MAS SERIES LED DRIVERS

DL-50H-58R-MAS Specification V1.0

GUANGDONG DONE POWER TECHNOLOGY CO.,LTD

Features



- Class I type for insulation
- Input voltage range 200-277 V ~ 50/60 Hz
- Efficiency: 89%(Typ.)
- Constant current output ,with power limitation for control mode
- Metal case, protection grade against water and dust: IP67
- Surge level: differential mode 4kV, common mode 6kV
- Available version :

  Output current is dimmed by Isolated RS485 dimmer
- Lifetime design: 5 years

Applications

Tunnel lighting、Street lighting、Industrial lighting、Venue lighting

Model list

Model NO.	Input voltage	Output power	Output voltage	The default current	Eff.	T.H.D	PF
DL-50H-58R-MAS	200-277V 50/60Hz	50W	32-58Vdc	0.9A	≥89%	≤10%	≥0.95

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 recoveries full power of 50W when the input is above 180Vac. Please refer to “THE OUTPUT POWER VS INPUT VOLTAGE” curve chart for details.

Input characteristics

Parameter	Min	Typ.	Max	Note
Rated input voltage	200Vac	230Vac	277Vac	
Input voltage range	180Vac		305Vac	With full load
Rated frequency range	47Hz	50/60Hz	63Hz	
Power factor	-	0.95	-	@230Vac input ,with full load
Power factor	-	0.9	-	@200-277Vac input ,with 75%-100%
T.H.D.	-	-	10%	@230Vac input ,with full load
T.H.D.	-	-	20%	@200-277Vac input ,with 75%-100%
Input current	-	-	0.35A	@200Vac input ,with full load
Inrush current	-	-	70A	230Vac, cold start (25℃)

Output characteristic

Parameter	Min	Typ.	Max	Note
Rated current DL-50H-58R-MAS	-	0.86A	-	With loading 58VDC
Output current range DL-50H-58R-MAS	0.5A	-	1.2A	
Output voltage range DL-50H-58R-MAS	32V	-	58V	Constant power output range: 42-58VDC
Available power(100-180Vac)	-	25W	50W	Decrease to a half once input voltage being less than 165±15Vac
Rated power(200-277Vac)	-	50W	-	
No-load voltage DL-50H-58R-MAS	-	-	75V	
Efficiency@230Vac DL-50H-58R-MAS	88%	89%	-	full load@230Vac
Accuracy of output current	-5%	-	+5%	For constant-power range , with full load
Line regulation	-3%	-	+3%	full load
Load regulation	-3%	-	+3%	full load
Starting time	-	-	1000ms	Full load@230Vac

Note: The output current is limited by the input and output voltage, please refer to "I-V WORKING AREA" for details;

RS485 dimming port features and communication characteristics

Dimmer port features		Min	Typ.	Max	Instructions
Receiver (to receive external communication signals)	A, B common mode input voltage	-7V	-	+12V	The input voltage of line A or line B refers to the GND point.
	A, B differential mode input voltage	-6V	-	+6V	Input voltage of line A refers to that of line B
	Receiver high level VR(A-B)H	200mV		6V	VR (A) : The input voltage of line A refers to GND, VR (B) : The input voltage of line B refers to GND VR(A-B)=VR (A) -VR (B)
	Receiver low level VR(A-B)L	-6V		-200mV	
transmitter (The Driver sends a communication signal to the bus)	A,B differential mode output high level VD (A-B)H	2V	3V	6V	VD (A-B) H: indicates the differential voltage between line A and line B, which corresponds to binary 1.
	A,B differential mode output low level VD (A-B)L	-6V	-2.5V	-2V	VD (A-B) L: indicates the differential voltage between line A and line B, which corresponds to binary 0.
Baud rate (Send & Receive)			2.4K BPS		

Note:

1. The RS485 dimming port is a dual-wire half-duplex communication port with line A and line B connecting to the bus. Through it , the LED driver receives command from the bus to perform dimming operations, and send out electrical parameters according to the command, such as the input voltage, input current, active power, and accumulated electricity, and so on .
2. The differential voltage between output A and output B of the transmitter is measured with 120R load; If A,B is short circuit the output current should be less than 150mA
3. The RS485 dimming port can withstand over-voltage up to 230VAC or 300VDC for a short while, without causing damage. However, please try to avoid to keep this condition for a long time, otherwise, it also has the possibility to be damaged.
4. Dimming off can be set through online programming, but the standby power after switching off can not be less than 0.5W, please pay special attention to;

Protection

Protection	description
Under-voltage protection	When the input voltage is less than 165±15Vac, the output power decreases to a half.
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 95±5℃, the output power decreases to a half.
Output over-power protection	The maximum output power is limited to about 1.1 time of the rating automatically.

