

# ORLRPV2480-HLG-A

ITEM NO. DRIVER - 15217

## Features:

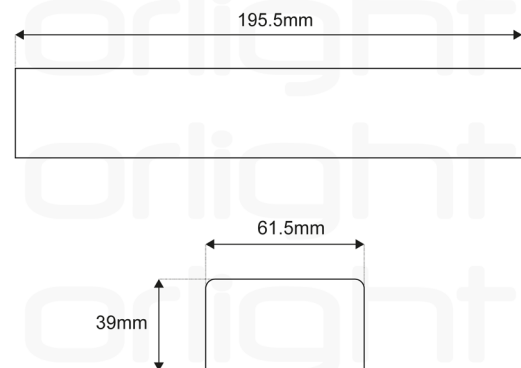
- Constant Voltage + Constant Current mode output
- Metal housing with class I design
- Built-in active PFC function
- Class 2 power unit
- IP67 / IP65 rating for indoor or outdoor installations
- Typical lifetime > 62000 hours

## Applications

- LED street lighting
- LED high-bay lighting
- Parking space lighting
- LED fishing lamp
- LED greenhouse lighting
- Type "HL" for use in Class I, Division 2 hazardous (Classified) location



## Dimension



## Technical Specification

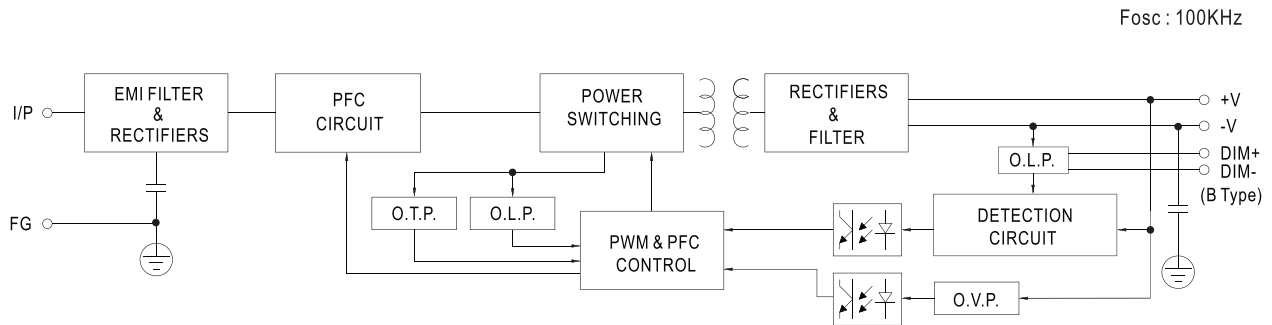
|        |                                        |                                                                                                                                                                   |
|--------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output | DC Voltage                             | 24V                                                                                                                                                               |
|        | Constant Current Region <b>Note. 4</b> | 14.4 ~ 24V                                                                                                                                                        |
|        | Rated Current                          | 3.4A                                                                                                                                                              |
|        | Rated Power                            | 81.6W                                                                                                                                                             |
|        | Ripple & Noise (max.) <b>Note. 2</b>   | 150mVp-p                                                                                                                                                          |
|        | Voltage Adj. Range                     | Adjustable for A- Type only (via built-in potentiometer)<br>22 ~ 27V                                                                                              |
|        | Current Adj. Range                     | Adjustable for A/AB- Type only (via built-in potentiometer)<br>2.04 ~ 3.4A                                                                                        |
|        | Voltage Tolerance <b>Note. 3</b>       | ±1.0%                                                                                                                                                             |
|        | Line Regulation                        | ±0.5%                                                                                                                                                             |
|        | Load Regulation                        | ±0.5%                                                                                                                                                             |
|        | Setup, Rise Time <b>Note. 6</b>        | 1200ms, 200ms/115VAC 500ms, 200ms/230VAC                                                                                                                          |
|        | Hold Up Time (Typ.)                    | 16ms at full load 230VAC/115VAC                                                                                                                                   |
| Input  | Voltage Range <b>Note.5</b>            | 90 ~ 305VAC 127 ~ 431VDC<br>(Please refer to "Static Characteristic" section)                                                                                     |
|        | Frequency Range                        | 47 ~ 63Hz                                                                                                                                                         |
|        | Power Factor (Typ.)                    | PF <sub>≥</sub> 0.96/115VAC, PF <sub>≥</sub> 0.96/230VAC, PF <sub>≥</sub> 0.94/277VAC @ full load<br>(Please refer to "Power Factor (PF) Characteristic" section) |

