

Features

- 0 -10V Dimmable (Compatible with Passive Dimmers)
- Constant Current Output
- High Efficiency
- Active Power Factor Correction
- All-Around Protection: OLP, SCP and Open Lamp Protection
- SELV and Class 2



Description

The LUC-012SxxxDSP(SSP) series operates 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.

Models

| Output Current | Input Voltage Range(1) | Output Voltage Range | Max. Output Power | Typical Efficiency (2) | Typical Power Factor (2) | Model Number |
|----------------|------------------------|----------------------|-------------------|------------------------|--------------------------|---------------------|
| 350 mA | 90 ~ 305 Vac | 17~ 34 Vdc | 12 W | 81% | 0.94 | LUC-012S035DSP(SSP) |
| 500 mA | 90 ~ 305 Vac | 12~ 24 Vdc | 12 W | 80% | 0.94 | LUC-012S050DSP(SSP) |
| 700 mA | 90 ~ 305 Vac | 9 ~ 17 Vdc | 12 W | 80% | 0.94 | LUC-012S070DSP(SSP) |

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

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

Input Specifications

| Parameter | Min. | Typ. | Max. | Notes |
|----------------------------------|--------|------|------------------------|--|
| Input Voltage | 90 Vac | - | 305 Vac | |
| Input Frequency | 47 Hz | - | 63 Hz | |
| Leakage Current | - | - | 0.75 MIU | UL8750; 277Vac/ 60Hz |
| | - | - | 0.70 mA | IEC60598-1; 240Vac/ 60Hz |
| Input AC Current | - | - | 0.18 A | Measured at 100% load and 120 Vac input |
| Inrush Current(I ² t) | - | - | 0.015 A ² s | At 220Vac input, 25°C cold start, duration= 136 μs, 10%lpk-10%lpk. |
| Power Factor | 0.90 | - | - | At 100-277Vac, 50-60Hz, 100%load |
| THD | - | - | 20% | At 100-277Vac, 50-60Hz, 75%-100%load (9~12W) |

Output Specifications

| Parameter | Min. | Typ. | Max. | Notes |
|--|-------------|-------------|-------------------|--|
| Output Current Tolerance | -5%Io | - | 5%Io | |
| Output Current Ripple | - | - | 30%Io | At 100% load condition. |
| No Load Output Voltage: Io = 350 mA Io = 500 mA Io = 700 mA | - - - | - - - | 38V 28V 21V | |
| Startup Overshoot Current | - | - | 10%Io | At 100% load condition. |
| Line Regulation | - | - | ±1% | Measured at 100% load condition. |
| Load Regulation | - | - | ±3% | Measured at 100% load condition. |
| Turn-on Delay Time | - | 0.40 s | 0.75 s | Measured at 120Vac input, 75%-100%load |
| | - | 0.30 s | 0.50 s | Measured at 220Vac input, 75%-100%load |
| Temperature Coefficient of Iomax | - | 0.03%/°C | - | Case temperature = 0°C ~Tc max |

Note: All specifications are tested by YW-PWH01 unless otherwise stated.

General Specifications

| Parameter | Min. | Typ. | Max. | Notes |
|---|---|-------------------|-------------|---|
| Efficiency at 120 Vac input: Io = 350 mA Io = 500 mA Io = 700 mA | 79% 78% 78% | 80% 79% 79% | - - - | Measured at 100% load and steady-state temperature in 25°C ambient. |
| Efficiency at 220 Vac input: Io = 350 mA Io = 500 mA Io = 700 mA | 80% 79% 79% | 81% 80% 80% | - - - | Measured at 100% load and steady-state temperature in 25°C ambient. |
| Efficiency at 277 Vac input: Io = 350 mA Io = 500 mA Io = 700 mA | 79% 78% 78% | 80% 79% 79% | - - - | Measured at 100% load and steady-state temperature in 25°C ambient. |
| No Load Power Dissipation | - | - | 3 W | |
| MTBF | - | 459,300 Hours | - | Measured at 120Vac input, 80%load and 25°C ambient temperature (MIL-HDBK-217F) |
| Lifetime | - | 90,000 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 | -20 °C | - | +85 °C | |
| Operating Case Temperature for Warranty Tc_w | -20 °C | - | +70 °C | Humidity: 10% RH to 90% RH, no condensation. |
| Storage Temperature | -30 °C | - | +85 °C | Humidity: 5% RH to 95% RH, no condensation. |
| Dimensions Inches (L × W × H) Millimeters (L × W × H) | 4.12 × 1.65 × 1.20 104.5 × 42 × 30.5 | | | |
| Net Weight | - | 180 g | - | |

