

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 enclosed in a thin teal rounded rectangular border.

**DONE**

# MXG SERIES LED DRIVERS

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DL-100WK-A/P-MXG SPEC V1.0

## Features

- Class II structure
- Input voltage: 120-277 V ~ 50/60 Hz
- Efficiency :91%(Typ.)
- Constant power drive and constant current output control mode
- Metal shell structure, protection grade: IP67
- Lightning protection level: differential mode 6kV,
- Function selection:
  - Output current is adjusted by external potentiometer (A version only)
  - Input over-voltage protection ( P version only)
  - Isolated 3 in 1 dimming (P 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.	T.H.D	PF
DL-100WK-V143A-MXG DL-100WK-V143P-MXG	AC 120-277V 50/60Hz	100W	71-143Vdc	0.7A	≥91%	<10%	≥0.95
DL-100WK-V56A-MXG DL-100WK-V56P-MXG	AC 120-277V 50/60Hz	100W	25-56Vdc	2.4A	≥89.5%	<10%	≥0.95

- 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±10%, the output power gradually decreases.When the input 120-277Vac, rated power 100W.  
Please refer to “THE OUTPUT POWER VS INPUT VOLTAGE” curve chart for details.
  3. The P version can be optionally equipped with input over-voltage protection function.

## Input characteristics

Parameter	Min	Typ.	Max	Note
Rated input voltage	120Vac 150Vdc	230Vac	277Vac 420Vdc	
Input voltage range	108Vac		305Vac	
Rated frequency	47Hz	50/60Hz	63Hz	
Power factor	0.95	-	-	@230Vac full load, rated input voltage
T.H.D.	-	-	10%	@230Vac full load
Input current	-	-	1.1A	@120Vac full load
Inrush current	-	-	70A	230Vac, cold start (25°C)

## Output characteristic

Parameter	Min	Typ.	Max	Note
Rated current				
DL-100WK-V56A/P-MXG	-	1.8A	-	
DL-100WK-V143A/P-MXG	-	0.7A	-	
Output current range				
DL-100WK-V56A/P-MXG	1.3A	-	2.8A	
DL-100WK-V143A/P-MXG	0.5A	-	1.05A	
Output voltage range				
DL-100WK-V56A/P-MXG	25V	-	56V	
DL-100WK-V143A/P-MXG	71V	-	143V	
Rated power(90-120Vac)	-	50W	100W	The derating begins when the input voltage is less than 108Vac
Rated power(120-277Vac)	-	100W	-	
No-load voltage				
DL-100WK-V56A/P-MXG	-	-	75V	
DL-100WK-V143A/P-MXG	-	-	190V	
Efficiency@120Vac				
DL-100WK-V56A/P-MXG	87.5%	88%	-	full load@120Vac
DL-100WK-V143A/P-MXG	88.5%	89%	-	

## Output characteristic

Parameter	Min	Typ.	Max	Note
Efficiency@230Vac	89.5%	90%	-	full load@230Vac
DL-100WK-V56A/P-MXG	90.5%	91%	-	
DL-100WK-V143A/P-MXG				
Output Current Ripple	-	5% I <sub>omax</sub>	-	100% load , 20 MHz BW ; Ripple =rms/ average
Accuracy of output current	-5%	-	+5%	full load
Line regulation	-3%	-	+3%	full load
Load regulation	-3%	-	+3%	full load
Starting time	300 ms	-	1000 ms	Full load@120-277Vac

**Note:**

- 1.The output current range is limited by the input and output voltage, please refer to “I-V WORKING AREA” for details.
2. When the output voltage is in the constant power range, the current accuracy is -5%~+5%; when the output voltage is below the constant power range, the current accuracy is -10%~+10%;

## Dimming characteristic

Dimming function		Min	Typ.	Max	Instructions
1-10V Dimming ( Optional )	Safe applied voltage range	0V	-	12V	When the external voltage is $\geq 12V$ , the dimming will fail
	Dimming output range	10%	-	100%	-
	Rated dimming voltage range	1V	-	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 scope	300Hz	-	2000Hz	-
	PWM duty cycle	10%	-	100%	Output full power at 99% duty cycle
Resistor Dimming ( Optional )	External resistance value	10K $\Omega$	-	100K $\Omega$	-
	Dimming output range	10%	-	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 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 over-voltage protection ( P version only)	Input over-voltage protection	Min	Typ.	Max	Note
		320Vac	340Vac	350Vac	If the input voltage exceeds the protection voltage, the output is turned off
	Input over-voltage recovery	Min	Typ.	Max	Note
		300Vac	320Vac	340Vac	When the input voltage drops below the recovery voltage, the power supply will automatically resume normal operation
Input under-voltage protection	When the input voltage is less than 108Vac $\pm 10\%$ , 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 @120-200Vac (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	75,000 hours @Tcase≤75°C, 230Vac, 80% Load, Please refer to "Tcase VS Lifetime" section

