



MXG SERIES LED DRIVERS

DL-240Z-A/P-MXL SPEC V1.0

Features

- Class I structure
- Input voltage: 100-277 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-240Z-56P-MXL DL-240Z-56A-MXL	100-277V 50/60Hz	240W	25-56Vdc	6.0A	≥92.5%	≤7%	≥0.95
DL-240Z-171P-MXL DL-240Z-171A-MXL	100-277V 50/60Hz	240W	90-171Vdc	1.9A	≥93.5%	≤7%	≥0.95
DL-240Z-343P-MXL DL-240Z-343A-MXL	100-277V 50/60Hz	240W	171-343Vdc	0.7A	≥94%	≤7%	≥0.95

- Note:**
1. Test conditions of the above parameters: Ta=25℃, 230Vac input, full load operation for 30 minutes.
 2. When input 100-277VAC, rated power 240W. Please refer to “THE OUTPUT POWER VS INPUT VOLTAGE” curve chart for details.

Input characteristics

Parameter	Min	Typ.	Max	Note
Rated input voltage	100Vac	230Vac	277Vac	
Input voltage range	90Vac		305Vac	
Rated frequency	47Hz	50/60Hz	63Hz	
Power factor	-	0.95	-	@230Vac full load, rated input voltage
T.H.D.	-	-	7%	@230Vac full load
Input current	-	-	3A	@120Vac full load
Inrush current	-	-	100A	230Vac, cold start (25°C)

Output characteristic

Parameter	Min	Typ.	Max	Note
Rated current				
DL-240Z-56P/A-MXL	-	4.3A	-	
DL-240Z-171P/A-MXL	-	1.4A	-	
DL-240Z-343P/A-MXL	-	0.7A	-	
Output current range				
DL-240Z-56P/A-MXL	3.5A	-	6.7A	
DL-240Z-171P/A-MXL	1.4A	-	2.1A	
DL-240Z-343P/A-MXL	0.5A	-	1.05A	
Output voltage range				Constant power range:
DL-240Z-56P/A-MXL	25V	-	56V	36-56V
DL-240Z-171P/A-MXL	90V	-	171V	115-171V
DL-240Z-343P/A-MXL	171V	-	343V	228-343V
Rated power(100-277Vac)	-	240W	-	
No-load voltage				
DL-240Z-56P/A-MXL	-	-	60V	
DL-240Z-171P/A-MXL	-	-	196V	
DL-240Z-343P/A-MXL	-	-	395V	
Efficiency@100Vac				
DL-240Z-56P/A-MXL	87%	88.5%	-	full load@100Vac
DL-240Z-171P/A-MXL	88%	89.5%	-	
DL-240Z-343P/A-MXL	88%	89.5%	-	
Efficiency@230Vac				
DL-240Z-56P/A-MXL	90.5%	92.5%	-	full load@230Vac
DL-240Z-171P/A-MXL	92.0%	93.5%	-	
DL-240Z-343P/A-MXL	92.0%	94%	-	

Output characteristic

Parameter	Min	Typ.	Max	Note
Output Current Ripple	-	5% Iomax	-	100% load, 20 MHz BW; Ripple =rms/ average
Accuracy of output current	-3%	-	+3%	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: 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 scope	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 10.3V, the maximum power output of the power supply will be achieved.

Protection

Function	Function instructions
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

