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)(3)
530 mA	90 ~ 305 Vac 100~300 Vdc	40~79 Vdc	42 W	90%	0.96	0.95	LUC-042S053DSW(SSW)(3)(5)
700 mA	90 ~ 305 Vac 100~300 Vdc	28~56 Vdc	39 W	90%	0.96	0.95	LUC-042S070DSW(SSW)(4)(5)
1050 mA	90 ~ 305 Vac 100~300 Vdc	20~38 Vdc	40 W	89%	0.96	0.95	LUC-042S105DSW(SSW)(4)(5)
1400 mA	90 ~ 305 Vac 100~300 Vdc	15~30 Vdc	42 W	88%	0.96	0.95	LUC-042S140DSW(SSW)(4)(5)
1750 mA	90 ~ 305 Vac 100~300 Vdc	12~24 Vdc	42 W	87%	0.96	0.95	LUC-042S175DSW(SSW)(4)(5)
2100 mA	90 ~ 305 Vac 100~300 Vdc	10~20 Vdc	42 W	87%	0.96	0.95	LUC-042S210DSW(SSW)(4)(5)

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(except KS).
(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℃ cold start. duration=200 μs, 10%Ipk-10%Ipk.
Inrush Current(I^2t)	-	-	0.32 A^2s	
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_O	-	5%I_O	
Output Voltage Ripple I_O = 350 mA I_O = 530 mA I_O = 700 mA I_O = 1050 mA I_O = 1400 mA I_O = 1750 mA I_O = 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_O	At full load condition
No Load Output Voltage I_O = 350 mA I_O = 530 mA I_O = 700 mA I_O = 1050 mA I_O = 1400 mA I_O = 1750 mA I_O = 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~Tc 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 mA I_O = 530 mA I_O = 700 mA I_O = 1050 mA I_O = 1400 mA I_O = 1750 mA I_O = 2100 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 mA I_O = 530 mA I_O = 700 mA I_O = 1050 mA I_O = 1400 mA I_O = 1750 mA I_O = 2100 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 mA I_O = 530 mA I_O = 700 mA I_O = 1050 mA I_O = 1400 mA I_O = 1750 mA I_O = 2100 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 ℃	-	+80 ℃	
Operating Case Temperature for Warranty Tc_w	-30 ℃	-	+65 ℃	Humidity: 10% RH to 90% RH. No condensation
Storage Temperature	-40 ℃	-	+85 ℃	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 μA	200 μA	250 μA	

Dimming Specifications (Continued)

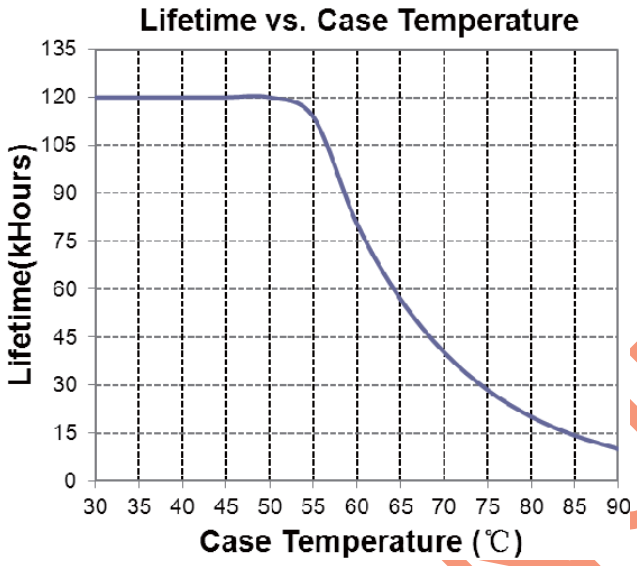
Parameter	Min.	Typ.	Max.	Notes
Dimming Output Range	10%Iomax		100%Iomax	
Recommended Dimming Input Range	0 V	-	10 V	

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 & ENEC	EN 61347-1, EN61347-2-13
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: 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