## Technical Specification Continued

|              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input        | Total Harmonic Distortion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | THD < 20% (@ load $\geq$ 60% / 115VAC, 230VAC; @ load $\geq$ 75% / 277VAC)<br>(Please refer to "Total Harmonic Distortion (THD)" section)                                                                                                                                                                                                                      |
|              | Efficiency (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 90.5%                                                                                                                                                                                                                                                                                                                                                          |
|              | AC Current (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 0.85A / 115VAC 0.425A / 230VAC 0.4A / 277VAC                                                                                                                                                                                                                                                                                                                   |
|              | Inrush Current (Typ.)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | COLD START 70A (twidth $\mu$ =485 s measured at 50% Ipeak) at 230VAC; Per NEMA 410                                                                                                                                                                                                                                                                             |
|              | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <0.75mA / 277VAC                                                                                                                                                                                                                                                                                                                                               |
| Protection   | Over Current                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 95 ~ 108%<br>Constant current limiting, recovers automatically after fault condition is removed                                                                                                                                                                                                                                                                |
|              | Short Circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Hiccup mode, recovers automatically after fault condition is removed                                                                                                                                                                                                                                                                                           |
|              | Over Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | 28 ~ 34V<br>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.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Tcase = -40 ~ +80 $\square$ (Please refer to "OUTPUT LOAD vs TEMPERATURE" section)                                                                                                                                                                                                                                                                             |
|              | Max. Case Temp.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Tcase = +80 $\square$ C                                                                                                                                                                                                                                                                                                                                        |
|              | Working Humidity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 20 ~ 95% RH non-condensing                                                                                                                                                                                                                                                                                                                                     |
|              | Storage Temp. Humidity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | -40 ~ +80 $\square$ C, 10 ~ 95% RH                                                                                                                                                                                                                                                                                                                             |
|              | Temp. Coefficient                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | $\pm$ 0.03%/ $\square$ C (0 ~ 60 $\square$ C)                                                                                                                                                                                                                                                                                                                  |
|              | Vibration                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes                                                                                                                                                                                                                                                                                        |
| Safety & EMC | Safety Standards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | UL8750(type"HL"), CSA C22.2 No. 250.0-08, UL8750 LISTED for HLG-80H- BL;EN/AS/NZS 61347-1,EN/AS/NZS 61347-2-13 independent, J61347-1, J61347-2-13(except for B,AB and D-type), GB19510.1,GB19510.14,EAC TP TC 004,BIS IS15885(for 36A,54A only), IP65 or IP67,KC61347-1,KC61347-2-13(except for AB,BL-type) approved; Design refer to UL60950-1, TUV EN60950-1 |
|              | Withstand Voltage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:1.5KVAC                                                                                                                                                                                                                                                                                                                   |
|              | Isolation Resistance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | I/P-O/P, I/P-FG, O/P-FG:100M Ohms / 500VDC / 25 $\square$ C/ 70% RH                                                                                                                                                                                                                                                                                            |
|              | EMC Emission                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compliance to EN55015, EN61000-3-2 Class C (@ load $\geq$ 60%); EN61000-3-3,GB17743 and GB17625.1, EAC TP TC 020                                                                                                                                                                                                                                               |
|              | EMC Immunity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, light industry level (surge immunity Line-Earth 4KV, Line-Line 2KV), EAC TP TC 020                                                                                                                                                                                                                   |
| Others       | MTBF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | 1069K hrs min. Telcordia SR-332 (Bellcore) ; 357.8K hrs min. MIL-HDBK-217F (25 $\square$ C)                                                                                                                                                                                                                                                                    |
|              | Dimension                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 195.6 x 61.5 x 39mm                                                                                                                                                                                                                                                                                                                                            |
|              | Packing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.84Kg; 16pcs/14.4Kg/0.54CUFT                                                                                                                                                                                                                                                                                                                                  |
| Note         | <ol style="list-style-type: none"> <li>All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25<math>\square</math>C of ambient temperature.</li> <li>Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1<math>\mu</math>f &amp; 47<math>\mu</math>f parallel capacitor.</li> <li>Tolerance : includes set up tolerance, line regulation and load regulation.</li> <li>Please refer to "DRIVING METHODS OF LED MODULE".</li> <li>De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.</li> <li>Length of set up time is measured at first cold start. Turning ON/OFF the driver may lead to increase of the set up time.</li> <li>The driver is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.</li> <li>To fulfill requirements of the latest ErP regulation for lighting fixtures, this LED driver can only be used behind a switch without permanently connected to the mains.</li> <li>This series meets the typical life expectancy of &gt;62,000 hours of operation when Tcase, particularly tc point (or TMP, per DLC), is about 80<math>\square</math>C or less.</li> <li>The ambient temperature derating of 3.5<math>\square</math>C/1000m with fanless models and of 5<math>\square</math>C/1000m with fan models for operating altitude higher than 2000m (6500ft).</li> </ol> |                                                                                                                                                                                                                                                                                                                                                                |