Note:

1. Unless otherwise specified, all parameters should be measured at the condition of 230Vac (50Hz) input ,with rated load ,and ambient temperature of 25℃.
2. Including setting error, linear adjustment rate and load adjustment rate.

Environmental characteristics

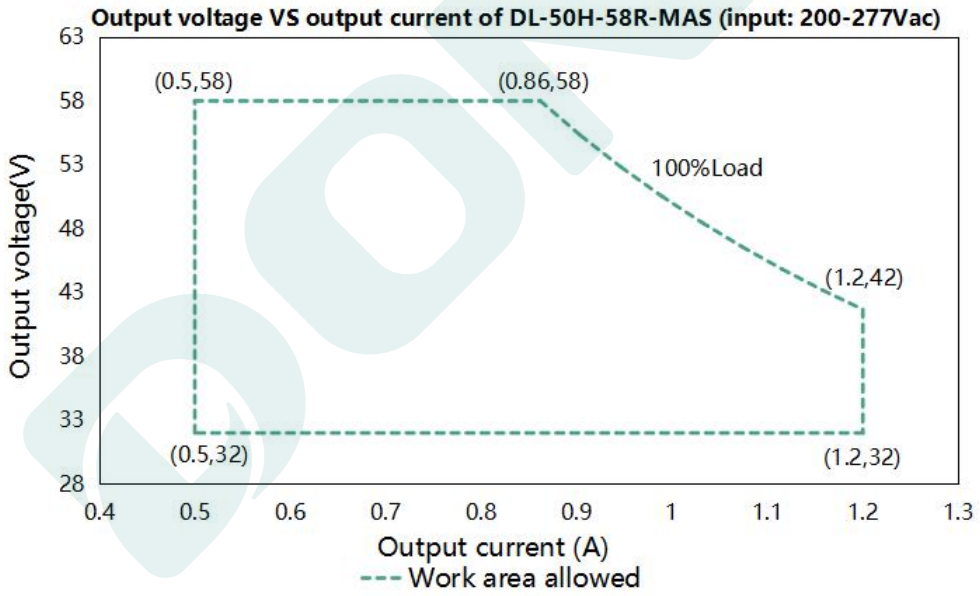
Environmental categories	Parameter
Working temperature	-40 ~ +55℃@200-277Vac
Max.Case Temp.	-40 ~ 90℃
Working humidity	20 ~ 95% RH
Storage temperature、humidity	-40~+80℃, 10 ~ 95% RH
Resistant to vibration	10 ~ 500Hz, 5G 12 min/cycle, X, Y, Z axis 72 min each
MTBF	230Khrs min. MIL-HDBK-217F (Ta=25℃)
Lifetime	50000 hours @Tcase=75℃,refer to" **Tcase VS Lifetime**" curve

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;
EMC	EN 55015、EN 61547、EN 61000-3-2、GB/T 17743、GB17625.1、EN 61000-3-3
Surge level	Differential mode L-N ±4KV（2 ohm）,common mode L，N-PE± 6 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:100MΩ / 500VDC; I/P-O/P:100MΩ / 500VDC / 25℃/ 70% RH
Leakage current	<0.7mA@277Vac

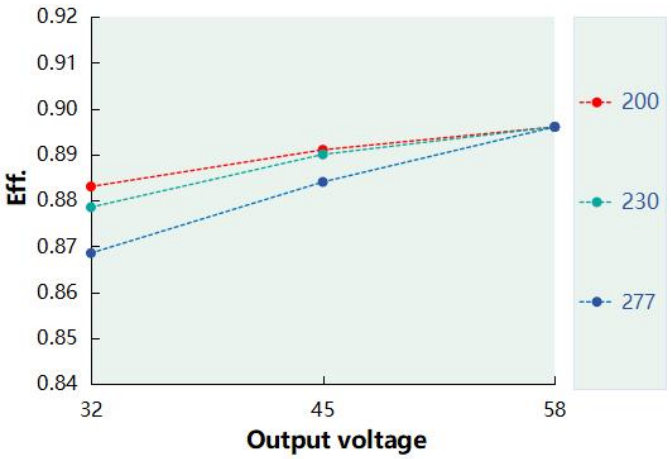
Note: Attention! As a component of the whole, the EMC performance of the final product is not only decided by the driver, even if the driver is well-designed and fulfil all the required compliance. The final equipment manufacturers must re-qualify EMC Directive on the complete product.

