

## Features

- High Efficiency (Up to 90%)
- Active Power Factor Correction (0.99 Typical)
- Constant Current Output
- Dimming Function
- Lightning Protection
- All-Around Protection: OVP, SCP, OTP
- Waterproof (IP67)
- SELV



## Description

The EUC-075SxxxDV(SV) 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 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	107~214Vdc	75 W	90%	0.99	0.96	EUC-075S035DV(SV)
450 mA	90 ~ 305 Vac	83~166 Vdc	75 W	90%	0.99	0.96	EUC-075S045DV(SV)
700 mA	90 ~ 305 Vac	54~108 Vdc	75 W	90%	0.99	0.96	EUC-075S070DV(SV)(4)
1050 mA	90 ~ 305 Vac	36 ~72 Vdc	75 W	89%	0.99	0.96	EUC-075S105DV(SV)(4)
1400 mA	90 ~ 305 Vac	27 ~54 Vdc	75 W	89%	0.99	0.96	EUC-075S140DV(SV)(4)
2100 mA	90 ~ 305 Vac	18 ~36 Vdc	75 W	88%	0.99	0.96	EUC-075S210DV(SV)(4)
2800 mA	90 ~ 305 Vac	13 ~27 Vdc	75 W	88%	0.99	0.96	EUC-075S280DV(SV)(4)
3750 mA	90 ~ 305 Vac	10 ~20 Vdc	75 W	87%	0.99	0.96	EUC-075S375DV(SV)(4)
5000 mA	90 ~ 305 Vac	7 ~15 Vdc	75 W	86%	0.99	0.96	EUC-075S500DV(SV)(4)

- Notes:** (1) Certified input Voltage range 100-240Vac  
 (2) Measured at full load and 220 Vac input  
 (3) 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) SELV

## 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 Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Input AC Current	-	-	0.9 A	Measured at full load and 100 Vac input.
	-	-	0.42 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	
Power Factor	0.9	-	-	At 100Vac-277Vac,100%load
THD	-	-	20%	

## Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Range	-5%	-	5%	
Ripple and Noise (pk-pk)	-	-	5% V <sub>O</sub>	Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 uF ceramic capacitor and a 10 uF electrolytic capacitor. V <sub>O</sub> is the maximum output voltage.
No Load Output Voltage				
I <sub>o</sub> = 350 mA	-	224 V	-	
I <sub>o</sub> = 450 mA	-	172 V	-	
I <sub>o</sub> = 700 mA	-	112 V	-	
I <sub>o</sub> = 1050 mA	-	76 V	-	
I <sub>o</sub> = 1400 mA	-	58 V	-	
I <sub>o</sub> = 2100 mA	-	40 V	-	
I <sub>o</sub> = 2800 mA	-	34 V	-	
I <sub>o</sub> = 3750 mA	-	25 V	-	
I <sub>o</sub> = 5000 mA	-	19 V	-	
Line Regulation	-	-	±1%	
Load Regulation	-	-	±3%	
Turn-on Delay Time	-	0.8 s	1.2 s	Measured at 120Vac input.
	-	0.4 s	0.6 s	Measured at 220Vac input.
Temperature coefficient	-	-	0.06%/°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
Over Temperature Protection-T <sub>c</sub>	-	100 °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 Io = 350 mA Io = 450 mA Io = 700 mA Io = 1050 mA Io = 1400 mA Io = 2100 mA Io = 2800 mA Io = 3750 mA Io = 5000 mA	86% 86% 86% 85% 85% 84% 84% 83% 82%	88% 88% 88% 87% 87% 86% 86% 85% 84%	- - - - - - - - -	Measured at full load, 120Vac input, 25°C ambient temperature, after the unit is thermally stabilized. It will be lower about 2%, if measured immediately after startup.
Efficiency Io = 350 mA Io = 450 mA Io = 700 mA Io = 1050 mA Io = 1400 mA Io = 2100 mA Io = 2800 mA Io = 3750 mA Io = 5000 mA	88% 88% 88% 87% 87% 86% 86% 85% 84%	90% 90% 90% 89% 89% 88% 88% 87% 86%	- - - - - - - - -	Measured at full load, 220Vac input, 25°C ambient temperature, after the unit is thermally stabilized. It will be lower about 2%, if measured immediately after startup.
MTBF	-	259,000 hours	-	Measured at 120Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Life Time	-	107,000 hours	-	Measured at 120Vac 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 )	5.91 x 2.66 x 1.44 150 x 67.5 x 36.5			
Net Weight	-	750 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

