Features

- Ultra High Efficiency (Up to 93.5%)
- Full Power at Wide Output Current Range (Constant Power)
- DALI Dimming Control
- Dim-to-Off with Standby Power ≤ 1 W
- Input Surge Protection: DM 6kV
- All-Around Protection: OVP, SCP, OTP
- IP67
- Class II, Double Insulation
- Suitable for Built-in Use
- Complies with DALI protocol IEC62386-101,102 and part of 207
- 5 Years Warranty

Description

The *EUD-200SxxxBD* series is a 200W, constant-current, programmable LED driver that operates from 90-305 Vac input with excellent power factor. Created for many lighting applications including high bay, high mast, sports and roadway, etc, it provides a dim-to-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 input surge, output over voltage, short circuit, and over temperature.

This product meets all requirements for Class II safety certification. However, the allowed leakage current could cause a mild shock if the case is touched while energized.

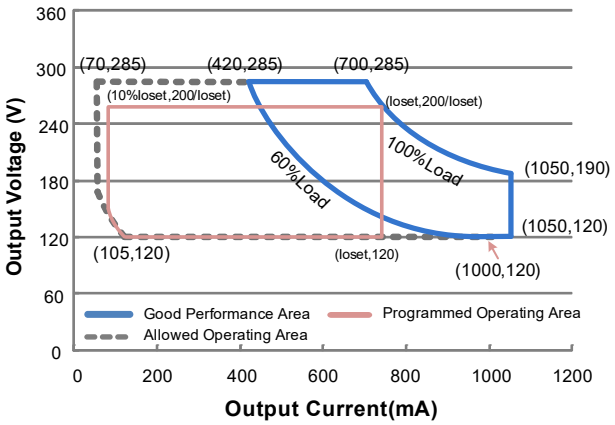
Models

Output Current Range	Full-Power Current Range (1)	Default Output Current	Input Voltage Range(2)	Output Voltage Range	Max. Output Power	Typical Efficiency (3)	Typical Power Factor		Model Number (4)
							120Vac	220Vac	
70-1050mA	700-1050mA	700 mA	90~305 Vac 127~250 Vdc	120~285Vdc	200 W	93.0%	0.99	0.96	EUD-200S105BD
105-1500mA	1050-1500mA	1400 mA	90~305 Vac 127~250 Vdc	80~190Vdc	200 W	93.5%	0.99	0.96	EUD-200S150BD

Notes: (1) Output current range with constant power at 200W
(2) Certified voltage range: 100-240Vac /127-250Vdc (except KS)
(3) Measured at 100%load and 220Vac input (see below “General Specifications” for details).
(4) All the models are certificated to KS, except EUD-200S105BD

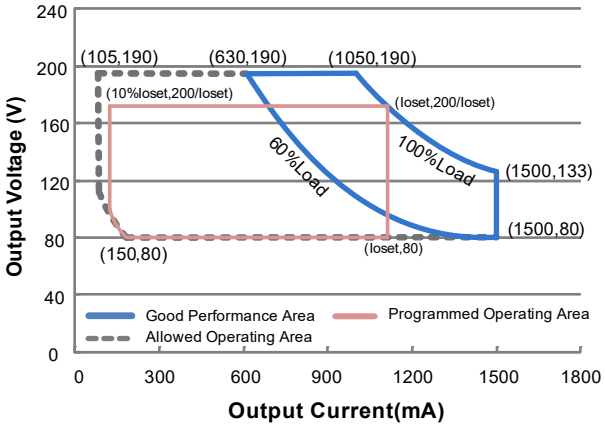
I-V Operating Area

EUD-200S105BD



Note: 700mA≤Ioset≤1050mA

EUD-200S150BD



Note: 1050mA≤Ioset≤1500mA

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input AC Voltage	90 Vac	-	305 Vac	
Input DC Voltage	127 Vdc	-	250 Vdc	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.70 mA	IEC60598-1; 240Vac/ 60Hz
Input AC Current	-	-	2.4 A	Measured at 100%load and 100 Vac input.
	-	-	1.0 A	Measured at 100%load and 220 Vac input.
Inrush Current(I^2t)	-	-	5.97 A^2s	At 220Vac input, 25 ℃ cold start, duration=1.36 ms, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.90	-	-	At 100-240Vac, 50-60Hz, 60%-100% load (120-200W)
THD	-	-	20%	

