

## Features

- High Efficiency (Up to 90%)
- Active Power Factor Correction (Typical 0.95)
- Cascade Connection
- Adjustable Constant Output Current with Dip Switch
- 0-10V Dimming Control
- All-Around Protection: OVP, SCP, OTP and Open Lamp Protection
- Class 2 & SELV Output
- Class II, Double Insulation
- Reliable Device for Strain Relief



## Description

The *LUC-042SxxxDSW(SSW)* 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, open lamp 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 100~300 Vdc	60~120 Vdc	42 W	90%	0.96	0.95	LUC-042S035DSW(SSW) <sup>(3)</sup>
530 mA	90 ~ 305 Vac 100~300 Vdc	40~79 Vdc	42 W	90%	0.96	0.95	LUC-042S053DSW(SSW) <sup>(3)(5)</sup>
700 mA	90 ~ 305 Vac 100~300 Vdc	28~56 Vdc	39 W	90%	0.96	0.95	LUC-042S070DSW(SSW) <sup>(4)(5)</sup>
1050 mA	90 ~ 305 Vac 100~300 Vdc	20~38 Vdc	40 W	89%	0.96	0.95	LUC-042S105DSW(SSW) <sup>(4)(5)</sup>
1400 mA	90 ~ 305 Vac 100~300 Vdc	15~30 Vdc	42 W	88%	0.96	0.95	LUC-042S140DSW(SSW) <sup>(4)(5)</sup>
1750 mA	90 ~ 305 Vac 100~300 Vdc	12~24 Vdc	42 W	87%	0.96	0.95	LUC-042S175DSW(SSW) <sup>(4)(5)</sup>
2100 mA	90 ~ 305 Vac 100~300 Vdc	10~20 Vdc	42 W	87%	0.96	0.95	LUC-042S210DSW(SSW) <sup>(4)(5)</sup>

**Notes:** (1) UL, FCC certified input voltage range: 100-277Vac or 100-300Vdc; other certified input voltage range except UL, FCC: 100-240Vac or 100-250Vdc.

(2) Measured at full load and 220 Vac input.

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

(4) Class 2 output (USR & CNR) for dry and damp location.

(5) SELV output.

## Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 Vac	-	305 Vac	100~300Vdc
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	-	-	0.6 A	Measured at full load and 100 Vac input.
	-	-	0.3 A	Measured at full load and 220 Vac input.
Inrush Current	-	-	70 A	At 220Vac input 25°C cold start. duration=200 $\mu$ s, 10%Ipk-10%Ipk.
Inrush Current(I <sup>2</sup> t)	-	-	0.32 A <sup>2</sup> s	
Power Factor	0.90	-	-	At 100Vac-277Vac, 75%load-100%load (31.5~42W)
THD	-	-	20%	

## Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%I <sub>O</sub>	-	5%I <sub>O</sub>	
Output Voltage Ripple I <sub>O</sub> = 350 mA I <sub>O</sub> = 530 mA I <sub>O</sub> = 700 mA I <sub>O</sub> = 1050 mA I <sub>O</sub> = 1400 mA I <sub>O</sub> = 1750 mA I <sub>O</sub> = 2100 mA	- - - - - - -	- - - - - - -	6 V 4 V 4 V 4 V 4 V 3 V 3 V	At full load condition
Output Current Overshoot/ Undershoot	-	-	10%I <sub>O</sub>	At full load condition
No Load Output Voltage I <sub>O</sub> = 350 mA I <sub>O</sub> = 530 mA I <sub>O</sub> = 700 mA I <sub>O</sub> = 1050 mA I <sub>O</sub> = 1400 mA I <sub>O</sub> = 1750 mA I <sub>O</sub> = 2100 mA	- - - - - - -	- - - - - - -	132 V 90 V 59.6 V 42 V 34 V 27 V 24 V	
Line Regulation	-	-	±1%	
Load Regulation	-	-	±1%	
Turn-on Delay Time	-	0.4 s	0.75 s	Measured at 120Vac input, 75%load-100%load
	-	0.3 s	0.5 s	Measured at 220Vac input, 75%load-100%load
Temperature Coefficient	-	0.03%/°C	-	Case temperature = 0°C~T <sub>c</sub> max
12V Output Voltage	10.8 V	12 V	13.2 V	
12V Output Source Current	0 mA	-	20 mA	Return terminal is "Dim-"

