



PXC SERIES LED DRIVER

DL-60H-A/P-PXC SPEC E2.1



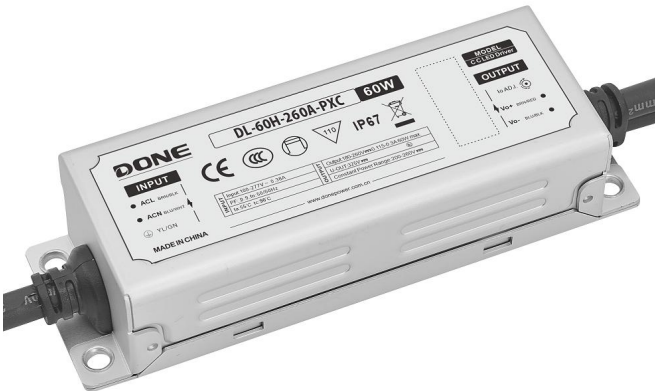
Features

- Class I type for insulation
- Input voltage range: 100-277 V ~ 50/60 Hz

Rated voltage:180-277 V ~ 50/60 Hz 60W max.
 Input voltage:100~150V ~ 50/60 Hz 30W max.
- Efficiency :93%(Typ.)
- Constant current output ,with power limitation for control mode
- Metal case, protection grade against water and dust: IP67

differential mode :4kV
 common mode :6kV
- Dimming signal input is 0V, standby power consumption ≤3W
- Available version :

A version: Output current is dimmed by external potentiometer
 P version: 1.default dimming method of Isolated 3 in 1 dimmer
- Guaranteed Lifetime : 5 years



Applications

street 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-60H-260P-PXC	200-277V	60W	180-260Vdc	0.25A	≥93%	≤10%	≥0.95
DL-60H-260A-PXC	50/60Hz						

- Note:**
1. Test conditions: Ta=25℃, under 230Vac input,after running for 30 minutes with full load.
 2. When the input is less than 165±15Vac,the output power gradually decreases to a half.and it recovers full power of 60W when the input is above 180VAC again. Please refer to “THE OUTPUT POWER VS INPUT VOLTAGE” curve chart for details.



Input characteristics

Parameter	Min	Typ.	Max	remark
Rated input voltage	200Vac	230Vac	277Vac	
Input voltage range	100Vac	-	305Vac	Output power decrease to a half when input below 165±15VAC.
Rated frequency range	47Hz	50/60Hz	63Hz	
Power factor	-	0.95	-	@230Vac input ,with full load
	0.9	-	-	@200-277Vac input ,with full load
T.H.D.	-	8%	10%	@230Vac input ,with full load
	-	-	20%	@277Vac input ,with 70%
Input current	-	-	0.38A	@200Vac input ,with full load
Inrush current	-	-	70A	230Vac, cold start (25°C)

Output characteristics

Parameter	Min	Typ.	Max	remark
Rated current DL-60H-260P/A-PXC	-	0.231A	-	With loading 260VDC
Output current range DL-60H-260P/A-PXC	0.115A	-	0.3A	
Output voltage range DL-60H-260P/A-PXC	180V	-	260V	Constant power output range:200-260VDC
Constant power output voltage range	-	60W	-	Maximum output power 60W
Constant current output voltage range	-	30W	-	Maximum output current 0.3A
No-load voltage DL-60H-260P/A-PXC	-	-	325V	-
Efficiency@180Vac DL-60H-260P/A-PXC	-	92%	-	100% load @260VDC Output current 0.231A, 60W
Efficiency@230Vac DL-60H-260P/A-PXC	-	93%	-	100% load @260VDC Output current 0.231A, 60W
Accuracy of output current	-5%	-	+5%	For constant-power range , with full load
output ripple current	-	-	5%	with100% load, 20MHZ band Width, and percent of ripple current = (Imax-Imin) /(Imax+Imin)*100%
Line regulation	-3%	-	+3%	Full load
Load regulation	-5%	-	+5%	Full load
Starting time	-	-	1000ms	Full load@230Vac

Note:

1. The output current is limited by the input and output voltage, please refer to "I-V WORKING AREA" for details;
2. When input voltage is between 150~180VAC ,the output power is undefined due to the tolerance of threshold.

