

## Features

- High Efficiency (Up to 91%)
- Active Power Factor Correction (0.99 Typical)
- Constant Current Output
- Dimming Function
- Lightning Protection
- All-Round Protection: OVP, SCP, OTP
- Waterproof (IP67)



## Description

The EUC-085SxxxDV(SV) Series operate from a 90 ~ 305 Vac input range. They are designed to be highly efficient and highly reliable. Features include over voltage protection, short circuit 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)
					110Vac	220Vac	
350 mA	90 ~ 305 Vac	122~243Vdc	85 W	91%	0.99	0.95	EUC-085S035DV(SV)
450 mA	90 ~ 305 Vac	95~189 Vdc	85 W	91%	0.99	0.95	EUC-085S045DV(SV)
700 mA	90 ~ 305 Vac	61~121 Vdc	85 W	90%	0.99	0.95	EUC-085S070DV(SV)
1050 mA	90 ~ 305 Vac	41~81 Vdc	85 W	90%	0.99	0.95	EUC-085S105DV(SV)
1400 mA	90 ~ 305 Vac	31~61 Vdc	85 W	90%	0.99	0.95	EUC-085S140DV(SV)
1750 mA	90 ~ 305 Vac	25~49 Vdc	85 W	90%	0.99	0.95	EUC-085S175DV(SV)
2000 mA	90 ~ 305 Vac	22~43 Vdc	85 W	90%	0.99	0.95	EUC-085S200DV(SV)
2450 mA	90 ~ 305 Vac	18~35 Vdc	85 W	89%	0.99	0.95	EUC-085S245DV(SV)
2800 mA	90 ~ 305 Vac	16~30 Vdc	85 W	89%	0.99	0.95	EUC-085S280DV(SV)

**Notes:** (1) Measured at full load and 220 Vac input.

(2) A suffix –xxxx may be added to denote variations or modifications to the base product, where x can be any alphanumeric character or blank.

## Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 V	-	305 V	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	1 mA	At 277Vac 60Hz input
Input AC Current	-	-	1.1 A	Measured at full load and 100 Vac input.
	-	-	0.5 A	Measured at full load and 220 Vac input.
Inrush Current	-	-	60 A	At 220Vac input, 25°C cold start, duration=1 ms, 10%Ipk-10%Ipk.
Inrush Current(I <sup>2</sup> t)	-	-	1 A <sup>2</sup> s	

Specifications are subject to changes without notice.

## Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Power Factor	0.90	-	-	At 100Vac-277Vac, 100%load
THD	-	-	20%	At 100Vac-277Vac, 100%load

## Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Range	-5%	-	5%	
No-load Output Voltage				
$I_o = 350 \text{ mA}$	-	-	255V	
$I_o = 450 \text{ mA}$	-	-	198V	
$I_o = 700 \text{ mA}$	-	-	129V	
$I_o = 1050 \text{ mA}$	-	-	87V	
$I_o = 1400 \text{ mA}$	-	-	67V	
$I_o = 1750 \text{ mA}$	-	-	54V	
$I_o = 2000 \text{ mA}$	-	-	48V	
$I_o = 2450 \text{ mA}$	-	-	39V	
$I_o = 2800 \text{ mA}$	-	-	33V	
Ripple and Noise (pk-pk)	-	-	3% $V_o$	Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 uF ceramic capacitor and a 10 uF electrolytic capacitor.
Output Overshoot / Undershoot	-	-	10%	When power on or off.
Line Regulation	-	-	$\pm 2\%$	
Load Regulation	-	-	$\pm 3\%$	
Turn-on Delay Time	-	2.0 s	3.0 s	Measured at 110Vac input.
	-	0.6 s	1.0 s	Measured at 220Vac input.
Temperature coefficient	-	-	0.06%/°C	Case temperature = 0°C ~Tc max

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

## Protection Functions

Parameter	Min.	Typ.	Max.	Notes
Over Temperature Protection-Tc	-	110 °C	-	Latch mode. The power supply shall return to normal operation only after the power is turn-on again.
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.			