I-V Working area

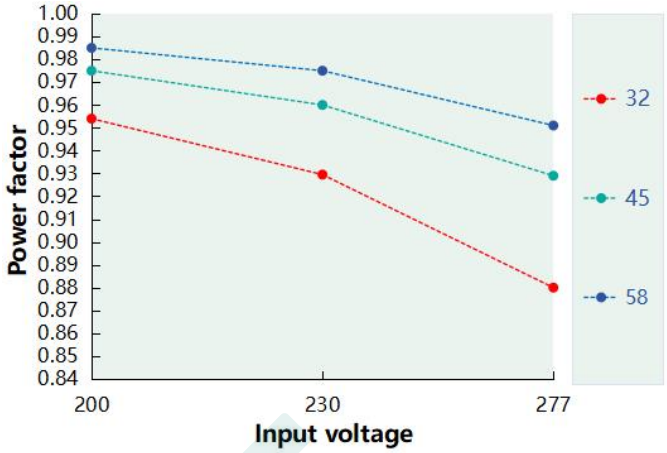


Load	Output								
Load working Voltage	32V	36V	39V	42V	46V	49V	52V	55V	58V
Io_MAX	1.2A	1.2A	1.2A	1.2A	1.09A	1.02A	0.96A	0.91A	0.86A
Po_MAX	38.4W	43.2W	46.8W	50.4W	50W	50W	50W	50W	50W