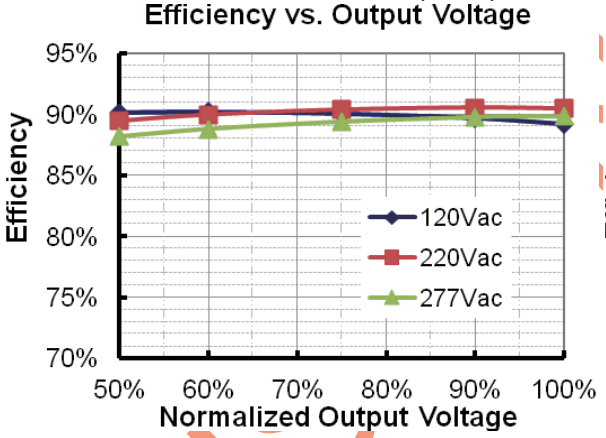
Note: (1) This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

Lifetime vs. Case Temperature Curve

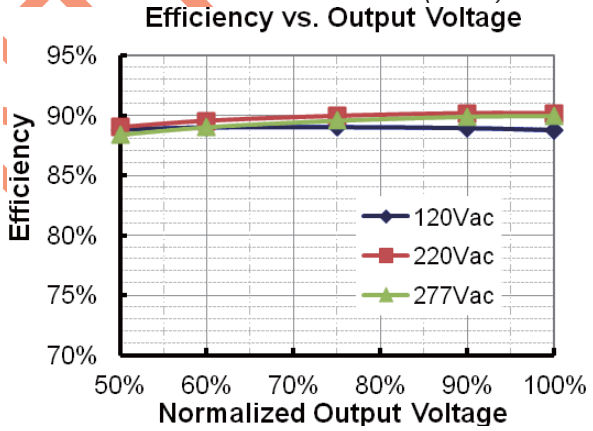


Efficiency vs. Load

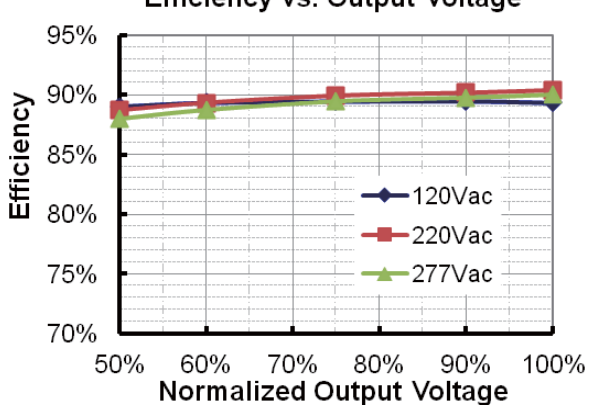
LUC-042S035DSW(SSW)



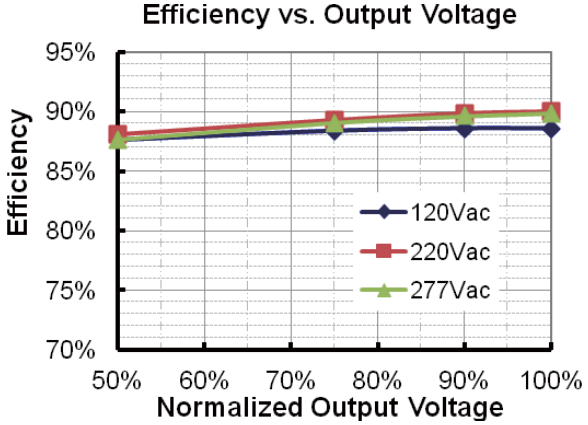
LUC-042S053DSW(SSW)



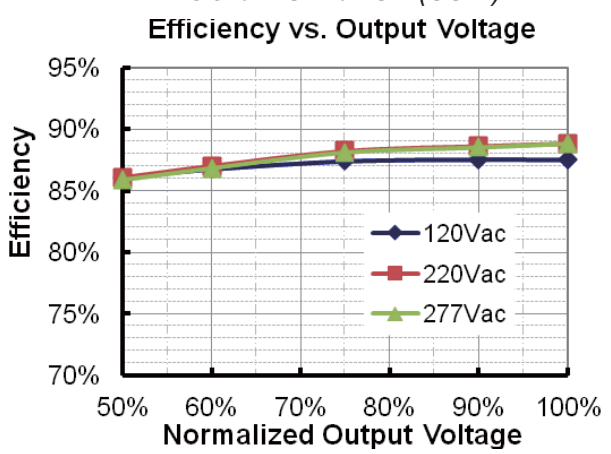
LUC-042S070DSW(SSW)



