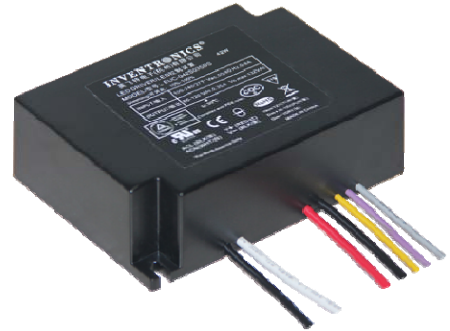


Features

- High Efficiency (Up to 90%)
- Second Generation with Improved Performance
- Active Power Factor Correction (Typical 0.95)
- Constant Current Output
- Waterproof (IP66) and Damp Location
- Dimming Control
- All-Around Protection: OVP, SCP, OLP, OTP
- SELV and Class 2
- UL Type TL (Temperature Limited)



Description

The EUC-042SxxxDS(PS) series operates from a 90 ~ 305 Vac input range. They are designed to be highly efficient and highly reliable. Features include dimming control, over voltage protection, short circuit protection, over load protection, and over temperature protection.

Models

| Output Current | Input Voltage Range(1) | Output Voltage Range | Max. Output Power | Typical Efficiency (2) | Power Factor | | Model Number |
|----------------|------------------------|----------------------|-------------------|------------------------|--------------|--------|----------------------------------|
| | | | | | 120Vac | 220Vac | |
| 350 mA | 90 ~ 305 Vac | 60~120Vdc | 42 W | 90.0% | 0.96 | 0.95 | EUC-042S035DS(PS) ⁽³⁾ |
| 450 mA | 90 ~ 305 Vac | 47~94 Vdc | 42 W | 89.0% | 0.96 | 0.95 | EUC-042S045DS(PS) ⁽³⁾ |
| 530 mA | 90 ~ 305 Vac | 40~79 Vdc | 42 W | 89.0% | 0.96 | 0.95 | EUC-042S053DS(PS) ⁽³⁾ |
| 700 mA | 90 ~ 305 Vac | 28~56 Vdc | 39 W | 89.0% | 0.96 | 0.95 | EUC-042S070DS(PS) ⁽⁴⁾ |
| 1050 mA | 90 ~ 305 Vac | 20~38 Vdc | 40 W | 88.0% | 0.96 | 0.95 | EUC-042S105DS(PS) ⁽⁵⁾ |
| 1280 mA | 90 ~ 305 Vac | 17~32 Vdc | 42 W | 87.0% | 0.96 | 0.95 | EUC-042S128DS(PS) ⁽⁵⁾ |
| 1400 mA | 90 ~ 305 Vac | 15~30 Vdc | 42 W | 87.0% | 0.96 | 0.95 | EUC-042S140DS(PS) ⁽⁵⁾ |
| 1750 mA | 90 ~ 305 Vac | 12~24 Vdc | 42 W | 87.0% | 0.96 | 0.95 | EUC-042S175DS(PS) ⁽⁵⁾ |

Notes: (1) UL, FCC certified input voltage range: 100-277Vac; other certified input voltage range except UL, FCC: 100-240Vac.

(2) Measured at 100% load and 220 Vac input.

(3) Non-Class 2 output (USR & CNR).

(4) Class 2 output (USR), Non-Class 2 output (CNR).

(5) Class 2 output (USR & CNR).

Input Specifications

| Parameter | Min. | Typ. | Max. | Notes |
|-----------------|--------|------|---------|-------|
| Input Voltage | 90 Vac | - | 305 Vac | |
| Input Frequency | 47 Hz | - | 63 Hz | |

Input Specifications (Continued)

| Parameter | Min. | Typ. | Max. | Notes |
|--------------------------|------|------|-----------------------|--|
| Leakage Current | - | - | 0.75 MIU | UL8750; 277Vac/ 60Hz |
| | - | - | 0.70 mA | IEC60598-1; 240Vac/ 60Hz |
| Input AC Current | - | - | 0.7 A | Measured at 100% load and 100 Vac input. |
| | - | - | 0.3 A | Measured at 100% load and 220 Vac input. |
| Inrush Current(I^2t) | - | - | 0.32 A ² s | At 220Vac input 25°C Cold Start. Duration=200 μ s, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details. |
| Power Factor | 0.90 | - | - | At 100-277Vac, 50-60Hz, 75%-100%load (31.5~42W) |
| THD | - | - | 20% | |