## General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency $I_o = 350 \text{ mA}$ $I_o = 450 \text{ mA}$ $I_o = 700 \text{ mA}$ $I_o = 1050 \text{ mA}$ $I_o = 1400 \text{ mA}$ $I_o = 1750 \text{ mA}$ $I_o = 2000 \text{ mA}$ $I_o = 2450 \text{ mA}$ $I_o = 2800 \text{ mA}$	88% 88% 87% 87% 87% 87% 87% 86% 86%	89% 89% 88% 88% 88% 88% 88% 87% 87%	- - - - - - - - -	Measured at full load and 110 Vac input
Efficiency $I_o = 350 \text{ mA}$ $I_o = 450 \text{ mA}$ $I_o = 700 \text{ mA}$ $I_o = 1050 \text{ mA}$ $I_o = 1400 \text{ mA}$ $I_o = 1750 \text{ mA}$ $I_o = 2000 \text{ mA}$ $I_o = 2450 \text{ mA}$ $I_o = 2800 \text{ mA}$	90% 90% 89% 89% 89% 89% 89% 88% 88%	91% 91% 90% 90% 90% 90% 90% 89% 89%	- - - - - - - - -	Measured at full load and 220 Vac input
MTBF	-	320,000 hours	-	Measured at 110Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Life Time	-	100,000 hours	-	Measured at 110Vac input, 80%Load ; Case temperature=60°C @ Tc point. See life time vs. Tc curve for the details
Case Temperature	-	-	90°C	
Dimensions Inches (L x W x H) Millimeters (L x W x H)	.91 x 2.66 x 1.44 150 x 67.5 x 36.5			
Net Weight	-	770 g	-	

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

## Environmental Specifications

Parameter	Min.	Typ.	Max.	Notes
Operating Temperature	-40 °C	-	+65 °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

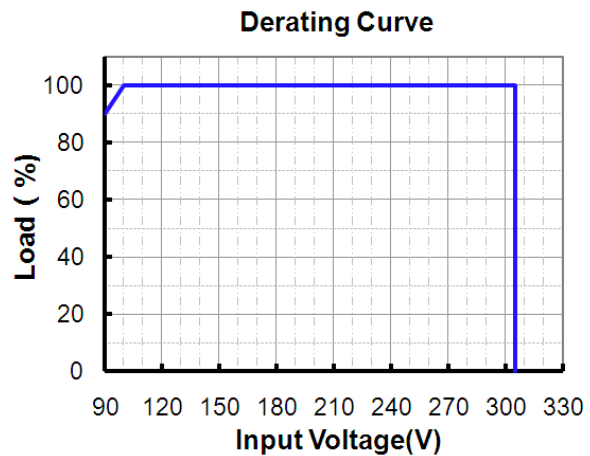
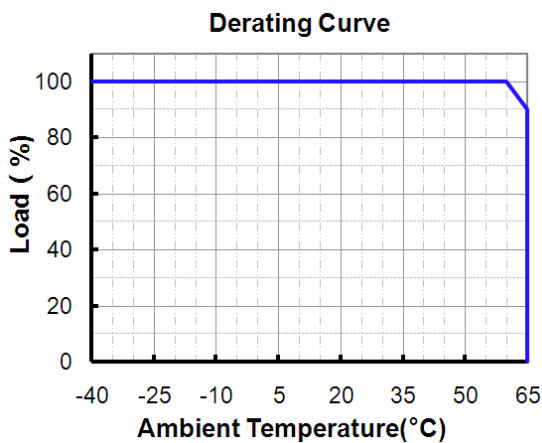
Safety Category	Standard
CE	EN61347-1, EN61347-2-13
EMI Standards	Notes
EN 55015	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker

Specifications are subject to changes without notice.