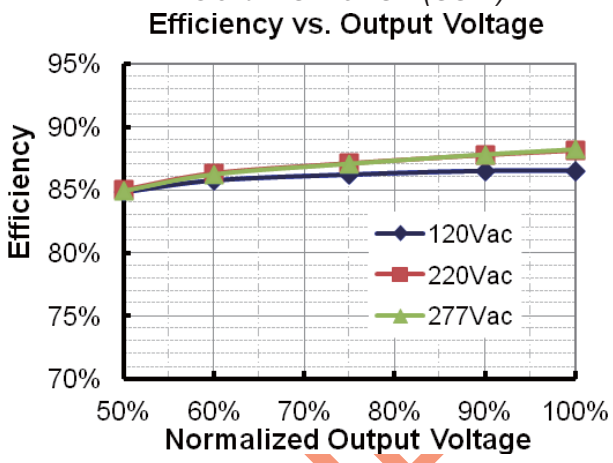
LUC-042S105DSW(SSW)



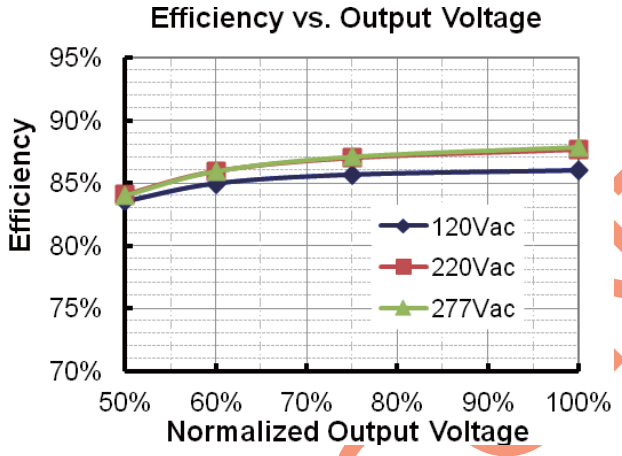
LUC-042S140DSW(SSW)



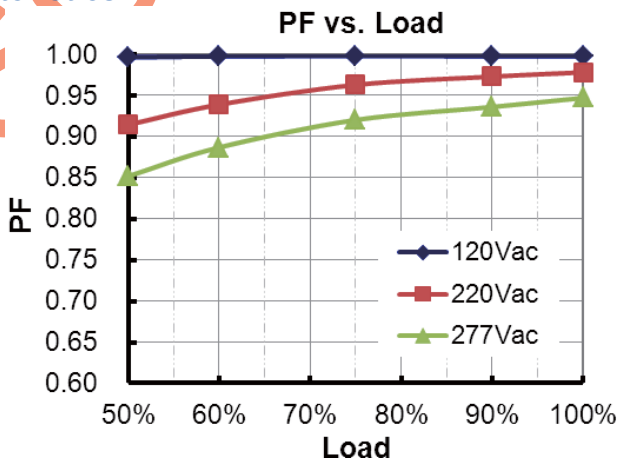
LUC-042S175DSW(SSW)



LUC-042S210DSW(SSW)



Power Factor Characteristics



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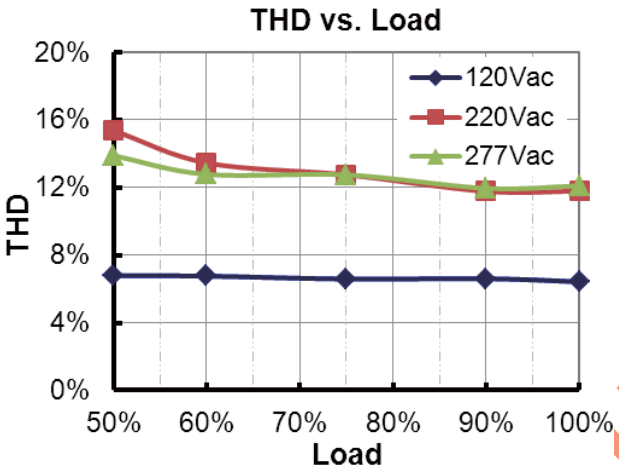
Total Harmonic Distortion



Protection Functions

Parameter	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±10℃, the output current decreases to 50%Io until the case temperature reaches 75℃.

