## Features

- 0 -10V Dimmable (Compatible with Passive Dimmers)
- Constant Current Output
- High Efficiency
- Active Power Factor Correction
- All-Round Protection: OLP, SCP and Open Lamp Protection
- EN61347, UL8750 Safety Certifications Approved
- Class2 Output

## Description

The *LUC-012SxxxDSM (SSM)* series operate from a 90 ~ 305 Vac input range. They are designed to be highly efficient and reliable. Features include open lamp, short circuit and over load protections.

## Model List

| Output Current | Input Voltage Range | Output Voltage Range | Max. Output Power | Efficiency (1) | Power Factor (1) | Model Number |
|---|---|---|---|---|---|---|
| 350 mA | 90 ~ 305 Vac | 17~ 34 Vdc | 12 W | 82 % | 0.95 | LUC-012S035DSM(SSM) |
| 500 mA | 90 ~ 305 Vac | 12~ 24 Vdc | 12 W | 81 % | 0.95 | LUC-012S050DSM(SSM) |
| 700 mA | 90 ~ 305 Vac | 9 ~ 17 Vdc | 12 W | 81 % | 0.95 | LUC-012S070DSM(SSM) |

**Notes:** (1) Measured in 220 Vac input at full load.

## Input Specifications

| Parameter | Min. | Typ. | Max. | Notes |
|---|---|---|---|---|
| Input Voltage | 90Vac | - | 305Vac | |
| Input Frequency | 47 Hz | - | 63 Hz | |
| Leakage Current | - | - | 0.5 mA | At 277Vac, 60Hz input |
| Input AC Current | - | - | 0.18 A | Measured at full load and 120 Vac input |
| Inrush Current | - | - | 20 A | At 277Vac input Ta=25℃ cold start, duration = 150μs |

## Output Specifications

| Parameter | Min. | Typ. | Max. | Notes |
|---|---|---|---|---|
| Output Current Tolerance | -5% | - | 5% | |
| Output Current Ripple | | | 30%Io | Full load condition |
| Startup Overshoot Current | - | - | 10% | Full load condition |
| Line Regulation | - | - | 1% | / |
| Load Regulation | - | - | 3% | / |

## Output Specifications (Continued)

| Parameter | Min. | Typ. | Max. | Notes |
|---|---|---|---|---|
| Turn-on Delay Time | - | 0.8 s | 1 s | Measured at 120Vac input |
| Dimming Range (Io) | 10% | | 100% | |

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

## Protection Functions

| Parameter | Min. | Typ. | Max. | Notes |
|---|---|---|---|---|
| No Load Voltage | Vomax | 110% Vomax | 120% Vomax | Vomax is the maximum operation output voltage |
| Short Circuit Protection | Hiccup. The power supply shall be self-recovery when the fault condition is removed. | | | |

## General Specifications

| Parameter | Min. | Typ. | Max. | Notes |
|---|---|---|---|---|
| Efficiency<br>$I_O$ = 350 mA<br>$I_O$ = 500 mA<br>$I_O$ = 700 mA | <br>81%<br>80%<br>80% | <br>82%<br>81%<br>81% | <br>-<br>- | Measured at full load and 277 Vac input |
| Efficiency<br>$I_O$ = 350 mA<br>$I_O$ = 500 mA<br>$I_O$ = 700 mA | <br>79%<br>78%<br>78% | <br>80%<br>79%<br>79% | <br>-<br>-<br>- | Measured at full load and 120 Vac input |
| Power Factor<br>$I_O$ = 350 mA<br>$I_O$ = 500 mA<br>$I_O$ = 700 mA | <br>0.88<br>0.88<br>0.88 | <br>0.90<br>0.90<br>0.90 | <br>-<br>-<br>- | Measured at maximum output voltage and 277Vac input |
| Power Factor<br>$I_O$ = 350 mA<br>$I_O$ = 500 mA<br>$I_O$ = 700 mA | <br>0.96<br>0.96<br>0.96 | <br>0.98<br>0.98<br>0.98 | <br>-<br>-<br>- | Measured at maximum output voltage and 120 Vac input |
| No Load<br>Power Dissipation | - | - | 3W | |
| MTBF | 200,000 Hours | | | Measured at 120Vac input, 80%load and 25℃ ambient temperature (MIL-HDBK-217F) |
| Life Time | 50,000 Hours | | | Measured at 120Vac input, 80%load; Case temperature=60℃ @ Tc point. See the life vs. Tc curve for the details |
| Dimensions<br>Inches (L × W × H)<br>Millimeters (L × W × H) | 3.29 ×1.64 × 0.98<br>83.5 × 41.5 × 25 | | | |
| Net Weight | | 170 g | | |

