 12V. If the external power supply voltage exceeds 12V or the signal cable is inverted, the power supply will be damaged;
3. Dimming default setting is three in one positive logic dimming (programmable software can be set to timing dimming, 0-5V or other voltage dimming);
4. When set to positive logic dimming function, the 0V dimming is turned off, and the output voltage is $0.46 \cdot V_{omax}$ after the dimming is turned off. Be careful when using this function, but customers are advised to use 1-10V dimming.
5. When setting negative logic dimming, the default output is 100% when the dimming is suspended. Negative logic dimming cannot be turned off. When the port voltage of the dimming is greater than 10.5V, the maximum power output of the power supply will be achieved.

Protection

Function	Function instructions
Input under-voltage protection	When the input voltage is less than 180Vac $\pm 10\%$, 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 @180-200Vac (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)
Lifetime	70,000 hours @Tcase \leq 75°C,230Vac, 80% Load, Please refer to "Tcase VS Lifetime" section

Safety and EMC

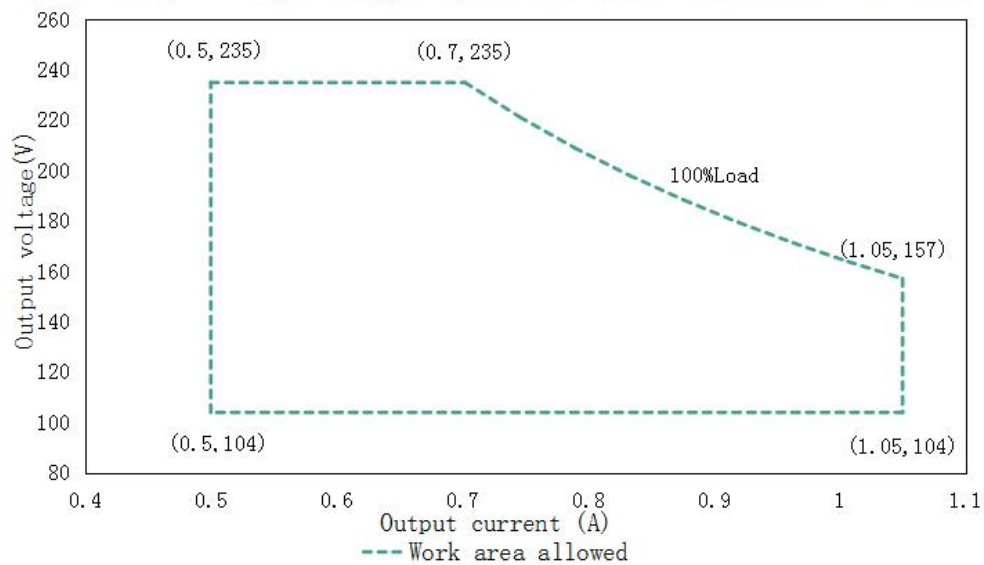
Safety categories	Standard
Safety	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13、EN 62384、UL8750;
EMC	EN 55015、EN 61000-3-2 、GB/T 17743、GB17625.1、EN 61000-3-3
Surge protection	Differential mode L-N $\pm 6KV$ (2 ohm) ,common mode L, N-PE $\pm 10 KV$ (12 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:1.5KVac O/P-DIM:1.5KVac
Insulation impedance	I/P-PE:100M Ω / 500VDC; I/P-O/P:100M Ω / 500VDC / 25 $^{\circ}C$ / 70% RH
Leakage current	<0.7mA@277Vac

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.

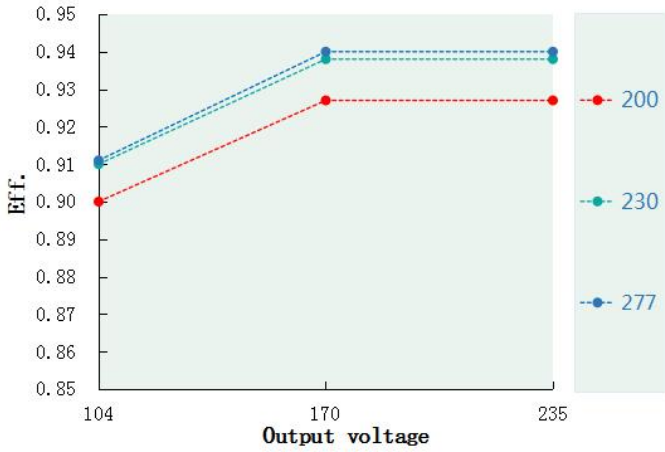
I-V Working area

Output voltage VS output current of DL-165H-V235P/X-MXK (input: 200-277Vac)

