

Features

- Ultra High Efficiency (Up to 94%)
- Constant Current Output
- 0-10V Dimmable and Dim off
- Standby Power ≤ 1.5 W
- All-Around Protection: OVP, SCP, OTP
- Suitable for UL Dry / Damp / Wet Location
- TYPE HL, for use in a Class I, Division 2 hazardous (Classified) location



Description

The EUC-320SxxxDT(ST) series is a 320W, constant-current outdoor LED driver that operates from 90-305 Vac input with excellent power factor. Created for high bay, high mast, arena and roadway lights, it provides a dim-off mode with low standby power. The high efficiency of these drivers and compact metal case enables them to run cooler, significantly improving reliability and extending product life. To ensure trouble-free operation, protection is provided against over voltage, short circuit, and over temperature.

Models

Output Current	Input Voltage Range(1)	Output Voltage Range	Max. Output Power	Typical Efficiency (2)	Power Factor		Model Number
					120Vac	220Vac	
1050 mA	90 ~ 305 Vac 127~300 Vdc	152~304Vdc	320 W	94.0%	0.99	0.96	EUC-320S105DT(ST)
1400 mA	90 ~ 305 Vac 127~300 Vdc	114~228Vdc	320 W	94.0%	0.99	0.96	EUC-320S140DT(ST)
2100 mA	90 ~ 305 Vac 127~300 Vdc	76~152 Vdc	320 W	94.0%	0.99	0.96	EUC-320S210DT(ST)
2800 mA	90 ~ 305 Vac 127~300 Vdc	57~114 Vdc	320 W	93.0%	0.99	0.96	EUC-320S280DT(ST)
4900 mA	90 ~ 305 Vac 127~300 Vdc	33 ~65 Vdc	320 W	93.0%	0.99	0.96	EUC-320S490DT(ST)
6200 mA	90 ~ 305 Vac 127~300 Vdc	26 ~52 Vdc	320 W	93.0%	0.99	0.96	EUC-320S620DT(ST)

Notes: (1) UL, FCC certified input voltage range: 100-277Vac or 127-300Vdc
 (2) Measured at full load and 220 Vac input.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 Vac	-	305 Vac	127~300 Vdc
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	1 mA	At 277Vac 60Hz input
Input AC Current	-	-	4.0 A	Measured at full load and 100Vac input.
	-	-	2.0 A	Measured at full load and 220Vac input.

Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Inrush Current(I^2t)	-	-	3.5 A ² s	At 220Vac input 25°C cold start, duration=4mS, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.90	-	-	At 100-277Vac, 75%load-100%load (240-320W)
THD	-	-	20%	

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%Io	-	5%Io	At full load condition
Output Current Ripple (pk-pk)	-	5%Io	10%Io	At full load condition.
Startup Overshoot Current	-	-	10%Io	At full load condition.
No load Output Voltage Io = 1050 mA Io = 1400 mA Io = 2100 mA Io = 2800 mA Io = 4900 mA Io = 6200 mA	- - - - - -	- - - - - -	338 V 258 V 172 V 128 V 76 V 60 V	
Line Regulation	-	-	±0.5%	Measured at full load
Load Regulation	-	-	±1.5%	
Turn-on Delay Time	-	0.5 s	1.0 s	Measured at 120V and 220Vac input.
Temperature Coefficient of Io	-	-	0.03%/°C	Case temperature = 0°C ~Tc max
12V Auxiliary Output Voltage	10.8 V	12 V	13.2 V	
12V Auxiliary Output Source Current	0 mA	-	200 mA	Return terminal is "Dim"

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

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 120 Vac input: Io = 1050 mA Io = 1400 mA Io = 2100 mA Io = 2800 mA Io = 4900 mA Io = 6200 mA	90.0% 90.0% 89.5% 89.0% 88.5% 88.5%	92.0% 92.0% 91.5% 91.0% 90.5% 90.5%	- - - - - -	Measured at full load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)