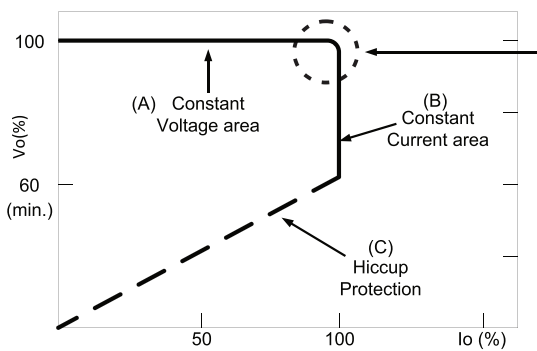
# ORLRPV2480-HLG-A

## Block Diagram



## Driving Methods of LED Module

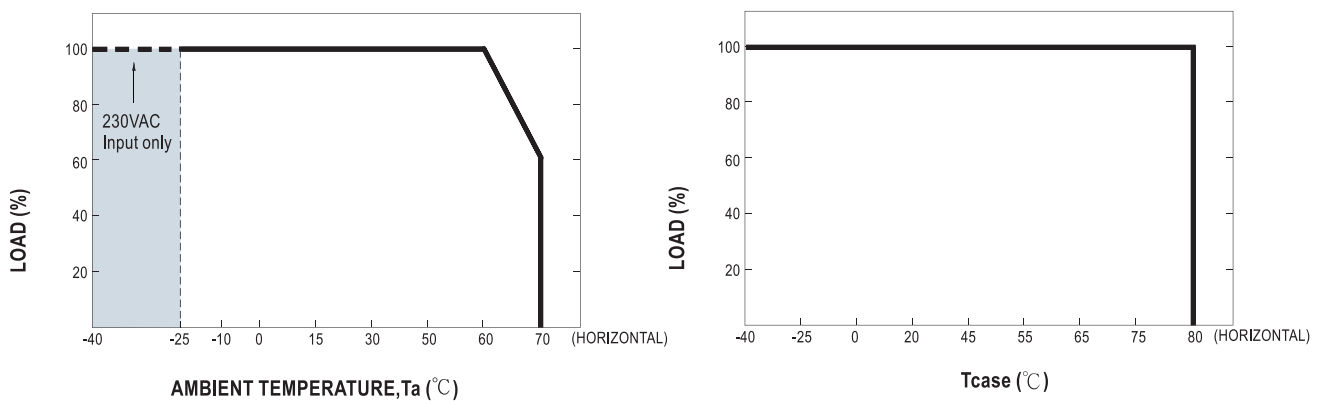
This series is able to work in either Constant Current mode (a direct drive way) or Constant Voltage mode (usually through additional DC/DC driver) to drive the LEDs.