Output Specifications

| Parameter | Min. | Typ. | Max. | Notes |
|---------------------------------------|-----------|--------|-----------|--|
| Output Current Tolerance | -5% I_o | - | 5% I_o | |
| No Load Output Voltage | | | | |
| $I_o = 350$ mA | - | - | 140 V | |
| $I_o = 450$ mA | - | - | 104 V | |
| $I_o = 530$ mA | - | - | 87 V | |
| $I_o = 700$ mA | - | - | 59 V | |
| $I_o = 1050$ mA | - | - | 42 V | |
| $I_o = 1280$ mA | - | - | 37 V | |
| $I_o = 1400$ mA | - | - | 34 V | |
| $I_o = 1750$ mA | - | - | 27 V | |
| Total Output Current Ripple (pk-pk) | - | - | 50% I_o | Related to V-I Curve of the LED |
| Output Current Overshoot / Undershoot | - | - | 10% I_o | At 100% load condition |
| Line Regulation | - | - | $\pm 1\%$ | Measured at 100% load condition |
| Load Regulation | - | - | $\pm 3\%$ | Measured at 100% load condition |
| Turn-on Delay Time | - | 0.40 s | 0.75 s | Measured at 120Vac input, 75%load-100%load |
| | - | 0.30 s | 0.50 s | Measured at 220Vac input, 75%load-100%load |
| Temperature Coefficient of I_{omax} | - | - | 0.2%/°C | Case temperature = 0°C ~Tc max |
| 12V Auxiliary Output Voltage | 10.8 V | 12 V | 13.2 V | |
| 12V Auxiliary Output Source Current | 0 mA | - | 20 mA | Return terminal is "Dim-". |

Note: All specifications are typical at 25°C unless otherwise stated.

General Specifications

| Parameter | Min. | Typ. | Max. | Notes |
|--|--|--|--------------------------------------|---|
| Efficiency at 120 Vac input: $I_o = 350 \text{ mA}$ $I_o = 450 \text{ mA}$ $I_o = 530 \text{ mA}$ $I_o = 700 \text{ mA}$ $I_o = 1050 \text{ mA}$ $I_o = 1280 \text{ mA}$ $I_o = 1400 \text{ mA}$ $I_o = 1750 \text{ mA}$ | 87% 86% 86% 86% 85% 84% 84% 84% | 89% 88% 88% 88% 86% 86% 85% 85% | - - - - - - - - | Measured at 100% load and steady-state temperature in 25°C ambient. |
| Efficiency at 220 Vac input: $I_o = 350 \text{ mA}$ $I_o = 450 \text{ mA}$ $I_o = 530 \text{ mA}$ $I_o = 700 \text{ mA}$ $I_o = 1050 \text{ mA}$ $I_o = 1280 \text{ mA}$ $I_o = 1400 \text{ mA}$ $I_o = 1750 \text{ mA}$ | 88% 87% 87% 87% 86% 85% 85% 85% | 90% 89% 89% 89% 88% 87% 87% 87% | - - - - - - - - | Measured at 100% load and steady-state temperature in 25°C ambient. |
| Efficiency at 277 Vac input: $I_o = 350 \text{ mA}$ $I_o = 450 \text{ mA}$ $I_o = 530 \text{ mA}$ $I_o = 700 \text{ mA}$ $I_o = 1050 \text{ mA}$ $I_o = 1280 \text{ mA}$ $I_o = 1400 \text{ mA}$ $I_o = 1750 \text{ mA}$ | 88% 87% 87% 87% 86% 85% 85% 85% | 90% 89% 89% 89% 88% 87% 87% 87% | - - - - - - - - | Measured at 100% load and steady-state temperature in 25°C ambient. |
| No Load Power Dissipation | - | - | 6 W | |
| MTBF | 327,000 Hours | - | - | Measured at 120Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F) |
| Life Time | - | 116,000 Hours | - | Measured at 120Vac input, 80%Load and 60°C Case temperature. See life time vs. Tc curve for the details |
| Operating Case Temperature for Safety Tc_s | -40 °C | - | +90 °C | |
| Operating Case Temperature for Warranty Tc_w | -40 °C | - | +70 °C | Humidity: 10% RH to 100% RH. |
| Operating Case Temperature for Type TL Tc_TL | -40 °C | - | +72 °C | |
| Storage Temperature | -40 °C | - | +85 °C | Humidity: 5% RH to 100% RH |
| Dimensions Inches (L × W × H) Millimeters (L × W × H) | 3.74 × 2.76 × 1.26 95 × 70 × 32 | | | |
| Net Weight | - | 390 g | - | |

Note: All specifications are typical at 25°C unless otherwise stated.

