MXC SERIES LED DRIVERS

DL-40H-A/P-MXC SPECV V1.3

GUANGDONG DONE POWER TECHNOLOGY CO.,LTD

Features

- Class I structure
- Input voltage: 100-305V ~ 50/60 Hz

  Rated input voltage: 200-277V ~ 50/60Hz
- Efficiency :87%(Typ.)
- Constant power drive and constant current output control mode
- Metal shell structure, protection grade: IP67
- Lightning protection level: differential mode 4kV, common mode 6kV
- Function selection:

  Output current is adjusted by external potentiometer (A version only)

  Isolation dimming function: 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-40H-56P-MXC DL-40H-56A-MXC	100-277V 50/60Hz	40W	25-56Vdc	0.9A	≥87%	≤10%	≥0.95

Note:

1. Test conditions of the above parameters: Ta=25℃, 230Vac input, full load operation for 30 minutes.
2. The input is less than 165±15Vac, and the output power is reduced to 20W±20%; When the input is 200-277Vac, the rated power is 40W, and special attention should be paid to the application; For details, see input voltage VS output power diagram.

Input characteristics

Parameter	Min	Typ.	Max	Note
Rated input voltage	200Vac	230Vac	277Vac	
Input voltage range	100Vac		305Vac	The derating begins when the input voltage is less than 165V±15VAC
Rated frequency	47Hz	50/60Hz	63Hz	
Power factor	0.95	-	-	@230Vac full load,rated input voltage
T.H.D.	-	-	10%	100% load，230Vacinput
Input current	-	-	0.25A	100% load，200Vacinput
Inrush current	-	-	70A	230Vac, cold start (25℃)

Output characteristic

Parameter	Min	Typ.	Max	Note
Rated current DL-40H-56A/P-MXC	-	0.71A	-	
Output current range DL-40H-56A/P-MXC	0.45A	-	1.34A	
Output voltage range DL-40H-56A/P-MXC	25V	-	56V	Constant power voltage range: 30-56V
Rated power(100-150Vac)	-	20W	-	The derating begins when the input voltage is less than 165V±15VAC
Rated power(200-277Vac)	-	40W	-	
No-load voltage DL-40H-56A/P-MXC	-	-	75V	
Efficiency@200Vac DL-40H-56A/P-MXC	86.4%	86.6%	-	full load@200Vac
Efficiency@230Vac DL-40H-56A/P-MXC	86.6%	87%	-	full load@230Vac

Output characteristic

Parameter	Min	Typ.	Max	Note
Output Current Ripple	-	5%Iomax	-	100% load, 20 MHz BW; Ripple =rms/ average
Accuracy of output current	-5%	-	+5%	full load Constant power range
Line regulation	-3%	-	+3%	full load Constant power range
Load regulation	-3%	-	+3%	full load Constant power range
Starting time	-	-	500ms	full load@200-277Vac

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 input voltage is between 150 and 180VAC,Because of the conversion threshold deviation,The output power may be between half load and full load.Please pay special attention to.

Dimming characteristic

Parameter		Min	Typ.	Max	Note
1-10V Dimming (Optional)	Safe applied voltage range	1V	-	12V	When the external voltage is ≥ 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	0	-	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	10KΩ	-	100KΩ	-
	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. Dimming The default setting is 3-in-1 positive logic dimming (it can be set to timing dimming, 0-5V or other voltage dimming by programming software).Dimming default setting is three in one positive logic dimming (programmable software can be set to timing dimming, 0-5V or other voltage dimming).
3. Set to positive logic dimming function, achieve 0V dimming off, dimming off after the output voltage is 0.46*Vomax, pay attention to the application, but it is recommended that customers use 1-10V dimming.
4. When negative logical dimming is set, the default output is 100% when the dimming light is suspended. Negative logic dimming cannot be turned off. When the voltage of the dimming port is greater than 10.5V, the maximum power output of the power supply is generated.

