

RAS Series DRIVERS

DL-50W-RAS_V1.0

A decorative graphic at the bottom of the page consisting of several overlapping teal waves. The topmost wave is the darkest and contains white circuit-like patterns, including lines and small circles. Below it are lighter teal waves, creating a sense of depth and movement.

Guangdong DONE Electronic Technology Co., Ltd

Features

- Input voltage:100-277Vac ~ 50/60Hz
- Maximum efficiency 88% (Typ.) Natural cooling
- Constant voltage output control
- Class II all-plastic housing structure,protection grade:IP67
- Lightning protection level: differential mode 4KV
- All-round protection: output over-temperature,output overcurrent, short circuit protection
- functional characteristics: DALI-2 communication protocol(Optional D version)
3-in-1 dimming function(Optional S version)

- 5 years warranty



Product introduction

DONE DL-50W-RAS is a series of constant voltage products with output power of 50W-RAS, operates from 90-305Vac, and offers 12/24/36/48 Vdc with different voltage. voltage output,It is equipped with perfect protection functions for over-temperature,over-current,overload and short-circuit in the output .The product is designed with IP67 protection grade. The plastic housing greatly improves the reliability of outdoor applications. Provide reliable power supply solutions for outdoor landscape lighting, architectural lighting, and advertising signage lighting.

Model list

Model NO.	Rated input voltage	Max output power	Output voltage	Output current Radius	EFF.	THD.	PF
DL-50W-V12-RAS	100-277Vac 50/60Hz	50W	12Vdc	0-4.17A	≥85%	<10%	>0.95
DL-50W-V24-RAS	100-277Vac 50/60Hz	50W	24Vdc	0-2.08A	≥87%	<10%	>0.95
DL-50W-V36-RAS	100-277Vac 50/60Hz	50W	36Vdc	0-1.40A	≥87%	<10%	>0.95
DL-50W-V48-RAS	100-277Vac 50/60Hz	50W	48Vdc	0-1.05A	≥87%	<10%	>0.95

Optional:D version(for example DL-50W-V24D-RAS)

S version(for example DL-50W-V24S-RAS)

NOTE:

1. Unless otherwise specified, all specifications are measured at 230Vac (50Hz) input, rated load, and ambient temperature of 25°C;
2. Including setting error, linear adjustment rate and load adjustment rate;
3. As the power supply is used together with the terminal device, its EMC will be affected by the entire device.

Therefore, the terminal device manufacturer needs to confirm the EMC of the entire device.

Input characteristics

Parameter	MIN	TYP	MAX	NOTE
Rated input voltage	100Vac 140Vdc	230Vac	277Vac 400Vdc	N/A
Input voltage range	90Vac	-	305Vac	N/A
Rated frequency	47Hz	50/60Hz	63Hz	N/A
Power factor	-	>0.95	-	FULL LOAD, 230Vac INPUT
Input current	-	-	0.5A	FULL LOAD, 100Vac INPUT
Inrush current	-	-	70A	230Vac INPUT, cold start (25°C)
16A Circuit breaker The number of power supplies of the same model can be configured	230Vac input can be configured with 10 (Type B circuit breaker)17(Type C circuit breaker)			

Output characteristics

Parameter	MIN	TYP	MAX	NOTE
Rated current				
DL-50W-V12-RAS		4.17A		
DL-50W-V24-RAS	-	2.08A	-	N/A
DL-50W-V36-RAS		1.39A		
DL-50W-V48-RAS		1.05A		
Output current range				
DL-50W-V12-RAS			4.17A	
DL-50W-V24-RAS	0	-	2.08A	N/A
DL-50W-V36-RAS			1.39A	
DL-50W-V48-RAS			1.05A	
Output voltage range				
DL-50W-V12-RAS	11.4V	12V	12.6V	
DL-50W-V24-RAS	23.4V	24V	24.6V	N/A
DL-50W-V36-RAS	35.4V	36V	36.6V	
DL-50W-V48-RAS	47.4V	48V	48.6V	
Rated power (100-277Vac)	-	50W	-	N/A
EFF.@230Vac				
DL-50W-V12-RAS	84%	85%		
DL-50W-V24-RAS	86%	87%	-	FULL LOAD@230Vac
DL-50W-V36-RAS	86%	87%		
DL-50W-V48-RAS	86%	87%		

