

## Features

- Ultra High Efficiency (Up to 92.5%)
- Active Power Factor Correction (0.99 Typical)
- Constant Current Output
- Lightning Protection
- All-Round Protection: SCP, OTP, OVP
- Waterproof (IP67)
- Comply With UL8750 & EN61347 Safety Regulation



## Description

The EUC-150SxxxDT Series operate from a 90 ~ 305 Vac input range. They are designed to be highly efficient and highly reliable. The standard features include dimming control, lightning protection, 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	214~428Vdc	150 W	92.5%	0.99	0.96	EUC-150S035DT
450 mA	90 ~ 305 Vac	166~333Vdc	150 W	92.5%	0.99	0.96	EUC-150S045DT
700 mA	90 ~ 305 Vac	107~214Vdc	150 W	92.5%	0.99	0.96	EUC-150S070DT★
1050 mA	90 ~ 305 Vac	107~142Vdc	150 W	92.0%	0.99	0.96	EUC-150S105DT
1400 mA	90 ~ 305 Vac	53~107 Vdc	150 W	92.0%	0.99	0.96	EUC-150S140DT

- 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.  
 (3) ★: Popular model.

## 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	-	-	1.8 A	Measured at full load and 100 Vac input.
	-	-	0.9 A	Measured at full load and 220 Vac input.
Inrush current	-	-	65 A	At 230Vac input 25°C Cold start

## Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Range $I_o = 350 \text{ mA}$ $I_o = 450 \text{ mA}$ $I_o = 700 \text{ mA}$ $I_o = 1050 \text{ mA}$ $I_o = 1400 \text{ mA}$	332 mA 427 mA 665 mA 997 mA 1330 mA	350 mA 450 mA 700 mA 1050 mA 1400 mA	368 mA 473 mA 735 mA 1102 mA 1470 mA	$V_{dim}=10V$
No-load Output Voltage $I_o = 350 \text{ mA}$ $I_o = 450 \text{ mA}$ $I_o = 700 \text{ mA}$ $I_o = 1050 \text{ mA}$ $I_o = 1400 \text{ mA}$	- - - - -	- - - - -	474.2 V 372.7 V 236.3 V 158.1 V 118.5 V	
Ripple and Noise (pk-pk) $I_o = 350 \text{ mA}$ $I_o = 450 \text{ mA}$ $I_o = 700 \text{ mA}$ $I_o = 1050 \text{ mA}$ $I_o = 1400 \text{ mA}$	- - - - -	- - - - -	13 V 10 V 6.5 V 4.3 V 3.2 V	Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 uF ceramic capacitor and a 10 uF electrolytic capacitor.
Line Regulation	-	-	1%	
Load Regulation	-	-	3%	
Turn-on Delay Time	-	0.5 s	1.0 s	Measured at 110Vac input.
	-	0.3 s	0.6 s	Measured at 220Vac input.

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

## Protection Functions

Parameter	Min.	Typ.	Max.	Notes
Over Voltage Protection $I_o = 350 \text{ mA}$ $I_o = 450 \text{ mA}$ $I_o = 700 \text{ mA}$ $I_o = 1050 \text{ mA}$ $I_o = 1400 \text{ mA}$	514 V 400 V 257 V 170 V 128 V	578 V 450 V 289 V 192 V 144 V	642 V 500 V 321 V 213 V 161 V	Latch mode. The power supply shall return to normal operation only after the power is turn-on again.
Over Temperature Protection	-	110 °C	-	Maximum temperature of components inside the case.
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 $I_o = 350 \text{ mA}$ $I_o = 450 \text{ mA}$ $I_o = 700 \text{ mA}$ $I_o = 1050 \text{ mA}$ $I_o = 1400 \text{ mA}$	89.5% 89.5% 89.5% 89.0% 89.0%	90.5% 90.5% 90.5% 90.0% 90.0%	- - - - -	Measured at full load, 110Vac input, 25°C ambient temperature, after the unit is thermally stabilized.  It will be lower about 1%, if measured immediately after startup.

Specifications are subject to changes without notice.