Protection

Function	Function instructions
Input under-voltage protection	When the input voltage is less than 165±15Vac, the output power gradually decreases. See derating curve for details
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

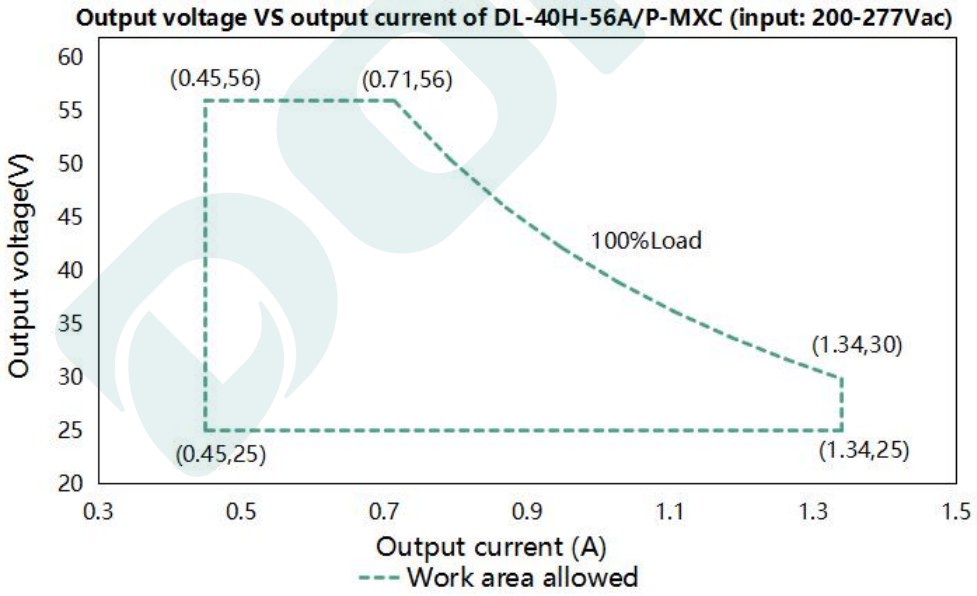
Environmental categories	Parameter
Working temperature	-40 ~ +55℃@200-277Vac
Max.Case Temp.	-40 ~ 90℃
Working humidity	20 ~ 95% RH, non condensing
Storage temperature、humidity	-40~+80℃, 10 ~ 95% RH
Resistant to vibration	10 ~ 500Hz, 5G 12 min/cycle, X, Y, Z axis 72 min each
MTBF	230Khrs min. MIL-HDBK-217F (Ta=25℃)
Lifetime	50000 hours @Tcase≤75℃,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 ±4KV（2 ohm）,common mode L，N-PE± 6KV（12 ohm）; Refer to IEC61000-4-5 2014 Criterion B
High-pot test	I/P-O/P: 3.858KVac I/P-PE :1.554KVac I/P-DIM:1.554KVac O/P-PE : 1.15KVac O/P-DIM:1.15KVac
Insulation impedance	I/P-PE:100MΩ / 500VDC; I/P-O/P:100MΩ / 500VDC / 25℃/ 70% RH
Leakage current	<0.7mA@277Vac

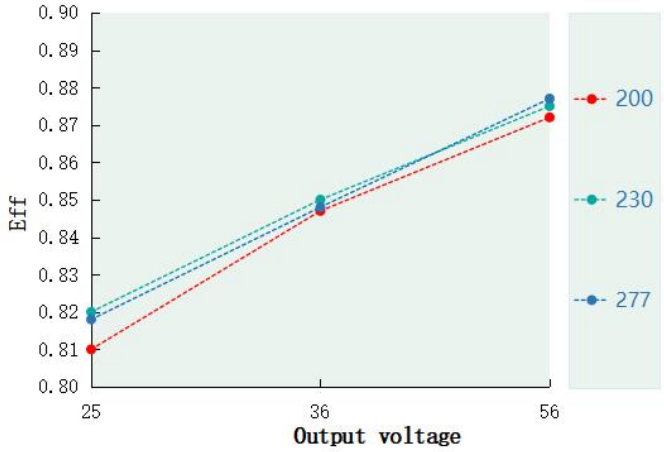
Note: The driver is considered as a component that will be operated in combination with the final equipment. Since EMC performance will be affected by the complete installation,the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.

