Astrodyne TDI
Now you have power.

240W Single Output Switching Power Supply with PFC

# HLG240 series


- Universal AC Input up to 305VAC (HLG240H)
- Built-in Active PFC Function
- Protections: Short Circuit / Over Voltage / Overload / Over Temperature
- OCP Point Adjustable Through Output Cable or Internal Potentiometer
- IP67/IP65 Design for Indoor or Outdoor Installations
- Suitable for LED Lighting and Street Light Applications
- Three in One Dimming Function (1~10VDC, PWM Signal or Resistance)
- Compliance to Worldwide Safety Regulations for Lighting
- Suitable for Dry / Damp / Wet Locations

IP65 IP67

HLG-240H-12 A
- Blank:90-264VAC, H: 90-305VAC
- → Blank : IP67 rated. Cable for I/O connection.
- A : IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
- B : IP67 rated. Constant current level adjustable through output cable with 1~10Vdc or 10V PWM signal or resistance.
- C : Terminal block for I/O connection. Output voltage and constant current level can be adjusted through internal potentiometer.

| Model Number | Output Volts | Output Amps | OVP | DC Voltage Adjust | Constant Current Region (Note 3) | Over Temp |
|---|---|---|---|---|---|---|
| **SINGLE OUTPUT** | | | | | | |
| HLG240(H)-12(A, B, or C) | 12 Volts(DC) | 16 Amps | 13.5~18 Volts(DC) | 11.2~12.8Volts(DC) | 6~12V | 105°C±5°C |
| HLG240(H)-15(A, B, or C) | 15 Volts(DC) | 15 Amps | 17.5~21.5 Volts(DC) | 14~16Volts(DC) | 7.5~15V | 105°C±5°C |
| HLG240(H)-20(A, B, or C) | 20 Volts(DC) | 12 Amps | 23.5~27.5 Volts(DC) | 18.6~21.4Volts(DC) | 10~20V | 95°C±5°C |
| HLG240(H)-24(A, B, or C) | 24 Volts(DC) | 10 Amps | 27~34 Volts(DC) | 22.4~25.6Volts(DC) | 12~24V | 95°C±5°C |
| HLG240(H)-30(A, B, or C) | 30 Volts(DC) | 8 Amps | 33~39 Volts(DC) | 28~32Volts(DC) | 15~30V | 95°C±5°C |
| HLG240(H)-36(A, B, or C) | 36 Volts(DC) | 6.7 Amps | 43~49 Volts(DC) | 33.5~38.5Volts(DC) | 18~36V | 95°C±5°C |
| HLG240(H)-42(A, B, or C) | 42 Volts(DC) | 5.72 Amps | 48~54 Volts(DC) | 39~45Volts(DC) | 21~42V | 95°C±5°C |
| HLG240(H)-48(A, B, or C) | 48 Volts(DC) | 5 Amps | 55~63 Volts(DC) | 44.8~51.2Volts(DC) | 24~48V | 95°C±5°C |
| HLG240(H)-54(A, B, or C) | 54 Volts(DC) | 4.45 Amps | 58~65 Volts(DC) | 50~57Volts(DC) | 27~54V | 95°C±5°C |

*All specifications are typical at 230V input, full load, and 25°C unless otherwise noted*

Astrodyne TDI
Now you have power.

240W Single Output Switching Power Supply with PFC

# HLG240 series


- Universal AC Input up to 305VAC (HLG240H)
- Built-in Active PFC Function
- Protections: Short Circuit / Over Voltage / Overload / Over Temperature
- OCP Point Adjustable Through Output Cable or Internal Potentiometer
- IP67/IP65 Design for Indoor or Outdoor Installations
- Suitable for LED Lighting and Street Light Applications
- Three in One Dimming Function (1~10VDC, PWM Signal or Resistance)
- Compliance to Worldwide Safety Regulations for Lighting
- Suitable for Dry / Damp / Wet Locations

