Features

- High Efficiency (Up to 90%)
- Second Generation with Improved Performance
- Active Power Factor Correction (Typical 0.95)
- Constant Current Output
- IP66 and UL Dry/Damp Location
- Dimming Control
- All-Around Protection: OVP, SCP, OLP, OTP
- SELV & Class 2
- UL Type TL (Temperature Limited)

Description

The *EUC-042SxxxDS(PS)* 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, over load protection, and over temperature protection.

Models

Output Current (mA)	Output Voltage Range (Vdc)	Max. Output Power (W)	Typical Efficiency(1)	Typical Power Factor		Model Number(2)
				120Vac	220Vac	
350	60-120	42	90.0%	0.96	0.95	EUC-042S035DS(PS)(3)
450	47-94	42	89.0%	0.96	0.95	EUC-042S045DS(PS)(3)
530	40-79	42	89.0%	0.96	0.95	EUC-042S053DS(PS)(3)
700	28-56	39	89.0%	0.96	0.95	EUC-042S070DS(PS)(4)
1050	20-38	40	88.0%	0.96	0.95	EUC-042S105DS(PS)(5)
1280	17-32	42	87.0%	0.96	0.95	EUC-042S128DS(PS)(5)
1400	15-30	42	87.0%	0.96	0.95	EUC-042S140DS(PS)(5)
1750	12-24	42	87.0%	0.96	0.95	EUC-042S175DS(PS)(5)

Notes: (1) Measured at 100% load and 220 Vac input.
(2) Certified input voltage range: UL, FCC 100-277Vac; otherwise: 100-240Vac.
(3) Non-Class 2 output (USR & CNR).
(4) Class 2 output (USR), Non-Class 2 output (CNR).
(5) Class 2 output (USR & CNR).

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 Vac	-	305 Vac	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.75 MIU	UL 8750; 277Vac/ 60Hz
	-	-	0.70 mA	IEC 60598-1; 240Vac/ 60Hz
Input AC Current	-	-	0.7 A	Measured at 100% load and 100 Vac input.
	-	-	0.3 A	Measured at 100% load and 220 Vac input.
Inrush Current(I^2t)	-	-	0.32 A^2s	At 220Vac input 25°C Cold Start. Duration=200 μs, 10%Ipk-10%Ipk.
Power Factor	0.90	-	-	At 100-277Vac, 50-60Hz,75%-100%load (31.5~42W)
THD	-	-	20%	

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5% I_O	-	5% I_O	
No Load Output Voltage I_O = 350 mA I_O = 450 mA I_O = 530 mA I_O = 700 mA I_O = 1050 mA I_O = 1280 mA I_O = 1400 mA I_O = 1750 mA	 - - - - - - - -	 - - - - - - - -	 140 V 104 V 87 V 59 V 42 V 37 V 34 V 27 V	
Total Output Current Ripple (pk-pk)	-	-	50%I_O	Related to V-I Curve of the LED
Output Current Overshoot / Undershoot	-	-	10%I_O	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%load-100%load
	-	0.30 s	0.50 s	Measured at 220Vac input, 75%load-100%load
Temperature Coefficient of Iomax	-	-	0.2%/°C	Case temperature = 0°C ~Tc max
12V Auxiliary Output Voltage	10.8 V	12 V	13.2 V	
12V Auxiliary Output Source Current	0 mA	-	20 mA	Return terminal is “Dim-”.

