

Features

- Ultra High Efficiency (Up to 93%)
- Active Power Factor Correction (0.99 Typical)
- Constant Current Output
- Lightning Protection
- All-Around Protection: SCP, OTP, OVP
- Waterproof (IP67)



Description

The EUC-200SxxxDT(ST) Series operates 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(1)	Output Voltage Range	Max. Output Power	Typical Efficiency (2)	Power Factor		Model Number (3,4)
					120Vac	220Vac	
450 mA	90 ~ 305 Vac	267~445Vdc	200 W	93.0%	0.99	0.96	EUC-200S045ST
450 mA	90 ~ 305 Vac	223~445Vdc	200 W	93.0%	0.99	0.96	EUC-200S045DT
700 mA	90 ~ 305 Vac	171~285Vdc	200 W	93.0%	0.99	0.96	EUC-200S070ST★
700 mA	90 ~ 305 Vac	143~285Vdc	200 W	93.0%	0.99	0.96	EUC-200S070DT★
1050 mA	90 ~ 305 Vac	114~190Vdc	200 W	92.5%	0.99	0.96	EUC-200S105ST★
1050 mA	90 ~ 305 Vac	95~190Vdc	200 W	92.5%	0.99	0.96	EUC-200S105DT★
1400 mA	90 ~ 305 Vac	85~142Vdc	200 W	92.0%	0.99	0.96	EUC-200S140ST
1400 mA	90 ~ 305 Vac	71~142Vdc	200 W	92.0%	0.99	0.96	EUC-200S140DT
1750 mA	90 ~ 305 Vac	68~114Vdc	200 W	92.0%	0.99	0.96	EUC-200S175ST
2100 mA	90 ~ 305 Vac	57~95 Vdc	200 W	92.0%	0.99	0.96	EUC-200S210ST
2450 mA	90 ~ 305 Vac	48~81 Vdc	200 W	91.5%	0.99	0.96	EUC-200S245ST
2800 mA	90 ~ 305 Vac	42~71 Vdc	200 W	91.5%	0.99	0.96	EUC-200S280ST
3150 mA	90 ~ 305 Vac	38~63 Vdc	200 W	91.5%	0.99	0.96	EUC-200S315ST
3500 mA	90 ~ 305 Vac	34~57 Vdc	200 W	91.5%	0.99	0.96	EUC-200S350ST★
4200 mA	90 ~ 305 Vac	28~47 Vdc	200 W	91.5%	0.99	0.96	EUC-200S420ST
4900 mA	90 ~ 305 Vac	24~40 Vdc	200 W	91.5%	0.99	0.96	EUC-200S490ST
5600 mA	90 ~ 305 Vac	21~35 Vdc	200 W	91.5%	0.99	0.96	EUC-200S560ST
6300 mA	90 ~ 305 Vac	19~32 Vdc	200 W	90.5%	0.99	0.96	EUC-200S630ST

Notes: (1) Certified Input Voltage Range 100-240Vac, for CE only

(2) Measured at full load and 220 Vac input.

(3) The DT suffix may be changed to ST to omit the dimming function and remove the two wires associated with that function.

- (4) A suffix –xxx may be added to denote variations or modifications to the base product, where x can be any alphanumeric character or blank.
 (5) ☆: 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	DT series; at 277Vac 60Hz input
	-	-	1 mA	ST series; at 277Vac 60Hz input
Input AC Current	-	-	2.4 A	Measured at full load and 100 Vac input.
	-	-	1.2 A	Measured at full load and 220 Vac input.
Inrush Current	-	-	75 A	At 220Vac input, 25°C cold start, duration= 2.5 ms, 10%l _{pk} -10%l _{pk} .
Inrush Current(I ² t)	-	-	7.5 A ² s	
Power Factor	0.90	-	-	At 100Vac-277Vac, 100%load
THD	-	-	20%	