## Safety and EMC

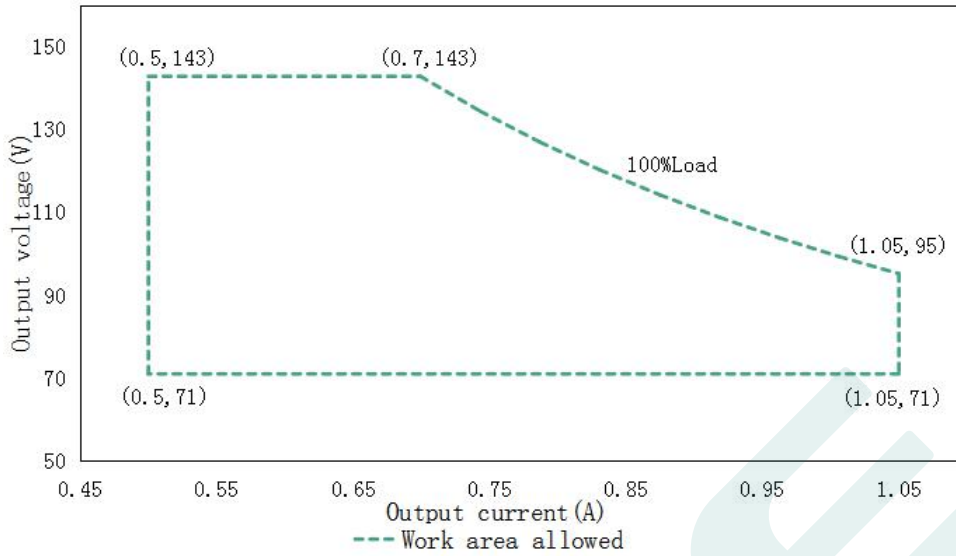
Safety categories	Standard
Safety	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13、EN 62384、UL8750;
EMC	EN 55015、EN 61000-3-2、GB/T 17743、GB17625.1、EN 61000-3-3
Surge protection	Differential mode L-N ±6KV (2 ohm) Refer to IEC61000-4-5 2014
High-pot test	I/P-O/P:3.75KVac I/P-DIM:3.75KVac O/P-DIM:1.5KVac
Insulation impedance	I/P-O/P:100MΩ / 500VDC / 25°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.

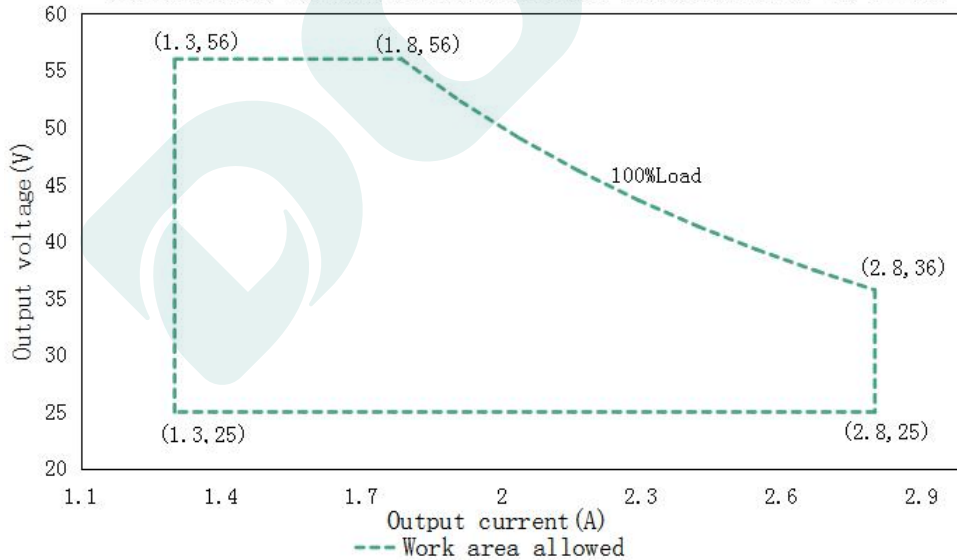
## I-V Working Area

Output voltage VS output current of DL-100WK-V143A/P-MXG (input: 120-277Vac)



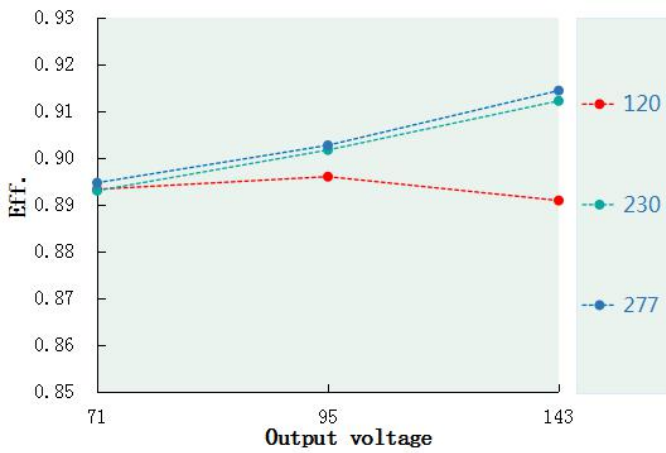
Load	Output								
Load working Voltage	71V	80V	89V	95V	107V	116V	125V	134V	143V
Io_MAX	1.05A	1.05A	1.05A	1.05A	0.93A	0.86A	0.8A	0.74A	0.7A
Po_MAX	74.5W	84W	93.5W	100W	99.51W	99.76W	100W	99.16W	100W

Output voltage VS output current of DL-100WK-V56A/P-MXG (input: 120-277Vac)