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 120 Vac input: I_O = 350 mA I_O = 450 mA I_O = 530 mA I_O = 700 mA I_O = 1050 mA I_O = 1280 mA I_O = 1400 mA I_O = 1750 mA	 87% 86% 86% 86% 85% 84% 84% 84%	 89% 88% 88% 88% 86% 86% 85% 85%	 - - - - - - - -	Measured at 100% load and steady-state temperature in 25°C ambient.
Efficiency at 220 Vac input: I I_O = 350 mA I_O = 450 mA I_O = 530 mA I_O = 700 mA I_O = 1050 mA I_O = 1280 mA I_O = 1400 mA I_O = 1750 mA	 88% 87% 87% 87% 86% 85% 85% 85%	 90% 89% 89% 89% 88% 87% 87% 87%	 - - - - - - - -	Measured at 100% load and steady-state temperature in 25°C ambient.
Efficiency at 277 Vac input: I_O = 350 mA I_O = 450 mA I_O = 530 mA I_O = 700 mA I_O = 1050 mA I_O = 1280 mA I_O = 1400 mA I_O = 1750 mA	 88% 87% 87% 87% 86% 85% 85% 85%	 90% 89% 89% 89% 88% 87% 87% 87%	 - - - - - - - -	Measured at 100% load and steady-state temperature in 25°C ambient.
No Load Power Dissipation	-	-	6 W	
MTBF	327,000 Hours	-	-	Measured at 120Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Life Time	-	116,000 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	-40 ℃	-	+90 ℃	
Operating Case Temperature for Warranty Tc_w	-40 ℃	-	+70 ℃	Humidity: 10% RH to 95% RH
Operating Case Temperature for Type TL Tc_TL	-40 ℃		+72 ℃	
Storage Temperature	-40 ℃	-	+85 ℃	Humidity: 5% RH to 95% RH
Dimensions Inches (L × W × H) Millimeters (L × W × H)	 3.74 × 2.76 × 1.26 95 × 70 × 32			
Net Weight	-	390 g	-	

Dimming Specifications

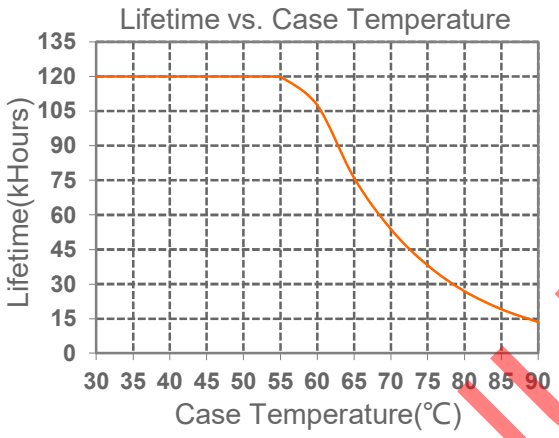
Parameter	Min.	Typ.	Max.	Notes
Absolute Maximum Voltage on the 0~10V Input Pin	0 V	-	15 V	
Source Current on 0~10V Input Pin	0 μA	200 μA	250 μA	
Dimming Output Range	10%Iomax		100%Iomax	
Recommended Dimming Input Range	0 V	-	10 V	

Safety & EMC Compliance

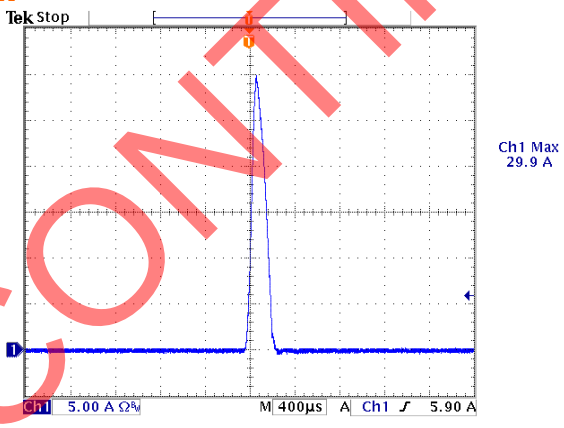
Safety Category	Standard
UL/CUL	UL 8750, UL 1310, CAN/CSA-C22.2 No. 250.13, CAN/CSA-C22.2 No. 223-M91
ENEC & CE	EN 61347-1, EN 61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
KS	KS C 7655
Performance	**Standard**
ENEC	EN IEC 62384
EMI Standards	**Notes**
EN IEC 55015(1)	Conducted emission Test &Radiated emission Test
EN IEC 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 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