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Range	-5%	-	5%	
Output Current Ripple (pk-pk)	-	10%l _o	15%l _o	At full load condition.
Line Regulation	-	-	±1%	
Load Regulation	-	-	±3%	
Turn-on Delay Time	-	1.5 s	3.0 s	Measured at 120Vac input.
	-	1.0 s	2.0 s	Measured at 220Vac input.
Temperature Coefficient	-	-	0.03%/°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
Over Temperature Protection	Hiccup Mode. When the case temperature reaches 110±10°C, OTP mode will be triggered; The power supply shall be self-recovery until the case temperature becomes normal.			
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 $I_o = 450 \text{ mA}$ $I_o = 700 \text{ mA}$ $I_o = 1050 \text{ mA}$ $I_o = 1400 \text{ mA}$ $I_o = 1750 \text{ mA}$ $I_o = 2100 \text{ mA}$ $I_o = 2450 \text{ mA}$ $I_o = 2800 \text{ mA}$ $I_o = 3150 \text{ mA}$ $I_o = 3500 \text{ mA}$ $I_o = 4200 \text{ mA}$ $I_o = 4900 \text{ mA}$ $I_o = 5600 \text{ mA}$ $I_o = 6300 \text{ mA}$	90.0% 90.0% 89.5% 89.0% 87.5% 87.5% 87.5% 87.0% 87.0% 87.0% 86.5% 86.5%	91.0% 91.0% 90.5% 90.0% 89.5% 89.5% 89.5% 89.0% 89.0% 89.0% 88.5% 88.5%	- - - - - - - - - - - -	Measured at full load, 120Vac input, 25°C ambient temperature, after the unit is thermally stabilized. It will be lower about 1%, if measured immediately after startup.
Efficiency $I_o = 450 \text{ mA}$ $I_o = 700 \text{ mA}$ $I_o = 1050 \text{ mA}$ $I_o = 1400 \text{ mA}$ $I_o = 1750 \text{ mA}$ $I_o = 2100 \text{ mA}$ $I_o = 2450 \text{ mA}$ $I_o = 2800 \text{ mA}$ $I_o = 3150 \text{ mA}$ $I_o = 3500 \text{ mA}$ $I_o = 4200 \text{ mA}$ $I_o = 4900 \text{ mA}$ $I_o = 5600 \text{ mA}$ $I_o = 6300 \text{ mA}$	92.0% 92.0% 91.5% 91.0% 90.0% 90.0% 89.5% 89.5% 89.5% 89.5% 89.5% 89.5% 88.5%	93.0% 93.0% 92.5% 92.0% 92.0% 92.0% 91.5% 91.5% 91.5% 91.5% 91.5% 91.5% 90.5%	- - - - - - - - - - - - -	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.
Efficiency $I_o = 450 \text{ mA}$ $I_o = 700 \text{ mA}$ $I_o = 1050 \text{ mA}$ $I_o = 1400 \text{ mA}$ $I_o = 1750 \text{ mA}$ $I_o = 2100 \text{ mA}$ $I_o = 2450 \text{ mA}$ $I_o = 2800 \text{ mA}$ $I_o = 3150 \text{ mA}$ $I_o = 3500 \text{ mA}$ $I_o = 4200 \text{ mA}$ $I_o = 4900 \text{ mA}$ $I_o = 5600 \text{ mA}$ $I_o = 6300 \text{ mA}$	92.0% 92.0% 91.5% 91.0% 90.0% 90.0% 89.5% 89.5% 89.5% 89.5% 89.5% 89.5% 88.5%	93.0% 93.0% 92.5% 92.0% 92.0% 92.0% 91.5% 91.5% 91.5% 91.5% 91.5% 91.5% 90.5%	- - - - - - - - - - - - -	Measured at full load, 277Vac input, 25°C ambient temperature, after the unit is thermally stabilized. It will be lower about 1%, if measured immediately after startup.
MTBF	-	236,000 Hours	-	Measured at 120Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Life Time	-	68,000 Hours	-	Measured at 220Vac input, 80%load; Case temperature=60°C @ Tc point. See life time vs. Tc curve for the details
Case temperature	-	-	90°C	450 mA of ST Series: 88°C
Dimensions Inches (L x W x H) Millimeters (L x W x H)	9.41 x 3.13 x 1.81 239 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