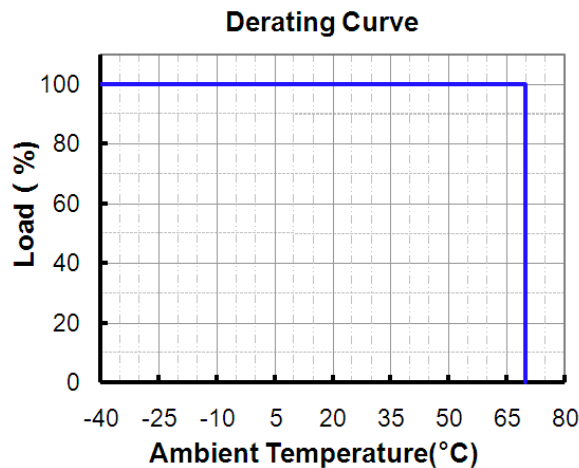
## Safety & EMC Compliance

Safety Category	Standard
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

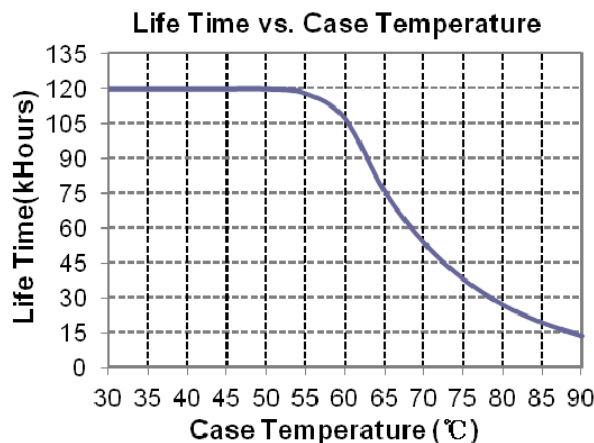
## Safety & EMC Compliance (Continued)

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
ENERGY STAR Standards	Notes
ANSI/IEEE C62.41-1991	Transient Protection, power supply shall comply with Class A operation. The line transient shall consist of seven strikes of a 100 kHz ring wave, 2.5 kV level, for both common mode and differential mode.

## Derating Curve



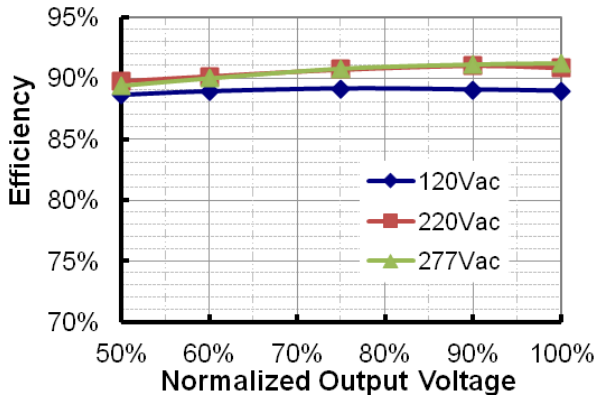
## Life Time vs. Case Temperature Curve



## Efficiency vs Load

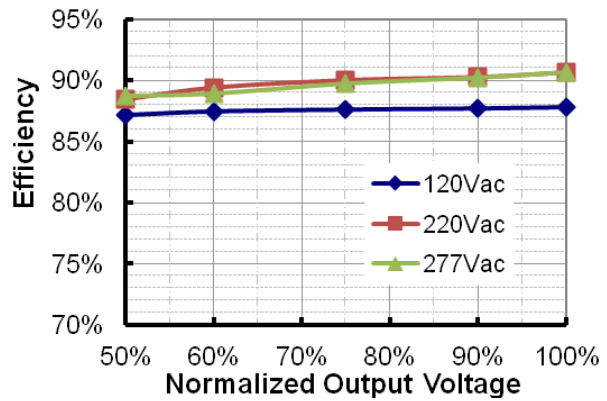
EUC-075S035DV(SV)