Dimming Specifications

| Parameter | Min. | Typ. | Max. | Notes |
|---|----------------------|-------------|-----------------------|-------|
| Absolute Maximum Voltage on the 0~10V Input Pin | 0 V | - | 15 V | |
| Source Current on 0~10V Input Pin | 0 μ A | 200 μ A | 250 μ A | |
| Dimming Output Range | 10%I _{omax} | | 100%I _{omax} | |
| Recommended Dimming Input Range | 0 V | - | 10 V | |

Safety & EMC Compliance

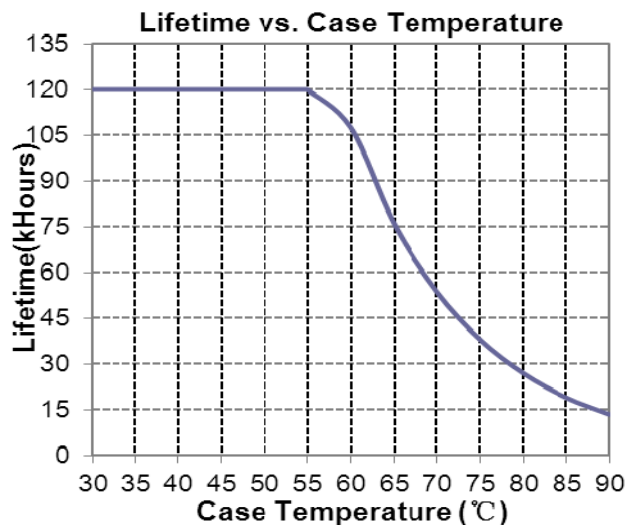
| Safety Category | Standard |
|----------------------------------|---|
| UL/CUL | UL8750, UL 1310, CAN/CSA-C22.2 No. 250.13, CAN/CSA-C22.2 No. 223-M91 |
| ENEC & TUV & CE | EN 61347-1, EN61347-2-13 |
| CB | IEC 61347-1, IEC 61347-2-13 |
| CCC | GB 19510.1, GB 19510.14 |
| PSE | J 61347-1, J 61347-2-13 |
| KS | KS C 7655 |
| EMI Standards | Notes |
| EN 55015/GB 17743 ⁽¹⁾ | Conducted emission Test & Radiated emission Test |
| EN 61000-3-2/GB 17625.1 | Harmonic current emissions |
| EN 61000-3-3 | Voltage Fluctuations & Flicker |
| FCC Part 15 ⁽¹⁾ | ANSI C63.4 Class B |
| | This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: [1] this device may not cause harmful interference, and [2] this device must accept any interference received, including interference that may cause undesired operation. |
| EMS Standards | Notes |
| EN 61000-4-2 | Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge |
| EN 61000-4-3 | Radio-Frequency Electromagnetic Field Susceptibility Test-RS |
| EN 61000-4-4 | Electrical Fast Transient / Burst-EFT |
| EN 61000-4-5 | Surge Immunity Test: AC Power Line: Differential Mode 2 kV |
| EN 61000-4-6 | Conducted Radio Frequency Disturbances Test-CS |

Safety & EMC Compliance (Continued)

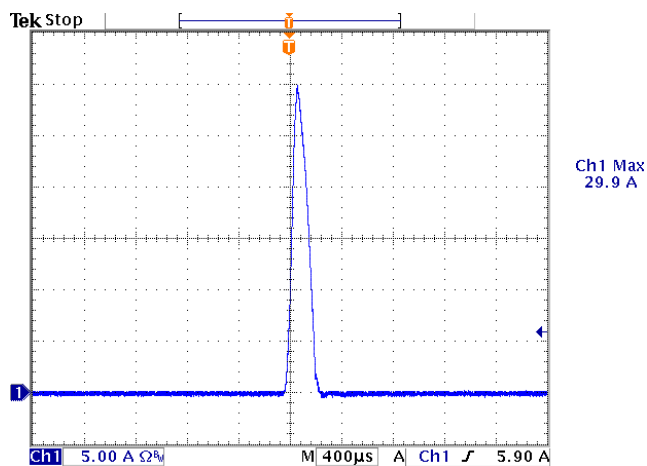
| EMS Standards | Notes |
|---------------|---|
| EN 61000-4-8 | Power Frequency Magnetic Field Test |
| EN 61000-4-11 | Voltage Dips |
| EN 61547 | Electromagnetic Immunity Requirements Applies To Lighting Equipment |