IP65 IP67

| Model Number | Load Regulation | Ripple/Noise max. | Voltage Tolerance | Current Adjust | Efficiency (HLG240 / HLG240H) |
|---|---|---|---|---|---|
| **SINGLE OUTPUT** | | | | | |
| HLG240(H)-12(A, B, or C) | ±2% | 150 mVpk-pk | ±2.5% | 8~16 Amps | 90% / 90% |
| HLG240(H)-15(A, B, or C) | ±1.5% | 150 mVpk-pk | ±2% | 7.5~15 Amps | 90% / 90% |
| HLG240(H)-20(A, B, or C) | ±1% | 150 mVpk-pk | ±1% | 6~12 Amps | 92% / 92% |
| HLG240(H)-24(A, B, or C) | ±0.5% | 150 mVpk-pk | ±1% | 5~10 Amps | 93% / 93% |
| HLG240(H)-30(A, B, or C) | ±0.5% | 200 mVpk-pk | ±1% | 4~8 Amps | 93% / 93% |
| HLG240(H)-36(A, B, or C) | ±0.5% | 250 mVpk-pk | ±1% | 3.3~6.7 Amps | 93.5% / 93% |
| HLG240(H)-42(A, B, or C) | ±0.5% | 250 mVpk-pk | ±1% | 2.86~5.72 Amps | 94% / 93% |
| HLG240(H)-48(A, B, or C) | ±0.5% | 250 mVpk-pk | ±1% | 2.5~5 Amps | 94% / 93.5% |
| HLG240(H)-54(A, B, or C) | ±0.5% | 350 mVpk-pk | ±1% | 2.23~4.45 Amps | 94% / 94% |

Astrodyne TDI
Now you have power.

240W Single Output Switching Power Supply with PFC

# HLG240 series

## INPUT SPECIFICATIONS

| | |
|---|---|
| Input Voltage Range (Note 4) | |
| HLG240: | 90-264VAC ; 127~373Volts(DC) |
| HLG240H: | 90-305VAC ; 127~431Volts(DC) |
| Frequency Range | 47-63 Hz |
| Input Current 115/230 I/P | 4.0 / 2.0 Amps |
| Inrush Current (Cold Start) | 75 Amps @ 230VAC |
| Leakage Current | <0.75 mAmps @ 240 / 277Vin |
| Power Factor 115/230 I/P | PF≥ ≥ 0.98 / 0.95 |
| See POWER FACTOR CHARACTERISTIC Curve | |

## OUTPUT SPECIFICATIONS

| | |
|---|---|
| Voltage and Current | See Selection Charts |
| Load Regulation | See Selection Charts |
| Line Regulation | ±0.5% |
| Setup, Rise Time @ FL | 2500mS,80mS Cold Start |
| Hold Up Time @ FL | 15mS @ 230VAC/115VAC |
| Ripple/Noise max. (Note 1) | See Selection Charts |
| Over Current Protection (Note3) | 95~108% |
| | Constant I limiting, auto recov |
| Over Voltage Protection | See Selection Charts |
| | Shut down and latch off o/p |
| | voltage, re-power |
| Over Termperature | 105°C±5°C (TSW1), Shut down |
| | o/p voltage, repower after cooling |
| Short Circuit (Note 7) | Hiccup mode, auto recov |
| Voltage Tolerance (Note 2) | See Selection Charts |
| DC Voltage Adjust (Note 5 ) | See Selection Charts |

## GENERAL SPECIFICATIONS

| | |
|---|---|
| Safety (Note 8) | UL1012; TUV EN61347-1; |
| | EN61347-2-13 independent; |
| | (except for C type) |
| | UL60950-1; TUV EN60950-1, |
| | J61347-1, J61347-2-13, |
| | IP65 or IP67 approved |
| Efficiency typ. | See Selection Chart |
| Isolation | 3750VAC Input - Output |
| | 1880VAC Input - Ground |
| | 500VAC Output - Ground |
| Insulation Resistance | 100MΩ / 500VDC /25°C/70% RH |
| EMC Immunity (Note 6) | EN61000-4-2,3,4,6,8,11; |
| | EN61547, EN55024, Heavy |
| | Industry level (surge 4KV), Criteria A |
| EMC Emission (Note 6) | EN55015; EN55022B (CISPR22B), |
| | EN610000-3-2 Class C (≥0.50% load); |
| | EN61000-3-3 |

## ENVIRONMENTAL SPECIFICATIONS

| | |
|---|---|
| Oper. Temperature (Note 6) | -40°C to +70°CSee Derate Curve |
| Relative Humidity | 20~95% RH non cond |
| Storage Temperature | -40°C to +80°C, 10~95% RH |
| MTBF | 207.9KHrs, MIL-HDBK-217F(25C) |
| Temp. Coefficient | ±0.03%/°C (0~50°C) |
| Vibration | 10~500Hz, 5G 12min./1cycle,. |
| | period for 72min, each along X,Y,Z |
| | axes |