Efficiency vs. Output Voltage



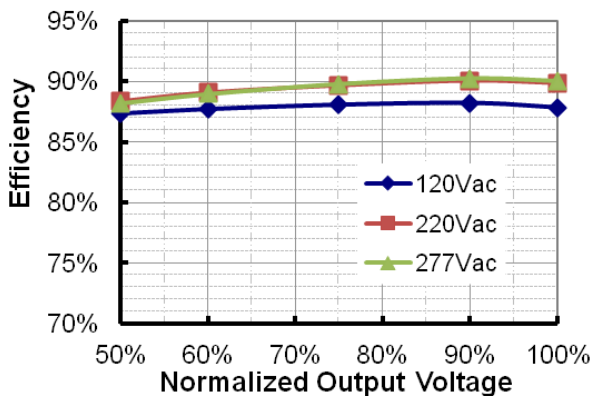
EUC-075S045DV(SV)

Efficiency vs. Output Voltage



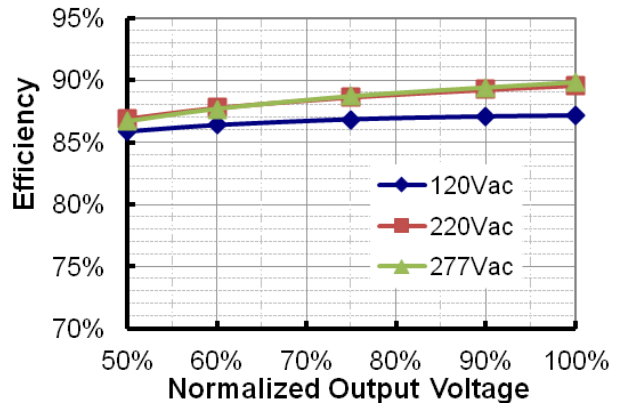
EUC-075S070DV(SV)

Efficiency vs. Output Voltage



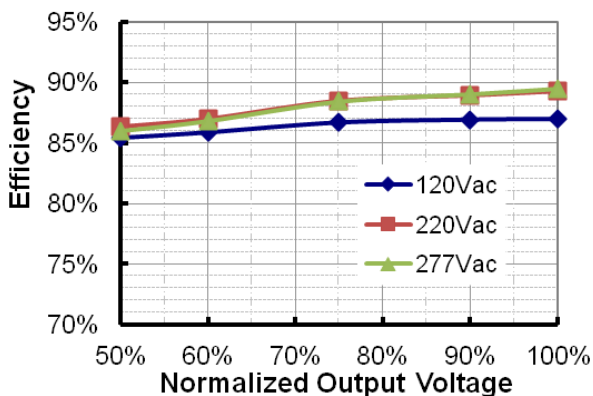
EUC-075S105DV(SV)

Efficiency vs. Output Voltage



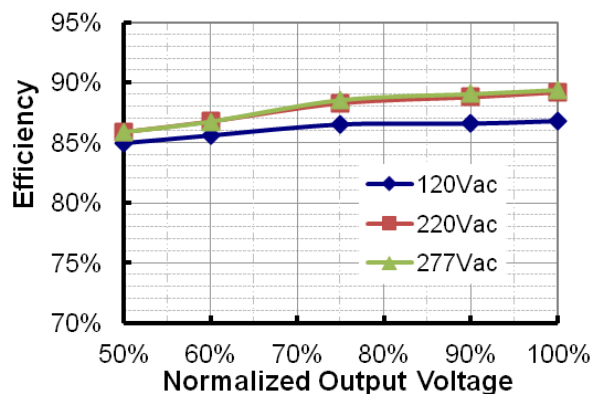
EUC-075S140DV(SV)

