

# RAP SERIES LED DRIVERS

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## DL-16W-RAP\_V1.4

A decorative graphic at the bottom of the page consisting of several overlapping, curved teal shapes. The topmost shape features white circuit board traces and circular nodes, suggesting a technological or electronic theme.

Guangdong DONE Electronic Technology Co., Ltd

## Features

- Class II structure
- Input voltage: 100-240Vac ~ 50/60Hz
- Efficiency :84%(Typ.)
- plastic housing structure, protection grade: IP67
- Lightning protection level: differential mode 2KV
- All-round protection: output over-voltage, output over-current, short circuit protection
- 3 years warranty



## Product introduction

DONE DL-16W-RAP is a series of constant voltage products with output power of 16W. Can operate in the input voltage range of 90-264Vac, and provide 5Vdc,12Vdc,24Vdc,with perfect output over voltage, over current, overload, short circuit protection. 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.	Input voltage	Output power	Output voltage	The default current	Eff. (Typ.)	PF
DL-16W-V5-RAP	100-240V 50/60Hz	16W	5Vdc	0-3.2A	≥80%	0.5
DL-16W-V12-RAP	100-240V 50/60Hz	16W	12Vdc	0-1.34A	≥84%	0.5
DL-16W-V24-RAP	100-240V 50/60Hz	16W	24Vdc	0-0.67A	≥84%	0.5

### Note:

1. Test conditions of the above parameters: Ta=25°C, 230Vac input, full load operation for 30 minutes;
2. Including setting error, linear adjustment rate and load adjustment rate;
3. Power supply is used as a component with terminal equipment. EMC is affected by the whole set of devices. Terminal equipment manufacturers need to re-confirm the EMC for the whole set of devices.

## Input characteristics

Parameter	Min	Typ.	Max	Note
Rated input voltage	100Vac 140Vdc	230Vac	240Vac 330Vdc	N/A
Input voltage range	90Vac	-	264Vac	N/A
Rated frequency	47Hz	50/60Hz	63Hz	N/A
Power factor	-	>0.5	-	Full load, 230Vac input
Input current	-	-	0.4A	100% load, 90Vac input
Inrush current	-	-	70A	230Vac, cold start (25°C)
16A Circuit breaker The number of power supplies of the same model can be configured	36pcs (Type B circuit breaker) 60pcs (Type C circuit breaker) for 230Vac input			

## Output characteristics

Parameter	Min	Typ.	Max	Note
Rated current DL-16W-V5-RAP DL-16W-V12-RAP DL-16W-V24-RAP	-	3.2A 1.34A 0.67A	-	N/A
Output current range DL-16W-V5-RAP DL-16W-V12-RAP DL-16W-V24-RAP	0	-	3.2A 1.34A 0.67A	N/A
Rated output voltage DL-16W-V5-RAP DL-16W-V12-RAP DL-16W-V24-RAP	-	5V 12V 24V	-	N/A
Rated power (100-240Vac)	-	16W	-	N/A
No-load voltage DL-16W-V5-RAP DL-16W-V12-RAP DL-16W-V24-RAP	-	-	5.8V 12.8V 24.8V	N/A
Efficiency@230Vac DL-16W-V5-RAP DL-16W-V12-RAP DL-16W-V24-RAP	80% 84% 84%	81% 85% 85%	-	100% load @230Vac

## Output characteristics

Parameter	Min	Typ.	Max	Note
Output voltage Ripple	-	<2%	-	100% load
Accuracy of output voltage	-5%	-	+5%	100% load
Line regulation	-3%	-	+3%	50-100% load@230Vac
Load regulation	-3%	-	+3%	50-100% load@230Vac
Starting time	-	-	500ms	Full load@230Vac

## Protection

Function	Function instructions
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
Output over-voltage protection	Output voltage > works voltage 1.08-1.2 Hiccup mode:recovers automatically after fault condition is removed
Output over-current protection	Output current >1.1-1.5 times Output voltage > works voltage 1.08-1.2Hiccup mode:recovers automatically after fault condition is removed

