

DONE

MXG SERIES LED DRIVERS

DL-150W-MXG SPEC V1.2

Features

- Class I structure
- Input voltage: 120-277 V ~ 50/60 Hz
- Efficiency :93%(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:

Output current is adjusted by external potentiometer (A 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-150W-V56A-MXG	120-277V	150W	25-56Vdc	4.2A	≥92%	≤10%	≥0.95
DL-150W-V56P-MXG	50/60Hz						
DL-150W-V214A-MXG	120-277V	150W	95-214Vdc	0.7A	≥93%	≤10%	≥0.95
DL-150W-V214P-MXG	50/60Hz						

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.When the input 120-277VAC,rated power 150W.
Please refer to “THE OUTPUT POWER VS INPUT VOLTAGE” curve chart for details.

Input characteristics

Parameter	Min	Typ.	Max	Note
Rated input voltage	120Vac	230Vac	277Vac	
Input voltage range	108Vac		305Vac	
Rated frequency	47Hz	50/60Hz	63Hz	
Power factor	-	0.95	-	@230Vac full load
T.H.D.	-	-	10%	@230Vac full load
Input current	-	-	1.5A	@120Vac full load
Inrush current	-	-	70A	230Vac, cold start (25°C)

Output characteristic

Parameter	Min	Typ.	Max	Note
Rated current				
DL-150W-V56P/A-MXG	-	2.68A	-	
DL-150W-V214P/A-MXG	-	0.7A	-	
Output current range				
DL-150W-V56P/A-MXG	1.8A	-	4.2A	
DL-150W-V214P/A-MXG	0.5A	-	1.05A	
Output voltage range				
DL-150W-V56P/A-MXG	25V	-	56V	
DL-150W-V214P/A-MXG	95V	-	214V	
Rated power(90-120Vac)	-	75W	150W	The derating begins when the input voltage is less than 108Vac
Rated power(120-277Vac)	-	150W	-	
No-load voltage				
DL-150W-V56P/A-MXG	-	-	70V	
DL-150W-V214P/A-MXG	-	-	250V	
Efficiency@120Vac				
DL-150W-V56P/A-MXG	89.5%	90%	-	full load
DL-150W-V214P/A-MXG	90.5%	91%	-	

Output characteristic

Parameter	Min	Typ.	Max	Note
Efficiency@230Vac				
DL-150W-V56P/A-MXG	91.5%	92%	-	full load@230Vac
DL-150W-V214P/A-MXG	92.5%	93%		
Accuracy of output current	-5%	-	+5%	full load constant-power range
Line regulation	-3%	-	+3%	full load
Load regulation	-3%	-	+3%	full load
Starting time	300ms	-	1000ms	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 driver works at the rated minimum output current, the current accuracy is -5% -- 7%.

Dimming characteristic

Dimming function		Min	Typ.	Max	Instructions
1-10V Dimming (Optional)	Safe applied voltage range	1V	-	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 band	300Hz	-	2000Hz	-
	PWM duty cycle	10%	-	99%	Output full power at 99% duty cycle
Resistor Dimming (Optional)	External resistance value	10K Ω	-	100K Ω	-
	Dimming output range	10%	-	100%	-

Note:

- Output current of dimming port: 100uA (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 ;
- When Dimming input is 0V in the constant-power range,the lamp can be dim-to-off.
- The default dimming setting is a three-in-one positive logic Dimming; timer dimming,0-10V,0-3.3V,0-5V or other voltage dimming and positive or reverse Logic dimming can be completed by the Done-Power programmer with off-line or on-line mode.

Protection

Function	Function instructions
Input under-voltage protection	When the input voltage is less than 108Vac, 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℃, 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℃ of ambient temperature;
2. Including setting error, line regulation and load regulation.