Dimming characteristics

Dimming function		Min	Typ.	Max	Instructions
0-10V Dimming (Optional)	Safe operation voltage range	0V	-	12V	-
	Rated operation voltage range	0%	-	100%	-
	Dimming output range	0V	-	10V	-
PWM Dimming (Optional)	PWM high level	9.5V	-	10.5V	-
	PWM low level	0V	-	0.3V	-
	PWM frequency band	300Hz	-	2000Hz	-
	PWM duty cycle	0%	-	99%	Output full power at 99% duty cycle
Resistor Dimming (Optional)	Rated external resistance value	0KΩ	-	100KΩ	-
	Dimming output range	0%	-	100%	-
Multiple timing dimming (optional)	MCU control	Set dimming function Segment by segment through program			Three operation modes for selection.
	Timer control	The default is six segments, Can be customized. 24H a cycle.			With extra timer controller outside.

Note:

1. Output current of dimming port: 100uA (typical value).
2. The maximum voltage applied to the dimming port is suggested below 12V, but it also is protected against wrong voltage up to 230VAC or 300VDC. Please don't keep the wrong voltage apply to the port for a long time. Otherwise, it is possible to be damaged.
3. When over-temperature protection happens, the threshold of output power (or output current) for dim-off and turn-on will keep the same as that in normal condition. Since the output power has been decreased to a half of normal condition, the dimming signal from the port need to be doubled to meet the same threshold as a result. Only for P version.
4. User is suggested to use 1-10V for dimming. However, dim-off function is also available through the software or program if necessary, for some application that don't care the stand-by power. Please consult the technician for details if you have other requirements.
5. All these drivers will not work in the no-load mode.

Protection

Protection	description
under-voltage protection	When the input voltage is less than $165\pm 15\text{Vac}$, the output power decreases.
Output over-voltage protection	hiccup mode,and recovers automatically when the fault condition is removed.
Output short circuit protection	Hiccup mode,and recovery automatically when the fault condition is removed.
Over temperature protection	when the temperature of the case is greater than 90°C , the output power decreases to a half.
Output over-power 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: Unless otherwise specified, all parameters should be measured at the condition of 230Vac (50Hz) input ,with rated load ,and ambient temperature of 25°C .

Environmental characteristics

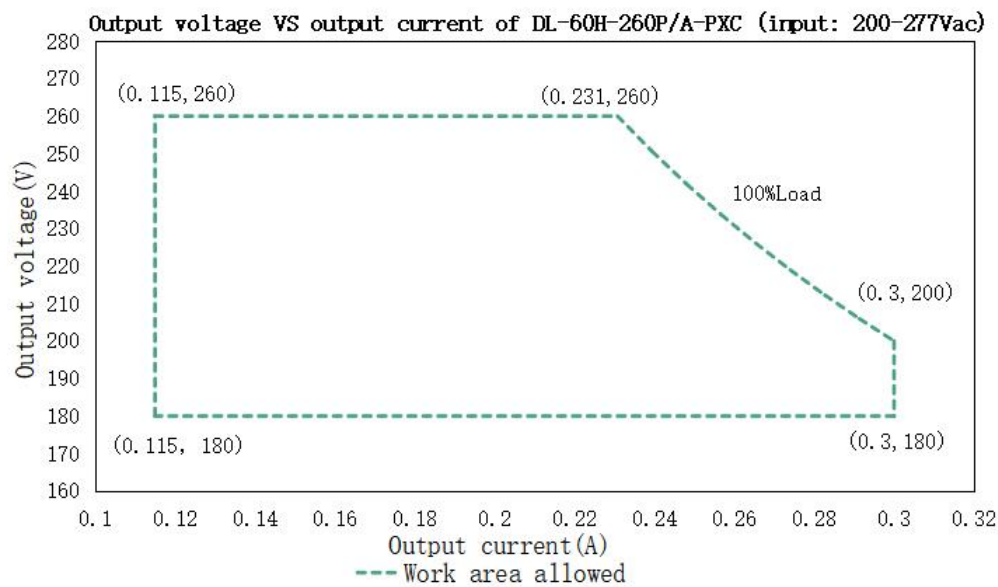
Environmental categories	Parameter
Working temperature	$-40 \sim +50^{\circ}\text{C}@200\text{-}277\text{Vac}$ (refer to "Life Curve ")
Working humidity	20 ~ 95% RH, non condensing
Tc temperature	$-40\sim 90^{\circ}\text{C}$
Storage temperature、 humidity	$-40\sim +80^{\circ}\text{C}$, 10 ~ 95% RH
Resistant to vibration	10 ~ 500Hz, 5G 12 min/cycle, X, Y, Z axis 72 min each
MTBF	50Khrs min. MIL-HDBK-217F ($T_a=25^{\circ}\text{C}$)
Lifetime	70000 hours @ $T_{\text{case}}\leq 75^{\circ}\text{C}$,230Vac, 100% Load, Please refer to "Tcase VS Lifetime" curve