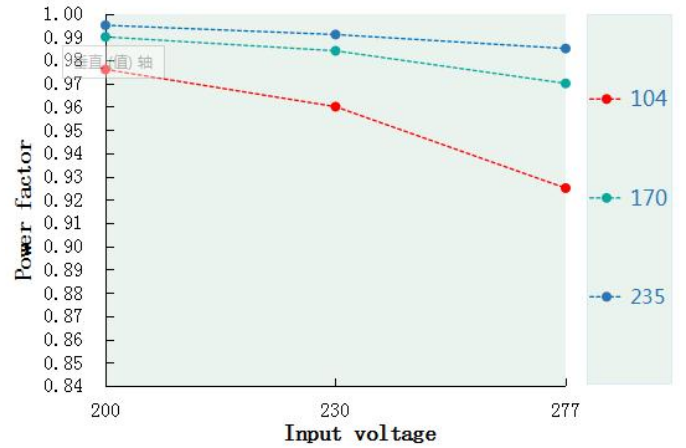


Load	Output								
Load working Voltage	104V	111V	118V	157V	172V	187V	202V	217V	235V
Io_MAX	1.05A	1.05A	1.05A	1.05A	0.96A	0.88A	0.82A	0.76A	0.7A
Po_MAX	108W	117W	124W	165W	165W	165W	165W	165W	165W

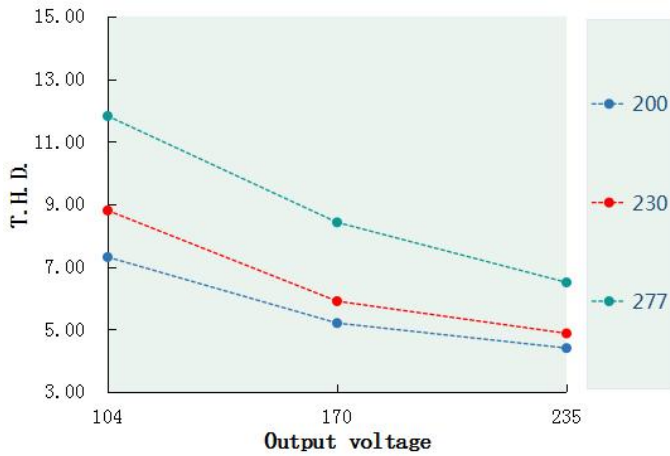
Eff. VS Output voltage(DL-165H-V235P/X-MXK)



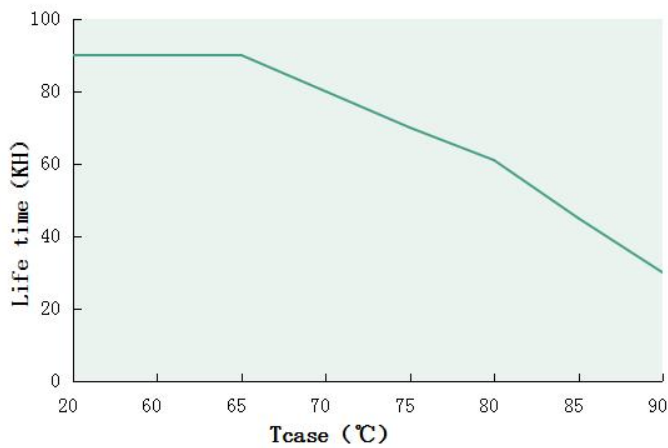
Power factor VS Input voltage(DL-165H-V235P/X-MXK)



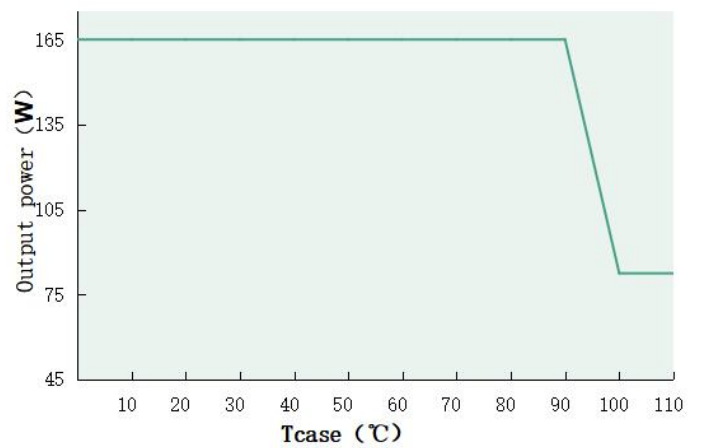
T.H.D. VS Output voltage(DL-165H-V235P/X-MXK)