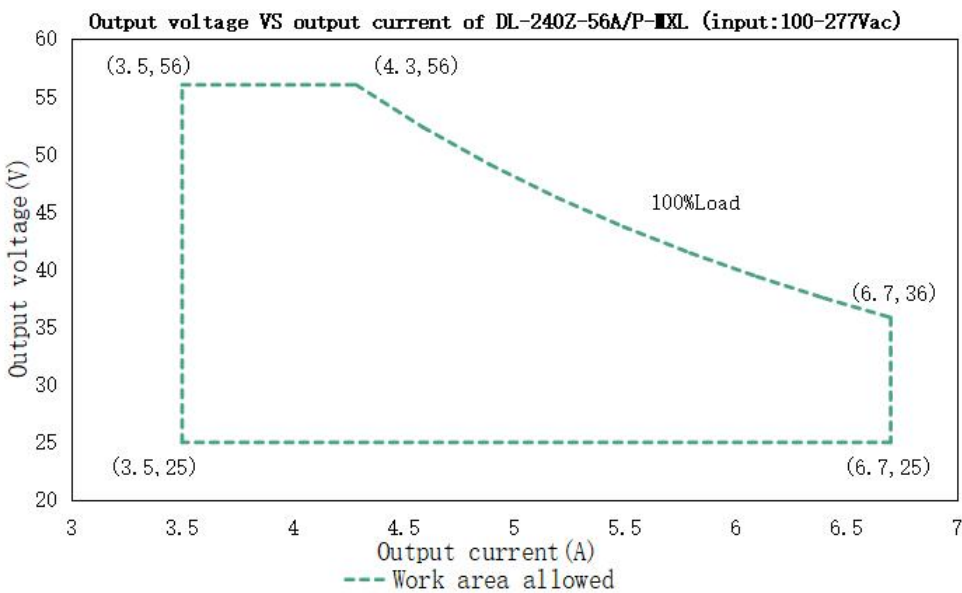
Environmental categories	Parameter
Working temperature	-40 ~ +55°C@200-277Vac, -40 ~ +40°C @100-200Vac (refer to "Life Curve ")
Max.Case Temp.	-40 ~ 90°C
Working humidity	20 ~ 95% RH, non condensing
Storage temperature、humidity	-40 ~ +80°C, 10 ~ 95% RH
Resistant to vibration	10 ~ 500Hz, 5G 12 min/cycle, X, Y, Z axis 72 min each
MTBF	230Khrs min. MIL-HDBK-217F (Ta=25°C)
Lifetime	50,000 hours @Tcase≤75°C,230Vac, 80% Load, Please refer to "Tcase VS Lifetime" section

Safety and EMC

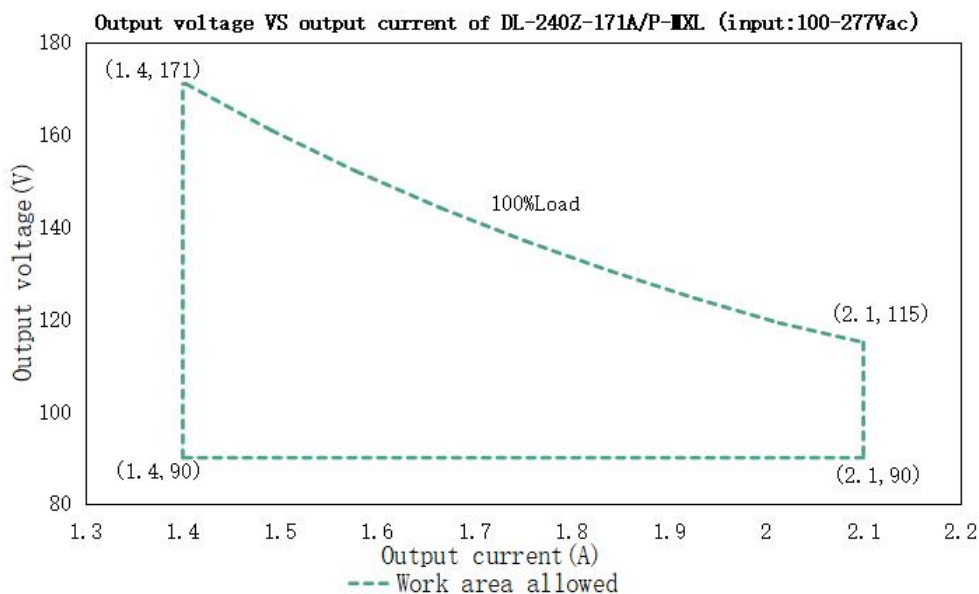
Safety categories	Standard
Safety	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS61347.2.13、EN 62384、UL8750
EMC	EN 55015、EN 61000-3-2 、GB/T 17743、GB17625.1、EN 61000-3-3
Surge protection	Differential mode L-N ±6KV (2 ohm) ,common mode L, N-PE± 15 KV (12 ohm); Refer 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:1.5KVac O/P-DIM:1.5KVac
Insulation impedance	I/P-PE:100MΩ / 500VDC; 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.