Environmental

Environmental categories	Parameter
Working temperature	-40 ~ +55℃@200-277Vac, -40 ~ +45℃ @120-200Vac (refer to "Life Curve ")
Working humidity	20 ~ 95% RH, non condensing
Storage temperature, humidity	-40~+80℃, 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℃)

Safety and EMC

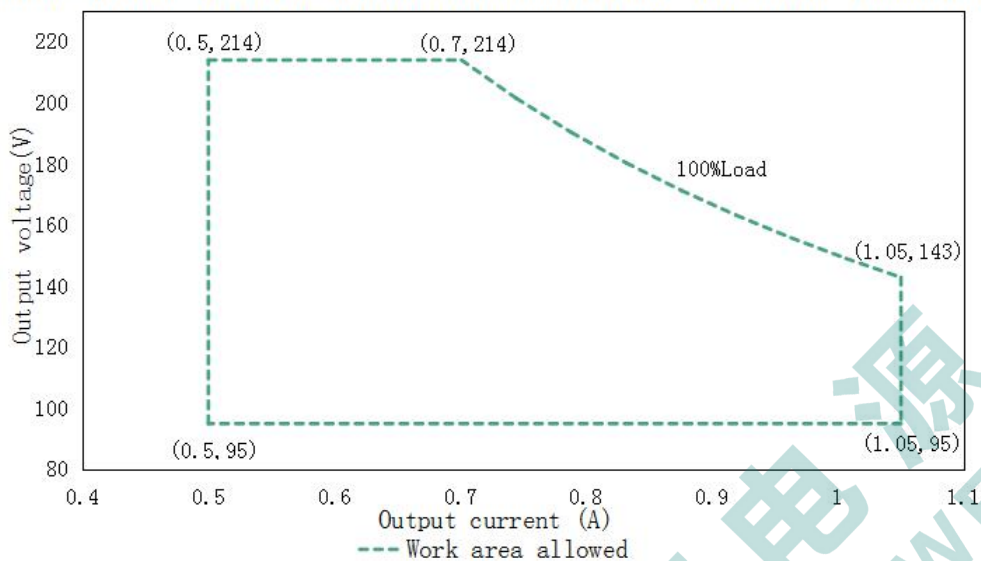
Safety categories	Standard
Safety	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13 UL8750;
EMC	EN 55015、EN 61547、EN 61000-3-2、GB/T 17743、GB17625.1、EN 61000-3-3 FCC Part 15
Surge protection	Differential mode L-N $\pm 6KV$ (2 ohm) ,common mode L, N-PE $\pm 15 KV$ (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 / 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.

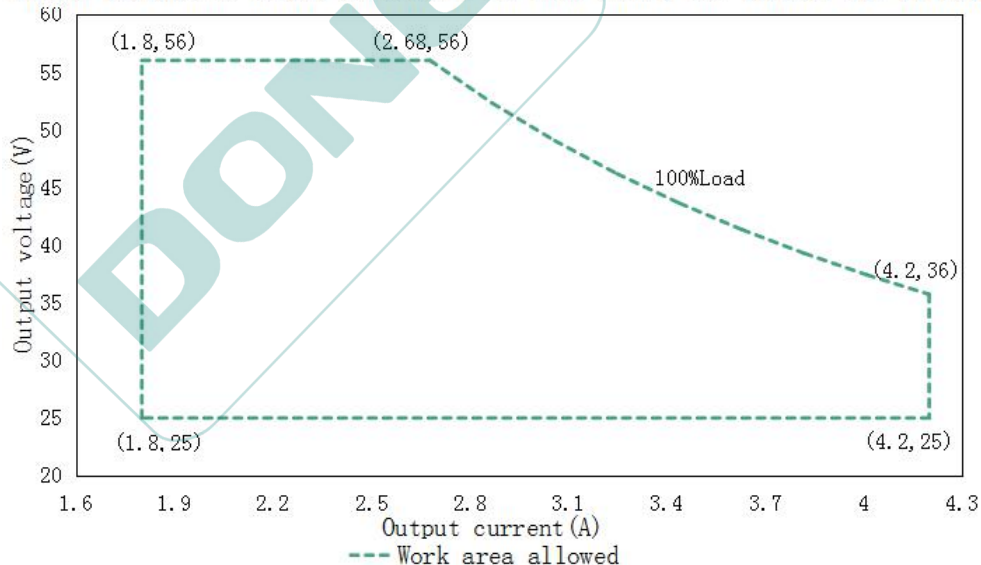
I-V Working area

Output voltage VS output current of DL-150W-V214A/P-MXG (input: 120-277Vac)



