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Datasheet

Dimmable Constant Voltage LED Driver 82.8W 36V 2.3A RS HLG-80H-36A

RS Stock number 738-2318



■ Features :

- Universal AC input | Full range (up to 305VAC)
- Built-in active PFC function
- Protections: Short circuit | Over current | Over voltage | Over temperature
- Cooling by free air convection
- OCP point adjustable through output cable or internal potentiometer
- IP67 | IP65 design for indoor or outdoor installations
- "UL8750 listed" safety approved for HLG-80H-□BL
- Class 2 powerunit
- Three in one dimming function (1-10Vdc or PWM signal or resistance)
- Suitable for LED lighting and moving sign applications
- Compliance to worldwide safety regulations for lighting
- Suitable for dry | damp | wet locations
- Type "HL" for use in class I , Division 2 hazardous(Classified) location luminaires

HLG-80H-12 ^A Blank : IP67 rated. Cable for IIO 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.

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SPECIFICATION

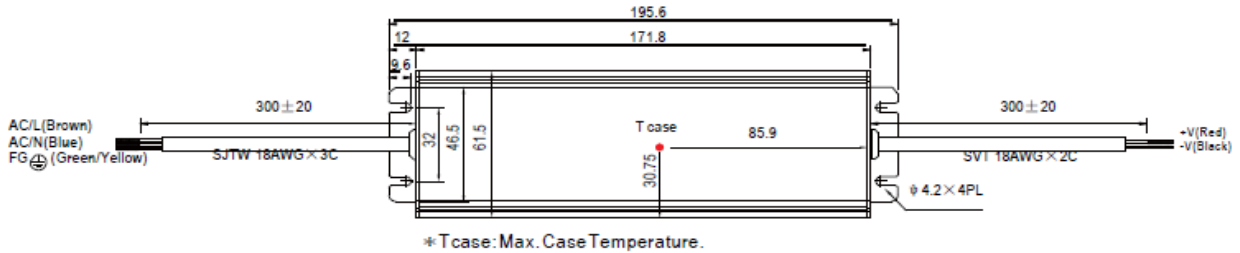
| MODEL | HLG-80H-12 | HLG-80H-15 | HLG-80H-20 | HLG-80H-24 | HLG-80H-30 | HLG-80H-36 | HLG-80H-42 | HLG-80H-48 | HLG-80H-54 | | |
|--|---|--|------------|-----------------|-------------|-----------------|-------------|--------------|-------------|------------|--|
| OUTPUT | DC VOLTAGE | 12V | 15V | 20V | 24V | 30V | 36V | 42V | 48V | 54V | |
| | CONSTANT CURRENT REGION <small>Note.4</small> | 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 | 5A | 5A | 4A | 3.4A | 2.7A | 2.3A | 1.95A | 1.7A | 1.5A | |
| | RATED POWER | 60W | 75W | 80W | 81.6W | 81W | 82.8W | 81.9W | 81.6W | 81W | |
| | RIPPLE & NOISE (max.) <small>Note.2</small> | 150mVp-p | 150mVp-p | 150mVp-p | 150mVp-p | 200mVp-p | 200mVp-p | 200mVp-p | 200mVp-p | 200mVp-p | |
| | VOLTAGE ADJ. RANGE <small>Note.6</small> | 10.8 ~ 13.5V | 13.5 ~ 17V | 17 ~ 22V | 22 ~ 27V | 27 ~ 33V | 33 ~ 40V | 38 ~ 46V | 43 ~ 53V | 49 ~ 58V | |
| | CURRENT ADJ. RANGE | Can be adjusted by internal potentiometer A type only | | | | | | | | | |
| | | 3 ~ 5A | 3 ~ 5A | 2.4 ~ 4A | 2.04 ~ 3.4A | 1.62 ~ 2.7A | 1.38 ~ 2.3A | 1.17 ~ 1.95A | 1.02 ~ 1.7A | 0.9 ~ 1.5A | |
| | VOLTAGE TOLERANCE <small>Note.3</small> | ± 2.5% | ± 2.0% | ± 1.0% | ± 1.0% | ± 1.0% | ± 1.0% | ± 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 | ± 2.0% | ± 1.5% | ± 1.0% | ± 0.5% | ± 0.5% | ± 0.5% | ± 0.5% | ± 0.5% | ± 0.5% | | |
