

Features

- High Efficiency (Up to 90%)
- Active Power Factor Correction (0.99 Typical)
- Constant Current Output
- Dimming Function
- Lightning Protection
- All-Round Protection: OVP, SCP, OTP
- Waterproof (IP67) and Damp & Wet Location



Description

The EUC-075SxxxDT(ST) Series operate 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 and over temperature protection.

Models

| Output Current | Input Voltage Range | Output Voltage Range | Max. Output Power | Typical Efficiency (1) | Power Factor | | Model Number (2) |
|----------------|---------------------|----------------------|-------------------|------------------------|--------------|--------|---------------------------|
| | | | | | 110Vac | 220Vac | |
| 350 mA | 90 ~ 305 Vac | 107~214Vdc | 75 W | 90% | 0.99 | 0.96 | EUC-075S035DT(ST) (3)★ |
| 450 mA | 90 ~ 305 Vac | 83~166 Vdc | 75 W | 90% | 0.99 | 0.96 | EUC-075S045DT(ST) (3)★ |
| 700 mA | 90 ~ 305 Vac | 54~108 Vdc | 75 W | 90% | 0.99 | 0.96 | EUC-075S070DT(ST) (3) |
| 1050 mA | 90 ~ 305 Vac | 36 ~72 Vdc | 75 W | 89% | 0.99 | 0.96 | EUC-075S105DT(ST) (3) |
| 1400 mA | 90 ~ 305 Vac | 27 ~54 Vdc | 75 W | 89% | 0.99 | 0.96 | EUC-075S140DT(ST) (4) |
| 2100 mA | 90 ~ 305 Vac | 18 ~36 Vdc | 75 W | 88% | 0.99 | 0.96 | EUC-075S210DT(ST) (5) |
| 2800 mA | 90 ~ 305 Vac | 13 ~27 Vdc | 75 W | 88% | 0.99 | 0.96 | EUC-075S280DT(5)(ST) (3)★ |
| 3750 mA | 90 ~ 305 Vac | 10 ~20 Vdc | 75 W | 87% | 0.99 | 0.96 | EUC-075S375DT(ST) (5) |
| 5000 mA | 90 ~ 305 Vac | 7 ~15 Vdc | 75 W | 87% | 0.99 | 0.96 | EUC-075S500DT(ST) (5) |

- Notes:** (1) Measured at full load and 220 Vac input.
 (2) A suffix –xxx may be added to denote variations or modifications to the base product, where x can be any alphanumeric character or blank.
 (3) Non-Class2 output (USR & CNR).
 (4) Class 2 output (USR), Non-Class 2 output (CNR).
 (5) Class 2 output (USR & CNR).
 (6) ★: Popular model.

Input Specifications

| Parameter | Min. | Typ. | Max. | Notes |
|-----------------|-------|------|-------|----------------------|
| Input Voltage | 90 V | - | 305 V | |
| Input Frequency | 47 Hz | - | 63 Hz | |
| Leakage Current | - | - | 1 mA | At 277Vac 60Hz input |

Specifications are subject to changes without notice.

Input Specifications (Continued)

| Parameter | Min. | Typ. | Max. | Notes |
|----------------------------------|------|------|--------------------|---|
| Input AC Current | - | - | 0.9 A | Measured at full load and 100 Vac input. |
| | - | - | 0.42 A | Measured at full load and 220 Vac input. |
| Inrush Current | - | - | 60 A | At 220Vac input, 25°C cold start, duration=1 ms, 10%Ipk-10%Ipk. |
| Inrush Current(I ² t) | - | - | 1 A ² s | |
| Power Factor | 0.9 | - | - | At 100Vac-277Vac,100%load |
| THD | - | - | 20% | |

Output Specifications

| Parameter | Min. | Typ. | Max. | Notes |
|--------------------------|------|-------|-------------------|--|
| Output Current Range | -5% | - | 5% | |
| Ripple and Noise (pk-pk) | - | - | 5% V _O | Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 uF ceramic capacitor and a 10 uF electrolytic capacitor. V _O is the maximum output voltage. |
| Line Regulation | - | - | ±1% | |
| Load Regulation | - | - | ±3% | |
| Turn-on Delay Time | - | 0.8 s | 1.2 s | Measured at 110Vac input. |
| | - | 0.4 s | 0.6 s | Measured at 220Vac input. |
| Temperature coefficient | - | - | 0.06%/°C | Case temperature = 0°C ~T _c max |