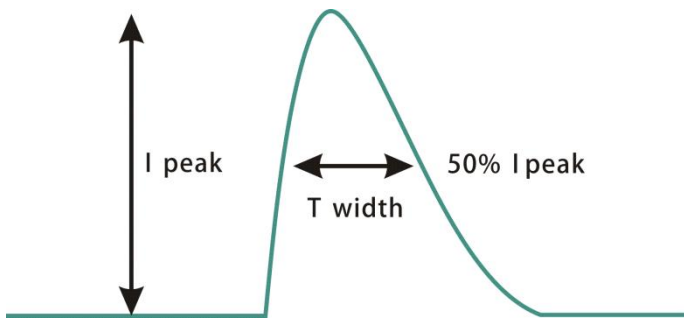
## Safety and EMC

Safety categories	Standard
Safety	GB19510、IEC62368-1 、 EN62368-1 、 UL8750、 EN61347-1 、 EN61347-2-13
EMC	GB/T 9254.1、 IEC61000-3-2 、 EN55032/55035、 Class B
Surge protection	Differential mode L-N $\pm 2\text{KV}$ (2 ohm) ,Refer to IEC61000-4-5 2014
High-pot test	I/P-O/P:3.75KVac
Insulation impedance	I/P-O/P:100M Ohms/500Vdc/ 25°C/ 70% RH
Leakage current	<0.25mA@240Vac

## Environmental

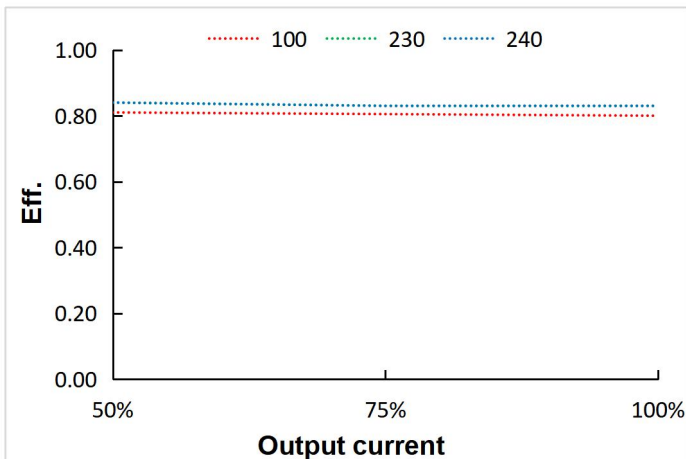
Environmental categories	Parameter
Working temperature	-40~55°C/90°C@230Vac; -40~45°C/90°C@100Vac
Safe housing temperature	-40~90°C
Working humidity	20 ~ 95% RH, non condensing
Storage temperature / humidity	-40 ~ +80°C, 10 ~ 90% RH
Resistant to vibration	10 ~ 500Hz, 5G 12 min/cycle, X, Y, Z axis 72 min each
MTBF	230Khrs min. MIL-HDBK-217F (Ta=25°C)
Lifetime	50,000 hours @Tc≤75°C,230Vac, 100% Load, Please refer to "Tcase VS Lifetime" section

## Inrush current

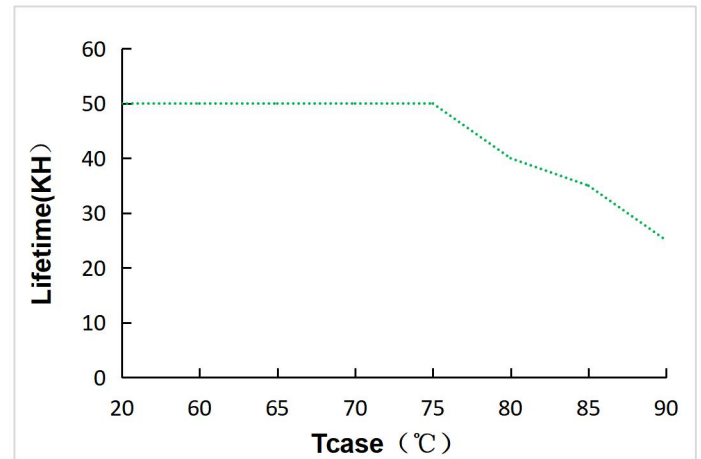


Input voltage	Peak current	T(@50% Peak current)
100Vac	21A	43us
230Vac	54A	36.6us
264Vac	64A	32.4us