| SETUP, RISE TIME <small>Note.8</small> | 1200ms, 80ms/115VAC 500ms, 80ms/230VAC at full load ; B type 1200ms, 200ms/115VAC 500ms, 200ms/230VAC at 95% load | | | | | | | | | | |
| HOLD UP TIME (Typ.) | 16ms at full load 230VAC/115VAC | | | | | | | | | | |
| INPUT | VOLTAGE RANGE <small>Note.5</small> | 90 ~ 305VAC | | 127 ~ 431VDC | | | | | | | |
| | FREQUENCY RANGE | 47 ~ 63Hz | | | | | | | | | |
| | POWER FACTOR (Typ.) | PF>0.96/115VAC, PF>0.96/230VAC, PF>0.94/277VAC at full load (Please refer to "Power Factor Characteristic" curve) | | | | | | | | | |
| | TOTAL HARMONIC DISTORTION | THD< 20% when output loading ≥ 60% at 115VAC/230VAC input and output loading ≥ 75% at 277VAC input | | | | | | | | | |
| | EFFICIENCY (Typ.) | 88% | 89% | 90% | 90.5% | 91% | 91% | 91% | 91% | 91% | |
| | AC CURRENT (Typ.) | 0.85A / 115VAC | | 0.425A / 230VAC | | 0.4A / 277VAC | | | | | |
| | INRUSH CURRENT (Typ.) | COLD START 70A (width=485 μs measured at 50% peak) 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 | <0.75mA / 277VAC | | | | | | | | | | |
| PROTECTION | OVER CURRENT <small>Note.4</small> | 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 | 14 ~ 17V | 18 ~ 24V | 23 ~ 30V | 28 ~ 35V | 35 ~ 43V | 41 ~ 49V | 48 ~ 58V | 54 ~ 63V | 59 ~ 68V | |
| | 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 ~ 60°C) | | | | | | | | | |
| SAFETY & EMC | VIBRATION | 10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes | | | | | | | | | |
| | SAFETY STANDARDS <small>Note.7</small> | UL8750(type HL7), CSA C22.2 No. 250.0-08(except for HLG-80H-48/54V & HLG-80H-48/54BL), UL8750 listed for HLG-80H-□BL, EN61347-1, EN61347-2-13 independent, optional models for J61347-1, J61347-2-13, IP65 or IP67 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°C / 70% RH | | | | | | | | | |
| | EMC EMISSION | Compliance to EN55015, EN61000-3-2 Class C (≠ 60% load) ; EN61000-3-3 | | | | | | | | | |
| OTHERS | EMC IMMUNITY | Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN61547, EN55024, light industry level (surge 4KV), criteria B | | | | | | | | | |
| | MTBF | 357.8K hrs min. MIL-HDBK-217F (25°C) | | | | | | | | | |
| | DIMENSION | 195.6*61.5*38.8mm (L*W*H) | | | | | | | | | |
| | PACKING | 0.84Kg; 16pcs/14.4Kg/0.54CUFT | | | | | | | | | |

