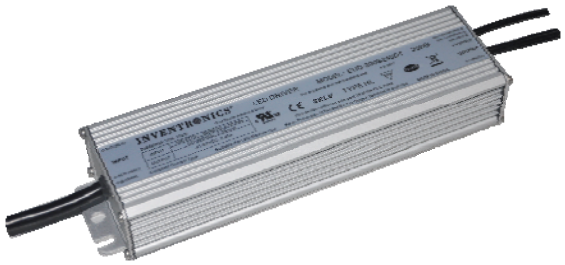
Features

- Ultra High Efficiency (Up to 93.5%)
- Programmable Constant-Current Output
- 0-10V/PWM/Timer Dimmable and Dim off
- Standby Power ≤1 W
- All-Around Protection: OVP,SCP, OTP
- Waterproof (IP67)
- SELV Output
- Suitable for EU Built-in Use
- TYPE HL, for use in a Class I, Division 2 hazardous (Classified) location



Description

The *EUD-200SxxxDT* series is a 200W, constant-current, programmable 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 (4)
					120Vac	220Vac	
700 mA	90 ~ 305 Vac 127~300 Vdc	143~286Vdc	200 W	93.5%	0.99	0.96	EUD-200S070DT
1050 mA	90 ~ 305 Vac 127~300 Vdc	95~190Vdc	200 W	93.5%	0.99	0.96	EUD-200S105DT
1400 mA	90 ~ 305 Vac 127~300 Vdc	71~142Vdc	200 W	93.0%	0.99	0.96	EUD-200S140DT
2100 mA	90 ~ 305 Vac 127~300 Vdc	47~ 95 Vdc	200 W	93.0%	0.99	0.96	EUD-200S210DT(3)
2450 mA	90 ~ 305 Vac 127~300 Vdc	41~ 82 Vdc	200 W	93.5%	0.99	0.96	EUD-200S245DT(3)
2800 mA	90 ~ 305 Vac 127~300 Vdc	35~ 71 Vdc	200 W	92.5%	0.99	0.96	EUD-200S280DT(3)
4200 mA	90 ~ 305 Vac 127~300 Vdc	24~ 48 Vdc	200 W	93.0%	0.99	0.96	EUD-200S420DT(3)
4900 mA	90 ~ 305 Vac 127~300 Vdc	21~ 41 Vdc	200 W	92.0%	0.99	0.96	EUD-200S490DT(3)

Notes: (1) UL, FCC certified input voltage range: 100-277Vac or 127-300Vdc; other certified input voltage range except UL & FCC: 100-240Vac /127-250Vdc
(2) Measured at full load and 220 Vac input.
(3) SELV Output
(4) Add suffix -0000 for the programmable version, or -00A0 for the non-programmable version.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 Vac	-	305 Vac	127~300 Vdc
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.75 mA	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(I^2t)	-	-	0.75 A^2s	At 220Vac input, 25℃ cold start, duration=2.5 ms,10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.90	-	-	At 100-277Vac, 75%-100%Load(150-200W)
THD	-	-	20%	

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%Iomax	-	5%Iomax	At full load condition
Output Current Ripple(pk-pk)	-	5%Iomax	10%Iomax	At full load condition
Startup Overshoot Current	-	-	10%Iomax	At full load condition
No Load Output Voltage EUD-200S070DT EUD-200S105DT EUD-200S140DT EUD-200S210DT EUD-200S245DT EUD-200S280DT EUD-200S420DT EUD-200S490DT	 - - - - - - - -	 - - - - - - - -	 305V 205V 155V 110V 95V 80V 55V 48V	
Line Regulation	-	-	±0.5%	Measured at full load
Load Regulation	-	-	±1.5%	
Turn-on Delay Time	-	0.5 s	1.0 s	Measured at 120Vac and 220Vac input.
Temperature Coefficient	-	-	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 otherwise stated.

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 120 Vac input:				Measured at full load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
EUD-200S070DT	88.0%	91.0%	-	
EUD-200S105DT	88.0%	91.0%	-	
EUD-200S140DT	87.0%	90.0%	-	
EUD-200S210DT	87.0%	90.0%	-	
EUD-200S245DT	88.0%	91.0%	-	
EUD-200S280DT	86.0%	89.0%	-	
EUD-200S420DT	87.5%	90.5%	-	
EUD-200S490DT	87.0%	90.0%	-	
Efficiency at 220 Vac input:				Measured at full load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
EUD-200S070DT	91.5%	93.5%	-	
EUD-200S105DT	91.5%	93.5%	-	
EUD-200S140DT	91.0%	93.0%	-	
EUD-200S210DT	91.0%	93.0%	-	
EUD-200S245DT	91.5%	93.5%	-	
EUD-200S280DT	90.5%	92.5%	-	
EUD-200S420DT	91.0%	93.0%	-	
EUD-200S490DT	90.0%	92.0%	-	
Efficiency at 277 Vac input:				Measured at full load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
EUD-200S070DT	92.0%	94.0%	-	
EUD-200S105DT	91.5%	93.5%	-	
EUD-200S140DT	91.0%	93.0%	-	
EUD-200S210DT	91.0%	93.0%	-	
EUD-200S245DT	91.5%	93.5%	-	
EUD-200S280DT	91.0%	93.0%	-	
EUD-200S420DT	91.5%	93.5%	-	
EUD-200S490DT	90.5%	92.5%	-	
Standby power	-	-	1 W	Measured at 230Vac/50Hz; Dimming off
MTBF	-	341,000 Hours	-	Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	120,000 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 × W × H)	8.82 ×2.66 × 1.56			
Millimeters (L × W × H)	224 × 67.5 × 39.5			
Net Weight	-	1200 g	-	

