

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) 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	Input Voltage Range(1)	Output Voltage Range	Max. Output Power	Typical Efficiency (2)	Power Factor		Model Number (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)
530 mA	90 ~ 305 Vac	40~79 Vdc	42 W	89.0%	0.96	0.95	EUC-042S053DS(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) 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. Besides, a suffix -xxxx 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	

Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
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 μ s, 10%lpk-10%lpk.
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 = 350 mA	-	-	132 V	
I _o = 450 mA	-	-	104 V	
I _o = 530 mA	-	-	87 V	
I _o = 700 mA	-	-	59 V	
I _o = 1050 mA	-	-	42 V	
I _o = 1280 mA	-	-	37 V	
I _o = 1400 mA	-	-	34 V	
I _o = 1750 mA	-	-	27 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 = 350 mA	87%	89%	-	Measured at full load and 120Vac input.
I _o = 450 mA	86%	88%	-	
I _o = 530 mA	86%	88%	-	
I _o = 700 mA	86%	88%	-	
I _o = 1050 mA	85%	86%	-	
I _o = 1280 mA	84%	86%	-	
I _o = 1400 mA	84%	85%	-	
I _o = 1750 mA	84%	85%	-	
Efficiency				
I _o = 350 mA	88%	90%	-	Measured at full load and 220 Vac input.
I _o = 450 mA	87%	89%	-	
I _o = 530 mA	87%	89%	-	
I _o = 700 mA	87%	89%	-	
I _o = 1050 mA	86%	88%	-	
I _o = 1280 mA	85%	87%	-	
I _o = 1400 mA	85%	87%	-	
I _o = 1750 mA	85%	87%	-	
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

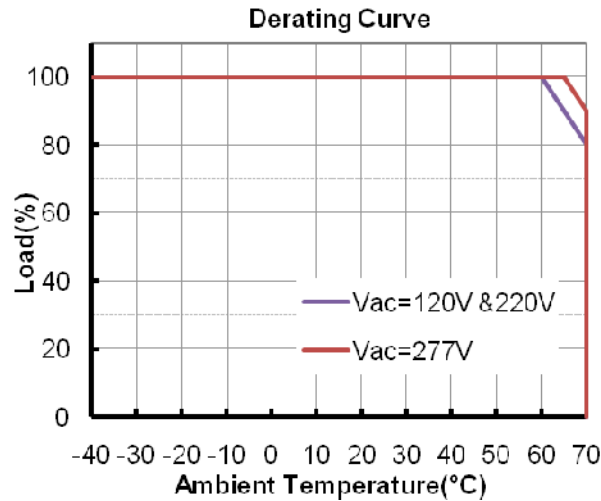
Safety & EMC Compliance

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

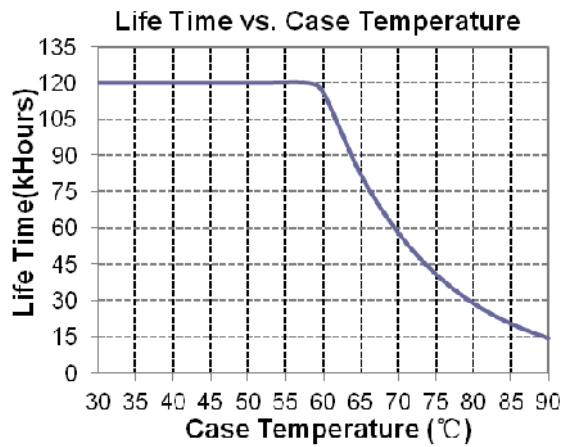
Safety & EMC Compliance (Continued)