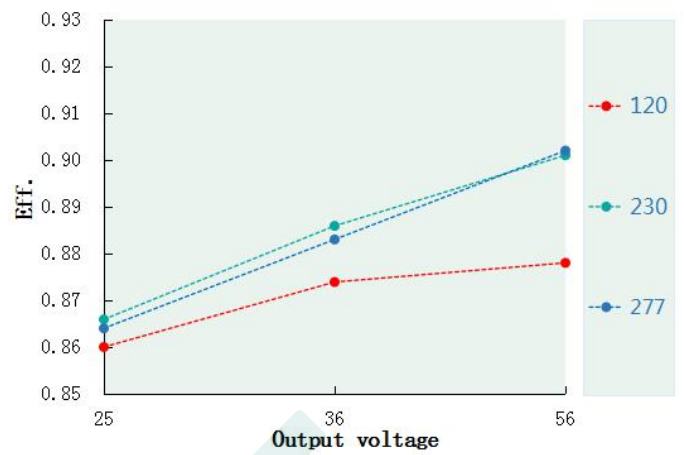


Load	Output								
Load working Voltage	25V	28V	32V	36V	40V	43V	48V	52V	56V
Io_MAX	2.8A	2.8A	2.8A	2.8A	2.5A	2.32A	2.08A	1.92A	1.8A
Po_MAX	70W	78.4W	89.6W	100W	100W	100W	99.84W	99.84W	100W

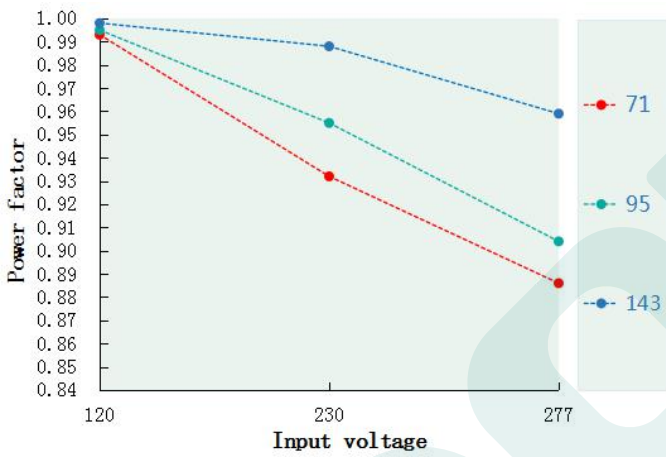
Eff. VS Output voltage(DL-100WK-V143A/P-MXG)



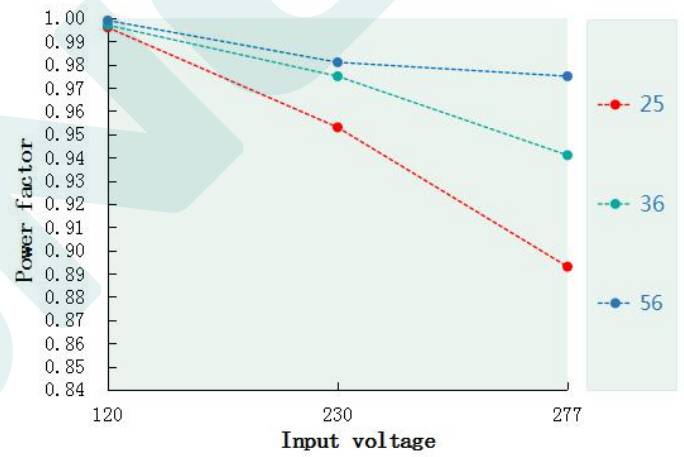
Eff. VS Output voltage(DL-100WK-V56A/P-MXG)



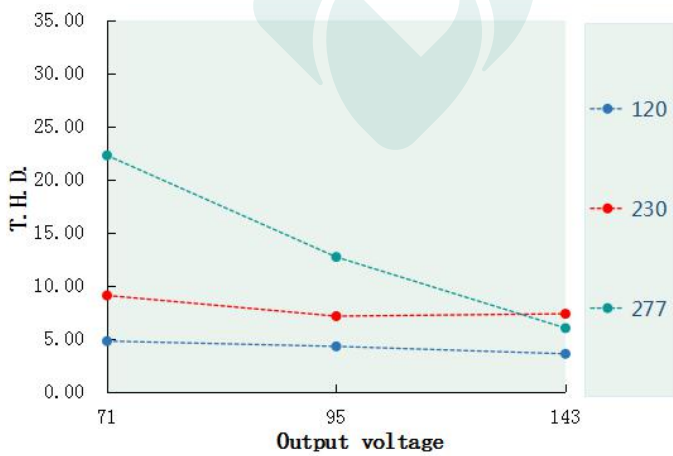
Power factor VS Input voltage(DL-100WK-V143A/P-MXG)



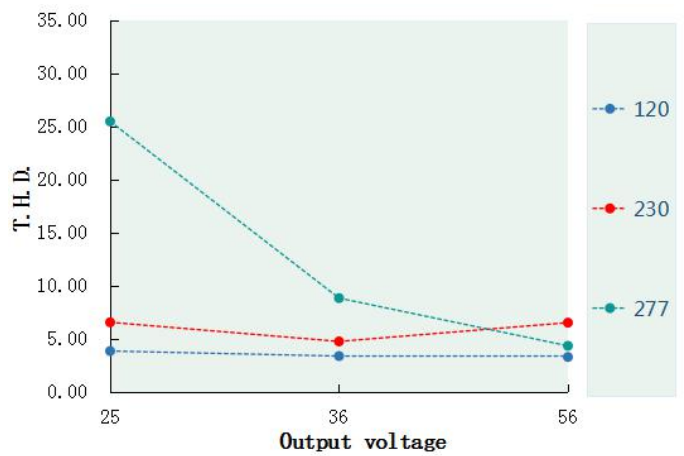
Power factor VS Input voltage(DL-100WK-V56A/P-MXG)