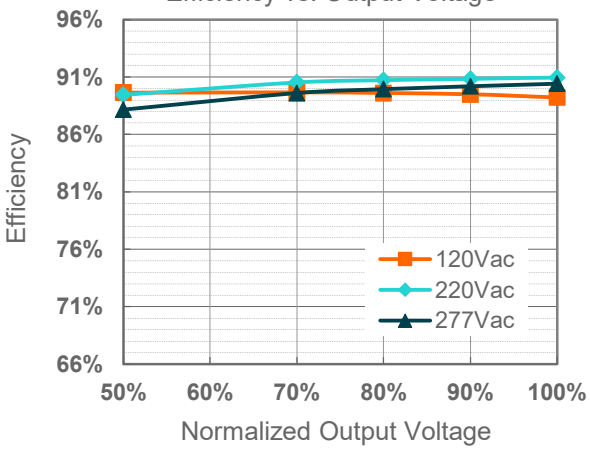


Inrush Current Waveform

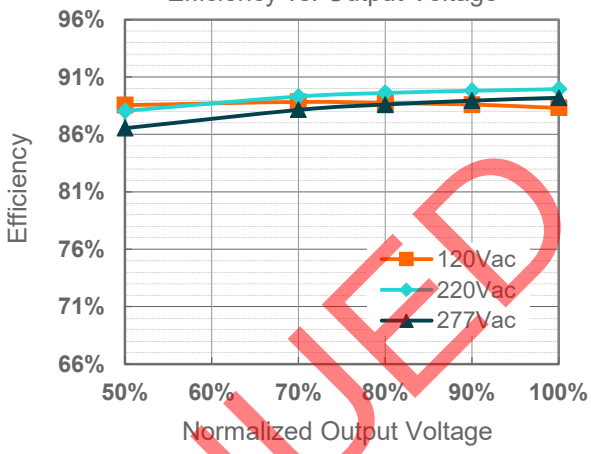


Efficiency vs. Load

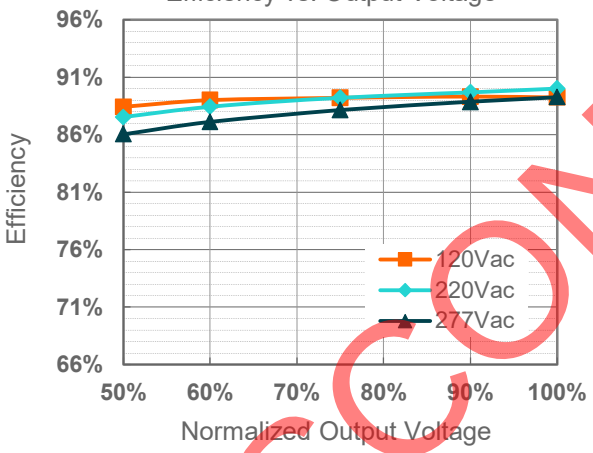
EUC-042S035DS(PS)
Efficiency vs. Output Voltage



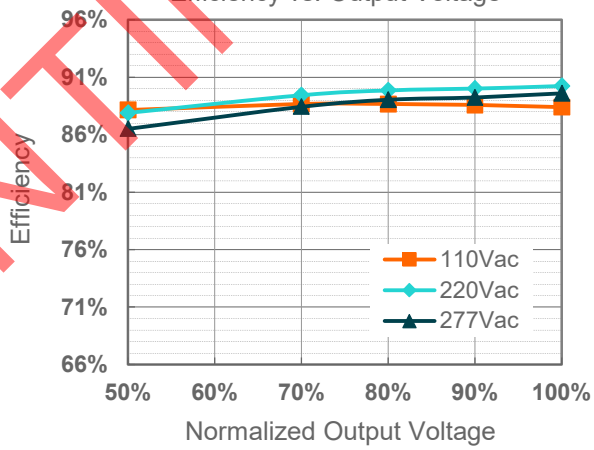
EUC-042S045DS(PS)
Efficiency vs. Output Voltage



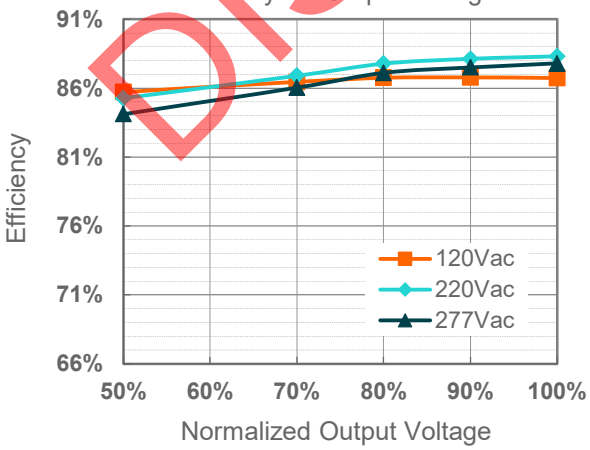
EUC-042S053DS(PS)
Efficiency vs. Output Voltage