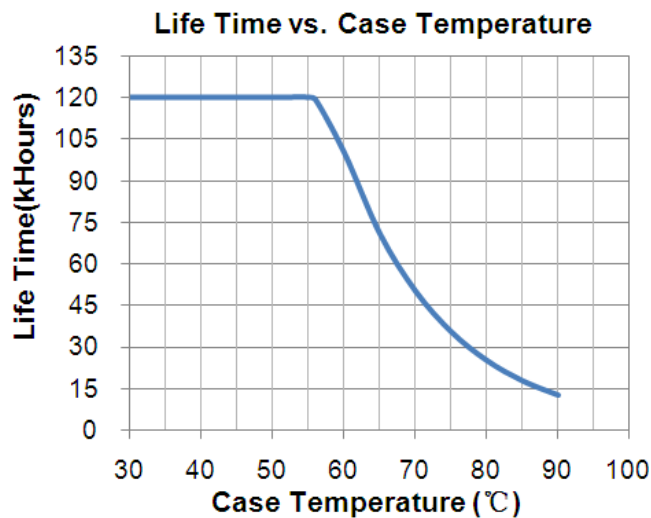
## Safety & EMC Compliance (Continued)

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
EN 61000-4-5	Surge Immunity Test: AC Power Line: line to line 4 kV, line to earth 6 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

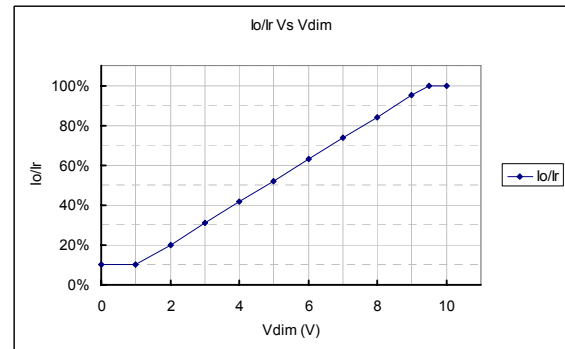
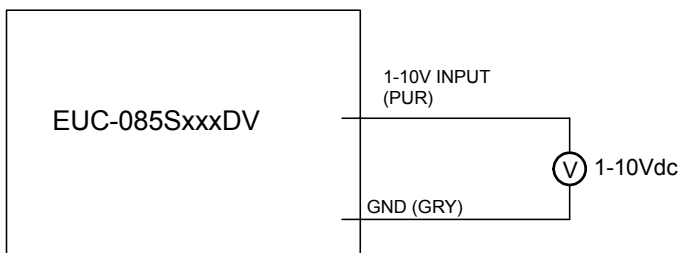


Specifications are subject to changes without notice.

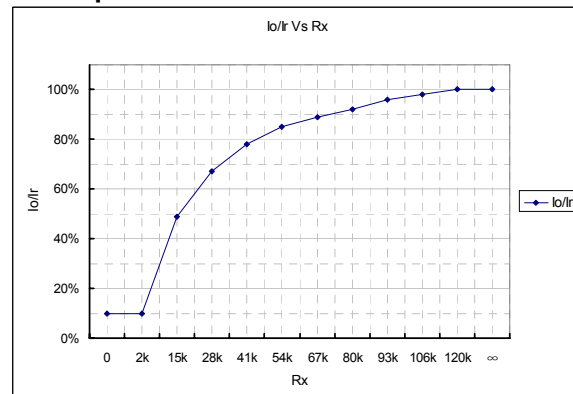
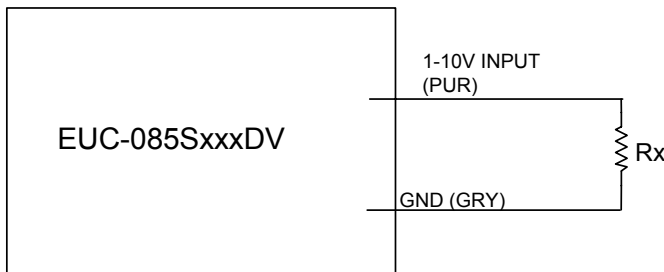
## Dimming Control (On secondary side)

Parameter	Min.	Typ.	Max.	Notes
Absolute maximum voltage on 1-10V input pin	-2 V	-	12 V	
Source current on 1~10V input pin	0 mA	-	0.5 mA	

The dimmer control may be operated from either a potentiometer or from an input signal of 1 – 10 Vdc. Two recommended implementations are provided below.