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

Dimming Specifications

- **EUD-200SxxxDT-00A0**

Parameter	Min.	Typ.	Max.	Notes
Absolute Maximum Voltage on the Vdim (+) Pin	-20 V	-	20 V	
Source Current on Vdim (+)Pin	90 uA	120 uA	150 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.

- **EUD-200SxxxDT-0000**

Parameter	Min.	Typ.	Max.	Notes
Absolute Maximum Voltage on the Vdim (+) Pin	-20 V	-	20 V	
Source Current on Vdim (+)Pin	-	250 uA	300 uA	Vdim(+) = 0 V
Dimming Output Range	10% I_O	-	100% I_O	
Recommended Dimming Input Range	0 V	-	10 V	Default 0-10V dimming mode.
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	-	
PWM_in High Level	3 V	-	10 V	Dimming mode set to PWM in PC interface.
PWM_in Low Level	-0.3 V	-	0.8 V	
PWM_in Frequency Range	200 Hz	-	4 KHz	
PWM_in Duty Cycle	1%	-	99%	
PWM Dimming off (Positive Logic)	2%	4%	7%	
PWM Dimming on (Positive Logic)	4%	6%	9%	
PWM Dimming off (Negative Logic)	93%	96%	98%	
PWM Dimming on (Negative Logic)	91%	94%	96%	
Hysteresis	-	2%	-	

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

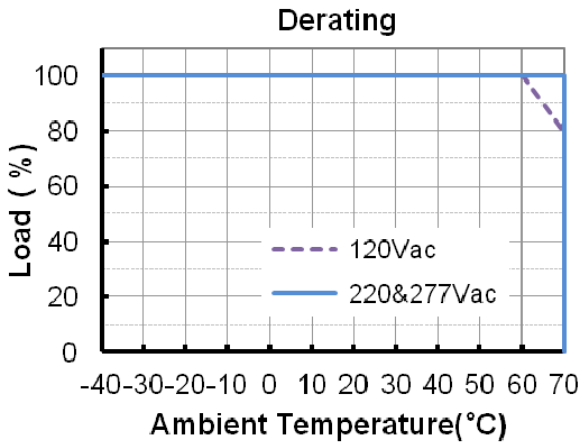
Environmental Specifications

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

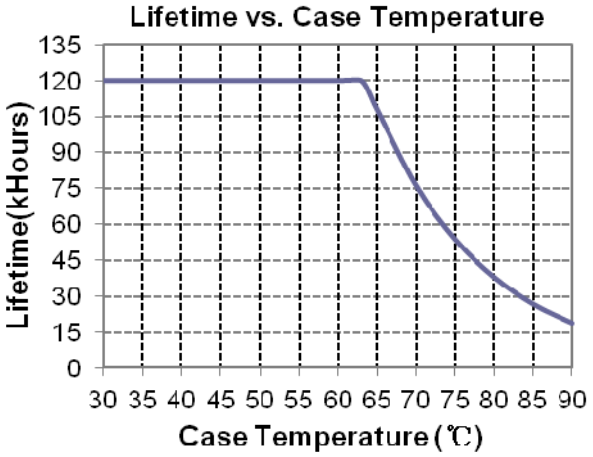
Safety & EMC Compliance

Safety Category	Standard
UL/CUL	UL8750, 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
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