Output characteristic

Parameter	MIN	TYP	MAX	NOTE
Ripple voltage	240mV@UP-12/24VDC/360mV@UP-36/48VDC			FULL LOAD
Voltage accuracy	-2%	-	+2%	FULL LOAD
Linear adjustment rate	-2%	-	+2%	50-100% LOAD@230Vac
Load adjustment rate	-2%	-	+2%	50-100% LOAD@230Vac
Start-up time	-	-	500ms	FULL LOAD@230Vac
Rise time	-	50ms	-	FULL LOAD
Holding time	-	20ms	-	FULL LOAD

Safety and environmental reliability

category	Inclusive function	Function description
Protection	Output overload protection	Protection mode: hiccup restart mode. After abnormal load conditions are removed, the system automatically recovers
	Output short-circuit protection	Hiccup mode, automatically recovered after abnormal conditions are removed
	Over temperature protection	Self-recovery mode:When the housing temperature is greater than 90°C, the output is turned off as the housing temperature rises
	Output overcurrent protection	Output current >1.4-1.8 times off
Safety and electromagnetic compatibility	Safety regulation	EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、EN 62384、EN 62493
	EMC electromagnetic compatibility	符合 GB17743/EN 55015、EN 61000-3-2 CLASSB ; EN 61000-4-2,3,4,5,6,8,11;EN 61547 CLASSB
	Lightning protection class	Differential mode L-N ± 4 KV (2 Ω), according to IEC61000-4-5 2014
	Withstand voltage	I/P-O/P:3.75KVac
	Insulation impedance	I/P-PE:100M Ω / 500VDC; I/P-O/P:100M Ω / 500VDC / 25°C/ 70% RH
	Leakage current	<0.7mA@277Vac
Environmental reliability	Operating temperature	-40~50°C @230VAC; -40~45°C @120VAC (Please refer to the temperature curve for details)
	Insulation shell temperature	-40~90°C
	Working humidity	20 ~ 90% RH,non-condensing
	Store temperature and humidity	-40~+80°C, 10 ~ 90% RH
	Resistance to 5G vibration	10 ~ 500Hz, 5G 12 minutes/cycle, X, Y, Z axis 72 minutes each
	MTBF	230Khrs min. MIL-HDBK-217F (Ta=25°C)
	Life time	70000 hours, 230Vac, 100% load, TC 75°C

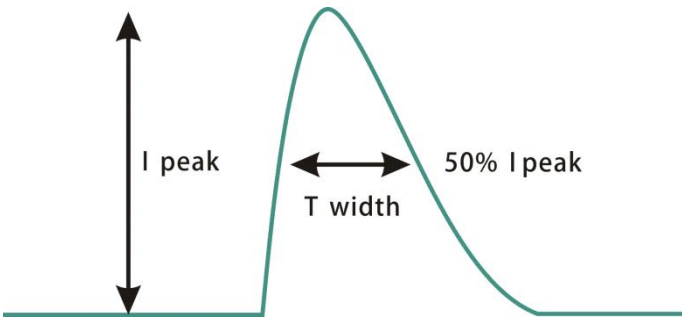
Dimming characteristic

Dimming function		Min	Typ.	Max	Instructions
0-10V dimming (optional) S version	Safe applied voltage range	1V	-	12V	When the external voltage is greater than or equal to 12V, the dimming will be damaged
	Dimming output range	10%	-	100%	-
	Rated dimming voltage range	1V	-	12V	-
PWM dimming (optional) S version	PWM High level	9.5V	-	10.5V	-
	PWM Low level	0	-	0.3V	-
	PWM Frequency band	300Hz	-	2000Hz	-
	PWM Duty cycle	10%	-	99%	Full power output at 99% duty cycle
Resistance dimming (optional) S version	Resistance of the external resistor	10K Ω	-	100K Ω	-
	Dimming output range	10%	-	100%	-

Note:

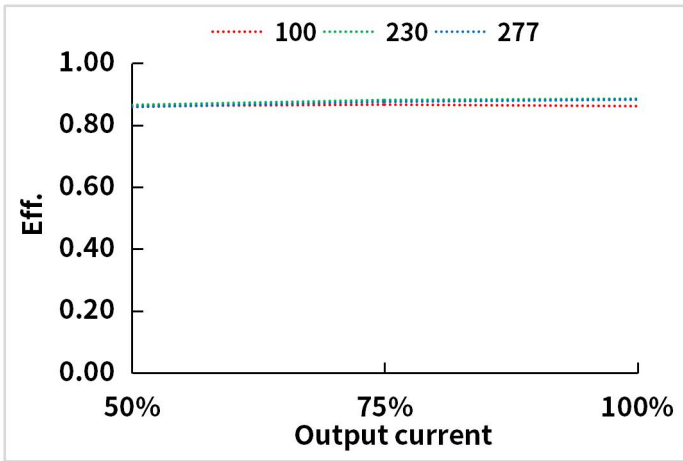
1. Dimming port output current: 108uA(typical value).
2. The dimmer port can withstand a maximum voltage of 12V. If the voltage of the external power supply exceeds 12V or the signal cable is reversed, the power supply may be damaged.
3. The minimum dimming ratio column time; Extinguishable lamp.

Inrush current

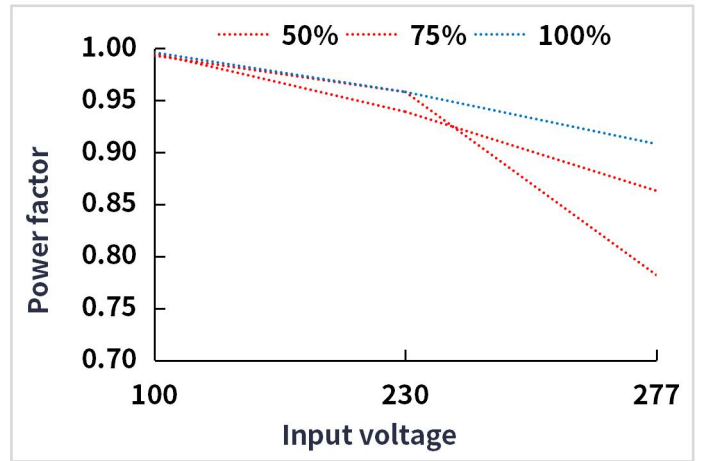


Input voltage	Peak current	T(@50% Peak current)
100Vac	20.9A	184us
230Vac	56.33A	105us
277Vac	66.33A	150us