Implementation 1: DC input

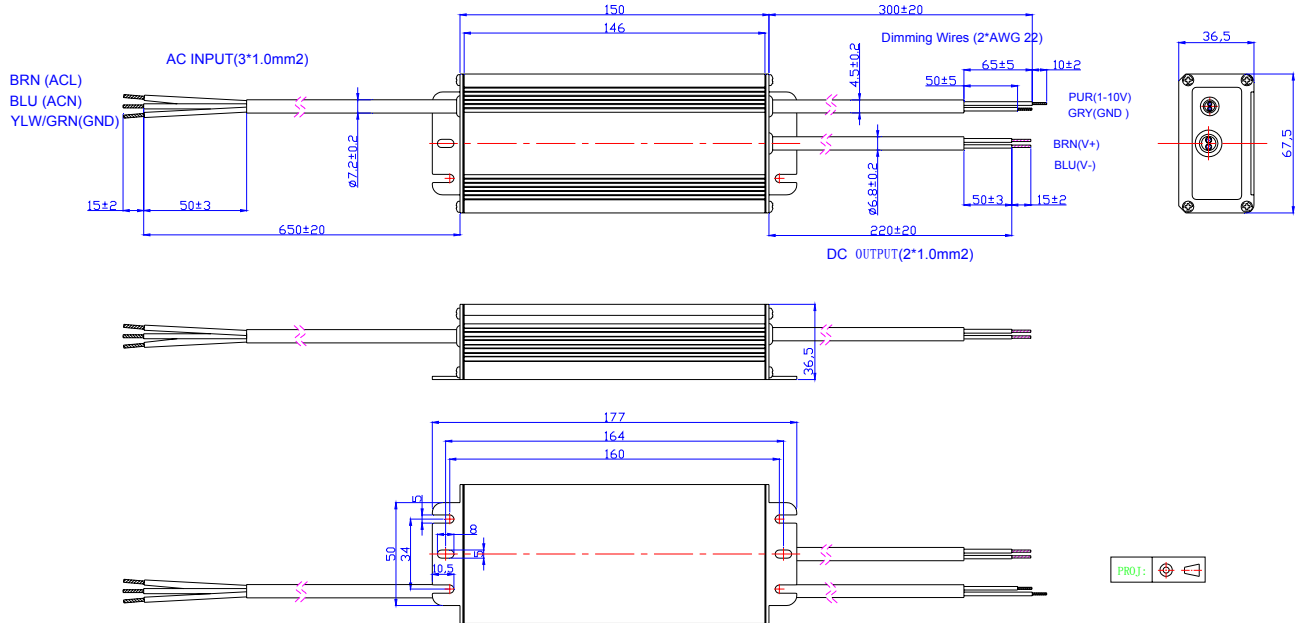


Implementation 2: External resistor

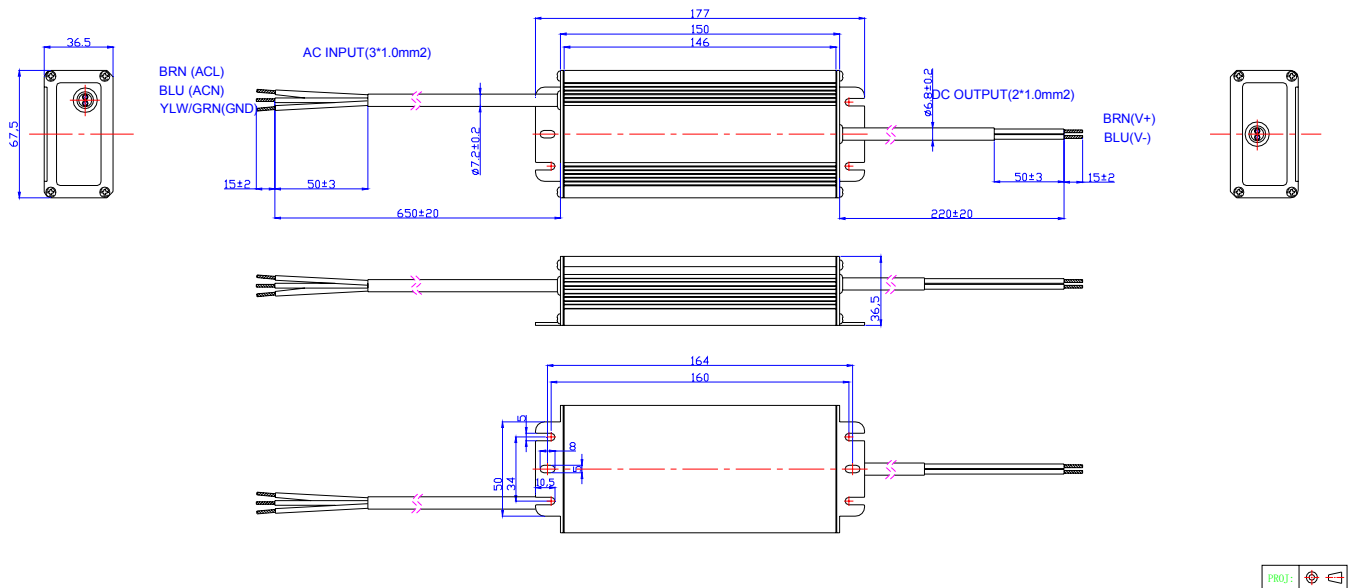
### Notes:

1.  $I_o$  is actual output current and  $I_r$  is rated current without dimming control.
2. For the driver to operate properly, the load voltage must be maintained above the minimum voltage threshold (approx. 50% of the max. output voltage for any given model).
3. If the output voltage is maintained above 50% of the maximum output voltage, the dimming control may be operated over the entire 1-10V range with output current varying from 100% down to practically 10%.
4. The dimming signal is allowed to be less than 1V, however, when it for 0-1V, the output current is 10% $I_o$ .
5. Do not connect the GND of dimming to the output; otherwise, the LED driver can not work normally.

## Mechanical Outline EUC-085SxxxDV



## EUC-085SxxxSV



## 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
2010-09-01	A	Add EUC-085SxxxST Series	EUC-085SxxxDT	EUC-085SxxxST/DT
		Add notes of UL1310 Class 2 for all models.	/	(4) (5) (6)
		Add No-load Output Voltage	/	The typ. value of every model.
		Change Ripple and Noise (pk-pk)	5% V <sub>O</sub>	1% V <sub>O</sub>
		Change Line Regulation	1%	2%
		Change efficiency for all models	/	/
		Change MTBF	498,000 hours	300,000 hours
		Change Life Time	90,000 hours	63,000 hours
		Change Net Weight	750 g	770 g
		Delete the Dimming Implementation-- External zener diodes	Implementation 2: External zener diodes	/
Change Mechanical Outline The dimming control Wire The output Wire	Purple / Green Red / Black	Purple / Gray Red / Blue		
2010-9-29	B	Change Output Voltage Range 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> = 1400 mA I <sub>o</sub> = 1750 mA I <sub>o</sub> = 2000 mA I <sub>o</sub> = 2450 mA I <sub>o</sub> = 2800 mA	Min. 121 V 94 V 61 V 40 V 30 V 24 V 21 V 17 V 15 V	Min. 122 V 95 V 61 V 41 V 31 V 25 V 22 V 18 V 16 V
		Change Ripple and Noise (pk-pk)	Max. 1% V <sub>O</sub>	Max. 3% V <sub>O</sub>
2010-11-17	C	Add Derating Curve	/	/
2012-02-23	D	Mechanical Outline	the position of the wire outing hole	Changed
		OTP	120°C	110°C
2012-06-19	E	Life time curve	/	Added
		EN61000-4-5	line to line 2 kV, line to earth 4 kV	line to line 4 kV, line to earth 6 kV
		Max of No-load Output Voltage	/	Added
2012-7-5	F	Inrush Current	50 A	60 A
2012-7-17	G	Max Case Temperature	/	Updated
2012-9-27	H	Min PF, Max THD	/	Added
		Temperature coefficient	/	Added
		MTBF, Life time Typical Value	/	Added
		Life Time Curve	/	Updated
		Operating Temperature	-35°C	-40°C
		Derating Curve	/	Updated

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