**Note:** All specifications are tested by YW-PWH01 and typical at 25°C unless otherwise stated.

## General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 120 Vac input: $I_o = 350 \text{ mA}$ $I_o = 530 \text{ mA}$ $I_o = 700 \text{ mA}$ $I_o = 1050 \text{ mA}$ $I_o = 1400 \text{ mA}$ $I_o = 1750 \text{ mA}$ $I_o = 2100 \text{ mA}$	87% 87% 87% 86% 85% 84% 84%	89% 89% 89% 88% 87% 86% 86%	- - - - - - -	Measured at full load and 120 Vac input.
Efficiency at 220 Vac input: $I_o = 350 \text{ mA}$ $I_o = 530 \text{ mA}$ $I_o = 700 \text{ mA}$ $I_o = 1050 \text{ mA}$ $I_o = 1400 \text{ mA}$ $I_o = 1750 \text{ mA}$ $I_o = 2100 \text{ mA}$	88% 88% 88% 87% 86% 85% 85%	90% 90% 90% 89% 88% 87% 87%	- - - - - - -	Measured at full load and 220 Vac input.
Efficiency at 277 Vac input: $I_o = 350 \text{ mA}$ $I_o = 530 \text{ mA}$ $I_o = 700 \text{ mA}$ $I_o = 1050 \text{ mA}$ $I_o = 1400 \text{ mA}$ $I_o = 1750 \text{ mA}$ $I_o = 2100 \text{ mA}$	88% 88% 88% 87% 86% 85% 85%	90% 90% 90% 89% 88% 87% 87%	- - - - - - -	Measured at full load and 277 Vac input.
No Load Power Dissipation	-	-	3 W	
MTBF	-	235,000 Hours	-	Measured at 120Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	80,500 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	-30 °C	-	+80 °C	
Operating Case Temperature for Warranty Tc_w	-30 °C	-	+65 °C	Humidity: 10% RH to 90% RH. No condensation
Storage Temperature	-40 °C	-	+85 °C	Humidity: 5% RH to 90% RH. No condensation
Dimensions Inches (L × W × H) Millimeters (L × W × H)	4.73 × 3.15 × 1.26 120 × 80 × 32			
Net Weight	-	220 g	-	

**Note:** All specifications are tested by YW-PWH01 and typical at 25°C unless otherwise stated.

## Dimming Specifications

Parameter	Min.	Typ.	Max.	Notes
Absolute Maximum Voltage on the 0~10V Input Pin	-20 V	-	20 V	
Source Current on 0~10V Input Pin	0 $\mu$ A	200 $\mu$ A	250 $\mu$ A	

## Dimming Specifications (Continued)

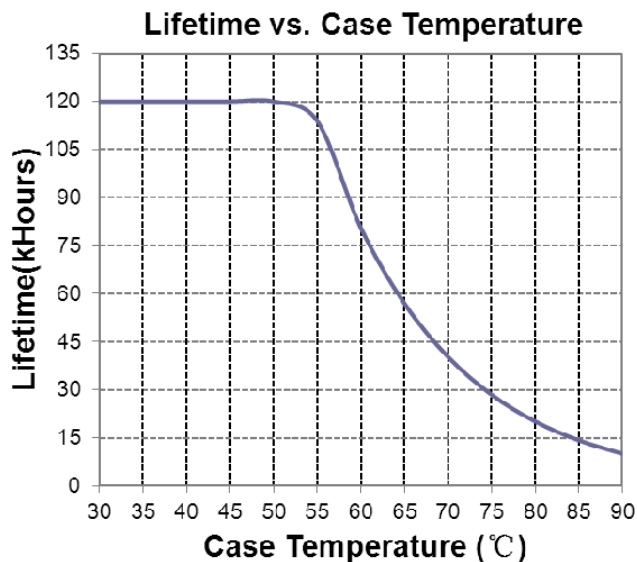
Parameter	Min.	Typ.	Max.	Notes
Dimming Output Range	10%I <sub>omax</sub>		100%I <sub>omax</sub>	
Recommended Dimming Input Range	0 V	-	10 V	