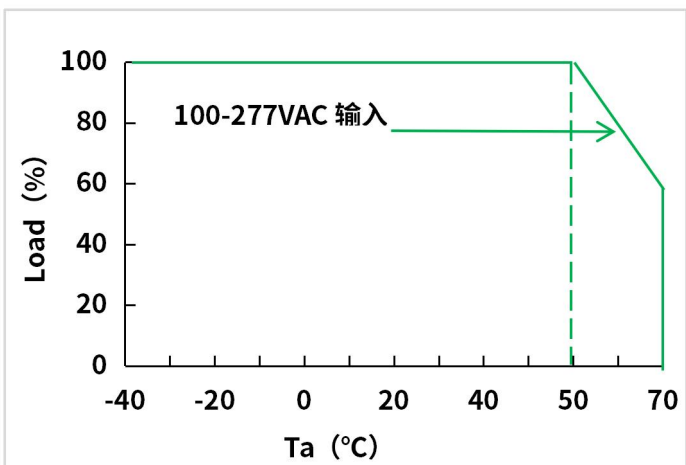
DL-50W-RAS Parametric curves



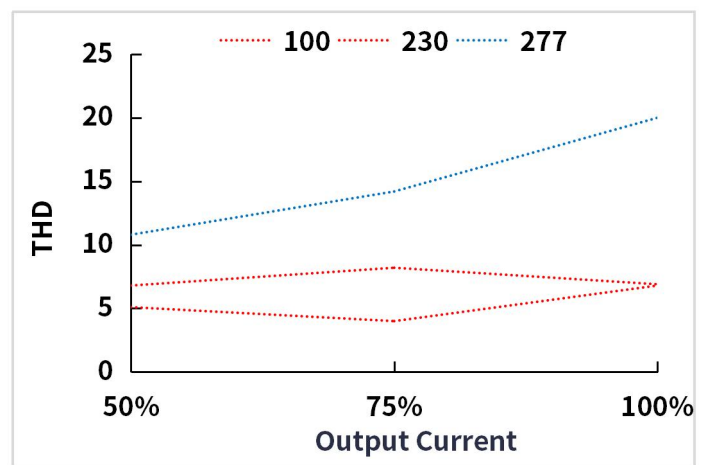
Eff. VS Output current



Power factor VS Input voltage

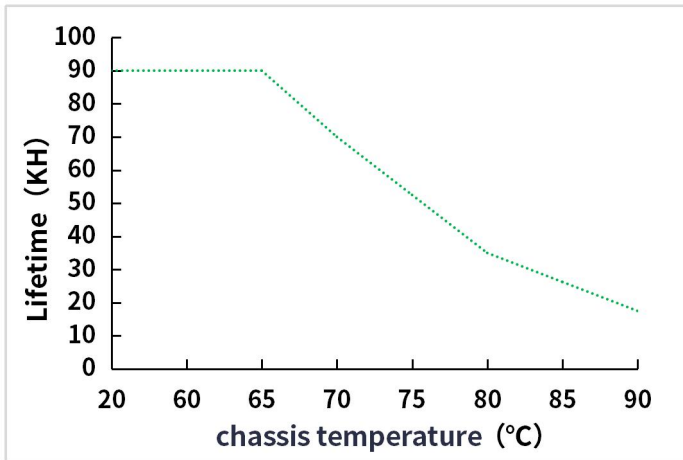


Load VS Ta

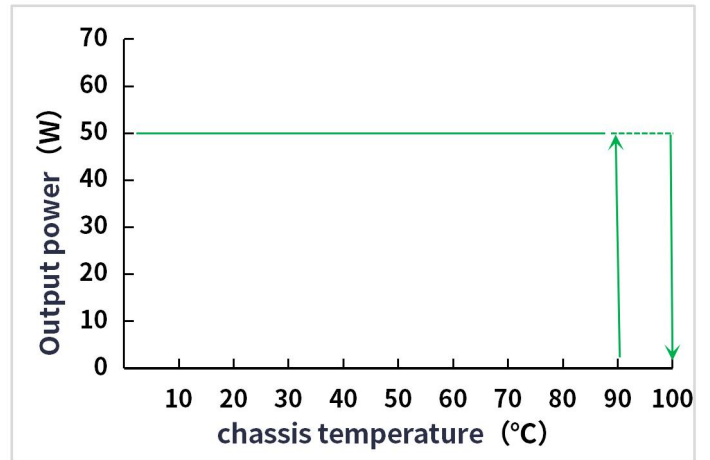


THD VS Output Current

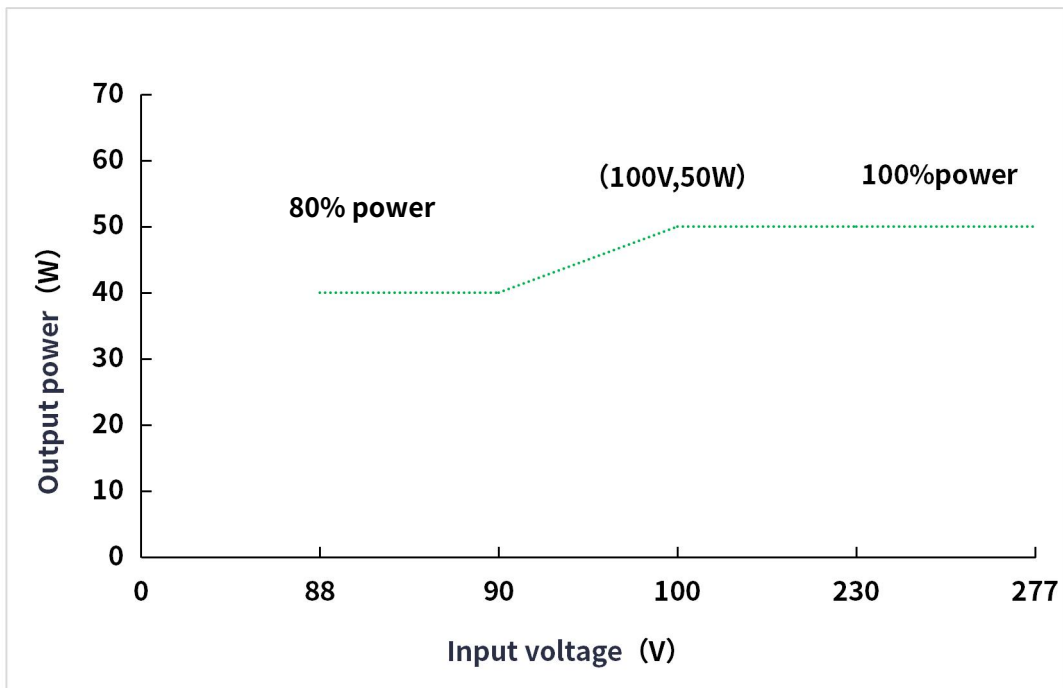
DL-50W-RAS Parametric curves



Lifetime VS chassis temperature



Output power VS chassis temperature



Output power VS Input voltage

Note: If the input voltage is lower than 100V, for every 1V drop, the load will decrease by 2%. If the input voltage is lower than 88Vac, the output will be shut down.