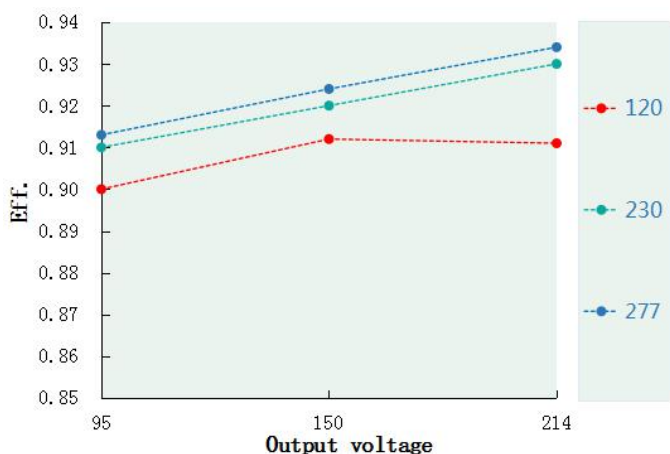
Load	Output								
Load working Voltage	95V	115V	135V	143V	165V	180V	190V	200V	214V
Io_MAX	1.05A	1.05A	1.05A	1.05A	0.91A	0.83A	0.79A	0.75A	0.7A
Po_MAX	99.75W	120.75W	141.75W	150W	150W	150W	150W	150W	150W

Output voltage VS output current of DL-150W-V56A/P-MXG (input: 120-277Vac)

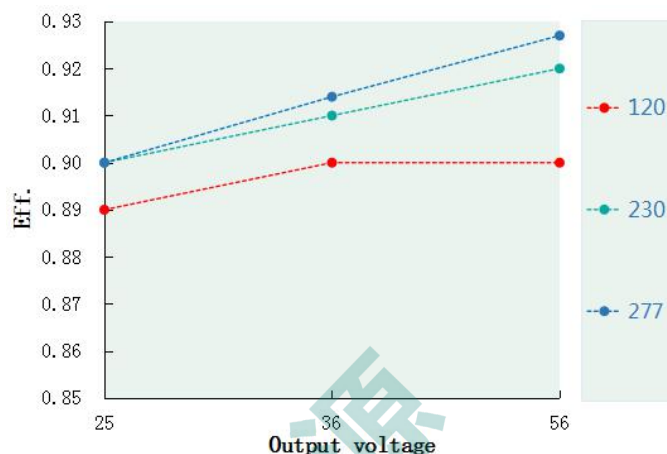


Load	Output								
Load working Voltage	25V	29V	33V	36V	40V	44V	48V	52V	56V
Io_MAX	4.2A	4.2A	4.2A	4.17A	3.75A	3.41A	3.13A	2.88A	2.67A
Po_MAX	105W	121.8W	138.6W	150W	150W	150W	150W	150W	150W

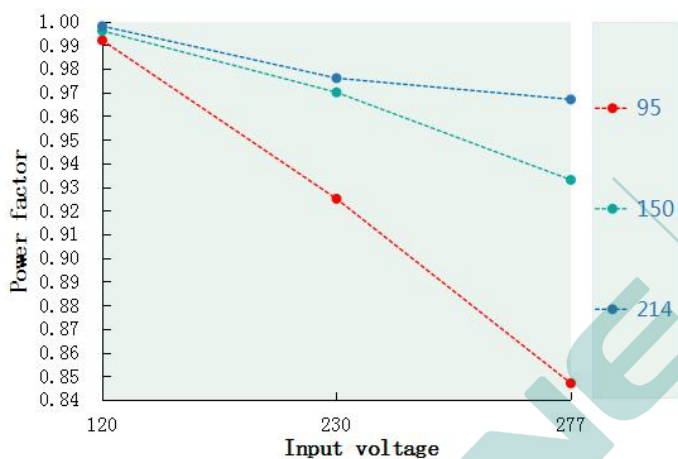
Eff. VS Output voltage(DL-150W-V214P/A-MXG)



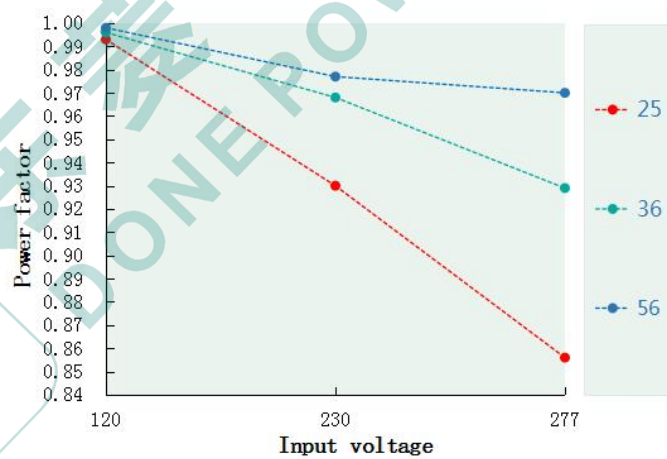
Eff. VS Output voltage(DL-150W-V56P/A-MXG)