## Safety & EMC Compliance

Safety Category	Standard
UL/CUL	UL 8750, UL1310, CAN/CSA-C22.2 No. 250.13, CAN/CSA-C22.2 No. 223-M91
CE	EN 61347-1, EN61347-2-13
KS	KS C 7655
EMI Standards	Notes
EN 55015 <sup>(1)</sup>	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic Current Emissions
EN 61000-3-3	Voltage Fluctuations & Flicker
FCC Part 15 <sup>(1)</sup>	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: level 3, criteria A
EN 61000-4-5	Surge Immunity Test: AC Power Line: line to line 2 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

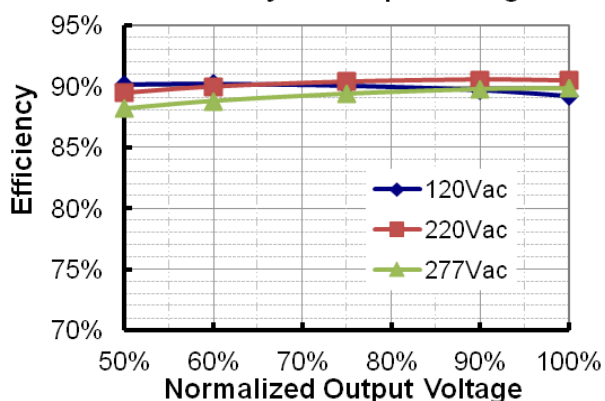
**Note:** (1) This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

## Lifetime vs. Case Temperature Curve

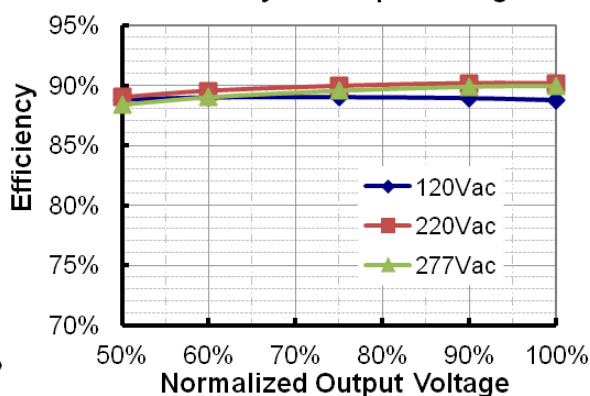


## Efficiency vs. Load

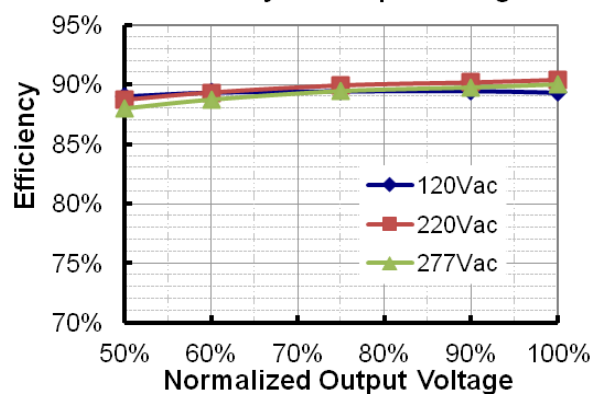
*LUC-042S035DSW(SSW)*  
Efficiency vs. Output Voltage