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

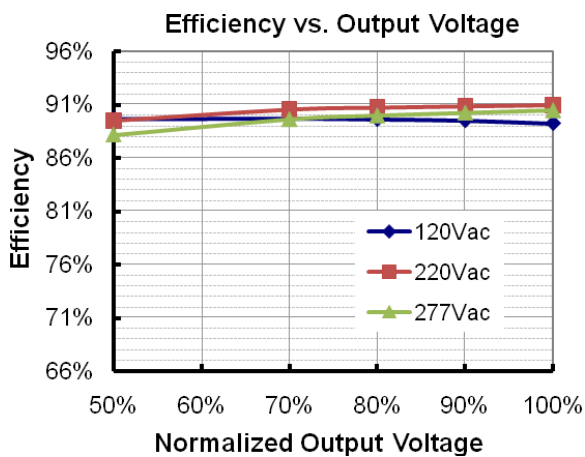


Life Time vs. Case Temperature Curve

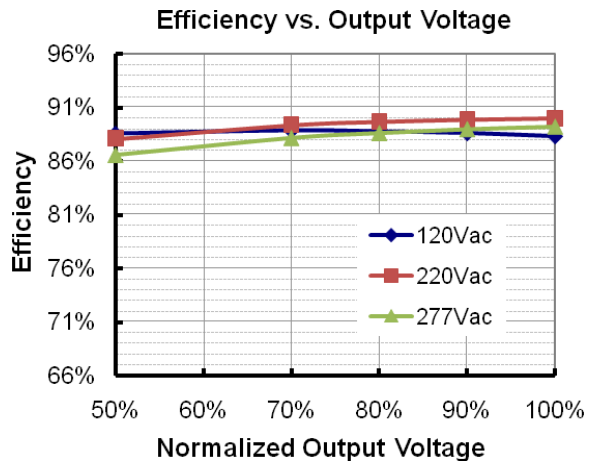


Efficiency vs. Load

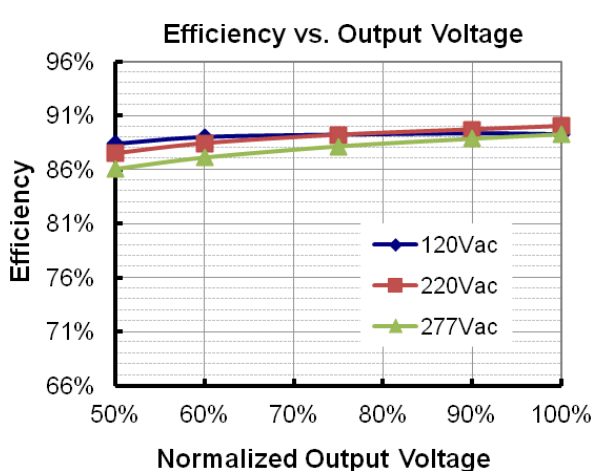
EUC-042S035DS(PS)