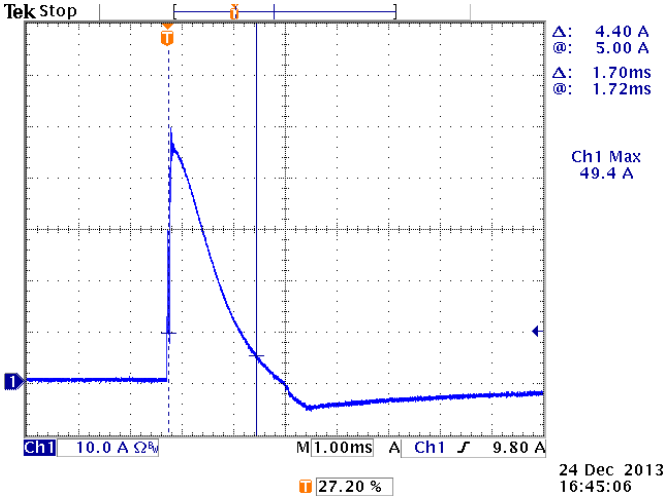
Derating



Lifetime vs. Case Temperature

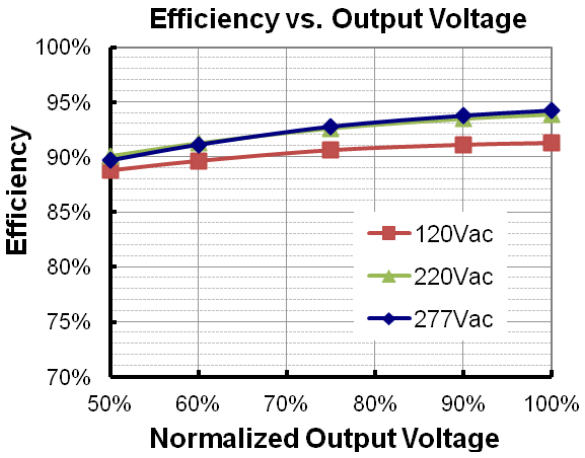


Inrush Current Waveform

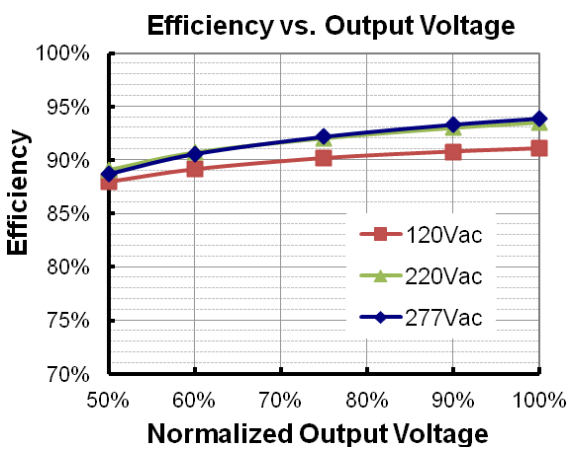


Efficiency vs. Load

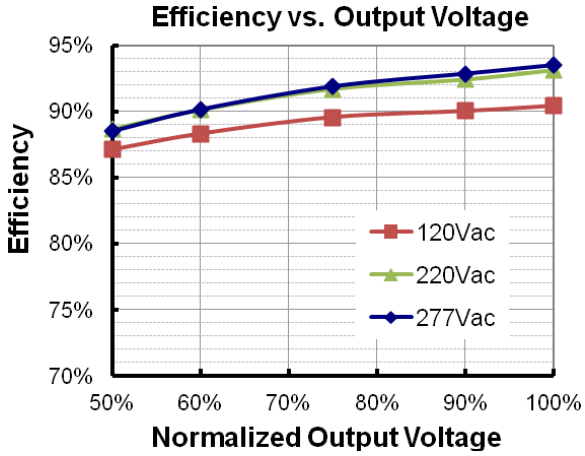
EUD-200S070DT



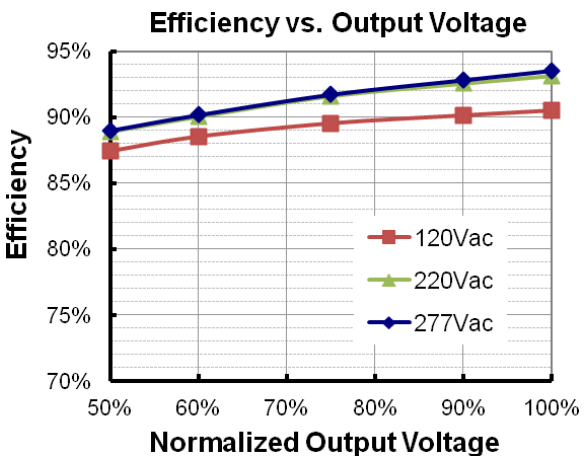
EUD-200S105DT