General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 220 Vac input: $I_o = 1050 \text{ mA}$ $I_o = 1400 \text{ mA}$ $I_o = 2100 \text{ mA}$ $I_o = 2800 \text{ mA}$ $I_o = 4900 \text{ mA}$ $I_o = 6200 \text{ mA}$	92.0% 92.0% 92.0% 91.0% 91.0%	94.0% 94.0% 94.0% 93.0% 93.0%	- - - - -	Measured at full load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
Efficiency at 277 Vac input: $I_o = 1050 \text{ mA}$ $I_o = 1400 \text{ mA}$ $I_o = 2100 \text{ mA}$ $I_o = 2800 \text{ mA}$ $I_o = 4900 \text{ mA}$ $I_o = 6200 \text{ mA}$	92.0% 92.0% 92.0% 92.0% 91.5% 91.5%	94.0% 94.0% 94.0% 94.0% 93.5% 93.5%	- - - - - -	Measured at full load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
Standby power	-	-	1.5 W	Measured at 230Vac/50Hz; Dimming off
MTBF	-	202,000 Hours	-	Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	103,000 Hours	-	Measured at 220Vac input, 80%Load and 60°C case temperature; See lifetime vs. Tc curve for the details
Case Temperature	-	-	90°C	
Dimensions Inches (L x W x H) Millimeters (L x W x H)	8.82 x 3.86 x 1.75 224 x 98 x 44.5			
Net Weight	-	1600 g	-	

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

Dimming Specifications

Parameter	Min.	Typ.	Max.	Notes
Absolute Maximum Voltage on the Vdim (+) Pin	-20 V	-	20 V	
Source Current on Vdim (+)Pin	100 uA	140 uA	180 uA	
Dimming Output Range	10% I_o	-	100% I_o	
Recommended Dimming Input Range	0 V	-	10 V	
Dim off Voltage	0.2 V	0.4 V	0.6 V	
Dim on Voltage	0.4 V	0.6 V	0.8 V	
Hysteresis	-	0.2 V	-	

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

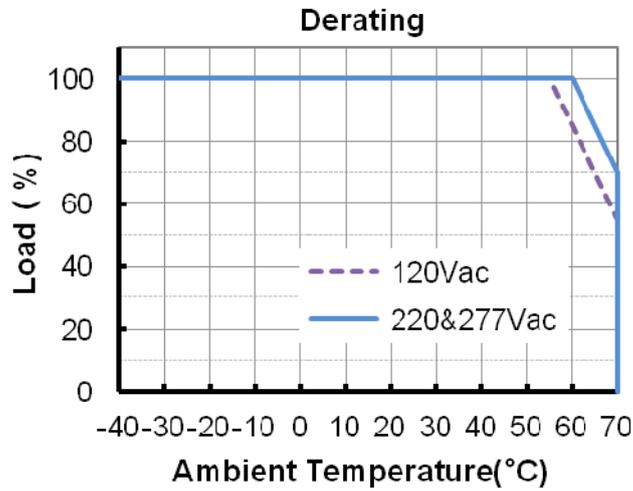
Environmental Specifications

Parameter	Min.	Typ.	Max.	Notes
Operating Ambient 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

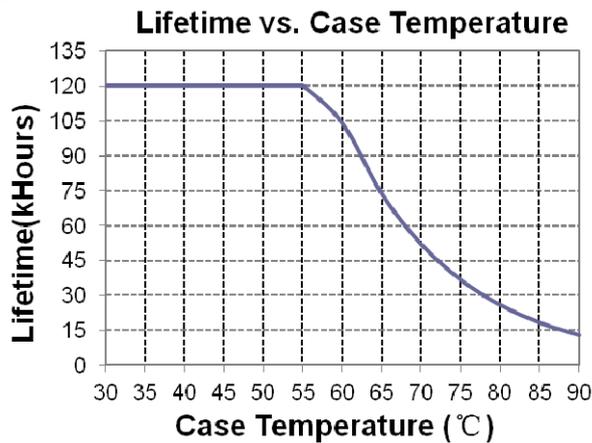
Safety & EMC Compliance

Safety Category	Standard
UL/CUL	UL8750, UL1012, CSA-C22.2 No. 107.1
EMI Standards	Notes
EN 55015	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic current emissions Class C
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

