

Features

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



Description

The EUC-042SxxxDS(PS)-0001 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 and over load protection.

Models

Output Current	Input Voltage Range(1)	Output Voltage Range	Max. Output Power	Typical Efficiency (2)	Power Factor		Model Number (3)
					120Vac	220Vac	
700 mA	90 ~ 305 Vac	30~60 Vdc	42 W	89.0%	0.96	0.95	EUC-042S070DS(PS)-0001(4)
1050 mA	90 ~ 305 Vac	20~40 Vdc	42 W	88.0%	0.96	0.95	EUC-042S105DS(PS)-0001(5)

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

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

(3) The DS suffix may be changed to PS to omit the dimming function and remove the three wires associated with that function.

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

(5) Class 2 output (USR), Non-Class 2 output (CNR).

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 V	-	305 V	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.75 mA	At 277Vac 60Hz input
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 μs, 10%Ipk-10%Ipk.
Inrush Current(I ² t)	-	-	0.32 A ² s	
Power Factor	0.90	-	-	At 100Vac-277Vac, 75%load-100%load
THD	-	-	20%	

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Range	-5% I _O	-	5% I _O	
No Load Output Voltage I _O = 700 mA I _O = 1050mA	- -	- -	67 V 45 V	
Output Current Ripple	-	-	50% I _O	Related to V-I Curve of the LED
Output Current Overshoot / Undershoot	-	-	10%I _O	At full load condition.
Line Regulation	-	-	±1%	
Load Regulation	-	-	±3%	
Turn-on Delay Time	-	0.6 s	1.0 s	Measured at 120Vac input.
	-	0.3 s	0.5 s	Measured at 220Vac input.
Temperature coefficient	-	-	0.2%/°C	Case temperature = 0°C ~T _C max

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

Protection Functions

Parameter	Min.	Typ.	Max.	Notes
Short Circuit Protection	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	Hiccup mode. When the case temperature is higher than 110°C, the power supply will turn off automatically; when the case temperature is lower than 75°C, the power supply will be auto recovery.			

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency I _O = 700 mA I _O = 1050 mA	86% 85%	88% 86%	- -	Measured at full load and 120Vac input.
Efficiency I _O = 700 mA I _O = 1050mA	87% 86%	89% 88%	- -	Measured at full load and 220 Vac input.
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, Case temperature=60°C @ T _C point. See life time vs. T _C curve for the details
Case temperature	-	-	90 °C	
Dimensions Inches (L × W × H) Millimeters (L × W × H)	3.74 × 2.76 × 1.26 95 × 70 × 32			
Net Weight	-	350 g	-	

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

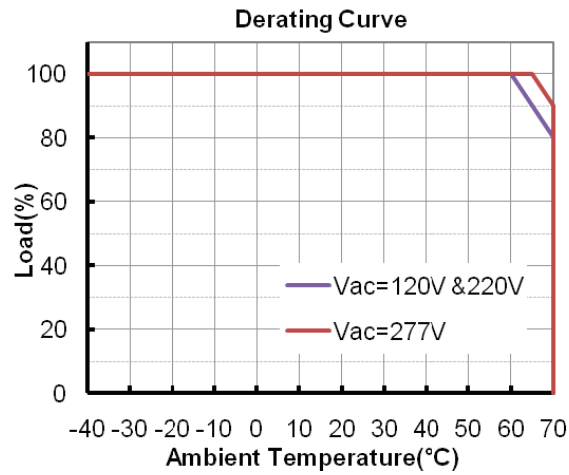
Environmental Specifications

Parameter	Min.	Typ.	Max.	Notes
Operating Temperature	-40 °C	-	+70 °C	Humidity: 10% RH to 100% RH. See Derating Curve for more details
Storage Temperature	-40 °C	-	+85 °C	Humidity: 5% RH to 100% RH