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%Ioset	-	5%Ioset	100%load
Output Current Setting(Ioset) Range EUD-200S105BD EUD-200S150BD	 70 mA 105 mA	 - -	 1050 mA 1500 mA	
Output Current Setting Range with Constant Power EUD-200S105BD EUD-200S150BD	 700 mA 1050 mA	 - -	 1050 mA 1500 mA	
Total Output Current Ripple (pk-pk)	-	5%Iomax	10%Iomax	100%load, 20 MHz BW
Output Current Ripple at < 200 Hz (pk-pk)	-	2%Iomax	-	100%load

Output Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Startup Overshoot Current	-	-	10%Iomax	100%load
No Load Output Voltage EUD-200S105BD EUD-200S150BD	 - -	 - -	 330 V 220 V	
Line Regulation	-	-	±0.5%	100%load
Load Regulation	-	-	±1.5%	
Turn-on Delay Time	-	1.0 s	2.0 s	Measured at 120Vac and 220Vac input, 60%-100% load
Temperature Coefficient of Ioset	-	0.03%/°C	-	Case temperature = 0°C ~Tc max

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 120 Vac input: EUD-200S105BD Io=700 mA Io=1050 mA EUD-200S150BD Io=1050 mA Io=1500 mA	 88.0% 88.0% 89.0% 88.0%	 90.0% 90.0% 91.0% 90.0%	 - - - -	Measured at 100%load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
Efficiency at 220 Vac input: EUD-200S105BD Io=700 mA Io=1050 mA EUD-200S150BD Io=1050 mA Io=1500 mA	 91.0% 91.0% 91.5% 90.5%	 93.0% 93.0% 93.5% 92.5%	 - - - -	Measured at 100%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: EUD-200S105BD Io=700 mA Io=1050 mA EUD-200S150BD Io=1050 mA Io=1500 mA	 91.5% 91.0% 92.0% 91.0%	 93.5% 93.0% 94.0% 93.0%	 - - - -	Measured at 100%load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
Standby power	-	1 W	-	Measured at 230Vac/50Hz; Dimming off
MTBF	-	288,000 Hours	-	Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	100,000 Hours	-	Measured at 220Vac input, 80%Load and 60°C case temperature; See lifetime vs. Tc curve for the details
Operating Case Temperature for Safety Tc_s	-40°C	-	+90°C	
Operating Case Temperature for Warranty Tc_w	-40°C	-	+70°C	Case temperature for 5 years warranty Humidity: 10%RH to 95%RH
Storage Temperature	-40°C	-	+85°C	Humidity: 5%RH to 95%RH
Dimensions Inches (L × W × H) Millimeters (L × W × H)	8.82 × 2.66 × 1.56 224 × 67.5 × 39.5			With mounting ear 9.88 × 2.66 × 1.56 251 × 67.5 × 39.5
Net Weight	-	1150 g	-	

Dimming Specifications

Parameter		Min.	Typ.	Max.	Notes
DA,DA High Level		9.5V	16V	22.5V	
DA,DA Low Level		-6.5V	0V	6.5V	
DA,DA Current		0mA	-	2mA	
Dimming Output Range	EUD-200S105BD EUD-200S150BD	10%Ioset	-	Ioset	700mA ⩽ Ioset ⩽ 1050mA 1050mA ⩽ Ioset ⩽ 1500mA
	EUD-200S105BD EUD-200S150BD	70mA 105mA	-	Ioset	70mA ⩽ Ioset ＜ 700mA 105mA ⩽ Ioset ＜ 1050mA

