

## 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-Round Protection: OVP, SCP, OLP, OTP
- SELV and Class 2



## Description

The EUC-042SxxxDS(PS) series operate 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	Input Voltage Range	Output Voltage Range	Max. Output Power	Typical Efficiency (1)	Power Factor		Model Number (2, 3)
					120Vac	220Vac	
350 mA	90 ~ 305 Vac	60~120Vdc	42 W	90.0%	0.96	0.95	EUC-042S035DS(PS)(4)
450 mA	90 ~ 305 Vac	47~94 Vdc	42 W	89.0%	0.96	0.95	EUC-042S045DS(PS)(4)
700 mA	90 ~ 305 Vac	28~56 Vdc	39 W	89.0%	0.96	0.95	EUC-042S070DS(PS)(5)
1050 mA	90 ~ 305 Vac	20~38 Vdc	40 W	88.0%	0.96	0.95	EUC-042S105DS(PS)(6)
1280 mA	90 ~ 305 Vac	17~32 Vdc	42 W	87.0%	0.96	0.95	EUC-042S128DS(PS)(6)
1400 mA	90 ~ 305 Vac	15~30 Vdc	42 W	87.0%	0.96	0.95	EUC-042S140DS(PS)(6)
1750 mA	90 ~ 305 Vac	12~24 Vdc	42 W	87.0%	0.96	0.95	EUC-042S175DS(PS)(6)

- Notes:** (1) Measured at full load and 220 Vac input.  
 (2) The DS suffix may be changed to PS to omit the dimming function and remove the three wires associated with that function.  
 (3) A suffix -xxx may be added to denote variations or modifications to the base product, where x can be any alphanumeric character or blank.  
 (4) Non-Class 2 output (USR & CNR).  
 (5) Class 2 output (USR), Non-Class 2 output (CNR).  
 (6) Class 2 output (USR & 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.

Specifications are subject to changes without notice.

## Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Inrush Current	-	-	70 A	At 220Vac input 25°C Cold Start. Duration=100 μs, 10%Ipk-10%Ipk.
Inrush Current(I <sup>2</sup> t)	-	-	0.16 A <sup>2</sup> 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 <sub>o</sub>	-	5% I <sub>o</sub>	
No Load Output Voltage				
I <sub>o</sub> = 350 mA	-	-	132 V	
I <sub>o</sub> = 450 mA	-	-	104 V	
I <sub>o</sub> = 700 mA	-	-	59 V	
I <sub>o</sub> = 1050 mA	-	-	42 V	
I <sub>o</sub> = 1280 mA	-	-	37 V	
I <sub>o</sub> = 1400 mA	-	-	34 V	
I <sub>o</sub> = 1750 mA	-	-	27 V	
Output Current Ripple	-	-	50% I <sub>o</sub>	Related to V-I Curve of the LED
Output Current Overshoot / Undershoot	-	-	10%I <sub>o</sub>	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 <sub>c</sub> 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-T <sub>c</sub>	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 <sub>o</sub> = 350 mA I <sub>o</sub> = 450 mA I <sub>o</sub> = 700 mA I <sub>o</sub> = 1050 mA I <sub>o</sub> = 1280 mA I <sub>o</sub> = 1400 mA I <sub>o</sub> = 1750 mA	87% 86% 86% 85% 84% 84% 84%	89% 88% 88% 86% 86% 85% 85%	- - - - - - -	Measured at full load and 120Vac input.
Efficiency I <sub>o</sub> = 350 mA I <sub>o</sub> = 450 mA I <sub>o</sub> = 700 mA I <sub>o</sub> = 1050 mA I <sub>o</sub> = 1280 mA I <sub>o</sub> = 1400 mA I <sub>o</sub> = 1750 mA	88% 87% 87% 86% 85% 85% 85%	90% 89% 89% 88% 87% 87% 87%	- - - - - - -	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 and 60°C Case temperature. See life time vs. Tc 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

