

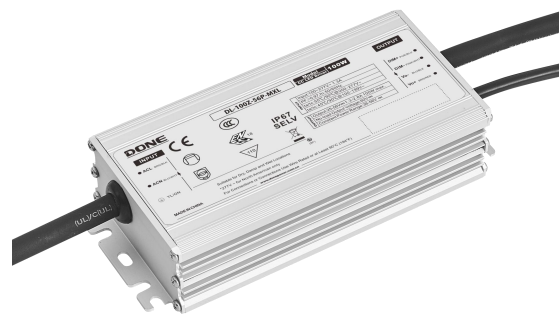
MXL Series LED Drivers

DL-100Z-A/P-MXL Specification V1.1



Features

- Class I structure
- Input voltage:100-277V ~ 50/60Hz
- Efficiency :90%(Typ.)
- Constant power driver and constant current output
- Function selection:
 - Fixed current : Adjusted by external potentiometer (A version)
 - Isolated 3-in-1 dimming: 0-10V/PWM/Resistor; Timer dimming (P version)
- Input surge protection: DM 6kV, CM 10kV
- All-Around protection: IUVP/SCP/OVP/OTP
- Ingress protection rating: IP67
- Warranty: 5 years



Applications

Road lighting
 Industrial lighting
 Stadium lighting
 Landscape lighting
 Horticulture lighting



Model list

Model NO.	Input voltage	Output power	Output voltage	Output current	Default current	Eff. (Typ.)	THD (Typ.)	PF (Typ.)
DL-100Z-56A-MXL	100-277V	100W	25-56Vdc	1.3-2.8A	2.4A	90%	7%	0.97
DL-100Z-56P-MXL	50/60Hz							
DL-100Z-72A-MXL	100-277V	100W	35-72Vdc	1.39-2.1A	1.9A	90%	7%	0.97
DL-100Z-72P-MXL	50/60Hz							
DL-100Z-143A-MXL	100-277V	100W	71-143Vdc	0.5-1.05A	0.7A	90%	7%	0.97
DL-100Z-143P-MXL	50/60Hz							

Note:

1. Test conditions for the above parameters: Ta = 25°C, 230 Vac input, 30 minutes full load.
2. The rated output power is 100W at an input voltage of 100-277Vac.

Input characteristics

Parameter	Min	Typ.	Max	Note
Rated input voltage	100Vac	230Vac	277Vac	
Input voltage range	90Vac		305Vac	
Input frequency	47Hz	50/60Hz	63Hz	
Leakage current	-	-	0.70mA	IEC 60598-1; 240Vac/60Hz
	-	-	0.75mA	UL 8750; 277Vac/60Hz
Power factor(PF)	0.95	0.97	-	At 100~240Vac and 70%~100% load
	0.88	0.95		At 277Vac and 70%~100% load
THD	-	7%	20%	At 100~277Vac and 70%~100% load
Input current	-	-	1.3A	At 120Vac and full load conditions
Inrush current	-	-	70A	At 230Vac and 25°C cold start

Output characteristic

Parameter	Min	Typ.	Max	Note
Efficiency@100Vac				At full load conditions
DL-100Z-56A/P-MXL	85.0%	86.0%	-	Io=1.79A
DL-100Z-72A/P-MXL	85.0%	86.0%		Io=1.39A
DL-100Z-143A/P-MXL	85.0%	86.0%		Io=0.70A
Efficiency@230Vac				At full load conditions
DL-100Z-56A/P-MXL	89.0%	90.0%	-	Io=1.79A
DL-100Z-72A/P-MXL	89.0%	90.0%		Io=1.39A
DL-100Z-143A/P-MXL	89.0%	90.0%		Io=0.70A
Efficiency@277Vac				At full load conditions
DL-100Z-56A/P-MXL	89.5%	90.5%	-	Io=1.79A
DL-100Z-72A/P-MXL	89.5%	90.5%		Io=1.39A
DL-100Z-143A/P-MXL	89.5%	90.5%		Io=0.70A
Output voltage range				Constant power range:
DL-100Z-56A/P-MXL	25V		56V	36-56V
DL-100Z-72A/P-MXL	35V	-	72V	48-72V
DL-100Z-143A/P-MXL	71V		143V	95-143V
Open circuit voltage				
DL-100Z-56A/P-MXL	-	-	65V	
DL-100Z-72A/P-MXL			100V	
DL-100Z-143A/P-MXL			175V	
Output current range				Default current is:
DL-100Z-56A/P-MXL	1.3A	-	2.8A	2.4A
DL-100Z-72A/P-MXL	1.39A		2.1A	1.9A
DL-100Z-143A/P-MXL	0.5A		1.05A	0.7A

Output characteristic

Parameter	Min	Typ.	Max	Note
Output current tolerance	-5%	-	+5%	At full load conditions
Output Current Ripple(PK-AV)	-	5% Iomax	10% Iomax	At full load conditions, 20 MHz BW
Start-up overshoot current	-	-	10%	At full load conditions
Line regulation	-5%	-	+5%	Measured at 100% load,input voltage changes from 100Vac to 277Vac,.
Load regulation	-5%	-	+5%	At 230Vac input and load change from 70% to 100%
Turn-on delay time	-	-	1.0s	At 100~277Vac and full load

Note: The output current range is limited by the input and output voltage, please refer to I-V Work area curve

Dimming characteristic (P version)

Dimming	Parameter	Min	Typ.	Max	Note
0-10V Dimming (Optional)	Safe operating voltage	0V	-	10V	On the Dim+ pin, Dim+ source current 150uA
	Dimming range	10%	-	100%	
	Recommended dimming input range	0V	-	10V	
	Turn-on voltage	0.6V	-	0.9V	
	Turn-off voltage	0.4V	-	0.6V	
PWM Dimming (Optional)	PWM in high level	9.5V	-	10.5V	
	PWM in low level	0V	-	0.3V	
	PWM in frequency scope	300Hz	-	2000Hz	-
	PWM in duty cycle	1%	-	99%	-
	Turn-on duty cycle	7%	8%	10%	
	Turn-off duty cycle	4%	6%	7%	
Resistor Dimming (Optional)	External resistor value	10KΩ	-	100KΩ	-
	Dimming range	10%	-	100%	Full power output at 99% duty cycle
Timer Dimming (Optional)	3 modes:Timing,Virtual Midnight,Self-adaptive				Default close, Set by the programmer
Output lumen compensation	Setting the output power with reference to the luminaire life				Default close, Set by the programmer

Note: 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.