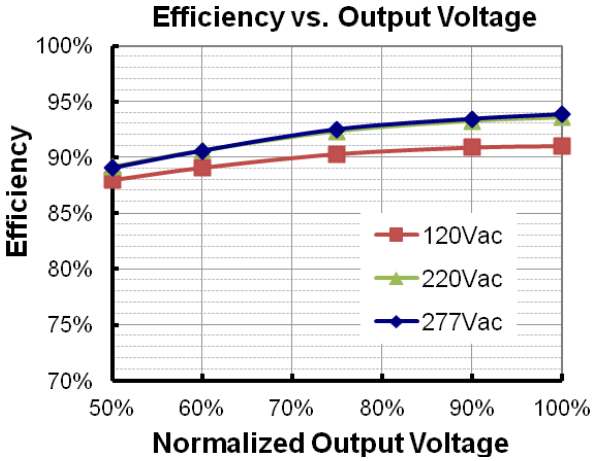
EUD-200S140DT



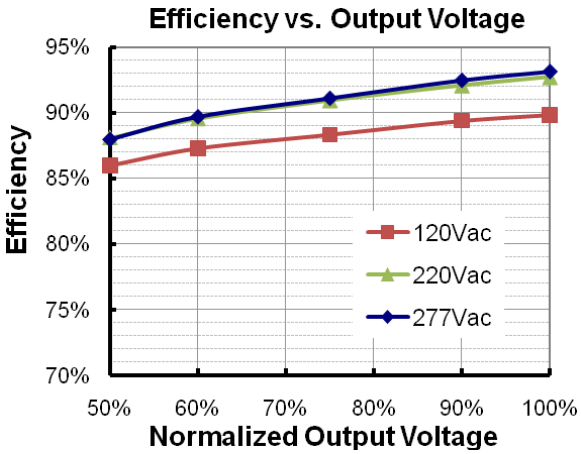
EUD-200S210DT



EUD-200S245DT



EUD-200S280DT



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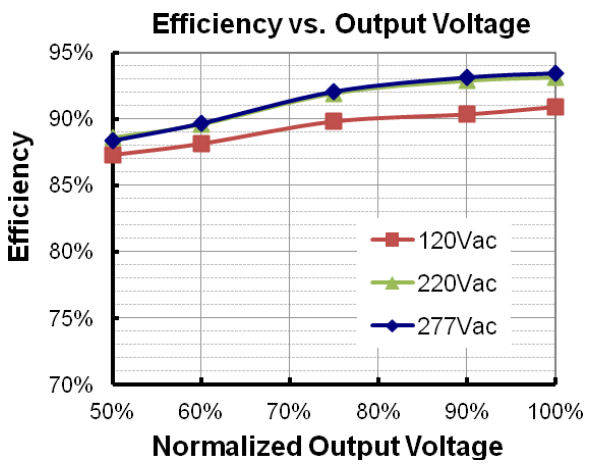
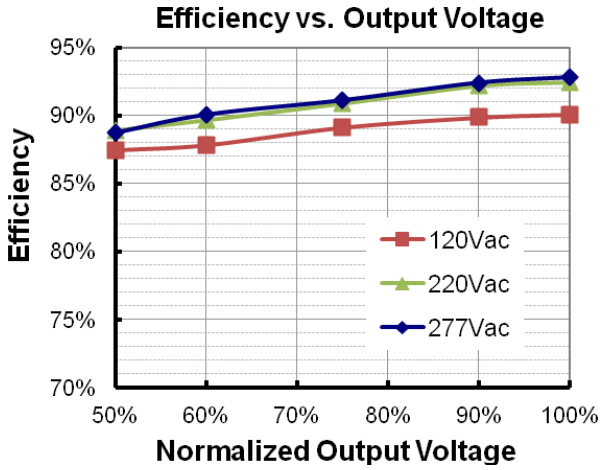
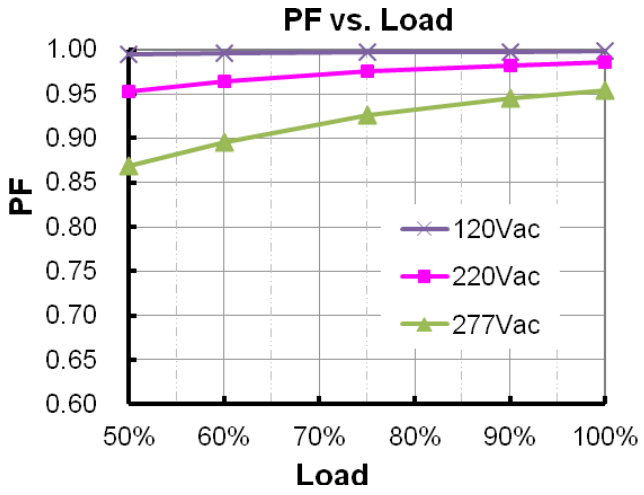
EUD-200S420DT