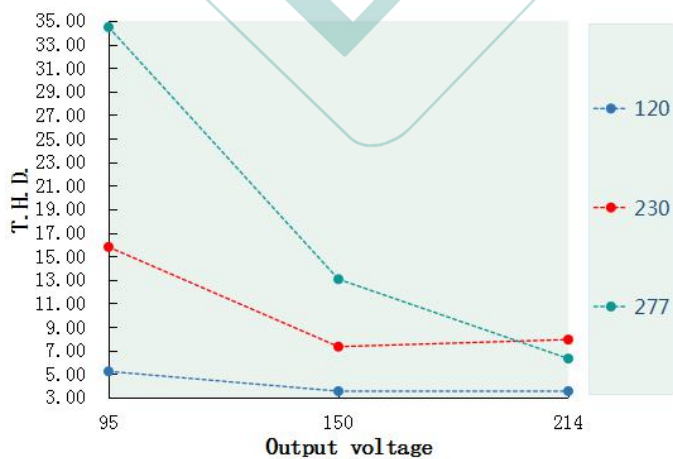
Power factor VS Input voltage(DL-150W-V214P/A-MXG)



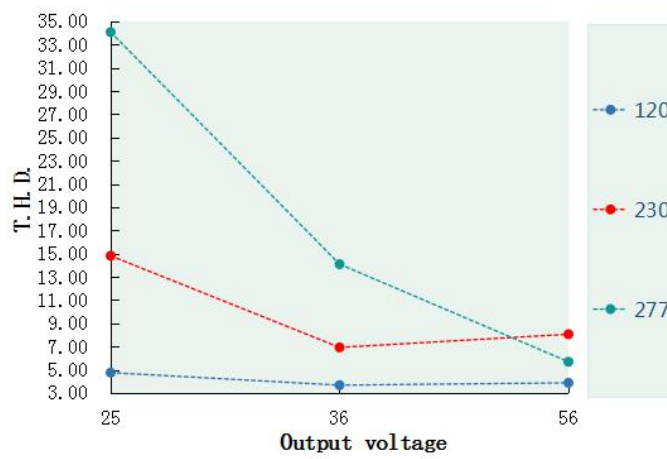
Power factor VS Input voltage(DL-150W-V56P/A-MXG)



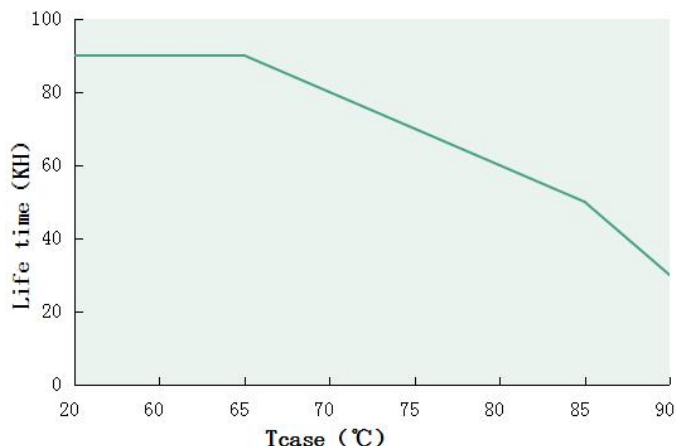
T.H.D. VS Output voltage(DL-150W-V214P/A-MXG)



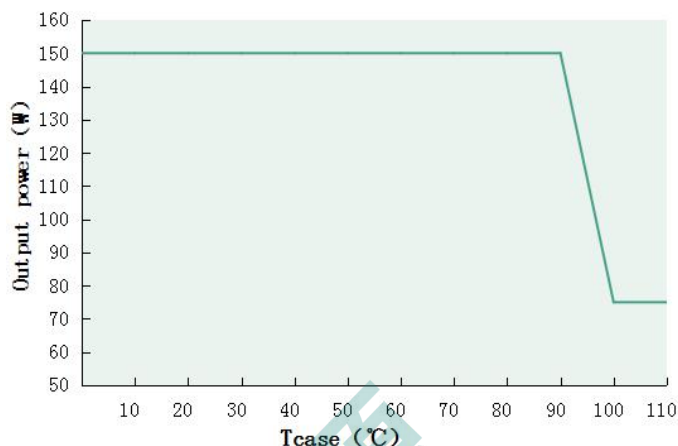
T.H.D. VS Output voltage(DL-150W-V56P/A-MXG)