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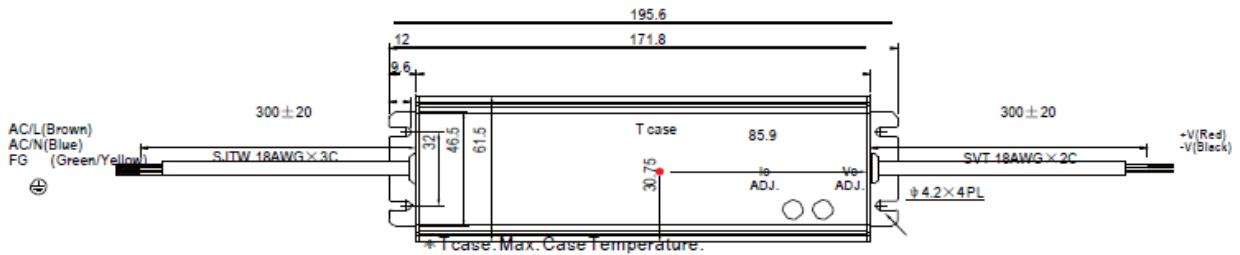
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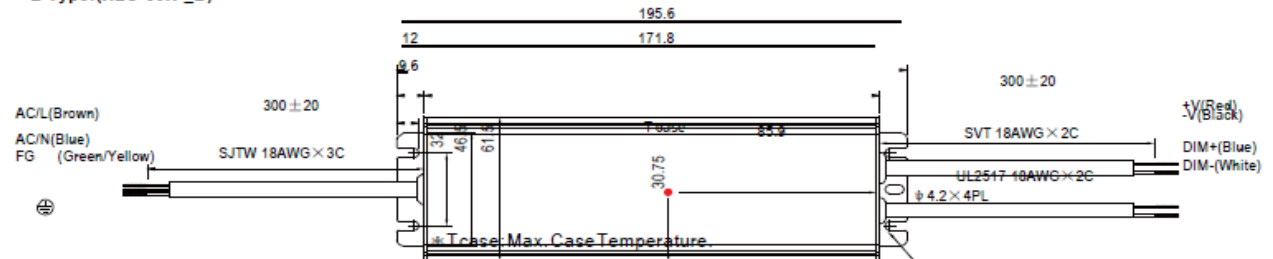
Mechanical Specification

Case No.997A Unit:mm

Blank:(HLG-80H)


⇒ IP67 rated. Cable for I/O connection.

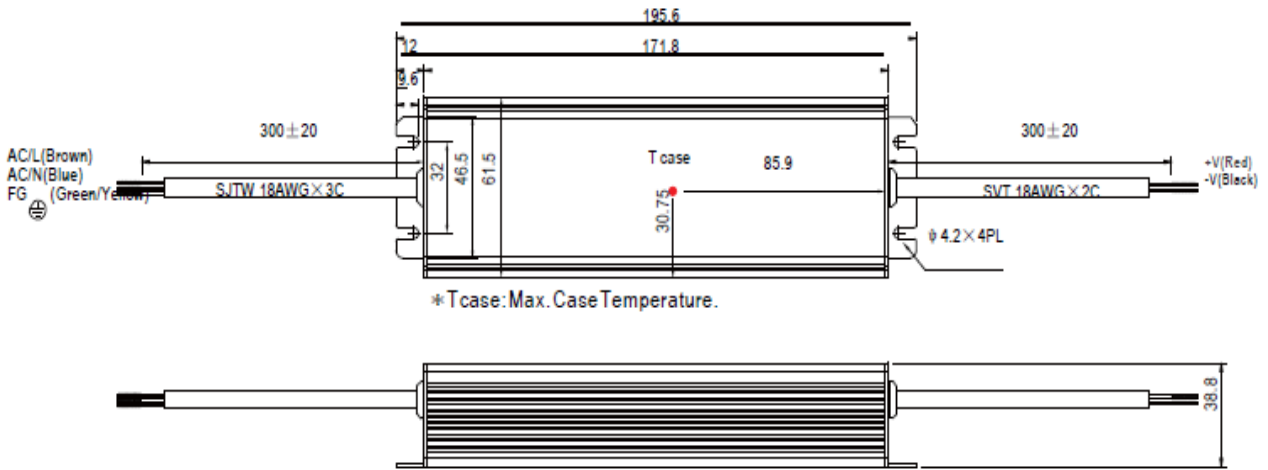
A Type:(HLG-80H_A)

 ⇒ 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-80H_B)