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

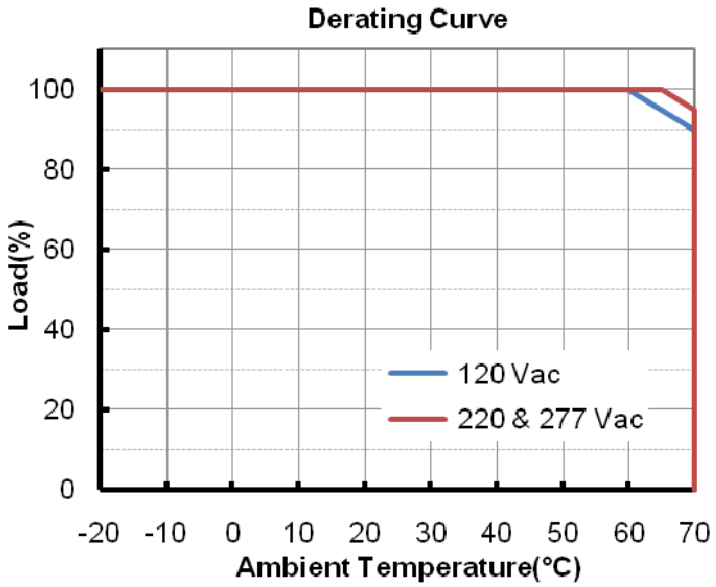
## Environmental Specifications

| Parameter | Min. | Typ. | Max. | Notes |
|---|---|---|---|---|
| Operating Temperature | -20 ℃ | - | +70 ℃ | Humidity: 10% RH to 90% RH<br>See Derating Curve for more details |
| Storage Temperature | -30 ℃ | - | +85 ℃ | Humidity: 5% RH to 90% RH |