Note: (1) This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

Lifetime vs. Case Temperature Curve



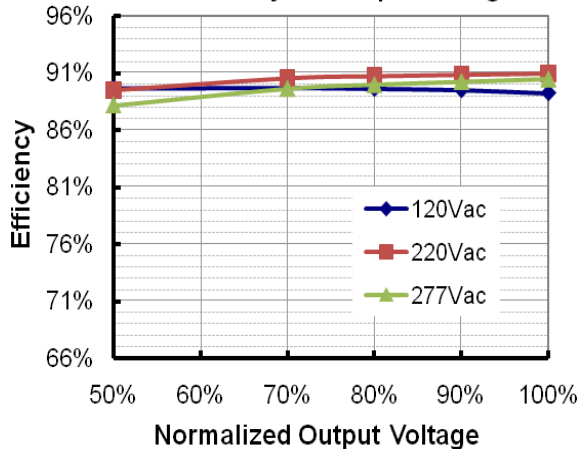
Inrush Current Waveform



Efficiency vs. Load

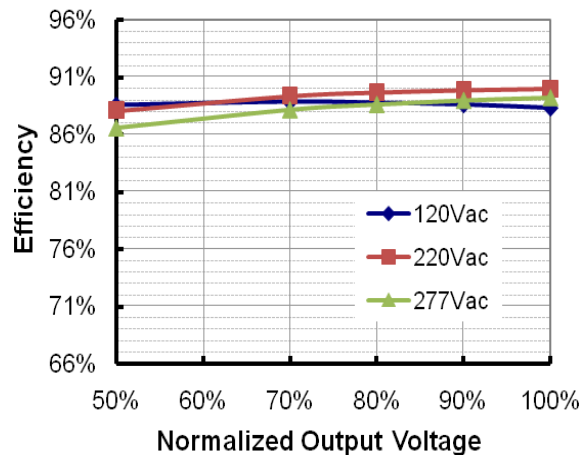
EUC-042S035DS(PS)

Efficiency vs. Output Voltage



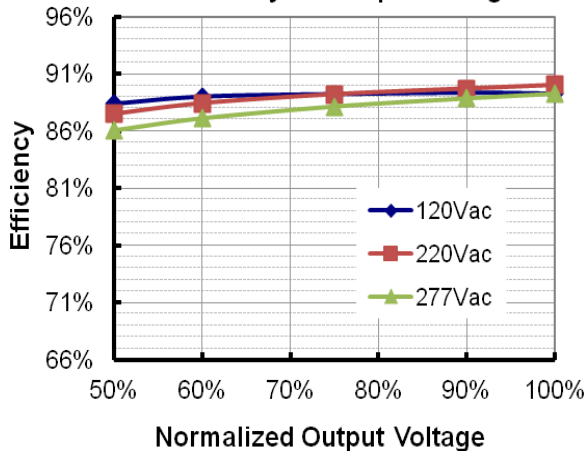
EUC-042S045DS(PS)

Efficiency vs. Output Voltage



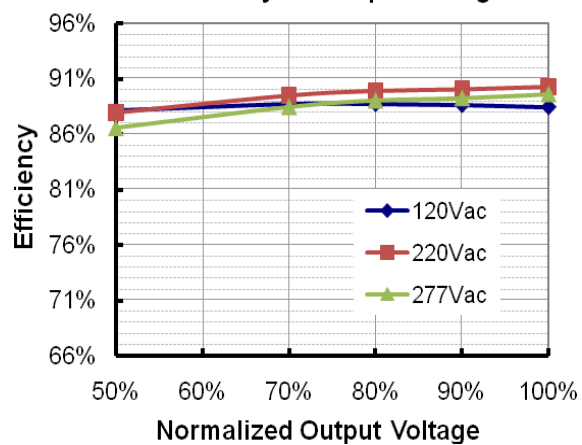
EUC-042S053DS(PS)