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

Protection Functions

| Parameter | Min. | Typ. | Max. | Notes |
|--|--|---|---|--|
| Over Voltage Protection I _O = 350 mA I _O = 450 mA I _O = 700 mA I _O = 1050 mA I _O = 1400 mA I _O = 2100 mA I _O = 2800 mA I _O = 3750 mA I _O = 5000 mA | - | 235 V 195 V 118 V 80 V 65 V 42 V 35 V 26 V 18 V | 250 V 215 V 130 V 88 V 70 V 45 V 38 V 30 V 25 V | Latch mode. The power supply shall return to normal operation only after the power is turn-on again. |
| Over Temperature Protection-T _c | - | 110 °C | - | Latch mode. The power supply shall return to normal operation only after the power is turn-on again. |
| Short Circuit Protection | 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. | | | |

Specifications are subject to changes without notice.

General Specifications

| Parameter | Min. | Typ. | Max. | Notes |
|---|---|---|---|---|
| Efficiency Io = 350 mA Io = 450 mA Io = 700 mA Io = 1050 mA Io = 1400 mA Io = 2100 mA Io = 2800 mA Io = 3750 mA Io = 5000 mA | 86% 86% 86% 85% 85% 84% 84% 83% 83% | 88% 88% 88% 87% 87% 86% 86% 85% 85% | - - - - - - - - - | Measured at full load, 110Vac input, 25°C ambient temperature, after the unit is thermally stabilized. It will be lower about 2%, if measured immediately after startup. |
| Efficiency Io = 350 mA Io = 450 mA Io = 700 mA Io = 1050 mA Io = 1400 mA Io = 2100 mA Io = 2800 mA Io = 3750 mA Io = 5000 mA | 88% 88% 88% 87% 87% 86% 86% 85% 85% | 90% 90% 90% 89% 89% 88% 88% 87% 87% | - - - - - - - - - | Measured at full load, 220Vac input, 25°C ambient temperature, after the unit is thermally stabilized. It will be lower about 2%, if measured immediately after startup. |
| MTBF | - | 320,000 hours | - | Measured at 110Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F) |
| Life Time | - | 107,000 hours | - | Measured at 110Vac input, 80%Load; Case temperature=60°C @ Tc point. See life time vs. Tc curve for the details |
| Case Temperature | - | - | 87°C | ST Series: 1400 mA, 2100 mA, 3750 mA: 90°C and other models: 88°C |
| Dimensions Inches (L x W x H) Millimeters (L x W x H) | 5.91 x 2.66 x 1.44 150 x 67.5 x 36.5 | | | |
| Net Weight | - | 750 g | - | |

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

Environmental Specifications

| Parameter | Min. | Typ. | Max. | Notes |
|-----------------------|--------|------|--------|--|
| Operating Temperature | -40 °C | - | +70 °C | Humidity: 10% RH to 100% RH See Derating Curve for more details |
| Storage Temperature | -40 °C | - | +85 °C | Humidity: 5% RH to 100% RH |