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

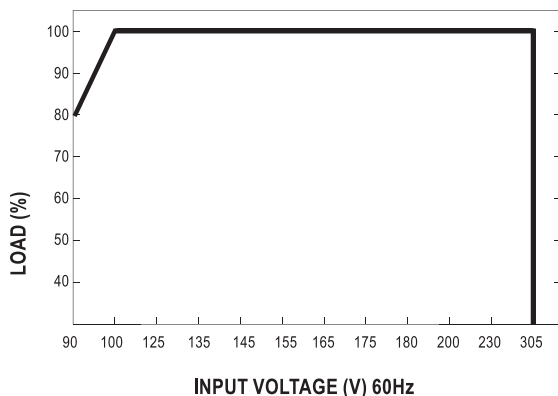
Typical output current normalized by rated current (%)

## Output Load vs Temperature (Note.10)



# ORLRPV2480-HLG-A

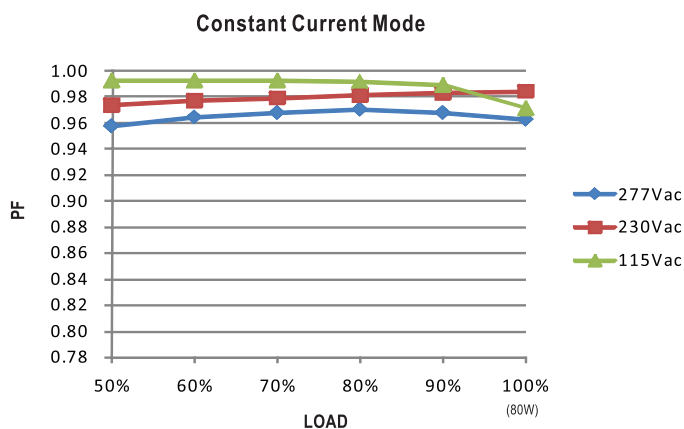
## Static Characteristics



※ De-rating is needed under low input voltage.