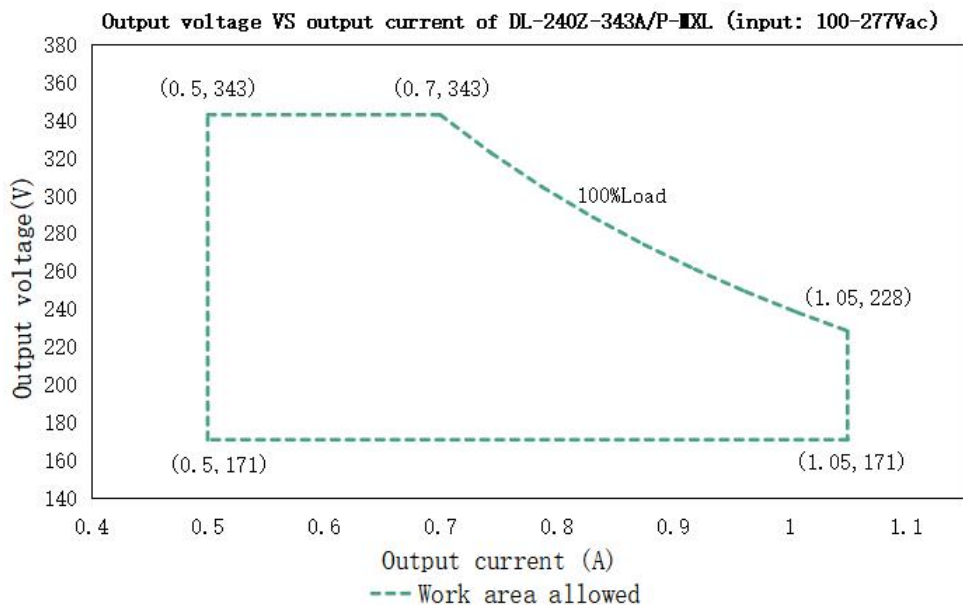
I-V Working area



Load	Output								
Load working Voltage	25V	29V	33V	36V	40V	44V	48V	52V	56V
Io_MAX	6.67A	6.67A	6.67A	6.69A	6A	5.45A	5A	4.62A	4.29A
Po_MAX	166.75W	193.43W	200.11W	240W	240W	240W	240W	240W	240W

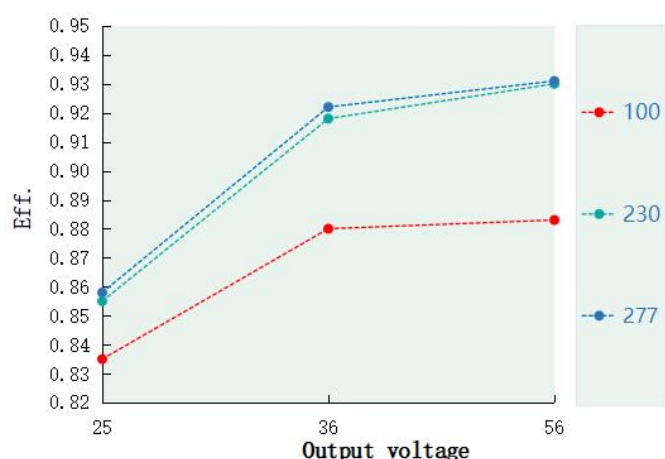


Load	Output								
Load working Voltage	90V	100V	110V	120V	130V	140V	150V	160V	171V
Io_MAX	2.1A	2.1A	2.1A	2A	1.85A	1.71A	1.6A	1.5A	1.4A
Po_MAX	189W	210W	231W	240W	240W	240W	240W	240W	240W

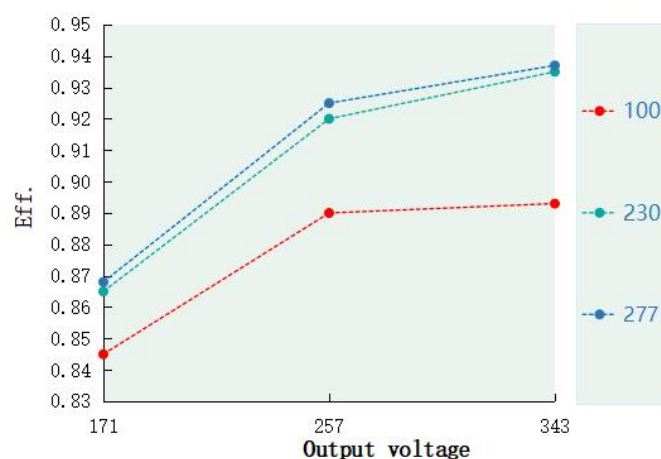


Load	Output								
Load working Voltage	171V	190V	205V	228V	251V	274V	297V	320V	343V
Io_MAX	1.05A	1.05A	1.05A	1.05A	0.96A	0.87A	0.81A	0.75A	0.7A
Po_MAX	179.55W	199.5W	214.2W	240W	240W	240W	240W	240W	240W