Protection

Parameter	Description
Input under voltage protection	Self-recovery type, When the input is below 70Vac, the output is automatically turned Off, and the driver will restart when the input voltage exceeds 90Vac.
Output overload protection	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 casing temperature is greater than 90°C, the output power decreases gradually.
Output over-voltage protection	Self-recovery type, automatically recovered after abnormal conditions are removed

Note: All parameters should be measured at a 230Vac/50Hz input voltage, with a rated load and an ambient temperature of 25°C, unless otherwise specified.

Environmental

Categories	Parameter
Operating temperature Ta	-40°C ~ +45°C@100-199Vac, -40°C ~ +55°C@200-277Vac
Operating case temperature for Safety Tc_s	-40°C ~ +90°C
Operating case temperature for Warranty Tc_w	-40°C ~ +75°C, 10% ~ 95% RH
Storage temperature, humidity	-40°C ~ +80°C, 10% ~ 95% RH
Resistant to vibration	10Hz ~ 500Hz, 5G 12 min/cycle, X, Y, Z axis 72 min each
MTBF	200,000 hours (MIL-HDBK-217F), Ta=25°C, 230Vac, 80% load
Lifetime	50,000 hours @Tc≤75°C, 230Vac, 100% Load

Safety

Safety Categories	Area	Standards	Approved
CCC	China	GB 19510.1, GB 19510.14	√
CE	Europe	EN 61347-1, EN 61347-2-13	√
ENEC		EN 62384	√
CB	CB member state	IEC 61347-1, IEC 61347-2-13	√
SAA	Australia	AS/NZS 61347.1, AS/NZS 61347.2.13	√
UL	USA	UL 8750	√
CUL	Canada	CSA C22.2 No.250.13	√
EAC	Russia	ГОСТ 61347-1-2019;-2-13-2013 ГОСТ IEC 61547-2013 ГОСТ 6800-3-2-2017 ГОСТ CISPR 15-2014 ГОСТ IEC 61000-3-3-2015	√
BIS	India	IS 15885(PART 2/SEC 13)	

EMC

EMI/EMS Categories	Area	Standards	Approved
CCC	China	GB/T 17743, GB 17625.1	√
CE	Europe	EN IEC 55015 EN 61547 EN IEC 61000-3-2;3-3;4-5	√
FCC	USA	FCC Part 15 Subpart B	√

RoHS

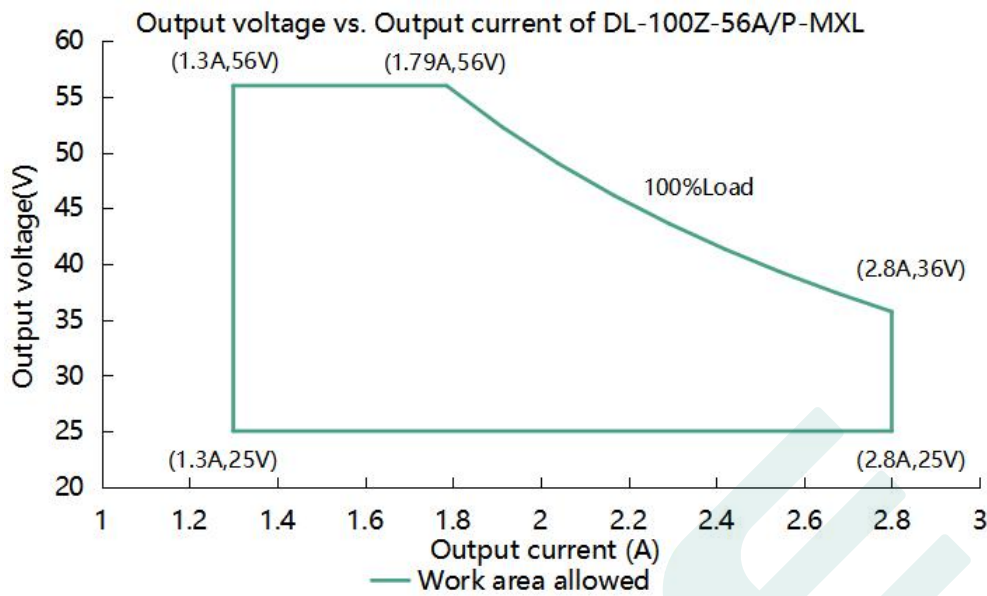
Our products comply with reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU.