Note: All specifications are tested by YW-PWH01 unless otherwise stated.

Dimming Specifications

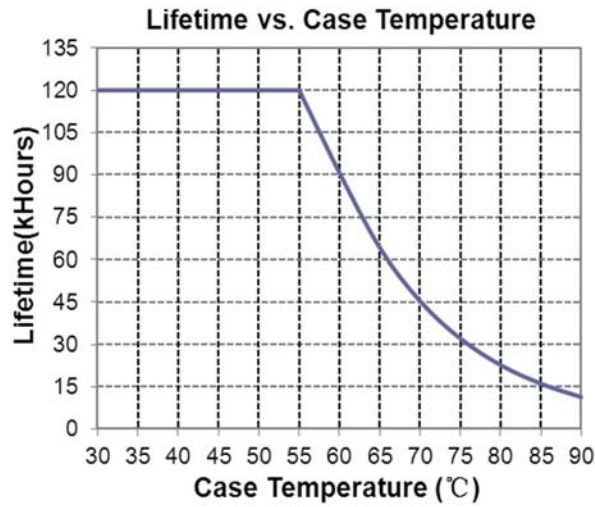
| Parameter | Min. | Typ. | Max. | Notes |
|--|----------------------|-------------|-----------------------|-------|
| Absolute Maximum Voltage on the 0~10V Wire | -2 V | - | 15 V | |
| 0~10V Wire Current Sourcing Capability | 0 μ A | 200 μ A | 250 μ A | |
| Dimming Output Range | 10%I _{omax} | - | 100%I _{omax} | |
| Recommended Dimming Input Range | 0 V | - | 10 V | |

Safety & EMC Compliance

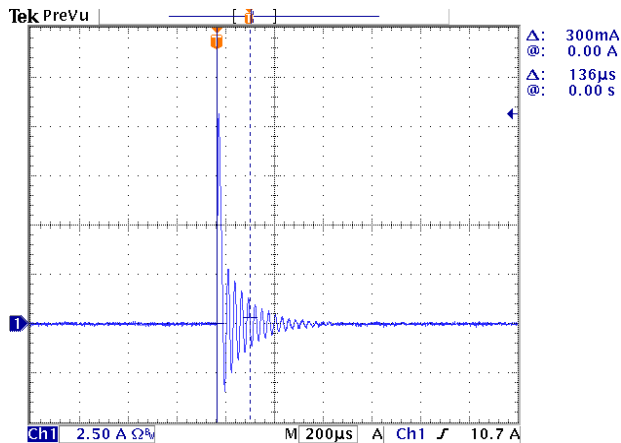
| Safety Category | Standard |
|----------------------------|---|
| UL/CUL | UL8750, UL 1310, CAN/CSA-C22.2 No. 250.13, CAN/CSA-C22.2 No. 223-M91 |
| TUV & CE | EN 61347-1, EN 61347-2-13 |
| CB | IEC 61347-1, IEC 61347-2-13 |
| KS | KS C 7655 |
| EMI Standards | Notes |
| EN 55015 ⁽¹⁾ | Conducted emission Test & Radiated emission Test |
| EN 61000-3-2 | 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 1 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 |

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.