## PHYSICAL SPECIFICATIONS

| | | |
|---|---|---|
| Size | Blank/A/B types: | 244.2 x 68 x 38.8 mm |
| | | (9.61" x 2.68" x 1.53") |
| | C Types: | 251 x 68 x 38.8 mm |
| | | (9.88" x 2.68" x 1.53") |
| Weight | Blank/A/B types: | 45.86 oz (1300g) |
| | C Types: | 43.39 oz (1230g) |

## NOTES

1. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
2. Tolerance : includes set up tolerance, line regulation and load regulation.
3. Constant current operation region is within 50% ~100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system designs.
4. Derating may be needed under low input voltages. Please check the derating curve for more details.
5. Type A and type C only.
6. The Power Supply is considered a component in the end application. Therefore, the end application needs to be tested for EMC.

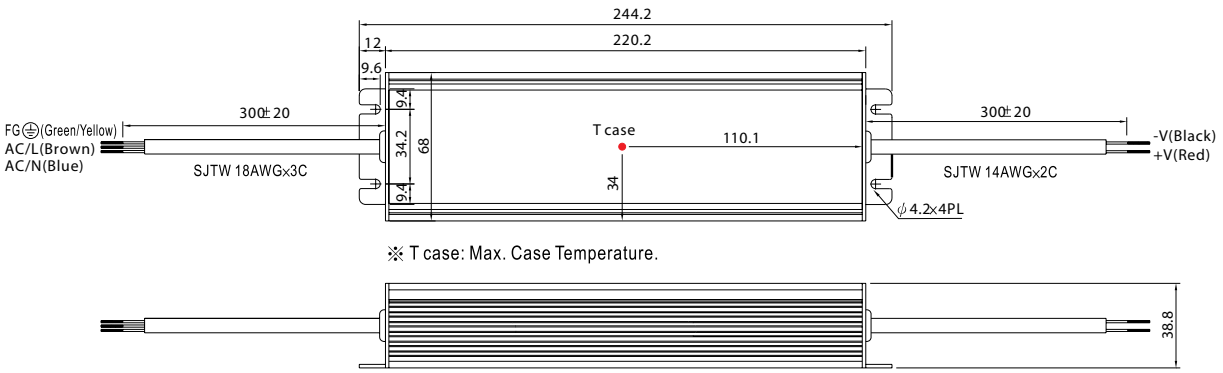


ASTRODYNE USA: 1-800-823-8082
ASTRODYNE PACIFIC: 886-2-26983458

## MECHANICAL DIMENSIONS

Unit:mm

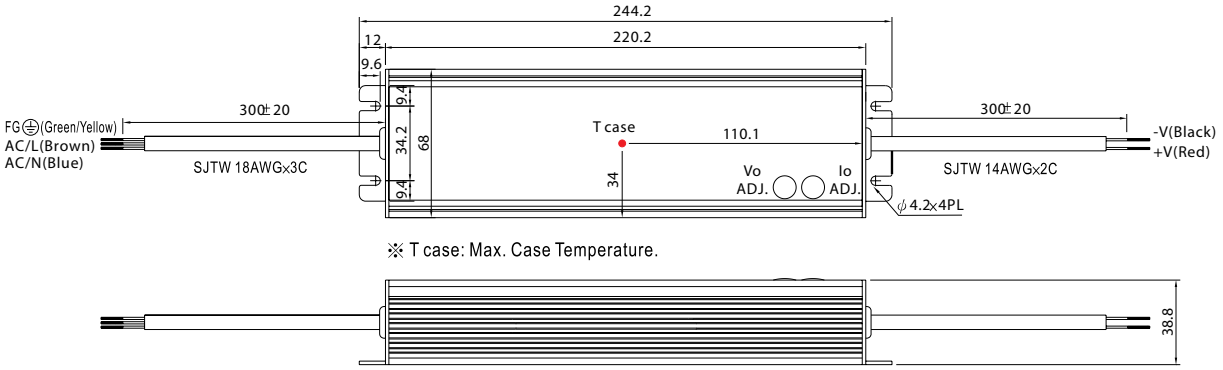
Blank:(HLG-240)




※ T case: Max. Case Temperature.