Safety Test Items:

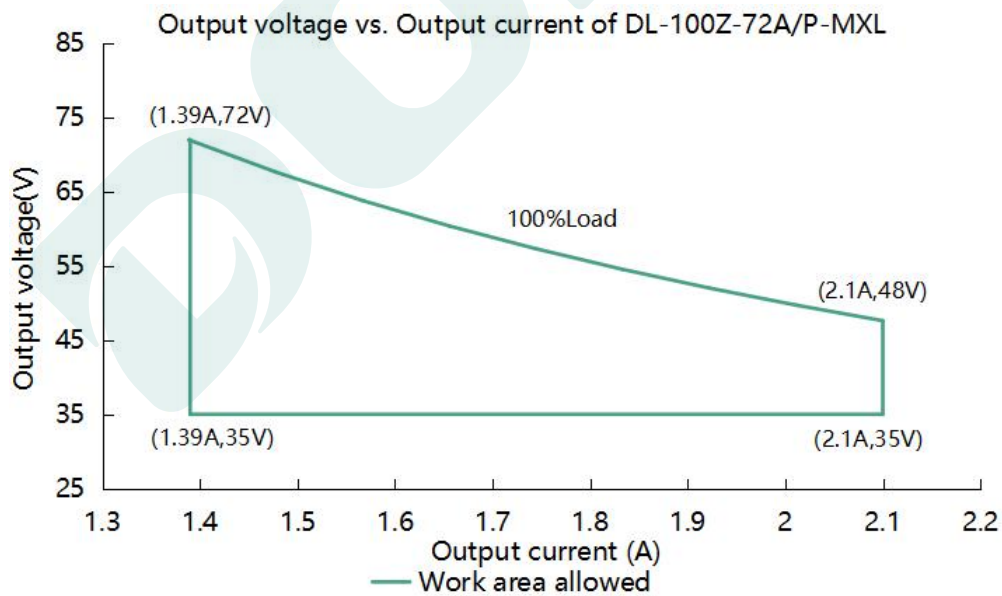
Safety Test Item	UL	CE/CB/ENEC	CCC	Insulation Requirements
Input-output	1600Vac	3200Vac	3900Vac	Reinforced insulation, 1min < 5mA
Input-Case/Ground	1600Vac	1600Vac	1600Vac	Basic insulation, 1min < 5mA
Input-Dim	1600Vac	3200Vac	3200Vac	Reinforced insulation, 1min < 5mA
Output-Case/Ground	1350Vac	1350Vac	1350Vac	Basic insulation, 1min < 5mA
Output-Dim	1350Vac	1350Vac	1350Vac	Additional insulation, 1min < 5mA
Dim-Case	500Vac	500Vac	500Vac	
Insulation Resistance	$\geq 10M\Omega$			Input-Dim, Test voltage: 500Vdc
Ground Resistance	$\leq 0.1\Omega$			25A/1min; Ta=25°C±10°C

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

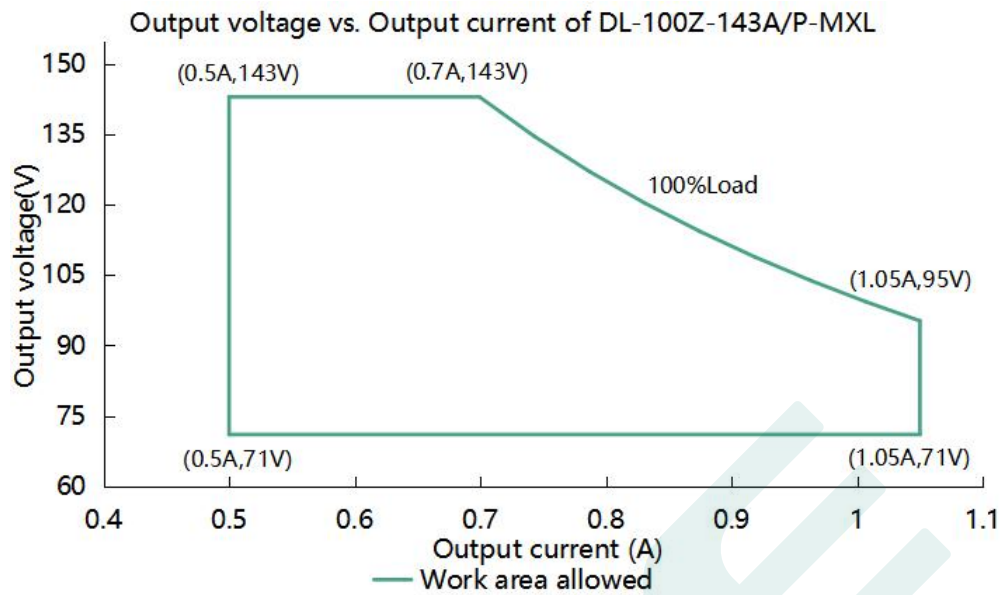


Load	Output								
Output Voltage	25V	29V	33V	36V	42V	46V	48V	52V	56V
Output Current	2.80A	2.80A	2.80A	2.80A	2.38A	2.17A	2.10A	1.92A	1.79A
Output Power	70.0W	81.2W	92.4W	100.0W	100.0W	100.0W	100.0W	100.0W	100.0W



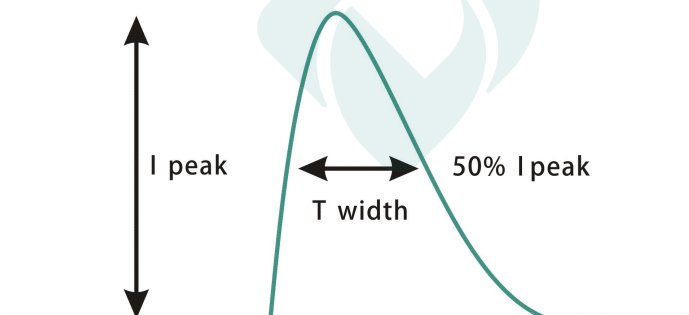
Load	Output								
Output Voltage	35V	40V	44V	48V	55V	60V	64V	68V	72V
Output Current	2.10A	2.10A	2.10A	2.10A	1.82A	1.67A	1.56A	1.47A	1.39A
Output Power	73.5W	84.0W	92.4W	100.0W	100.0W	100.0W	100.0W	100.0W	100.0W