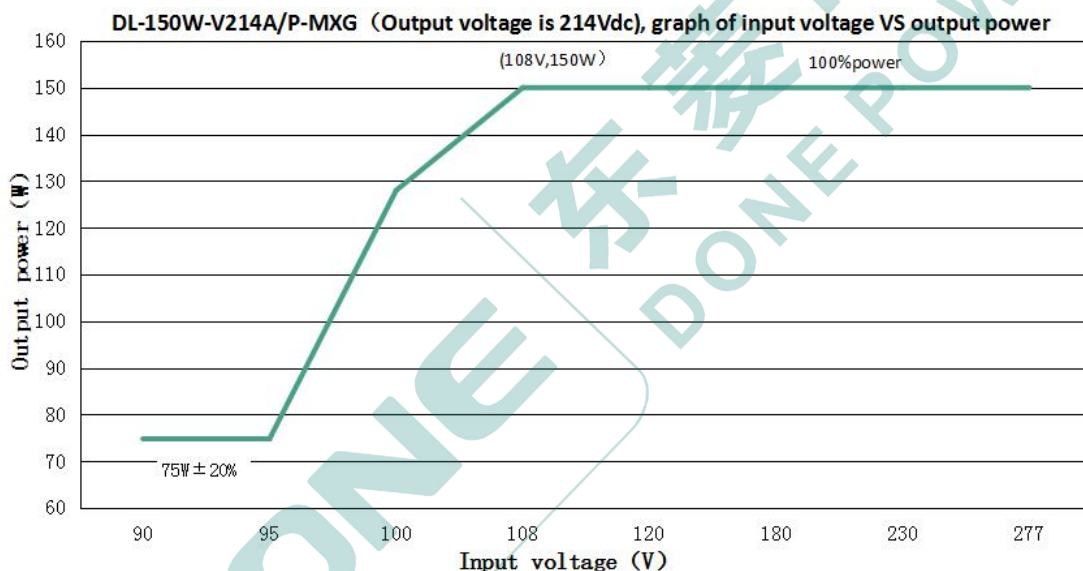
Tcase VS Lifetime(DL-150W-P/A-MXG)



Output power VS Tcase (DL-150W-P/A-MXG)



Output power VS Input voltage



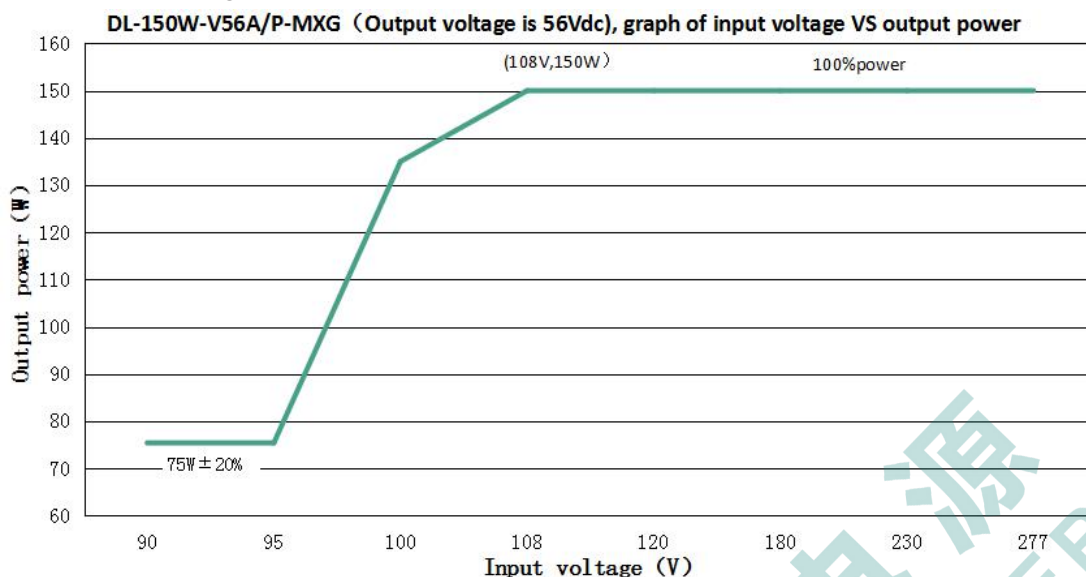
DL-150W-V214P-MXG (When the output voltage is 214Vdc, the rated output current value and output power corresponding to different input voltage)

