



Features

- Universal AC input / Full range
- Built-in active PFC function
- Class 2 power unit (except OWA-90U-12/15)
- High efficiency up to 91%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Class II power unit, no FG
- Fanless design, cooling by free air convection
- No load power consumption <0.15W
- Energy efficiency Level VI
- Comply with EISA 2007 DoE and NRCan
- UL LISTED, suitable for dry and damp locations
- Various DC plug quick adapter accessory available (Plug kit sold sperately, please refer to : https://www.meanwell.com/upload/pdf/DC_plug.pdf)
- 5 years warranty

Applications

- LED lighting fixture
- LED decorative lighting
- LED office lighting
- General electronic products in dry or damp environment

GTIN CODE

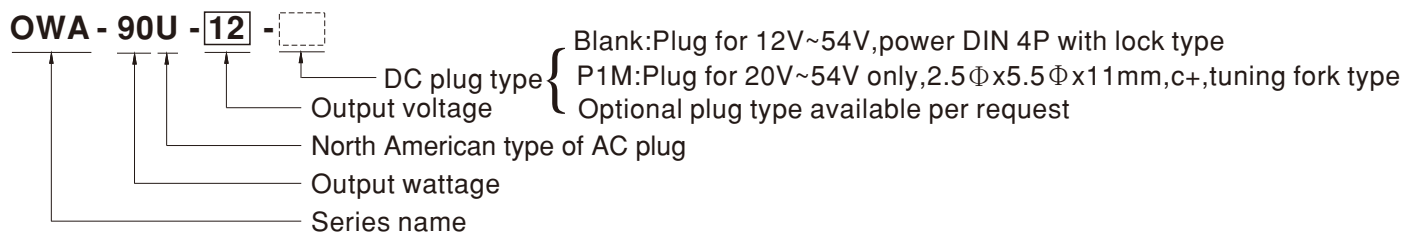
MW Search: <https://www.meanwell.com/serviceGTIN.aspx>

Description

OWA-90U is one 90W single-output external LED power supply series. Pairing the North American type of AC plug and the prevailing DC connectors, OWA-90U, working like an adaptor, simplifies the connection with LED lighting fixtures without extra wiring efforts. The entire series is certified with the “UL LISTED” for dry and damp locations.

As a class II (without earth pin) design, the enclosure of OWA-90U is a 94V-0 flame retardant plastic case. The interior is fully potted with silicone that enhances the heat dissipation. With the working efficiency up to 91%, OWA-90U is cooled by free air convection; the working temperature ranges from -40°C to +70°C.