※IP67 rated. Cable for I/O connection.

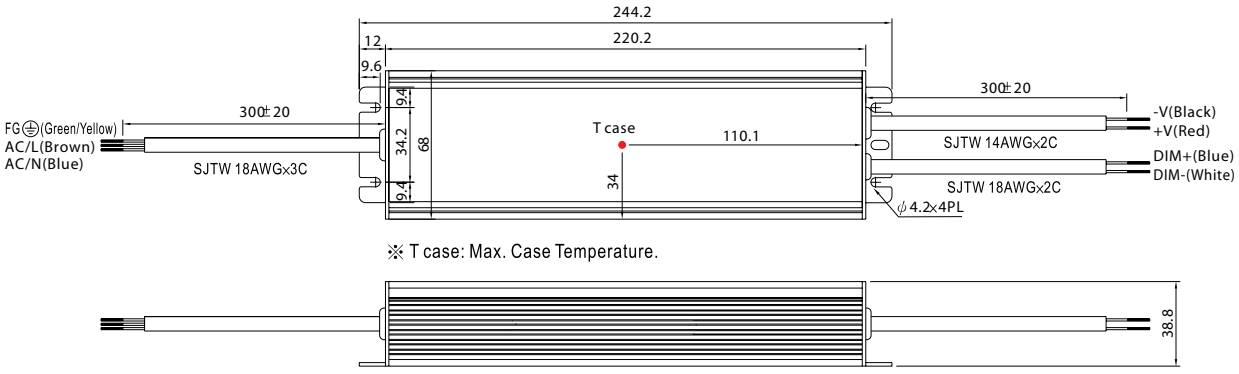
A Type:(HLG-240-_A)




※ T case: Max. Case Temperature.

※ IP65 rated. Output voltage and constant current level can be adjusted through internal potentiometer.
(Can access by removing the rubber stopper on the case.)

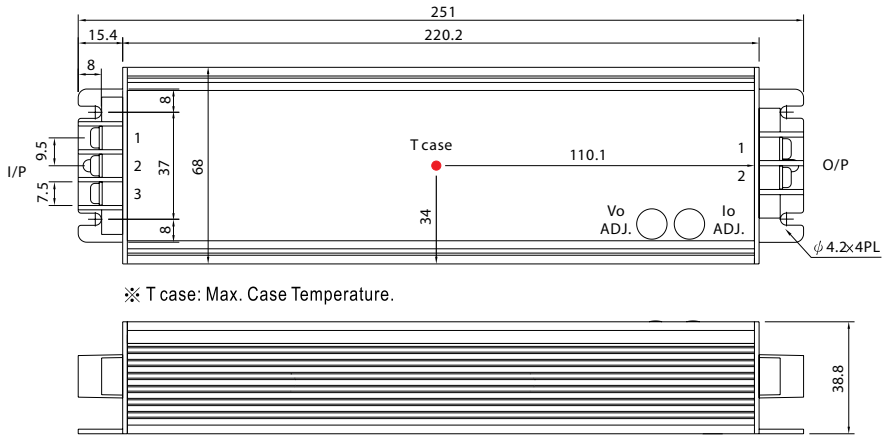
**B Type:(HLG-240-_B)**




※ T case: Max. Case Temperature.

## MECHANICAL DIMENSIONS

C Type:(HLG-240-_C)




※ T case: Max. Case Temperature.

※ Output voltage and constant current level can be adjusted through internalpotentiometer.
(Can access by removing the rubber stopper on the case.)