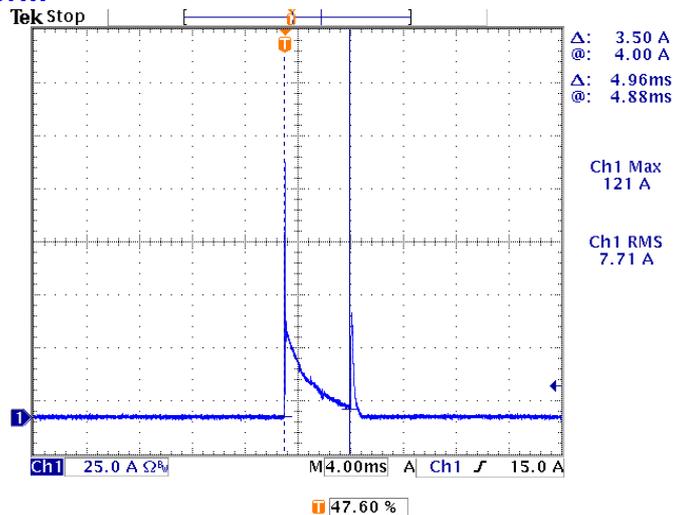
Derating



Lifetime vs. Case Temperature



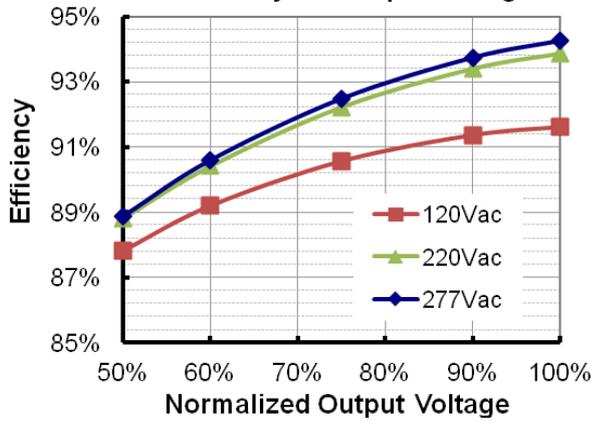
Inrush Current Waveform



Efficiency vs. Load

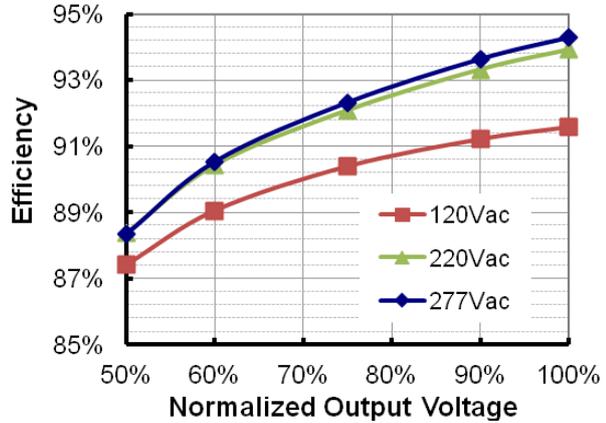
EUC-320S105DT(ST)

Efficiency vs. Output Voltage



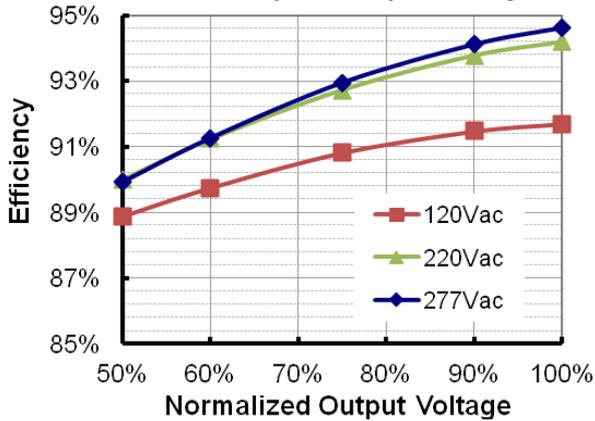
EUC-320S140DT(ST)