Safety & EMC Compliance

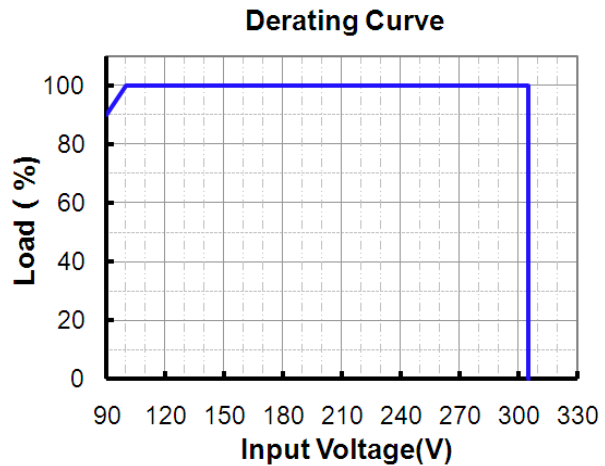
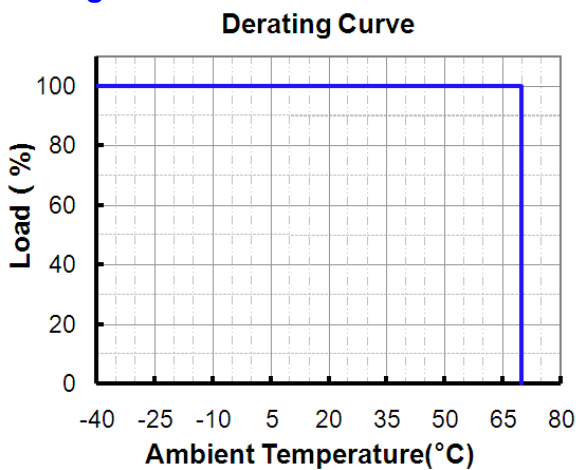
| Safety Category | Standard |
|-----------------|--|
| UL/CUL | UL8750,UL1012, UL1310 Class 2, CSA-C22.2 No. 107.1, CSA C22.2 NO. 223-M91 Class 2 |
| CE | EN61347-1, EN61347-2-13 |
| EMI Standards | Notes |
| EN 55015 | Conducted emission Test & Radiated emission Test |
| EN 61000-3-2 | Harmonic current emissions |
| EN 61000-3-3 | Voltage fluctuations & flicker |

Specifications are subject to changes without notice.

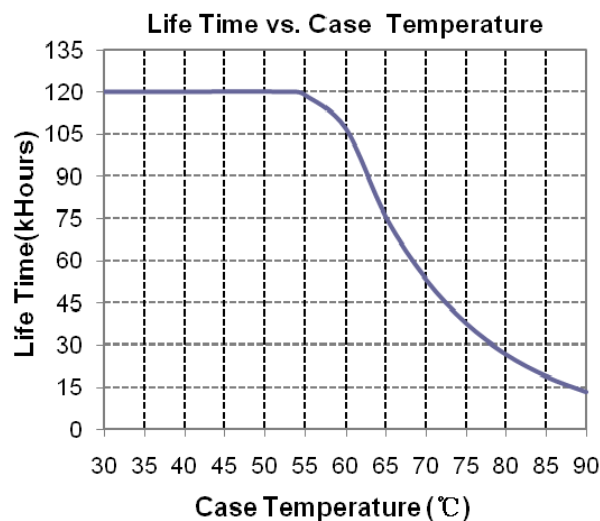
Safety & EMC Compliance (Continued)

| 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: line to line 4 kV, line to earth 6 kV |
| EN 61000-4-6 | Conducted Radio Frequency Disturbances Test-CS |
| EN 61000-4-8 | Power Frequency Magnetic Field Test |
| EN 61000-4-11 | Voltage Dips |
| EN 61547 | Electromagnetic Immunity Requirements Applies to Lighting Equipment |
| ENERGY STAR Standards | Notes |
| ANSI/IEEE C62.41-1991 | Transient Protection, power supply shall comply with Class A operation. The line transient shall consist of seven strikes of a 100 kHz ring wave, 2.5 kV level, for both common mode and differential mode. |

Derating Curve



Life Time vs. Case Temperature Curve



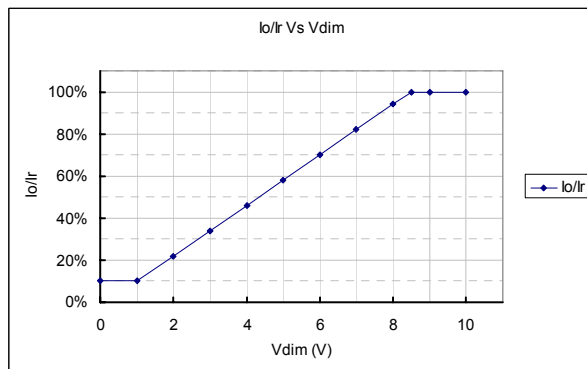
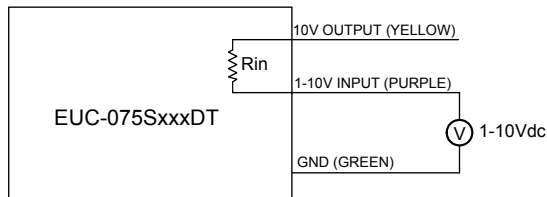
Specifications are subject to changes without notice.

