

# RAP SERIES LED DRIVERS

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## DL-30W-RAP\_V1.0

Guangdong DONE Electronic Technology Co., Ltd

## Features

- Class II structure
- Input voltage: 100-240Vac ~ 50/60Hz
- Efficiency :85%(Typ.)
- plastic housing structure, protection grade: IP67
- Lightning protection level: differential mode 4KV
- All-round protection: output temperature, output over-voltage, output over-current, short circuit protection
- 3 years warranty



## Product introduction

DONE DL-30W-RAP is a series of constant voltage products with output power of 30W. Can operate in the input voltage range of 90-264Vac, and provide 12Vdc,24Vdc,36Vdc,48Vdc,with perfect output over temperature, 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-30W-V12-RAP | 100-240V<br>50/60Hz | 30W          | 12Vdc          | 0-2.5A              | ≥85%          | 0.5 |
| DL-30W-V24-RAP | 100-240V<br>50/60Hz | 30W          | 24Vdc          | 0-1.25A             | ≥85%          | 0.5 |
| DL-30W-V36-RAP | 100-240V<br>50/60Hz | 30W          | 36Vdc          | 0-0.84A             | ≥85%          | 0.5 |
| DL-30W-V48-RAP | 100-240V<br>50/60Hz | 30W          | 48Vdc          | 0-0.63A             | ≥85%          | 0.5 |

### Note :

1. Test conditions of the above parameters: Ta=25℃, 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<br>140Vdc                                                              | 230Vac  | 240Vac<br>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                                                                        | -                                                                             | -       | 0.6A             | 100% load, 100Vac input  |
| Inrush current                                                                       | -                                                                             | -       | 60A              | 230Vac, cold start (25℃) |
| 16A Circuit breaker The number of power supplies of the same model can be configured | 9pcs (Type B circuit breaker) 15pcs (Type C circuit breaker) for 230Vac input |         |                  |                          |

## Output characteristics

| Parameter                                                                                    | Min                      | Typ.                            | Max                              | Note              |
|----------------------------------------------------------------------------------------------|--------------------------|---------------------------------|----------------------------------|-------------------|
| Rated current<br>DL-30W-V12-RAP<br>DL-30W-V24-RAP<br>DL-30W-V36-RAP<br>DL-30W-V48-RAP        | -                        | 2.5A<br>1.25A<br>0.84A<br>0.63A | -                                | N/A               |
| Output current range<br>DL-30W-V12-RAP<br>DL-30W-V24-RAP<br>DL-30W-V36-RAP<br>DL-30W-V48-RAP | 0                        | -                               | 2.5A<br>1.25A<br>0.84A<br>0.63A  | N/A               |
| Rated output voltage<br>DL-30W-V12-RAP<br>DL-30W-V24-RAP<br>DL-30W-V36-RAP<br>DL-30W-V48-RAP | -                        | 12V<br>24V<br>36V<br>48V        | -                                | N/A               |
| Rated power<br>(100-240Vac)                                                                  | -                        | 30W                             | -                                | N/A               |
| No-load voltage<br>DL-30W-V12-RAP<br>DL-30W-V24-RAP<br>DL-30W-V36-RAP<br>DL-30W-V48-RAP      | -                        | -                               | 12.5V<br>24.5V<br>36.5V<br>48.5V | N/A               |
| Efficiency@230Vac<br>DL-30W-V12-RAP<br>DL-30W-V24-RAP<br>DL-30W-V36-RAP<br>DL-30W-V48-RAP    | 84%<br>84%<br>84%<br>84% | 85%<br>85%<br>85%<br>85%        | -                                | 100% load @230Vac |

## Output characteristics

| Parameter                  | Min | Typ. | Max   | Note                |
|----------------------------|-----|------|-------|---------------------|
| Output voltage Ripple      | -   | <2%  | -     | 100% load           |
| Accuracy of output voltage | -3% | -    | +3%   | 100% load           |
| Line regulation            | -2% | -    | +2%   | 50-100% load@230Vac |
| Load regulation            | -2% | -    | +2%   | 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                                                                        |
| 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 over-voltage protection  | Output voltage > working 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 > working voltage 1.08-1.2Hiccup mode:recovers automatically after fault condition is removed |