Safety &EMC Compliance

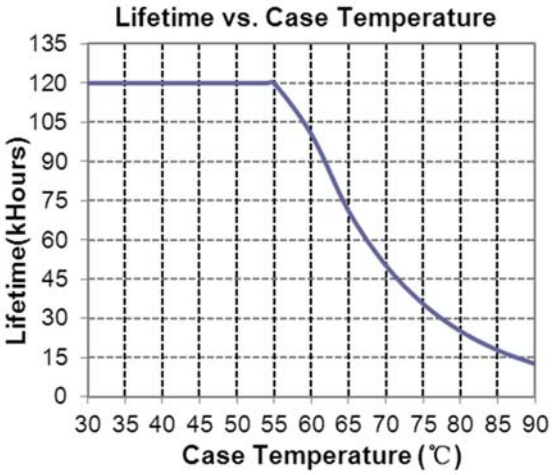
Safety Category	Standard
ENEC & TUV & CE(1)	EN 61347-1, EN 61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
KS	KS C 7655
EMI Standards	**Notes**
EN 55015(2)	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EMS Standards	**Notes**
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: Differential Mode 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
DALI Standards	**Notes**
DALI	IEC62386-101,102 & part of 207(3)

Note：(1) For compliance with EU Directive 2009/125/EC (ecodesign requirements for energy-related products) the Dim-to-Off function shall not be used or alternatively be interrupted through use of a relay or similar device to prevent excessive standby power consumption (as illustrated in Implementation 2).

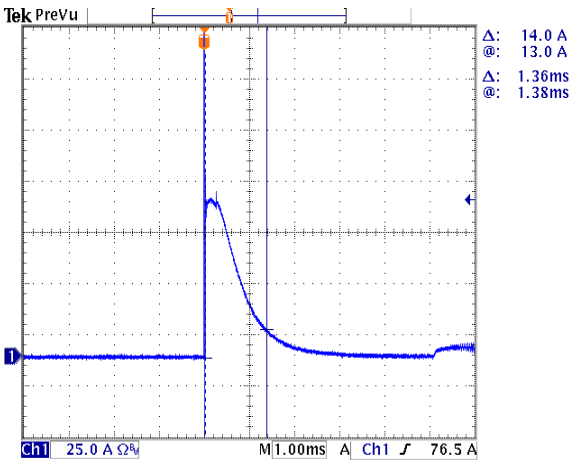
(2) This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

(3) Optional Commands Implemented: 242 (query short circuit), 243 (query open circuit)