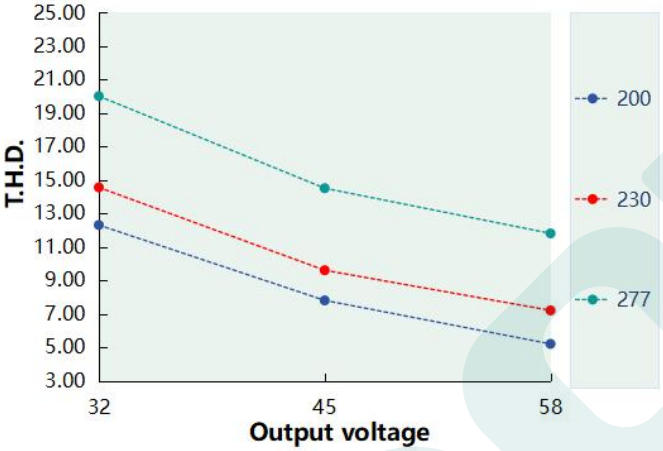
Eff. VS Output voltage



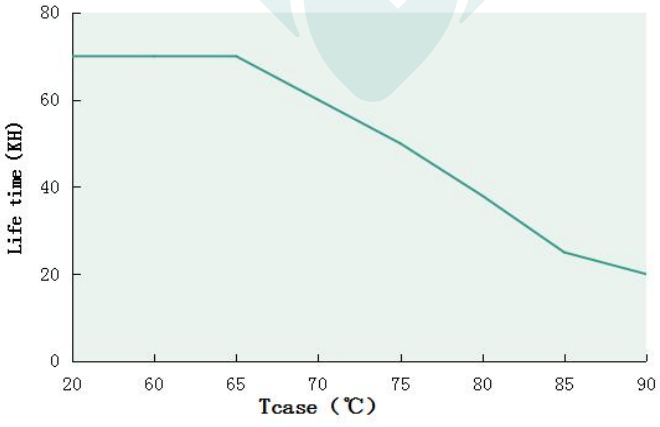
Eff. VS Output voltage



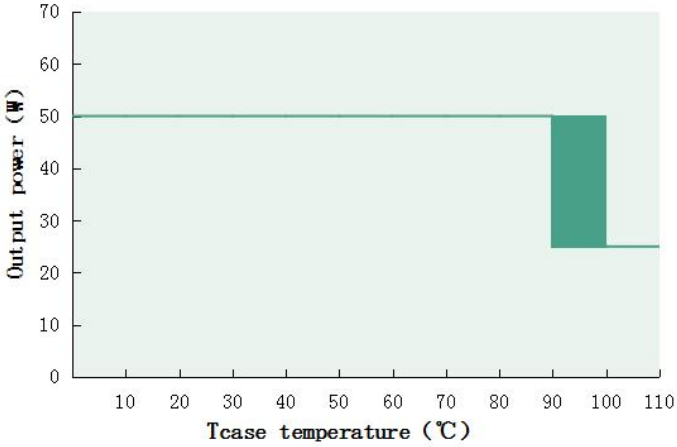
Eff. VS Output voltage



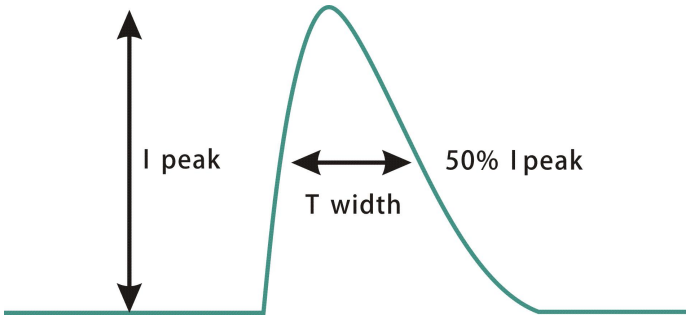
Tcase VS Lifetime



Output power VS Tcase

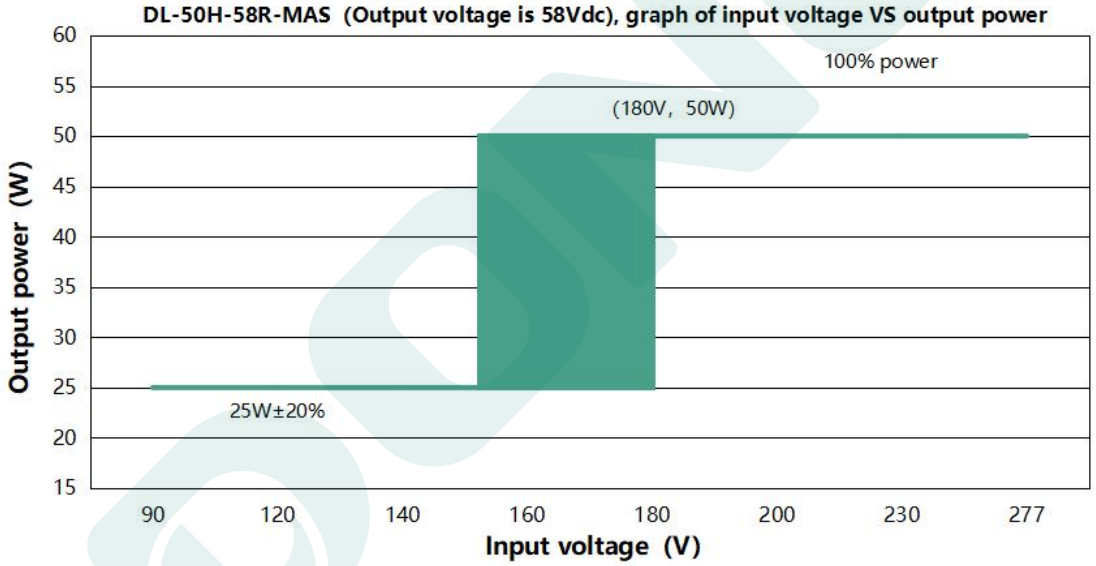


Inrush Current



Input voltage	Peak current	T(@50% Peak current)
200Vac	-	-
230Vac	30.2A	93us
277Vac	34A	110us

Output power versus Input voltage



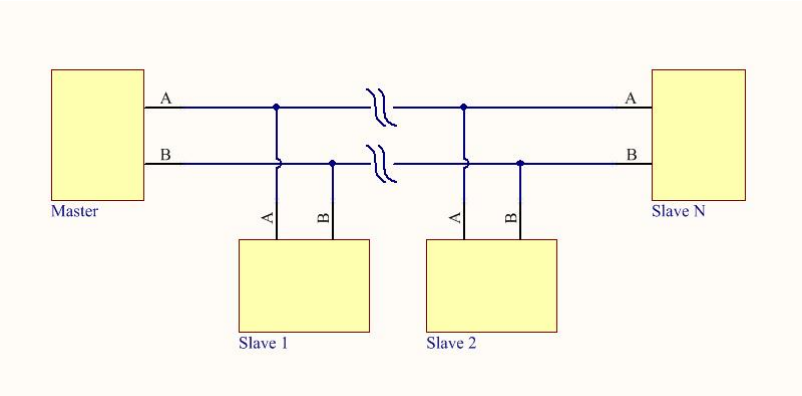
DL-50H-58R-MAS(When the output voltage is 58Vdc, the rated output current value and output power corresponding to different input voltage)								
Input Voltage	100Vac	120Vac	130Vac	150Vac	180Vac	200Vac	230Vac	277Vac
Iout	0.43A	0.43A	0.43A	0.43A	0.86A	0.86A	0.86A	0.86A
Pout	25W	25W	25W	25W	50W	50W	50W	50W