Input Voltage	90Vac	95Vac	100Vac	108Vac	120Vac	180Vac	230Vac	277Vac
Iout	0.42A	0.53A	0.63A	0.7A	0.7A	0.7A	0.7A	0.7A
Pout	74.8W	112.7W	134.8W	150W	150W	150W	150W	150W

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 75W±20%.

Output power versus Input voltage



DL-150W-V56P-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	1.48A	2.01A	2.41A	2.68A	2.68A	2.68A	2.68A	2.68A
Pout	75.4W	112.6W	135W	150W	150W	150W	150W	150W

Note:

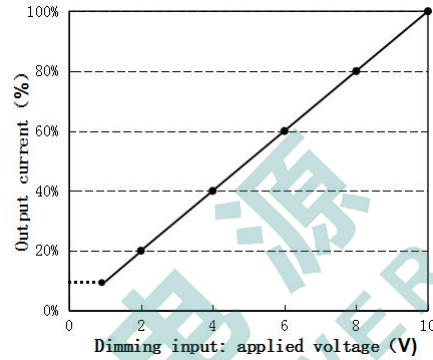
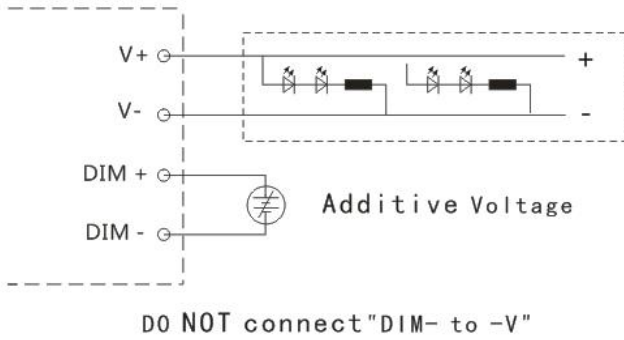
1. Input voltage will fluctuate, resistance error and other factors. At the decrease or increase of power ($V_{in}=108V_{ac}$), it will move left and right, with the range of 108V .
2. When the input voltage is 90-108Vac, the output power range is 75W±20%.

Dimming operation

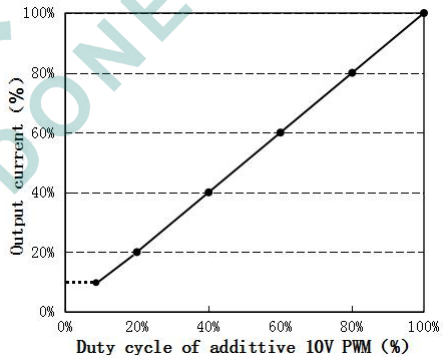
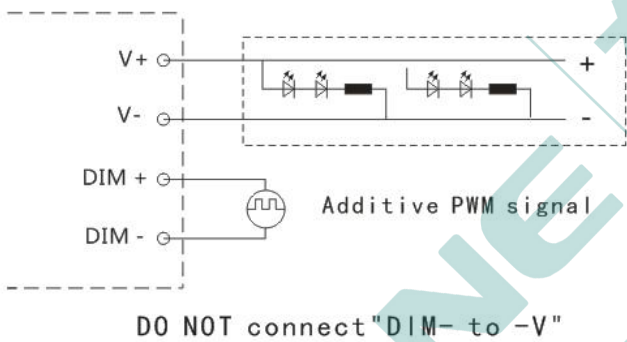
※ **Three-in-one dimming function (P version only)**

- A. connect a resistor 10-100K or 1-10V DC voltage or 10V PWM signal between DIM+ and DIM- to adjust the output current.
- B. output current of dimming port: 100uA (typical value).