I-V Working area



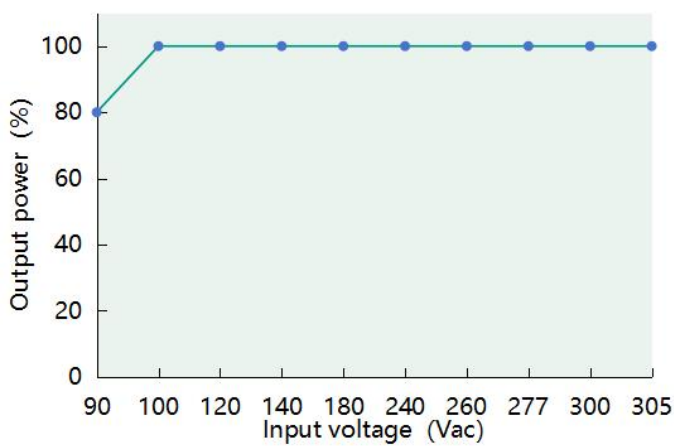
Load	Output								
Output Voltage	71V	78V	86V	95V	100V	110V	115V	120V	143V
Output Current	1.05A	1.05A	1.05A	1.05A	1.00A	0.90A	0.87A	0.83A	0.70A
Output Power	74.5W	81.9W	90.3W	100.0W	100.0W	100.0W	100.0W	100.0W	100.0W

Inrush current

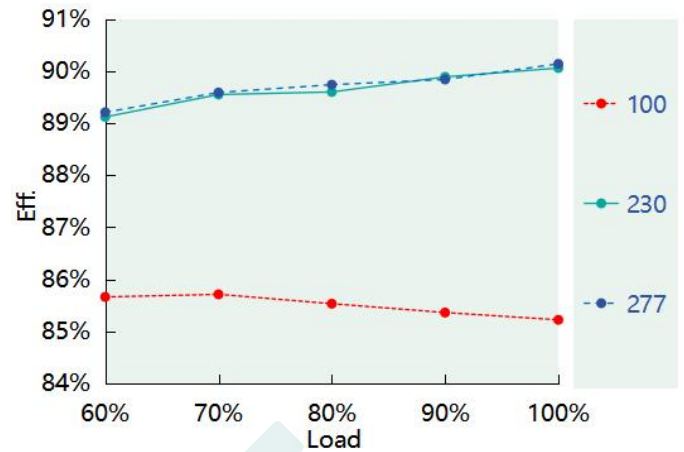


Input voltage	Peak current	T(@50% Peak current)
100V	23.5A	100US
230V	54.0A	100US
277V	65.0A	100US

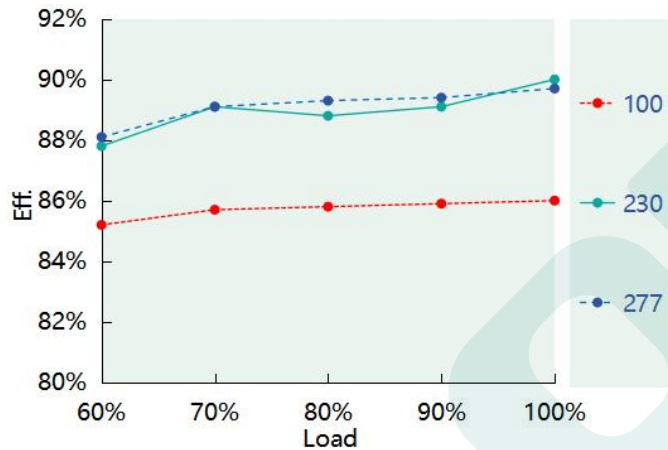
Output power vs. Input voltage (DL-100Z-MXL)



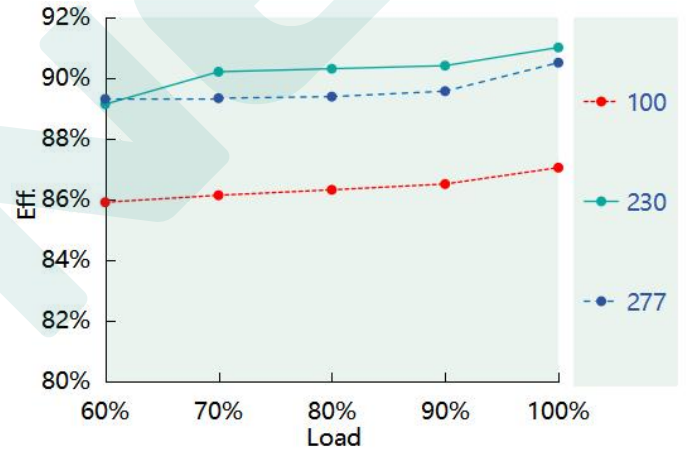
Eff. vs. Load (DL-100Z-56A/P-MXL)



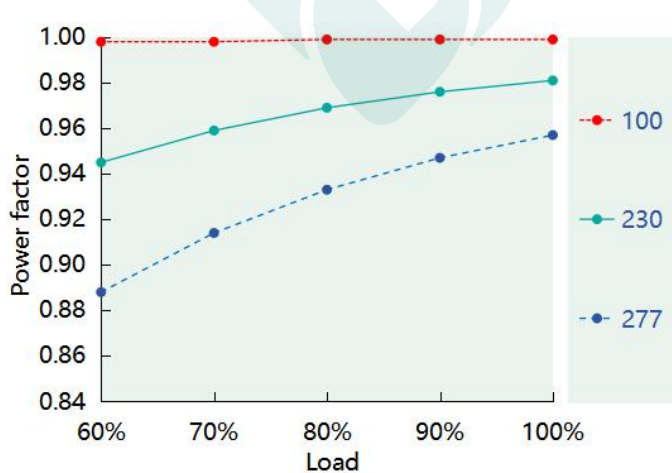
Eff. vs. Load (DL-100Z-72A/P-MXL)