## General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Efficiency				
$I_o = 350 \text{ mA}$	91.5%	92.5%	-	Measured at full load, 220Vac input, 25°C ambient temperature, after the unit is thermally stabilized.  It will be lower about 1%, if measured immediately after startup.
$I_o = 450 \text{ mA}$	91.5%	92.5%	-	
$I_o = 700 \text{ mA}$	91.5%	92.5%	-	
$I_o = 1050 \text{ mA}$	91.0%	92.0%	-	
$I_o = 1400 \text{ mA}$	91.0%	92.0%	-	
MTBF				
$I_o = 350 \text{ mA}$	250,000 hours			Measured at 110Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
$I_o = 1400 \text{ mA}$	230,000 hours			
Life Time				
$I_o = 350 \text{ mA}$	58,000 hours			Measured at 220Vac input, 80%load; Case temperature=60°C @ Tc point. See life time vs. Tc curve for the details
$I_o = 1400 \text{ mA}$	88,000 hours			
Dimensions				
Inches (L x W x H)	9.37 x 3.13 x 1.81			
Millimeters (L x W x H)	238 x 79.5 x 46			
Net Weight	-	1500 g	-	

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

## Environmental Specifications

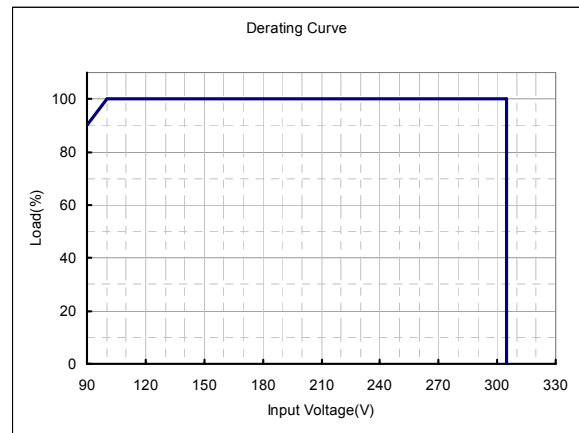
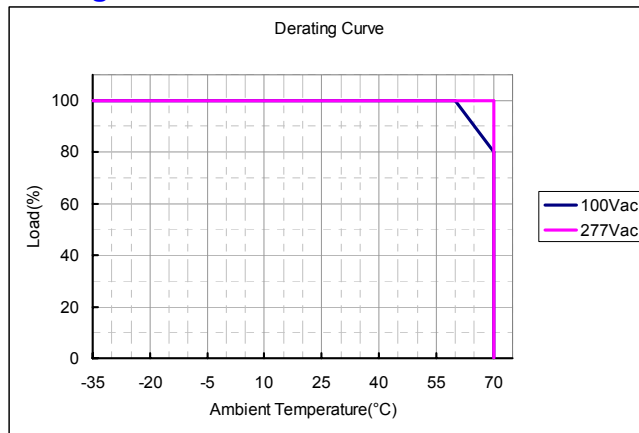
Parameter	Min.	Typ.	Max.	Notes
Operating Temperature	-35 °C	-	+70 °C	Humidity: 10% RH to 100% RH See Derating Curve for more details
Storage Temperature	-40 °C	-	+85 °C	Humidity: 5% RH to 100% RH

## Safety & EMC Compliance

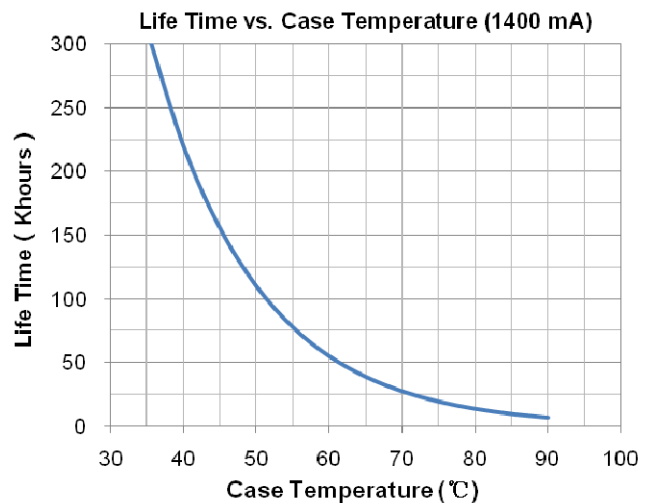
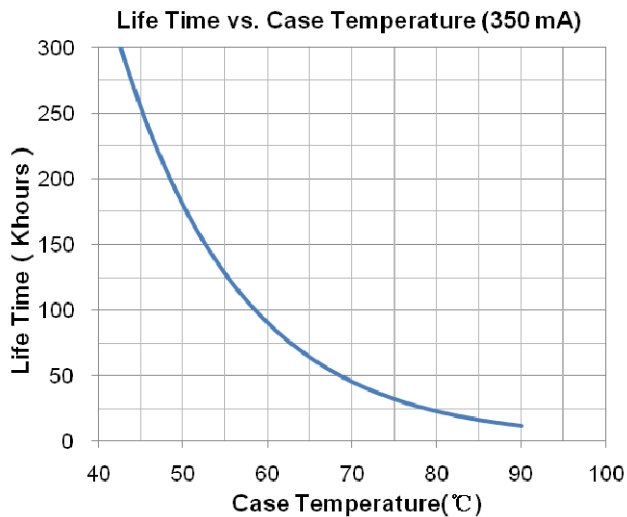
Safety Category	Standard
CUL	UL8750, UL935, UL1012, CSA-C22.2 No. 107.1
CE	EN 61347-1, EN61347-2-13
EMI Standards	Notes
EN 55015	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EMS Standards	Notes
EN 61000-4-2	Electrostatic 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