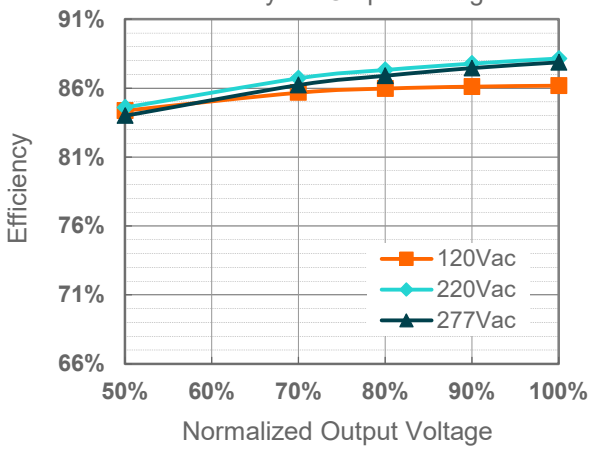
EUC-042S070DS(PS)
Efficiency vs. Output Voltage

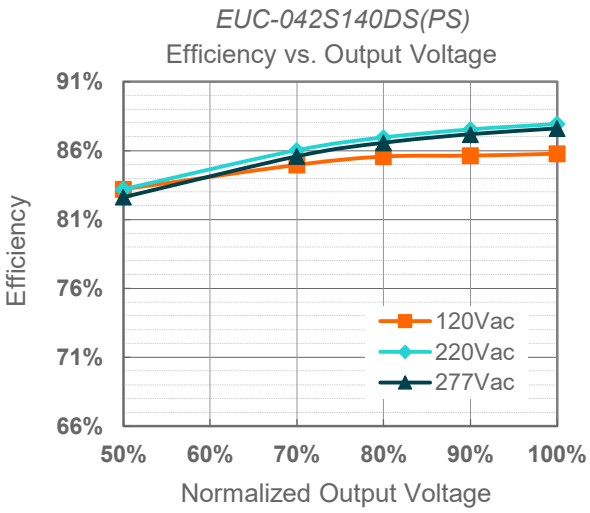


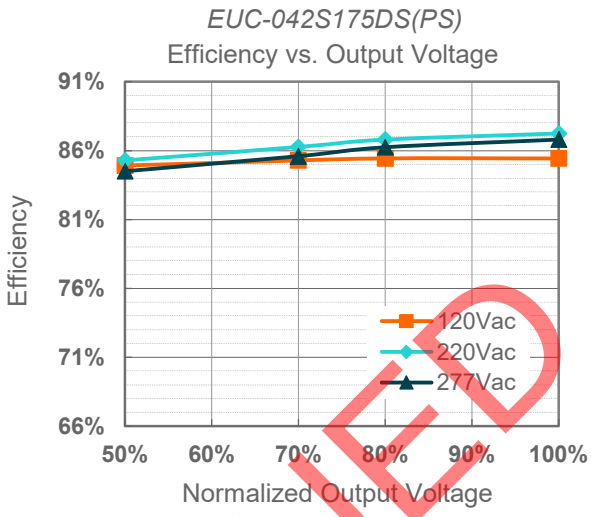
EUC-042S105DS(PS)
Efficiency vs. Output Voltage



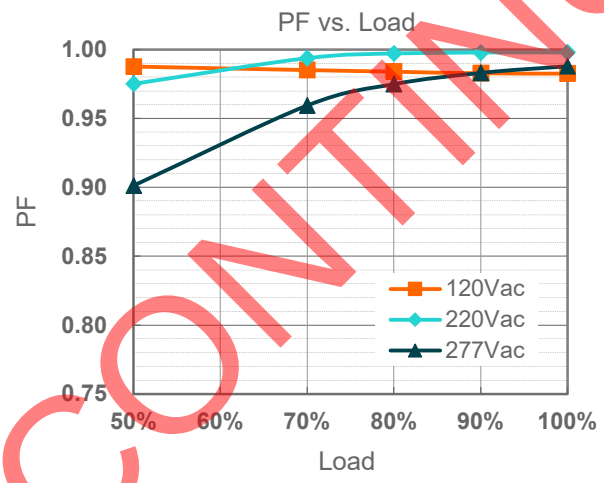
EUC-042S128DS(PS)
Efficiency vs. Output Voltage