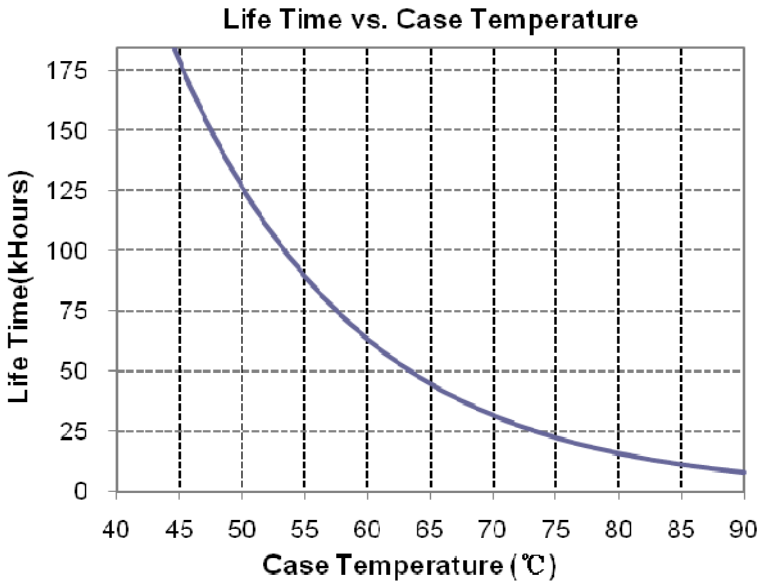
## Safety & EMC Compliance

| Safety Category | Standard |
|---|---|
| CE | EN 61347-1, EN61347-2-13 |
| UL/cUL | UL8750, UL1310, UL1012, CAN/CSA-C22.2 No. 223-M91, CSA C22.2 No. 107.1-01 |
| **EMI Standards** | **Notes** |
| EN 55015/CISPR15 | Conducted Emission Test & Radiated Emission |
| EN 61000-3-2 | Harmonic Current Emissions Class C |
| EN 61000-3-3 | Voltage Fluctuations & Flicker |
| FCC Part 15 | Class B |
| **EMS Standards** | **Notes** |
| EN 61000-4-2 | Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge Level 3, Criteria A |
| EN 61000-4-3 | Radio-Frequency Electromagnetic Field Susceptibility Test-RS Level 3, Criteria A |
| EN 61000-4-4 | Electrical Fast Transient / Burst-EFT Level 3, Criteria A |
| EN 61000-4-5 | Surge Immunity Test: AC Power Line: Line to Line 1 kV |
| EN 61000-4-6 | Conducted Radio Frequency Disturbances Test-CS Level 3, Criteria A |
| EN 61000-4-8 | Power Frequency Magnetic Field Test 3A/m , Criteria A |
| EN 61000-4-11 | Voltage Dips Criteria B |
| EN 61547 | Electromagnetic Immunity Requirements Applies to Lighting Equipment |