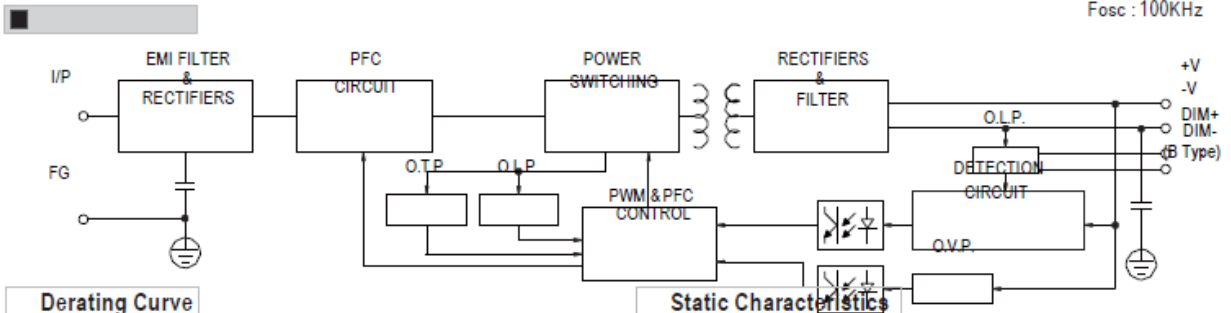
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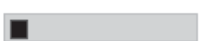
D Type(option):(HLG-80H_D)



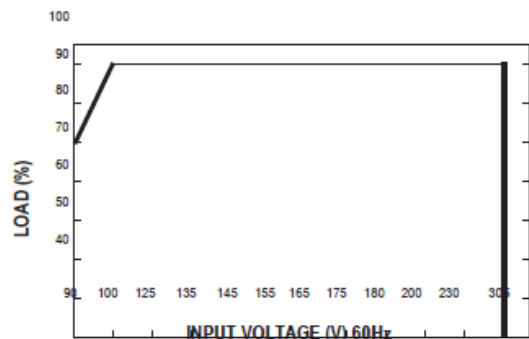
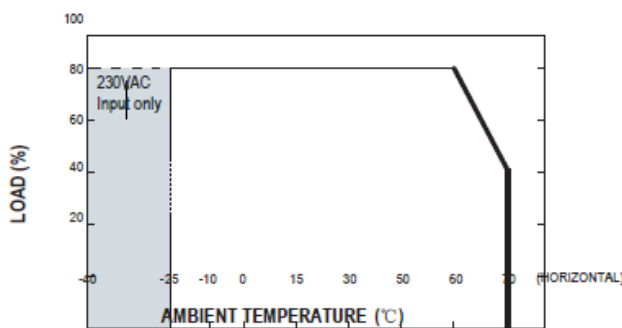
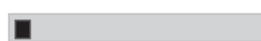
Block Diagram