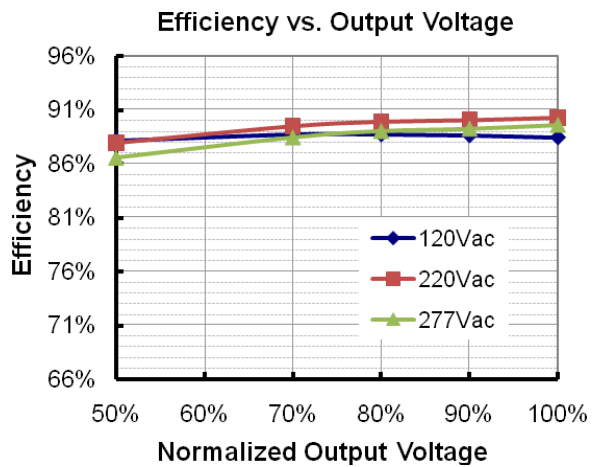
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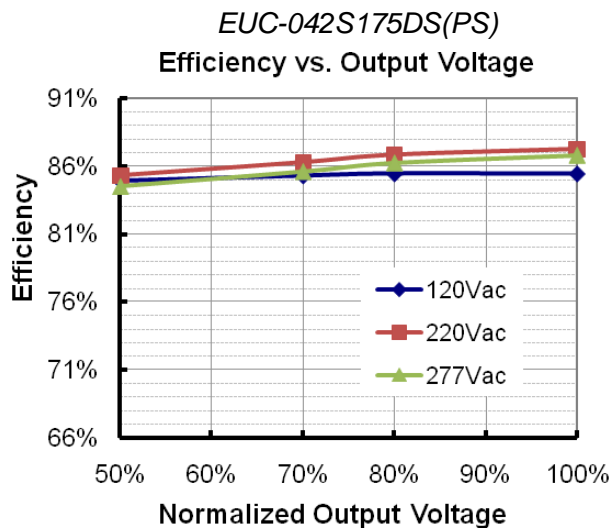
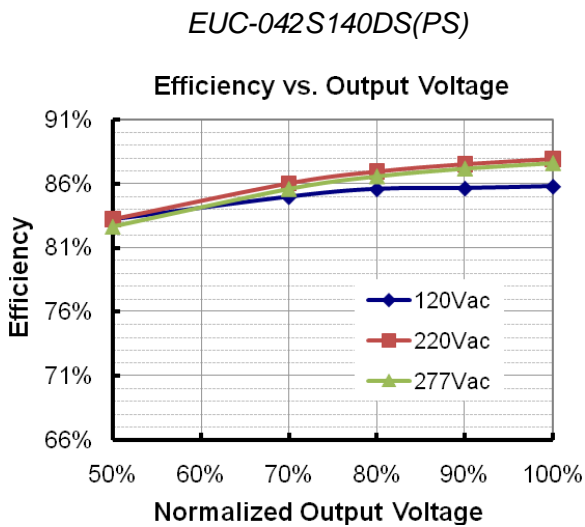
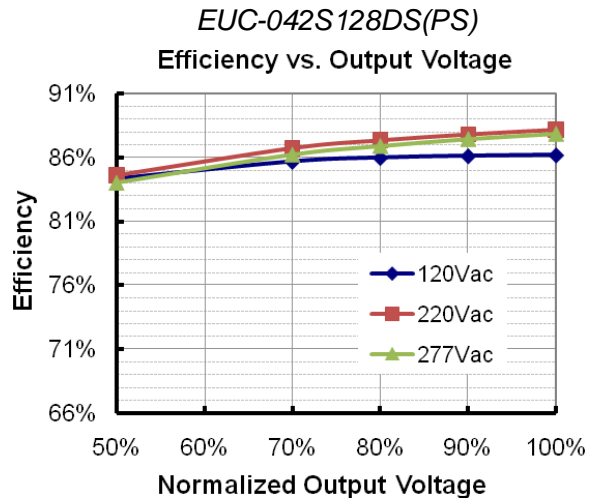
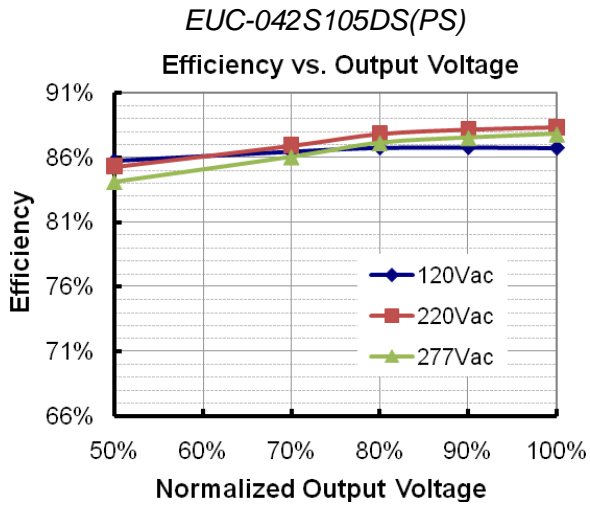


EUC-042S053DS(PS)