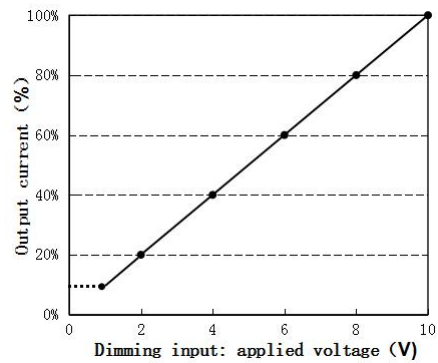
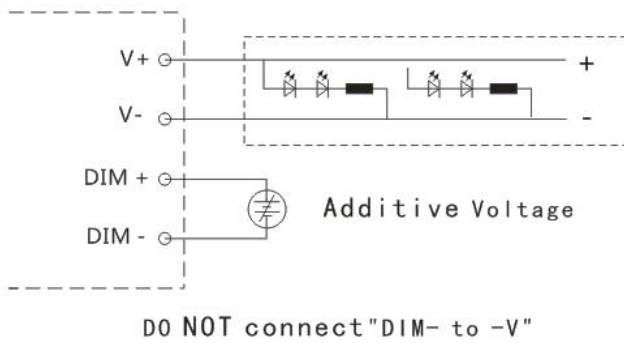
Dimming operation

3-in-1 Dimming function (S version)

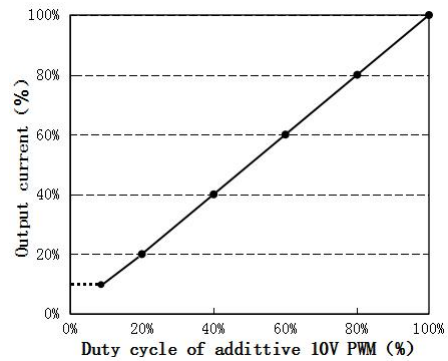
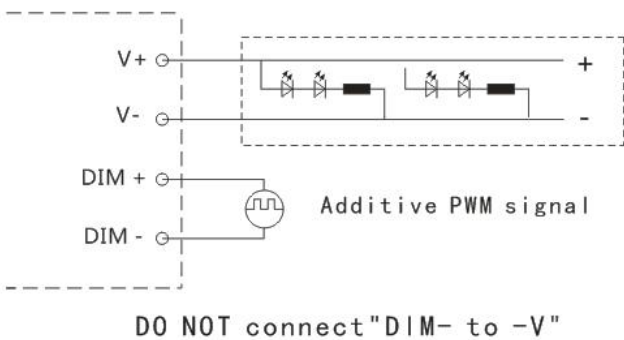
a.The output current can be adjusted by connecting a resistor 10-100K or 1-10V DC voltage or 10V PWM signal between DIM+ an DIM-.

b.Dimmer port output current: 108uA(typical value).

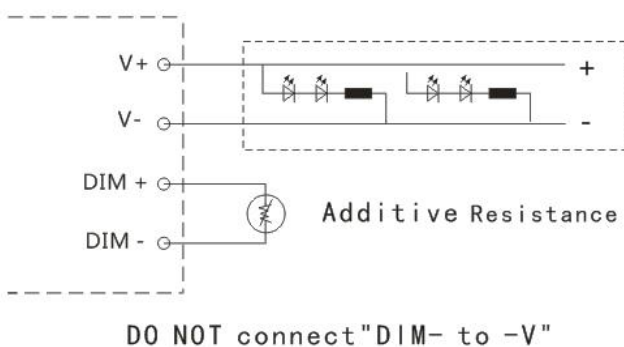
◎ With applied 0-10V voltage:



◎ With an external 10V PWM signal (frequency range: 300Hz-2K Hz) :