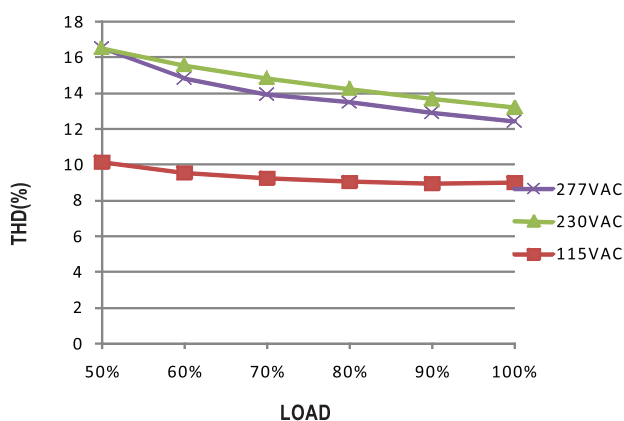
## Power Factor (PF) Characteristic

※ Tcase at 70°C



## Total Harmonic Distortion (THD)

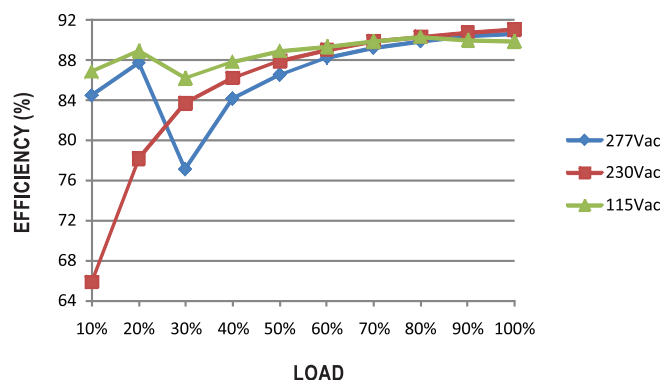
※ 48V Model, Tcase at 70°C



## Efficiency vs Load

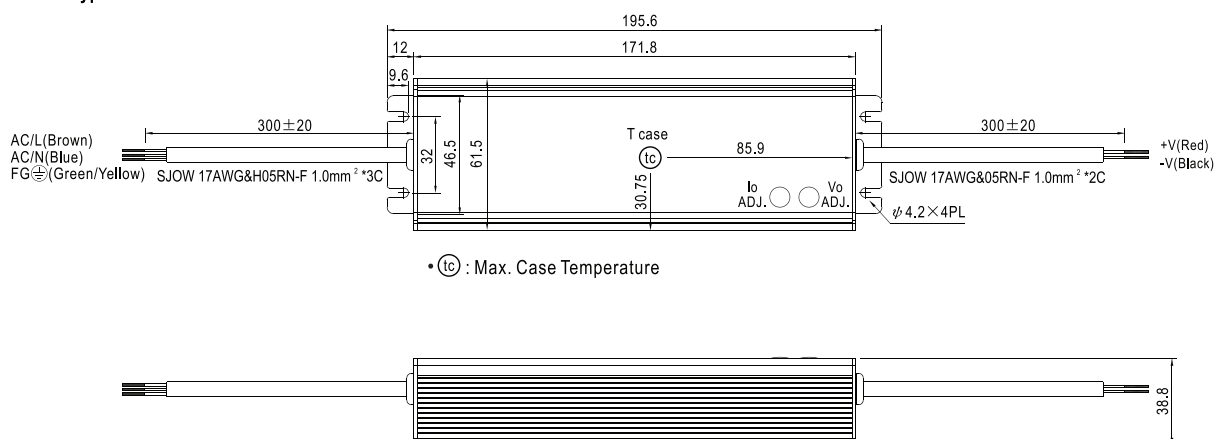
HLG-80H series possess superior working efficiency that up to 91% can be reached in field applications.