Safety and EMC

Safety categories	Standard
Safety	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 、 EN 61000-3-3
Surge level	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-PE :1.5KVac O/P-PE : 1.5KVac I/P-DIM:1.5KVac O/P-DIM:1.5KVac
Insulation impedance	I/P-PE:100MΩ / 500VDC; O/P-PE:100MΩ / 500VDC / 25°C/ 70% RH
Leakage current	<0.7mA@277Vac

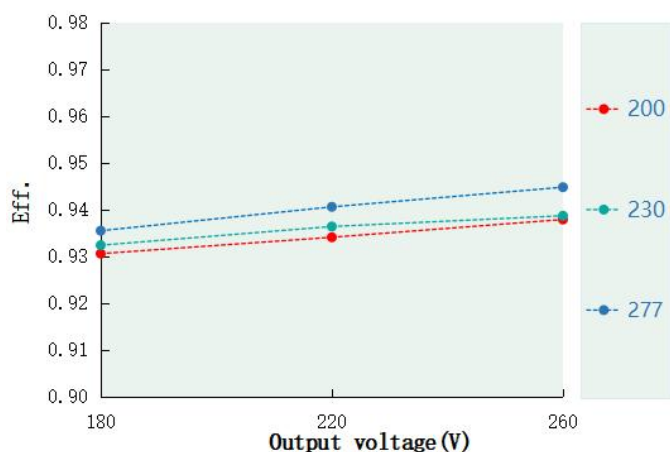
Note: Attention! As a component of the whole, the EMC performance of the final product is not only decided by the driver, even if the driver is well-designed and fulfil all the required compliance. The final equipment manufacturers must re-qualify EMC Directive on the complete product.

I-V Working area

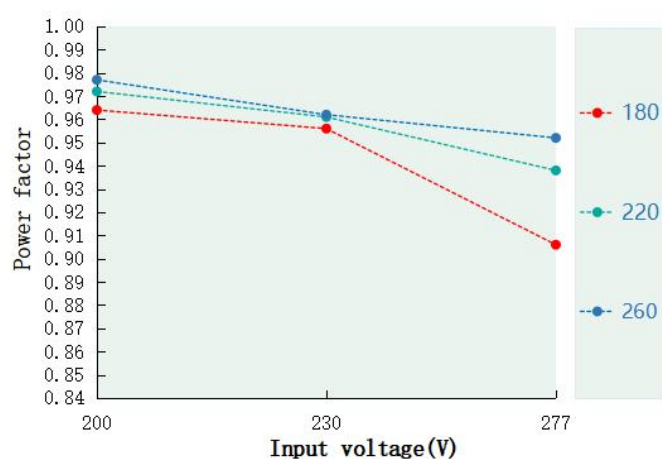


Load	Output								
Load working Voltage	180V	190V	200V	210V	220V	230V	240V	250V	260V
Io_MAX	0.334A	0.316A	0.3A	0.286A	0.273A	0.261A	0.25A	0.24A	0.231A
Po_MAX	60W	60W	60W	60W	60W	60W	60W	60W	60W