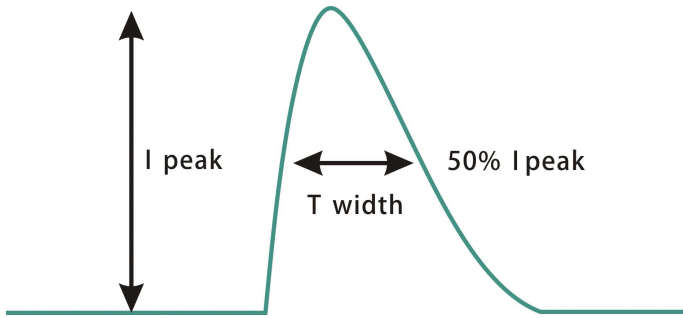
Tcase VS Lifetime(DL-165H-P/X-MXK)



Output power VS Tcase (DL-165H-P/X-MXK)

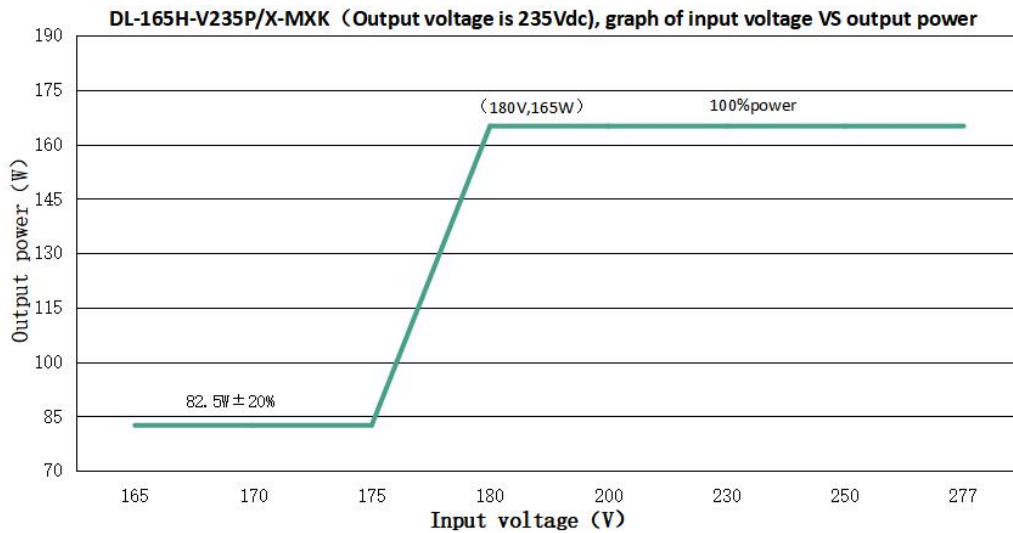


Inrush current(DL-165H-P/X-MXK)



Input voltage	Peak current	T(@50% Peak current)
200Vac	28A	278us
230Vac	56A	236us
277Vac	68A	262us

Output power VS Input voltage



DL-165H-V235P/X-MXK (When the output voltage is 235Vdc, the rated output current value and output power corresponding to different input voltage)

Input Voltage	165Vac	170Vac	175Vac	180Vac	200Vac	230Vac	250Vac	277Vac
Iout	0.37A	0.37A	0.37A	0.7A	0.7A	0.7A	0.7A	0.7A
Pout	82.5W	82.5W	82.5W	165W	165W	165W	165W	165W