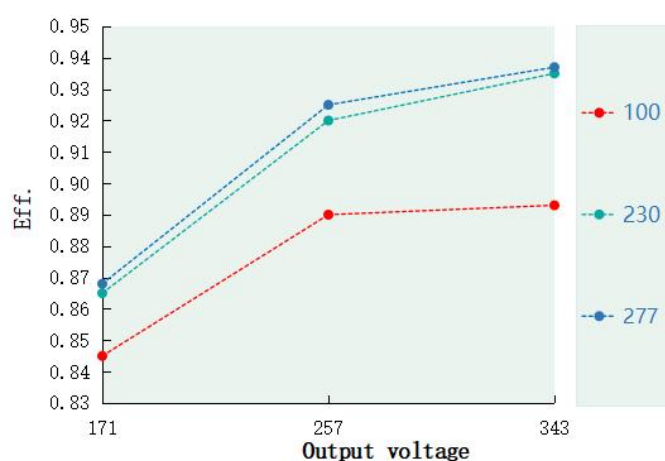
Eff. VS Output voltage(DL-240Z-56P/A-MXL)



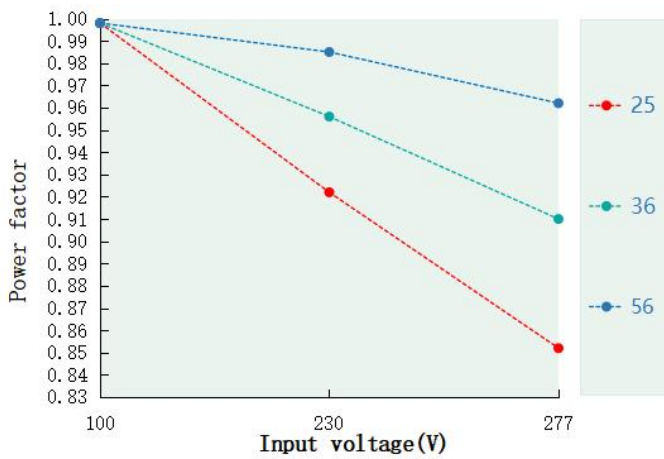
Eff. VS Output voltage(DL-240Z-171P/A-MXL)



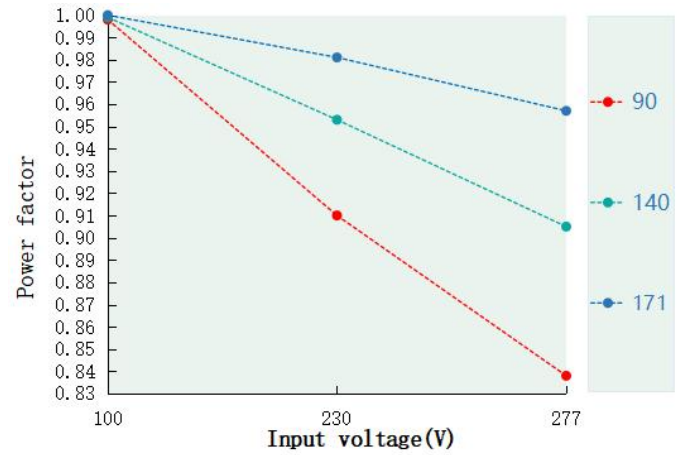
Eff. VS Output voltage(DL-240Z-343P/A-MXL)



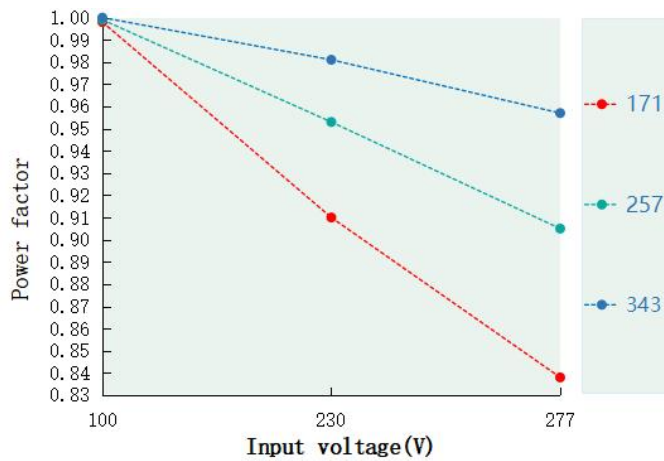
Power factor VS Input voltage(DL-240Z-56P/A-MXL)



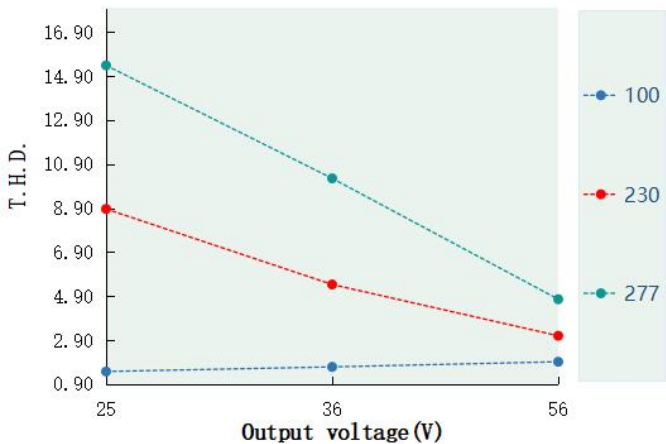
Power factor VS Input voltage(DL-240Z-171P/A-MXL)