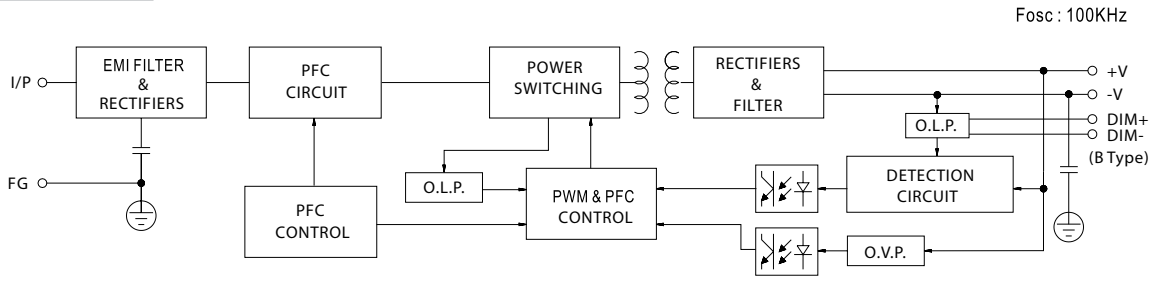
AC Input Terminal Pin No. Assignment

| Pin No. | Assignment |
|---|---|
| 1 | FG ⏚ |
| 2 | AC/L |
| 3 | AC/N |

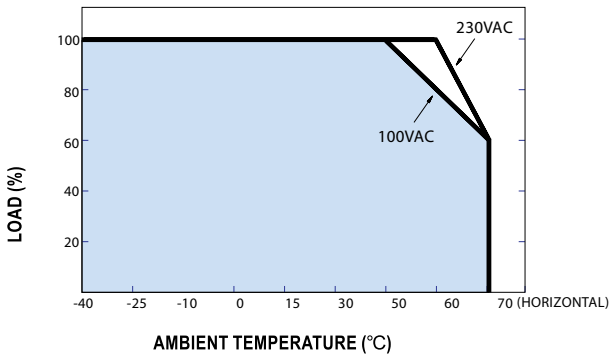
DC Output Terminal Pin No. Assignment

| Pin No. | Assignment |
|---|---|
| 1 | -V |
| 2 | +V |

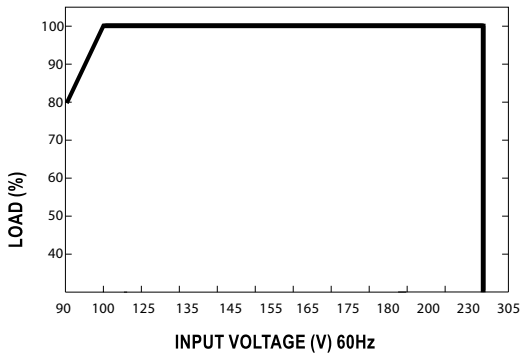
## ■ Block Diagram



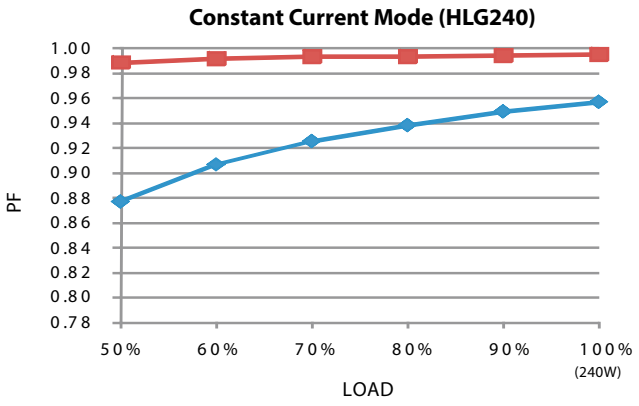

## ■ Derating Curve

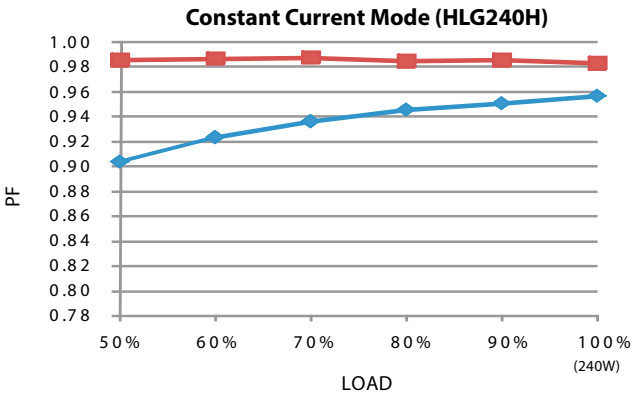



## ■ Static Characteristics



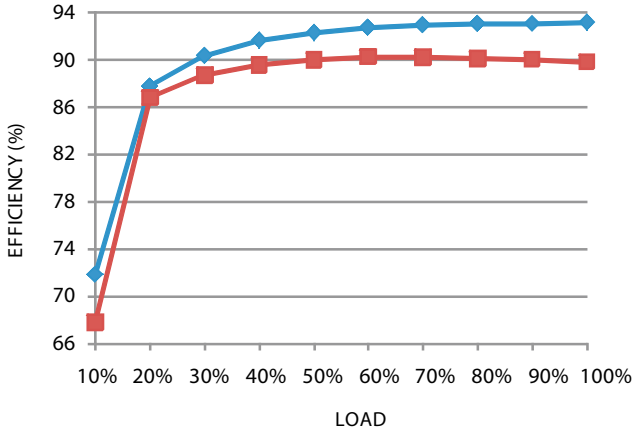
## ■ Power Factor Characteristic



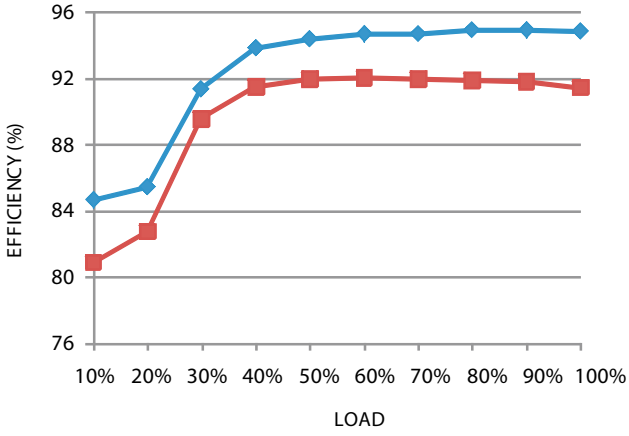




## ■ EFFICIENCY vs LOAD (48V Model)

The HLG240 Series possesses a superior working efficiency of up to 94% that can be reached in field applications




The HLG240 Series possesses a superior working efficiency of up to 93% that can be reached in field applications

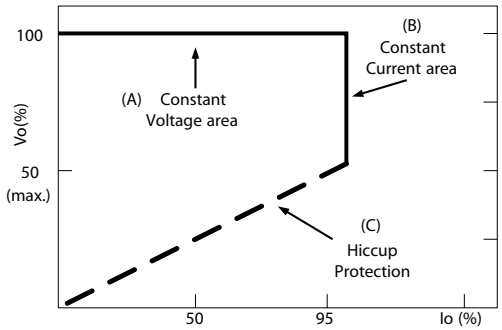



## ■ DRIVING METHODS OF LED MODULE

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

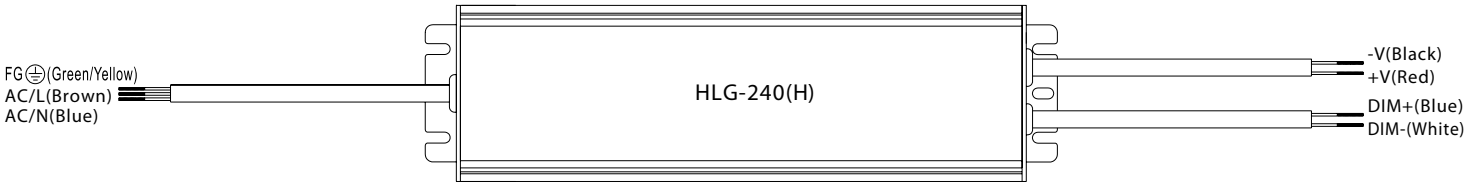
A typical LED power supply may either work in "constant voltage mode (CV) or constant current mode (CC)" to drive the LEDs.

The HLG240 Series 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

## ■ DIMMING OPERATION




※ Built-in 3 in 1 dimming function, IP67 rated. Output constant current level can be adjusted through output cable by connecting a resistance or 1 ~ 10Vdc or 10V PWM signal between DIM+ and DIM-.

※ Please DO NOT connect "DIM-" to "-V".

※ Reference resistance value for output current adjustment (Typical)

| Resistance value | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Single driver | 10KΩ | 20KΩ | 30KΩ | 40KΩ | 50KΩ | 60KΩ | 70KΩ | 80KΩ | 90KΩ | 100KΩ | OPEN |
| | Multiple drivers (N=driver quantity for synchronized dimming operation) | 10KΩ /N | 20KΩ /N | 30KΩ /N | 40KΩ /N | 50KΩ /N | 60KΩ /N | 70KΩ /N | 80KΩ /N | 90KΩ /N | 100KΩ /N | ----- |
| Percentage of rated current | | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 95%~105% |

※ 1 ~ 10V dimming function for output current adjustment (Typical)