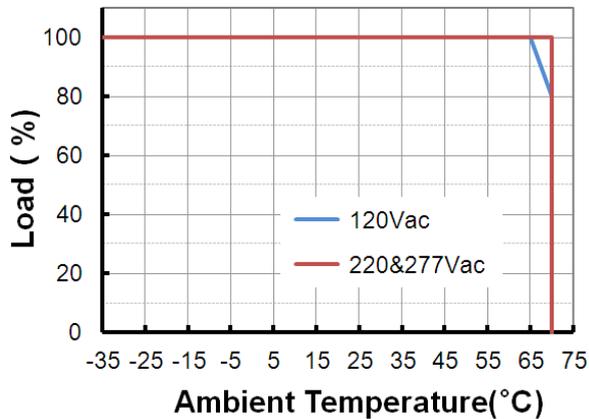
Safety & EMC Compliance

Safety Category	Standard
UL/CUL	UL8750, UL1012, CSA-C22.2 No. 107.1, CSA-C22.2 No. 250.0
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
FCC Part 15	ANSI C63.4:2009 Class B
	This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired Operation.
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

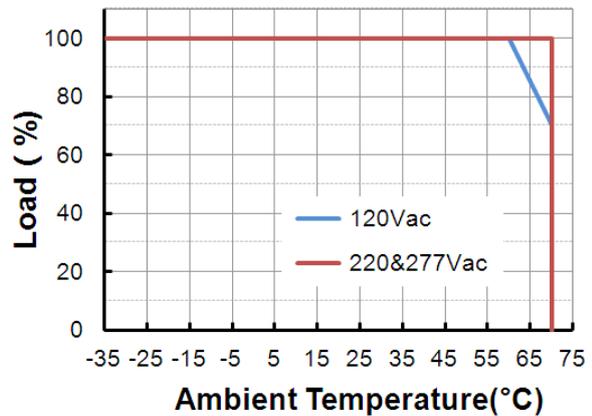
EUC-200S045DT(ST)

Derating Curve



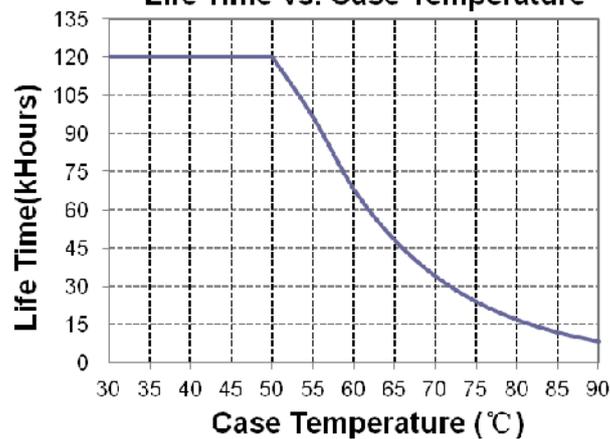
Others

Derating Curve



Life Time vs. Case Temperature Curve

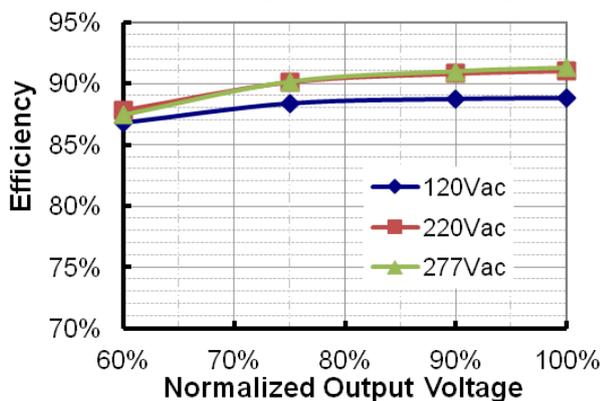
Life Time vs. Case Temperature



Efficiency vs. Load

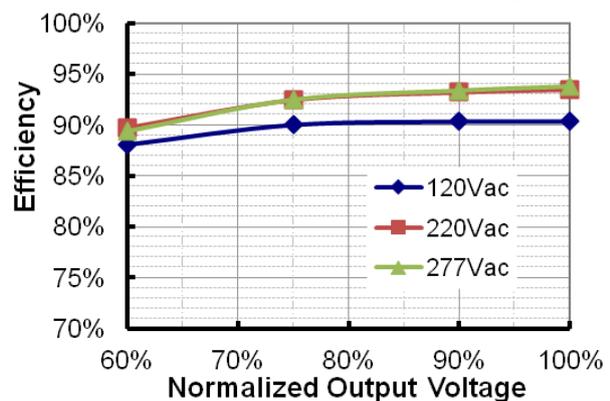
EUC-200S045DT(ST)