Efficiency vs. Output Voltage



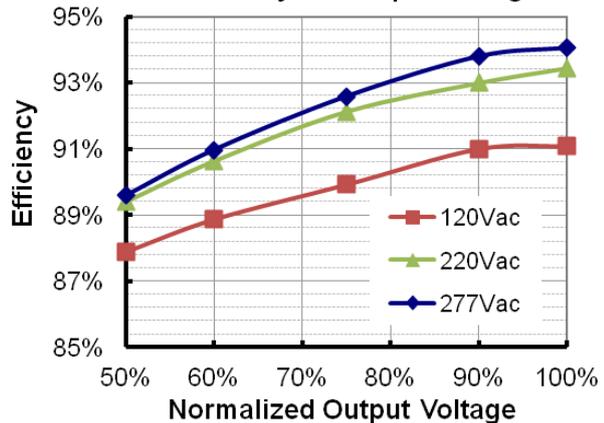
EUC-320S210DT(ST)

Efficiency vs. Output Voltage



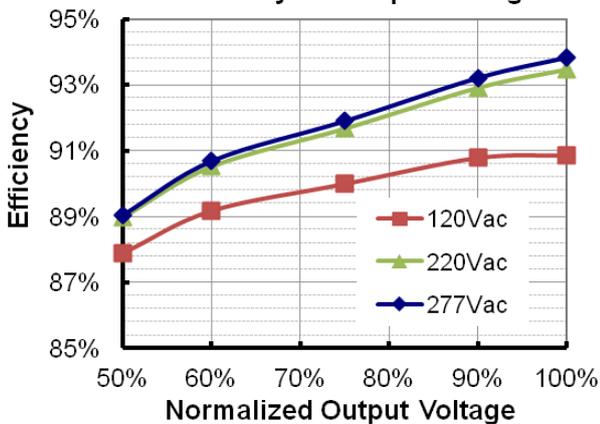
EUC-320S280DT(ST)

Efficiency vs. Output Voltage



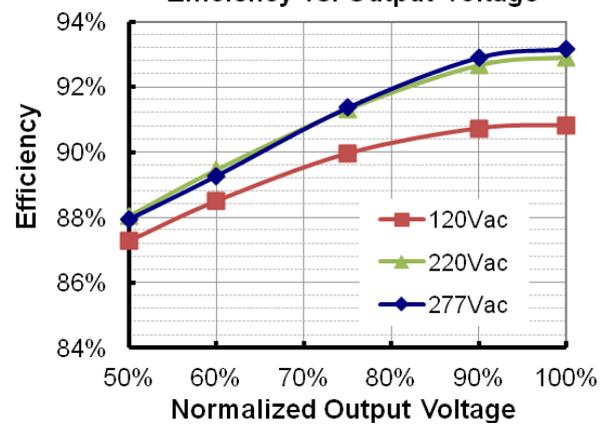
EUC-320S490DT(ST)