Note: When the input voltage is below 165±15Vac,the output power decreases to 25W±20%.

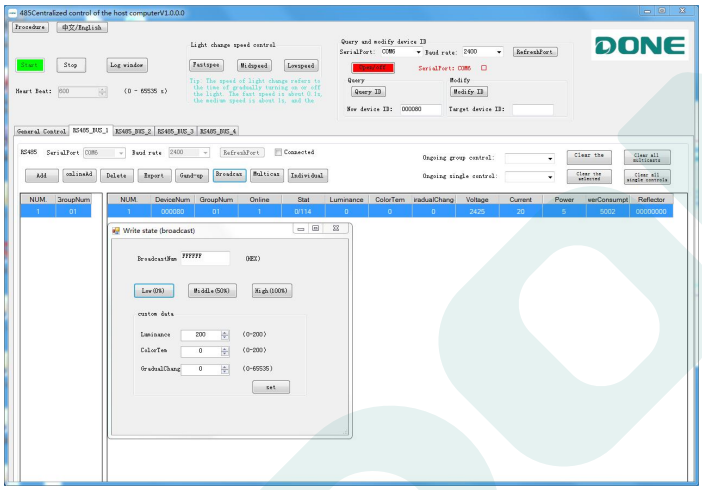
Dimming function

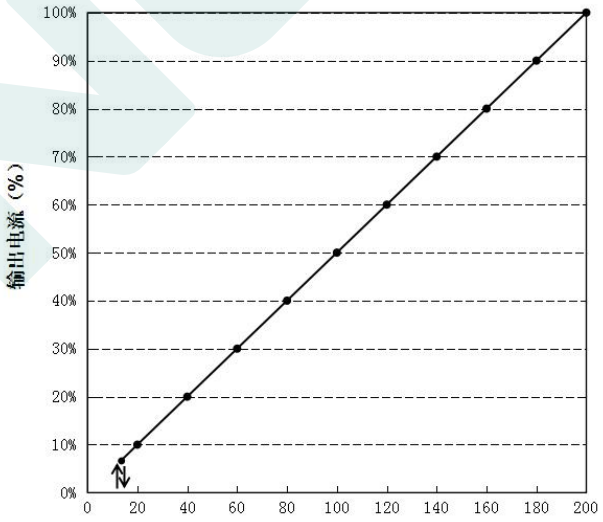
RS485 dimming function

1. Connection mode



2. Dimming interface and dimming curve.

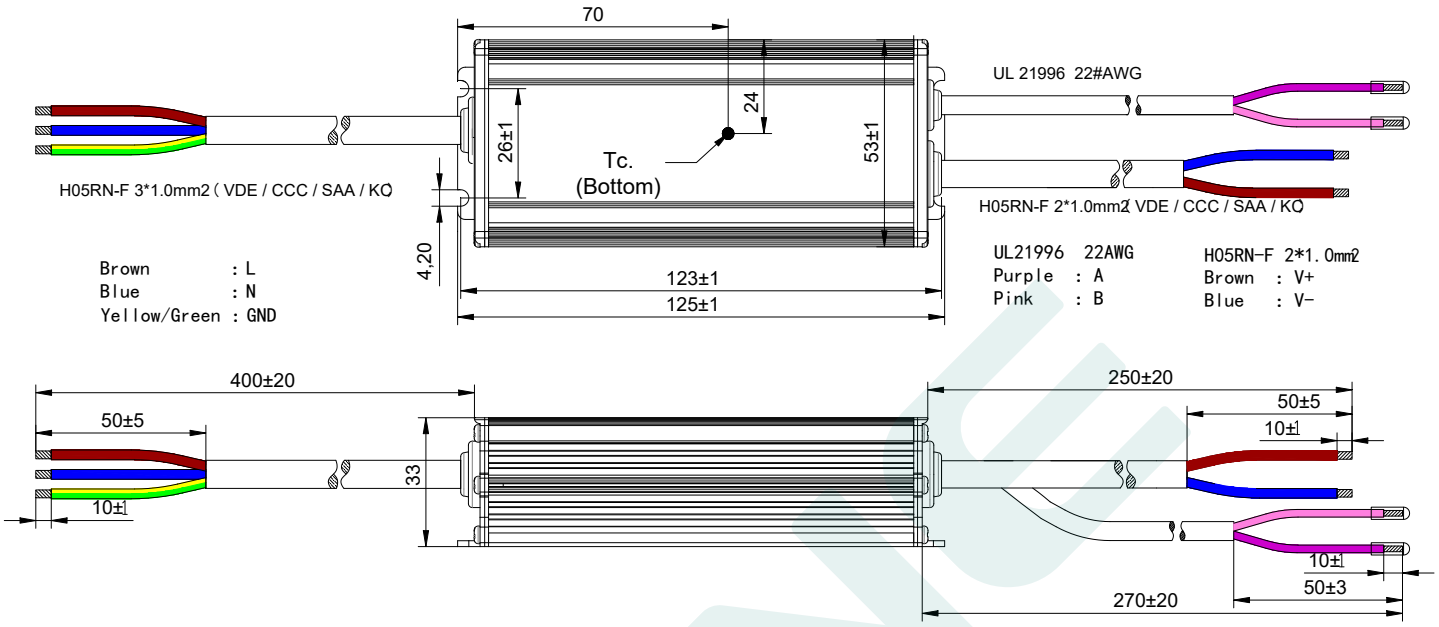




Mechanical specification

Size (mm)	L125*W53*H33