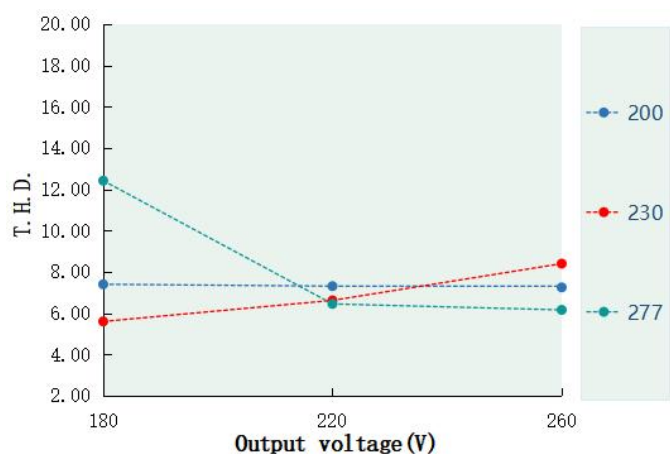
Eff. VS Output voltage(DL-60H-260P/A-PXC)



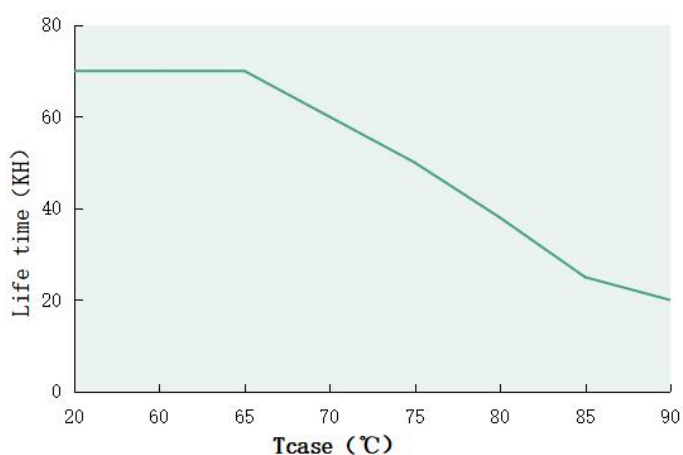
Power factor VS Input voltage(DL-60H-260P/A-PXC)



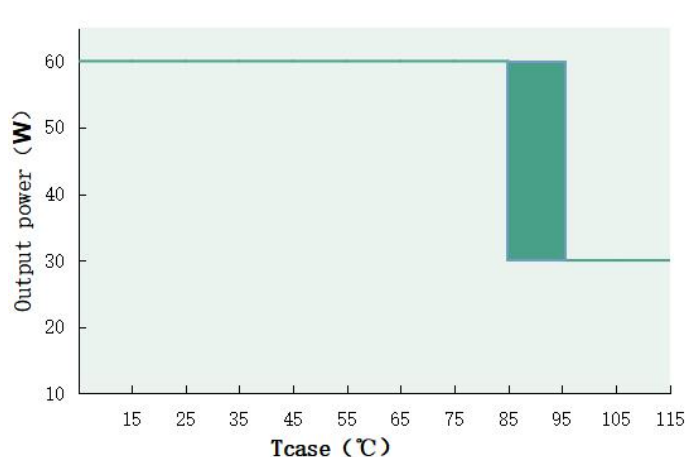
T.H.D. VS Output voltage(DL-60H-260P/A-PXC)