Derating Curve



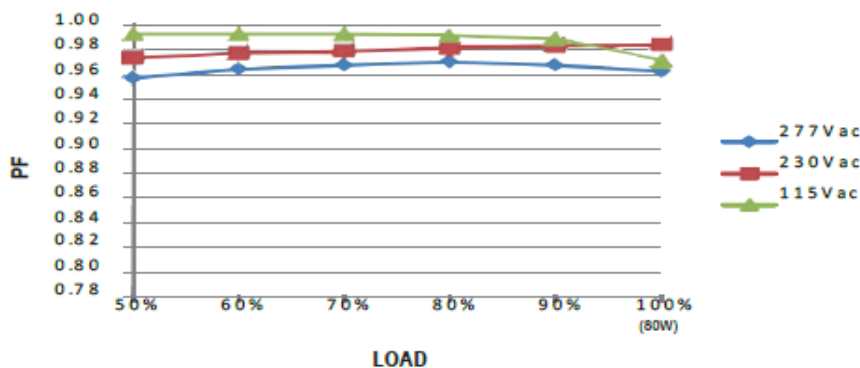
Static Characteristics



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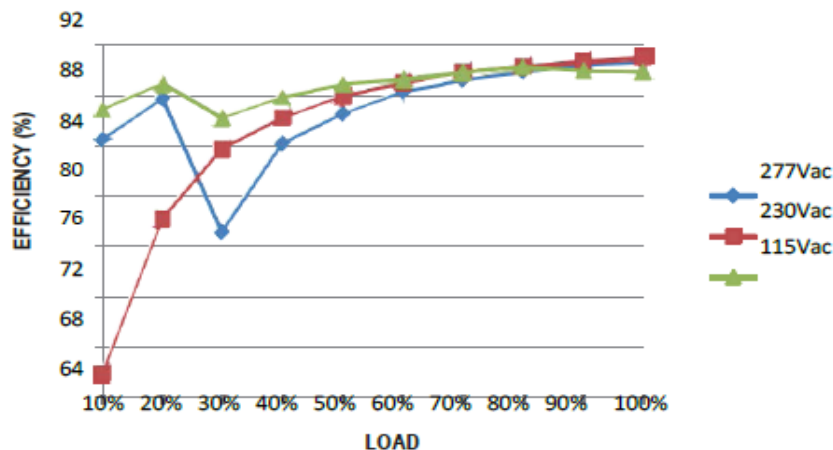
Power Factor Characteristic

Constant Current Mode



EFFICIENCY vs LOAD (48V Model)

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



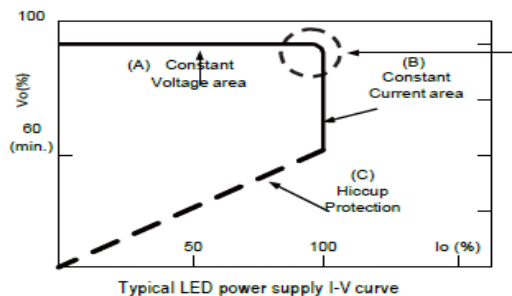
DRIVING METHODS OF LED MODULE

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)].

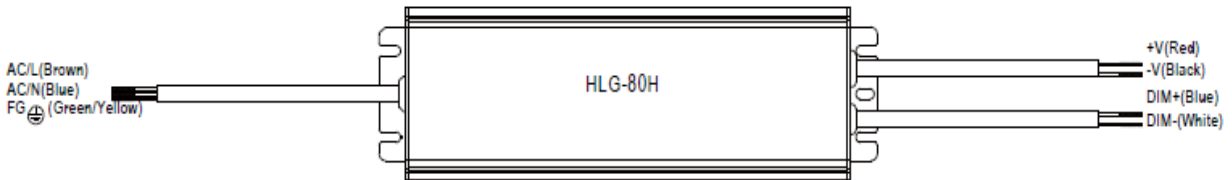
In the constant current region, the highest voltage at the output of the driver depends on the configuration of the end systems.



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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 | 10K Ω | 20K Ω | 30K Ω | 40K Ω | 50K Ω | 60K Ω | 70K Ω | 80K Ω | 90K Ω | 100K Ω | OPEN |
|-----------------------------|---------------|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|
| | | Multiple drivers (N=number of synchronized dimming operation) | 10K Ω /N | 20K Ω /N | 30K Ω /N | 40K Ω /N | 50K Ω /N | 60K Ω /N | 70K Ω /N | 80K Ω /N | 90K Ω /N | 100K Ω /N |
| Percentage of rated current | | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 102%~108% |

※ 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% | 102%~108% |

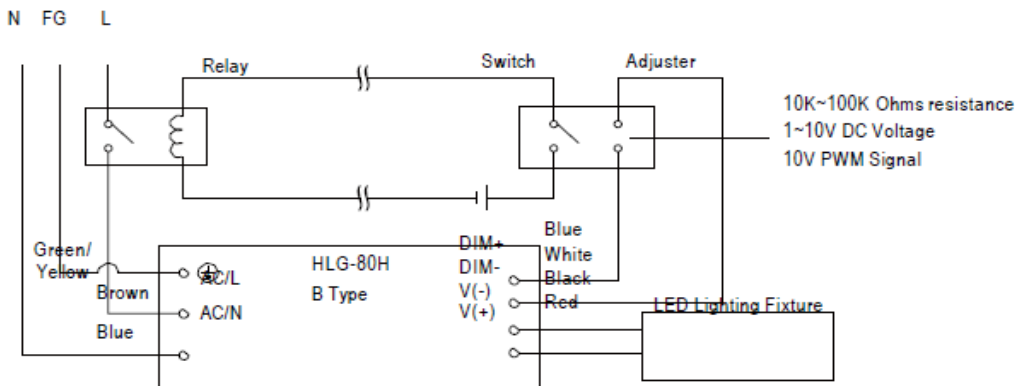
※ 10V PWM signal for output current adjustment (Typical): Frequency range : 100Hz ~ 3KHz