DL-50H-58R-MAS

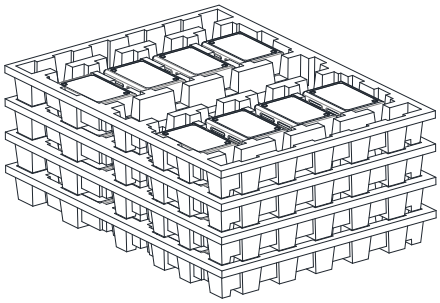


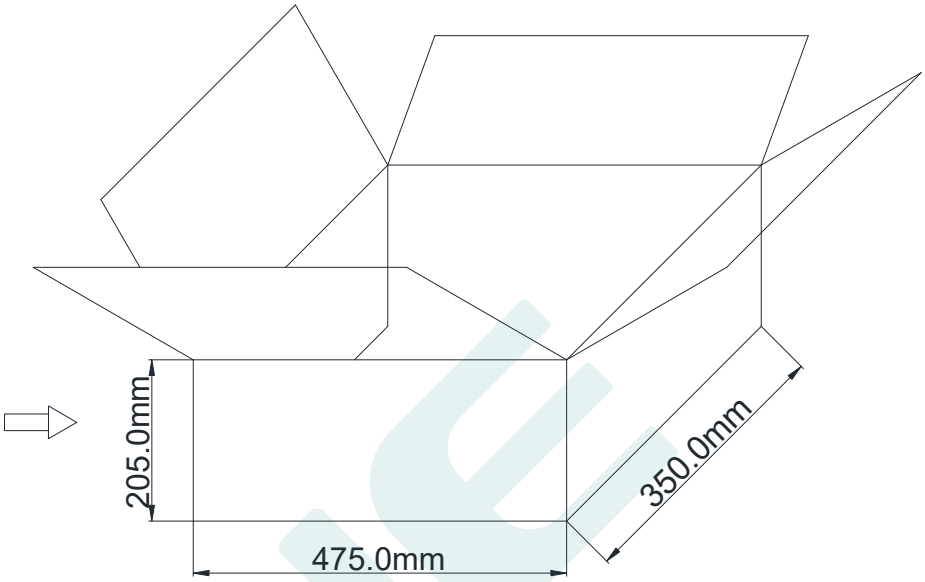
Weight

Weight	420 g

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
2025.3.27	Initial version.	V1.0	JH 2025.03.28 16:03:25 +08'00' LQ 2025.03.28 16:10:02 +08'00'

MANUFACTRUER		
EDIT	CHECK	APPROVE
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