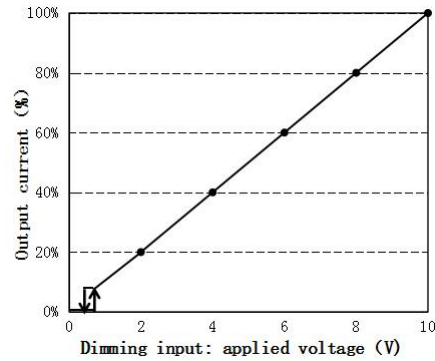
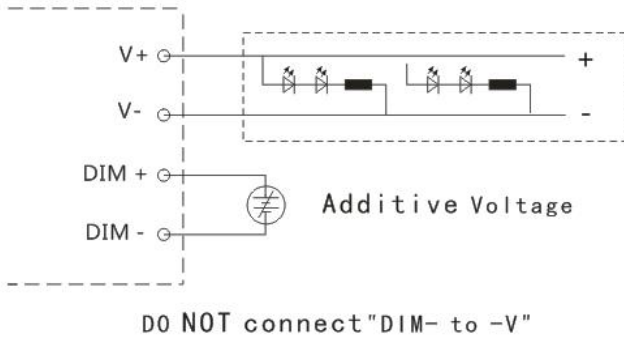
Note:
 Output power will decrease gradually when input voltage less than 180Vac±10%;When the input voltage is 170Vac,the output power range is 82.5W±20%.

Dimming operation

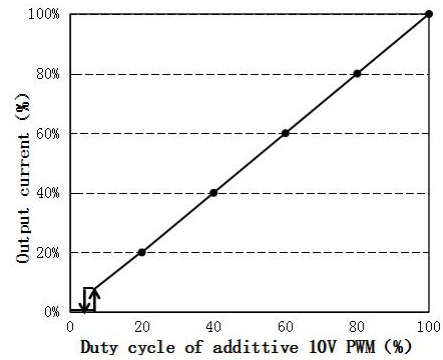
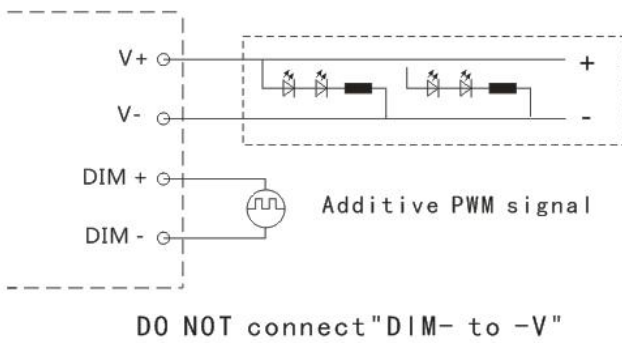
※ Three-in-one dimming function

- 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).

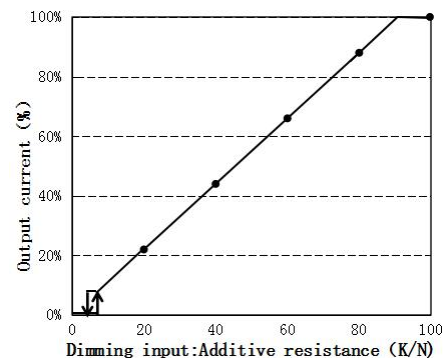
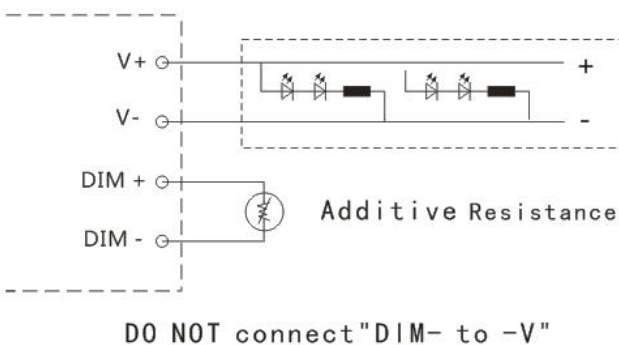
◎ With an applied voltage of 0-10V:



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



◎ With an additional 0-100K resistor:



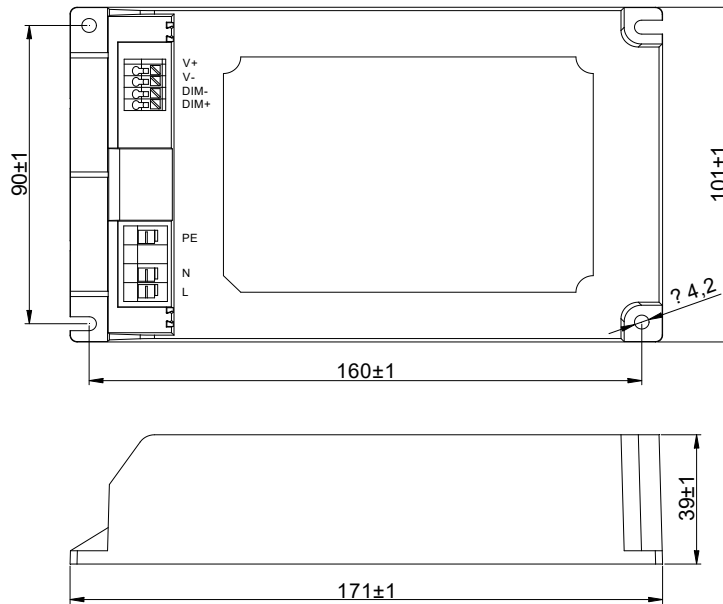
Note:

1. Positive and negative logic dimming can be programmed.
2. Dimming off only applies to positive logic. For other requirements, please contact technical personnel.