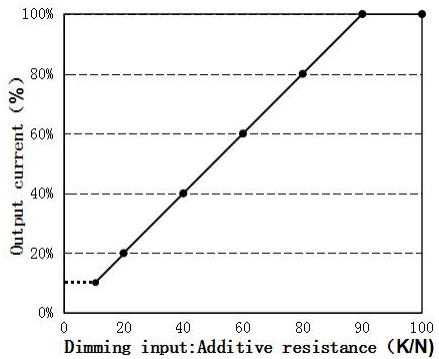
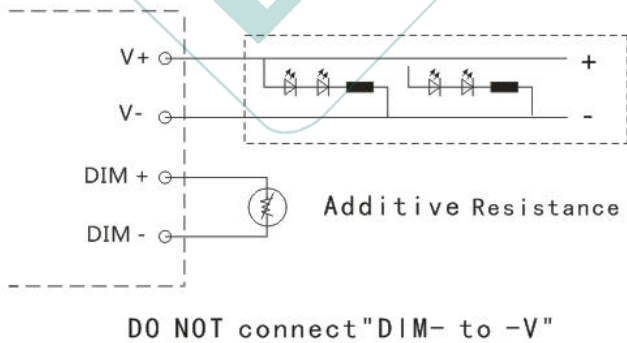
◎ **With an applied voltage of 1-10V:**



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



◎ **With an additional 10-100K resistor:**



Remark:

When Dimming input is 0V in the constant-power range, the lamp can be dim-to-off.