Efficiency vs. Output Voltage



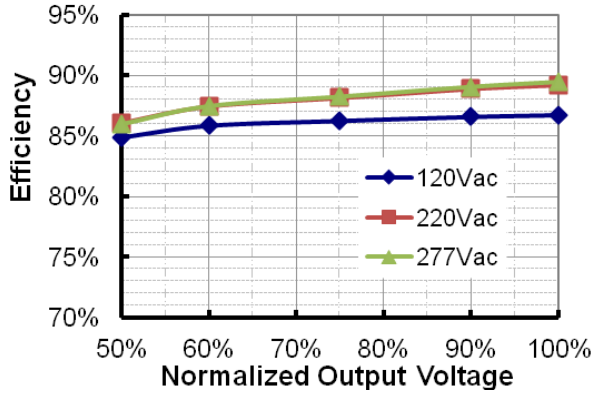
EUC-075S210DV(SV)

Efficiency vs. Output Voltage



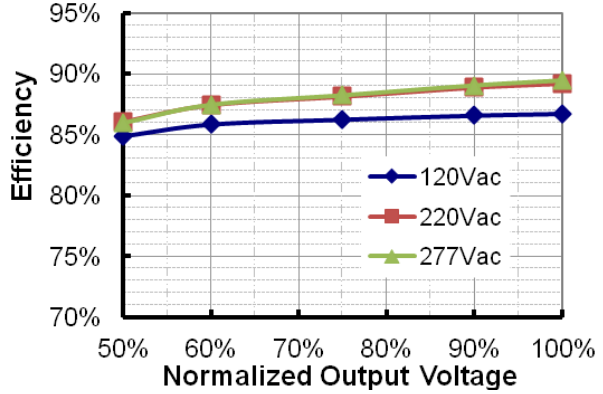
EUC-075S280DV(SV)

Efficiency vs. Output Voltage



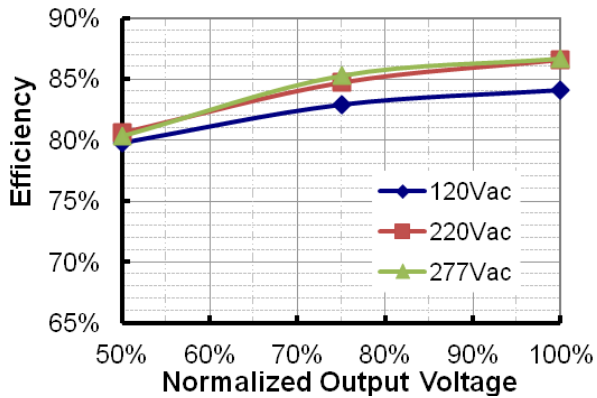
EUC-075S375DV(SV)

Efficiency vs. Output Voltage



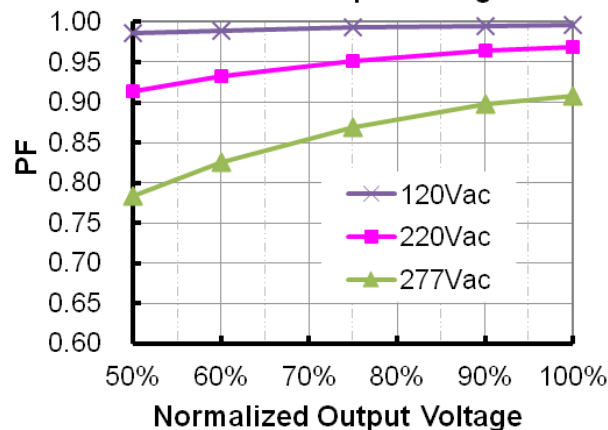
EUC-075S500DV(SV)