Lifetime vs. Case Temperature

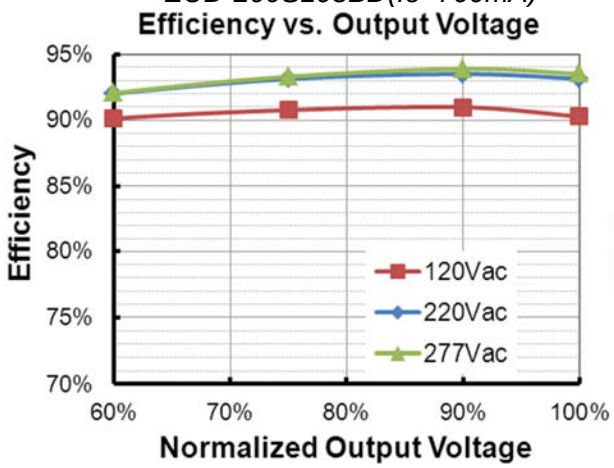


Inrush Current Waveform

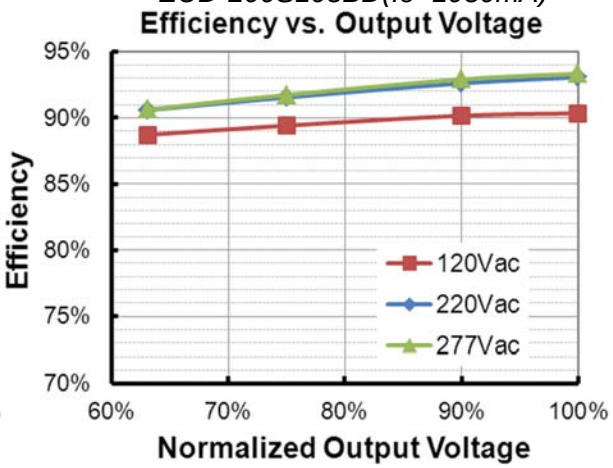


Efficiency vs. Load

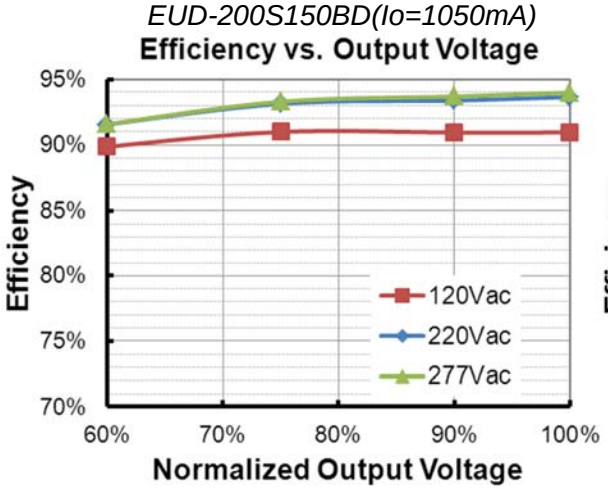
EUD-200S105BD(Io=700mA)



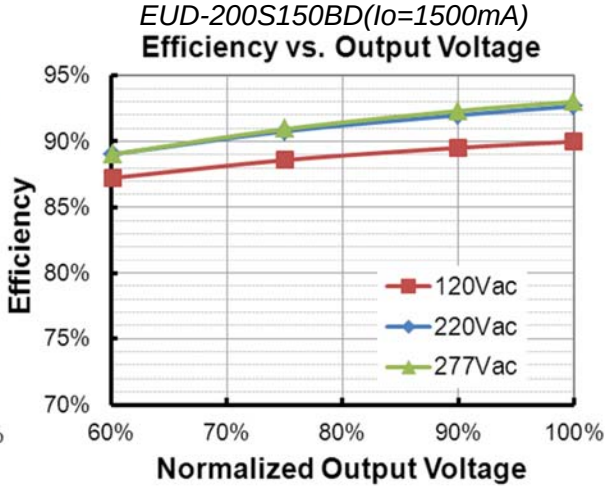
EUD-200S105BD(Io=1050mA)



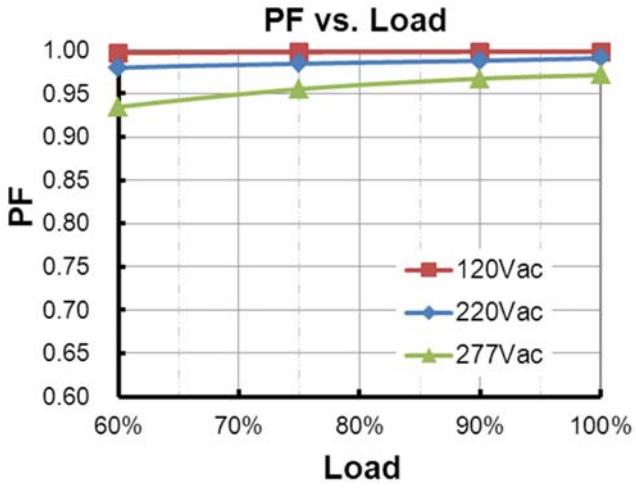
EUD-200S150BD(Io=1050mA)



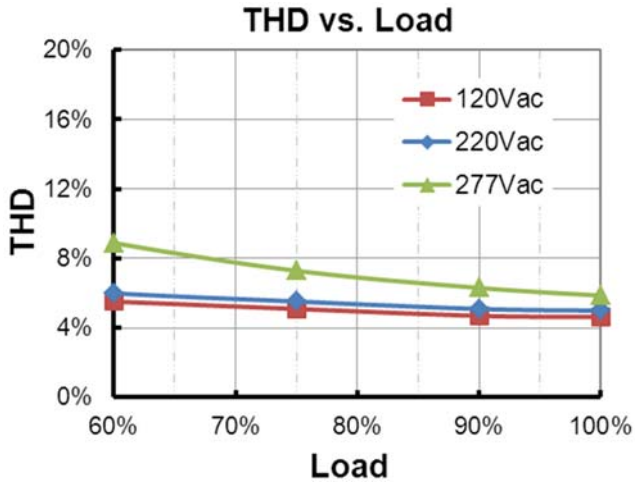
EUD-200S150BD(Io=1500mA)