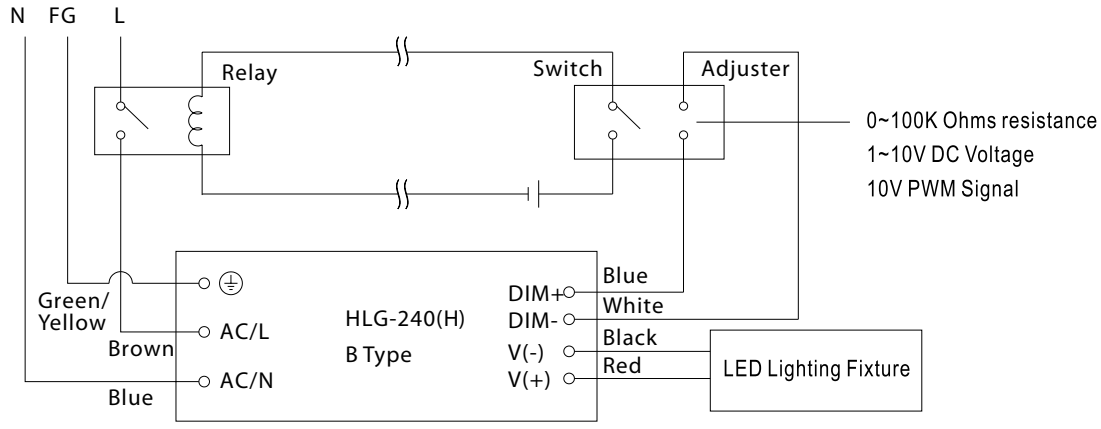
| Dimming value | 1V | 2V | 3V | 4V | 5V | 6V | 7V | 8V | 9V | 10V | OPEN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage of rated current | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 95%~105% |

※ 10V PWM signal for output current adjustment (Typical): Frequency range :100HZ ~ 3KHz

| Duty value | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | OPEN |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Percentage of rated current | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 95%~105% |

※Using the built-in dimming function on B-type model can't turn the lighting fixture totally dark. Please refer to the connection method below to achieve 0% brightness of the lighting fixture connecting to the LED power supply unit.

Dimming connection diagram for turning the lighting fixture ON/OFF :




Using a switch and relay can turn ON/OFF the lighting fixture.

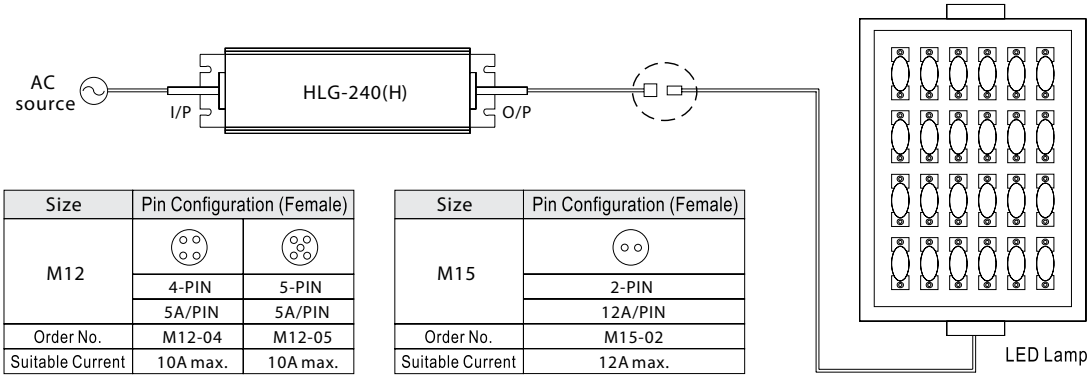
1.Output constant current level can be adjusted through output cable by connecting a resistance or 1~10Vdc or 10V PWM signal between DIM+ and DIM-.

2.The LED lighting fixture can be turned ON/OFF by the switch.