Efficiency vs. Output Voltage



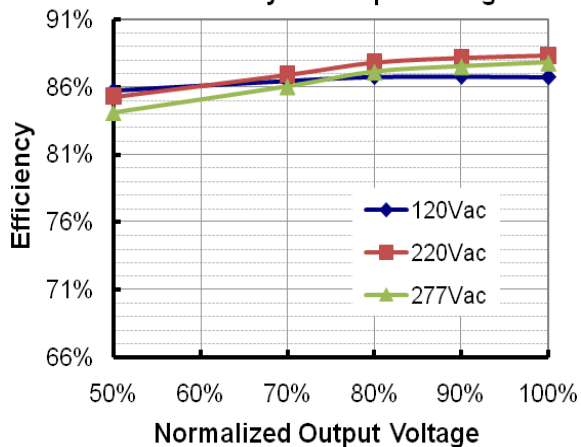
EUC-042S070DS(PS)

Efficiency vs. Output Voltage



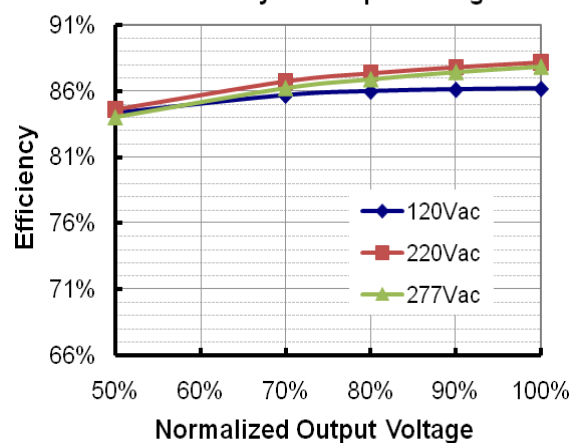
EUC-042S105DS(PS)

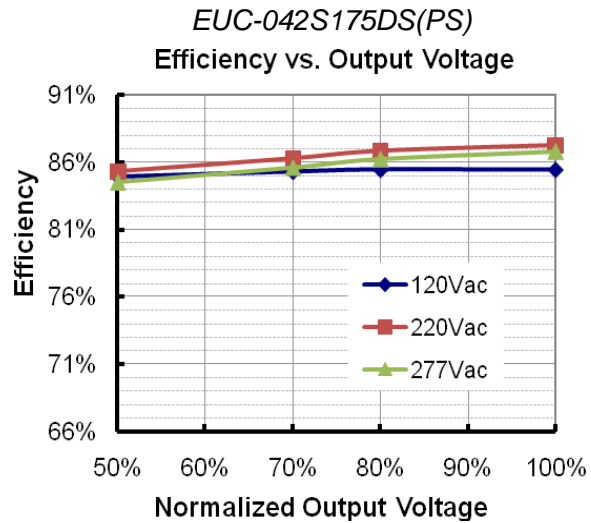
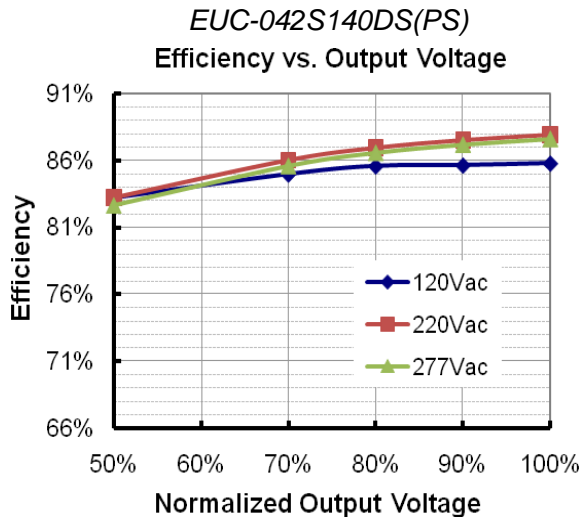
Efficiency vs. Output Voltage



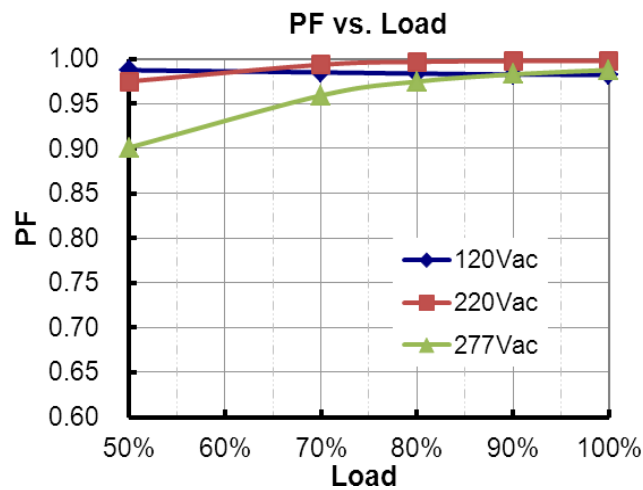
EUC-042S128DS(PS)