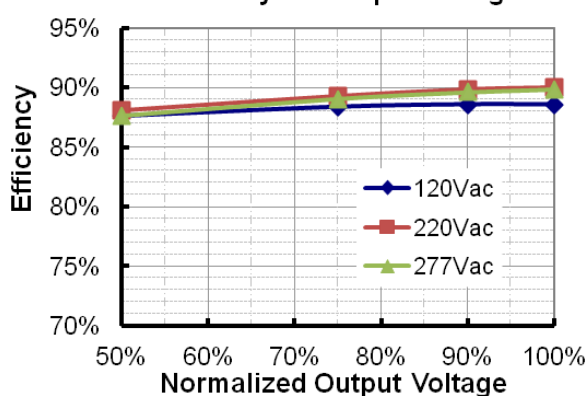
*LUC-042S053DSW(SSW)*  
Efficiency vs. Output Voltage



*LUC-042S070DSW(SSW)*  
Efficiency vs. Output Voltage

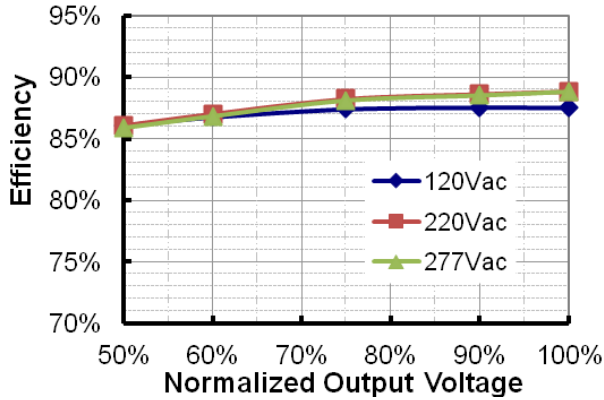


*LUC-042S105DSW(SSW)*  
Efficiency vs. Output Voltage



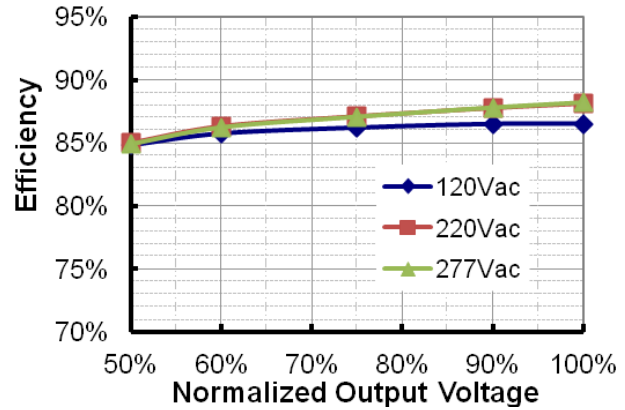
LUC-042S140DSW(SSW)

Efficiency vs. Output Voltage



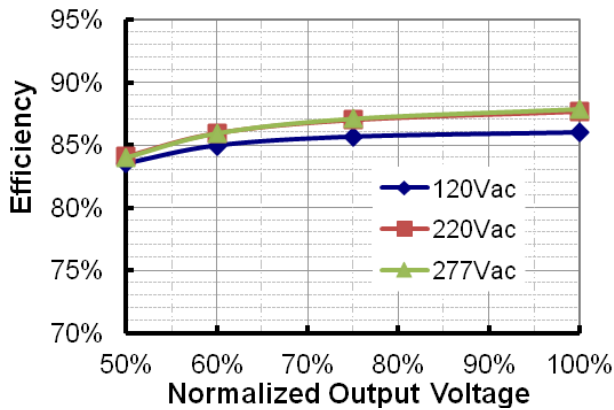
LUC-042S175DSW(SSW)

Efficiency vs. Output Voltage



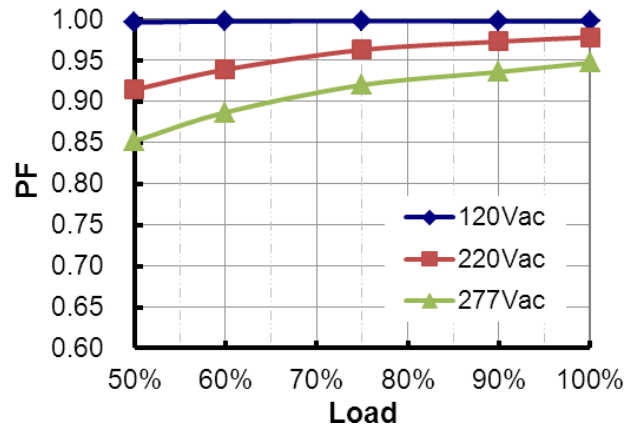
LUC-042S210DSW(SSW)