Model Encoding

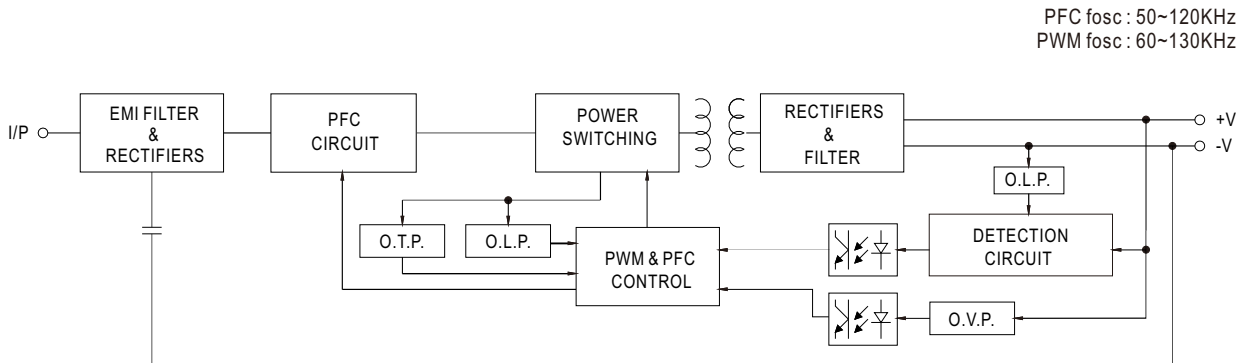




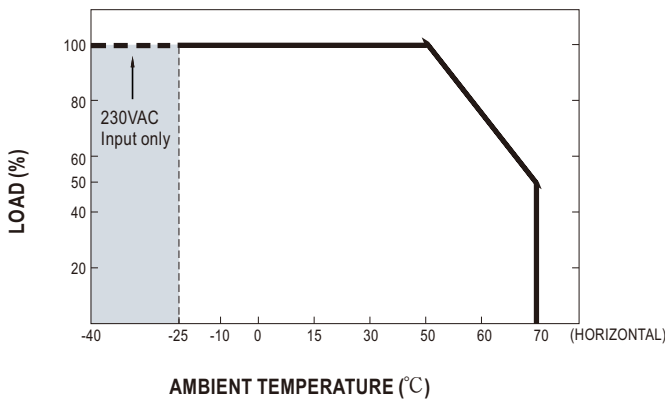
SPECIFICATION

| MODEL | | OWA-90U-12 | OWA-90U-15 | OWA-90U-20 | OWA-90U-24 | OWA-90U-30 | OWA-90U-36 | OWA-90U-42 | OWA-90U-48 | OWA-90U-54 | |
|-----------------|---|--|------------|------------|------------|------------|------------|------------|------------|------------|-------|
| OUTPUT | DC VOLTAGE | 12V | 15V | 20V | 24V | 30V | 36V | 42V | 48V | 54V | |
| | CONSTANT CURRENT REGION | 7.2 ~ 12V | 9 ~ 15V | 12 ~ 20V | 14.4 ~ 24V | 18 ~ 30V | 21.6 ~ 36V | 25.2 ~ 42V | 28.8 ~ 48V | 32.4 ~ 54V | |
| | RATED CURRENT | 7.5A | 6A | 4.5A | 3.75A | 3A | 2.5A | 2.15A | 1.88A | 1.67A | |
| | RATED POWER | 90W | 90W | 90W | 90W | 90W | 90W | 90.3W | 90.24W | 90.18W | |
| | RIPPLE & NOISE (max.) Note.2 | 150mVp-p | 150mVp-p | 150mVp-p | 150mVp-p | 200mVp-p | 200mVp-p | 250mVp-p | 250mVp-p | 350mVp-p | |
| | VOLTAGE TOLERANCE Note.3 | ±4.0% | ±4.0% | ±4.0% | ±3.0% | ±3.0% | ±2.0% | ±1.0% | ±1.0% | ±1.0% | |
| | LINE REGULATION | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | |
| | LOAD REGULATION | ±1.5% | ±1.0% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | ±0.5% | |
| | SETUP, RISE TIME Note.4 | 500ms, 80ms at 95% load 115VAC / 230VAC | | | | | | | | | |
| | HOLD UP TIME (Typ.) | 16ms at full load 115VAC / 230VAC | | | | | | | | | |
| INPUT | VOLTAGE RANGE | 90 ~ 264VAC 127 ~ 370VDC | | | | | | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | | | | | | |
| | POWER FACTOR (Typ.) | PF>0.98/115VAC, PF>0.96/230VAC at full load | | | | | | | | | |
| | TOTAL HARMONIC DISTORTION | THD< 20% when output loading ≥60% at 115VAC/230VAC | | | | | | | | | |
| | EFFICIENCY (Typ.) | 115VAC | 88% | 89% | 89% | 89% | 89% | 89.5% | 89.5% | 89.5% | 89.5% |
| | | 230VAC | 89% | 90% | 90% | 90% | 90% | 91% | 91% | 91% | 91% |
| | AC CURRENT (Typ.) | 0.95A / 115VAC 0.5A / 230VAC | | | | | | | | | |
| | INRUSH CURRENT (Typ.) | COLD START 30A (twidth=550μs measured at 50% Ipeak) at 115VAC COLD START 60A (twidth=550μs measured at 50% Ipeak) at 230VAC | | | | | | | | | |
| | MAX. NO. of PSUs on 16A CIRCUIT BREAKER | 3 units (circuit breaker of type B) / 6 units (circuit breaker of type C) at 230VAC | | | | | | | | | |