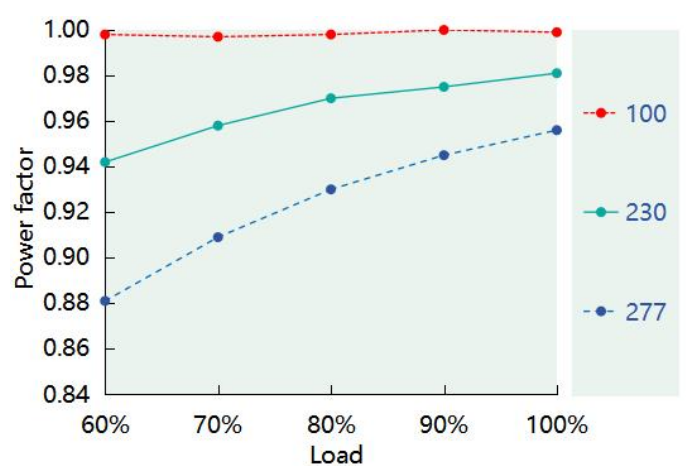
Eff. vs. Load (DL-100Z-143A/P-MXL)



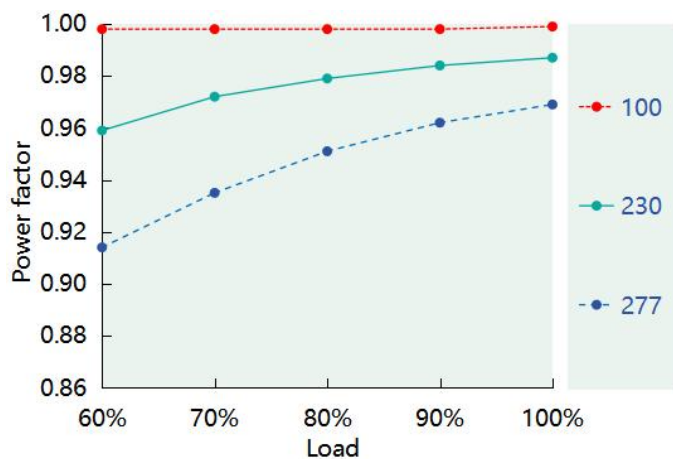
Power Factor vs. Load (DL-100Z-56A/P-MXL)



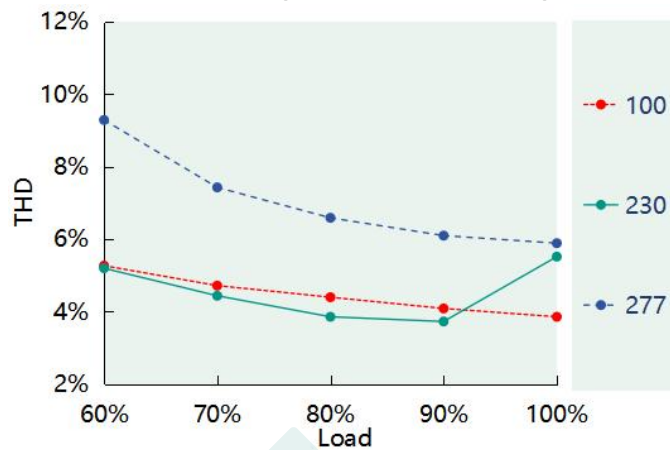
Power Factor vs. Load (DL-100Z-72A/P-MXL)



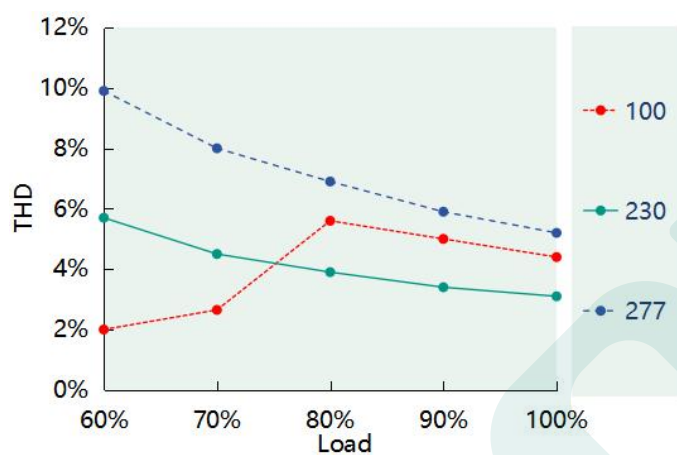
Power Factor vs. Load (DL-100Z-143A/P-MXL)



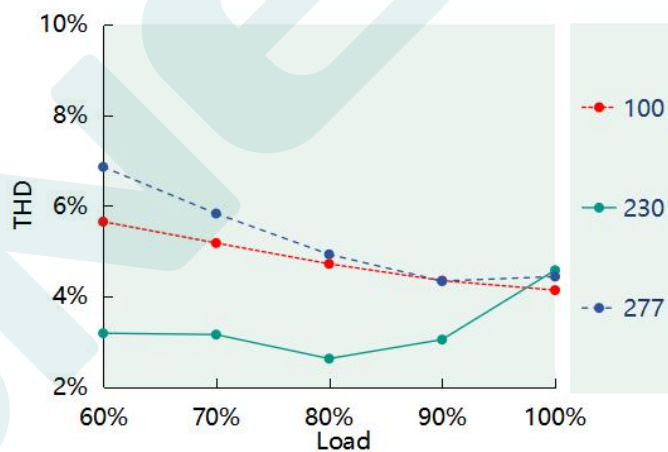
THD vs. Load (DL-100Z-56A/P-MXL)