Efficiency vs. Output Voltage



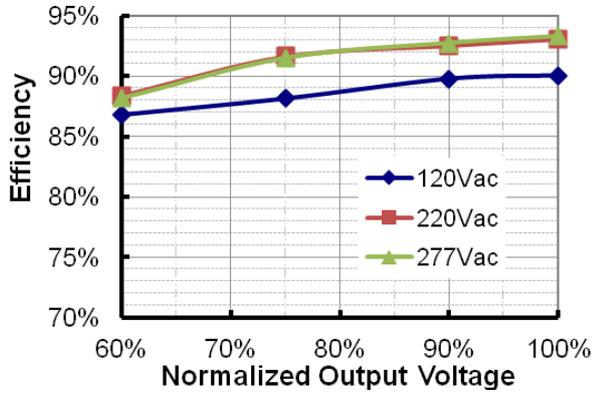
EUC-200S070DT(ST)

Efficiency vs. Output Voltage



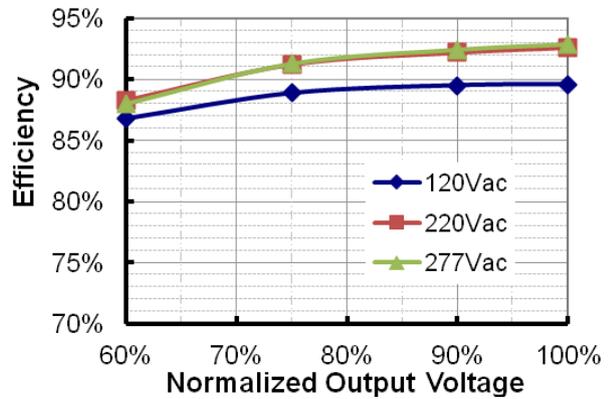
EUC-200S105DT(ST)

Efficiency vs. Output Voltage



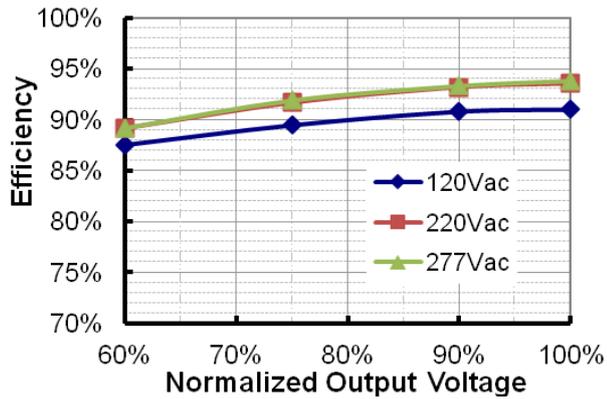
EUC-200S140DT(ST)