| LEAKAGE CURRENT | <0.125mA / 120VAC <0.25mA / 240VAC | | | | | | | | | | |
| PROTECTION | OVER CURRENT | 95 ~ 108% Protection type : Constant current limiting, recovers automatically after fault condition is removed | | | | | | | | | |
| | SHORT CIRCUIT | Hiccup mode, recovers automatically after fault condition is removed | | | | | | | | | |
| | OVER VOLTAGE | 15 ~ 17V | 17.5 ~ 21V | 23 ~ 27V | 28 ~ 34V | 34 ~ 40V | 41 ~ 46V | 46 ~ 54V | 54 ~ 60V | 59 ~ 66V | |
| | | Protection type : Shut down o/p voltage, re-power on to recover | | | | | | | | | |
| | OVER TEMPERATURE | Shut down o/p voltage, re-power on to recover | | | | | | | | | |
| ENVIRONMENT | WORKING TEMP. | -40 ~ +70°C (Refer to "Derating Curve") | | | | | | | | | |
| | WORKING HUMIDITY | 20 ~ 95% RH non-condensing | | | | | | | | | |
| | STORAGE TEMP., HUMIDITY | -40 ~ +80°C, 10 ~ 95% RH | | | | | | | | | |
| | TEMP. COEFFICIENT | ±0.03%/°C (0 ~ 50°C) | | | | | | | | | |
| | VIBRATION | 10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes | | | | | | | | | |
| SAFETY & EMC | SAFETY STANDARDS | UI8750 listed, CSA C22.2 No. 250.13-12(except for 42V, 48V, 54V); IP67(for main body) approved | | | | | | | | | |
| | WITHSTAND VOLTAGE | I/P-O/P:3.75KVAC | | | | | | | | | |
| | ISOLATION RESISTANCE | I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH | | | | | | | | | |
| | EMC EMISSION | Compliance to FCC Part15 | | | | | | | | | |
| OTHERS | MTBF | 3044.3K hrs min. Telcordia SR-332 (Bellcore) 292.9K hrs min. MIL-HDBK-217F (25°C) | | | | | | | | | |
| | DIMENSION | 171*63*37.5mm | | | | | | | | | |
| | PACKING | 0.83Kg; 16pcs/14.3Kg/1.01CUFT | | | | | | | | | |
| NOTE | <p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</p> <p>2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.</p> <p>3. Tolerance : includes set up tolerance, line regulation and load regulation.</p> <p>4. Length of set up time is measured at cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.</p> <p>5. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).</p> <p>※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx</p> | | | | | | | | | | |