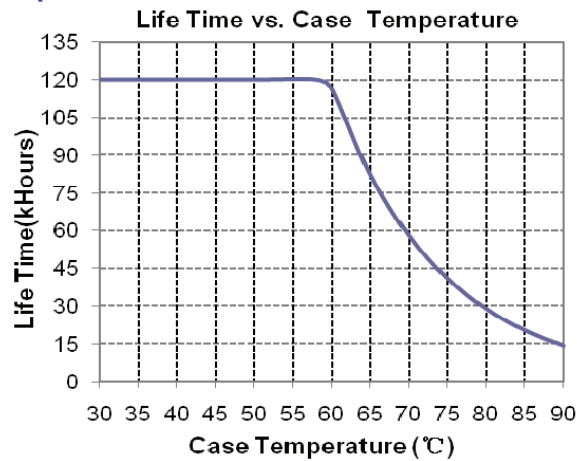
Safety & EMC Compliance

Safety Category	Standard
UL/CUL	UL8750, UL1012, UL1310 Class 2, CSA-C22.2 No. 107.1, CSA C22.2 NO. 223-M91 Class 2
CE	EN 61347-1, EN61347-2-13
CQC	GB19510.14-2009, GB19510.1-2009, GB17743-2007, GB17625.1-2003
EMI Standards	Notes
EN 55015	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic Current Emissions
EN 61000-3-3	Voltage Fluctuations & Flicker
FCC Part 15	ANSI C63.4:2009 Class B
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

Derating Curve



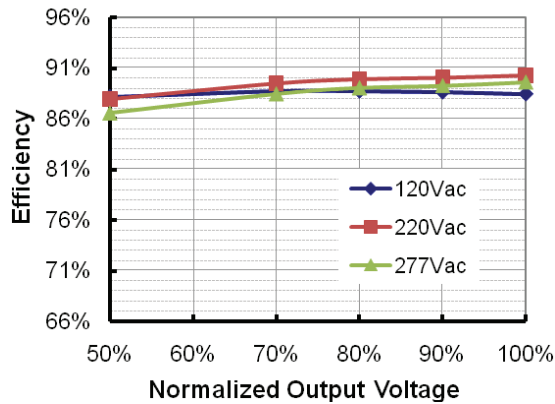
Life Time vs. Case Temperature Curve



Efficiency vs. Load

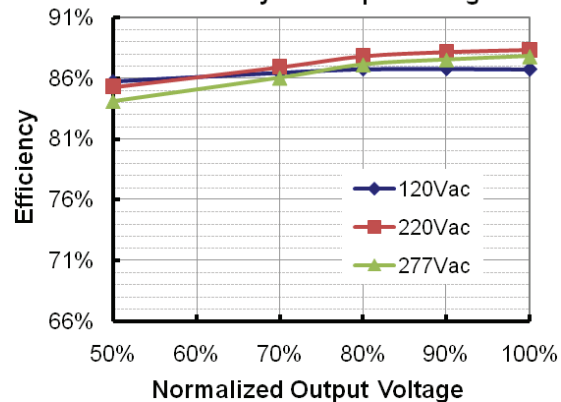
EUC-042S070DS(PS)-0001

Efficiency vs. Output Voltage



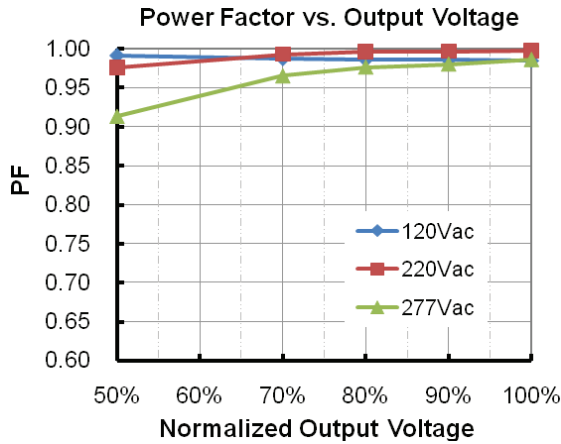
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Efficiency vs. Output Voltage

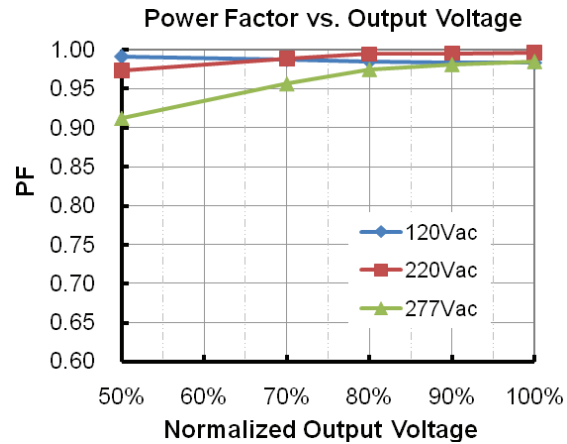


Power Factor Characteristics

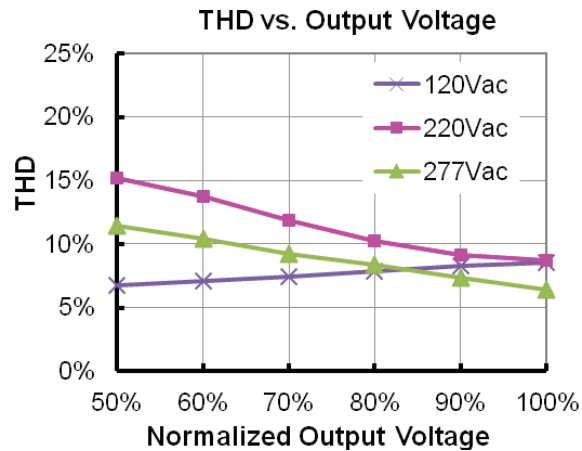
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EUC-042S105DS(PS)-0001



