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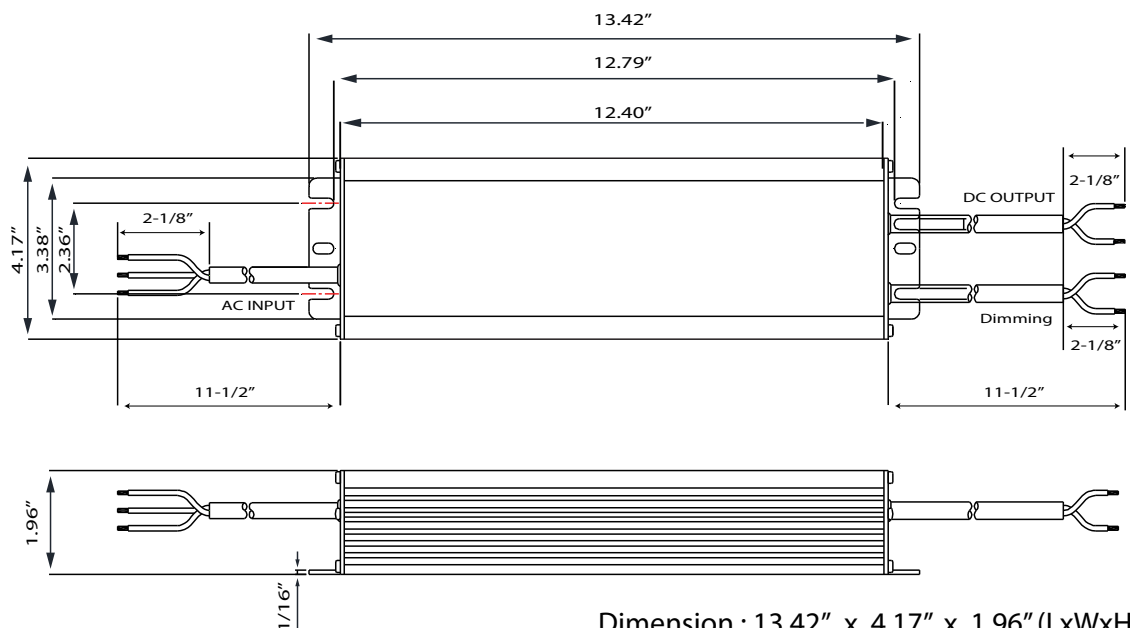


## Product Features

- Universal input voltage / Full range: 108~305Vac
- Constant power Design, output current programming adjustable
- Constant lumen output
- 3-in-1 dimmable: 0~10Vdc/PWM/Timer dimming (Dim-to-off)
- Auxiliary power supply: 12V/200mA
- Surge protection: 6KV Line-Line, 10KV Line-Earth
- Protections: SCP/OVP/OTP
- IP67 design for indoor and outdoor applications
- Metal case, suitable for dry, damp and wet locations
- 5 Years warranty
- Best use in, Horticulture Lighting, high power lighting etc.

| Model N°      | Max Output Power (W) | Output Volt. (Vdc) | Full Power Output Volt. (Vdc) | Full Power Current Adjustable (A) | Default Output Current Setting (A) | Typical Efficiency | Power Factor |
|---------------|----------------------|--------------------|-------------------------------|-----------------------------------|------------------------------------|--------------------|--------------|
| P1-680M056A12 | 680W                 | 38-56V             | 48-56V                        | 12.15-14.17A                      | 38-48V/14.17A                      | 94%                | 0.97         |