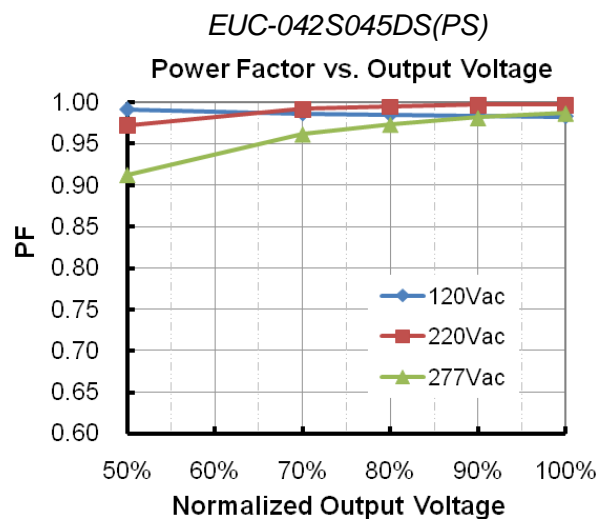
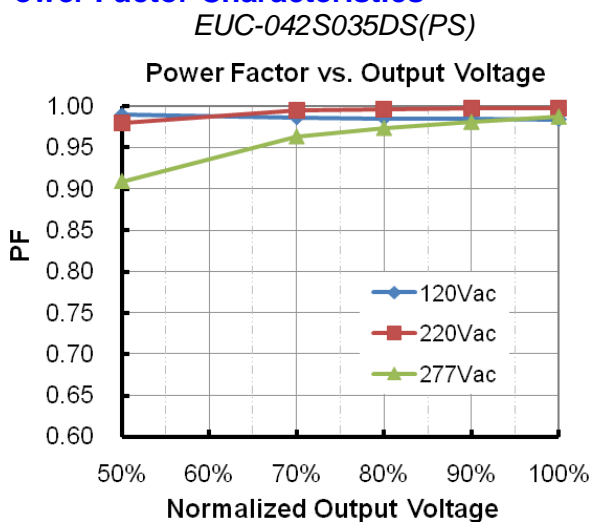


EUC-042S070DS(PS)

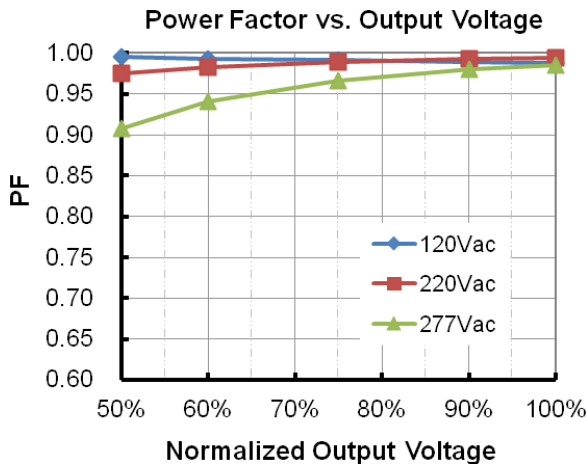




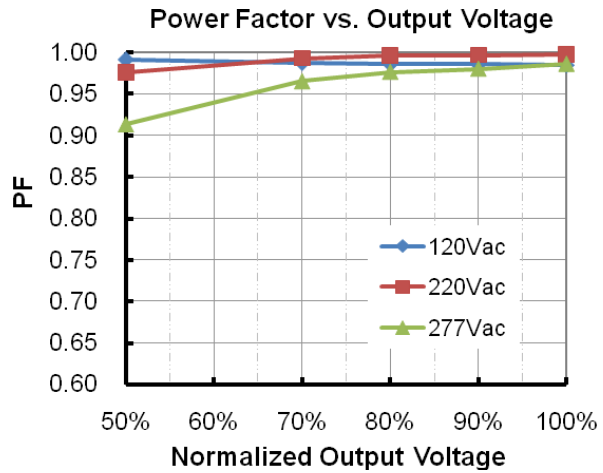
Power Factor Characteristics



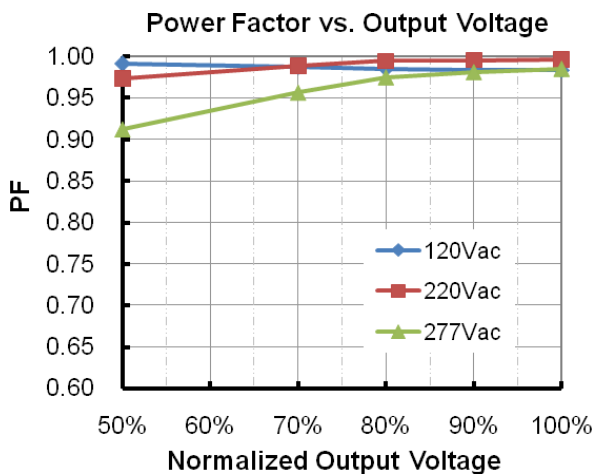
EUC-042S053DS(PS)



