Features

- High Efficiency (Up to 90.5%)
- Full Power at 70-100% Max Current (Constant Power)
- Compact Package Design
- 0-10V/PWM/Timer Dimmable
- All-Around Protection: OVP, SCP, OTP
- Waterproof (IP67)
- Suitable for EU Independent Use

CCC TUV CE CB

Description

The *EBD-075S105DV* series is a 75W, constant-current, programmable outdoor LED driver that operates from 176-305 Vac input with excellent power factor. It is created for low bay, tunnel and street lights. 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 Range	Full-Power Current Range (1)	Default Output Current	Input Voltage Range(2)	Output Voltage Range	Max. Output Power	Typical Efficiency (3)	Power Factor (3)	Model Number
70-1050 mA	700-1050 mA	700 mA	176~305 Vac	43~107 Vdc	75 W	90.5%	0.98	EBD-075S105DV

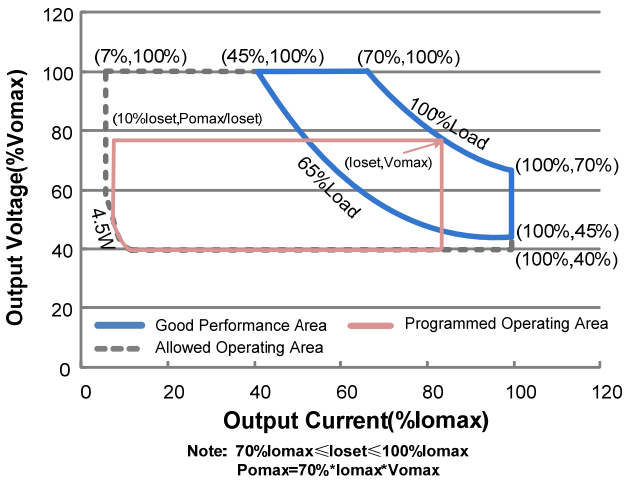
Notes: (1) Output current range with constant power at 75W

(2) Certified input voltage range: 200-240Vac

(3) Measured at 220Vac input with 70% maximum output current and 100% maximum output voltage.

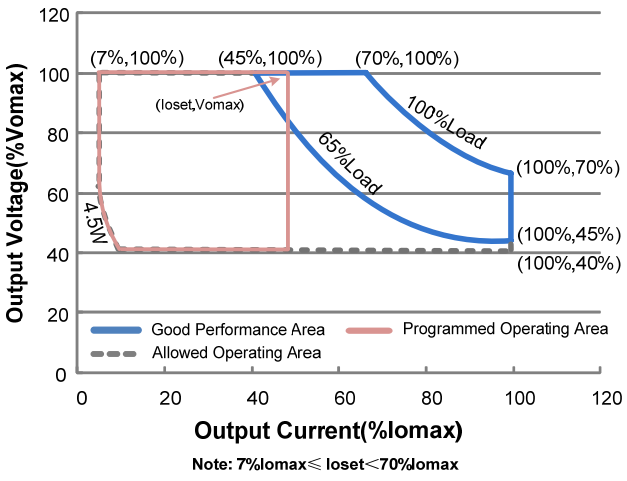
I-V Operation Curve

Power-Limited



Note: 70%Iomax≤Ioset≤100%Iomax
Pomax=70%*Iomax*Vomax

Voltage-Limited



Note: 7%Iomax≤ Ioset<70%Iomax

www.inventronics-co.com Tel: 86-571-56565800 Fax: 86-571-86601139 sales@inventronics-co.com

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	176 Vac	-	305 Vac	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.70 mA	IEC60598-1; 240Vac/ 60Hz
Input AC Current	-	-	0.42 A	Measured at full load and 220 Vac input.
Inrush Current(I^2t)	-	-	1.3 A^2s	At 220Vac input, 25℃ cold start, duration=584 us, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.9	-	-	At 220-240Vac, 65%-100% Load(49-75W)
THD	-	-	20%	

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%Ioset	-	5%Ioset	At full load condition
Output Current Setting(Ioset) Range	7%Iomax	-	100%Iomax	
Output Current Setting Range with Constant Power	70%Iomax	-	100%Iomax	
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	-	-	117 V	
Line Regulation	-	-	±0.5%	Measured at full load
Load Regulation	-	-	±1.5%	
Turn-on Delay Time	-	0.5 s	1.5 s	Measured at 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	-	20 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 220 Vac input: EBD-075S105DV Io=700 mA Io=1050 mA	 88.0% 88.5%	 90.0% 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
MTBF	-	445,000 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
Operating Case Temperature for Safety Tc_s	-	-	90°C	
Operating Case Temperature for Warranty Tc_w	-	-	75°C	
Dimensions Inches (L × W × H) Millimeters (L × W × H)	5.91× 2.66 × 1.44 150 × 67.5 × 36.5			
Net Weight	-	750 g	-	