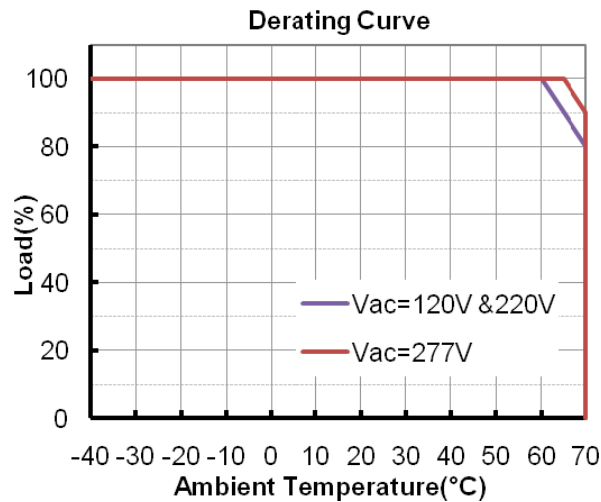
Safety Category	Standard
UL/CUL	UL8750, UL1012, UL1310 Class 2, CSA-C22.2 No. 107.1, CSA C22.2 NO. 223-M91 Class 2
CE	EN 61347-1, EN61347-2-13
CQC	GB19510.14-2009, GB19510.1-2009, GB17743-2007, GB17625.1-2003
EMI Standards	Notes
EN 55015	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic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

Specifications are subject to changes without notice.

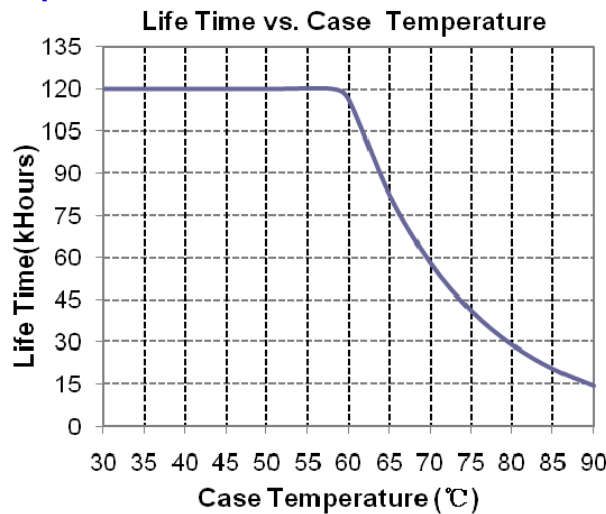
## Safety & EMC Compliance (Continued)