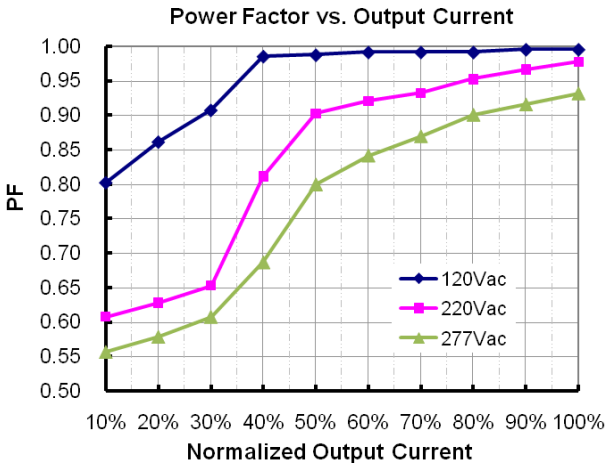
## Derating Curve

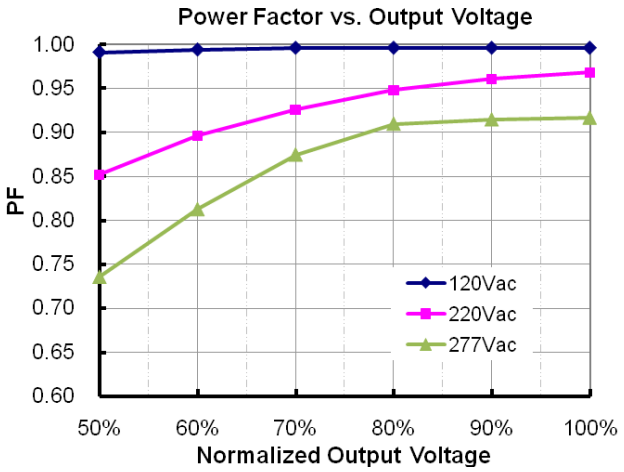



## Life vs. Case Temperature Curve

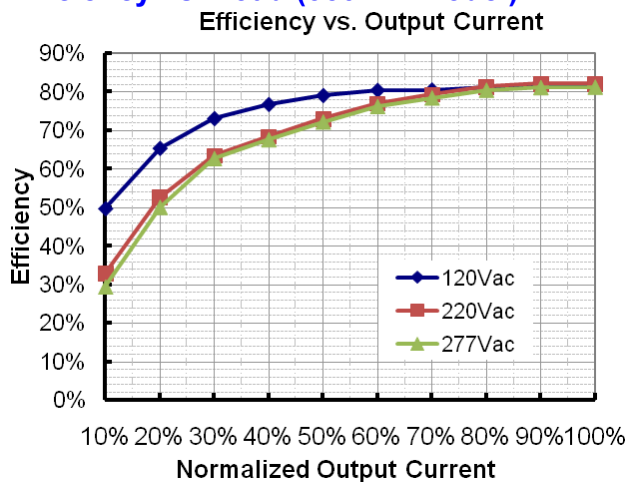


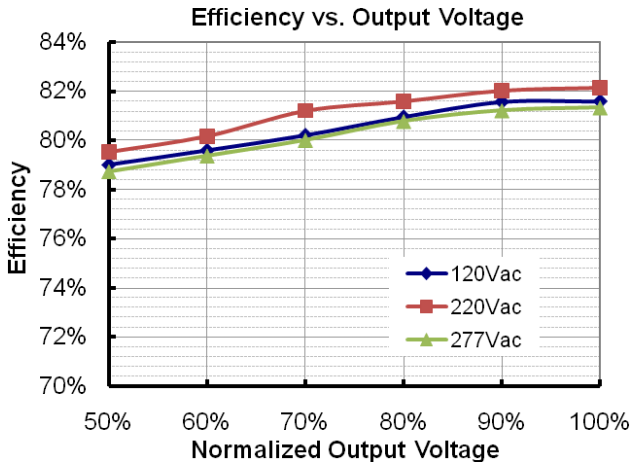
## Power Factor Characteristic



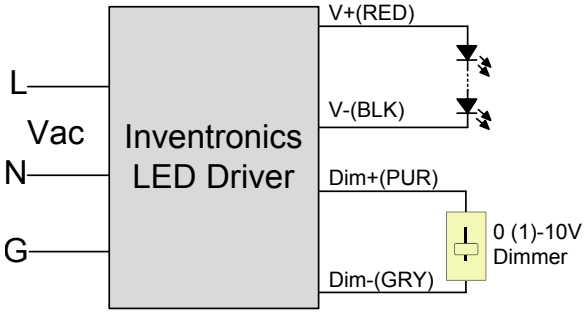

## Efficiency vs. Load (350mA model)

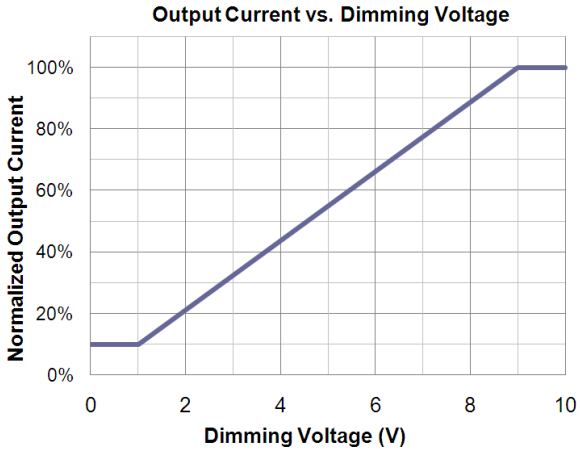



## Dimming Control (On secondary side)

| Parameter | Min. | Typ. | Max. | Notes |
|---|---|---|---|---|
| Absolute Maximum Voltage on the 0~10V Wire | -2 V | - | 15 V | |
| 0~10V Wire Current Sourcing Capability | 100 uA | 150uA | 200 uA | |