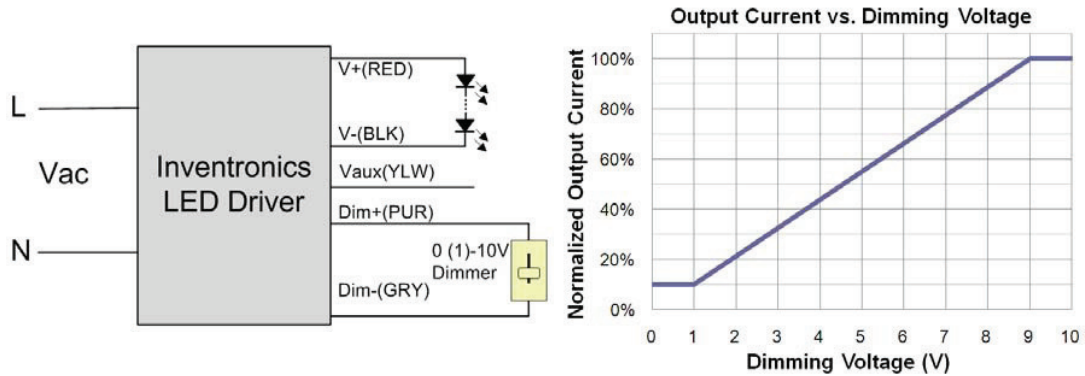
Total Harmonic Distortion (700 mA)



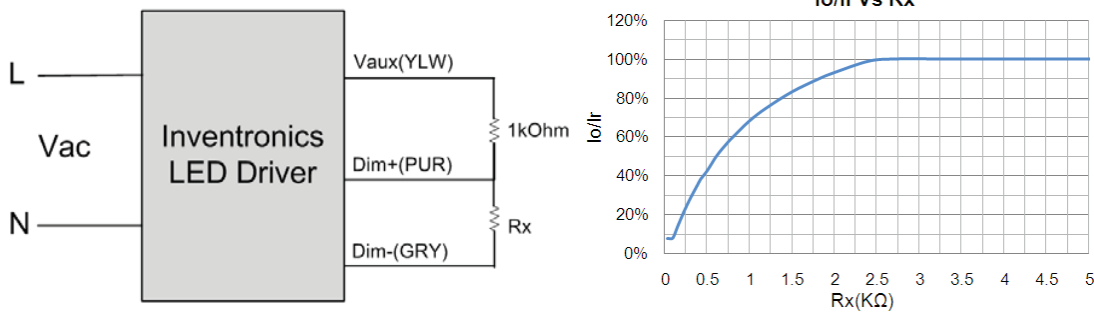
Dimming Control (On secondary side)

Parameter	Min.	Typ.	Max.	Notes
12V Output Voltage	10.8 V	12 V	13.2 V	
12V Output Source Current	0 mA	-	20 mA	
Absolute Maximum Voltage on the 0~10V Input Pin	0 V	-	15 V	
Source Current on 0~10V Input Pin	0 uA	-	200 uA	

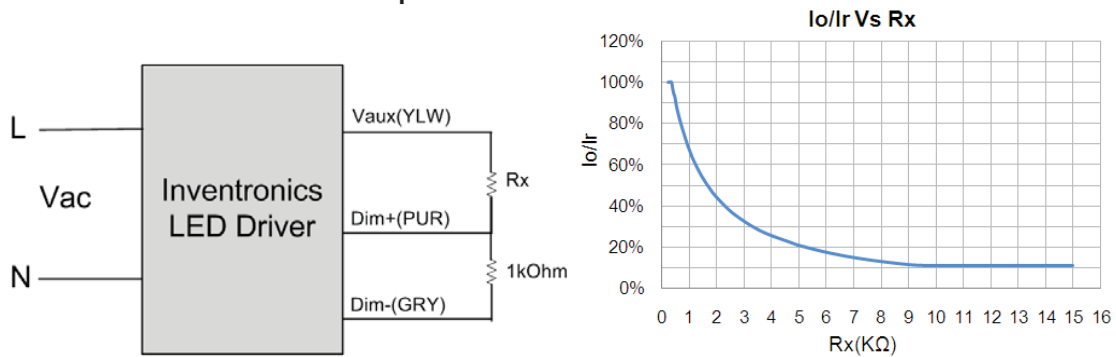
The dimmer control may be operated from either a dimmer or from an input signal of 0 – 10 Vdc. The recommended implementation is provided below.