I-V Working area

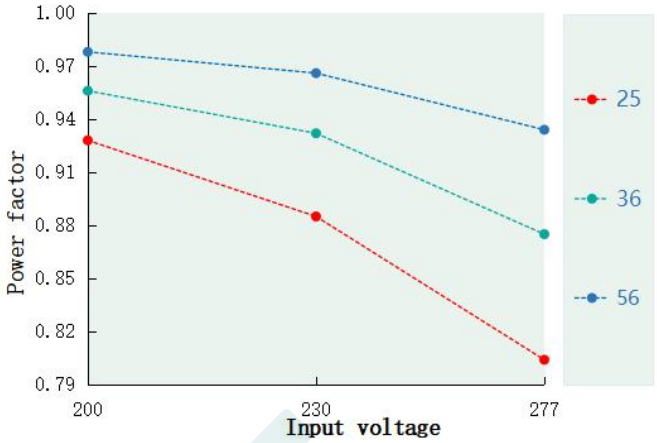


Load	Output								
Load working Voltage	25V	28V	30V	36V	40V	44V	48V	52V	56V
Io_MAX	1.34A	1.34A	1.33A	1.1A	1A	0.91A	0.83A	0.77A	0.71A
Po_MAX	33.5W	37.5W	40W	40W	40W	40W	40W	40W	40W

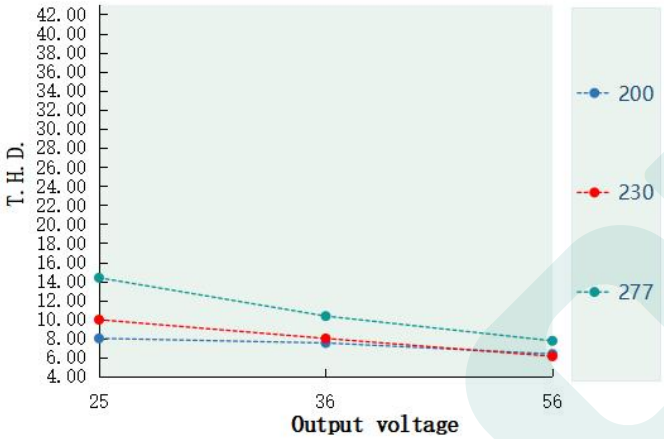
Eff. VS Output voltage(DL-40H-56A/P-MXC)



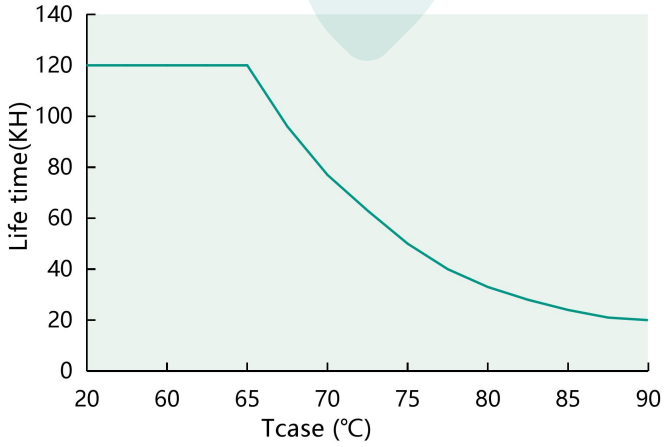
Power factor VS Input voltage(DL-40H-56A/P-MXC)



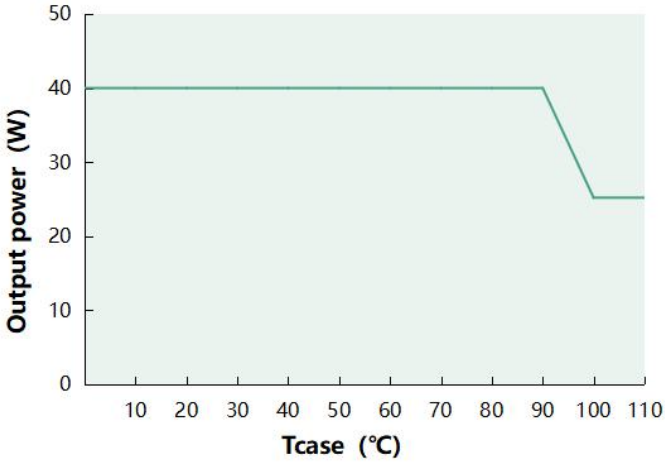
T.H.D. VS Output voltage(DL-40H-56A/P-MXC)