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

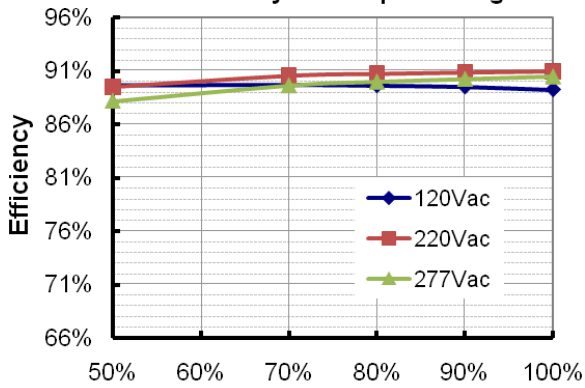


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## Efficiency vs. Load

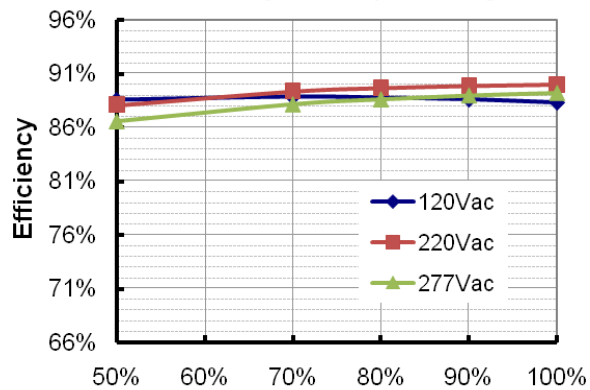
*EUC-042S035DS(PS)*

Efficiency vs. Output Voltage



*EUC-042S045DS(PS)*

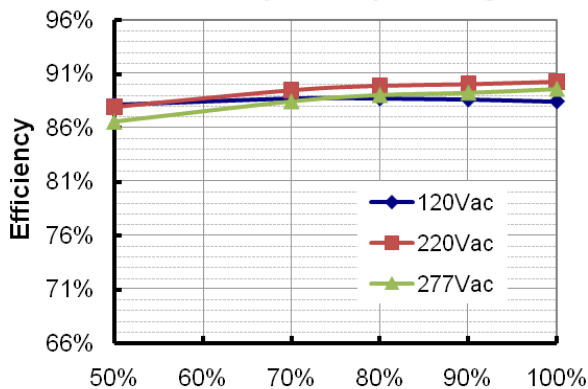
Efficiency vs. Output Voltage



Normalized Output Voltage

*EUC-042S070DS(PS)*

Efficiency vs. Output Voltage



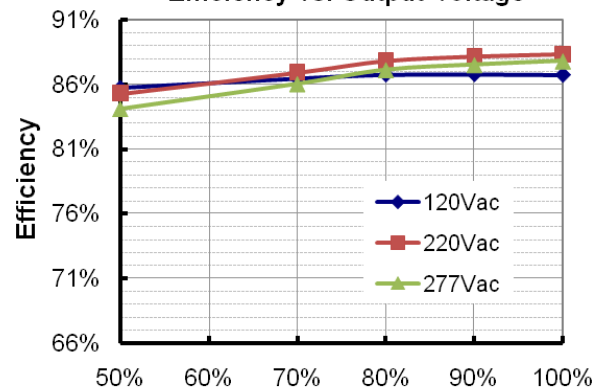
Normalized Output Voltage

*EUC-042S105DS(PS)*

Normalized Output Voltage

*EUC-042S105DS(PS)*