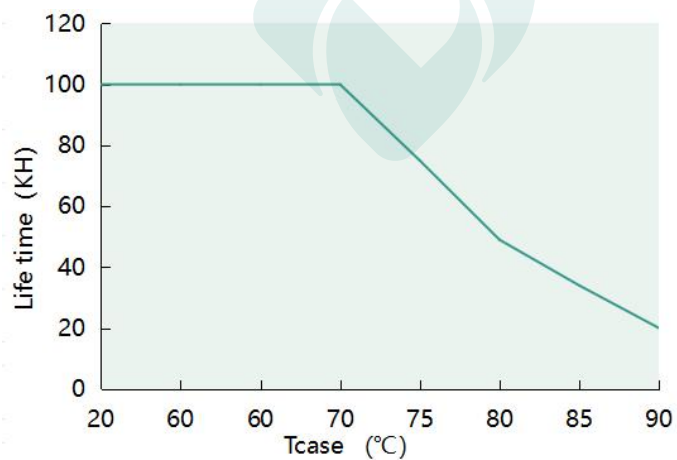
THD vs. Load (DL-100Z-72A/P-MXL)



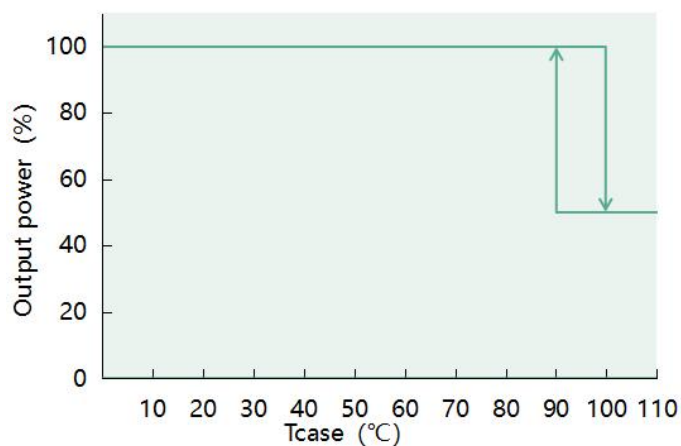
THD vs. Load (DL-100Z-143A/P-MXL)



Tcase vs. Lifetime (DL-100Z-MXL)



Output power vs. Tcase (DL-100Z-MXL)

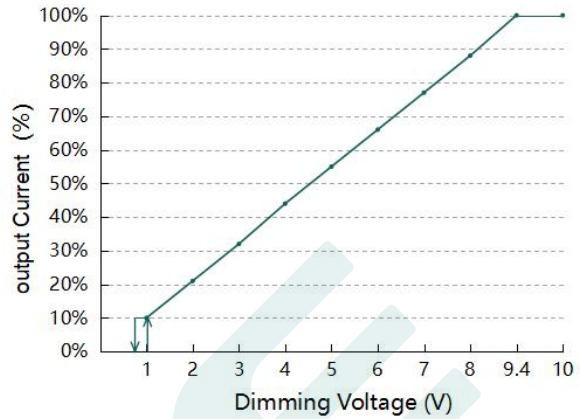
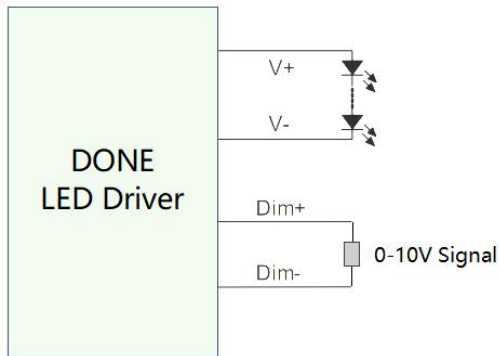


Dimming operation

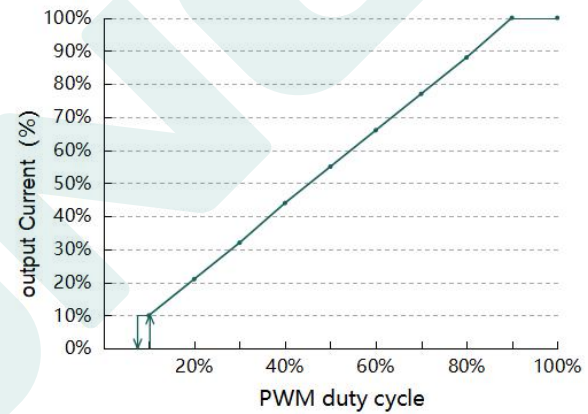
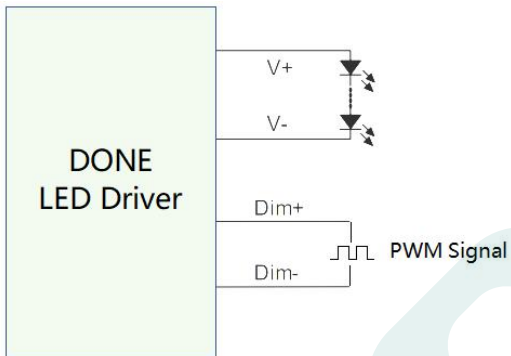
3-in-1 dimming function (P version only)