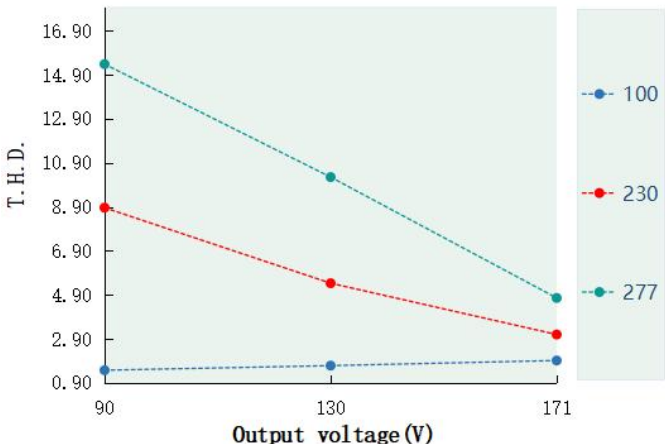
Power factor VS Input voltage(DL-240Z-343P/A-MXL)



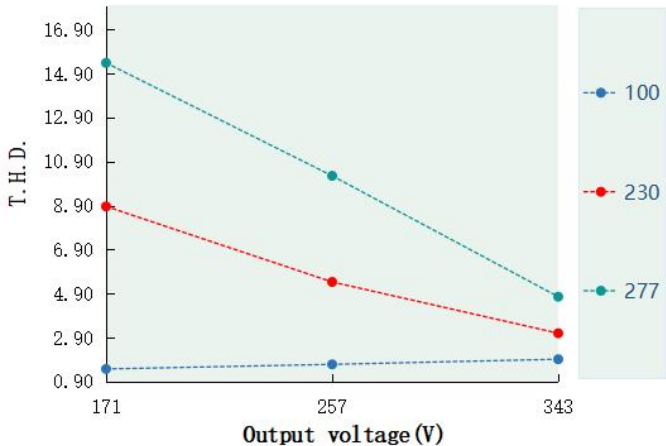
T.H.D. VS Output voltage(DL-240Z-56P/A-MXL)



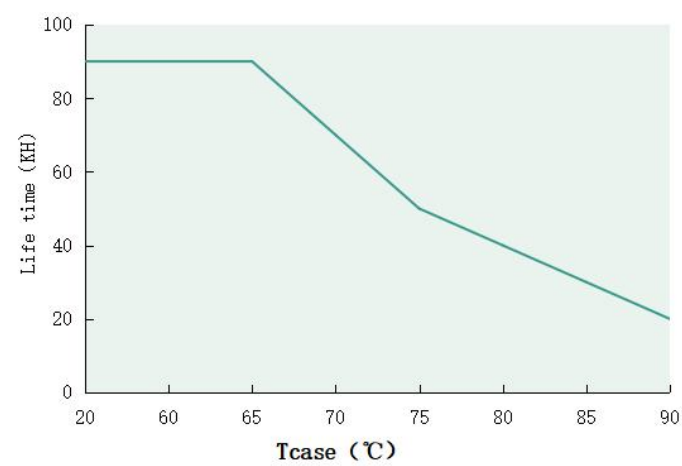
T.H.D. VS Output voltage(DL-240Z-171P/A-MXL)



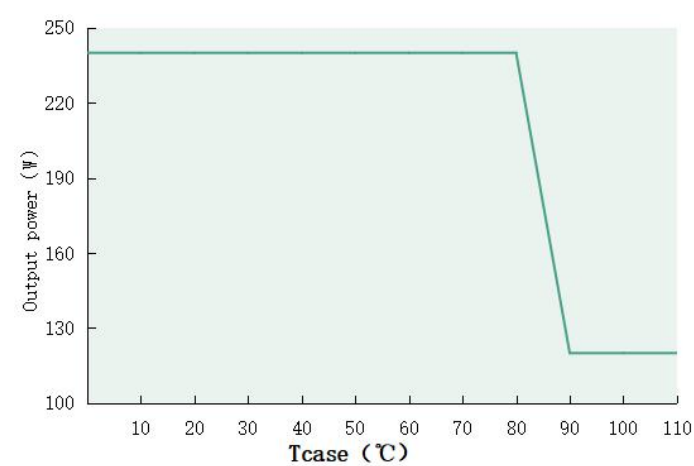
T.H.D. VS Output voltage(DL-240Z-343P/A-MXL)