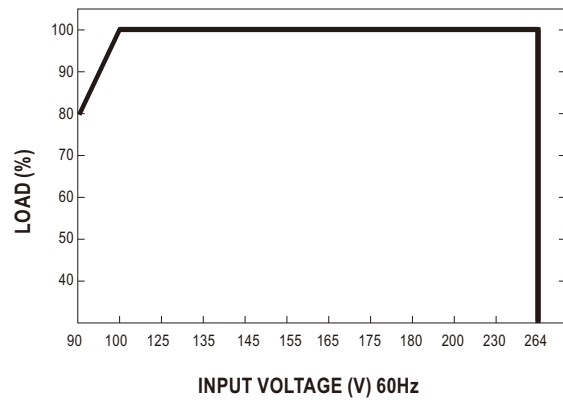
■ Block Diagram



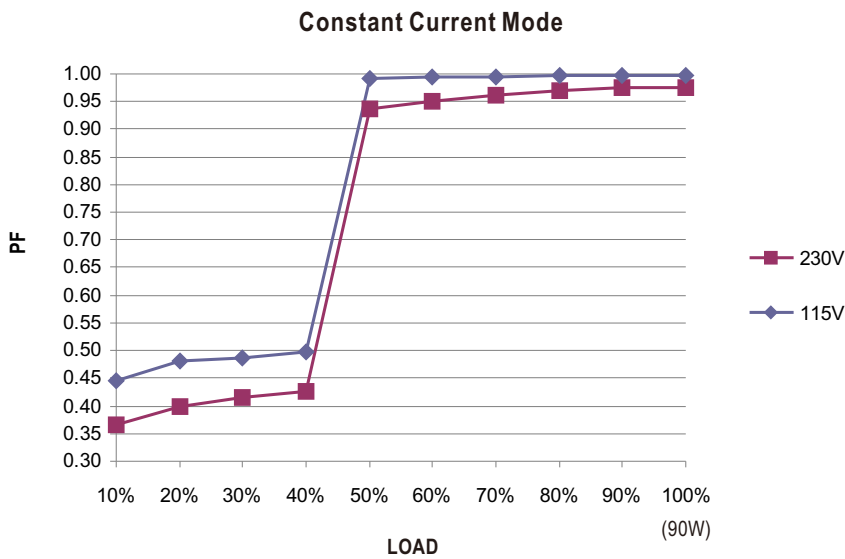
■ Derating Curve



■ Static Characteristics

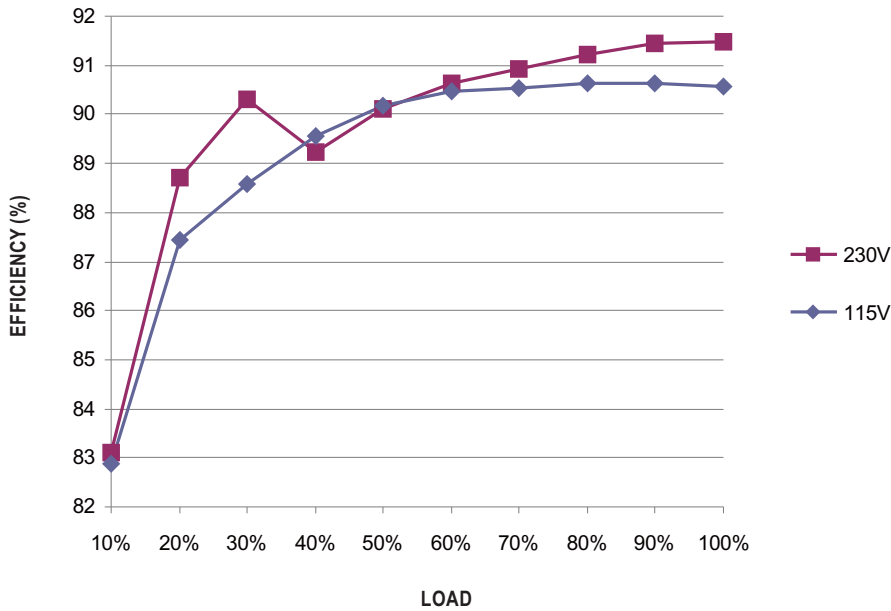


■ Power Factor Characteristic



EFFICIENCY vs LOAD (48V Model)

OWA-90U series possess superior working efficiency that up to 91% can be reached in field applications.

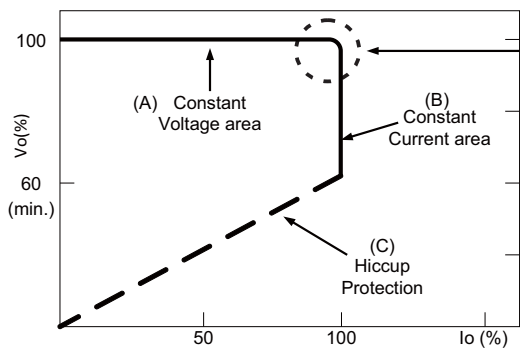


DRIVING METHODS OF LED MODULE

There are two major kinds of LED drive method, "direct drive" and "with LED driver".

A typical LED power supply may either work in "constant voltage mode (CV)" or "constant current mode (CC)" to drive the LEDs.

Mean Well's LED power supply with CV+ CC characteristic can be operated at both CV mode (with LED driver, at area (A) and CC mode (direct drive, at area (B)).