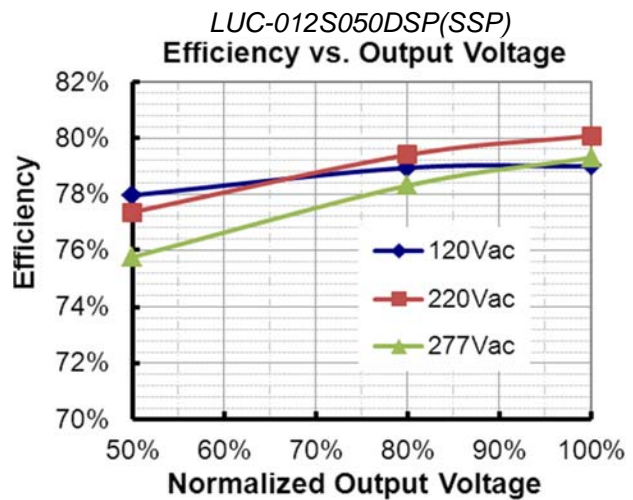
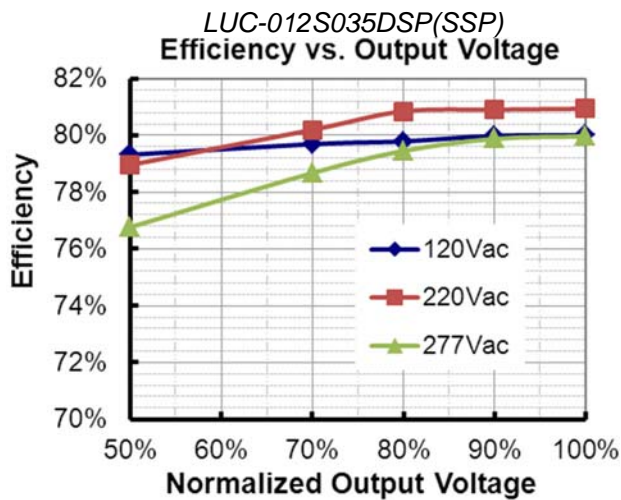
Lifetime vs. Case Temperature