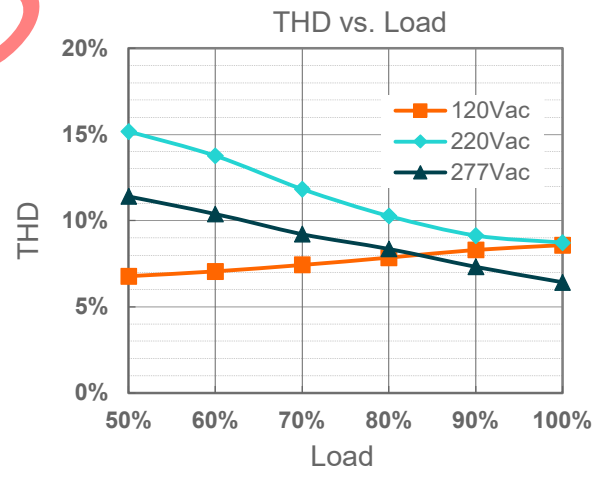




Power Factor



Total Harmonic Distortion



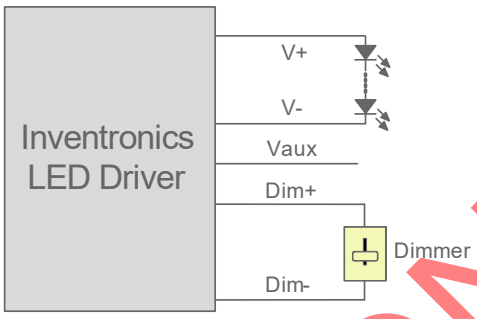
Protection Functions

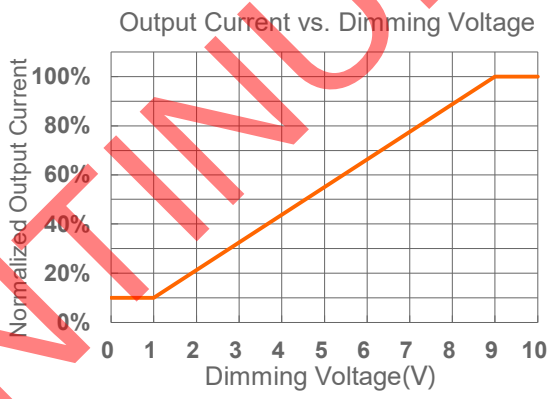
Parameter	Notes
Over Voltage Protection	Limits output voltage at no load and in case the normal voltage limit fails.
Short Circuit Protection	Auto Recovery. No damage shall occur when any output operating in a short circuit condition. The power supply shall be self-recovery when the fault condition is removed.
Over Temperature Protection	Auto Recovery. Returning to normal after over temperature is removed.

Dimming

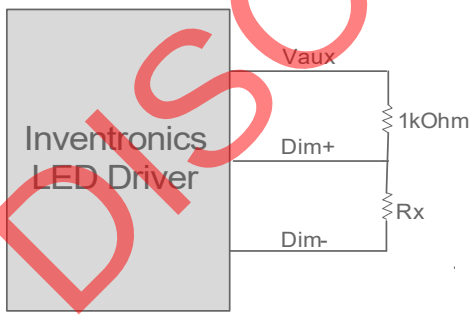
0-10V Dimming

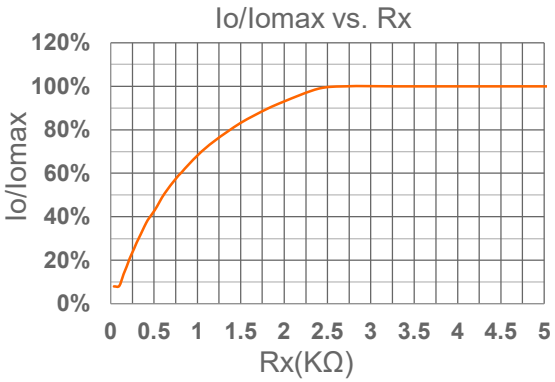
The dimmer control may be operated from either a dimmer or from an input signal of 0 - 10 Vdc. The recommended implementation is provided below.