Efficiency vs. Output Voltage

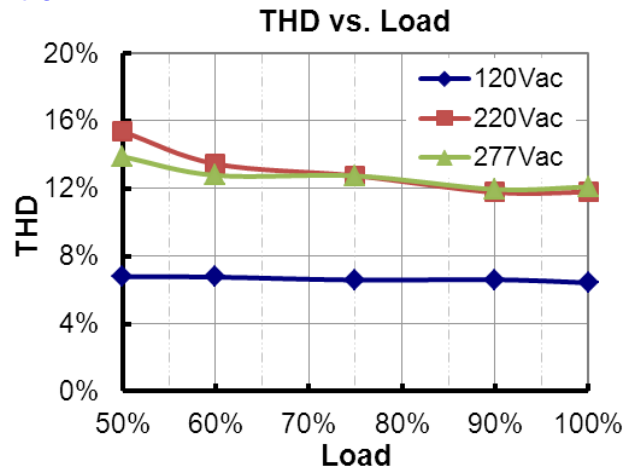


## Power Factor Characteristics

PF vs. Load



## Total Harmonic Distortion



## Protection Functions

Parameter	Min.	Typ.	Max.	Notes
Short Circuit Protection	Hiccup mode. The power supply shall be self-recovery when the fault condition is removed.			
Over Temperature Protection	Decrease output current mode. When the case temperature reaches $100 \pm 10^{\circ}\text{C}$ , the output current decreases to 50%Io until the case temperature reaches $75^{\circ}\text{C}$ .			

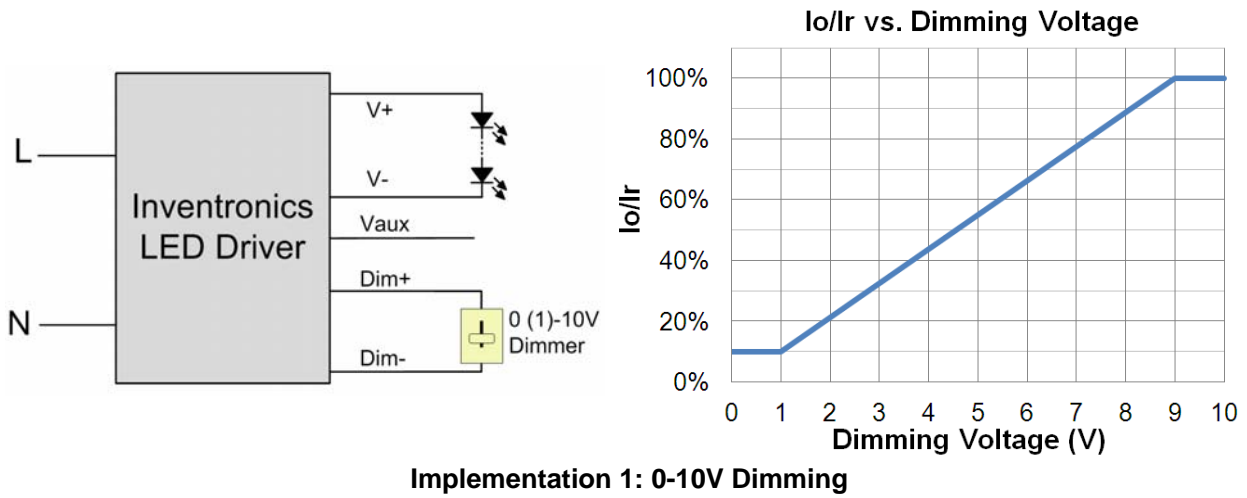
## Adjustable Constant Output Current with Dip Switch (LUC-042SxxxDSW/SSW)