Efficiency vs. Output Voltage

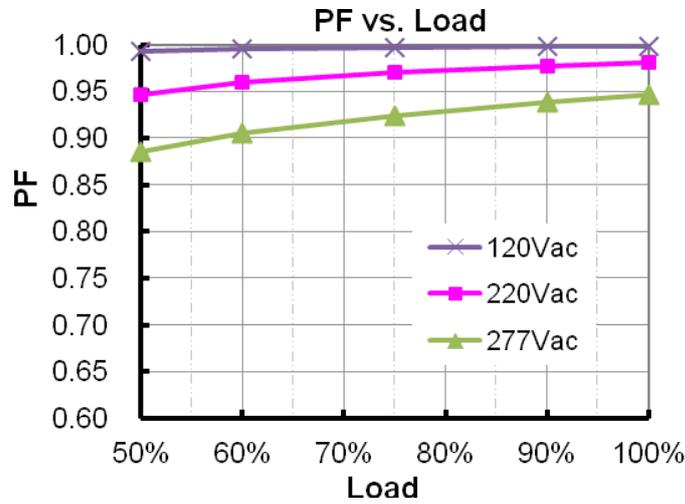


EUC-320S620DT(ST)

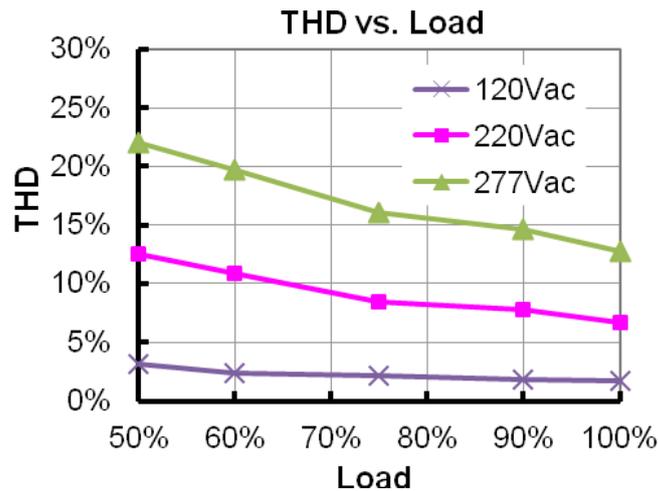
Efficiency vs. Output Voltage



Power Factor



Total Harmonic Distortion



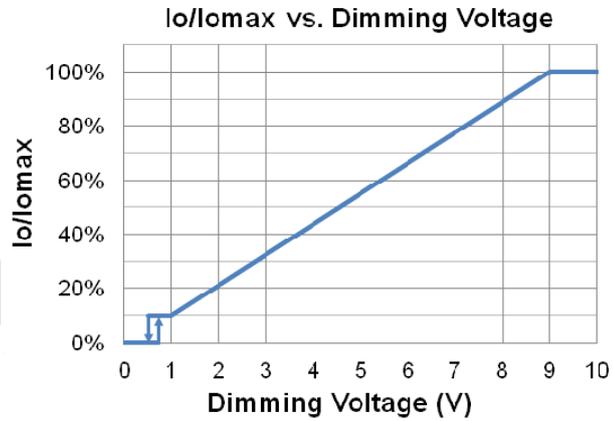
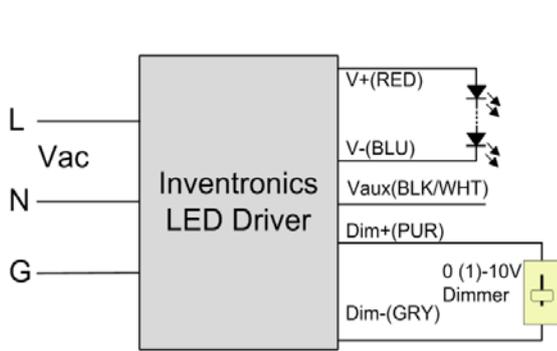
Protection Functions

Parameter	Notes
Over Temperature Protection	Decreases output current, returning to normal after over temperature is removed.
Short Circuit Protection	Auto Recovery. No damage will occur when any output is short circuited. The output shall return to normal when the fault condition is removed.
Over Voltage Protection	Limits output voltage at no load and in case the normal voltage limit fails.