Efficiency vs. Output Voltage

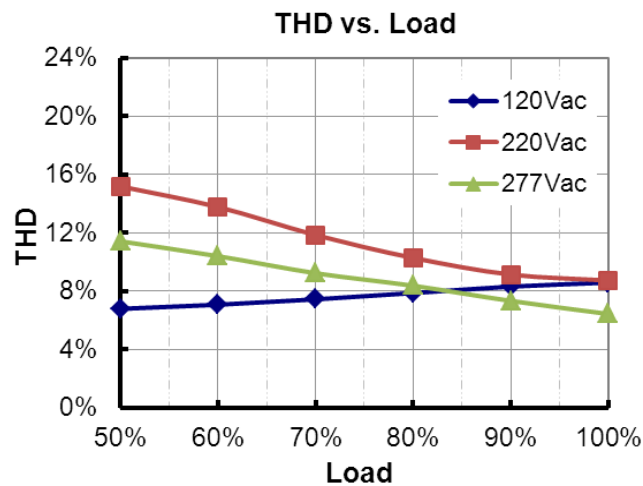




Power Factor Characteristics



Total Harmonic Distortion



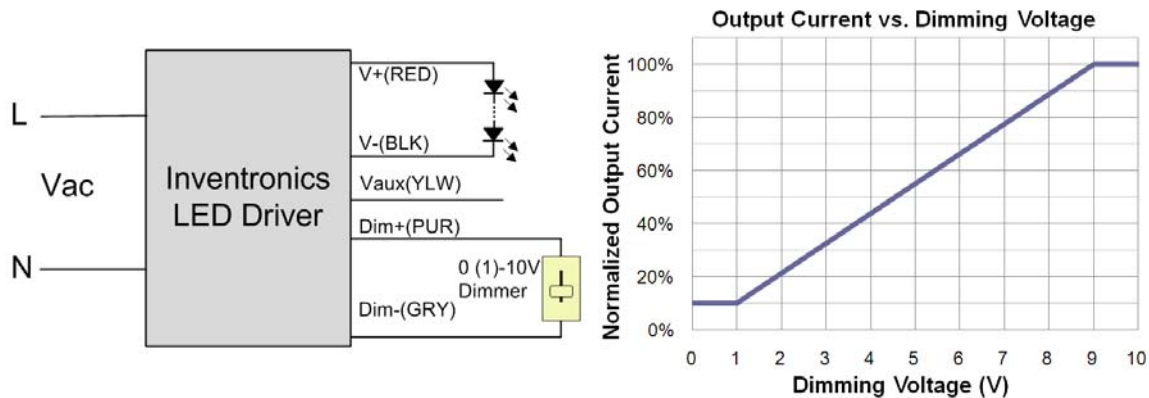
Protection Functions

| Parameter | Notes |
|-----------------------------|---|
| Over Voltage Protection | Limits output voltage at no load and in case the normal voltage limit fails. |
| Short Circuit Protection | Auto Recovery. No damage shall occur when any output operating in a short circuit condition. The power supply shall be self-recovery when the fault condition is removed. |
| Over Temperature Protection | Auto Recovery. Returning to normal after over temperature is removed. |