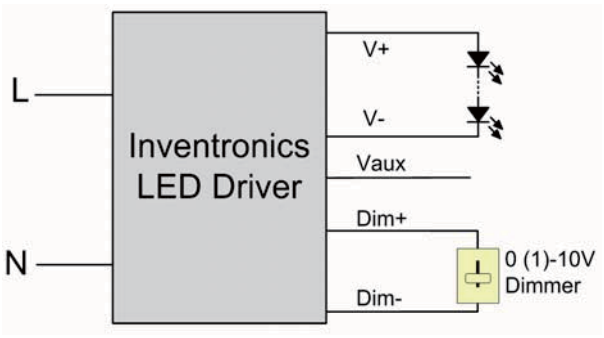
Adjustable Constant Output Current with Dip Switch (LUC-042SxxxDSW/SSW)

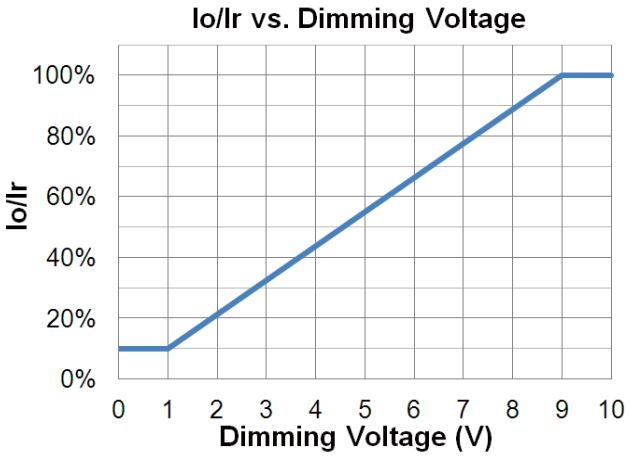
Dip Switch			Output Current (Iset)
1	2	3	/
OFF	OFF	OFF	100%Iomax
ON	OFF	OFF	95%Iomax
OFF	ON	OFF	90%Iomax
ON	ON	OFF	85%Iomax
OFF	OFF	ON	80%Iomax
ON	OFF	ON	75%Iomax
OFF	ON	ON	70%Iomax
ON	ON	ON	65%Iomax

Dimming

- **0-10V Dimming**

The recommended implementation is provided below.