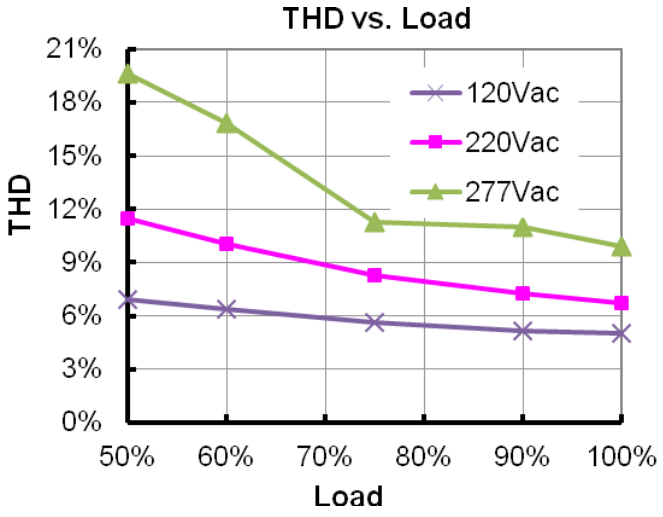
EUD-200S490DT



Power Factor



Total Harmonic Distortion



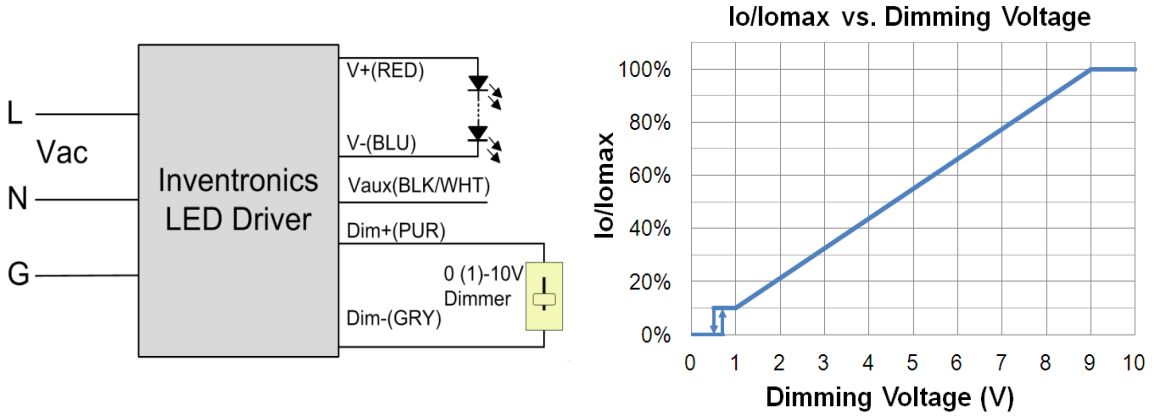
Protection Functions

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.

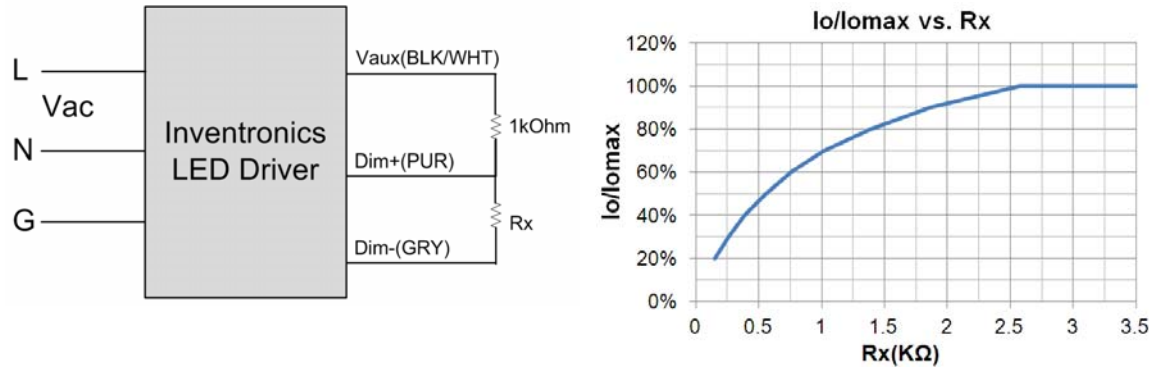
Dimming (EUD-200SxxxDT-00A0)

- **0-10V Dimming**

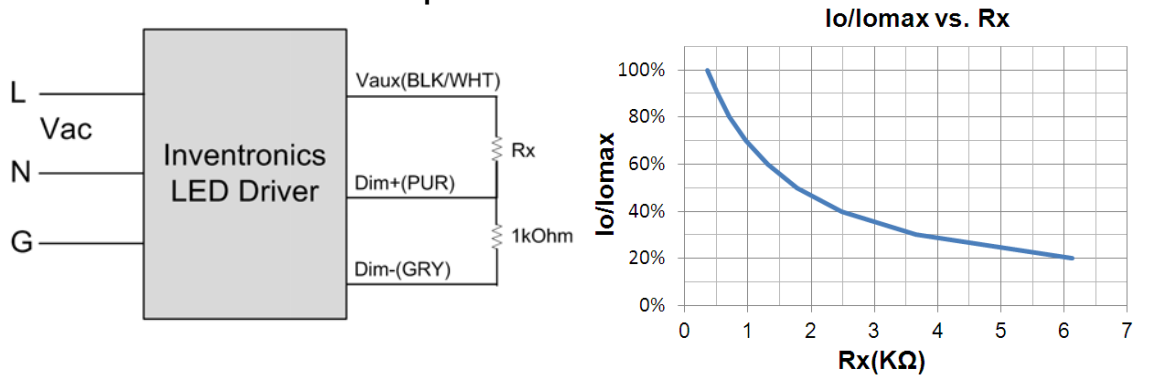
The recommended implementation of the dimming control is provided below.