Dimming Control (On secondary side)

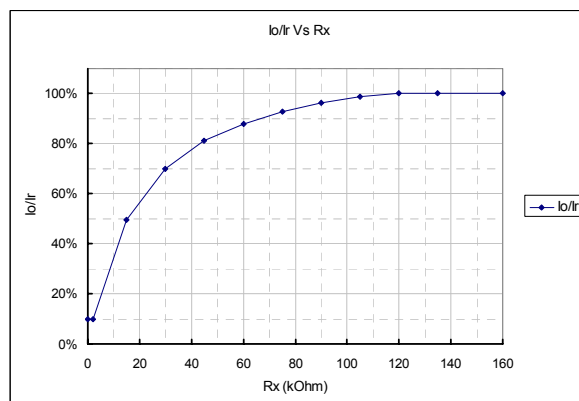
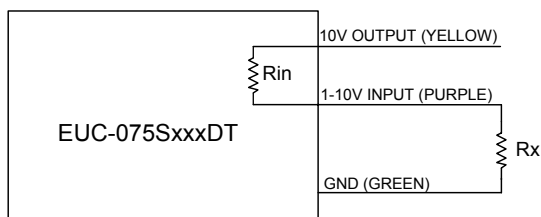
The function has two versions. One is with internal pull-up resistor, the output is full load when the dimming leads are floated. Another is with internal pull-down resistor, the output is 10% full load when the dimming leads are floated.

1. With pull-up resistor (Default, without suffix):

| Parameter | Min. | Typ. | Max. | Notes |
|--|--------|------|--------|-------|
| 10V output voltage | 9.8 V | 10 V | 10.2 V | |
| 10V output source current | 0 mA | - | 10 mA | |
| Absolute maximum voltage on the 1~10V input pin | -2 V | - | 12 V | |
| Source current on 1~10V input pin | 0 mA | - | 0.5 mA | |
| Value of Rin (the resistor inside the LED driver which locate between the 1-10V input and 10V output pin) | 19.8 K | 20 K | 20.2 K | |



Implementation 1: DC input



Implementation 2: External resistor

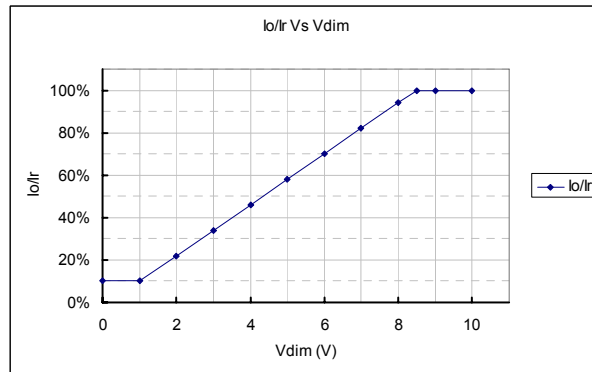
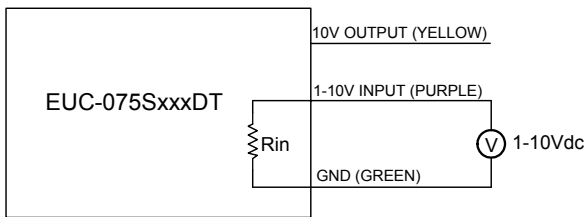
Notes:

1. If the dimming function is not used, please let the dimming leads floated.
2. I_o is actual output current and I_r is rated current without dimming control.
3. For the driver to operate properly, the load voltage must be maintained above the minimum voltage threshold (approx. 50% of the max. output voltage for any given model).
4. If the output voltage is maintained above 50% of the maximum output voltage, the dimming control may be operated over the entire 1-10V range with output current varying from 100% down to practically 10%.