## Physical

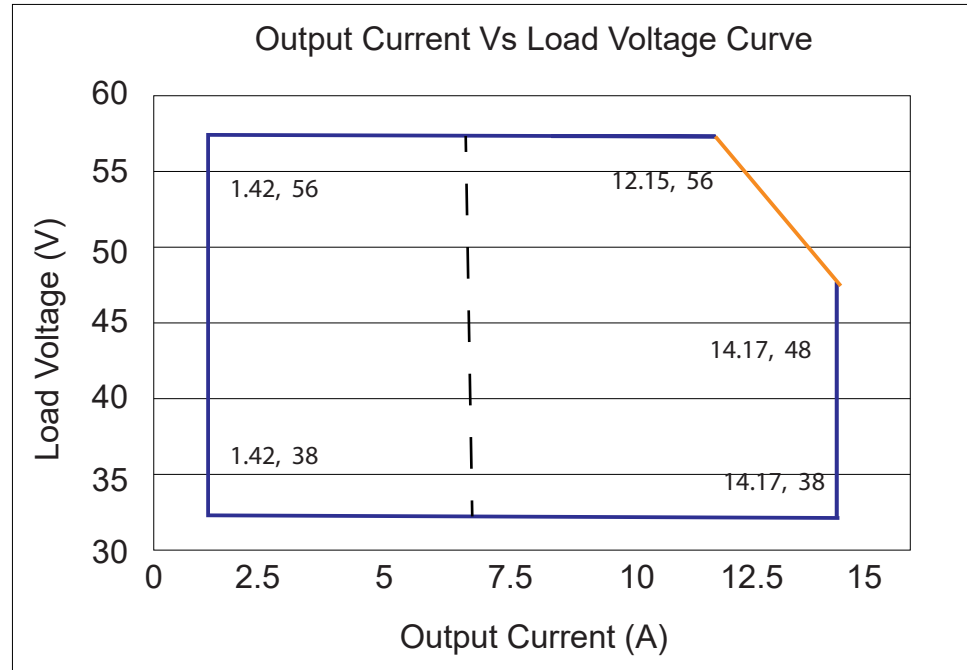


Dimension : 13.42" x 4.17" x 1.96" (LxWxH)

Weight : 7.05 ± 0.66 lbs



## Operating Area



Note: The drivers are not allowed to work in overloaded condition, otherwise warranty will expire.

## General Specifications

| Parameter                             |              | Description                    |           |       | Notes                                                                           |
|---------------------------------------|--------------|--------------------------------|-----------|-------|---------------------------------------------------------------------------------|
|                                       |              | Min.                           | Typ.      | Max.  |                                                                                 |
| Efficiency @120Vac                    | Io: 14.17A   | 90.5%                          | 92%       | —     | Measured at full load and 25°C - ambient temperature                            |
| Efficiency @230Vac                    | Io: 14.17A   | 92.5%                          | 94%       | —     | Measured at full load and 25°C - ambient temperature                            |
| Efficiency @277Vac                    | Io: 14.17A   | 93%                            | 94%       | —     | Measured at full load and 25°C - ambient temperature                            |
| Dielectric Strength                   | Input-Output | —                              | 3750Vac   | —     | Maximum 5mA/60S                                                                 |
|                                       | Input-PE     | —                              | 1600Vac   | —     |                                                                                 |
|                                       | Output-PE    | —                              | 1600Vac   | —     |                                                                                 |
| Grounding Resistance                  |              | —                              | —         | 0.1Ω  | 25A/60S, under 25°C ± 10°C ambient temperature                                  |
| Insulation Resistance                 |              | 10MΩ                           | —         | —     | Input-Output, Input-PE, Output-PE, 500Vdc/60S/25°C/70%RH                        |
| MTBF (Hr)                             |              | —                              | 500000Hrs | —     | Telcordia SR-332, 100% load, & Ta = 25°C                                        |
| Lifetime (Hr)                         |              | —                              | 50000Hrs  | —     | 230Vac & 100% load, 75°C case temperature, refer to lifetime curve for details. |
| Ambient Temperature                   |              | -40°C                          | —         | +50°C | Reference Detaring Curve                                                        |
| Operating Case Temp for Safety Tc_S   |              | -40°C                          | —         | +90°C |                                                                                 |
| Operating Case Temp for Warranty Tc_S |              | -40°C                          | —         | +75°C | 5 years warranty case temp. Humidity: 10% to 95% RH                             |
| Storage Temperature                   |              | -40°C                          | —         | +85°C | Humidity: 5% to 100% RH                                                         |
| Working Elevation                     |              | -50m                           | —         | 4000m |                                                                                 |
| Net Weight                            |              | 7.05 ±0.66 Lbs/pc              |           |       |                                                                                 |
| Dimensions                            |              | 13.42" * 4.17" * 1.96" (L*W*H) |           |       |                                                                                 |