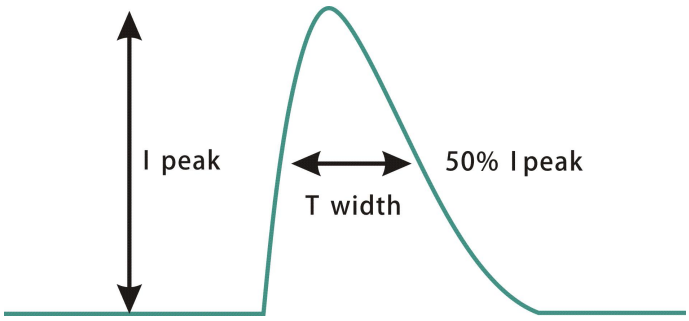
Tcase VS Lifetime(DL-40H-MXC)



Output power VS Tcase (DL-40H-MXC)

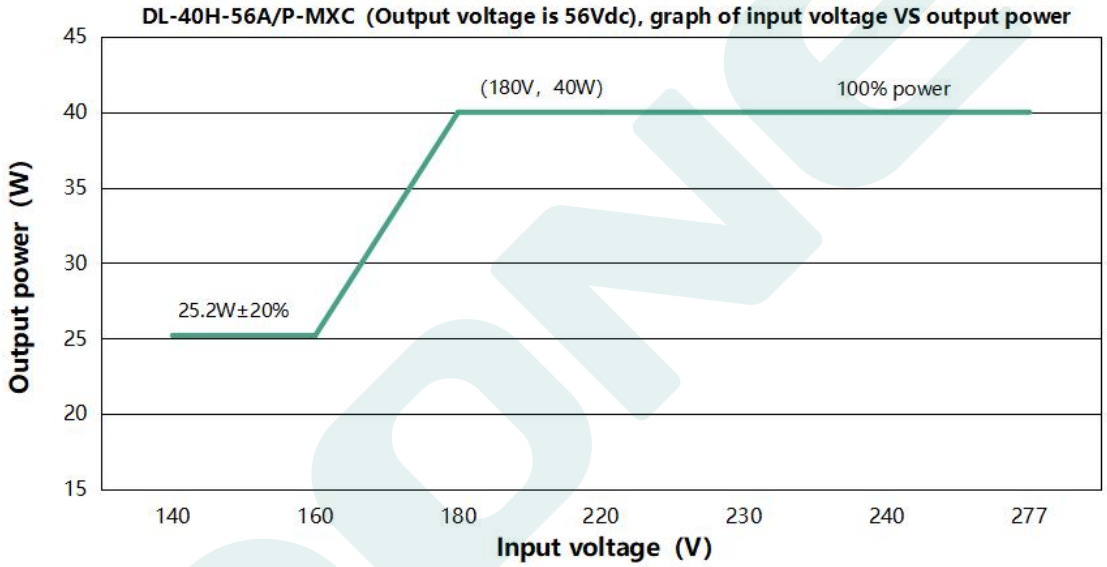


Inrush Current (DL-40H--MXC)



Input voltage	Peak current	T(@50% Peak current)
200Vac	40.5A	148us
230Vac	60.33A	172us
277Vac	60.5A	194us

Output power VS Input voltage



DL-40H-56A/P-MXC(When the output voltage is 56Vdc, the rated output current value and output power corresponding to different input voltage)							
Input Voltage	140Vac	160Vac	180Vac	220Vac	230Vac	240Vac	277Vac
Iout	0.45A	0.45A	0.71A	0.71A	0.71A	0.71A	0.71A
Pout	25.2W	25.2W	40W	40W	40W	40W	40W