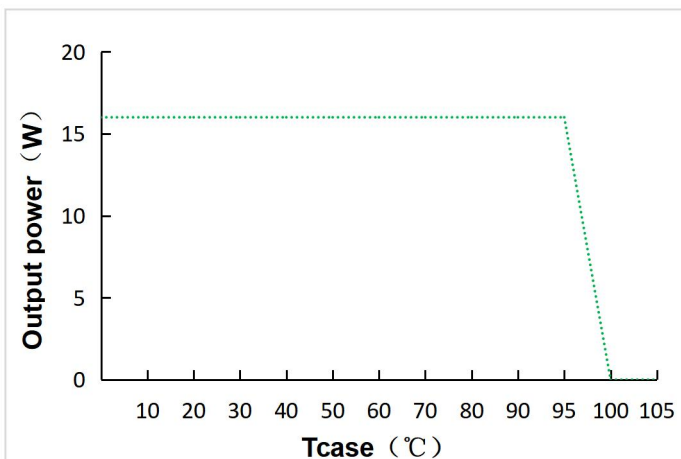
## DL-16W-RAP Parametric curves



Eff. VS Output current

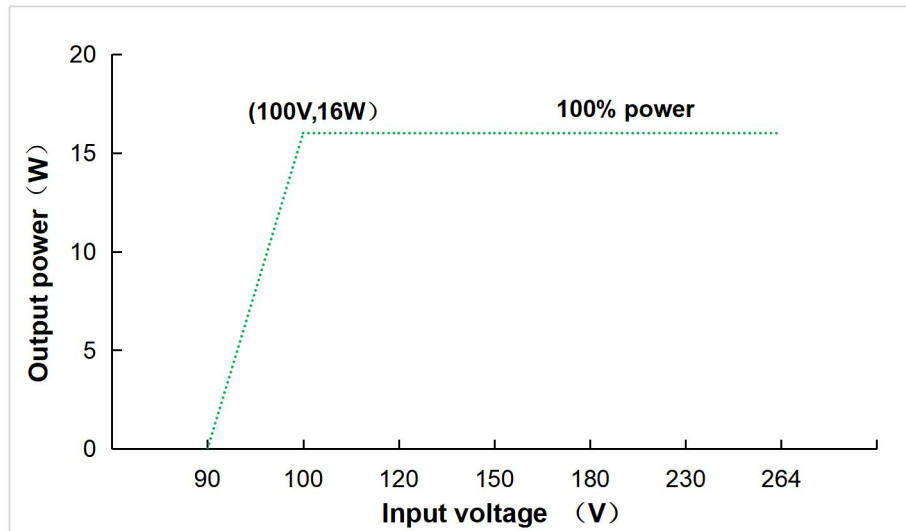


Lifetime VS Tcase



Output power VS Tcase

## DL-16W-RAP Parametric curves



Output power VS Input voltage

**Note:** If the input voltage is lower than 90Vac, the output is off.

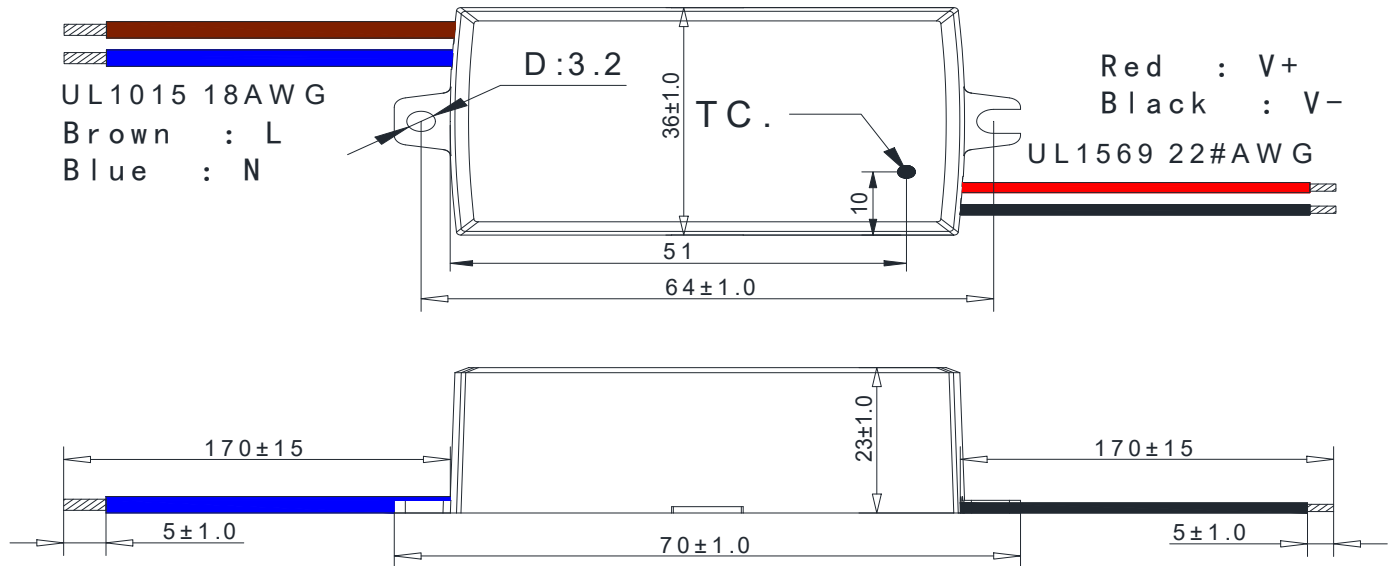
## Mechanical specification

Size (mm)

L70mmxW36mmxH23mm

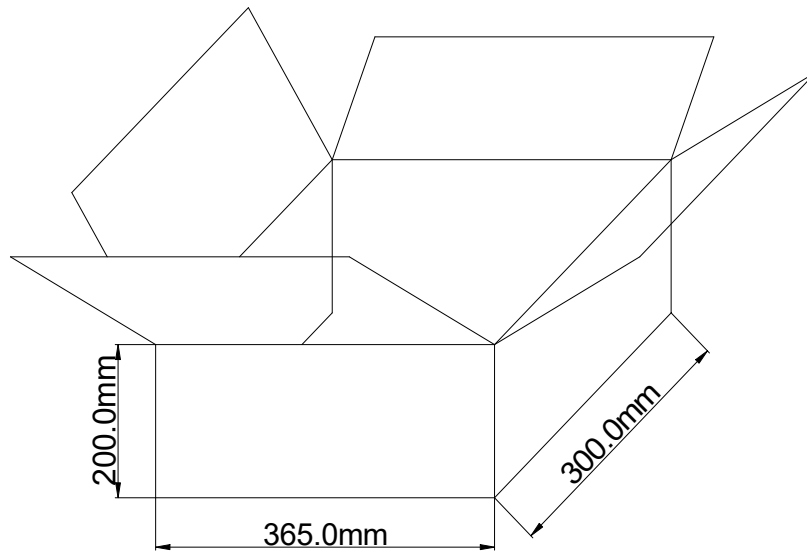
0.094KG

### DL-16W-RAP



## Packaging

Packaging (mm) L365\*W300\*H200



Note: One Carton 5 layers and 40 pcs each layer, total 200 pcs/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
2024.01.15	Initial version.	V1.0	
2024.05.30	FCC UL certificated	V1.1	
2024.12.30	Modify the input end wire material	V1.2	
2025.04.08	Example Modify output feature parameters	V1.3	
2025.7.15	The leakage current has been reduced from 0.75mA to 0.25mA Add safety markings EN61347-1 and EN61347-2-13	V1.4	

## ANUFACTRUER

EDIT

CHECK

APPROVE