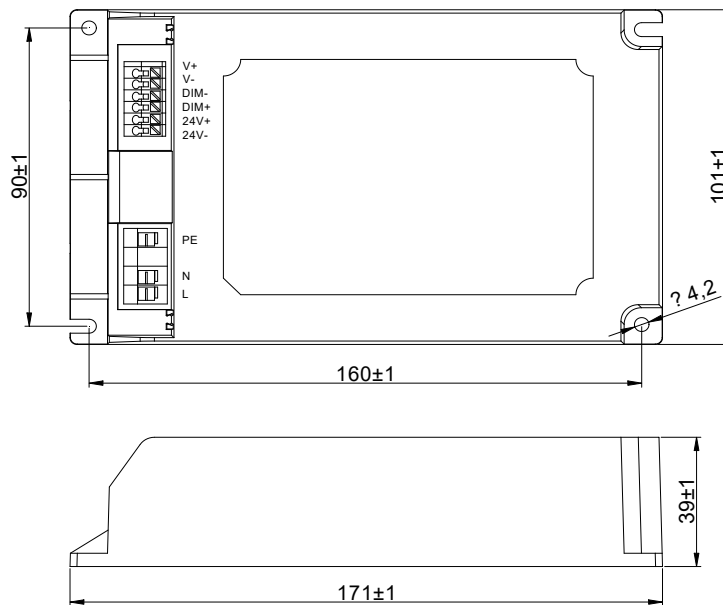
Mechanical specification

Size (mm) L170mm*W100mm*H40mm

DL-165W-V235P-MXK



DL-165W-V235X-MXK

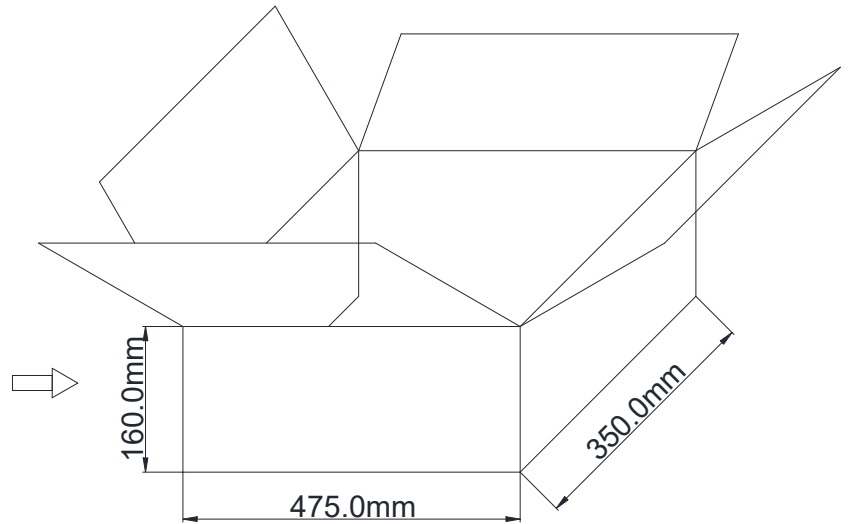
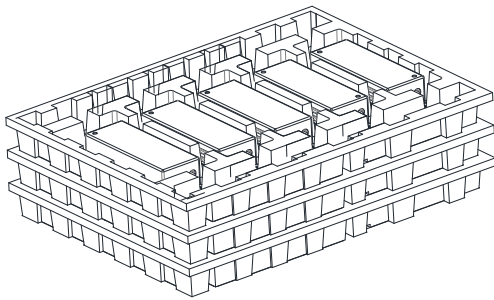


Weight

Weight 720 g

Packaging

Packaging (mm) L475*W350*H160



Note: One Carton 3 layers and 5 pcs each layer, total 15pcs/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
2023.10.12	Initial version.	V1.0	

MANUFACTURER		
EDIT	CHECK	APPROVE