Dip Switch			Output Current (Iset)
1	2	3	/
OFF	OFF	OFF	100%Iomax
ON	OFF	OFF	95%Iomax
OFF	ON	OFF	90%Iomax
ON	ON	OFF	85%Iomax
OFF	OFF	ON	80%Iomax
ON	OFF	ON	75%Iomax
OFF	ON	ON	70%Iomax
ON	ON	ON	65%Iomax

## Dimming

### ● 0-10V Dimming

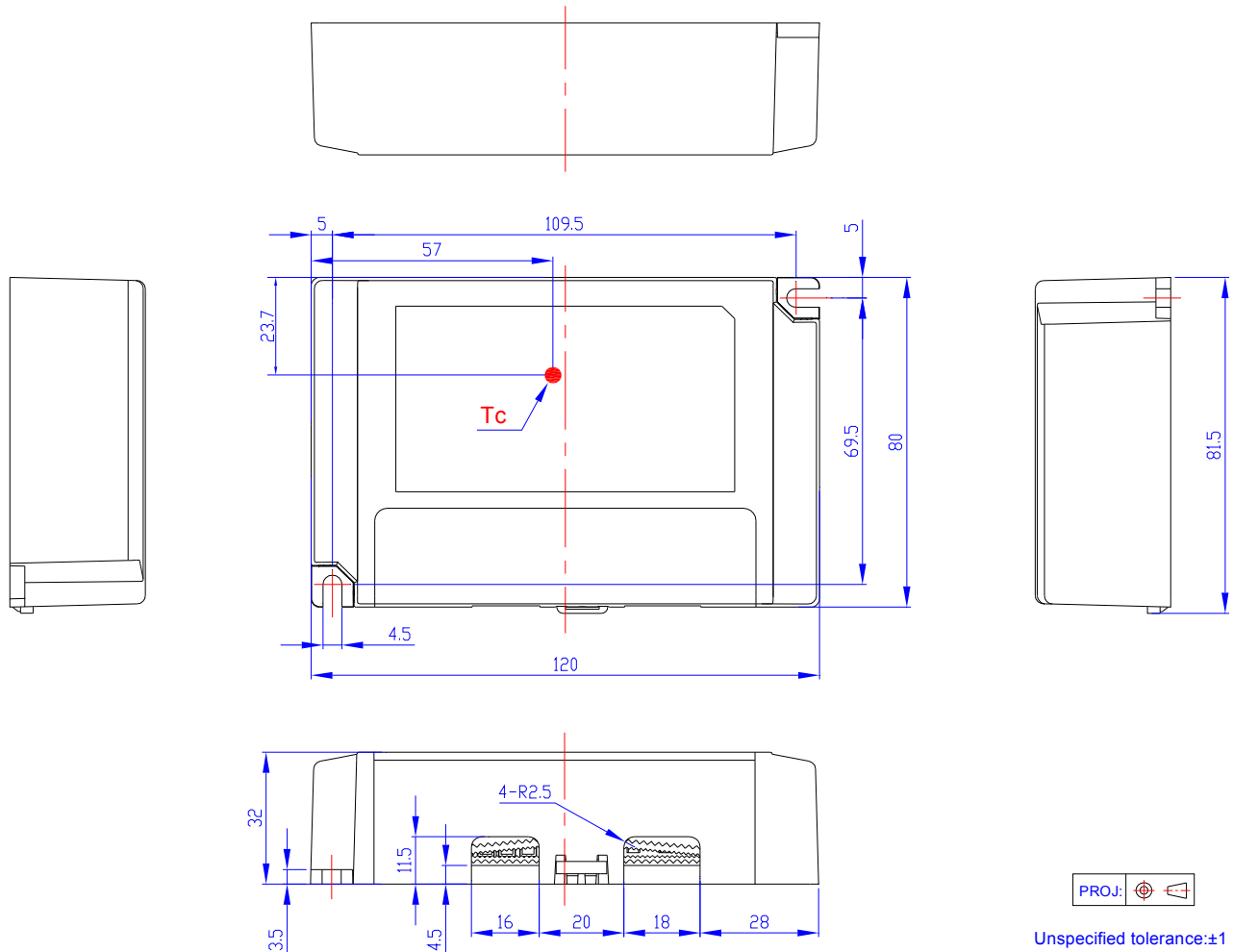
The recommended implementation is provided below.