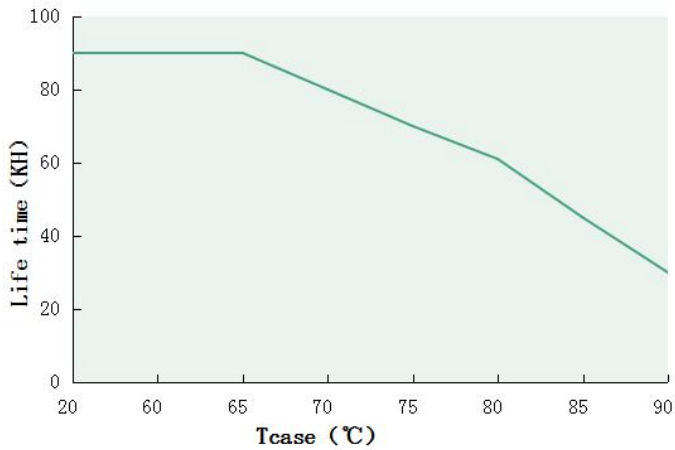
T.H.D. VS Output voltage(DL-100WK-V143A/P-MXG)



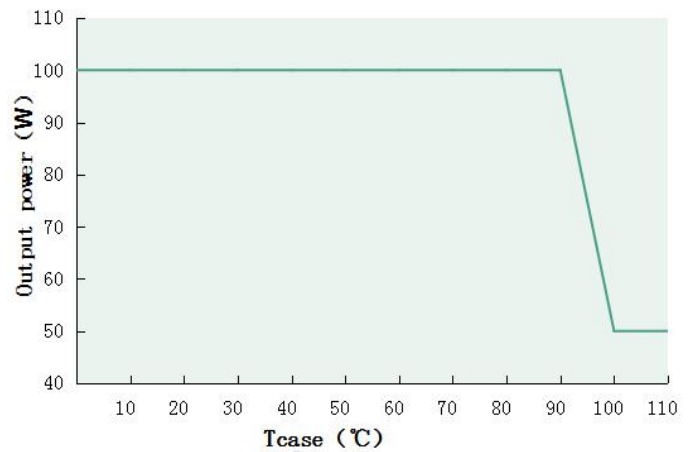
T.H.D. VS Output voltage(DL-100WK-V56A/P-MXG)



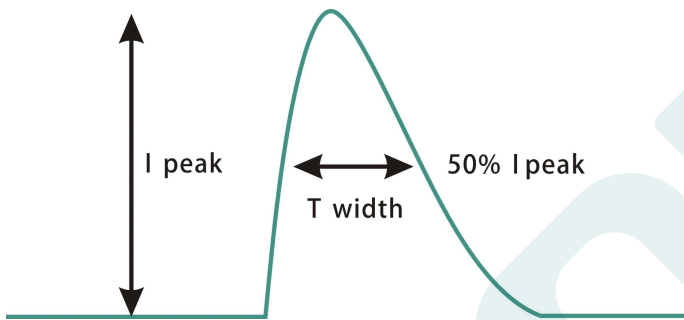
**Tcase VS Lifetime (DL-100WK-A/P-MXG)**