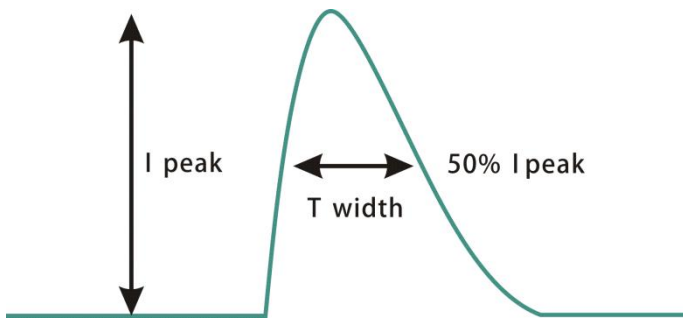
## Safety and EMC

| Safety categories    | Standard                                                                   |
|----------------------|----------------------------------------------------------------------------|
| Safety               | GB4943.1 、 IEC62368-1 、 EN62368-1 、 UL8750                                 |
| EMC                  | GB/T 9254.1、 EN55032/55035                                                 |
| Surge protection     | Differential mode L-N $\pm 4\text{KV}$ (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      | <5mA@240Vac                                                                |

## Environmental

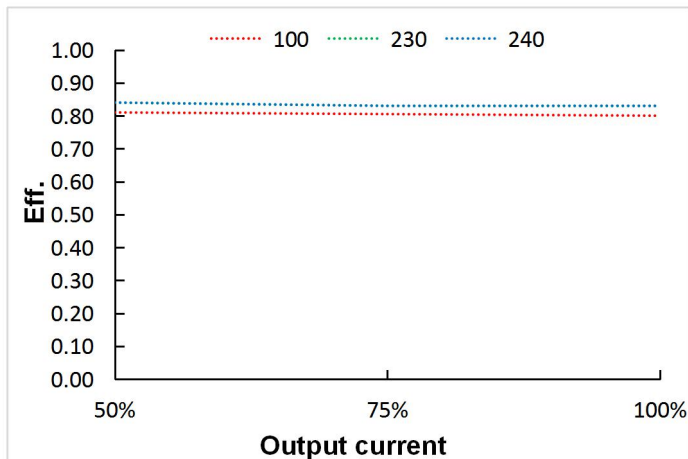
| Environmental categories       | Parameter                                                                            |
|--------------------------------|--------------------------------------------------------------------------------------|
| Working temperature            | -40~55°C/90°C@230Vac; -40~45°C/90°C@100Vac(refer to "Life Curve ")                   |
| 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

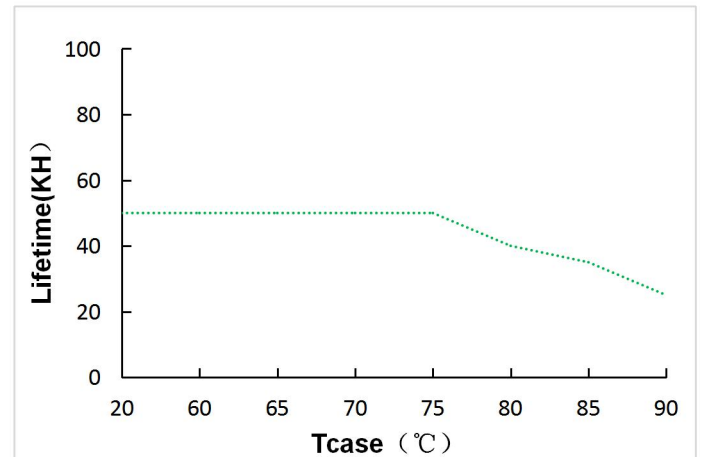


| Input voltage | Peak current | T(@50% Peak current) |
|---------------|--------------|----------------------|
| 100Vac        | 23A          | 160us                |
| 230Vac        | 50A          | 166us                |
| 264Vac        | 56A          | 206us                |