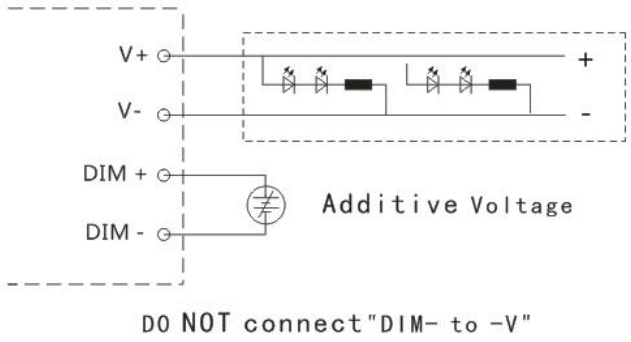
Note: When the input voltage is less than 180Vac, the output power will decrease gradually to 25.2W±20%.

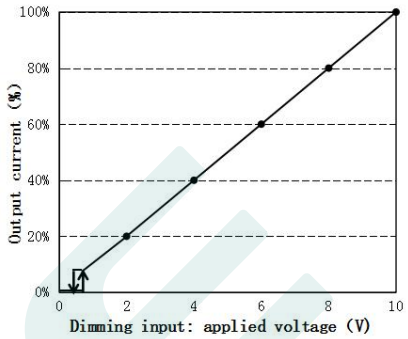
Dimming operation

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

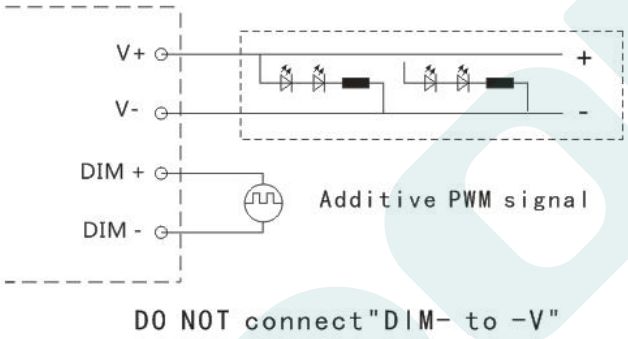
A. Connect a resistor 10-100K or 1-10V DC voltage or 10V PWM signal between DIM+ and DIM- to adjust the output current.
B. Output current of dimming port: 100uA (typical value).

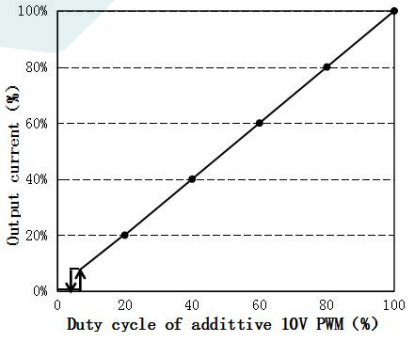
◎ **With an applied voltage of 1-10V:**



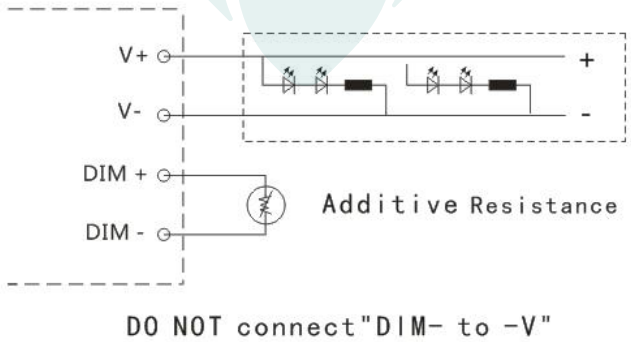


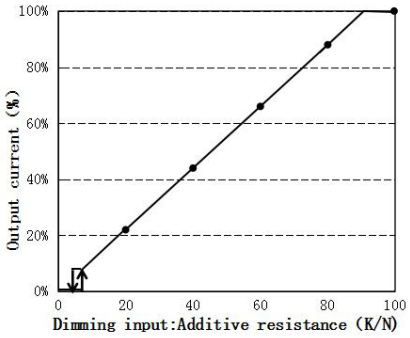
◎ **Applying additive 10V PWM signal（Frequency range：300Hz-2K Hz）：**