Efficiency vs. Output Voltage



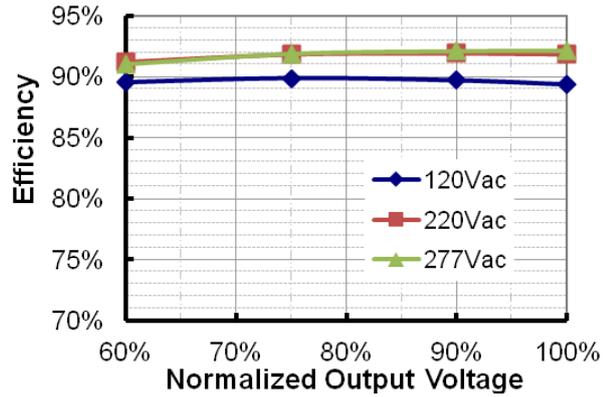
EUC-200S175ST

Efficiency vs. Output Voltage



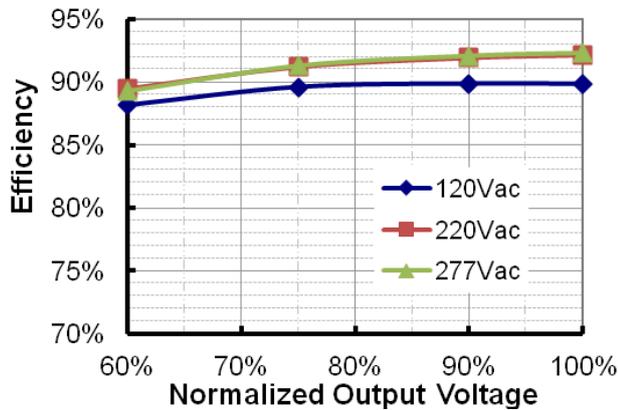
EUC-200S210ST

Efficiency vs. Output Voltage



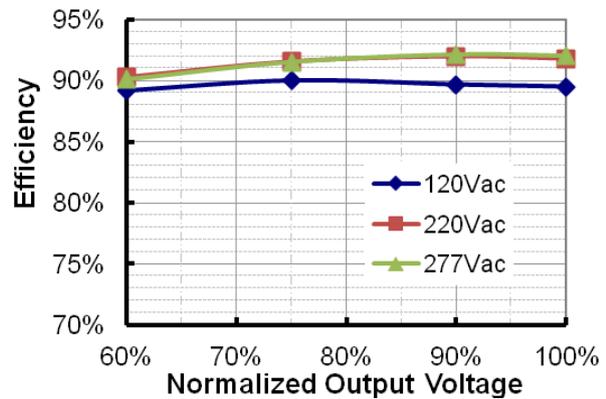
EUC-200S245ST

Efficiency vs. Output Voltage



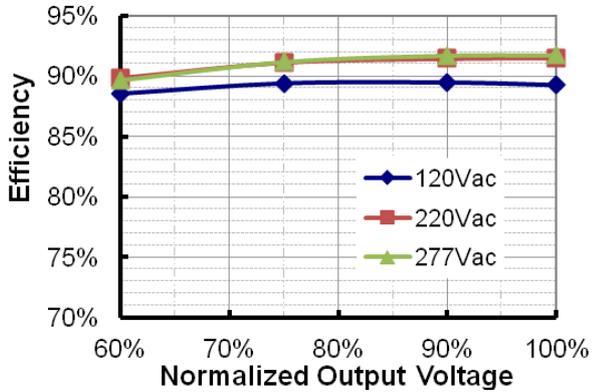
EUC-200S280ST

Efficiency vs. Output Voltage



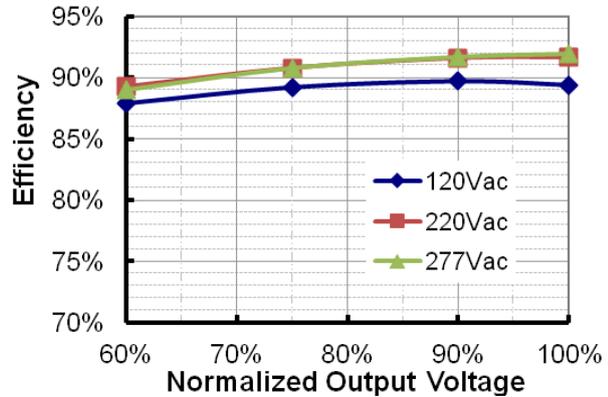