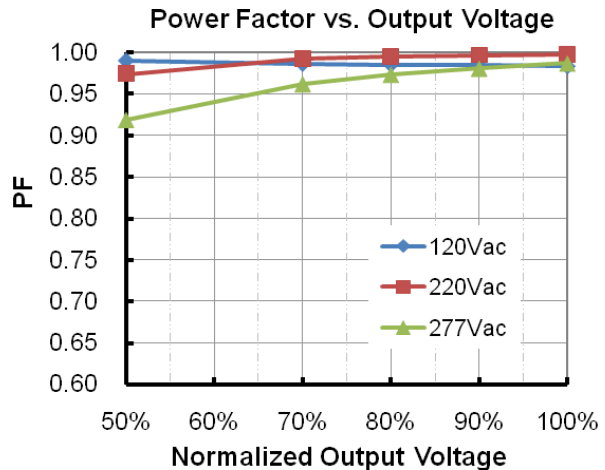
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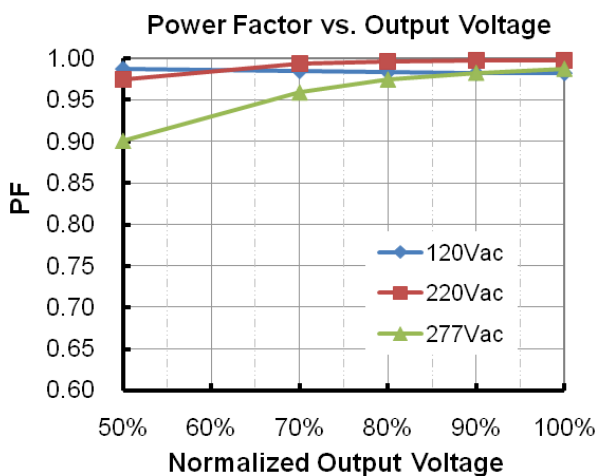
EUC-042S105DS(PS)



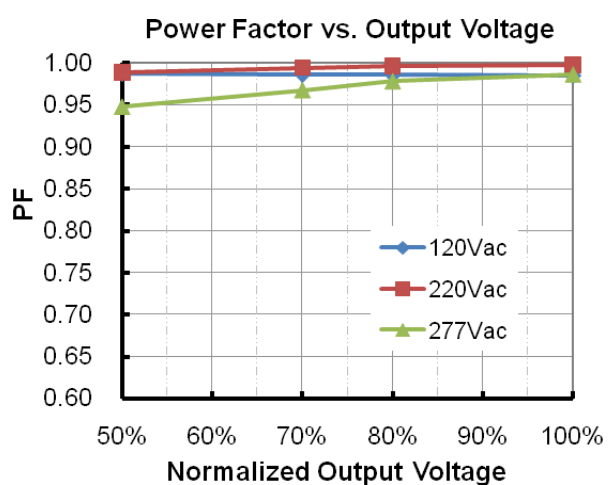
EUC-042S128DS(PS)



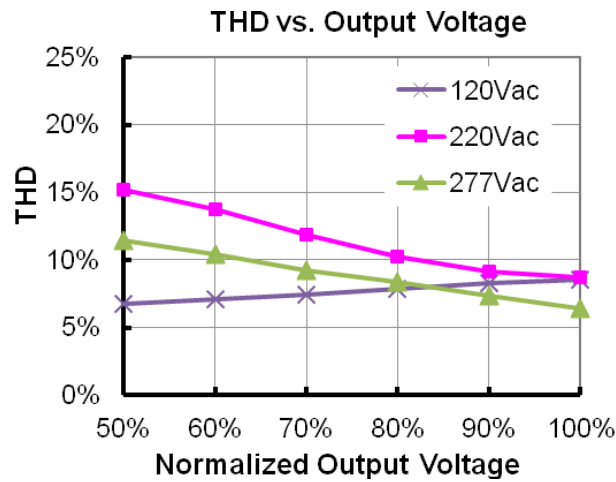
EUC-042S140DS(PS)