## Input Specifications

| Parameter                 | Description |            |        | Notes                              |
|---------------------------|-------------|------------|--------|------------------------------------|
|                           | Min.        | Typ.       | Max.   |                                    |
| Input Voltage             | 108Vac      | 120-277Vac | 305Vac |                                    |
| Input Frequency           | 47Hz        | 50/60Hz    | 63Hz   |                                    |
| Leakage Current           | –           | –          | 0.75mA | 277Vac / 60Hz                      |
| Input AC Current          | –           | –          | 6.5A   | 120-277Vac & Full load             |
| Inrush Current            | –           | –          | 38A    | 230Vac & Full load                 |
| Standby Power Consumption | –           | –          | 0.5W   | Dim to off, AUX. Power no load     |
| Power Factor              | 0.97        | 0.99       | –      | 120Vac, 50/60Hz, full load         |
|                           | 0.95        | 0.97       | –      | 230Vac, 50/60Hz, full load         |
|                           | 0.92        | 0.95       | –      | 277Vac, 50/60Hz, full load         |
| THD                       | –           | 5%         | 10%    | 120-230Vac, 50-60Hz, 70%-100% load |
|                           | –           | –          | 20%    | 277Vac, 50-60Hz, 70%-100% load     |

## Output Specifications

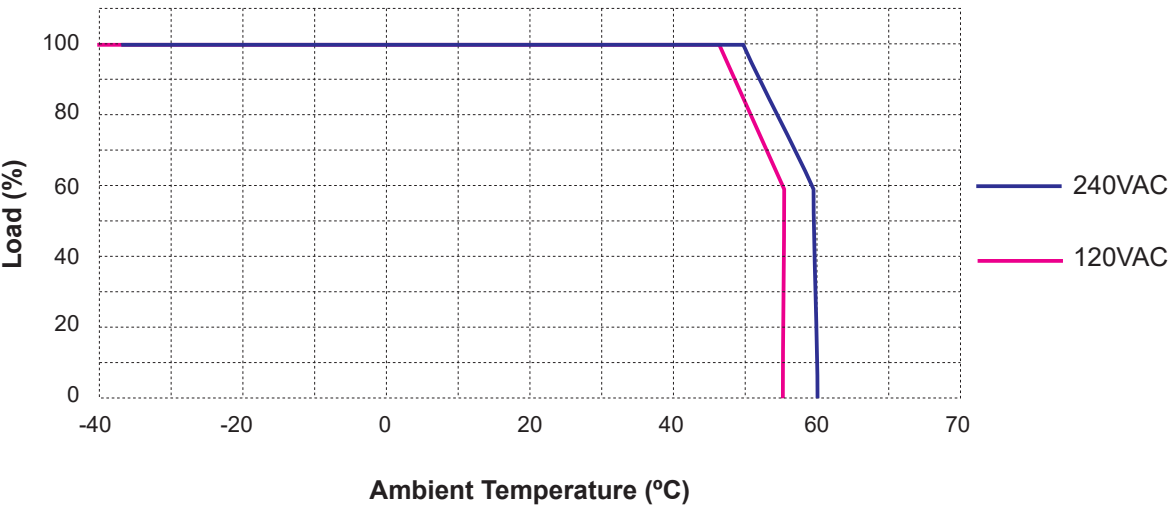
| Parameter                           | Description |      |       | Notes                                                                                   |
|-------------------------------------|-------------|------|-------|-----------------------------------------------------------------------------------------|
|                                     | Min.        | Typ. | Max.  |                                                                                         |
| Output Current Tolerance            | -5%         | –    | 5%    |                                                                                         |
| Output Current Setting Range (A)    | 1.42        | –    | 14.17 |                                                                                         |
| Total output Current Ripple (Pk-Pk) | –           | ± 5% | ± 10% | 20MHz BW, Full load & LED load ripple would be tiny different under different LED load. |
| Starup Overshoot Current (%)        | –           | –    | 10%   | 120~277Vac & 100% load                                                                  |
| Line Regulation                     | -1%         | –    | 1%    | 25°C± 10°C ambient temperature, input voltage changes from 120Vac to 277Vac.            |
| Load Regulation                     | -3%         | –    | 3%    | 25°C± 10°C ambient temperature, input voltage 230Vac, load changes from 60% to 100%     |
| Turn-on Delay time                  | –           | –    | 1S    | 120-277Vac, 10-100% Vo                                                                  |
| AUX. Power Output Current (mA)      | 0           | 200  | –     |                                                                                         |
| AUX. Power Output Voltage (V)       | 11.4        | 12   | 12.6  |                                                                                         |