Power Factor



Total Harmonic Distortion



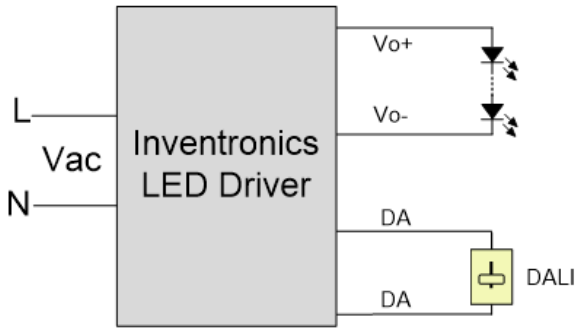
Protection Functions

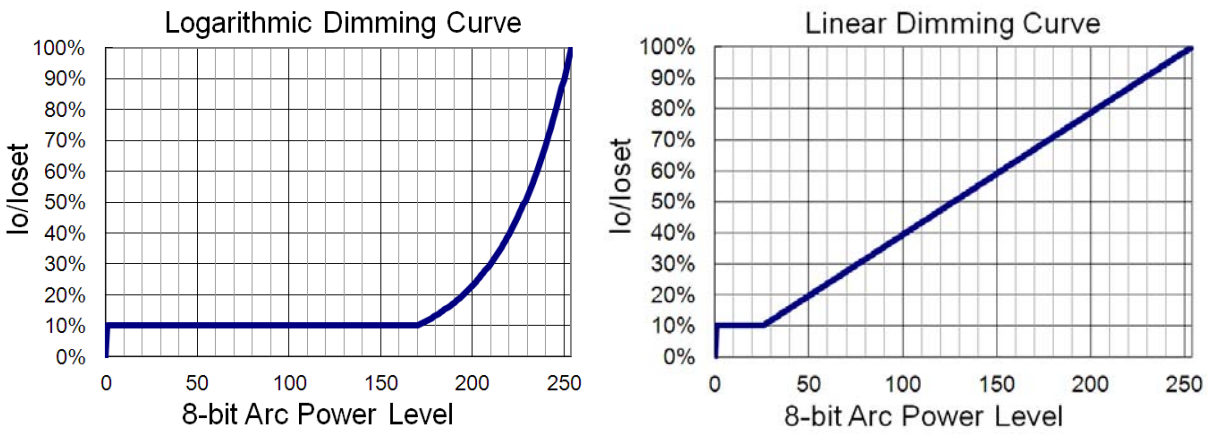
Parameter	Notes
Over Temperature Protection	Decreases output current, returning to normal after over temperature is removed.
Short Circuit Protection	Auto Recovery. No damage will occur when any output is short circuited. The output shall return to normal when the fault condition is removed.
Over Voltage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

Dimming

- **DALI Dimming**

The recommended implementation of the dimming control is provided below.