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## Derating Curve



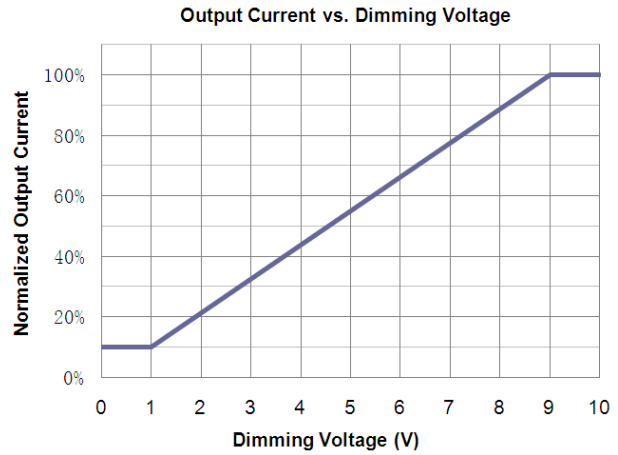
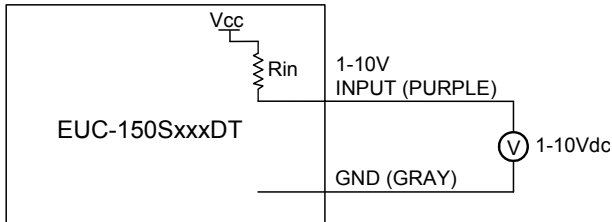
## Life Time vs. Case Temperature Curve



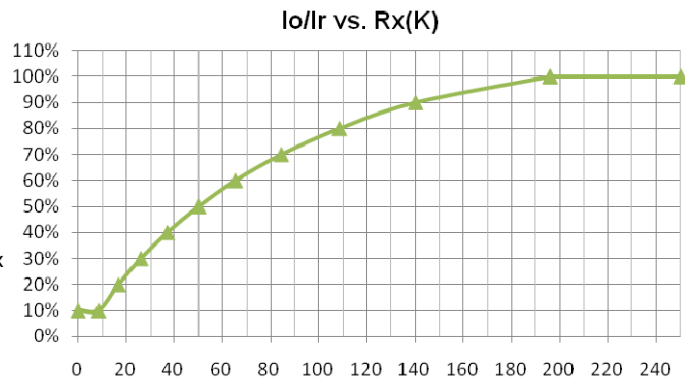
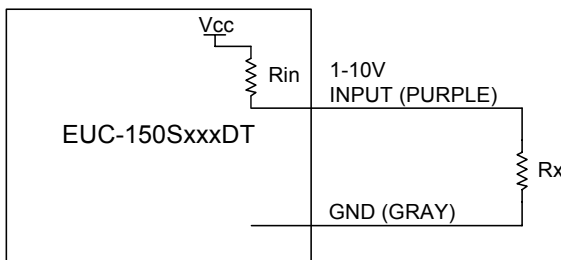
## Dimming Control (On secondary side)