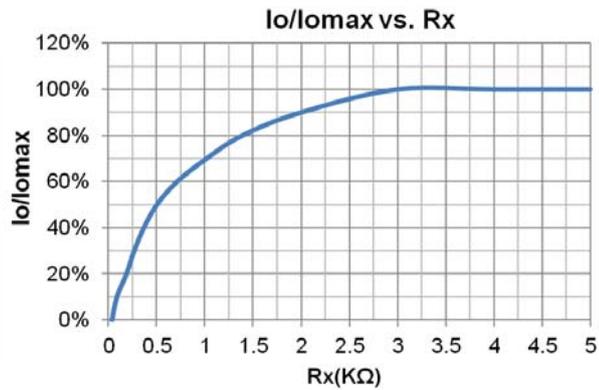
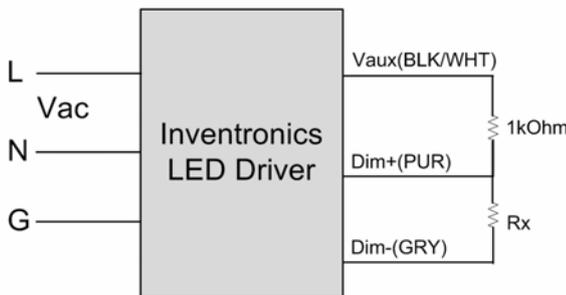
Dimming

● 0-10V Dimming

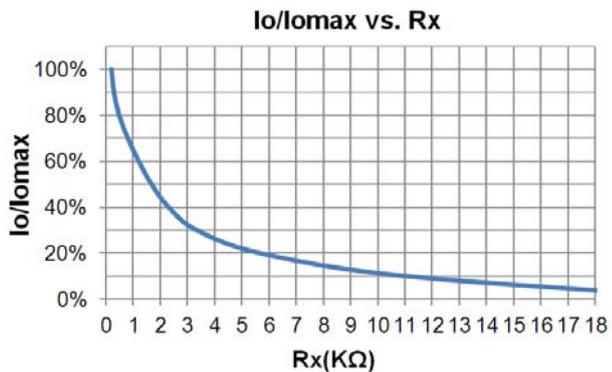
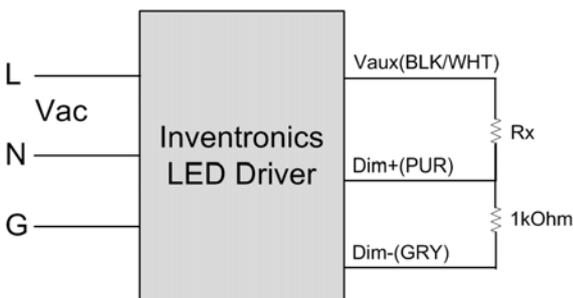
Recommended implementations of the dimming control are provided below.