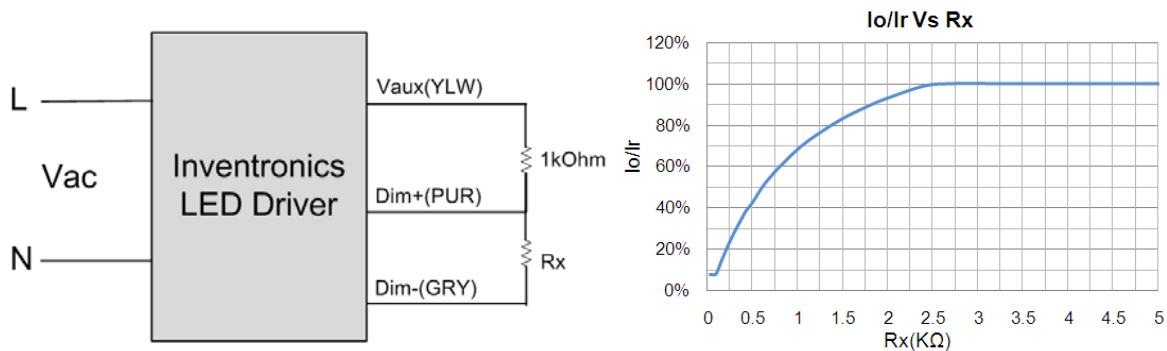
Dimming Control

● 0-10V Dimming

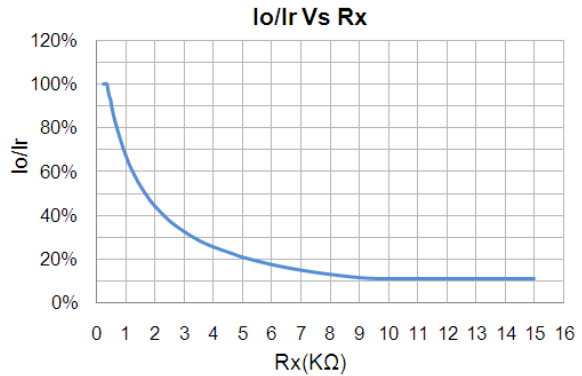
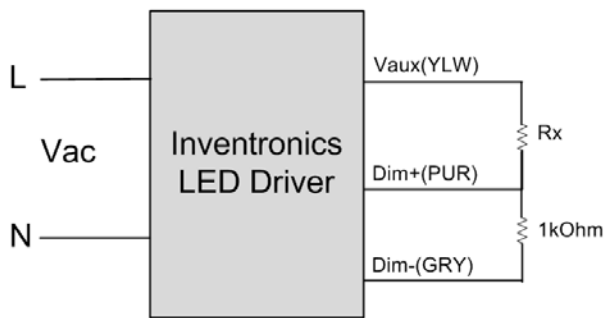
The dimmer control may be operated from either a dimmer or from an input signal of 0 - 10 Vdc. The recommended implementation is provided below.



Implementation 1: DC Input



Implementation 2: External Resistor



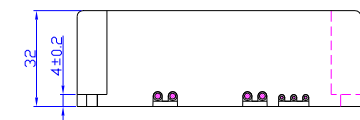
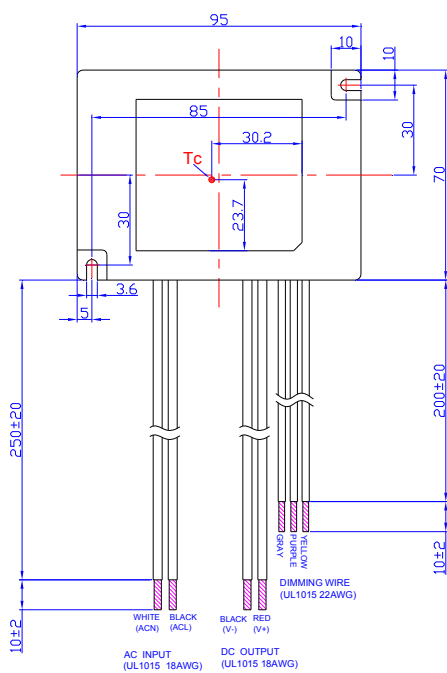
Implementation 3: External Resistor

Notes:

1. Do not connect the Dim- to the V-, otherwise, the LED driver cannot work normally.
2. If 0-10V dimming is not used, Dim + can be either open or connected to Vaux.

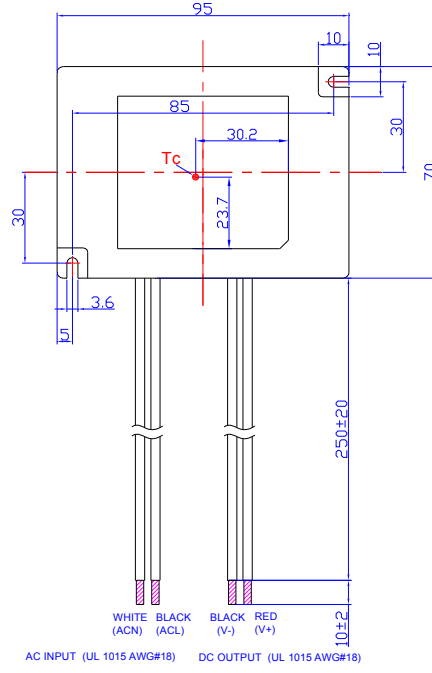
Mechanical Outline

EUC-042SxxxDS



Unspecified tolerance:±1

EUC-042SxxxPS



Unspecified tolerance:±1

RoHS Compliance

Our products comply with reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU, calling for the elimination of lead and other hazardous substances from electronic products.