Implementation 1: DC Input



Implementation 2: External Resistor

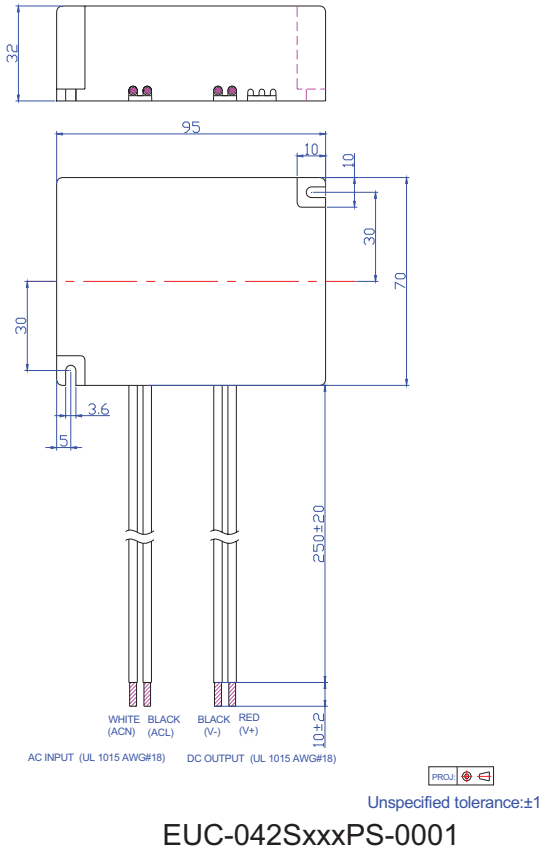
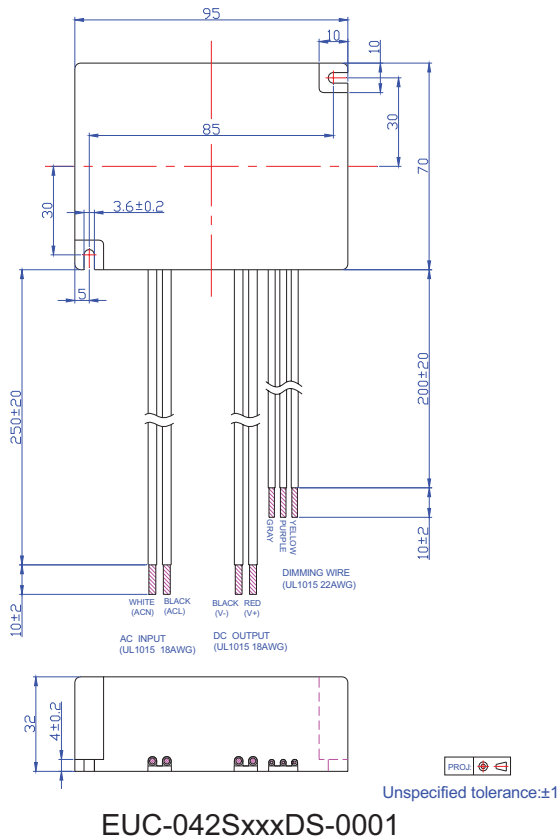


Implementation 3: External Resistor

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



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
2012-06-20	A	Datasheets Release	/	/
2012-07-02	B	Description of OTP	/	Updated
2012-7-17	C	Max Case Temperature	/	Updated
2012-7-30	D	Min Operating Temperature	-20°C	-40°C
2012-8-20	E	Derating Curve	/	Updated
		Inrush Current	60A	70A
		Inrush Current(I^2t)	/	Added
		Temperature co-efficient	/	Added
2012-11-16	F	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	G	Inrush Current(I^2t) corrected	0.16 A ² s	0.32 A ² s
		Duration of Inrush Current corrected	100 µs	200 µs
		Mechanical Outline---cable length corrected	/	Updated
2013-11-25	H	Mechanical Outline-Dimming wires updated	UL1015 26AWG	UL1015 22AWG
2014-05-27	I	ENEC certificate	/	Added