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

Dimming Specifications

Parameter	Min.	Typ.	Max.	Notes
Absolute Maximum Voltage on the Vdim (+) Pin	-20 V	-	20 V	
Source Current on Vdim (+)Pin	200 uA	300 uA	450 uA	Vdim(+) = 0 V
Dimming Output Range	10%Ioset	-	Ioset	70%Iomax ≤ Ioset ≤ 100%Iomax
	7%Iomax	-	Ioset	7%Iomax ≤Ioset < 70%Iomax
Recommended Dimming Range	0 V	-	10 V	Default 0-10V dimming mode.
PWM_in High Level	3 V	-	10 V	Dimming mode set to PWM in PC interface.
PWM_in Low Level	-0.3 V	-	0.6 V	
PWM_in Frequency Range	200 Hz	-	2 KHz	
PWM_in Duty Cycle	1%	-	99%	

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

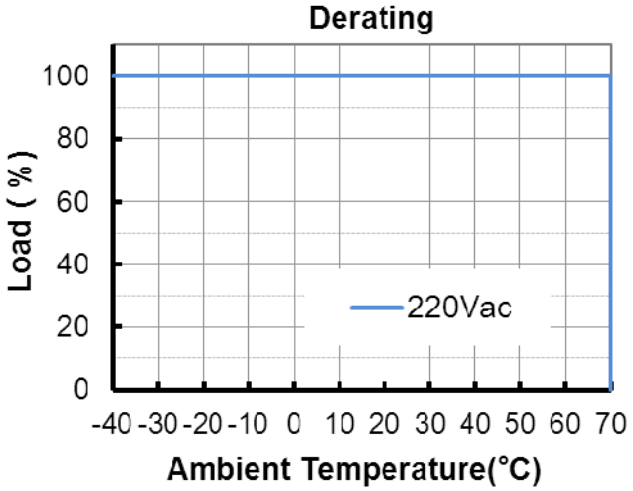
Environmental Specifications

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

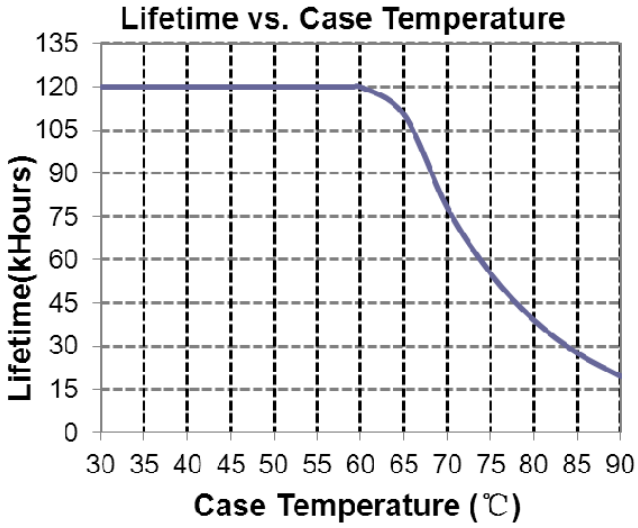
Safety &EMC Compliance

Safety Category	Standard
CE	EN 61347-1, EN61347-2-13
CCC	GB 19510.1, GB 19510.14
EMI Standards	**Notes**
EN 55015/GB 17743	Conducted emission Test &Radiated emission Test
EN 61000-3-2/GB 17625.1	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: level 3, criteria A
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