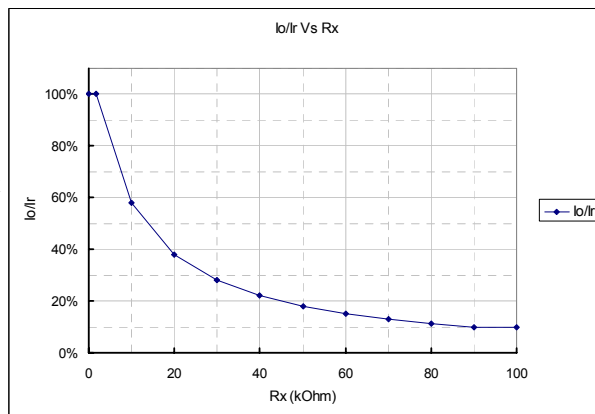
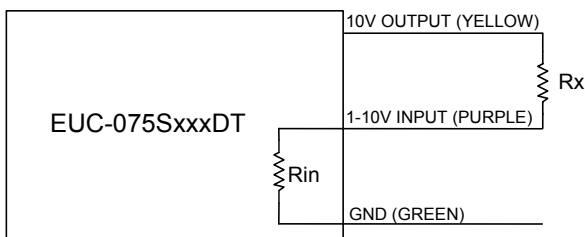
5. The dimming signal is allowed to be less than 1V, however, when it for 0-1V, the output current can maintain about 10%I_r. When it for 8.5-10V, the output current can maintain about 100%I_r.
6. Do not connect the GND of dimming to the output; otherwise, the LED driver can not work normally.

2. With pull-down resistor: (The model number has a suffix -0040)

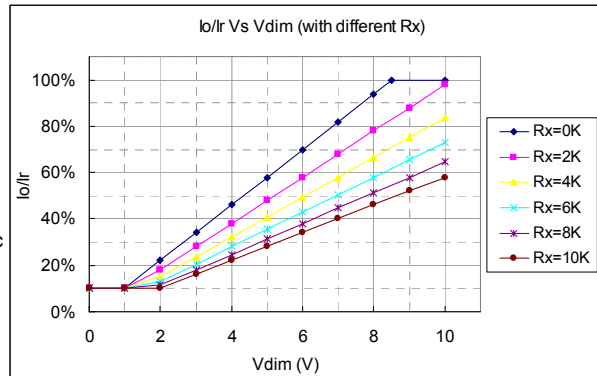
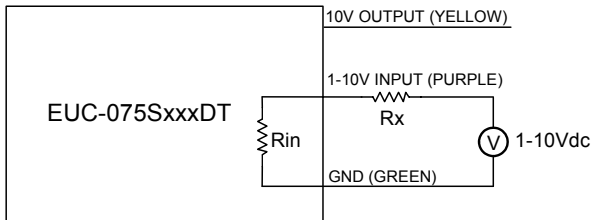
| Parameter | Min. | Typ. | Max. | Notes |
|---|-------|------|--------|-------|
| 10V output voltage | 9.8 V | 10 V | 10.2 V | |
| 10V output source current | 0 mA | - | 10 mA | |
| Absolute maximum voltage on the 1~10V input pin | -2 V | - | 12 V | |
| Sink current on 1~10V input pin | 0 mA | - | 1 mA | |
| Value of Rin (the resistor inside the LED driver which locate between the 1-10V input and GND) | 9.9 K | 10 K | 10.1 K | |