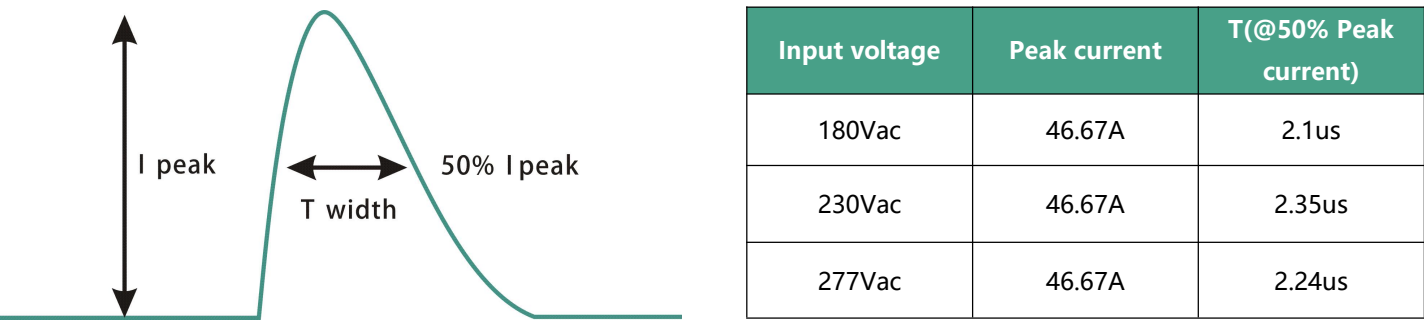
Tcase VS Lifetime(DL-60H-260P/A-PXC)



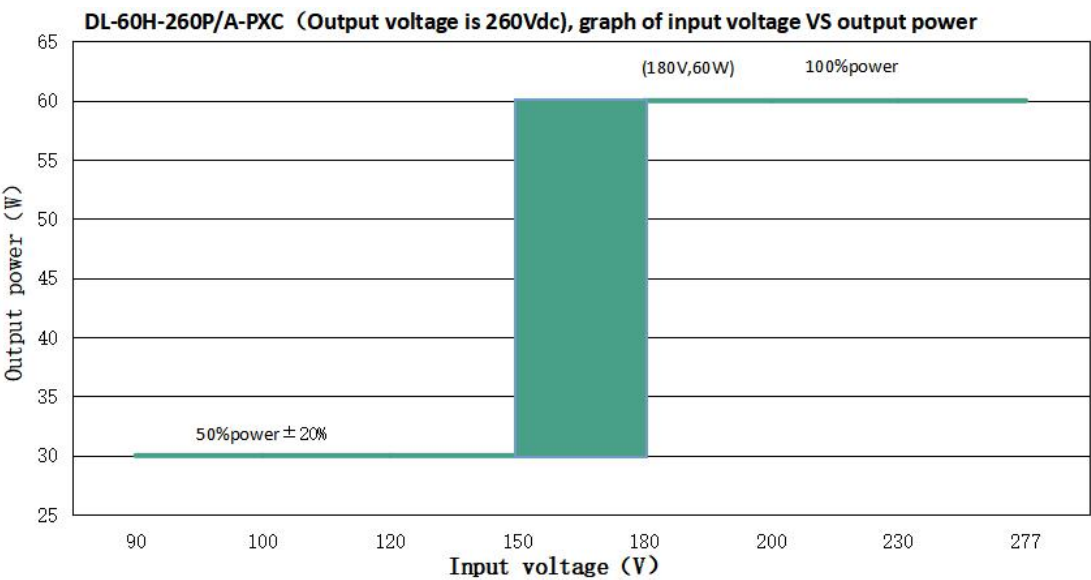
Output power VS Tcase (DL-60H-260P/A-PXC)



Inrush Current(DL-60H-260P/A-PXC)



Output power VS Input voltage



DL-60H-260P/A-PXC (For output 260Vdc, the rated output current & power under different input voltage)								
Input Voltage	120Vac	130Vac	140Vac	150Vac	180Vac	200Vac	230Vac	277Vac
Iout	0.116A	0.116A	0.116A	0.116A	0.231A	0.231A	0.231A	0.231A
Pout	30W	30W	30W	30W	60W	60W	60W	60W