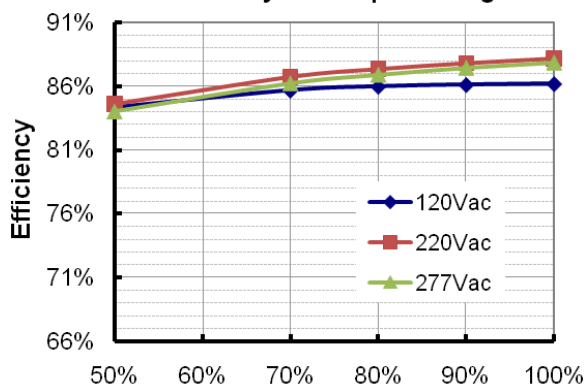
Efficiency vs. Output Voltage



Normalized Output Voltage

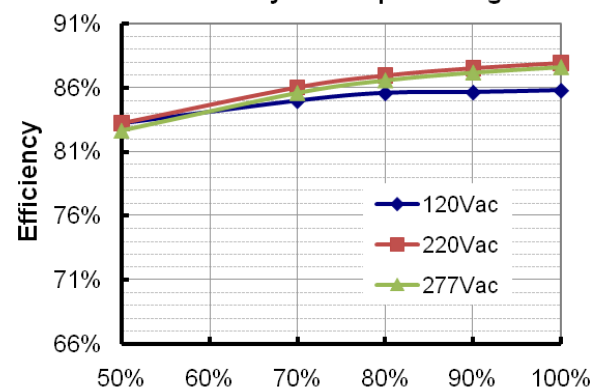
*EUC-042S128DS(PS)*

Efficiency vs. Output Voltage



Normalized Output Voltage

Efficiency vs. Output Voltage

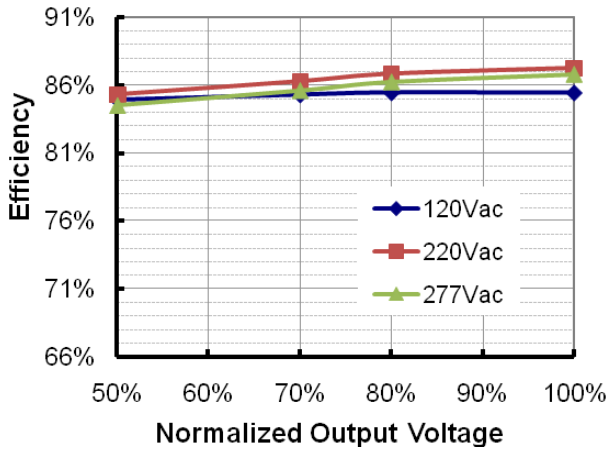


Normalized Output Voltage

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*EUC-042S175DS(PS)*

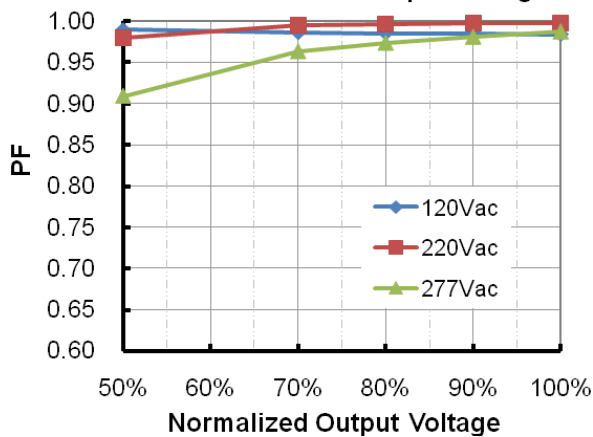
Efficiency vs. Output Voltage



## Power Factor Characteristics

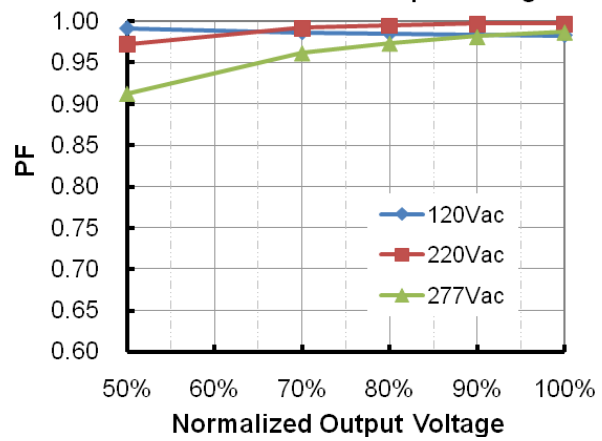
*EUC-042S035DS(PS)*

Power Factor vs. Output Voltage