**Output power VS Tcase (DL-100WK-A/P-MXG)**

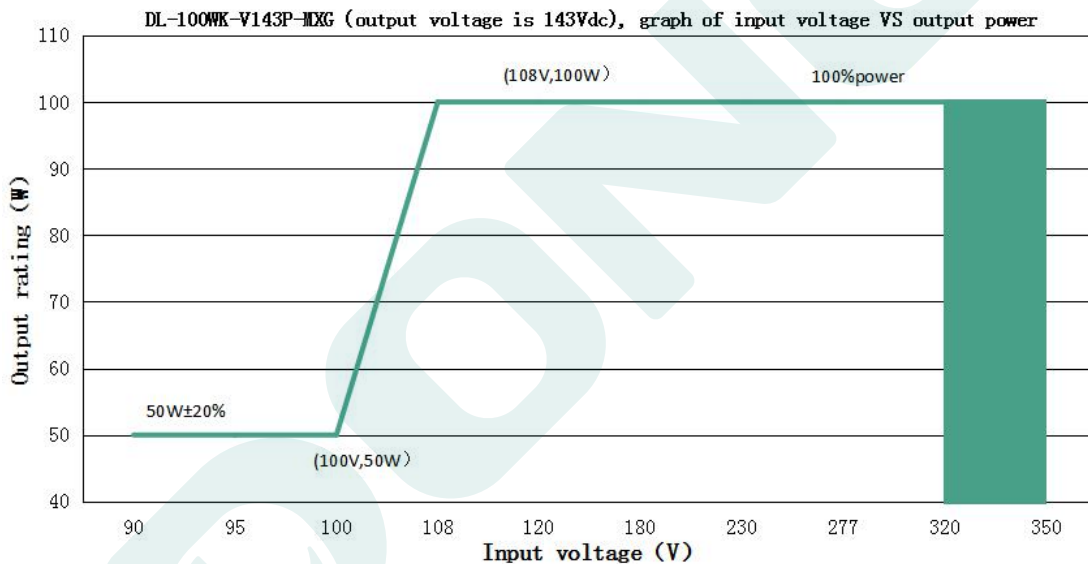
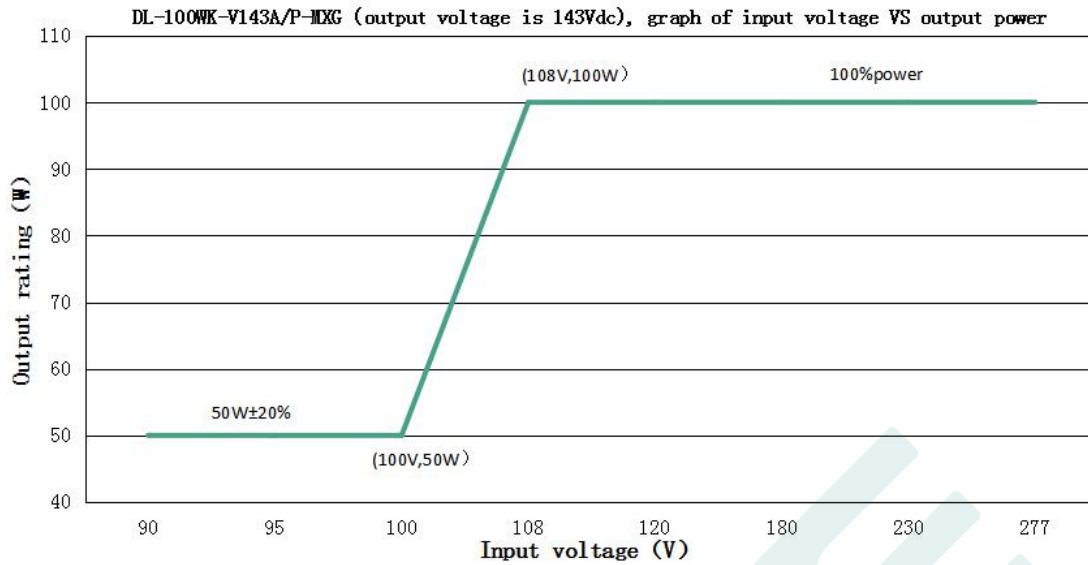


**Inrush current(DL-100WK-A/P-MXG)**



Input voltage	Peak current	T(@50% Peak current)
120Vac	25.4A	188us
230Vac	51.8A	188us
277Vac	61A	206us

**Output power VS Input voltage**



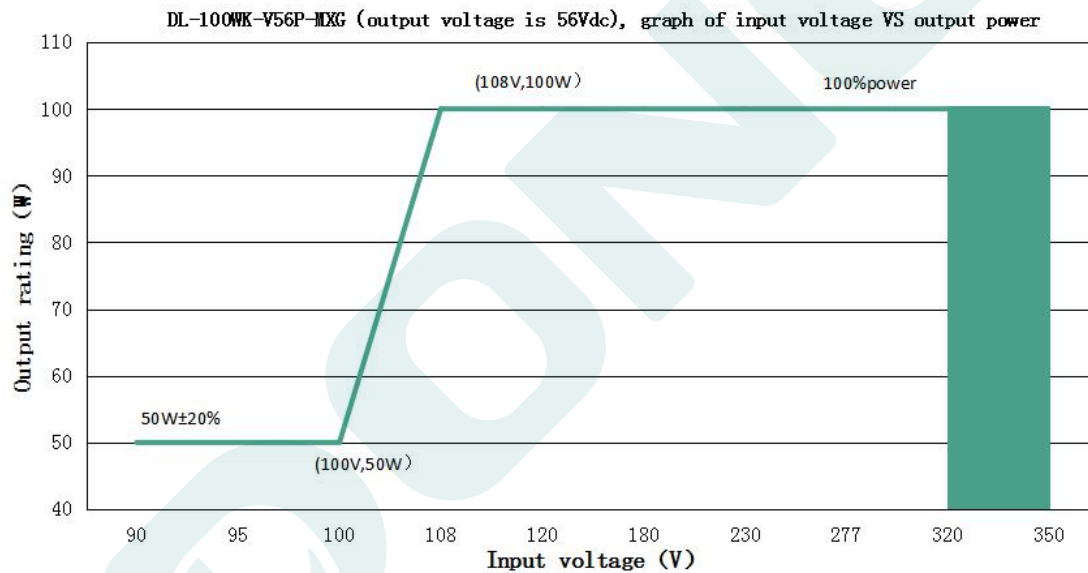
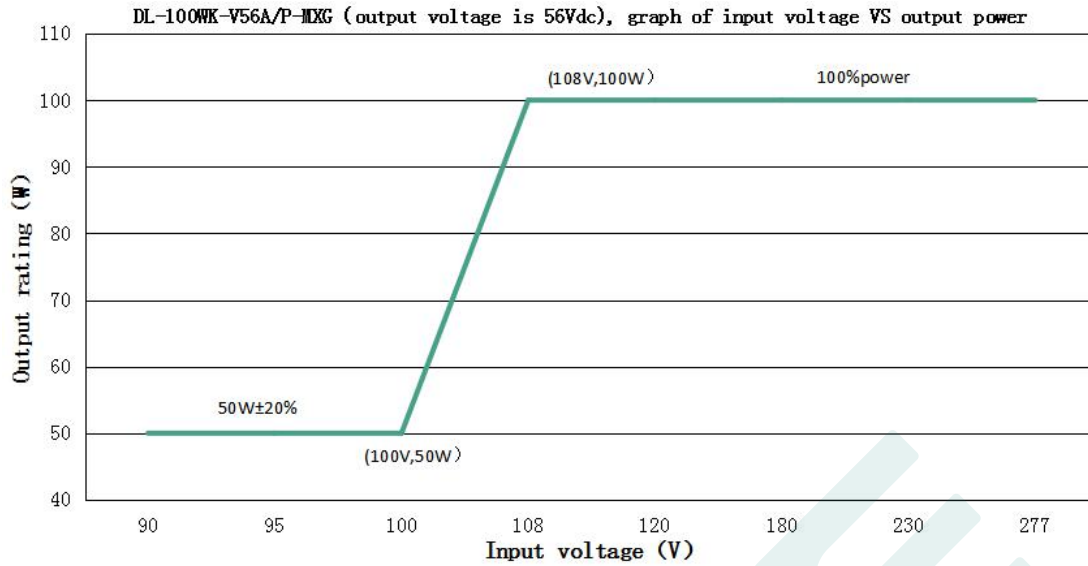
**DL-100WK-V143A/P-MXG (When the output voltage is 143Vdc, the rated output current value and output power corresponding to different input voltage)**