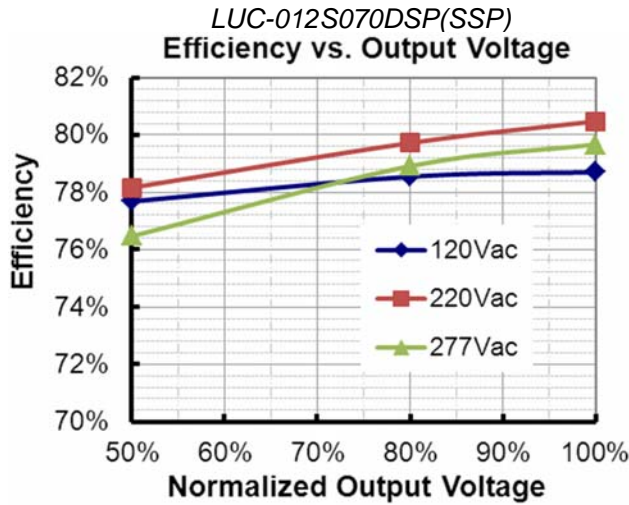


Inrush Current Waveform

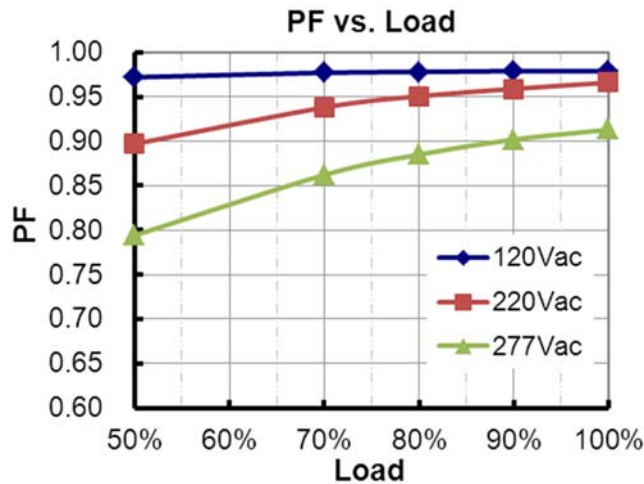


Efficiency vs. Load

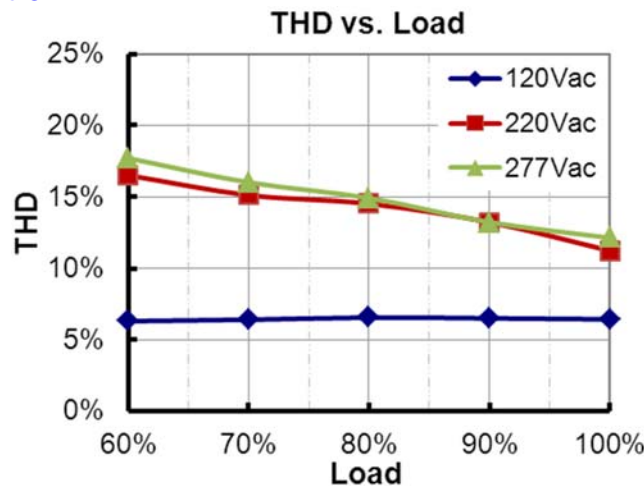




Power Factor



Total Harmonic Distortion



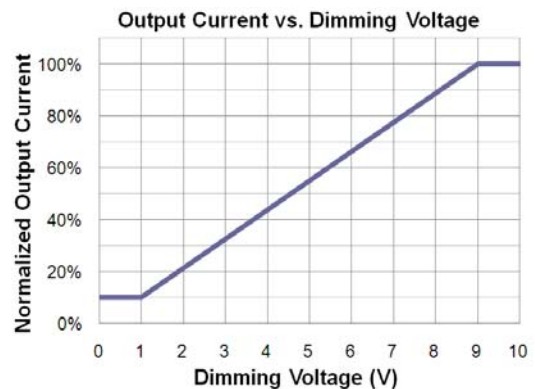
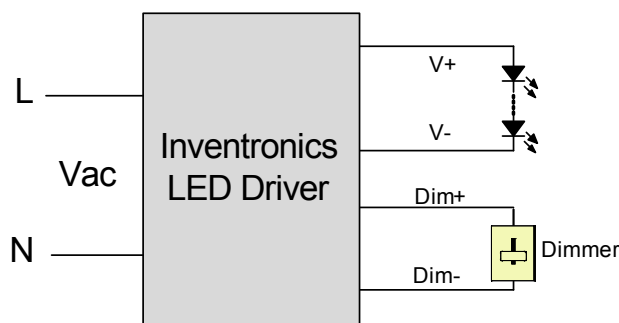
Protection Functions

| Parameter | Notes |
|--------------------------|---|
| 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. |

Dimming

● 0-10V Dimming

The dimmer control may be operated from either a dimmer or from an input signal of 0 - 10 Vdc. The recommended implementations of the dimming control are provided below.