Efficiency vs. Output Voltage

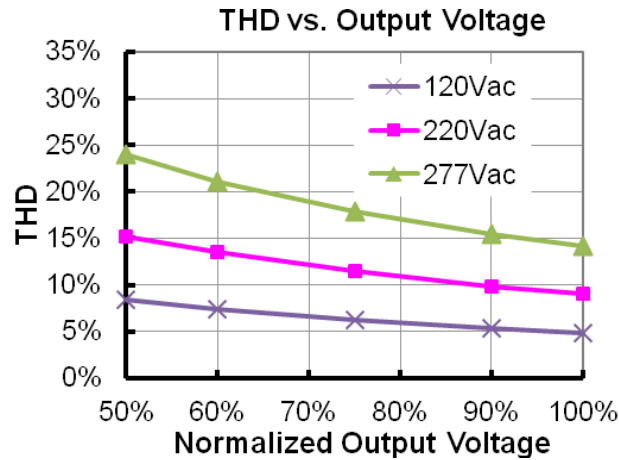


## Power Factor Characteristics

PF vs. Output Voltage



## Total Harmonic Distortion

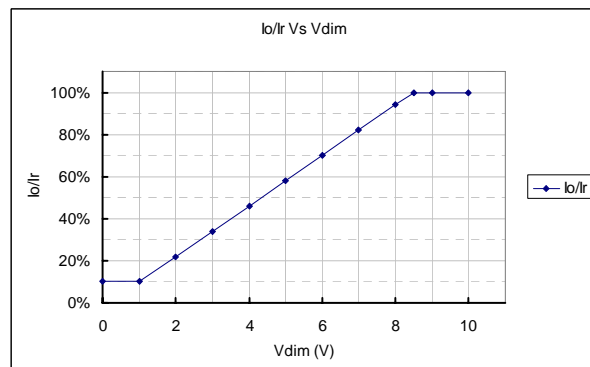
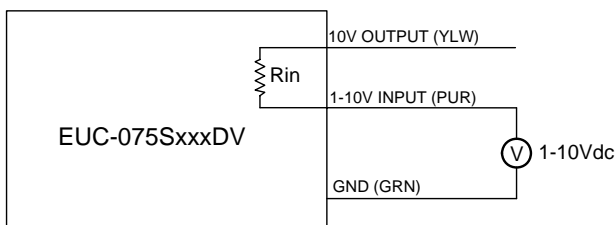


## Dimming Control (On secondary side)

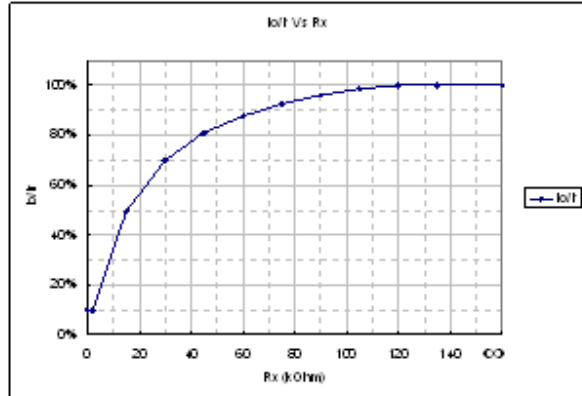
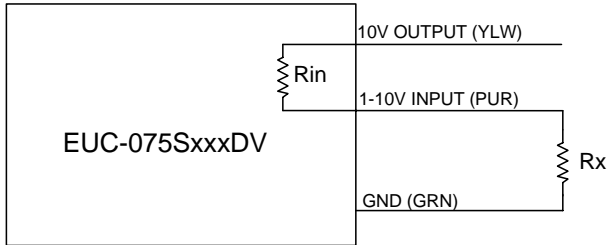
The function has two versions. One is with internal pull-up resistor, the output is full load when the dimming leads are floated. Another is with internal pull-down resistor, the output is 10% full load when the dimming leads are floated.

1. With pull-up resistor (Default, without suffix):

Parameter	Min.	Typ.	Max.	Notes
10V output voltage	9.8 V	10 V	10.2 V	
10V output source current	0 mA	-	10 mA	
Absolute maximum voltage on the 1~10V input pin	-2 V	-	12 V	
Source current on 1~10V input pin	0 mA	-	0.5 mA	
Value of Rin ( the resistor inside the LED driver which locate between the 1-10V input and 10V output pin)	19.8 K	20 K	20.2 K	