Input Voltage	90Vac	95Vac	100Vac	108Vac	120Vac	180Vac	230Vac	277Vac
Iout	0.35A	0.35A	0.35A	0.7A	0.7A	0.7A	0.7A	0.7A
Pout	50W	50W	50W	100W	100W	100W	100W	100W

**Note:**

1. Input voltage will fluctuate, resistance error and other factors. At the decrease or increase of power ( $V_{in}=108V$ ), it will move left and right, with the range of 108V.
2. When the input voltage is 90-108Vac, the output power range is 50W±20%.

**Output power versus Input voltage**



**DL-100WK-V56A/P-MXG (When the output voltage is 56Vdc, the rated output current value and output power corresponding to different input voltage)**

Input Voltage	90Vac	95Vac	100Vac	108Vac	120Vac	180Vac	230Vac	277Vac
Iout	0.9A	0.9A	0.9A	1.8A	1.8A	1.8A	1.8A	1.8A
Pout	50W	50W	50W	100W	100W	100W	100W	100W

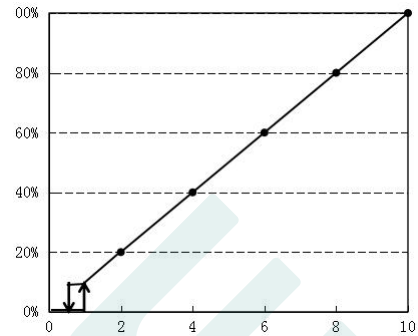
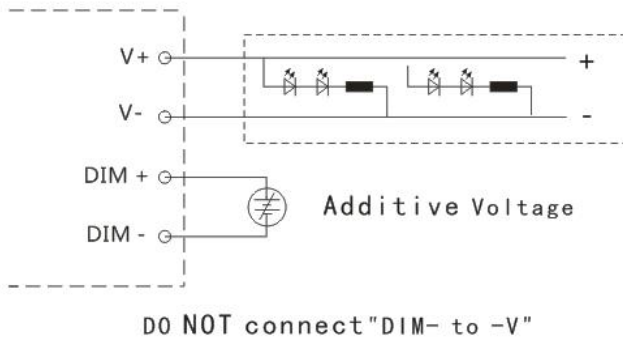
- Note:**
- 1.Input voltage will fluctuate,resistance error and other factors.At the decrease or increase of power (Vin=108Vac),it will move left and right,with the range of 108V .
  - 2.When the input voltage is 90-108Vac,the output power range is 50W±20%.

## Dimming operation

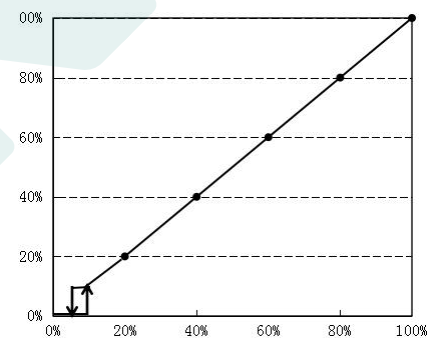
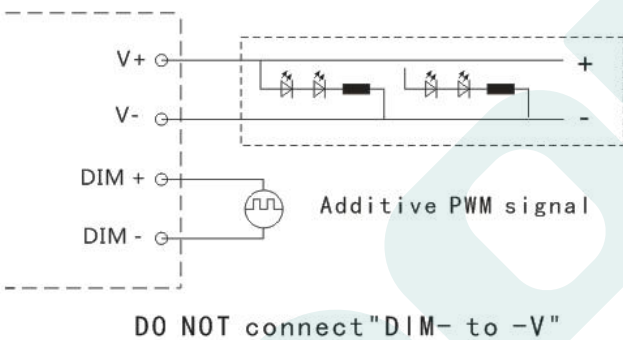
### ※ Three-in-one dimming function (P version only)

- 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).