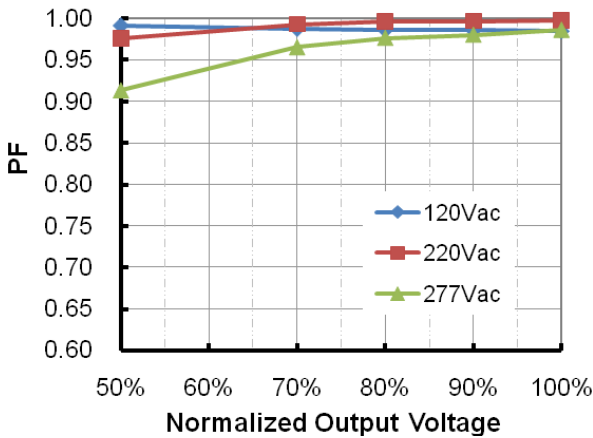
*EUC-042S045DS(PS)*

Power Factor vs. Output Voltage



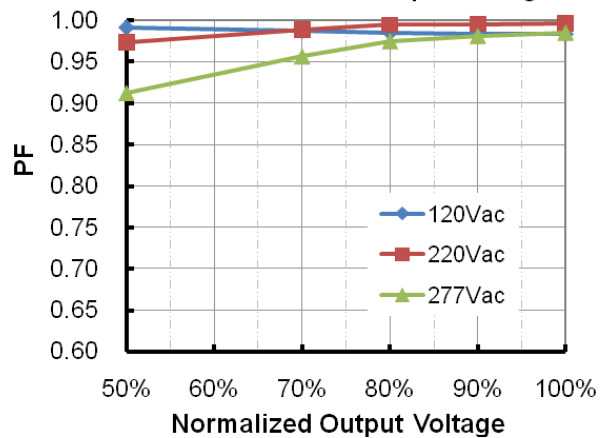
*EUC-042S070DS(PS)*

Power Factor vs. Output Voltage



*EUC-042S105DS(PS)*

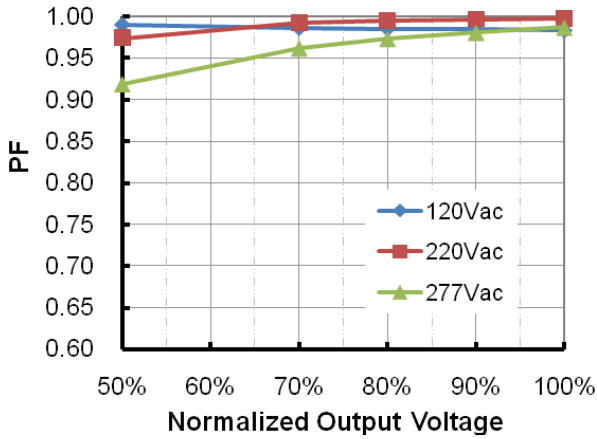
Power Factor vs. Output Voltage



Specifications are subject to changes without notice.

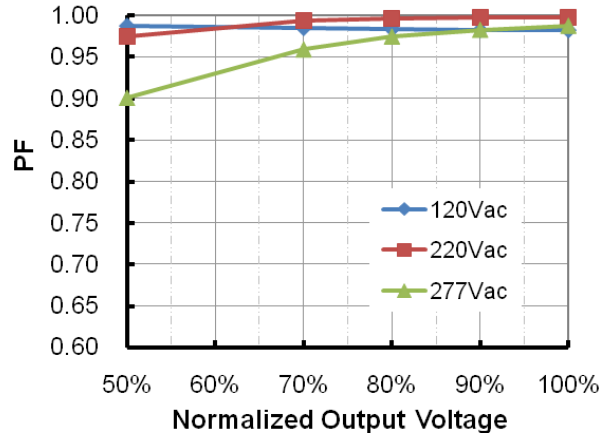
EUC-042S128DS(PS)

Power Factor vs. Output Voltage



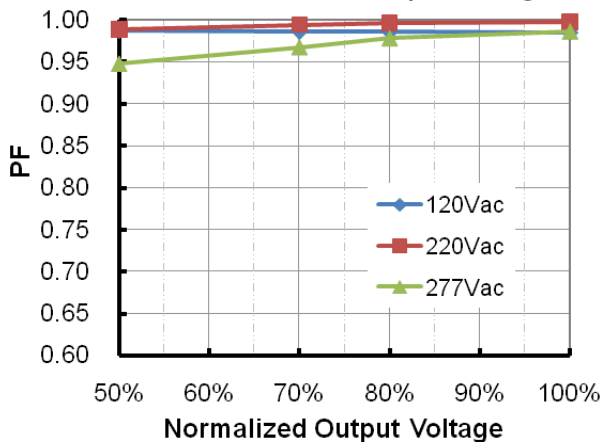
EUC-042S140DS(PS)

Power Factor vs. Output Voltage



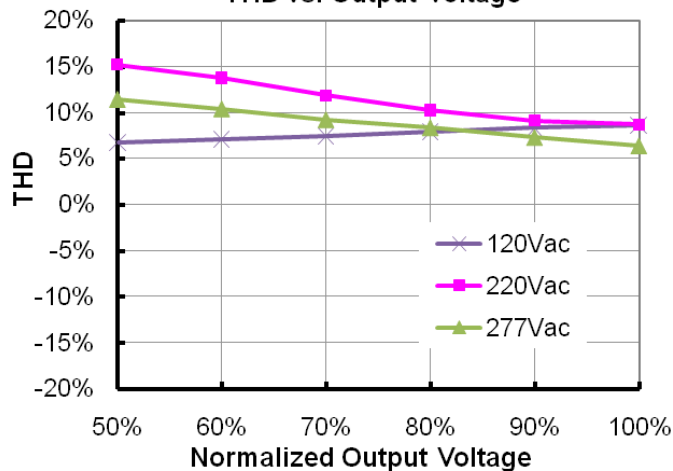
EUC-042S175DS(PS)