EUC-200S315ST

Efficiency vs. Output Voltage



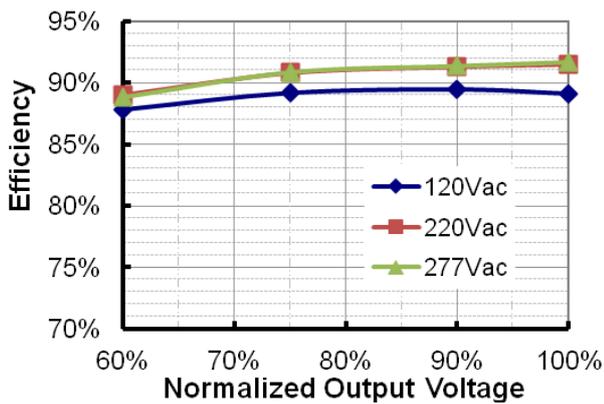
EUC-200S350ST

Efficiency vs. Output Voltage



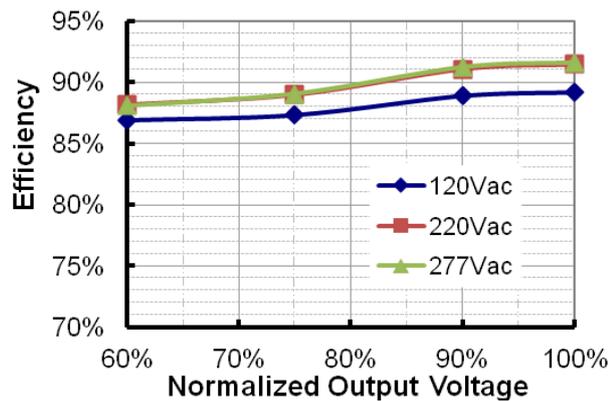
EUC-200S420ST

Efficiency vs. Output Voltage



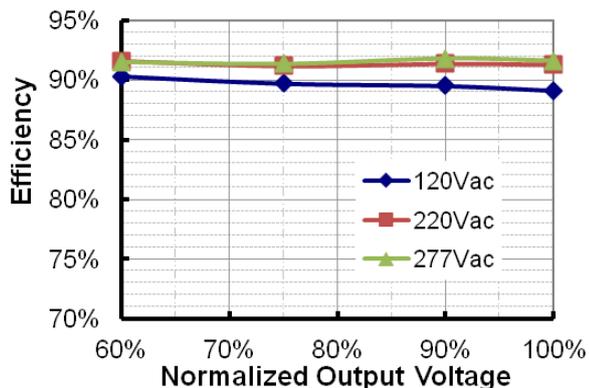
EUC-200S560ST

Efficiency vs. Output Voltage

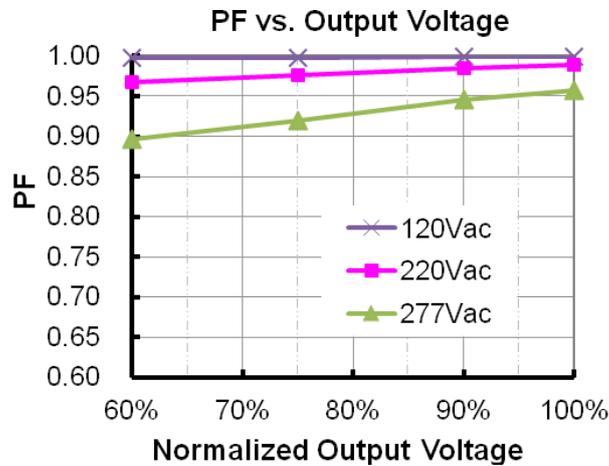


EUC-200S630ST

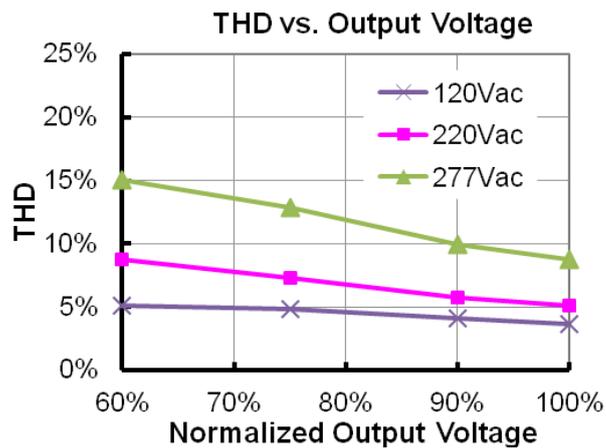