Revision History

| Change Date | Rev. | Description of Change | | |
|-------------|------|---|-----------------------|-----------------------|
| | | Item | From | To |
| 2012-02-17 | A | Preliminary Datasheets First Release | / | / |
| 2012-03-21 | B | EUC-042S105DS(PS) CUL Class 2 added | / | / |
| 2012-05-25 | C | EUC-042S105DS(PS)-0001 | / | Added |
| | | EN 61000-4-5--- line to line 2 kV, line to earth 4 kV | / | Corrected |
| | | Life time | / | 50,000 Hours |
| | | EUC-042S070DS(PS)-0001 | / | Added |
| 2012-06-06 | D | EUC-042S070DS(PS)-0001, EUC-042S105DS(PS)-0001 | / | Deleted |
| | | Notes of life time | / | Updated |
| | | Life time vs. Tc Curve | / | Added |
| 2012-07-02 | E | Description of OTP | / | Updated |
| 2012-07-17 | F | Max Case Temperature | / | Updated |
| 2012-7-30 | G | Min Operating Temperature | -20°C | -40°C |
| 2012-08-20 | H | Derating Curve | / | Updated |
| | | Inrush Current | 60A | 70A |
| | | Inrush Current(I ² t) | / | Added |
| | | Temperature coefficient | / | Added |
| 2012-11-16 | I | Life time | Min 50,000hrs | Typical 116,000hrs |
| | | Life time Curve | / | Updated |
| | | Io/Ir Vs Rx Curve | / | Added |
| | | THD Curve | / | Added |
| | | EFF and PF Curve of other models | / | Added |
| 2013-05-22 | J | Inrush Current(I ² t) corrected | 0.16 A ² s | 0.32 A ² s |
| | | Duration of Inrush Current corrected | 100 μs | 200 μs |
| | | Mechanical Outline---cable length corrected | / | Updated |
| 2013-11-25 | K | Model 530mA | / | Added |
| | | Mechanical Outline-Dimming wires updated | UL1015 26AWG | UL1015 22AWG |
| 2014-05-27 | L | ENEC certificate | / | Added |
| 2015-08-04 | M | Warranty Tc | / | Added |
| | | Environmental Specifications | / | Deleted |
| | | Inrush Current Waveform | / | Added |

Revision History (Continued)

| Change Date | Rev. | Description of Change | | |
|------------------------|--------------|--|---------------|-------------|
| | | Item | From | To |
| 2015-08-04 | M | CCC certificate | / | Added |
| | | CQC certificate | / | Deleted |
| | | Source Current on 0~10V Input Pin Max. | 200 uA | 250 uA |
| 2015-12-31 | N | KS Certification | / | Added |
| | | KC Certification-EUC-042S070/105/128/140DS(PS) | / | Added |
| | | Net Weight | 350 g | 390 g |
| 2016-04-18 | O | UL Type TL | / | Added |
| | | KS Certificate Regulation | / | Added |
| | | Note of EMI Standard | / | Added |
| 2016-08-02 | P | Turn-on Delay Time at 120Vac | Max.=1.0 s | Max.=0.75 s |
| 2019-04-17 | Q | Mechanical Outline | / | Updated |
| 2019-08-21 | R | TUV Logo | / | Updated |
| | | ENEC Logo | / | Updated |
| | | PSE Logo | / | Updated |
| | | KC Logo | / | Deleted |
| | | Note of Models | (6) | Deleted |
| | | Input Specifications(PF/THD) | 50-60Hz | Added |
| | | Output Specifications (No Load Output Voltage)- EUC-042S035DS(PS) | 132V | 140V |
| | | Safety &EMC Compliance | UL/CUL | Updated |
| | | Safety &EMC Compliance | ENEC | Added |
| | | Safety &EMC Compliance | TUV | Added |
| | | Safety &EMC Compliance | CB | Added |
| | | Safety &EMC Compliance | PSE | Added |
| | | Safety &EMC Compliance | KS | Updated |
| | | Safety &EMC Compliance | EMI Standards | Updated |
| | | Safety &EMC Compliance | FCC | Updated |
| Safety &EMC Compliance | EN 61000-4-5 | Updated | | |
| RoHS Compliance | / | Updated | | |