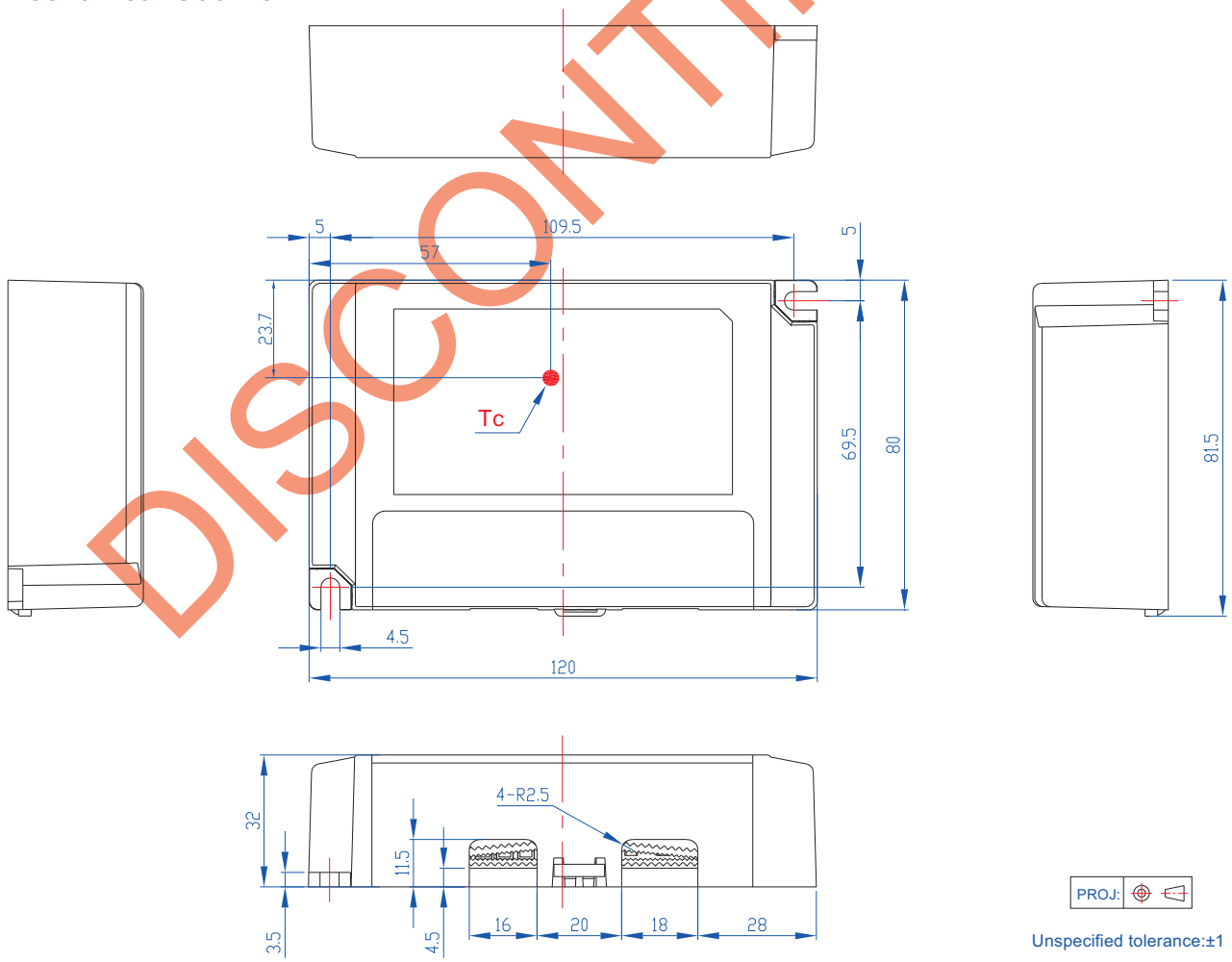


Implementation 1: 0-10V Dimming

Notes:

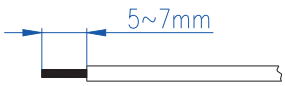
1. Io: output current; Ir: rated output current.
2. Do not connect the Dim- to the V- or Vaux; otherwise, the LED driver cannot work normally.
3. If 0-10V dimming is not used, Dim + can be either open or connected to Vaux.

Mechanical Outline

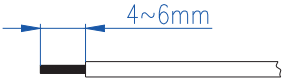


Details of the recommended wires:

Input:
Strip wire 5-7mm
Copper wire rated>300V
18AWG/0.5-1.0mm2

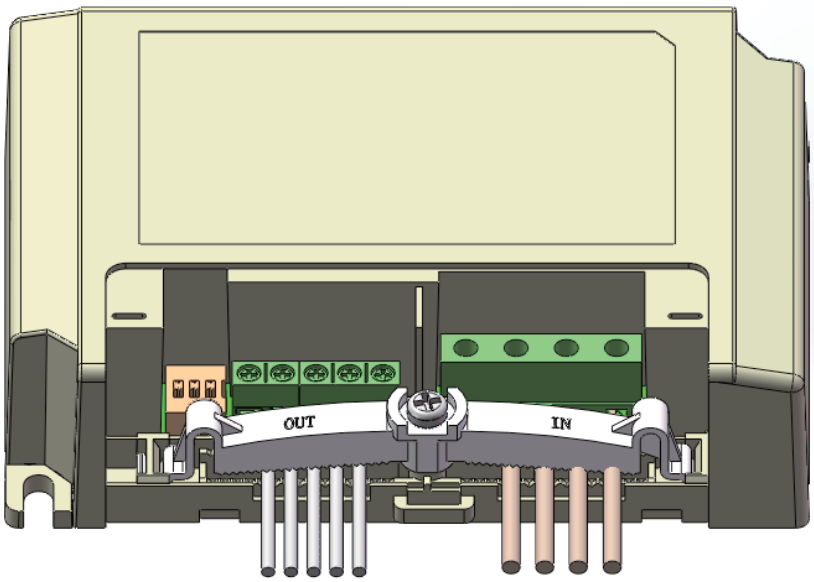


Output:
Strip wire 4-6mm
Copper wire rated>150V
18-22AWG/0.5-0.75mm2



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/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
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 μA	250 μA
		CQC Certificate	/	CCC Certificate
		Derating Curve	/	Deleted
		Note of EMI Standard	/	Added
		Power Factor Curve	/	Updated
		Total Harmonic Distortion Curve	/	Updated
		Resistor Dimming	/	Deleted
2019-01-29	C	PSE certificate	/	Deleted
		CCC certificate	/	Deleted
		Notes of Models	(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.	(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(except KS).
		Safety & EMC Compliance	/	Updated