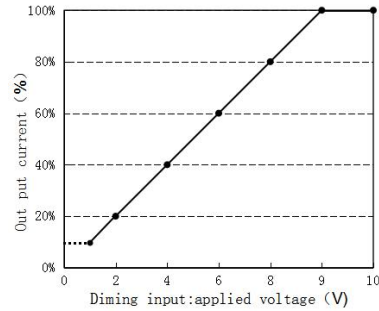
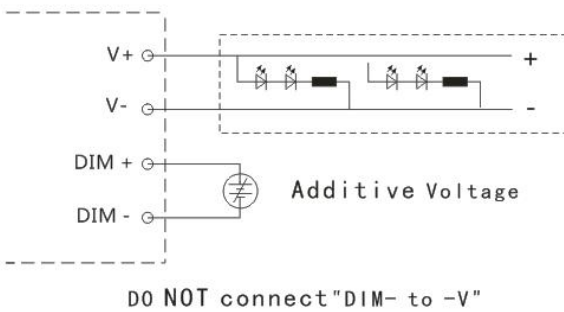
Note: When the input voltage is below 165±15Vac,the output power decreases to 30W±20%.

Dimming function

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

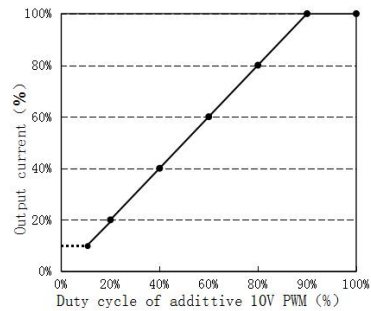
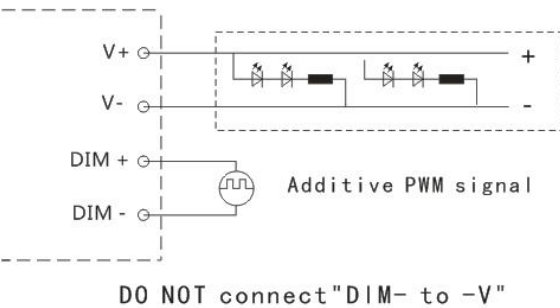
- A. To adjust the output current, applying one of the three methods between DIM+ and DIM- : a resistor of 0-100K, or any voltage of 0-10V , or a PWM signal with amplitude of 10V.
- B. output current of dimming port: 100uA (typical value).

◎ With 0-10V dimming voltage(for both logic,negative and positive):



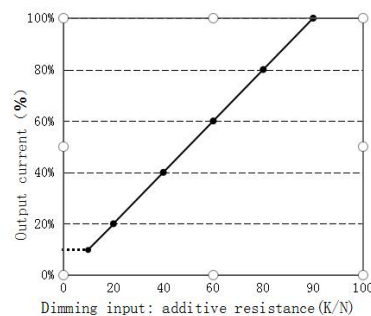
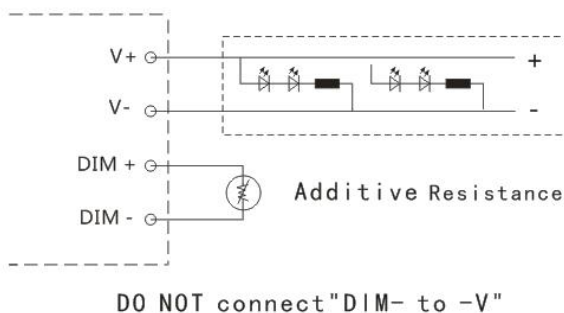
dimming curve

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



dimming curve

◎ With an additional 0-100K resistor:



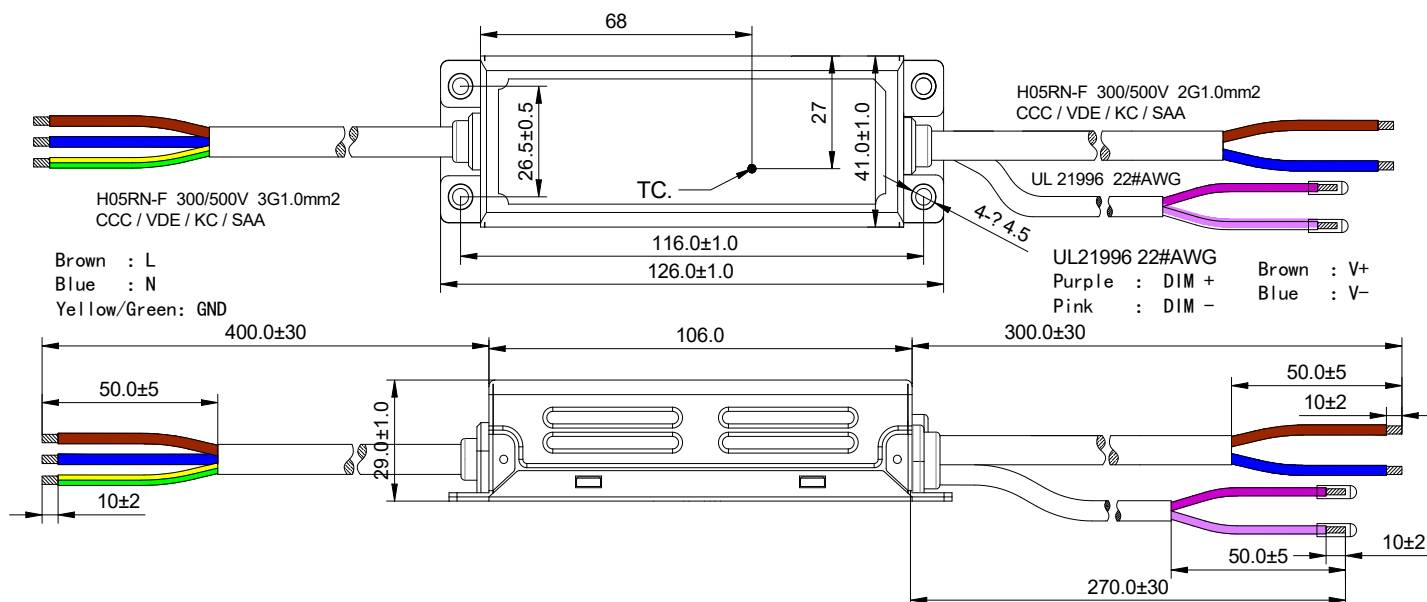
dimming curve

Remark: It is recommended to use 0-10V and the equivalent 3-in-1 dimmer, and the default state is to dim-off but can't meet the requirement of less than 0.5W standby power. If it is no need to be turned off, please contact the technicians for help.