Implementation 1: DC input



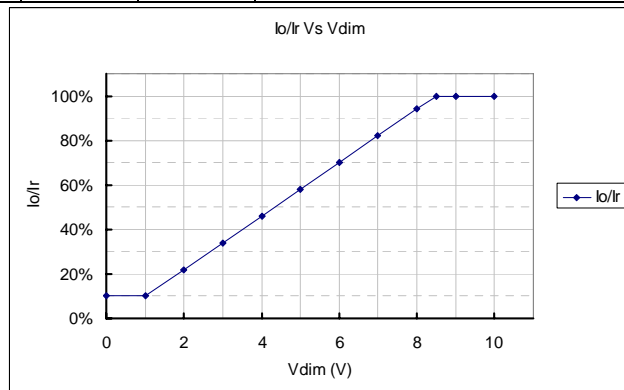
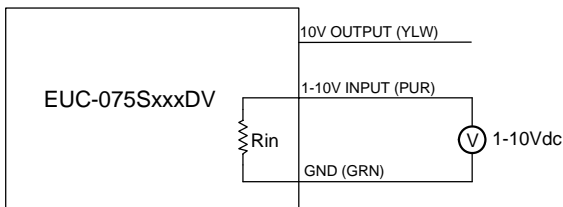
### Implementation 2: External resistor

**Notes:**

1. If the dimming function is not used, please let the dimming leads floated.
2.  $I_o$  is actual output current and  $I_r$  is rated current without dimming control.
3. 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).
4. 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%.
5. The dimming signal is allowed to be less than 1V, however, when it for 0-1V, the output current can maintain about 10% $I_r$ . When it for 8.5-10V, the output current can maintain about 100% $I_r$ .
6. Do not connect the GND of dimming to the output; otherwise, the LED driver can not work normally.

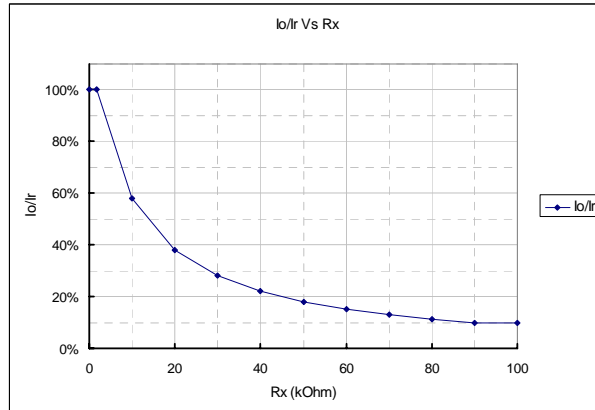
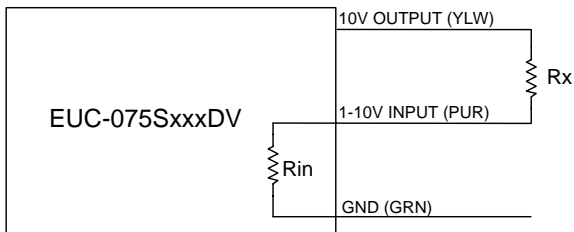
2. With pull-down resistor: (The model number has a suffix -0040)

Parameter	Min.	Typ.	Max.	Notes
10V output voltage	9.8 V	10 V	10.2 V	
10V output source current	0 mA	-	10 mA	
Absolute maximum voltage on the 1~10V input pin	-2 V	-	12 V	
Sink current on 1~10V input pin	0 mA	-	1 mA	
Value of $R_{in}$ ( the resistor inside the LED driver which locate between the 1-10V input and GND)	9.9 K	10 K	10.1 K	

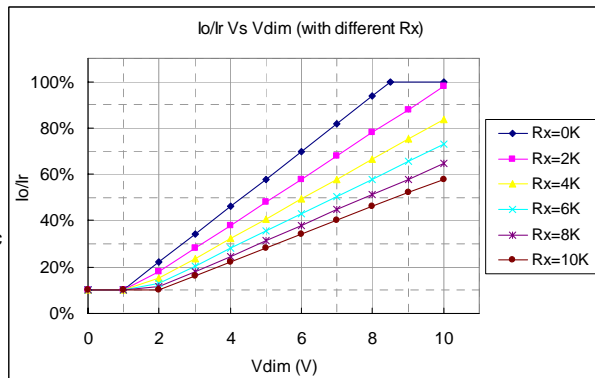
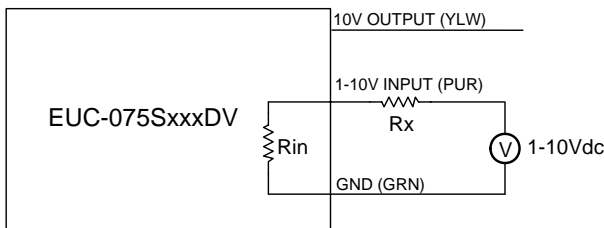