Connect a 0-10V Dimmer or 10V PWM signal or resistor between DIM+ and DIM-

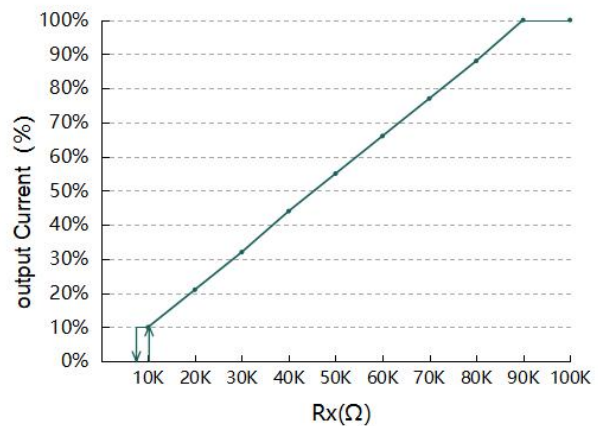
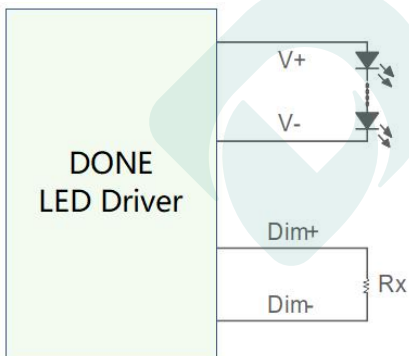
0-10V dimming:



PWM dimming:



Resistor Dimming:



Remark:

1. Positive and negative logic dimming can be programmed.
2. Dimming-off only applies to positive logic.

Programmable Connections

Suitable for MXG, MXL,MXC,MXS,MAS,PXS Series.

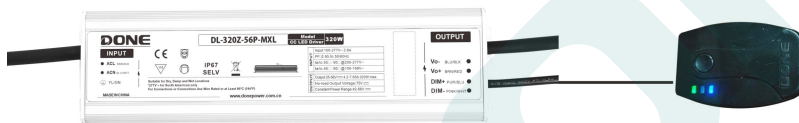
Mode 1



Visual Programming

1. Set the output parameters through the control signal line, set the output current and 0-5V/0-10V/3-in-1/PWM optional.
2. Timer dimming, Traditional/Self-adaptive midnight/Self-adaptive percentage optional, support up to 6 segments;
3. Set output output lumen compensation(OLC);
4. Set the lifetime warning
5. Set the OTP parameter
6. After setting is completed, then click the Save button, download it to the offline programmer and the driver setup is complete.

Mode 2



Off-line programmable :

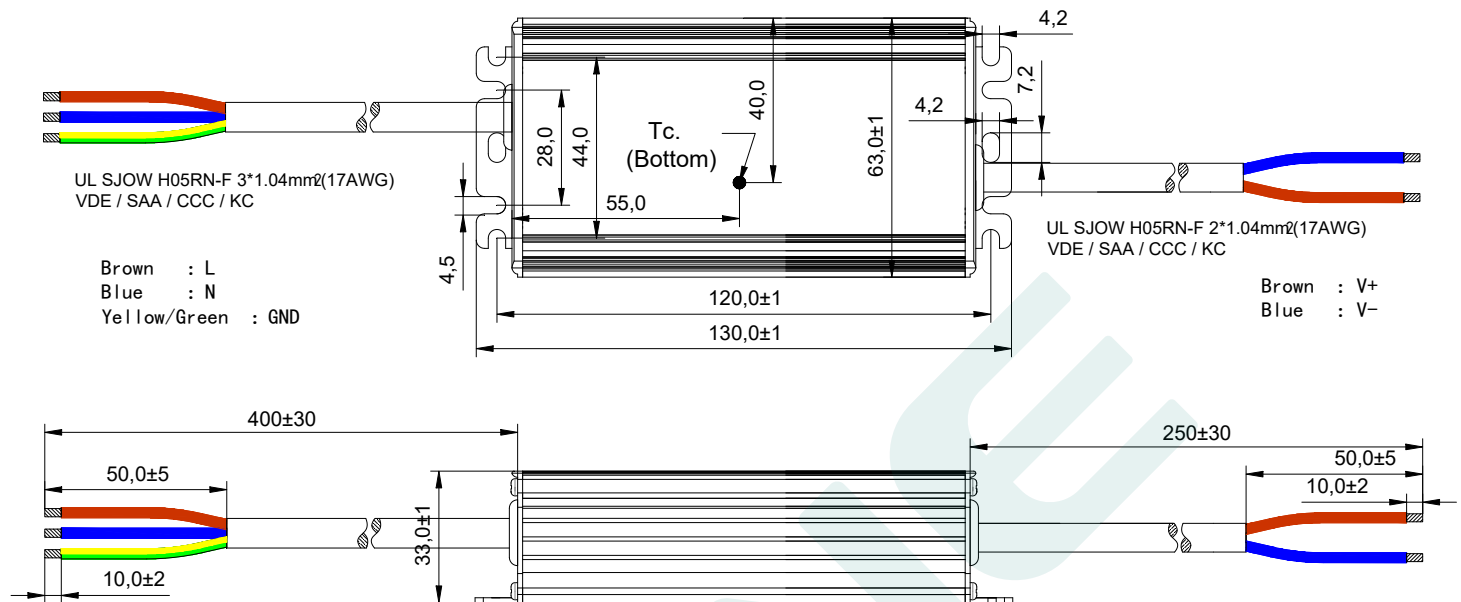
1. Download the program to the programmer;
2. Connect the dimming wire with the programmer, press the programmer button , the programmer will give you a Beep and indicator light turns green to tell you the installation completed.

For more details,Please see the “DONE POWER OFFLINE PROGRAMMING TOOL V2.0 “ file.