Efficiency vs. Output Voltage



Power Factor Characteristics



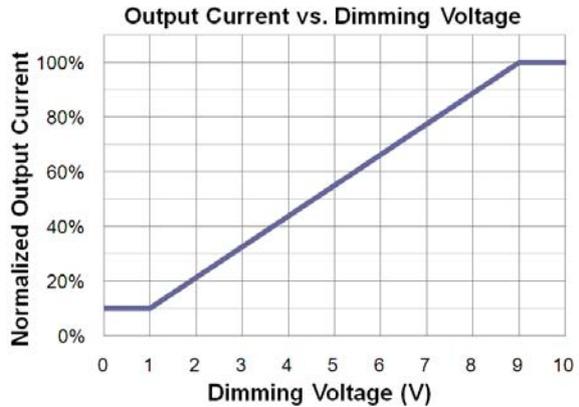
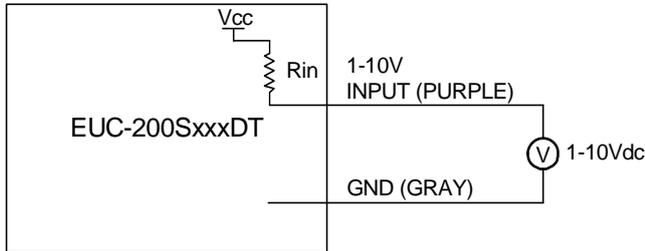
Total Harmonic Distortion



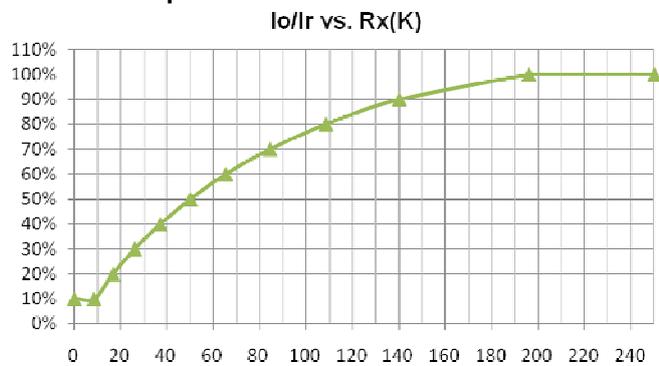
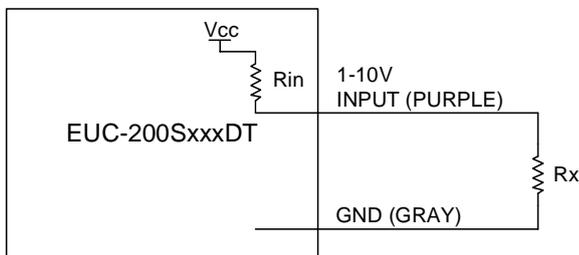
Dimming Control (On secondary side)

Parameter	Min.	Typ.	Max.	Notes
Absolute maximum voltage on the 1~10V input pin	-2 V	-	12 V	
Sink current on 1~10V input pin	0 uA	-	200 uA	