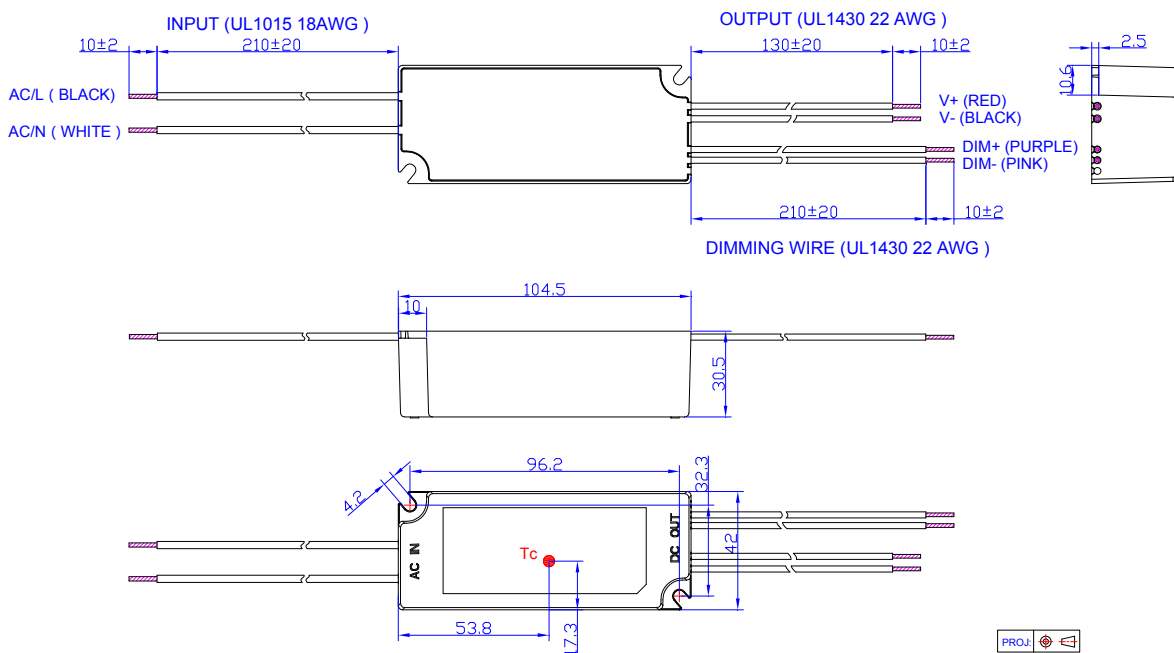


Notes:

1. Do NOT connect Dim- to the output V- or V+, otherwise the driver will not work properly.
2. The dimmer can also be replaced by an active 0-10V voltage source signal or passive components like zener.