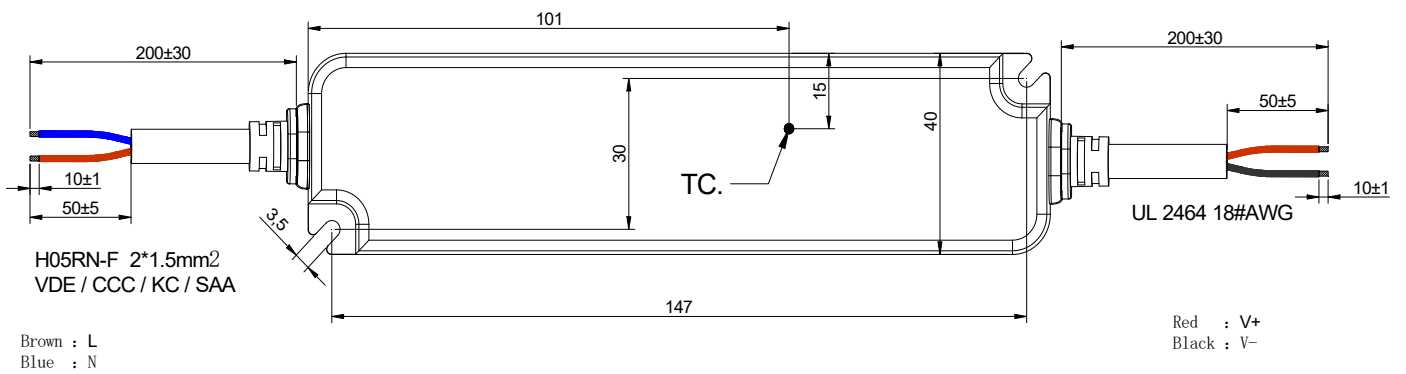
◎ With an external 0-100K resistor:



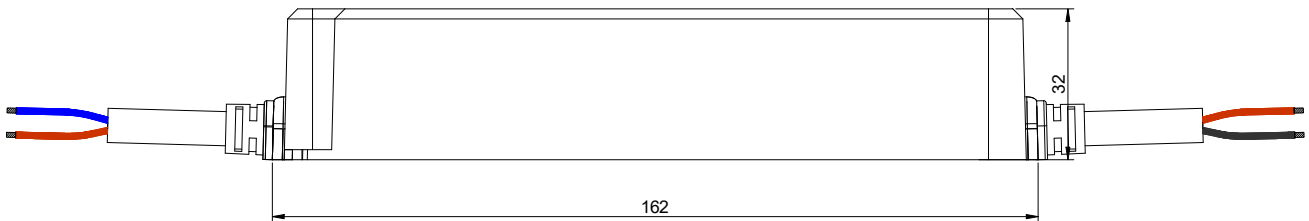
Mechanical specification

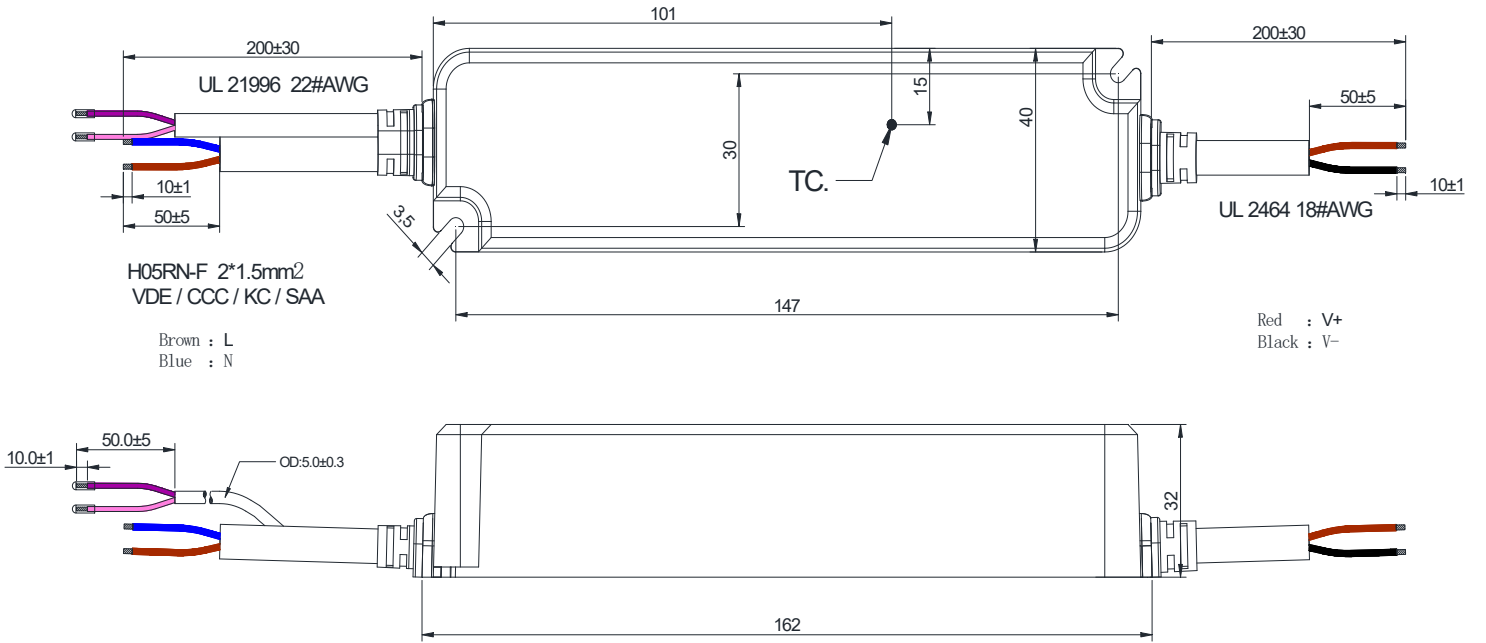
Size (mm)	L162mm*W40mm*H32mm
Weight (kg)	0.5KG

DL-50W-RAS



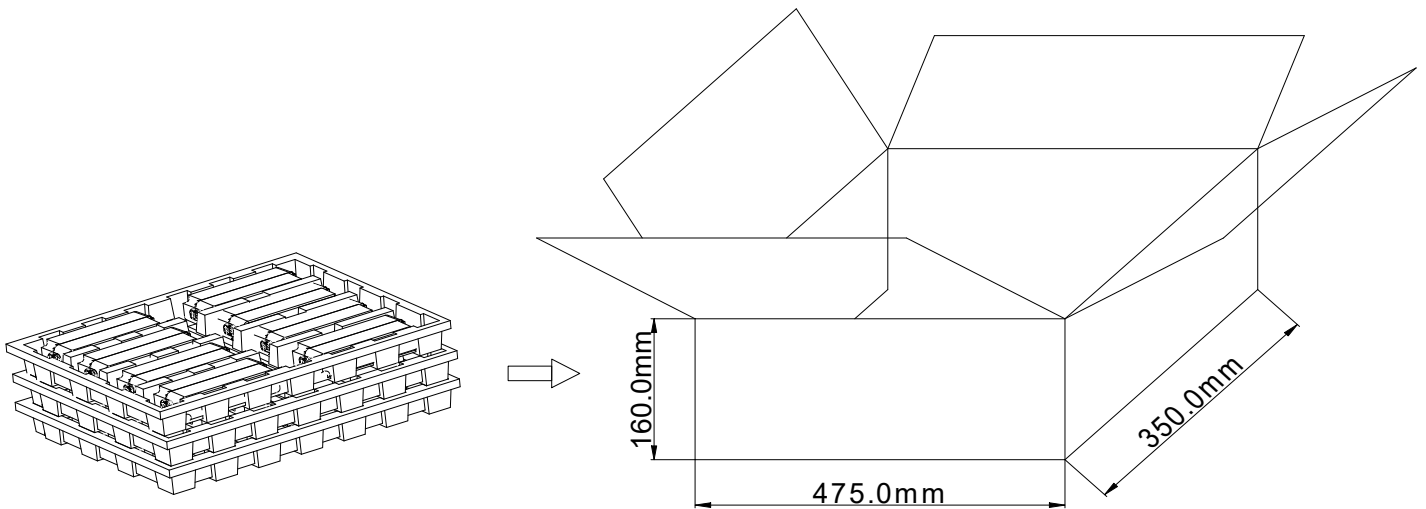
DL-50W-S/D-RAS





Packaging

Packaging (mm)	L475*W350*H160mm
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Note: One Carton 3 layers and 16pcs each layer, total 48pcs/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
2025.03.14	Initial version.	V1.0	

EDIT	CHECK	APPROVE