## Notes:

1.  $I_o$ : output current;  $I_r$ : rated output current.
2. Do not connect the Dim- to the V- or Vaux; otherwise, the LED driver cannot work normally.
3. If 0-10V dimming is not used, Dim + can be either open or connected to Vaux.

## Mechanical Outline



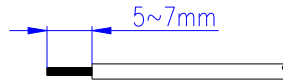
Unspecified tolerance: ±1



Details of the recommended wires:

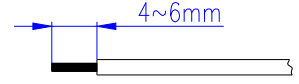
**Input:**

Strip wire 5-7mm  
Copper wire rated >300V  
18AWG/0.5-1.0mm<sup>2</sup>



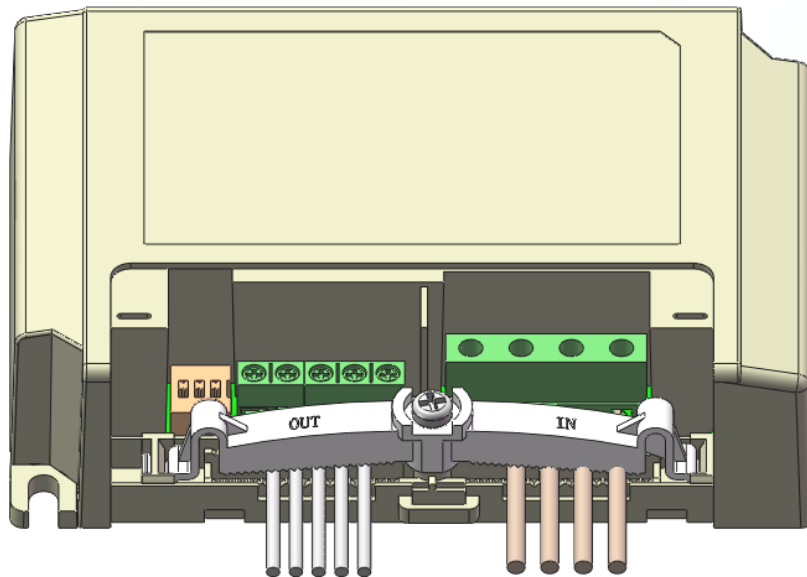
**Output:**

Strip wire 4-6mm  
Copper wire rated >150V  
18-22AWG/0.5-0.75mm<sup>2</sup>



**Steps of wires fixed:**

1. Insert the input /output wires into connecting terminals and lock it tightly;
2. Press wires tightly with the plastic strip: put the IN side into the right buckle and then press the OUT side into the left buckle;
3. Use screw to fasten the plastic strip;
4. Cover the cap and finish the connection.



## RoHS Compliance

Our products comply with the European Directive 2011/65/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
2013-08-09	A	Datasheets Release	/	/
2017-07-07	B	KS Certificate	/	Added
		Double Insulation	/	Added
		Input Voltage Range	127~250 Vdc	100~300 Vdc
		Turn-on Delay Time at 120Vac	Max.=1.0 s	Max.=0.75 s
		Operating Case Temperature for Warranty Tc_w	/	Added
		Environmental Specifications	/	Deleted
		Dimming Specifications-0~10V Wire Current Sourcing Capability Max.	220 $\mu$ A	250 $\mu$ A
		CQC Certificate	/	CCC Certificate
		Derating Curve	/	Deleted
		Note of EMI Standard	/	Added
		Power Factor Curve	/	Updated
		Total Harmonic Distortion Curve	/	Updated
		Resistor Dimming	/	Deleted