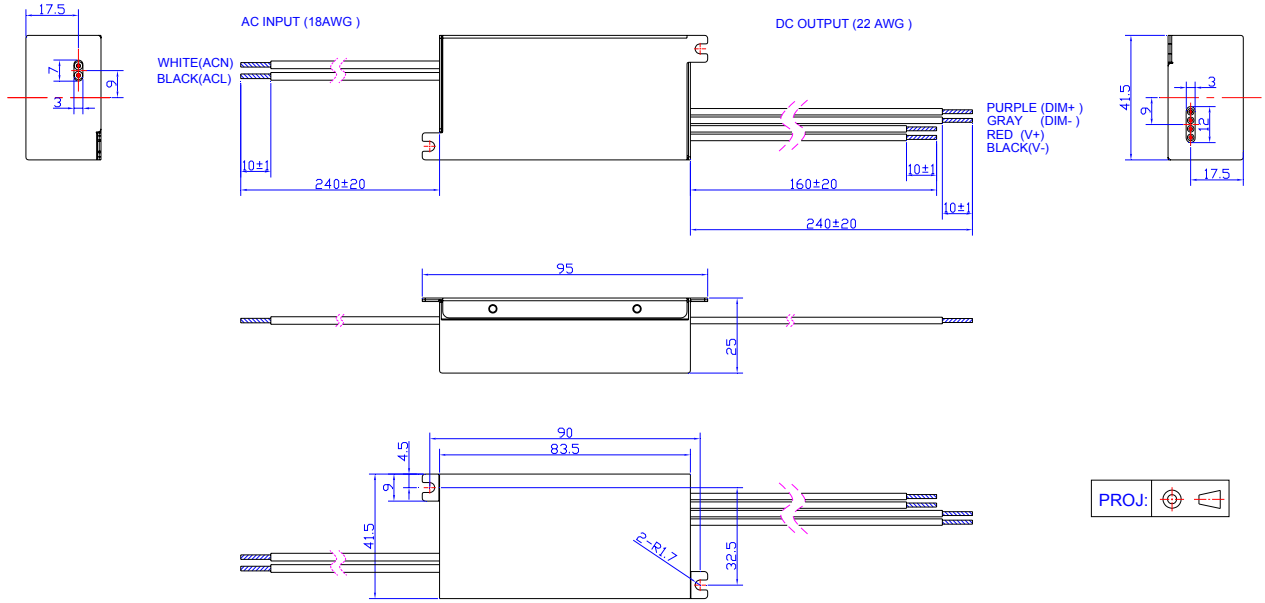


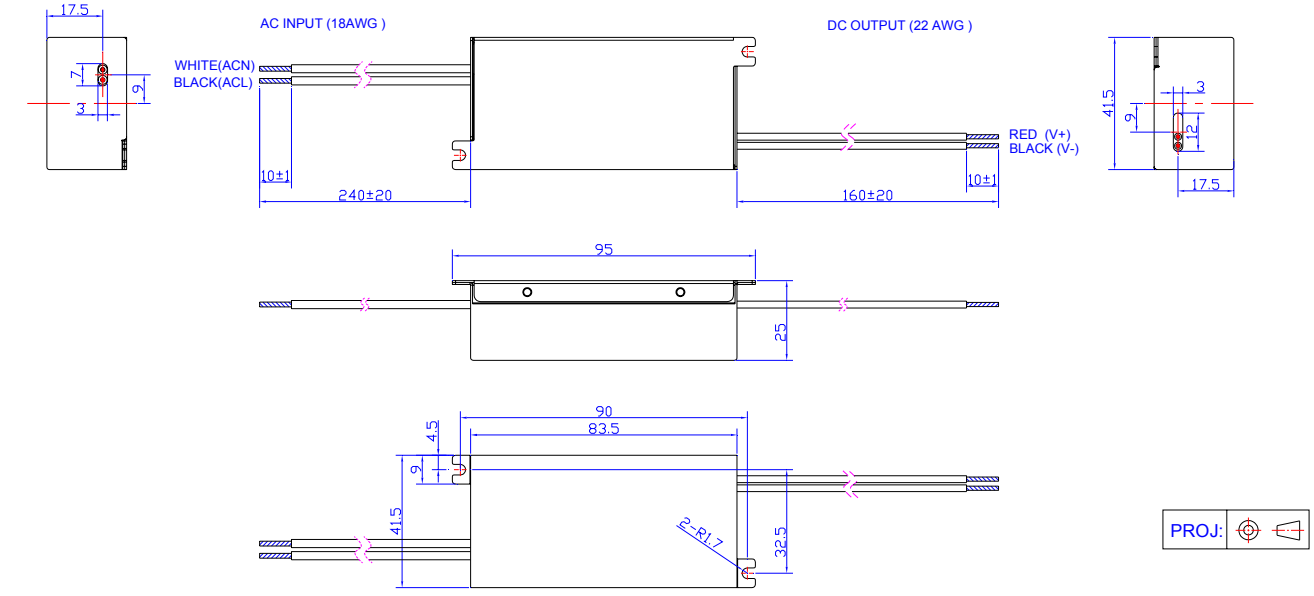

*Specifications are subject to change without notice.*

## Mechanical Outline

LUC-012SxxxDSM




LUC-012xxxSSM




## 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 |
| 2011-9-29 | A | Release | / | / |
| 2011-10-11 | B | Derating Curve, Life time, PF, EFF Curve | / | Update |
| 2011-12-27 | C | Derating Curve | / | Update |
| 2012-6-14 | D | Startup Overshoot Current | 20% | 10% |