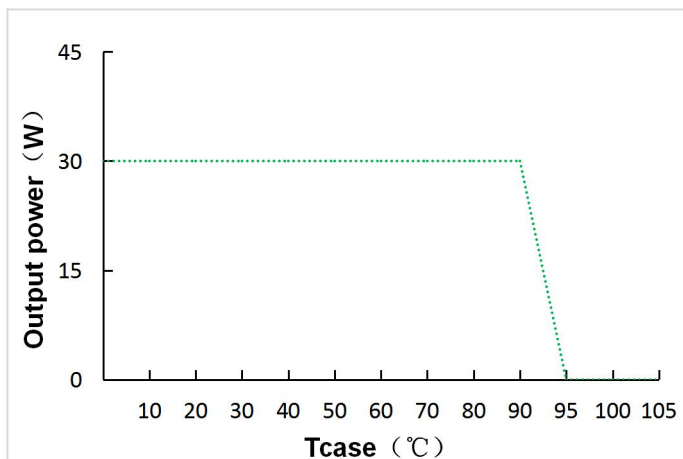
## DL-30W-RAP Parametric curves



Eff. VS Output current

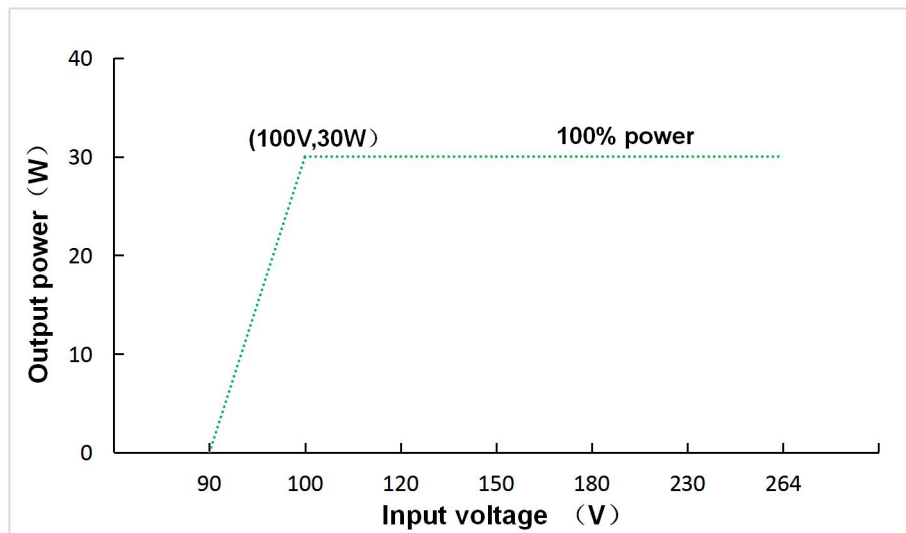


Lifetime VS Tcase



Output power VS Tcase

## DL-30W-RAP Parametric curves



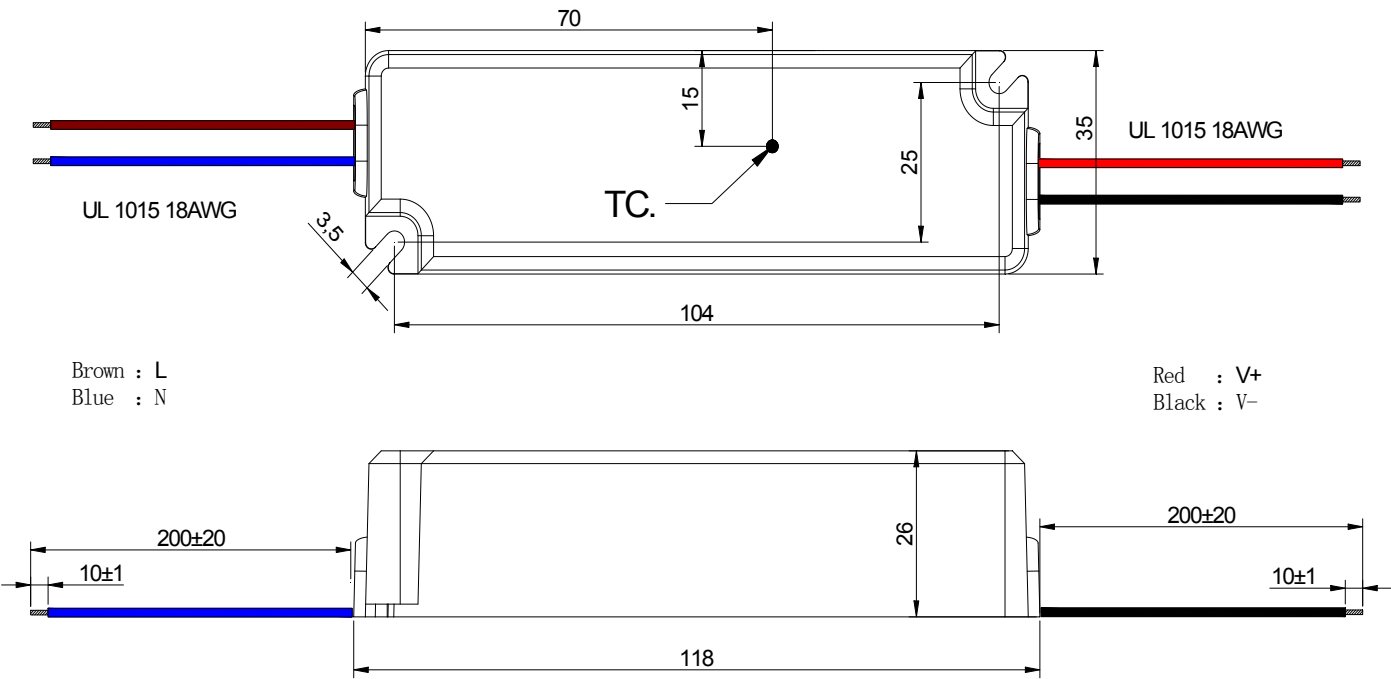
Output power VS Input voltage

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

Mechanical specification

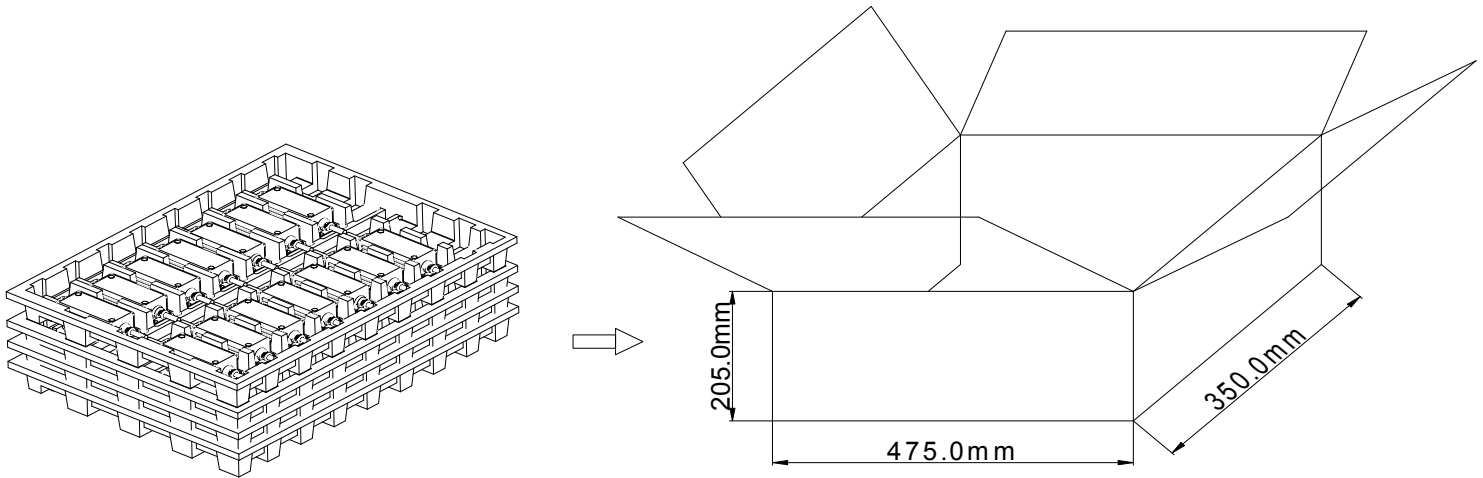
|           |                    |        |
|-----------|--------------------|--------|
| Size (mm) | L118mmxW35mmxH26mm | 0.18KG |
|-----------|--------------------|--------|

DL-30W-RAP



## Packaging

Packaging (mm) L475\*W350\*H205mm



Note: One Carton 4 layers and 16pcs each layer, total 64pcs/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 |       |

| ANUFACTRUER |       |         |
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