Implementation 1: DC input



Implementation 2: External resistor



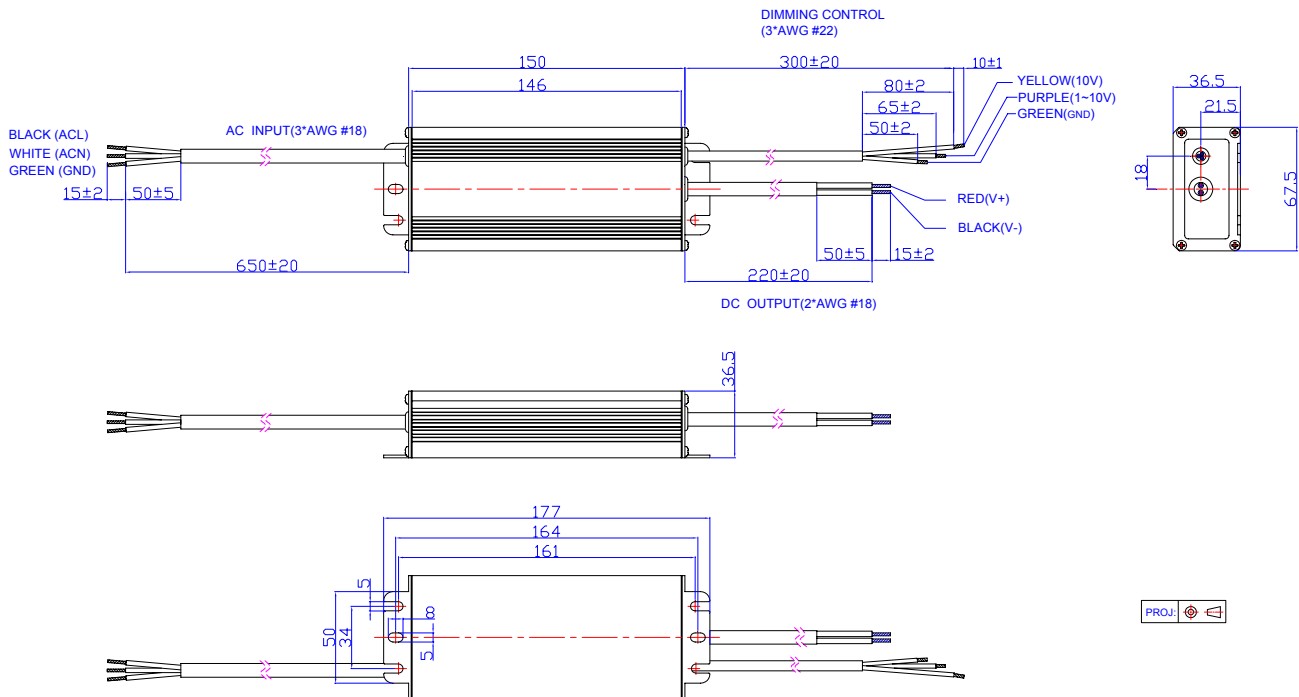
Implementation 3: External resistor and 1-10V DC Input

Notes:

1. If the dimming function is not used, please short 10V output pin (yellow) and 1-10 input pin (purple).
2. I_o is actual output current and I_r is rated current without dimming control.
3. For the driver to operate properly, the load voltage must be maintained above the minimum voltage threshold (approx. 50% of the max. output voltage for any given model).
4. If the output voltage is maintained above 50% of the maximum output voltage, the dimming control may be operated over the entire 1-10V range with output current varying from 100% down to practically 10%.
5. The dimming signal is allowed to be less than 1V, however, when it for 0-1V, the output current can maintain about 10% I_r . When it for 8.5-10V, the output current can maintain about 100% I_r .
6. Do not connect the GND of dimming to the output; otherwise, the LED driver can not work normally.