Implementation 1: DC Input



Implementation 2: External Resistor



Implementation 3: External Resistor

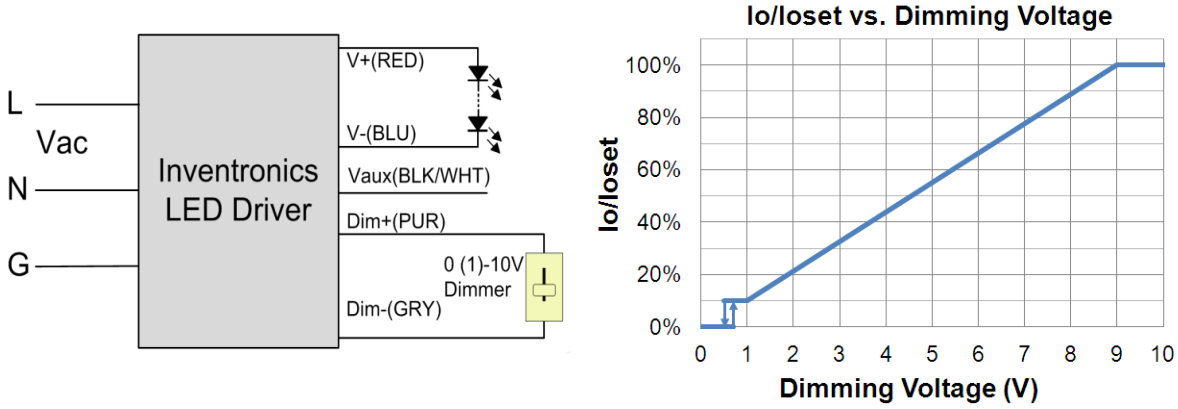
Notes:

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.

Dimming (EUD-200SxxxDT-0000)

● 0-10V Dimming

The recommended implementation of the dimming control is provided below.

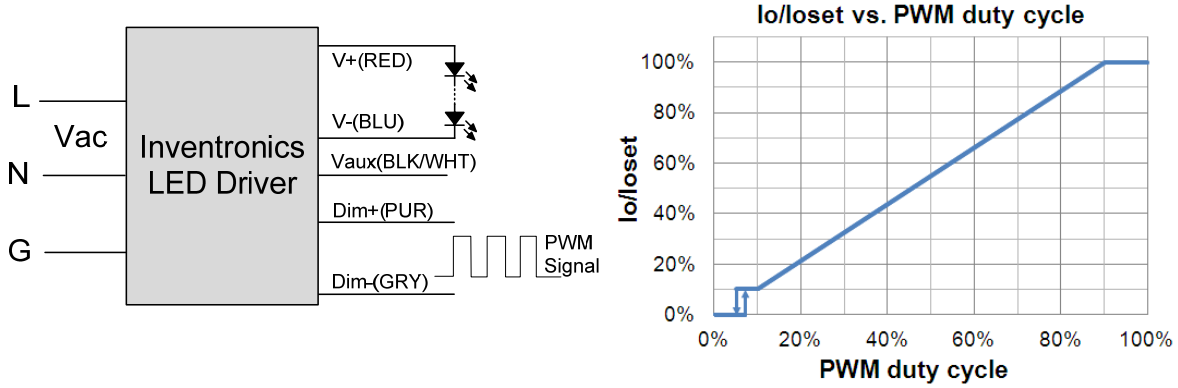


Implementation 1: DC Input

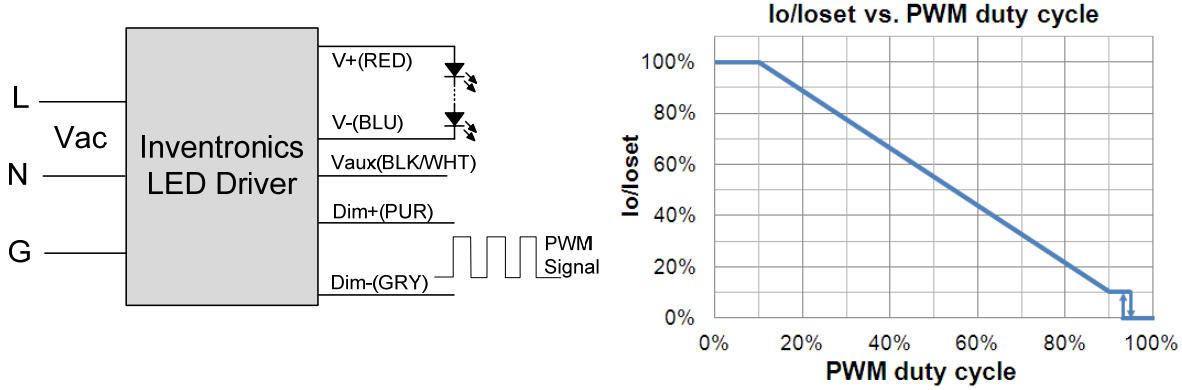
Notes:

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 + should be open.