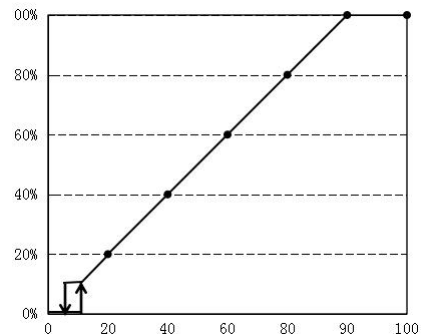
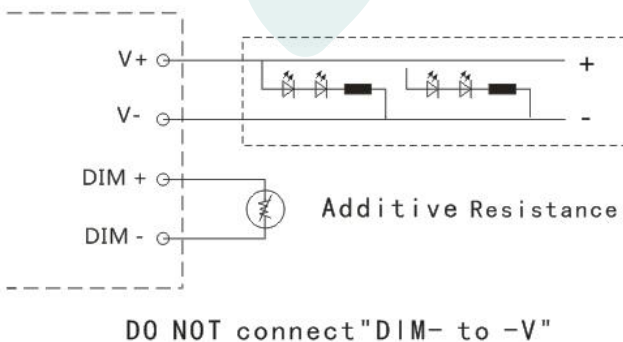
#### ◎ With an applied voltage of 0-10V:



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



#### ◎ With an additional 0-100K resistor:



### Remark:

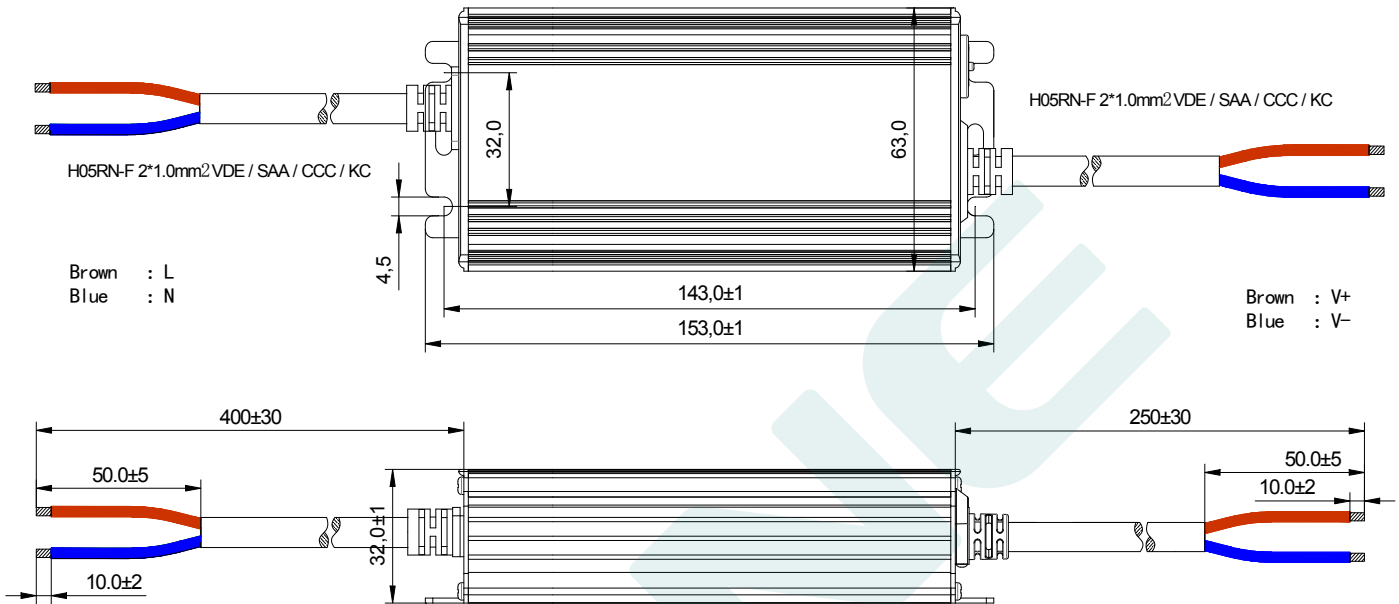
1. Positive and negative logic dimming can be programmed.
2. Dimming off only applies to positive logic. For other requirements, please contact technical personnel.