EUC-042S175DS(PS)



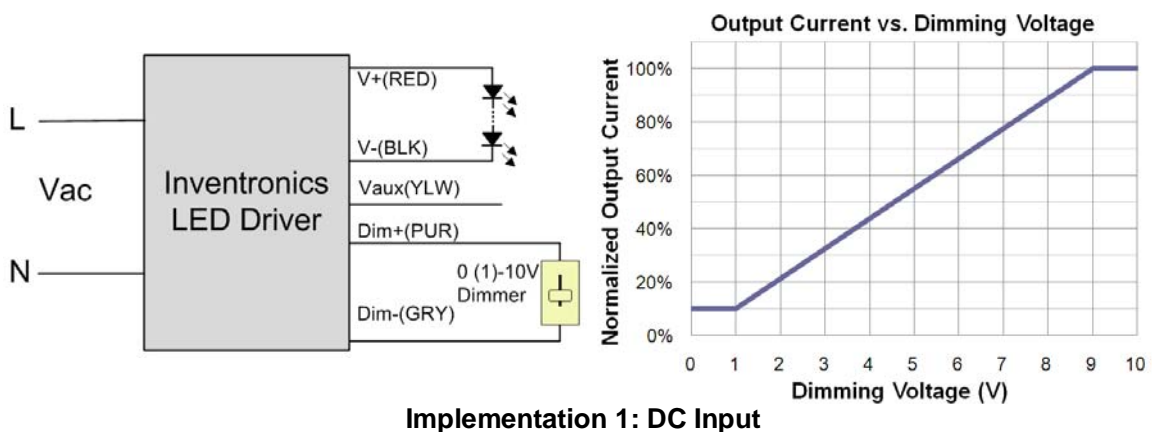
Total Harmonic Distortion (700 mA)

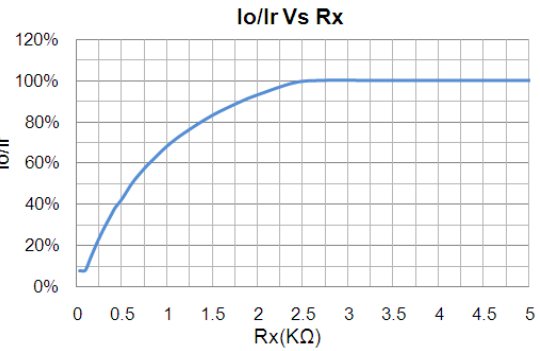
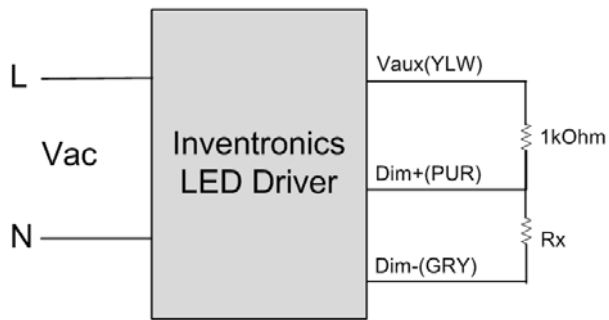


Dimming Control (On secondary side)

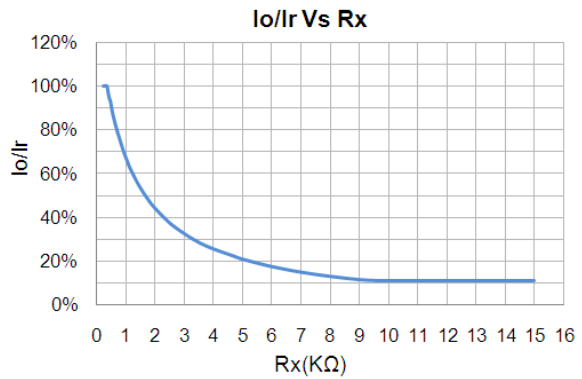
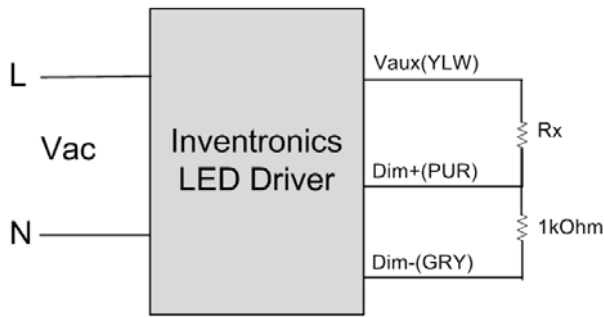
Parameter	Min.	Typ.	Max.	Notes
12V Output Voltage	10.8 V	12 V	13.2 V	
12V Output Source Current	0 mA	-	20 mA	
Absolute Maximum Voltage on the 0~10V Input Pin	0 V	-	15 V	
Source Current on 0~10V Input Pin	0 uA	-	200 uA	