● PWM Dimming

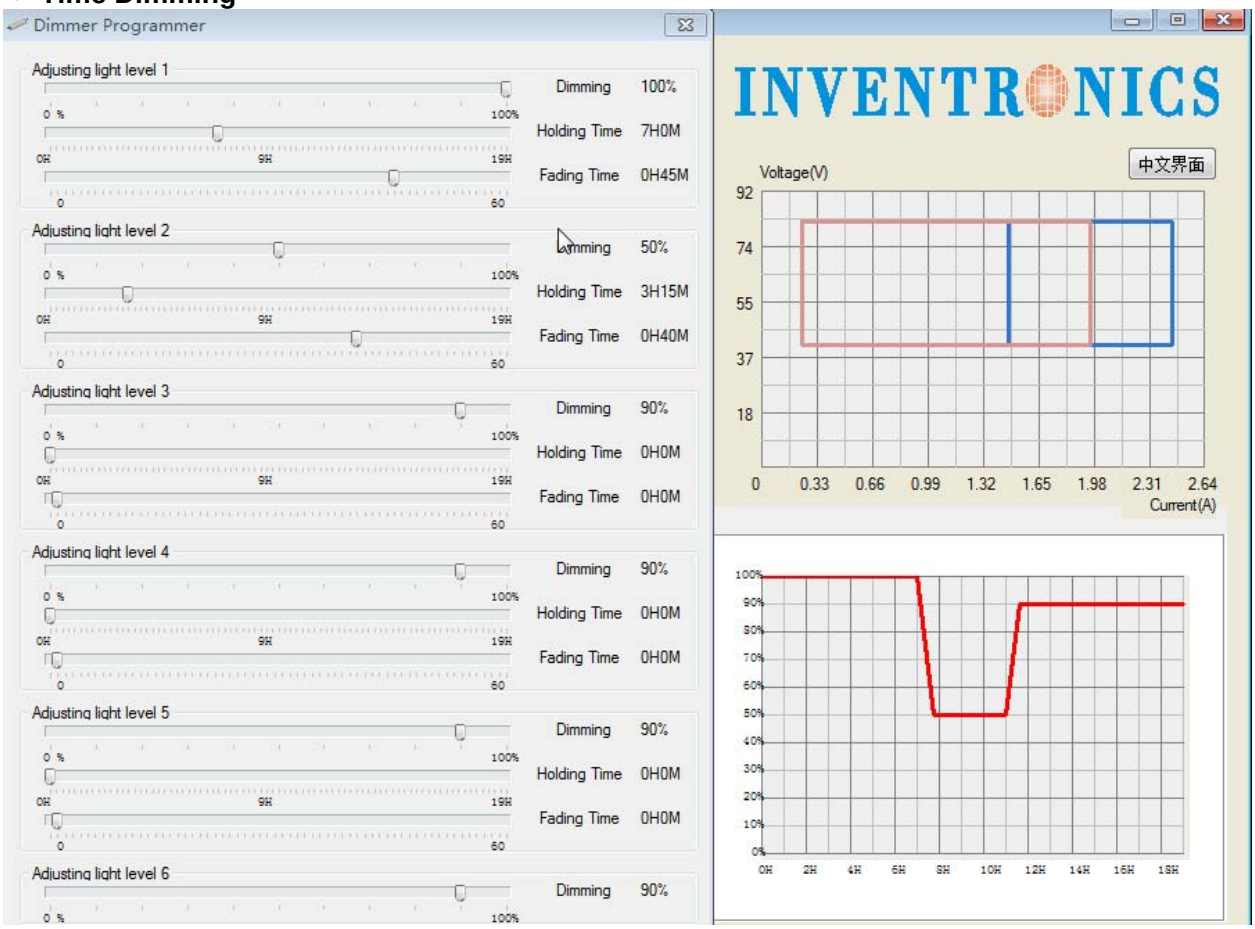


Implementation 2: Positive logic



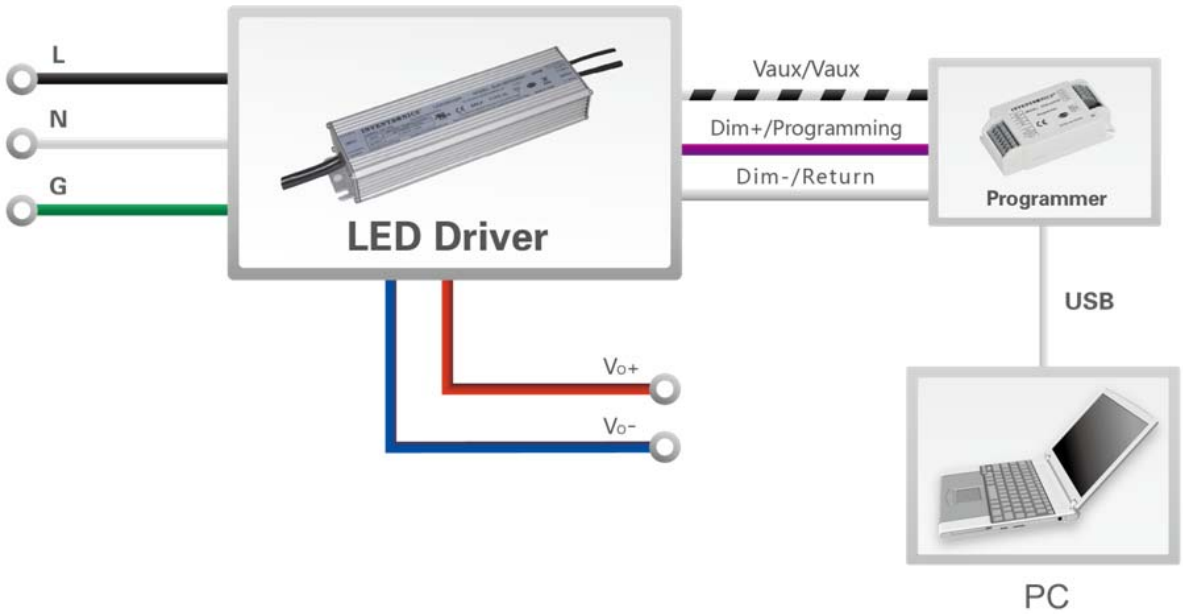
Implementation 3: Negative logic

- **Time Dimming**



Set the timing curve by pulling the sliders.

Programming Connection Diagram

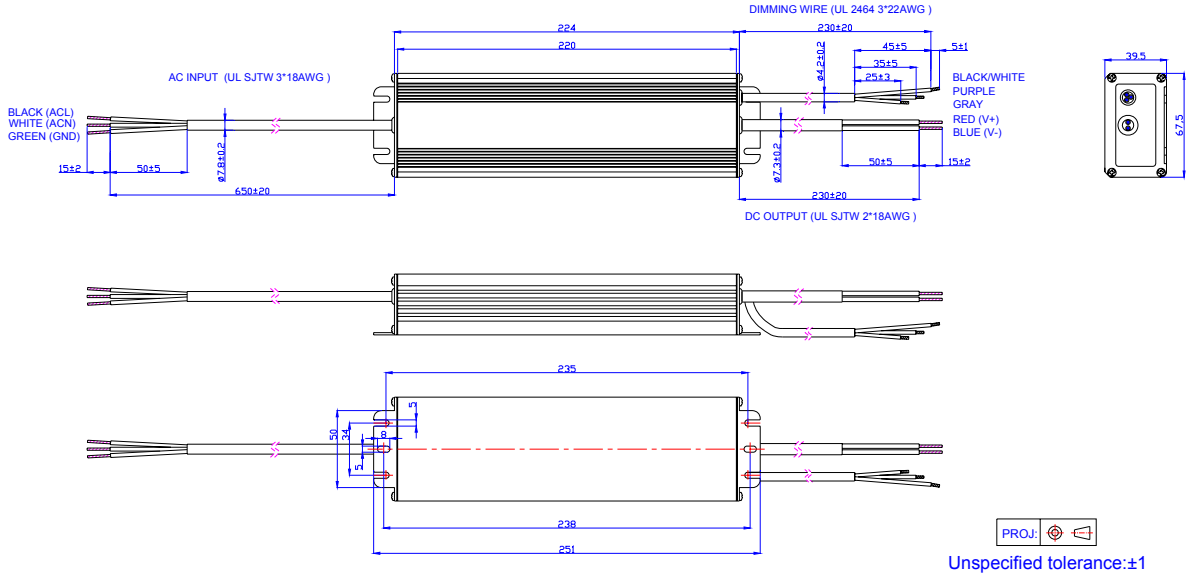


Note: The driver does not need to be powered on during the programming process.

- **Please refer to SDD-AAPNP(Programmer) datasheet for details.**

http://www.inventronics-co.com/cp_det.aspx?c_kind=2&c_kind2=177&c_kind3=179&id=220&productName=SDD-AAPNP

Mechanical Outline



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
2013-08-16	A	Datasheets Release	/	/
2014-07-23	B	Dimming control- EUD-200SxxxDT	/	Added
		PF curve	/	Updated
		THD curve	/	Updated
		Model 4200mA and Model 4900mA	/	Added
		Efficiency of all models	/	Updated
		Mechanical Outline	/	Updated