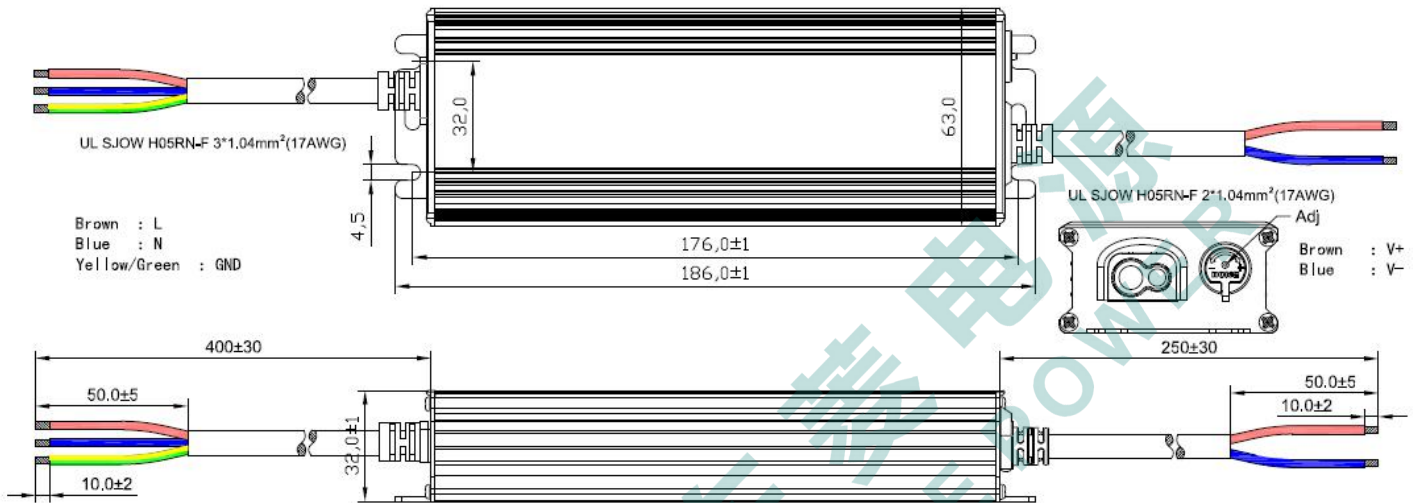
Mechanical specification

Size (mm) L186*W63*H32

General product dimension drawing

DL-150W-V56A-MXG

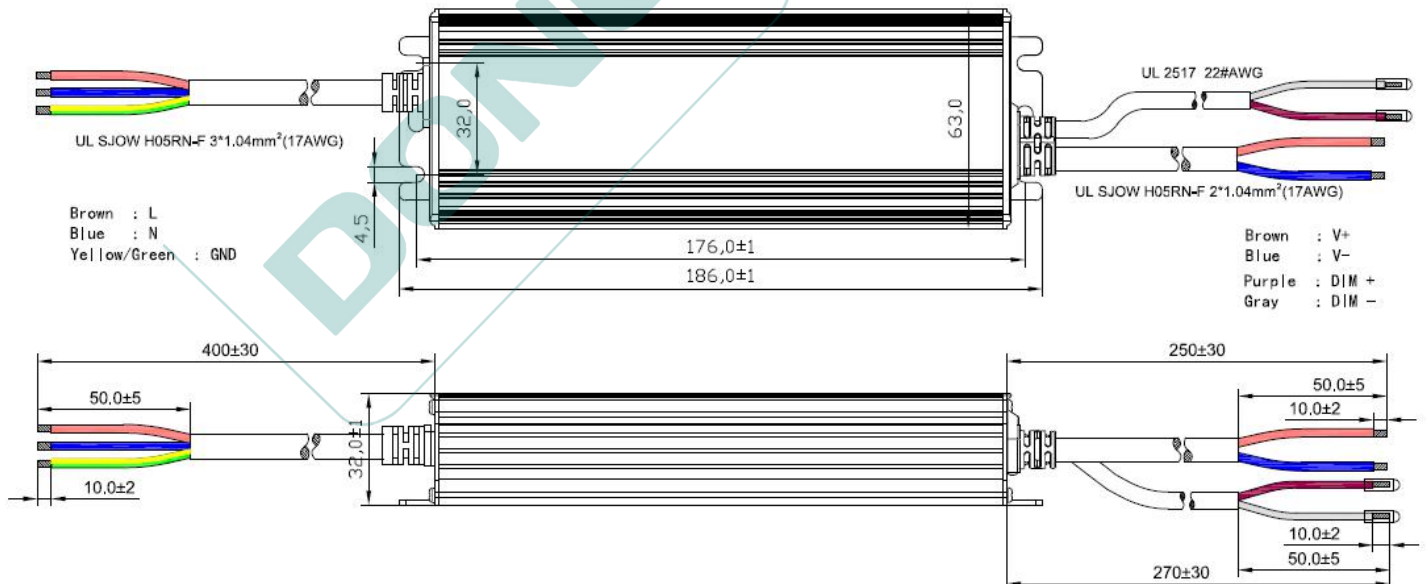
DL-150W-V214A-MXG



General product dimension drawing

DL-150W-V56P-MXG

DL-150W-V214P-MXG

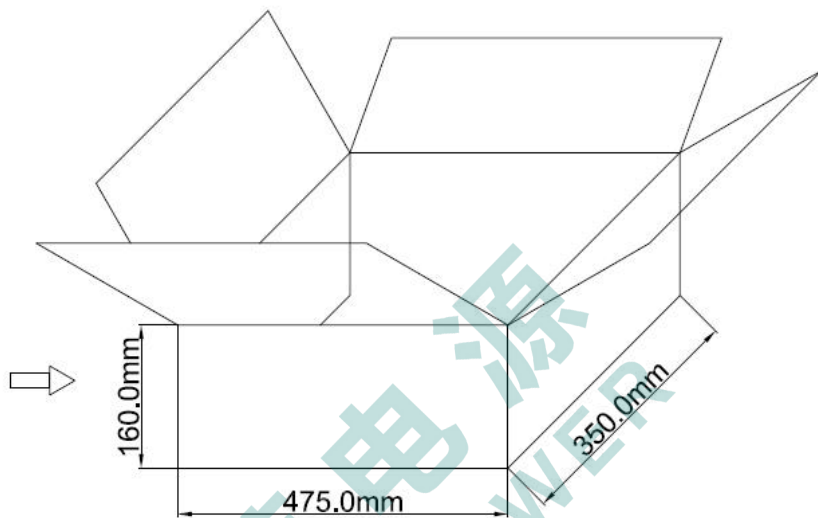
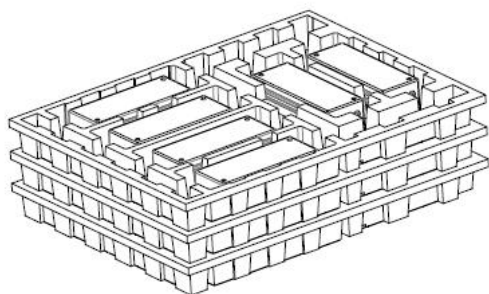


Weight

Weight 800 g

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
2021.4.7	Initial version.	V1.0	
2021.5.28	1、 Page 13 Modify package size description; 2、 Update the 1-10V dimming function on page 4; 3、 Update the dimming chart on page 11; 4、 Add product drawings and safety information drawings.	V1.1	
2021.08.13	1.Change current accuracy comment in page 4,add constant power range; 2.Update dimming drawing in page 11; 3.Update mechanical dimension drawing and packing drawing	V1.2	

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