## Dimming Specifications

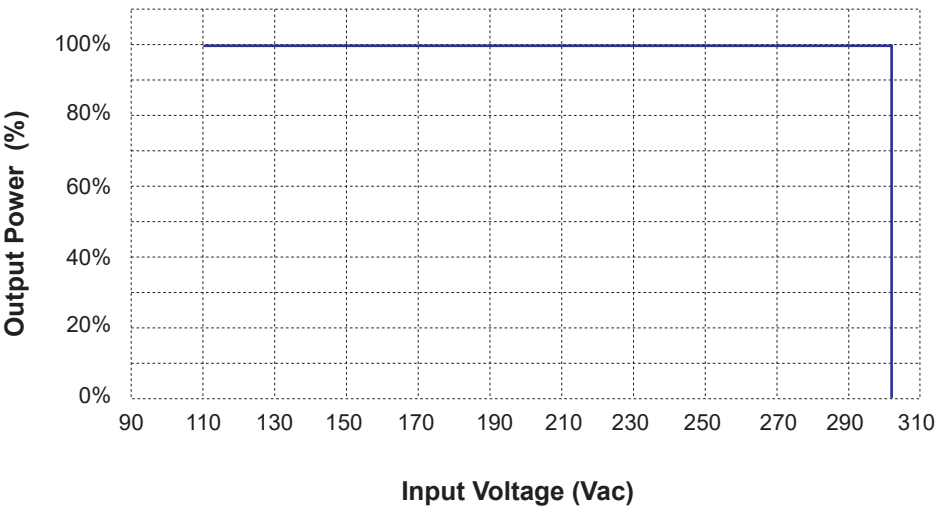
| Parameter                                          | Description |      |          | Notes                                                                                                         |
|----------------------------------------------------|-------------|------|----------|---------------------------------------------------------------------------------------------------------------|
|                                                    | Min.        | Typ. | Max.     |                                                                                                               |
| 0~10V Absolute Maximum Voltage on the Vdim (+) Pin | –           | 10V  | –        |                                                                                                               |
| 0~10V Source Current on Vdim (+) Pin (mA)          | –           | 0.2  | 0.4      |                                                                                                               |
| Dimming Output Range                               | 10%Imax     | –    | 100%Imax | Imax = 14.17A                                                                                                 |
| Recommended Dimming Range for 0-10V                | 0V          | –    | 10V      | Default 0-10V/PWM Dimming (0-10V, 0-9V, 0-5V, 0-3.3V Positive and Reverse Logic can be customized as request) |
| PWM_in high level                                  | 9.7V        | –    | 10.5V    |                                                                                                               |
| PWM_in low level                                   | 0V          | –    | 0.3V     |                                                                                                               |
| PWM_in frequency range                             | 300Hz       | –    | 2KHz     |                                                                                                               |
| PWM_in Duty Cycle                                  | 1%          | –    | 99%      |                                                                                                               |