Implementation 1: DC Input



Implementation 2: External Resistor



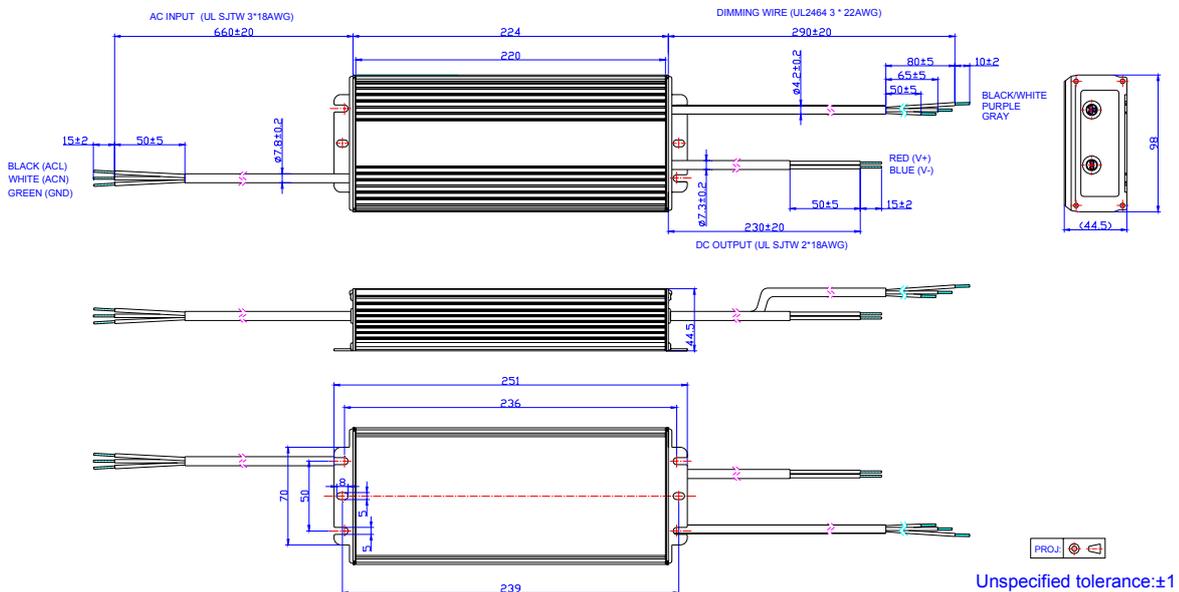
Implementation 3: External Resistor

Notes:

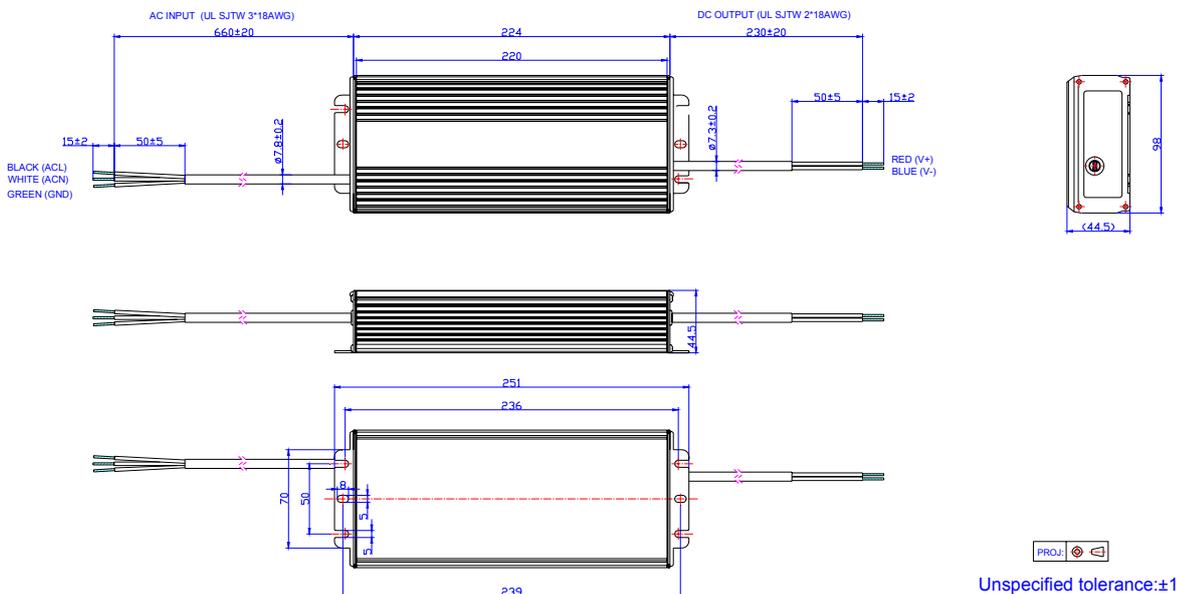
1. The dimmer can also be replaced by an active 0-10V voltage source signal or passive components like resistors and zener.
2. Do NOT connect Dim- to the output V- or V+, otherwise the driver will not work properly.
3. If 0-10V dimming is not used, Dim + can be either open or connected to Vaux.

Mechanical Outline

EUC-320SxxxDT



EUC-320SxxxST



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
2014-08-06	A	Datasheets Release	/	/