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 2: External Resistor

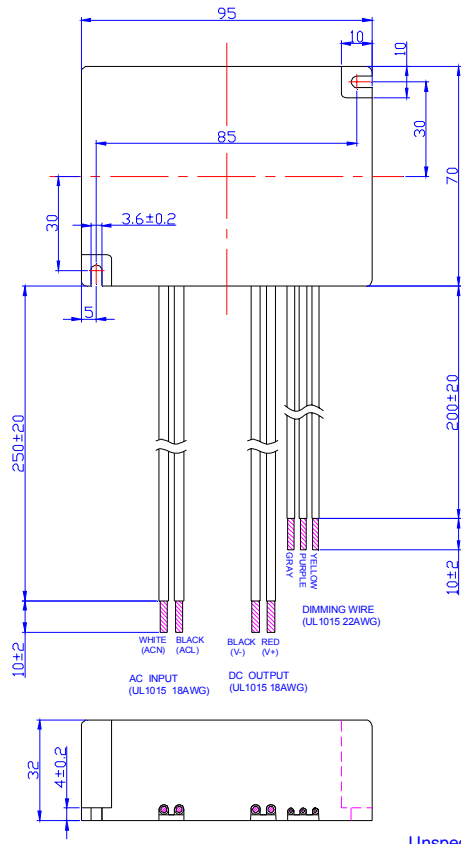


Implementation 3: External Resistor

Notes:

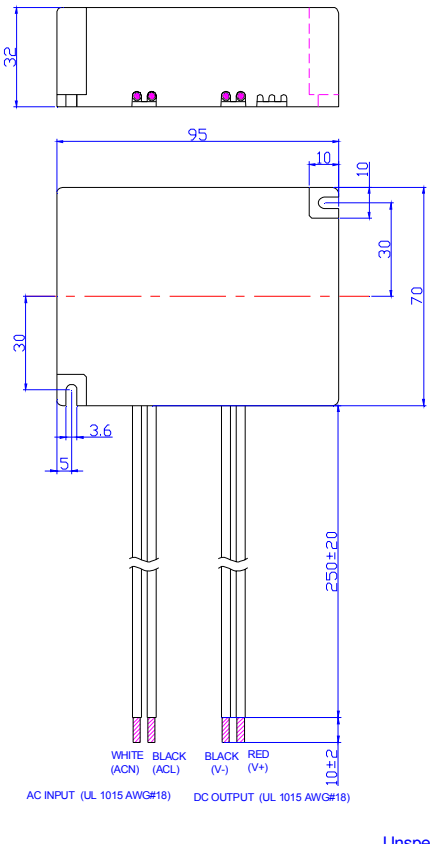
1. Do not connect the Dim- to the V-, otherwise, the LED driver cannot work normally.
2. If 0-10V dimming is not used, Dim + can be either open or connected to Vaux.

Mechanical Outline



EUC-042SxxxDS

Unspecified tolerance:±1



EUC-042SxxxPS

Unspecified tolerance:±1

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
2012-02-17	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°C	-40°C
2012-08-20	H	Derating Curve	/	Updated
		Inrush Current	60A	70A
		Inrush Current(I ² 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
2013-05-22	J	Inrush Current(I ² t) 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	K	Model 530mA	/	Added
		Mechanical Outline-Dimming wires updated	UL1015 26AWG	UL1015 22AWG