※ 48V Model, Tcase at 70°C



## Mechanical Specification

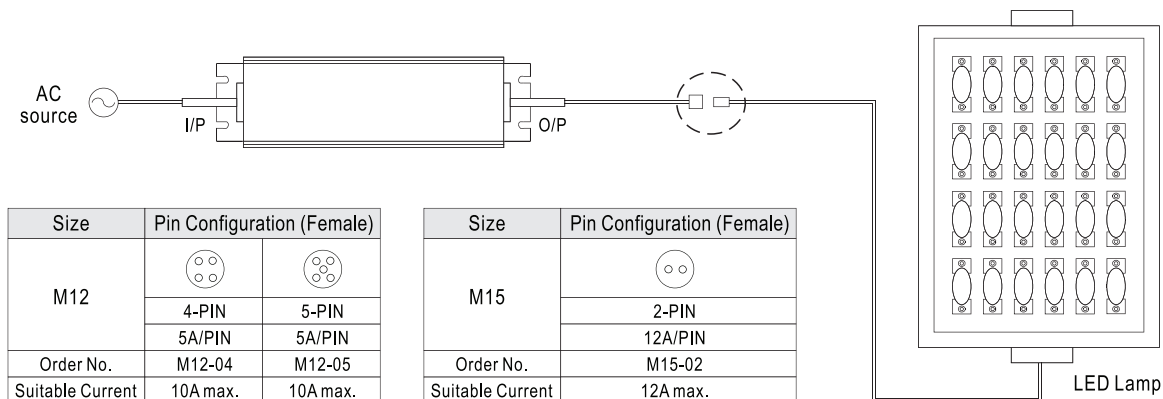
※ A-Type



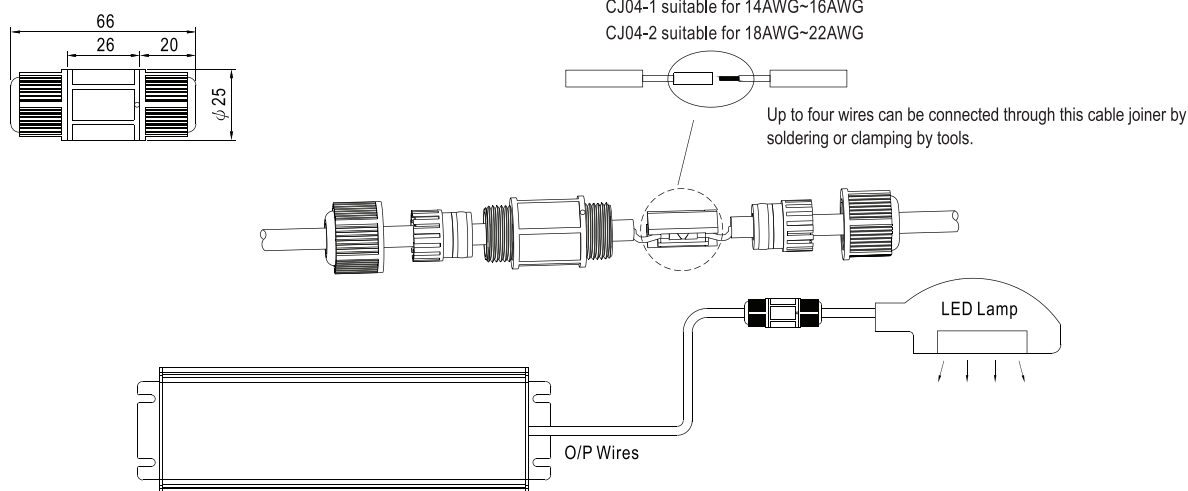
# ORLRPV2480-HLG-A

## Waterproof Connection

Waterproof connector can be assembled on the output cable of HLG-80H to operate in dry/wet/damp or outdoor environment.

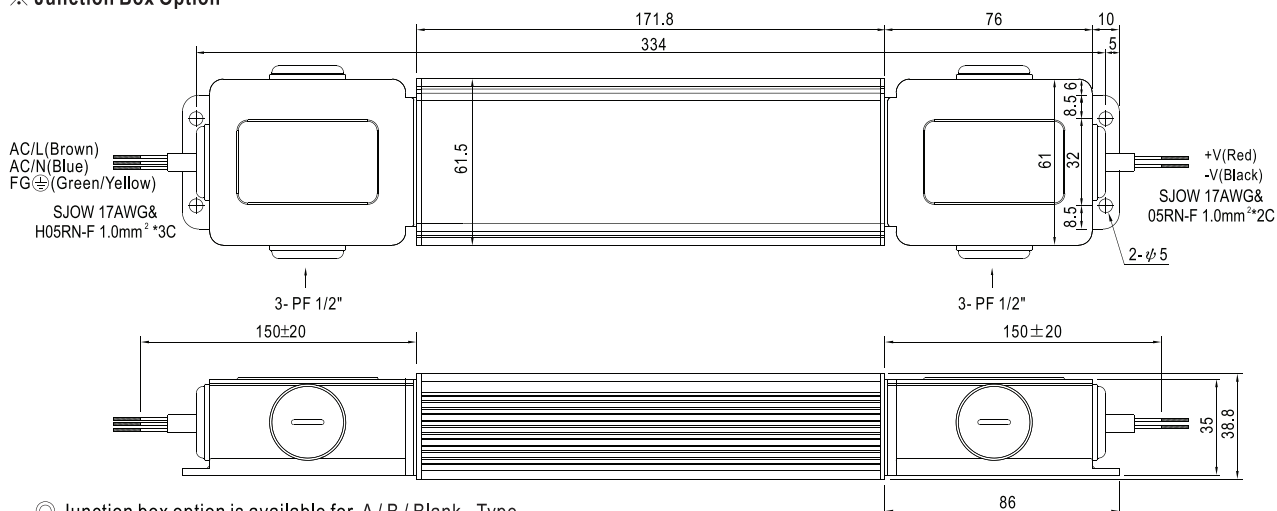


### ※ Cable Joiner



◎ CJ04 cable joiner can be purchased independently for user's own assembly.

### ※ Junction Box Option



◎ Junction box option is available for A / B / Blank - Type.