### Implementation 1: DC input





### Implementation 2: External resistor



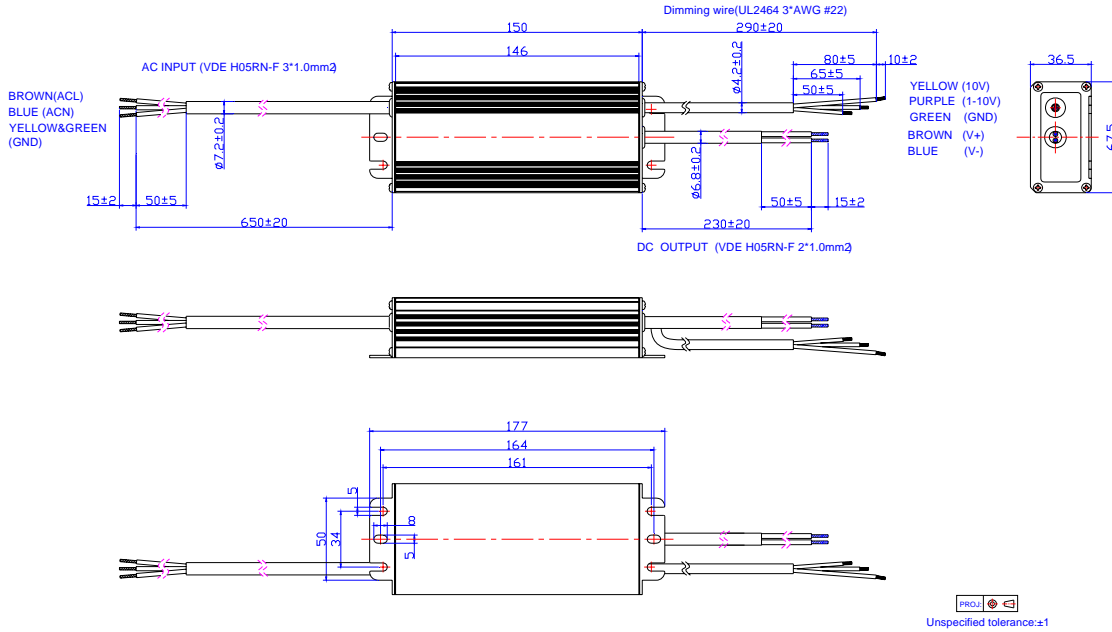
### Implementation 3: External resistor and 1-10V DC Input