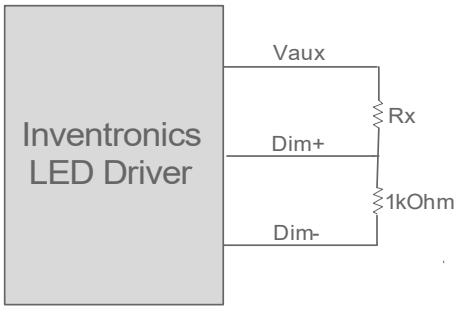


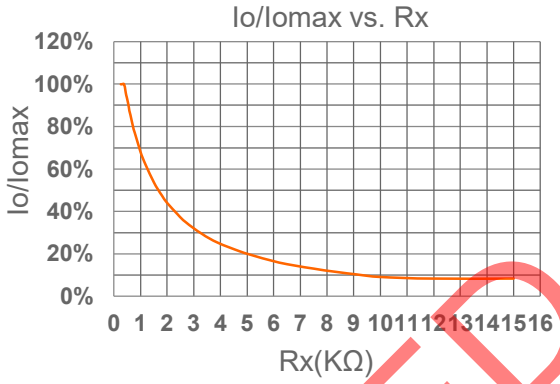
Implementation 1: DC Input





Implementation 2: External Resistor





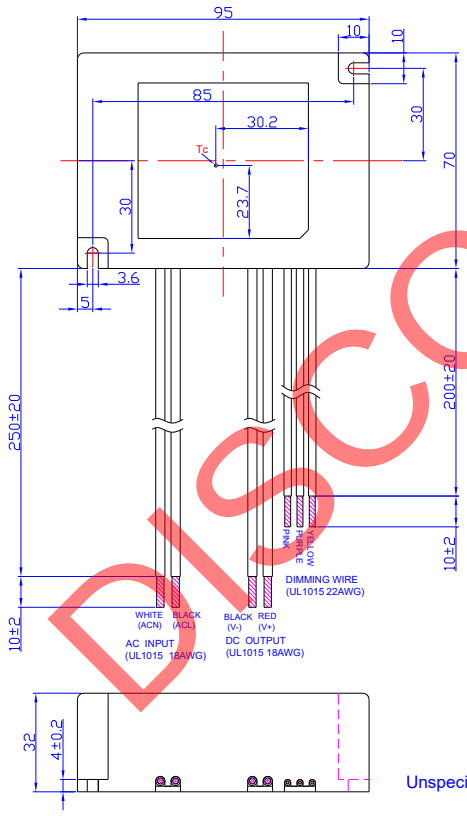
Implementation 3: External Resistor

Notes:

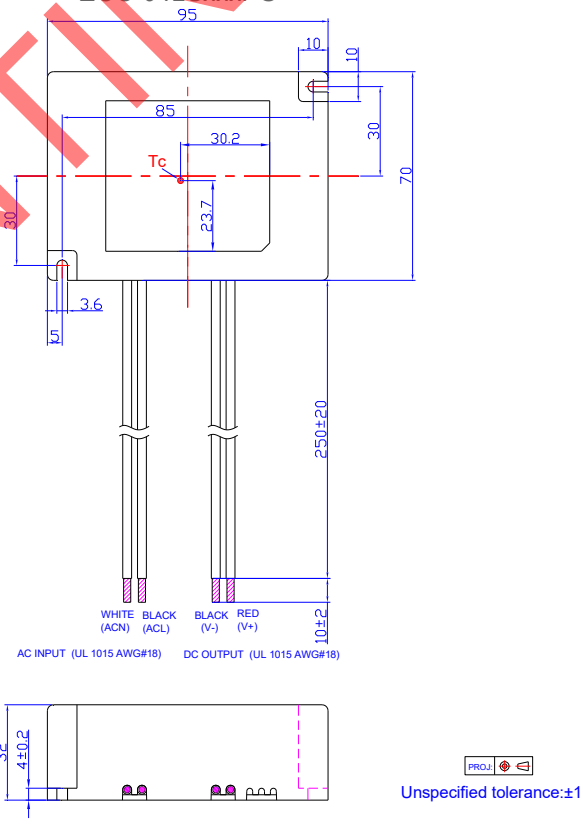
1. Do not connect the Dim- to the V-, otherwise, the LED driver cannot work normally.
2. If 0-10V dimming is not used, Dim + can be either open or connected to Vaux.