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

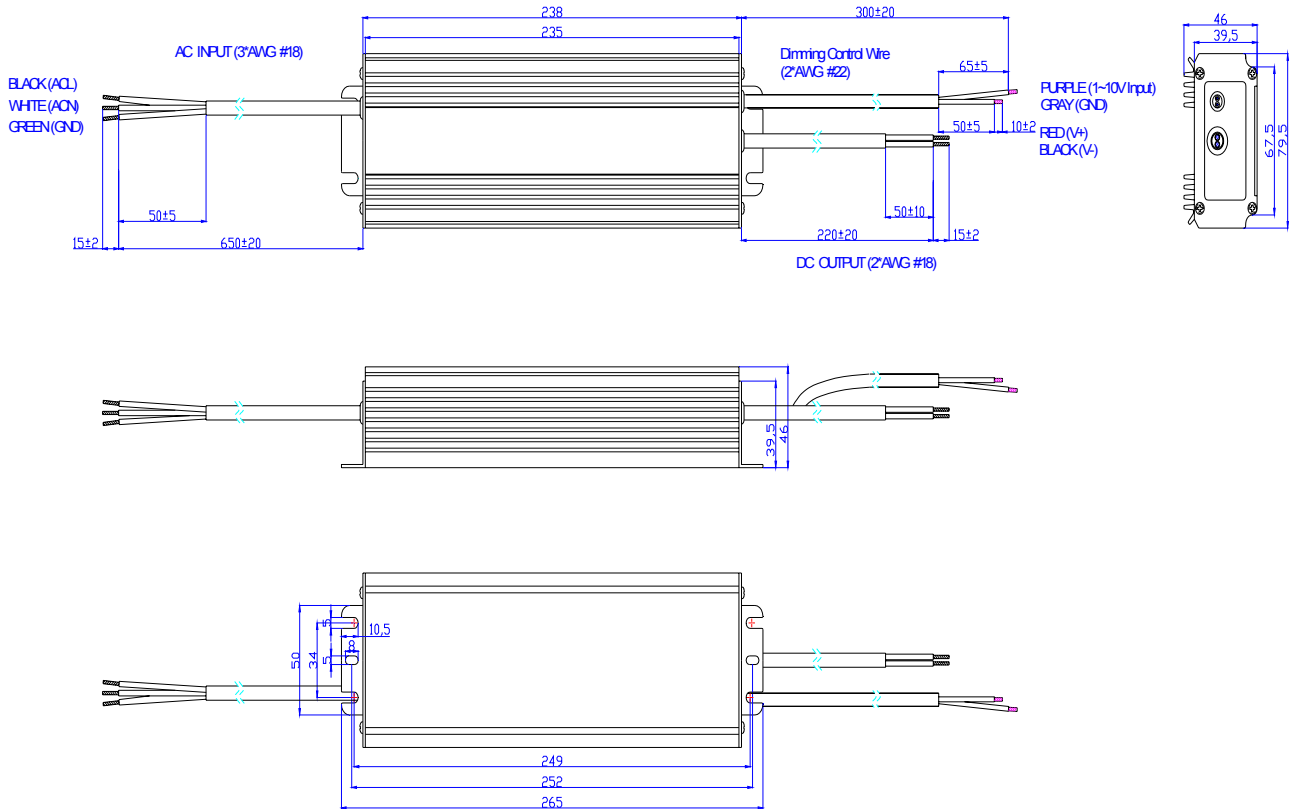


### Implementation 2: External resistor

**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



## 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
2010-01-15	V1.1	First Release	/	/
2010-09-01	A	Add a new model of 1400mA	/	/
		Add Leakage Current in Input Specifications	/	Max. 0.75 mA At 277Vac 50Hz input
		Add No-load Output Voltage	/	The typ. value of every model.
		Change Ripple and Noise	Max. 3% V <sub>O</sub>	The max. value of every model.
		Change MTBF	450,000 hours	300,000 hours
		Change Life Time	100,000 hours	70,000 hours
		Change the dimming Implementation and notes	Four dimming Implementations	Two dimming Implementations: 1. DC input 2. External resistor
		Change Mechanical Outline The dimming control Wire The output Wire	3*AWG #22 (Yellow/Purple/Green) Red/Black	2*AWG #22 (Purple/Gray) Red/Blue
2010-10-13	B	Change Output Voltage Range I <sub>O</sub> = 1400 mA	Min. 54V	Min. 53V
		Change the dimming diagram	/	/
		Add one note for Dimming Control	/	5. The internal resistor Rin is 20K, and Vcc is about 15V.
2011-01-14	C	Add star rank for recommended models	/	☆: Popular model.
		Update MTBF & Life Time Date	For One Model	For Two Models
2011-04-29	D	Change the Turn-on Delay Time 110 Vac 220 Vac	Typ. Max. 1.0S 2.0S 1.0S 2.0S	Typ. Max. 0.5S 1.0S 0.3S 0.6S
2011-9-30	E	Mechanical Outline-DC Wire	270 ± 20	220 ± 20
		Mechanical Outline-Dimming Wire	60 ± 5	65 ± 5
2012-1-13	F	Dimming Curve	/	Updated
		Mechanical outline	/	Updated
2012-06-28	G	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
		MTBF	/	Updated
		Mechanical outline	/	Corrected
2012-7-4	H	Ir/Io vs. Rx Curve	/	Updated
		Notes of Dimming Curve	/	Updated
		Life time and MTBF of Model 1400mA	/	Added

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