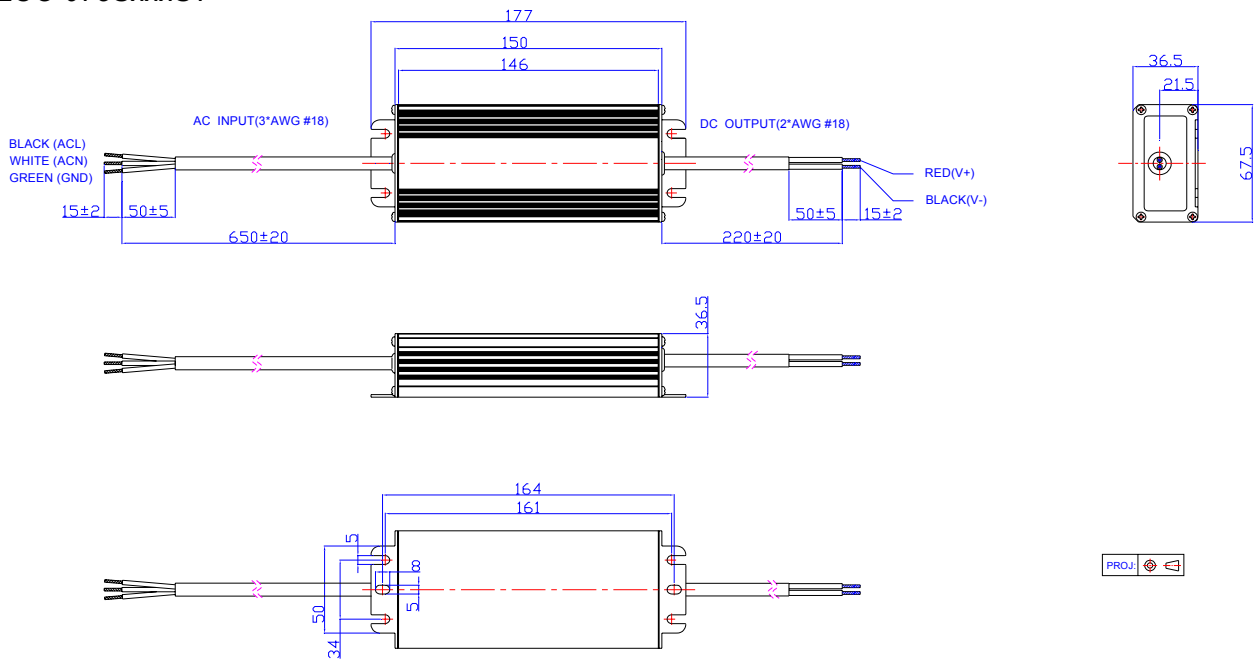
Mechanical Outline

EUC-075SxxxDT



Specifications are subject to changes without notice.

EUC-075SxxxST



RoHS Compliance

Our products comply with the European Directive 2002/95/EC, calling for the elimination of lead and other hazardous substances from electronic products.

Revision History

| Change Date | Rev. | Description of Change | | |
|-------------|------|---|---------------------------------------|--|
| | | Item | From | To |
| 2010-03-03 | A | Add notes of UL1310 Class 2 for all models. (3) (4) (5) | | |
| | | Change efficiency for all models | | |
| | | Change MTBF | 498,000 hours | 450,000 hours |
| | | Add Leakage Current in Input Specifications | / | / |
| | | Add Derating Curve | / | / |
| | | Modify the tin-plated wire length tolerance in Mechanical Outline | ±0.5 | ±2 |
| | | Add one note in Dimming Control | / | 7. Do not connect the GND of dimming to the output; otherwise, the LED driver can not work normally. |
| 2010-05-25 | B | Add one item in the notes of Ripple and Noise (pk-pk) | / | Vo is the maximum output voltage. |
| | | Delete Output Overshoot / Undershoot | Max. 10% | / |
| 2010-05-31 | C | Add star rank for recommended models | / | ☆: Popular model. |
| | | Standardize the tolerance in Mechanical Outline | / | / |
| 2010-07-30 | D | Add Energy Star Standard | / | Comply With ANSI/IEEE C62.41, Class A Operation |
| 2010-08-10 | F | Change Turn-on Delay Time 110Vac input | Typ. 0.5S Max. 0.8S | Typ. 0.8S Max. 1.2S |
| 2010-10-22 | G | Update the part of dimming control | / | / |
| 2010-11-12 | H | Change efficiency of 5000 mA 110 Vac 220 Vac | Min. 84%, Typ. 86% 86%, 88% | Min. 82%, Typ. 84% 84%, 86% |
| | | Add another dimming version with pull-down resistor | / | / |
| 2011-01-14 | I | Change popular models | / | / |
| 2012-06-10 | J | Life time curve | / | Added |
| | | EN61000-4-5 | line to line 2 kV, line to earth 4 kV | line to line 4 kV, line to earth 6 kV |
| | | Efficiency of some models | / | 1% or 2% lower |
| 2012-7-5 | k | Inrush Current | 50 A | 60 A |
| 2012-7-17 | L | Max Case Temperature | / | Updated |
| 2012-10-10 | M | Min PF, Max THD | / | Added |
| | | Temperature coefficient | / | Added |
| | | MTBF, Life time Typical Value | / | Added |
| | | Life Time Curve | / | Updated |
| | | Operating Temperature | -35°C | -40°C |
| | | Derating Curve | / | Updated |

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