Mechanical Outline

EUC-042SxxxDS



EUC-042SxxxPS



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
2012-02-17	A	Preliminary Datasheets First Release	/	/
2012-03-21	B	EUC-042S105DS(PS) CUL Class 2 added	/	/
2012-05-25	C	EUC-042S105DS(PS)-0001	/	Added
		EN 61000-4-5--- line to line 2 kV, line to earth 4 kV	/	Corrected
		Life time	/	50,000 Hours
		EUC-042S070DS(PS)-0001	/	Added
2012-06-06	D	EUC-042S070DS(PS)-0001, EUC-042S105DS(PS)-0001	/	Deleted
		Notes of life time	/	Updated
		Life time vs. Tc Curve	/	Added
2012-07-02	E	Description of OTP	/	Updated
2012-07-17	F	Max Case Temperature	/	Updated
2012-7-30	G	Min Operating Temperature	-20℃	-40℃
2012-08-20	H	Derating Curve	/	Updated
		Inrush Current	60A	70A
		Inrush Current(I2t)	/	Added
		Temperature coefficient	/	Added
2012-11-16	I	Life time	Min 50,000hrs	Typical 116,000hrs
		Life time Curve	/	Updated
		Io/Ir Vs Rx Curve	/	Added
		THD Curve	/	Added
		EFF and PF Curve of other models	/	Added
2013-05-22	J	Inrush Current(I^2t) corrected	0.16 A^2s	0.32 A^2s
		Duration of Inrush Current corrected	100 μs	200 μs
		Mechanical Outline---cable length corrected	/	Updated
2013-11-25	K	Model 530mA	/	Added
		Mechanical Outline-Dimming wires updated	UL1015 26AWG	UL1015 22AWG
2014-05-27	L	ENEC certificate	/	Added

Revision History (Continued)

Change Date	Rev.	Description of Change		
		Item	From	To
2015-08-04	M	Warranty Tc	/	Added
		Environmental Specifications	/	Deleted
		Inrush Current Waveform	/	Added
		CCC certificate	/	Added
		CQC certificate	./	Deleted
		Source Current on 0~10V Input Pin Max.	200 uA	250 uA
2015-12-31	N	KS Certification	/	Added
		KC Certification-EUC-042S070/105/128/140DS(PS)	/	Added
		Net Weight	350 g	390 g
2016-04-18	O	UL Type TL	/	Added
		KS Certificate Regulation	/	Added
		Note of EMI Standard	/	Added
2016-08-02	P	Turn-on Delay Time at 120Vac	Max.=1.0 s	Max.=0.75 s
2019-04-17	Q	Mechanical Outline	/	Updated
2019-08-21	R	TUV Logo	/	Updated
		ENEC Logo	/	Updated
		PSE Logo	/	Updated
		KC Logo	/	Deleted
		Note of Models	(6)	Deleted
		Input Specifications(PF/THD)	50-60Hz	Added
		Output Specifications (No Load Output Voltage)-EUC-042S035DS(PS)	132V	140V
		Safety &EMC Compliance	UL/CUL	Updated
		Safety &EMC Compliance	ENEC	Added
		Safety &EMC Compliance	TUV	Added
		Safety &EMC Compliance	CB	Added
		Safety &EMC Compliance	PSE	Added
		Safety &EMC Compliance	KS	Updated
		Safety &EMC Compliance	EMI Standards	Updated
		Safety &EMC Compliance	FCC	Updated

Revision History (Continued)

Change Date	Rev.	Description of Change		
		Item	From	To
2019-08-21	R	Safety &EMC Compliance	EN 61000-4-5	Updated
		RoHS Compliance	/	Updated
2021-12-31	S	PSE Logo	/	Deleted
		Safety &EMC Compliance	PSE	Deleted
		General Specifications	Humidity	Updated
		Mechanical Outline	EUC-042SxxxDS	Updated
2023-08-15	T	TUV logo	/	Deleted
		Product photograph	/	Updated
		Safety &EMC Compliance	/	Updated
2024-03-13	U	Format	/	Updated
		CCC logo	/	Deleted
		Safety &EMC Compliance	/	Updated
2025-02-13	V	Product Photograph	/	Updated