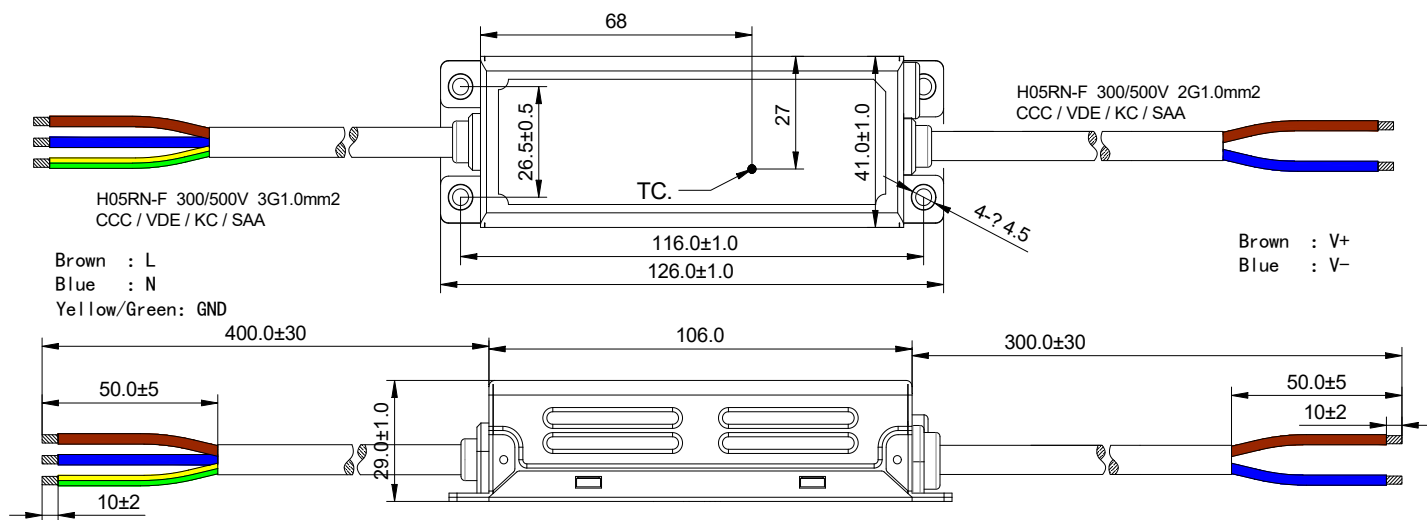
Mechanical specification

Size (mm) L126*W41*H29

DL-60H-260P-PXC



DL-60H-260A-PXC

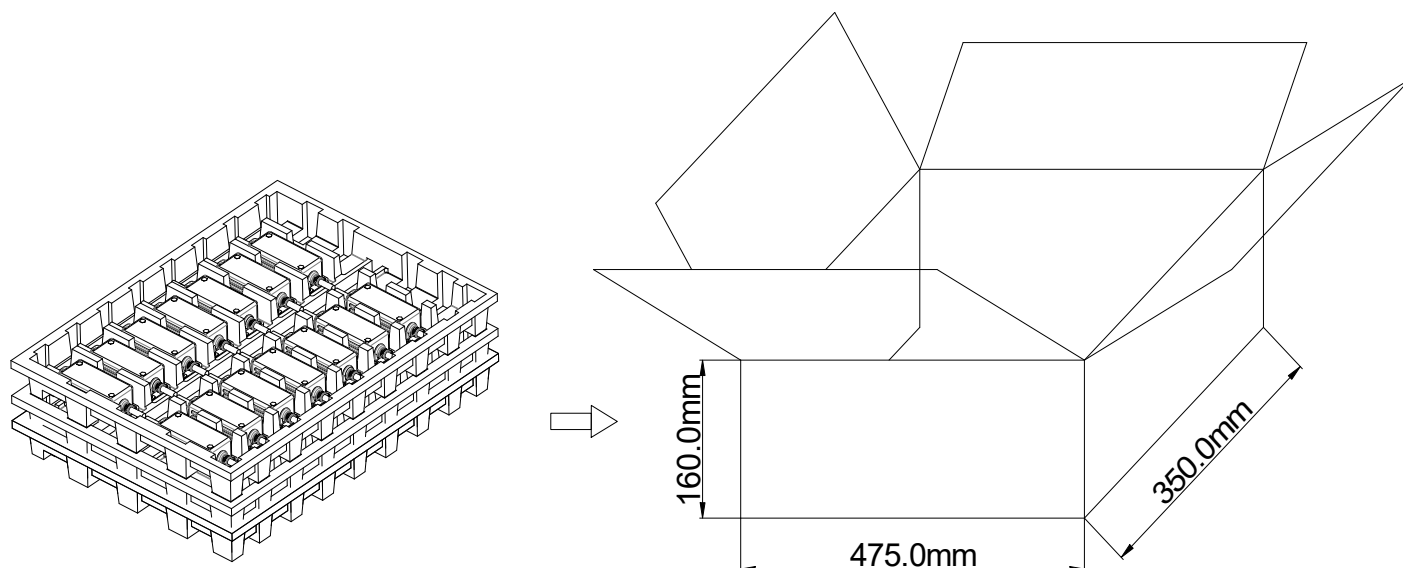


Weight

Weight 325g

Packaging

Packaging (mm) L475*W350*H160



Note: One Carton 3 layers and 14 pcs each layer, total 42pcs/carton.

Note:

1. According to the qualified certificate of the LED DRIVER, that with English label is for sale in Europe, America and India.
2. That with Chinese label are used for Chinese market.

Version

DATE	DESCRIPTION	REV.	CHECK
2024.5.9	Initial version.	E2.0	
2024.10.22	Modify protection grade.	E2.1	

MANUFACTRUER		
EDIT	CHECK	APPROVE