Typical LED power supply I-V curve

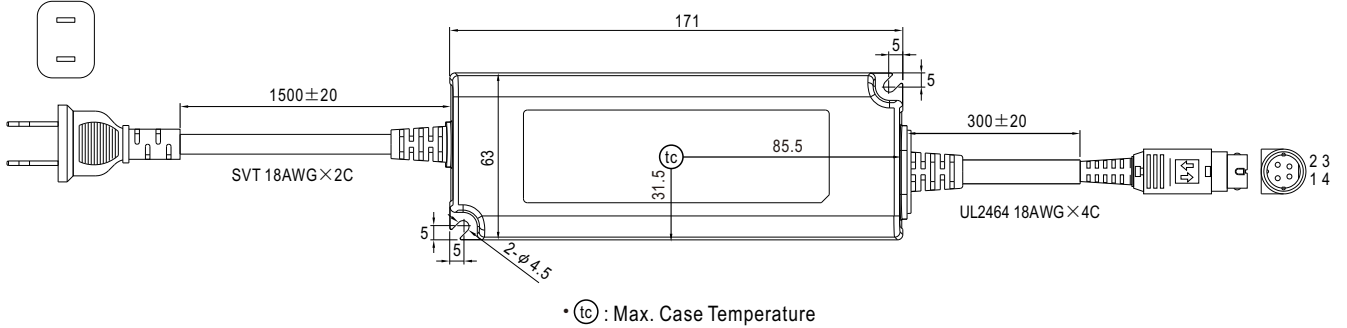
In the constant current region, the highest voltage at the output of the driver depends on the configuration of the end systems.

Should there be any compatibility issues, please contact MEAN WELL.

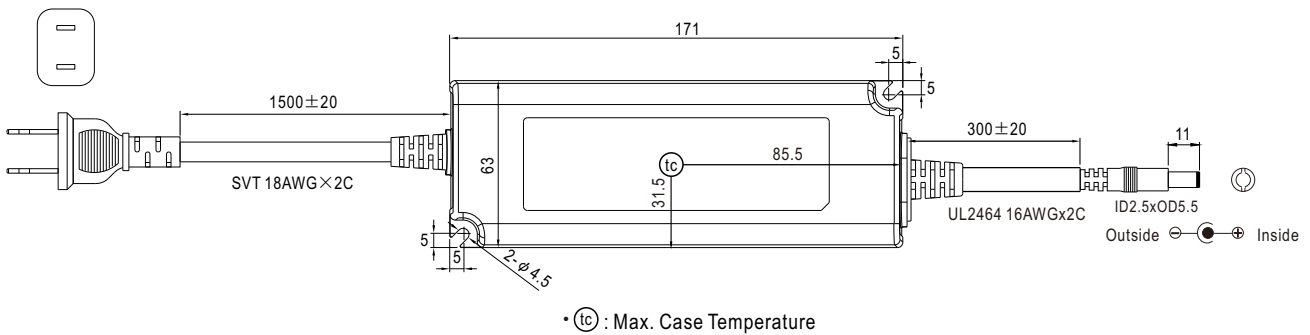
Mechanical Specification

Case No. PWM-90P Unit:mm Tolerance:±1

Blank Type:(OWA-90U-_)

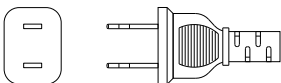


P1M Type:(OWA-90U-_-P1M)



Input Plug Type

All models : NEMA 1-15p male plug



Output Plug Assignment

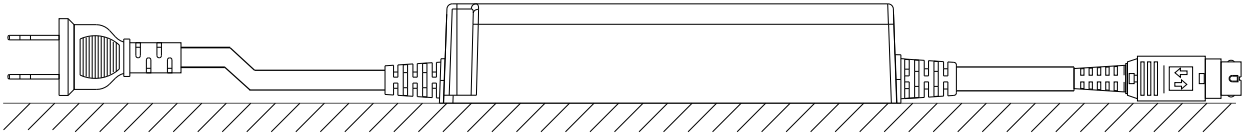
Plug for all standard models(12V~54V) :
power DIN 4 pins with lock type,
KYCON KPPX-4P, or equivalent

| PIN NO. | OUTPUT |
|---------|--------|
| 1,4 | +V |
| 2,3 | -V |

Plug for 20V~54V only :

| PIN NO. | OUTPUT |
|---------|--------|
| CENTER | +V |

■ Recommend Mounting Direction



■ Installation Manual

Please refer to : <http://www.meanwell.com/manual.html>