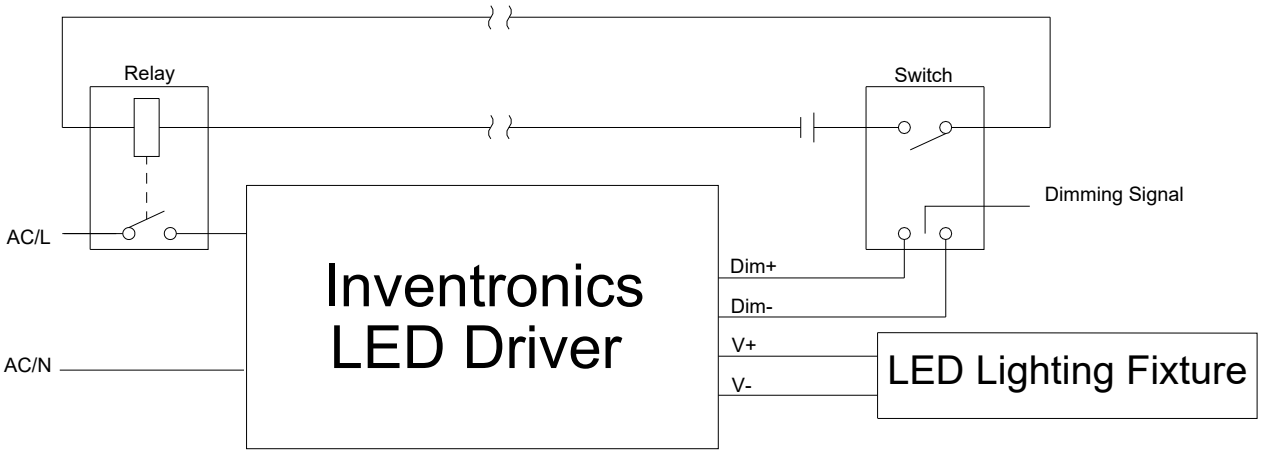




Implementation: DALI Dimming

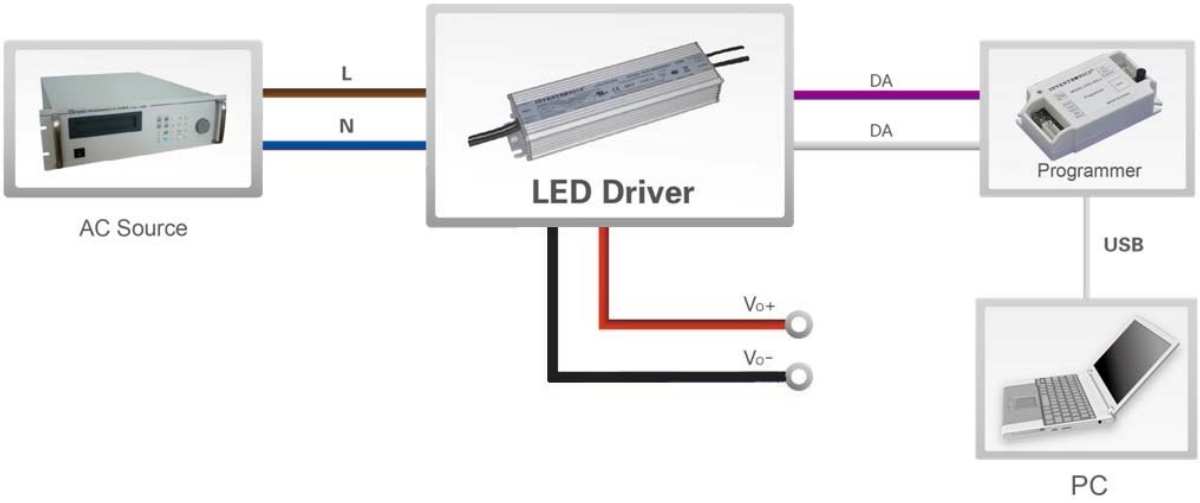
- **0% Light Brightness**

  If the brightness of the LED lighting fixture down to 0%, please refer to the following wiring method. The lamp can be turned on/off using a switch and relay.