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



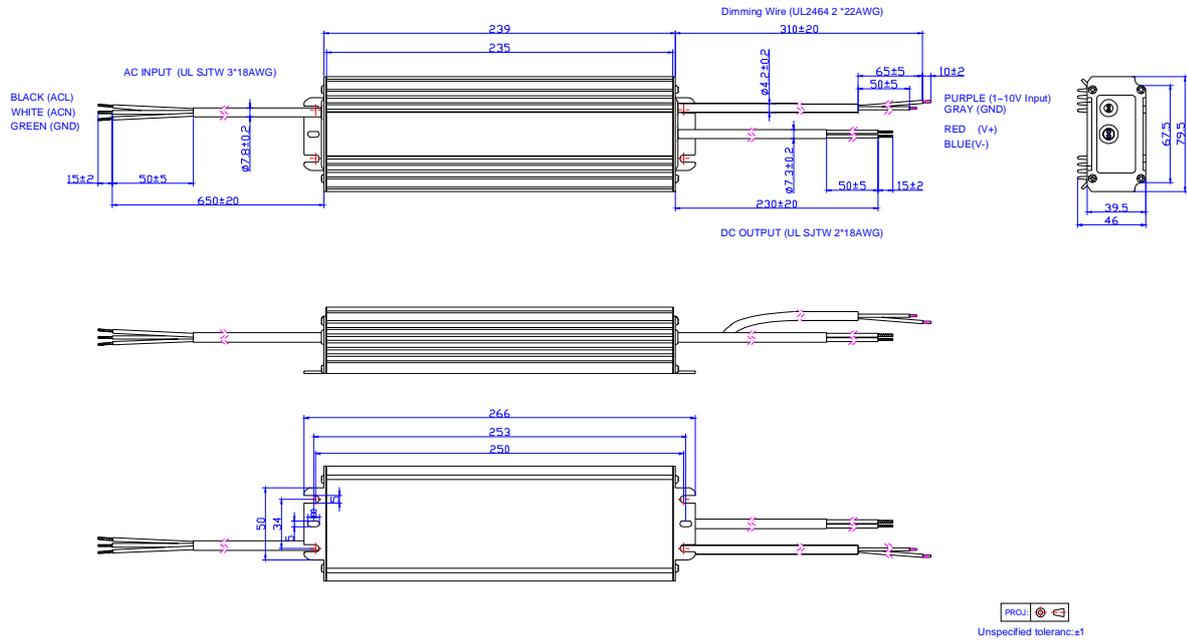
Implementation 2: External resistor

Notes:

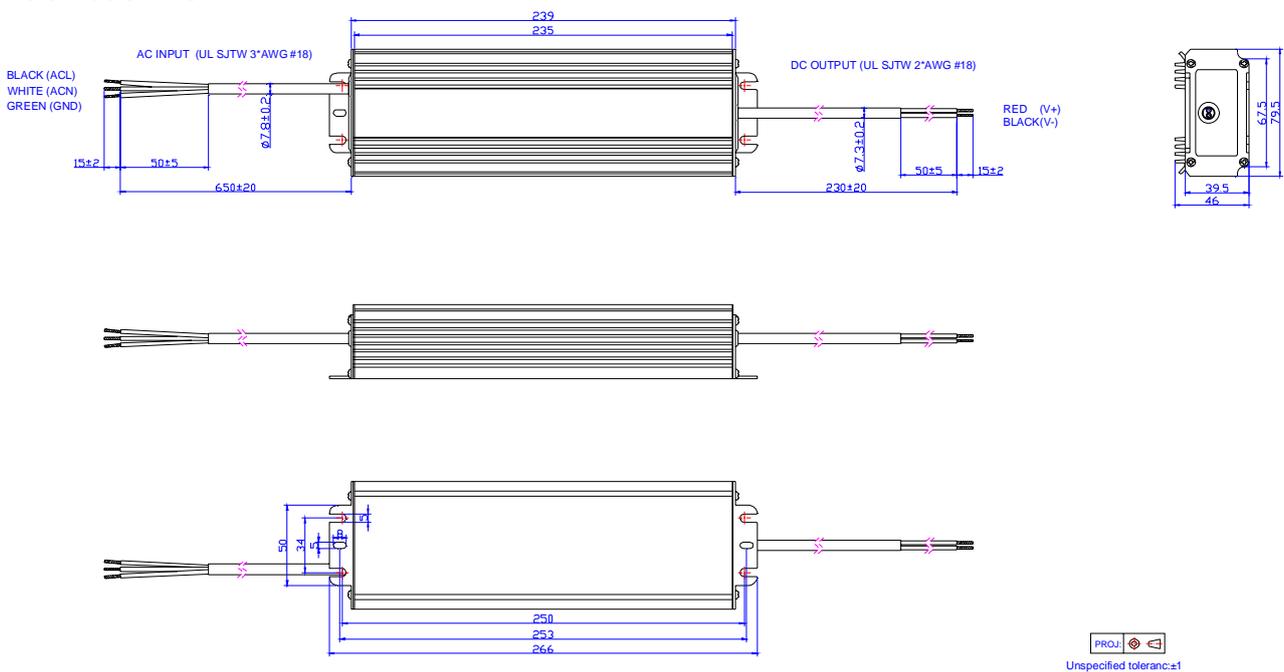
1. I_o is actual output current and I_r is rated current without dimming control.
2. For the driver to operate properly, the load voltage must be maintained above the minimum voltage threshold (approx. 50% of the max. output voltage for any given model).
3. If the output voltage is maintained above 50% 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 cannot work normally.

Mechanical Outline

EUC-200SxxxDT



EUC-200SxxxST



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
2013-11-22	A	Datasheets Release	/	/