# Specification

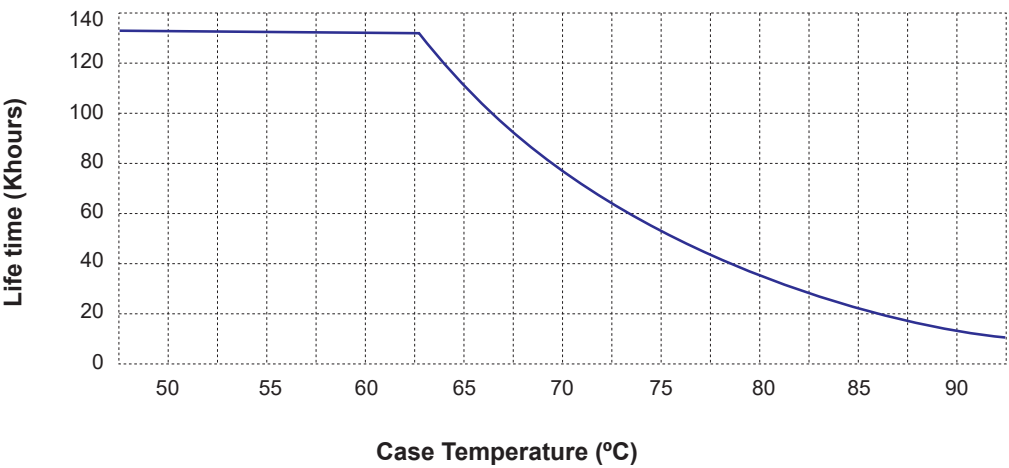
## Derating Curve



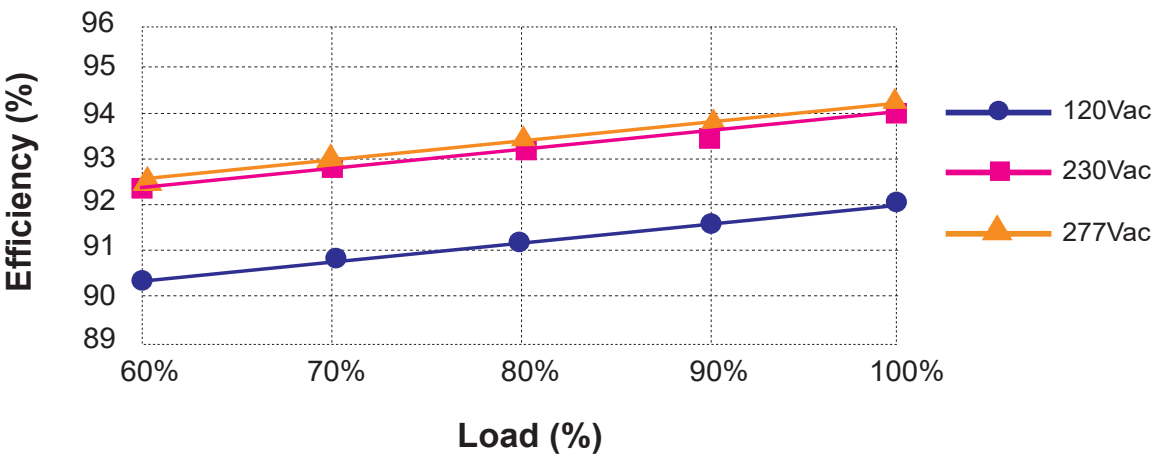
## Output Power Vs Input Voltage



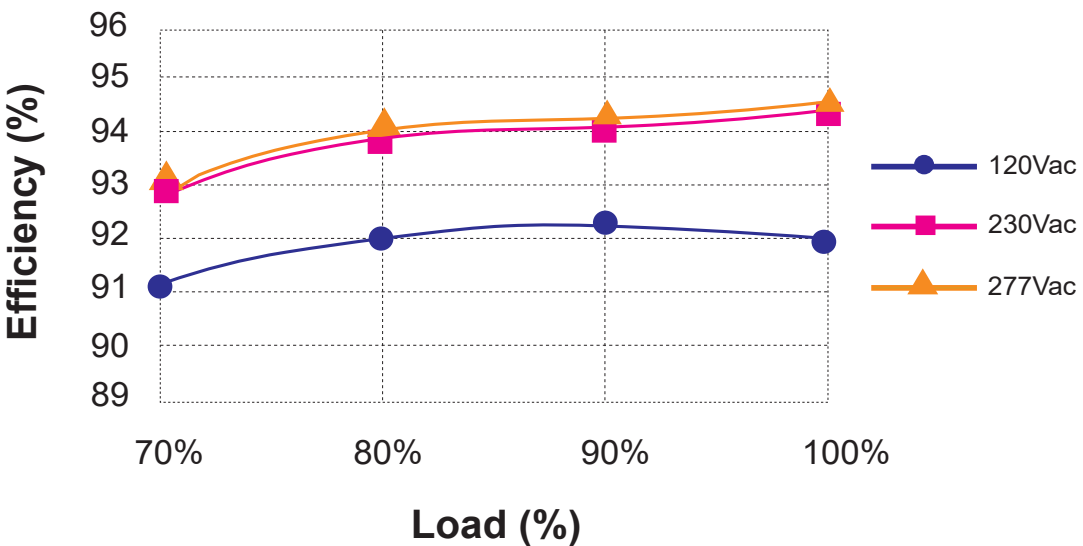
## Lifetime Vs Case Temperature



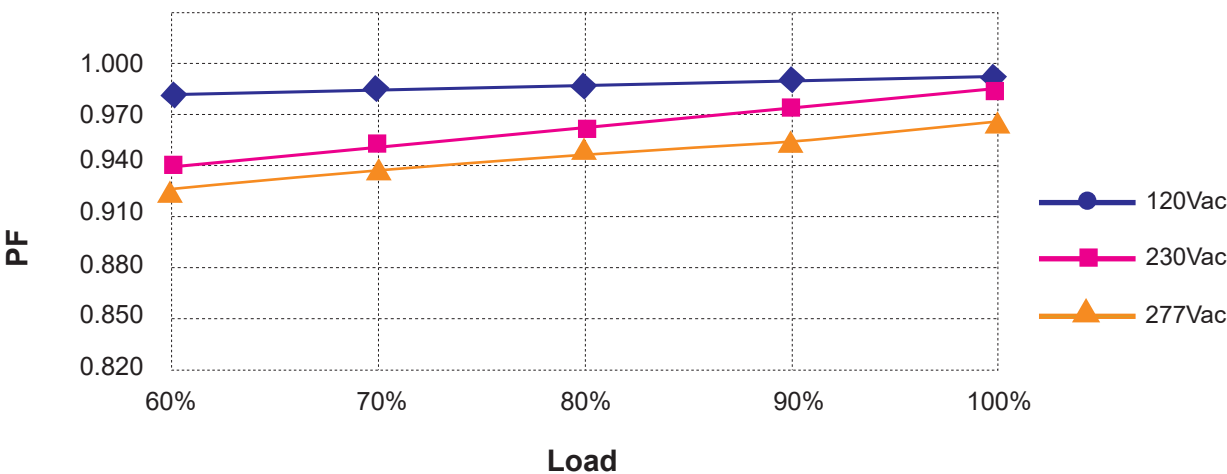
Efficiency Vs Load  $I_o=14.17A$



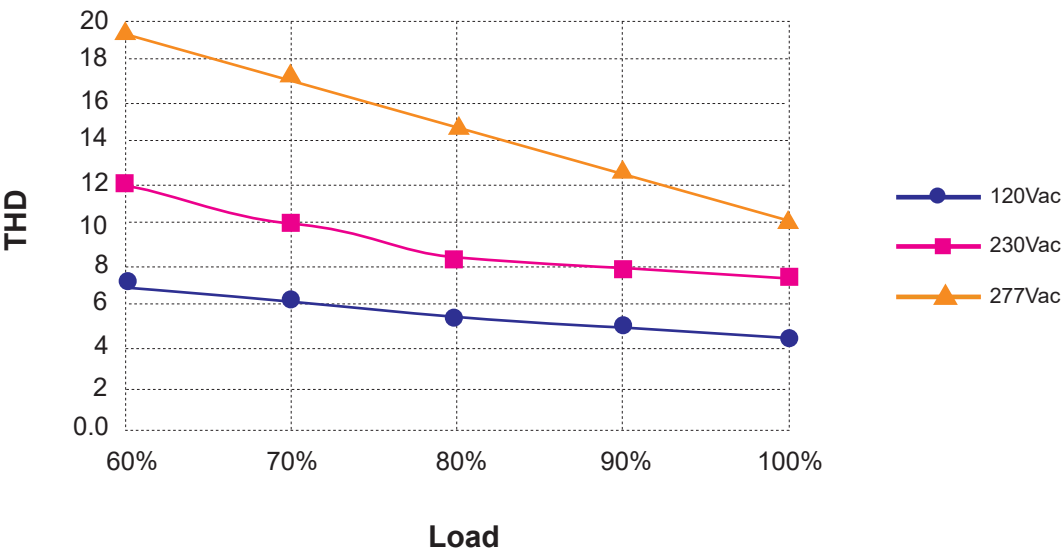
Efficiency Vs Load  $I_o=12.15A$



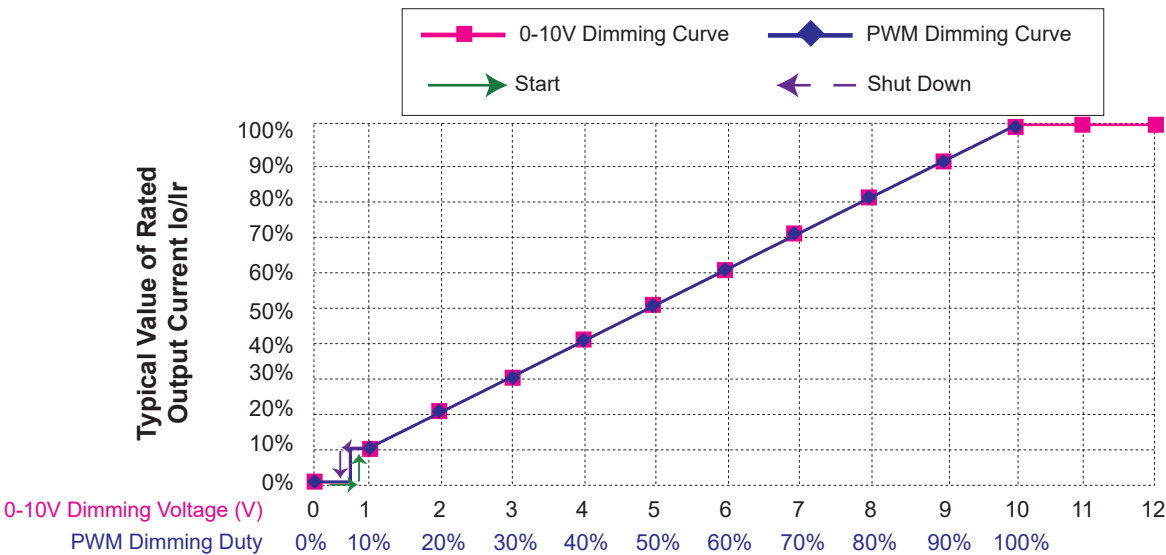
Power Factor Vs Load



Total Harmonic Distortion



0-10V/PWM Dimming Curve



Note: Dim to off model is realized by decreasing the output voltage, the power supply still has residual voltage when dim to off, so the start up voltage of the lamp should be higher than residual voltage

Protections