Implementation 2: 0% Light Brightness Wiring Method

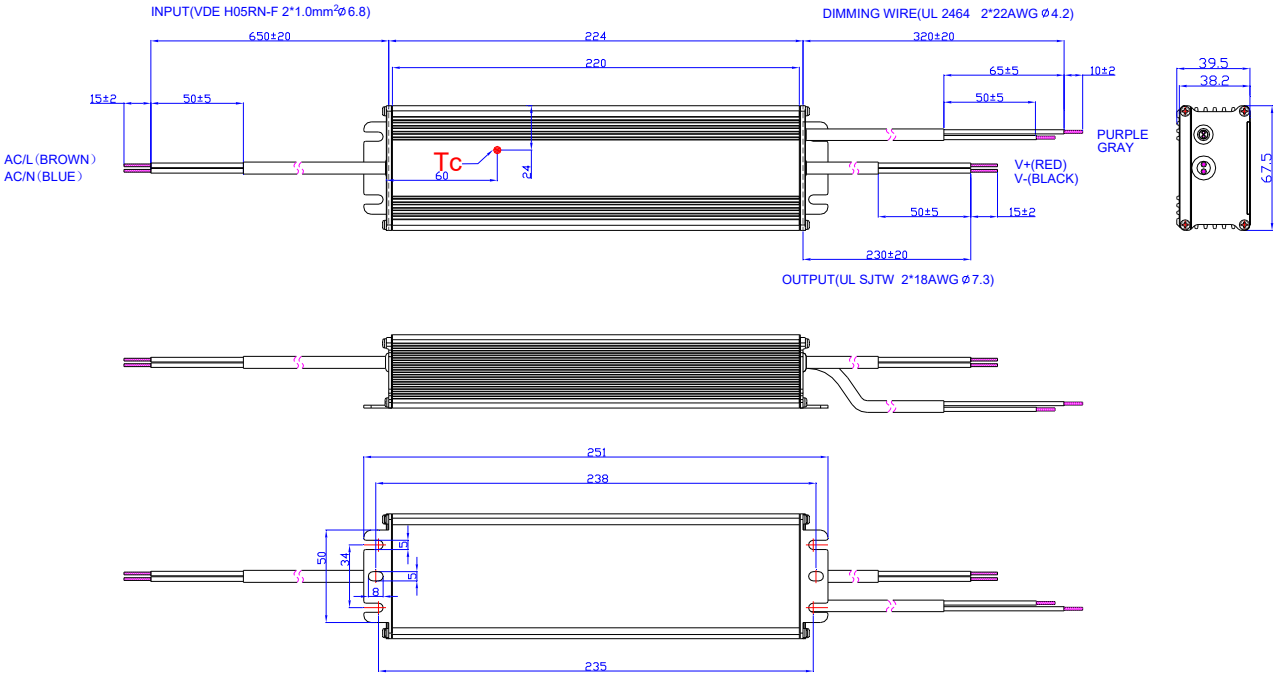
Programming Connection Diagram



Note: The driver needs to be powered on during the programming process.

- **Please refer to PRG-MUL2 Multi-Programmer datasheet for details.**

Mechanical Outline



RoHS Compliance

Our products comply with reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU, calling for the elimination of lead and other hazardous substances from electronic products.

Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2015-06-23	A	Datasheets Release	/	/
2018-06-14	B	ENEC	/	Updated
		Features	5 Years Warranty	Updated
		Description	/	Updated
		Input Specifications	PF/THD	Updated
		Input Specifications	Turn-on Delay Time	Updated
		Output Specifications	No Load Output Voltage	Updated
		Temperature Coefficient of Ioset	Max 0.03%/°C	Typ 0.03%/°C
		Standby power	Max 1W	Typ 1W
		Operating Case Temperature for Warranty Tc_w	/	Updated
		Dimensions	With mounting ear	Added
		Mechanical Outline	/	Updated
2019-09-20	C	TUV Logo	/	Added
		KS Logo	/	Added
		Features	6kV line-line	DM 6kV
		Features	Waterproof (IP67)	IP67
		Models	Notes(4)	Added
		Safety &EMC Compliance	ENEC	Added
		Safety &EMC Compliance	TUV	Added
		Safety &EMC Compliance	CB	Added
		Safety &EMC Compliance	KS	Added
		Safety &EMC Compliance	EN 61000-4-5	Updated
		Safety &EMC Compliance	DALI Standards	Added
		Safety &EMC Compliance	Note	Added
		RoHS Compliance	/	Updated
2021-11-26	D	Safety &EMC Compliance	Note (1)	Updated
		0% Light Brightness	/	Updated