| 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% | 102%~108% |

※ 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.

※ Direct connecting to LEDs is suggested, but is not suitable for using additional

drivers. 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.

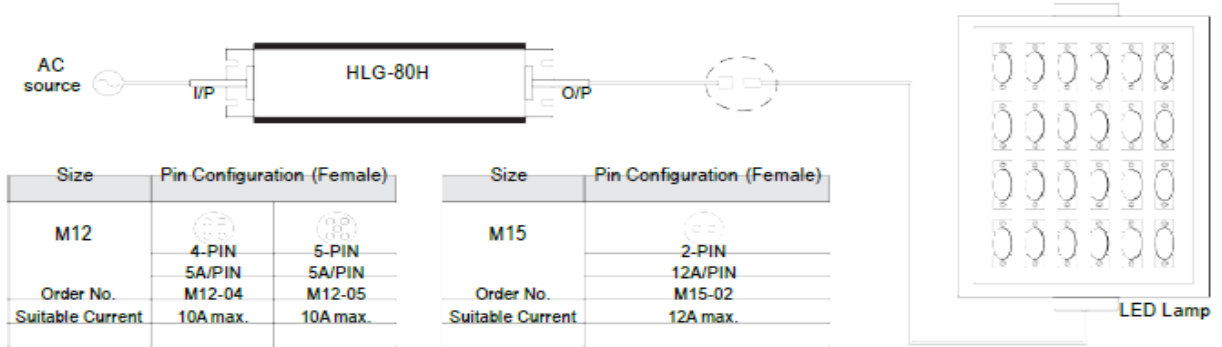
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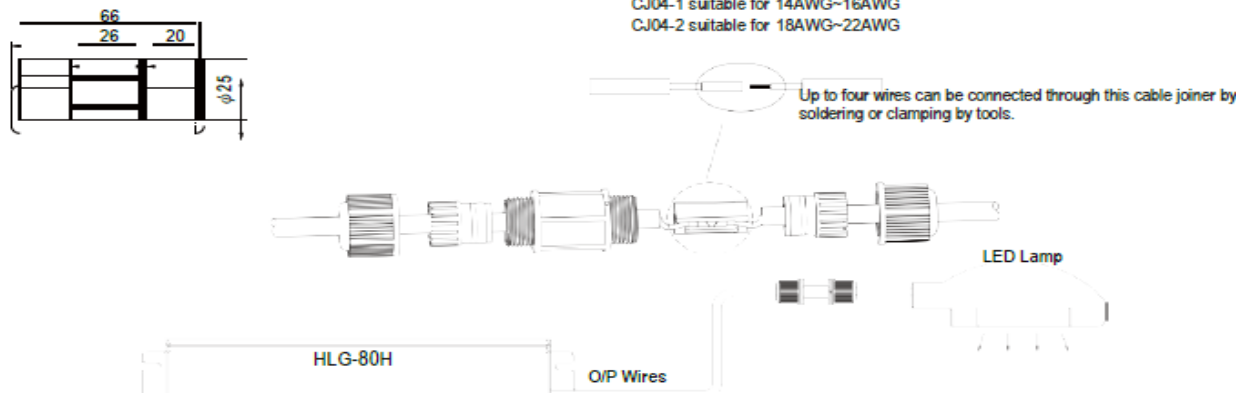
WATERPROOF CONNECTION

Waterproof connector

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



Cable Joiner



Junction Box (Option)