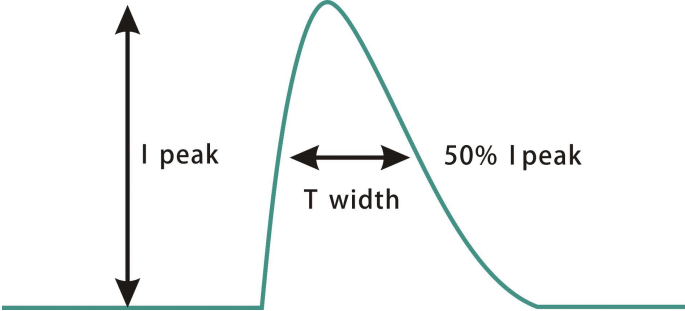
Tcase VS Lifetime (DL-240Z-P/A-MXL)



Output power VS Tcase (DL-240Z-P/A-MXL)



Inrush current(DL-240Z-P/A-MXL)



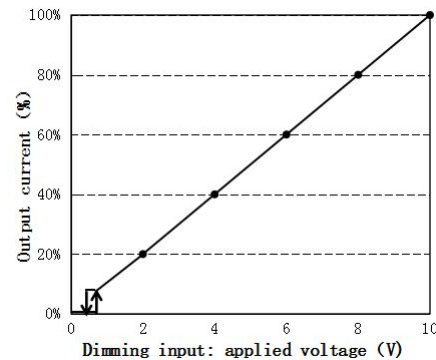
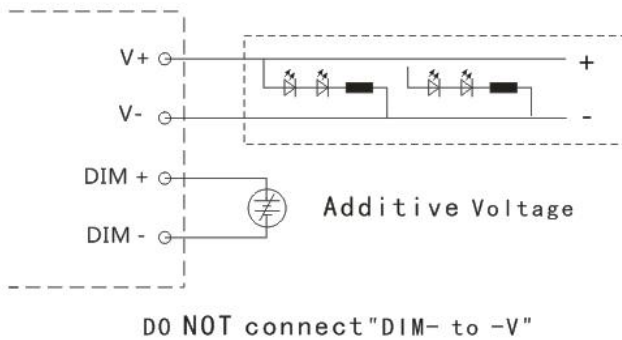
Input voltage	Peak current	T(@50% Peak current)
100Vac	55.6A	147us
230Vac	86A	165us
277Vac	92A	167us

Dimming operation

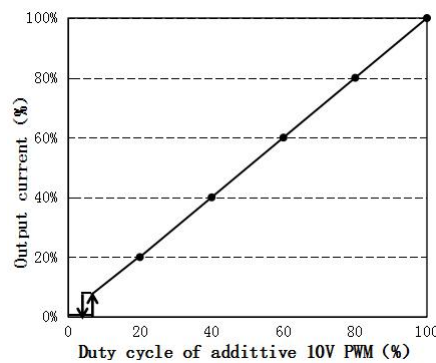
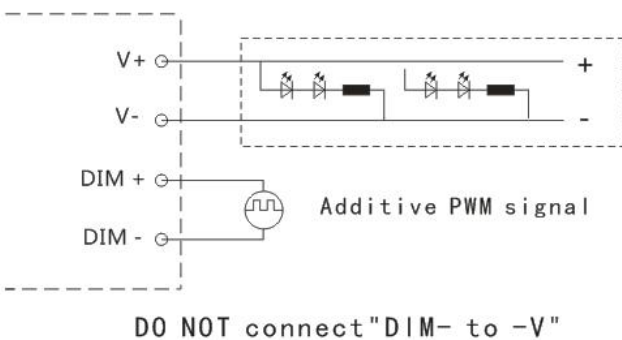
※ Three-in-one dimming function (P version only)

- 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).

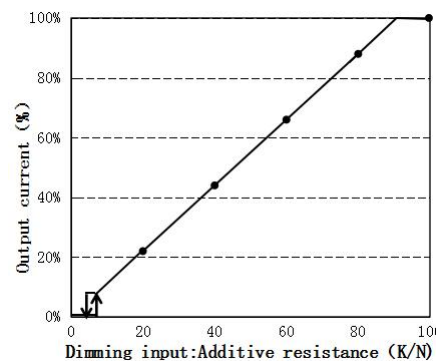
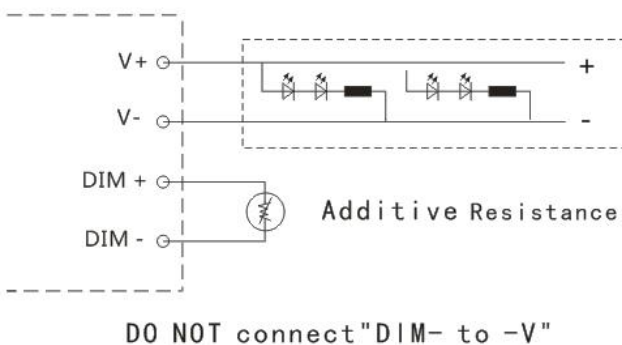
◎ With an applied voltage of 0-10V:



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



◎ With an additional 0-100K resistor:



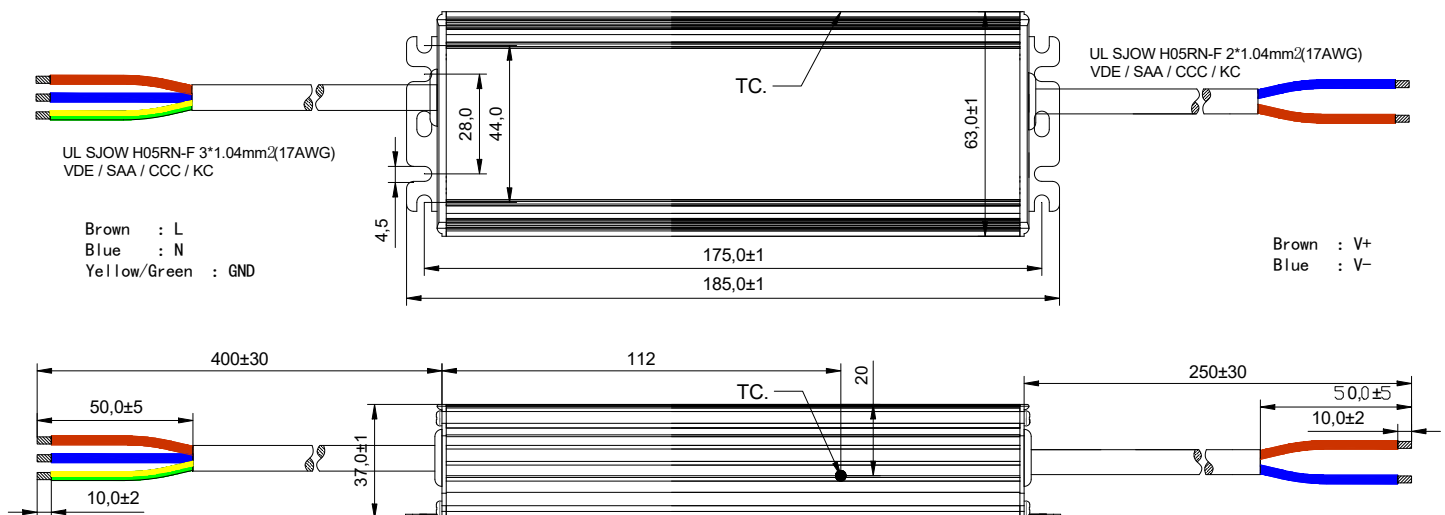
Remark:

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

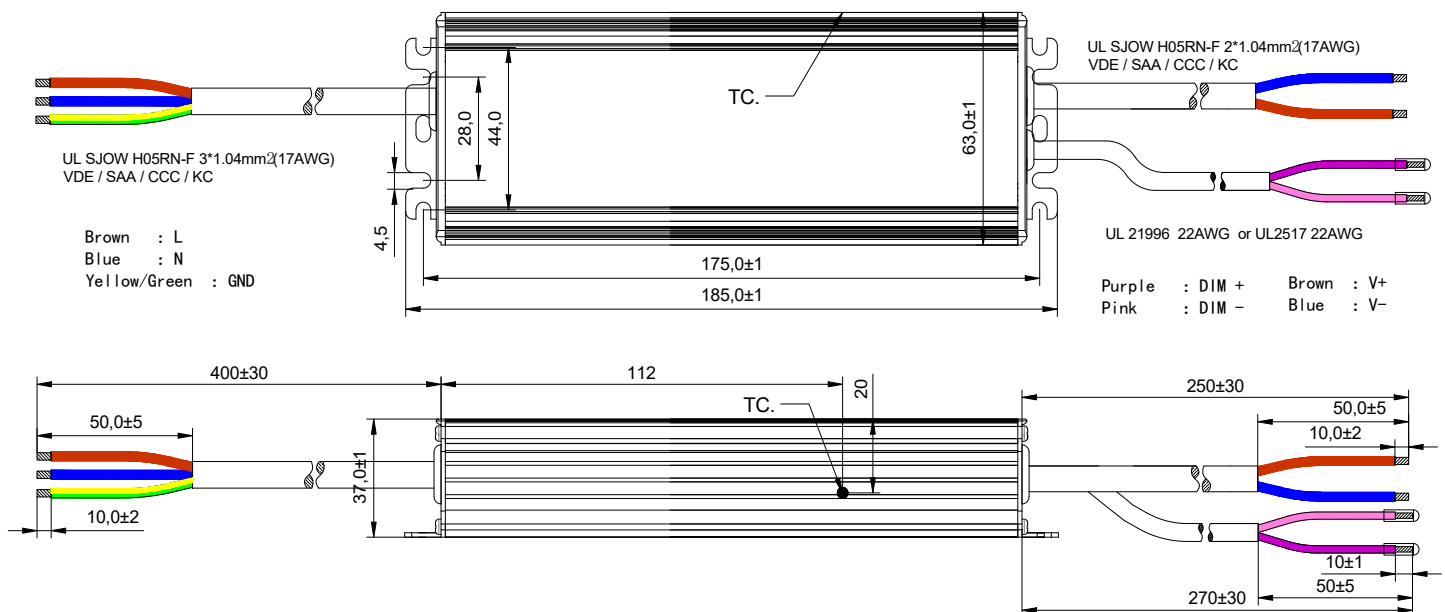
Mechanical specification

Size (mm) L185*W63*H37

DL-240Z-56A/171A/343A-MXL



DL-240Z-56P/171P/343P-MXL

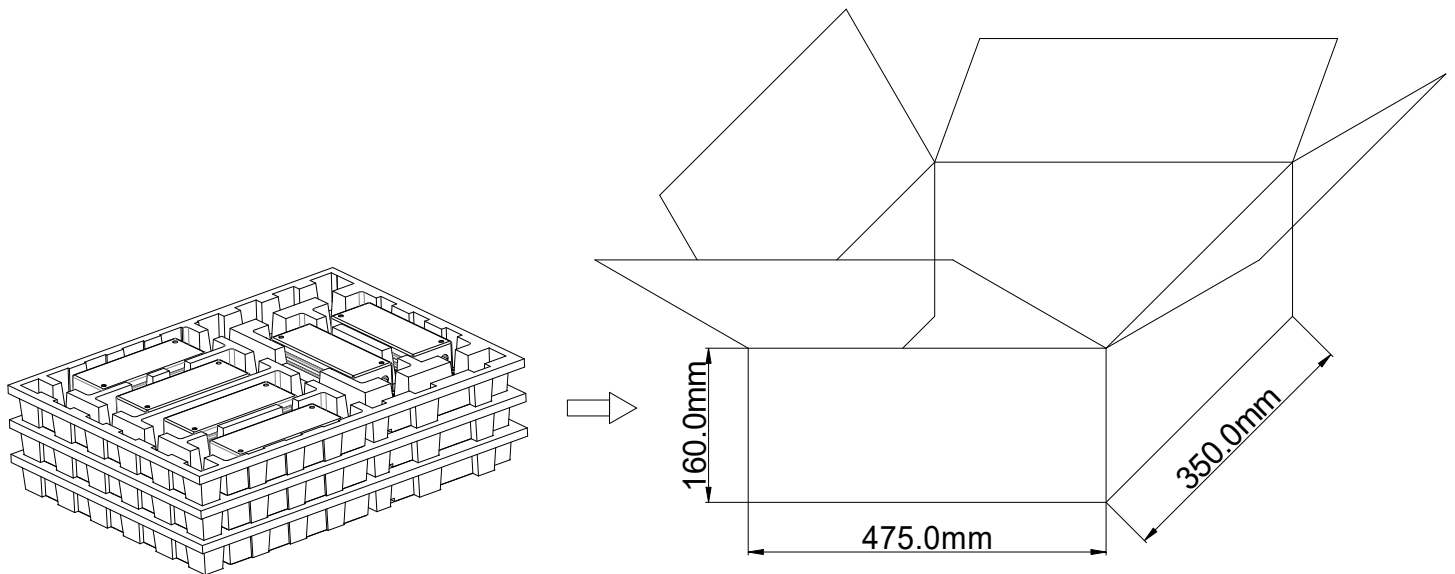


Weight

Weight 800g

Packaging

Packaging (mm) L475*W350*H160



Note: One Carton 3 layers and 6pcs each layer, total 18pcs/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
2024.9.27	Initial version.	V1.0	

MANUFACTRUER		
EDIT	CHECK	APPROVE