Power Factor vs. Output Voltage



## Total Harmonic Distortion (700 mA)

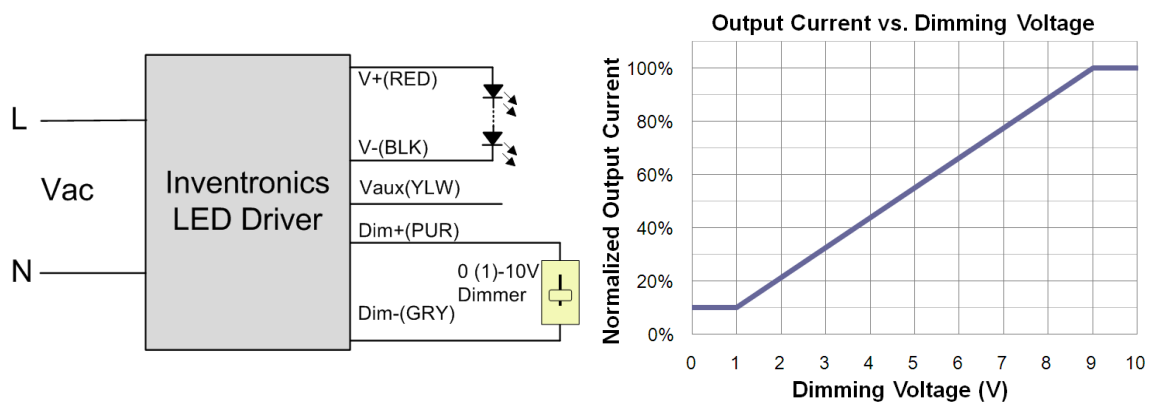
THD vs. Output Voltage



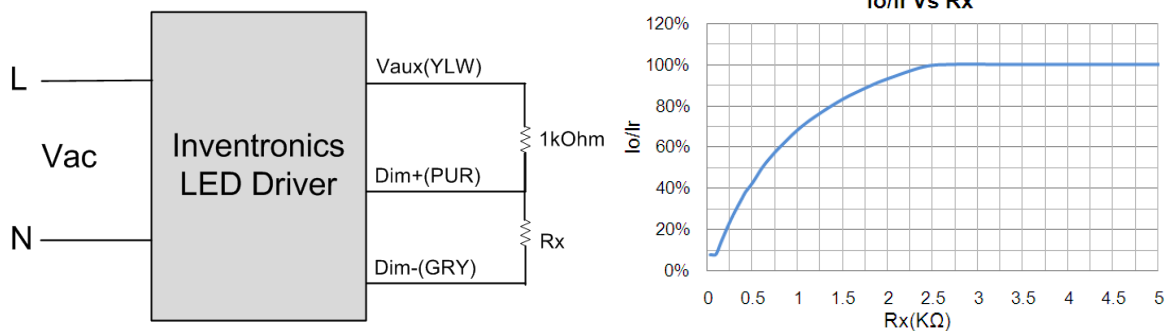
## Dimming Control (On secondary side)

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	

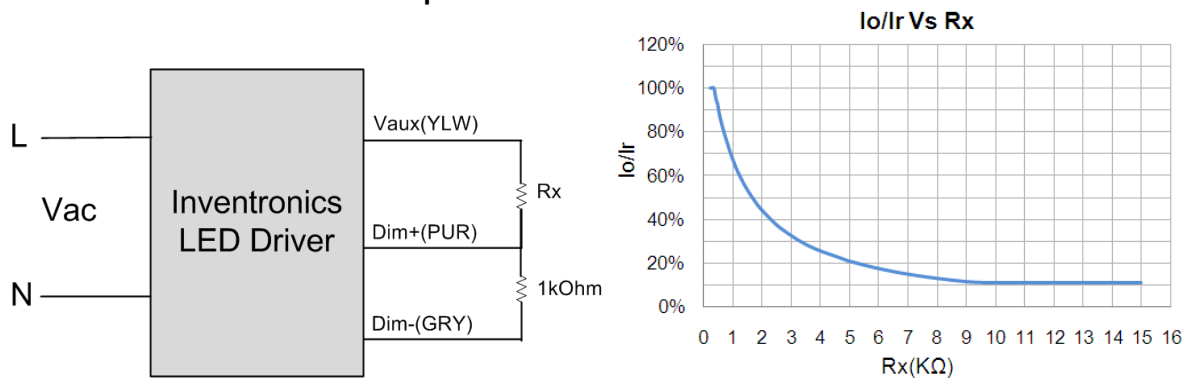
The dimmer control may be operated from either a dimmer or from an input signal of 0 – 10 Vdc. The recommended implementation is provided below.