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





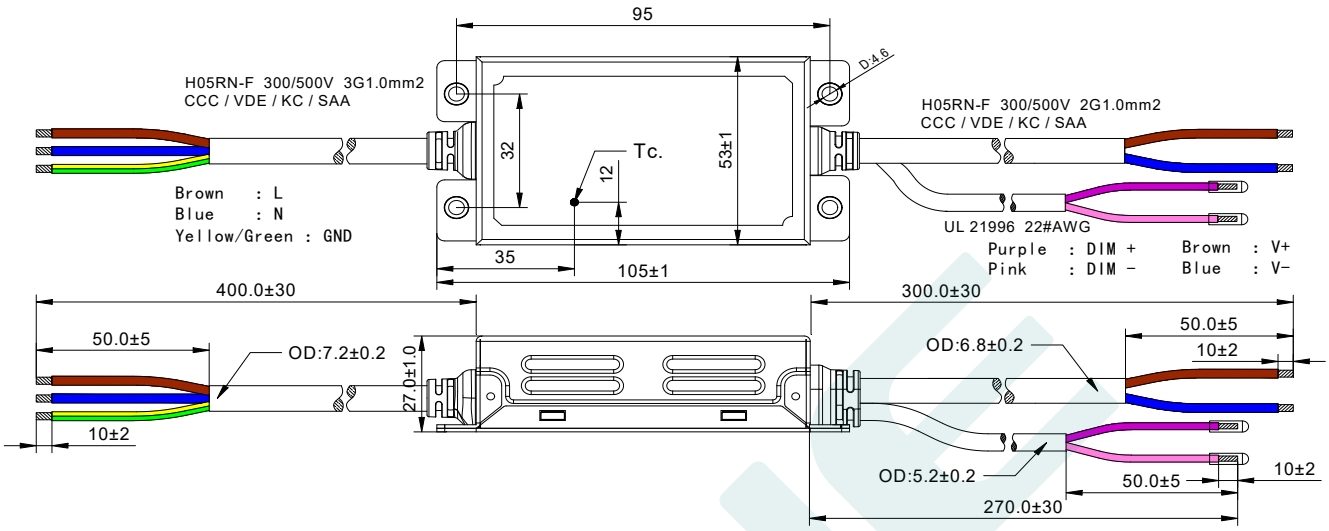
Note:

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

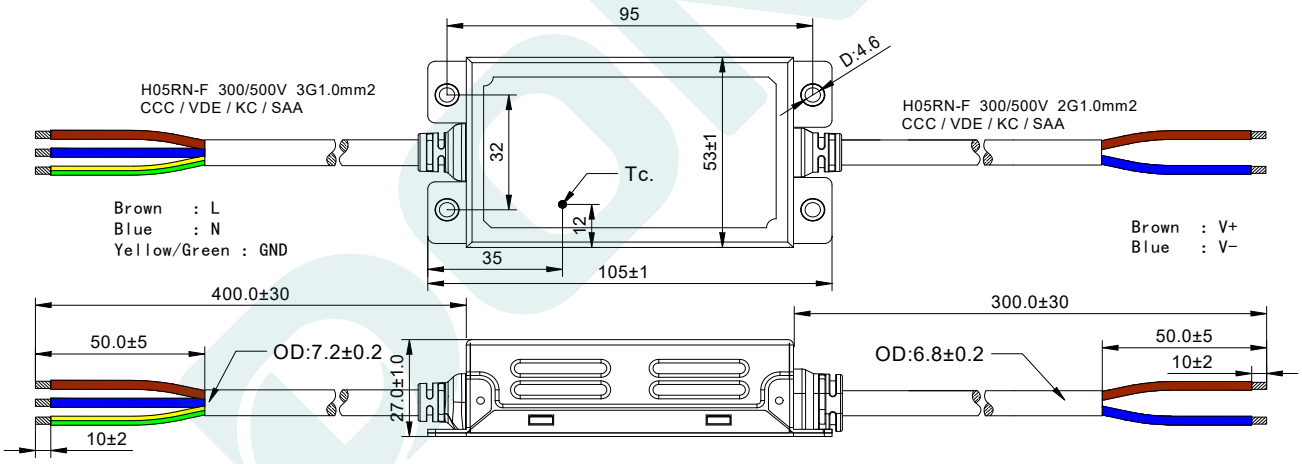
Mechanical specification

Size (mm)	L105*W53*H27

DL-40H-56P-MXC



DL-40H-56A-MXC

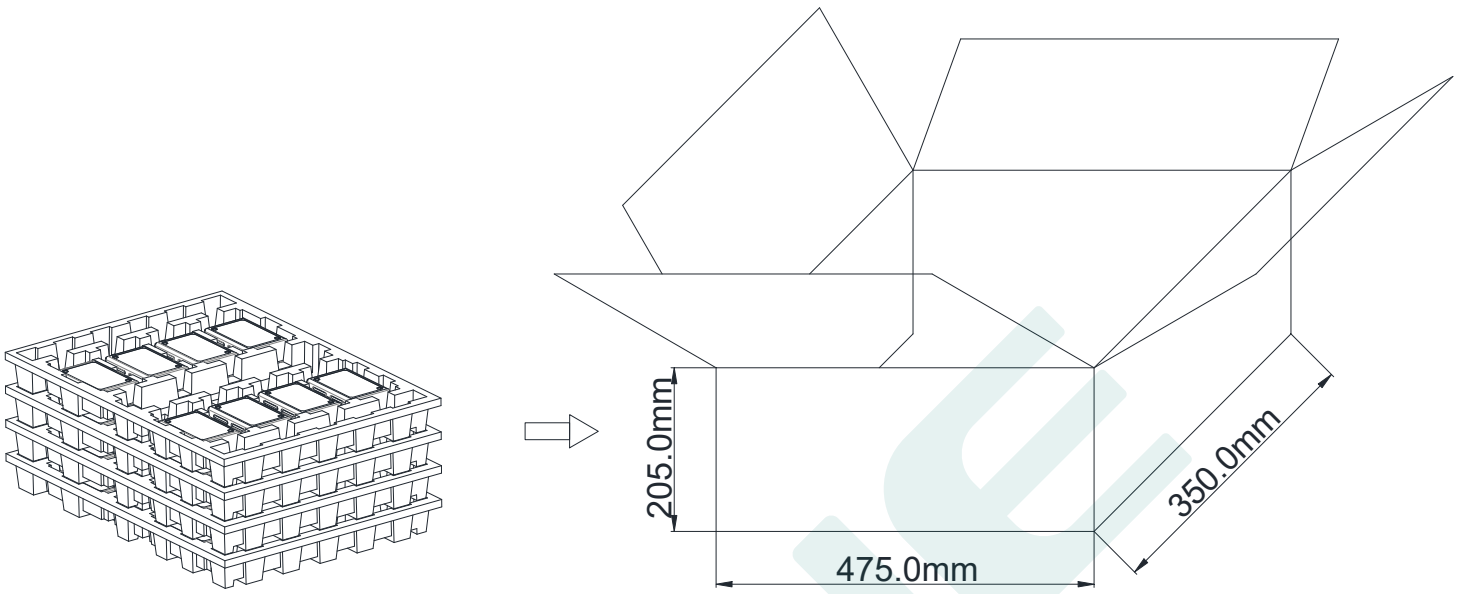


Weight

Weight	350g

Packaging

Packaging (mm)	L475*W350*H205



Note: One Carton 4 layers and 8 pcs each layer, total 32pcs/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
2024.9.12	Initial version.	V1.0	
2024.12.12	Modify output current range.	V1.1	
2025.1.10	Modify input voltage on page 2 and High-pot test on page 7.	V1.2	
2025.8.14	Update Dimming characteristic on page 5, and Tcase VS Lifetime curve	V1.3	JH 2025.08.17 14:00:12 +08'00' DYX 2025.08.18 08:16:35 +08'00'

MANUFACTRUER		
EDIT	CHECK	APPROVE
ZMH 2025.08.14 16:11:25 +08'00' WLQ 2025.08.16 16:04:07 +08'00'	GZK 2025.08.16 16:14:16 +08'00'	数字签名者：张鸿生 DN：cn=张鸿生, o, ou, email=978425630@qq.com, c=<无 日期：2025.08.22 16:04:18 +08'00'