## ■ WATERPROOF CONNECTION

◎ Waterproof connector

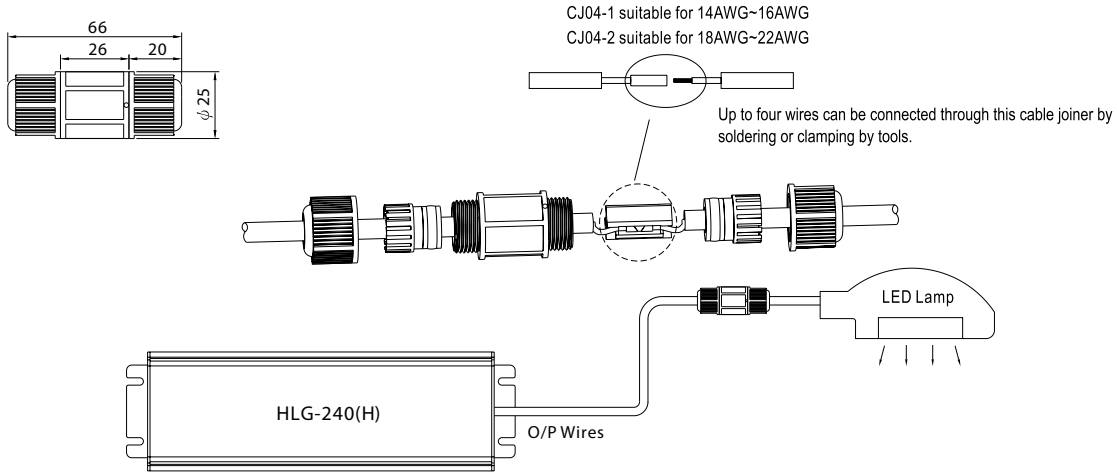
Waterproof connector can be assembled on the output cable of HLG-240H to operate in dry/wet/damp or outdoor environment.




| Size | Pin Configuration (Female) | |
|---|---|---|
| M12 | | |
| | 4-PIN | 5-PIN |
| | 5A/PIN | 5A/PIN |
| Order No. | M12-04 | M12-05 |
| Suitable Current | 10A max. | 10A max. |

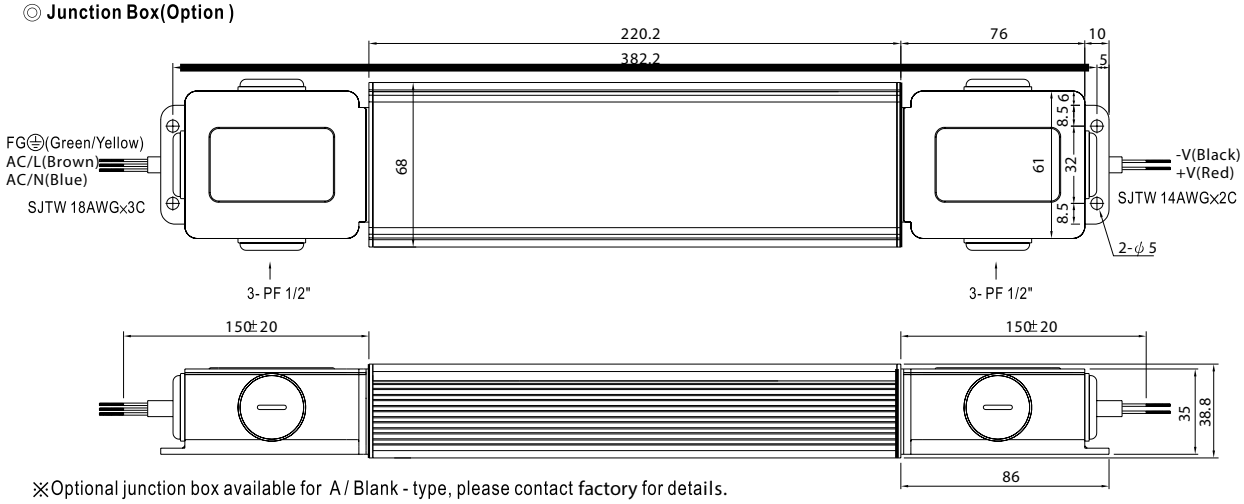
| Size | Pin Configuration (Female) |
|---|---|
| M15 | |
| | 2-PIN |
| | 12A/PIN |
| Order No. | M15-02 |
| Suitable Current | 12A max. |

◎ **Cable Joiner**




※CJ04 cable joiner can be purchased independently for user's own assembly.
order No. : CJ04-1, CJ04-2.

◎ **Junction Box(Option )**




※Optional junction box available for A / Blank - type, please contact factory for details.



ASTRODYNE USA: 1-800-823-8082
ASTRODYNE PACIFIC: 886-2-26983458