**Notes:**

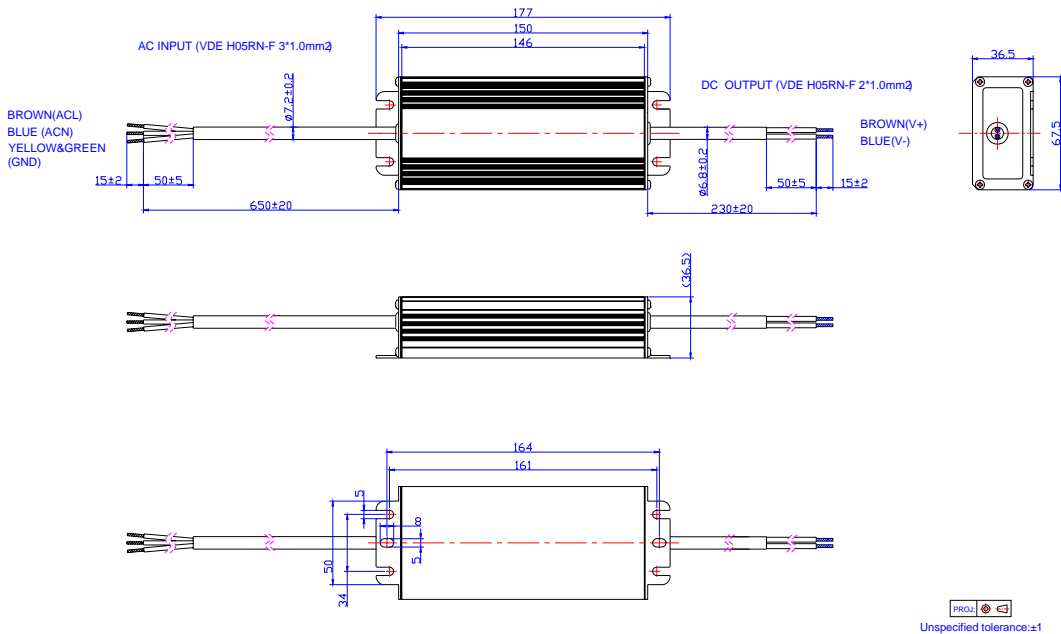
1. If the dimming function is not used, please short 10V output pin (yellow) and 1-10 input pin (purple).
2.  $I_o$  is actual output current and  $I_r$  is rated current without dimming control.
3. For the driver to operate properly, the load voltage must be maintained above the minimum voltage threshold (approx. 50% of the max. output voltage for any given model).
4. 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%.
5. The dimming signal is allowed to be less than 1V, however, when it for 0-1V, the output current can maintain about 10% $I_r$ . When it for 8.5-10V, the output current can maintain about 100% $I_r$ .
6. Do not connect the GND of dimming to the output; otherwise, the LED driver can not work normally.

## Mechanical Outline

### EUC-075SxxxDV



### EUC-075SxxxSV



## 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
2010-03-03	A	Add notes of UL1310 Class 2 for all models. (3) (4) (5)		
		Change efficiency for all models		
		Change MTBF	498,000 hours	450,000 hours
		Add Leakage Current in Input Specifications	/	/
		Add Derating Curve	/	/
		Modify the tin-plated wire length tolerance in Mechanical Outline	±0.5	±2
		Add one note in Dimming Control	/	7. Do not connect the GND of dimming to the output; otherwise, the LED driver can not work normally.
2010-05-25	B	Add one item in the notes of Ripple and Noise (pk-pk)	/	Vo is the maximum output voltage.
		Delete Output Overshoot / Undershoot	Max. 10%	/
2010-05-31	C	Add star rank for recommended models	/	☆: Popular model.
		Standardize the tolerance in Mechanical Outline	/	/
2010-07-30	D	Add Energy Star Standard	/	Comply With ANSI/IEEE C62.41, Class A Operation
2010-08-10	F	Change Turn-on Delay Time 120Vac input	Typ. 0.5S Max. 0.8S	Typ. 0.8S Max. 1.2S
2010-10-22	G	Update the part of dimming control	/	/
2010-11-12	H	Change efficiency of 5000 mA	Min. 84%, Typ. 86%	Min. 82%, Typ. 84%
		110 Vac 220 Vac	86%, 88%	84%, 86%
		Add another dimming version with pull-down resistor	/	/
2011-01-14	I	Change popular models	/	/
2012-06-10	J	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
		Efficiency of some models	/	1% or 2% lower
2012-7-5	k	Inrush Current	50 A	60 A
2012-7-17	L	Max Case Temperature	/	Updated
2012-10-10	M	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

2013-05-23	N	Product photo	/	Updated
		Leakage current	1mA	0.75mA
		No load voltage- Typical	/	Added
		OVP	/	Deleted
		Efficiency of 5000mA Model	/	1%lower
		Typical value of OTP	110°C	100°C
		MTBF	320,000 hours	259,000 hours
		Efficiency curve	/	Added
		PF curve	/	Added
		THD curve	/	Added
		Dimming control- With pull-up resistor dimming curve	/	Updated
		Mechanical outline	/	Updated

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