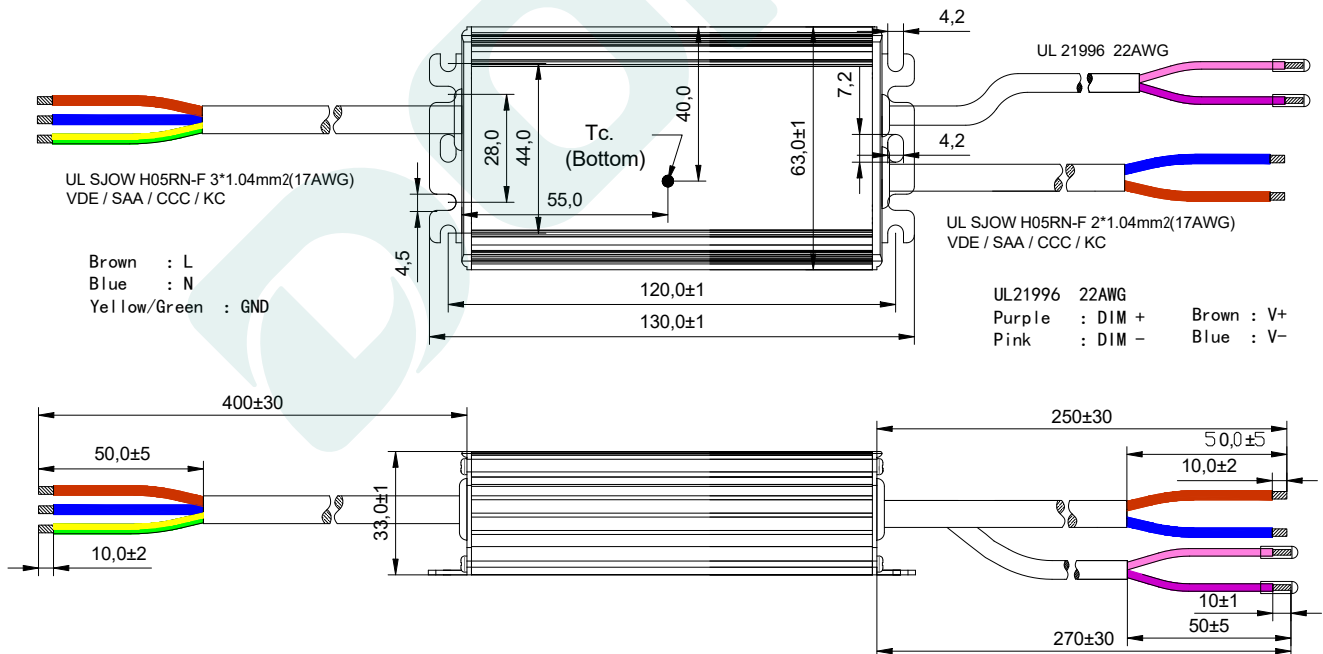
Mechanical specification

Size (mm) L130*W63*H33

DL-100Z-56A/72A/143A-MXL



DL-100Z-56P/72P/143P-MXL

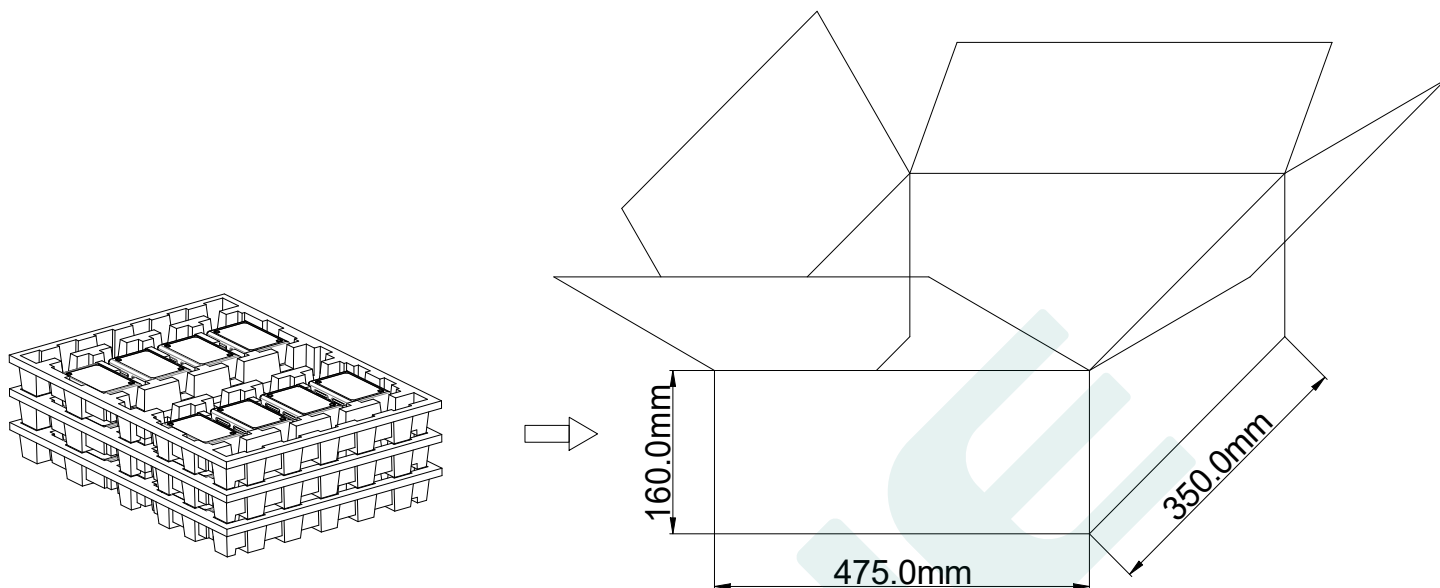


Weight

Weight 500g

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
2025.3.22	Initial version.	V1.0	
2025.4.7	1. 100Z-56A/P-MXL open circuit voltage changed to 65V, CM changed to 10KV 2. The maximum value of THD changed to 20%	V1.1	

MANUFACTRUER		
EDIT	CHECK	APPROVE