## Mechanical specification

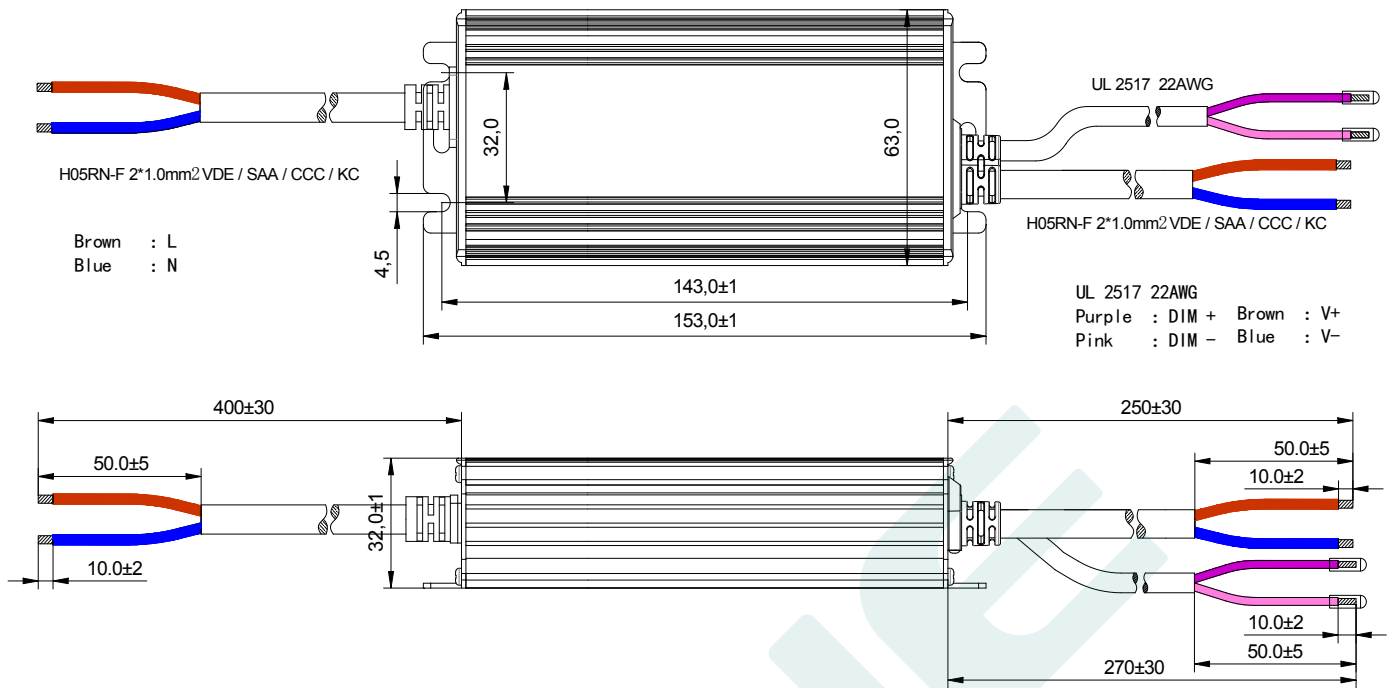
Size (mm) L153\*W63\*H32

DL-100WK-V56A-MXG

DL-100WK-V143A-MXG



**DL-100WK-V56P-MXG**  
**DL-100WK-V143P-MXG**

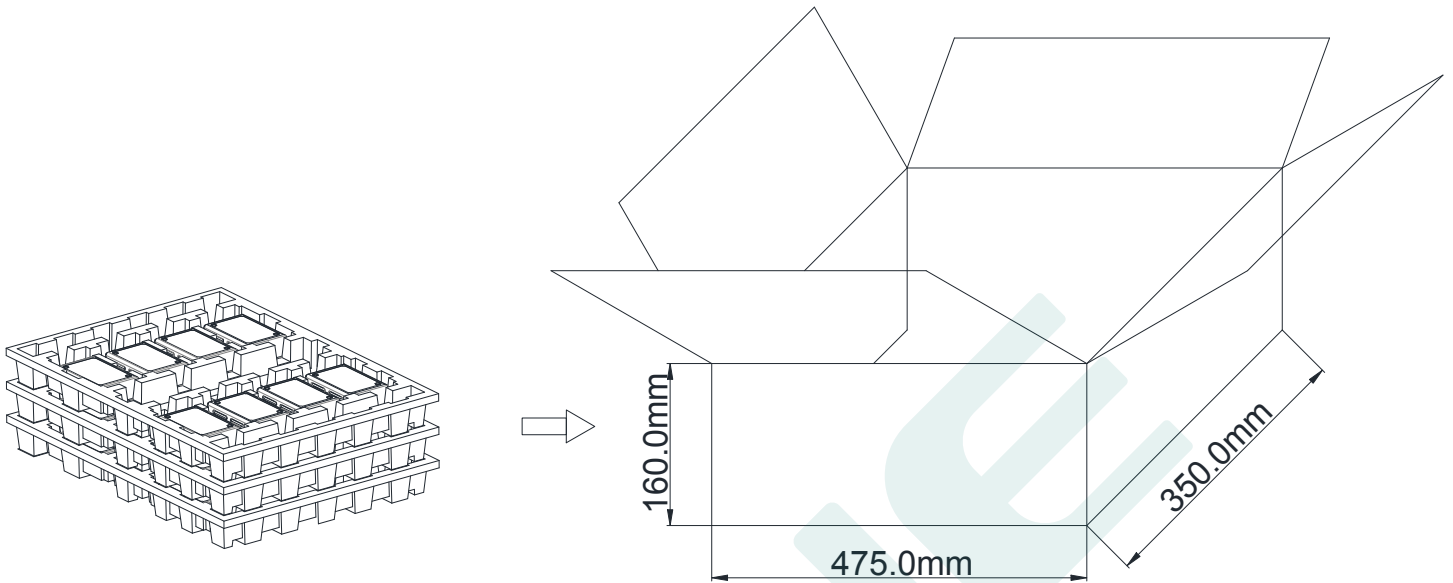


**Weight**

Weight	545 g
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## Packaging

Packaging (mm) L475\*W350\*H160



Note: One Carton 3 layers and 8 pcs each layer, total 24pcs/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
2023.10.31	Initial version.	V1.0	

**MANUFACTRUER**

EDIT

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