### Implementation 1: DC Input



### Implementation 2: External Resistor



### Implementation 3: External Resistor

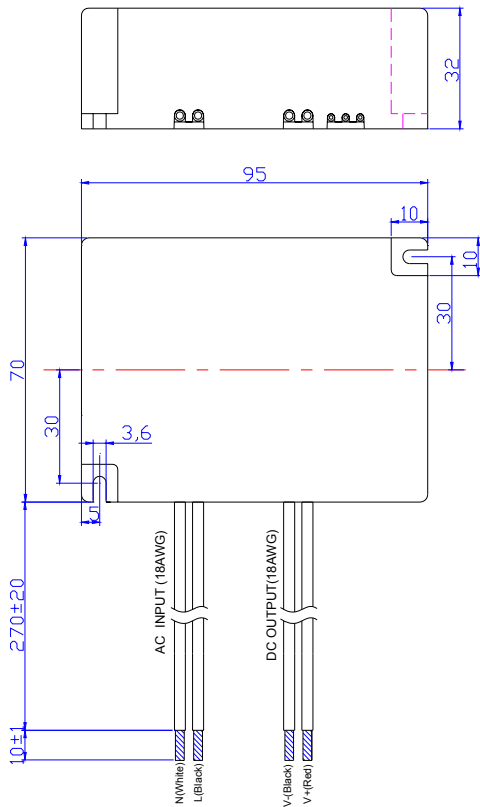
Specifications are subject to changes without notice.



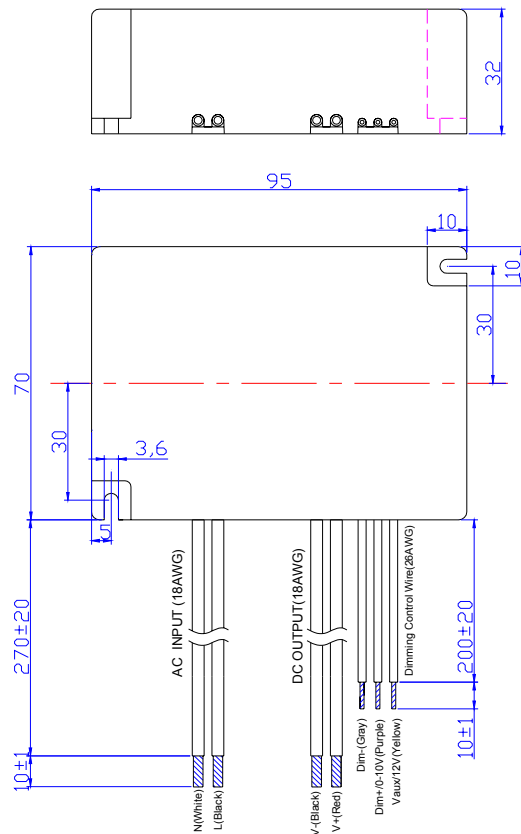
**Notes:**

Do not connect the Dim- to the V-, otherwise, the LED driver cannot work normally.

**Mechanical Outline**



EUC-042SxxxPS



EUC-042SxxxDS

**RoHS Compliance**

Our products comply with the European Directive 2002/95/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
2012-02-17	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
2012-7-17	F	Max Case Temperature	/	Updated
2012-7-30	G	Min Operating Temperature	-20°C	-40°C
2012-8-20	H	Derating Curve	/	Updated
		Inrush Current	60A	70A
		Inrush Current(I <sup>2</sup> t)	/	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

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