| Parameter                   | Notes                                                                                                                                                                 |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Over Temperature Protection | Decreases output current, returning to normal after over temperature is removed.                                                                                      |
| Short Circuit Protection    | The product will enter hiccup status. No damage will occur when any output is short circuited. The output shall return to normal when the fault condition is removed. |
| Over Voltage Protection     | Run into protection model when output voltage exceeds limit, and return to normal when the fault condition is removed.                                                |

- \* Ensure the power has been cut off before making any connection.
- \* All wiring and installation of this product is required to be manipulated by a professional

## Safety Standards Approved

- USA
  - Category: UL
  - Standards: UL 8750
- Canada
  - Category: CUL
  - Standards: CSA C22.2 No.250.13
- Europe
  - Category: CE/ENEC
  - Standards:
    - EN61347-1
    - EN61347-2-13
    - EN62493
    - EN62384
- CB Countries
  - Category: CB
  - Standards
    - IEC61347-1
    - IEC61347-2-13
- China
  - Category: CCC
  - Standards:
    - GB19510.1
    - GB19510.14
- Australia
  - Category: SAA
  - Standards:
    - AS/NZS IEC 61347.2.13
    - AS/NZS 61347.1
- Russia
  - Category: EAC
  - Standards:
    - ГОСТ Р МЭК 61347-1-2011
    - ГОСТ IEC 61347-2-13-2013
    - ГОСТ IEC 62493-2014
    - СТБ EH 55015-2006
    - ГОСТ IEC 61547-2013
    - ГОСТ 30804.3.2-2013 (IEC 61000-3-2:2009)
    - ГОСТ 30804.3.3-2013 (IEC