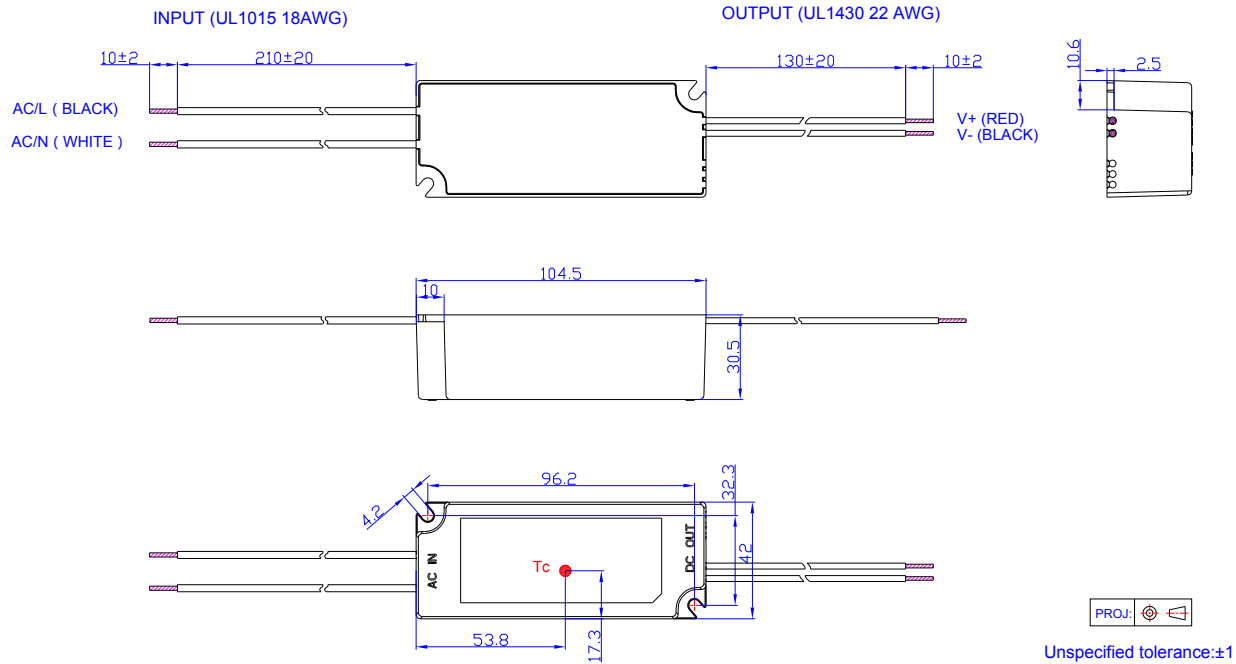
Mechanical Outline

LUC-012SxxxDSP



PROJ. Unspecified tolerance:±1

LUC-012SxxxSSP



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 |
| 2011-09-29 | A | Datasheets Release | / | / |
| 2011-10-11 | B | Derating Curve, Life time PF, EFF Curve | / | Update |
| 2011-12-27 | C | Derating Curve | / | Update |
| 2012-06-14 | D | Startup Overshoot Current | 20% | 10% |
| 2012-7-17 | E | Max Case Temperature | / | Updated |
| 2012-8-29 | F | Inrush Current(I ² t) | / | Added |
| | | Min PF | / | Added |
| | | Max THD | / | Added |
| | | Temperature coefficient | / | Added |
| | | Typical life time and MTBF | / | Added |
| 2012-10-31 | G | Mechanical Outline-all wires 20mm reduced | / | / |
| 2013-02-20 | H | Efficiency @220Vac | / | 1% lower |
| | | Efficiency @277Vac | / | 2% lower |
| | | Efficiency & PF Curve of other models | / | Added |
| | | THD Curve of all the models | / | Added |
| 2014-02-26 | I | PF | 0.9 Min At 100-277Vac, 90%-100%load | 0.9 Min At 100-277Vac, 100%load |
| 2015-07-13 | J | CCC certificate | / | Added |
| | | Double Insulation | / | Added |
| | | CQC certificate | / | Deleted |
| | | Leakage Current | / | Updated |
| | | Inrush Current(I ² t) | 0.001 A ² s | 0.015 A ² s |
| | | Turn-on Delay Time at 220 Vac | / | Added |
| | | Lifetime | 63,500 Hours | 90,000 Hours |
| | | Warranty Tc | / | Added |
| | | Environmental Specifications | / | Deleted |
| | | Net Weight | 140g | 170g |
| | | 0~10V Wire Current Sourcing Capability Max. | 200 uA | 250 uA |
| | | Lifetime vs. Case Temperature Curve | / | Updated |
| | | Inrush Current Waveform | / | Added |
| THD Curve | / | Updated | | |

Revision History (Continued)

| Change Date | Rev. | Description of Change | | |
|-------------|------|--|-------------------------|-------------|
| | | Item | From | To |
| 2016-12-05 | K | Turn-on Delay Time at 120Vac | Max.=1.0 s | Max.=0.75 s |
| | | Net Weight | 170 g | 180 g |
| | | KS certificate | / | Added |
| | | Mechanical Outline- LUC-012SxxxDSP/ LUC-012SxxxSSP | / | Corrected |
| 2019-08-20 | L | TUV Logo | / | Updated |
| | | PSE Logo | / | Updated |
| | | CCC Logo | / | Deleted |
| | | Input Specifications(PF/THD) | 50-60Hz | Added |
| | | Safety &EMC Compliance | UL/CUL | Updated |
| | | Safety &EMC Compliance | TUV | Added |
| | | Safety &EMC Compliance | CB | Added |
| | | Safety &EMC Compliance | PSE | Added |
| | | Safety &EMC Compliance | KS | Updated |
| | | Safety &EMC Compliance | FCC | Updated |
| | | Safety &EMC Compliance | EN 55015 ⁽¹⁾ | Updated |
| | | Safety &EMC Compliance | EN 61000-3-2 | Updated |
| | | Safety &EMC Compliance | EN 61000-4-2 | Updated |
| | | Safety &EMC Compliance | EN 61000-4-3 | Updated |
| | | Safety &EMC Compliance | EN 61000-4-5 | Updated |
| | | Safety &EMC Compliance | EN 61000-4-6 | Updated |
| | | Safety &EMC Compliance | EN 61000-4-8 | Updated |
| | | Safety &EMC Compliance | EN 61000-4-11 | Updated |
| | | RoHS Compliance | / | Updated |
| 2022-03-10 | M | Product Photograph | / | Updated |
| | | PSE | / | Deleted |
| | | General Specifications | Humidity | Updated |
| | | Safety & EMC Compliance | PSE | Deleted |
| | | Dimming | / | Updated |
| | | Mechanical Outline | / | Updated |