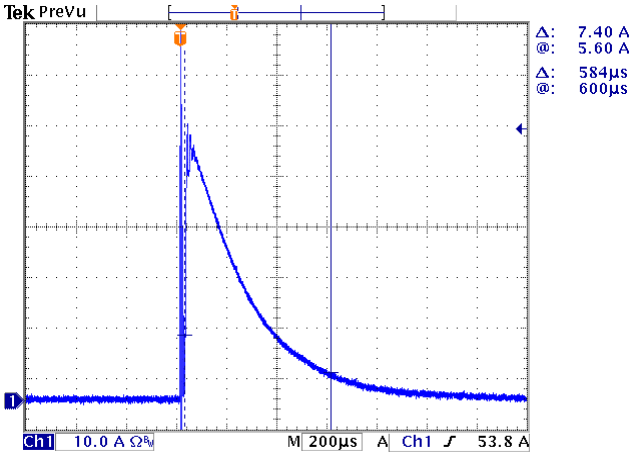
Derating



Lifetime vs. Case Temperature

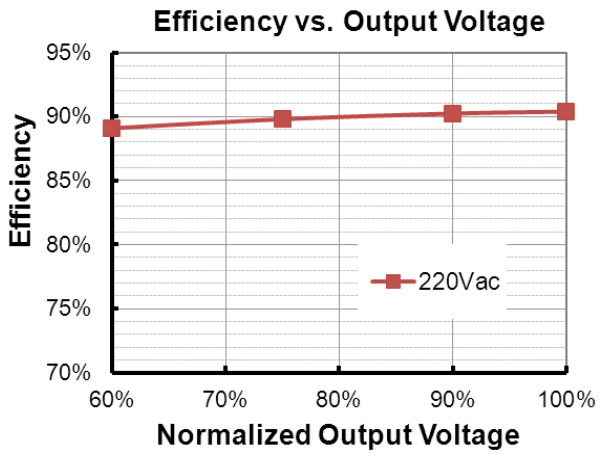


Inrush Current Waveform

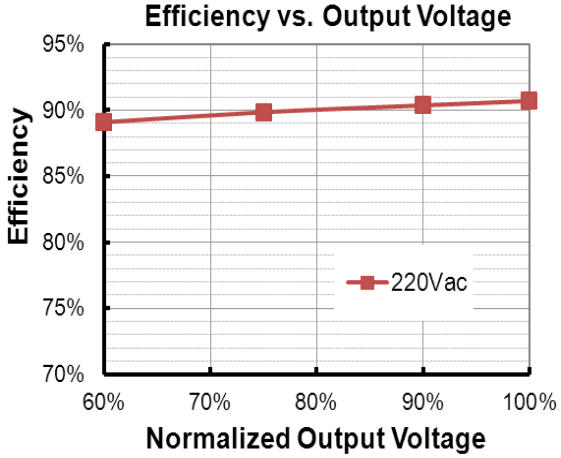


Efficiency vs. Load

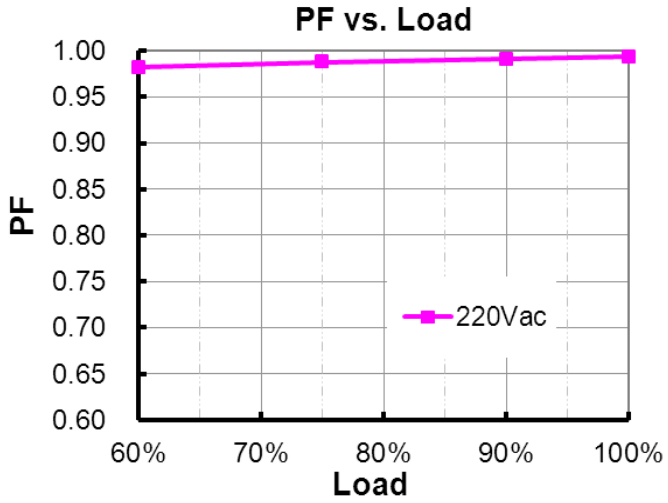
EBD-075S105DV(Io=700mA)



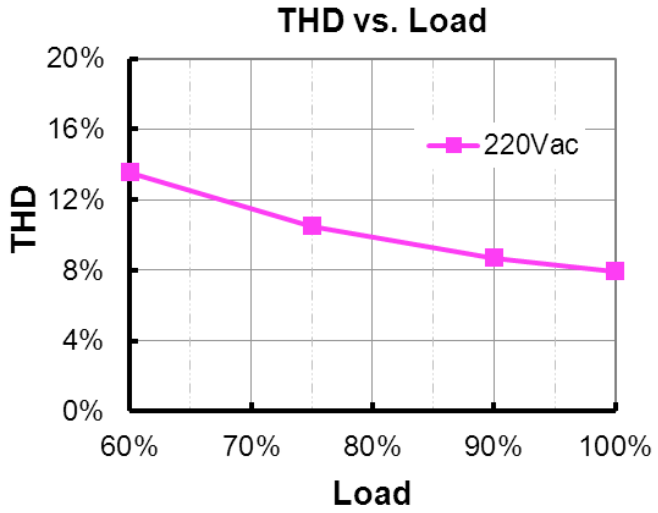
EBD-075S105DV(Io=1050mA)



Power Factor



Total Harmonic Distortion



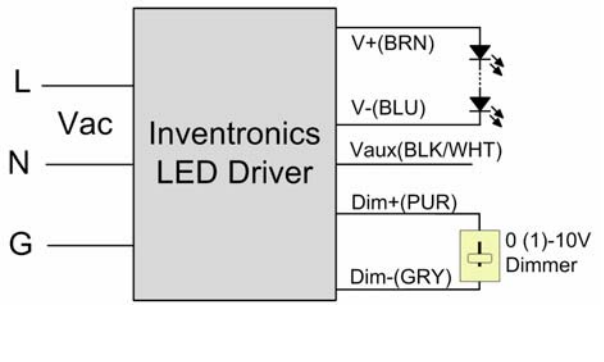
Protection Functions

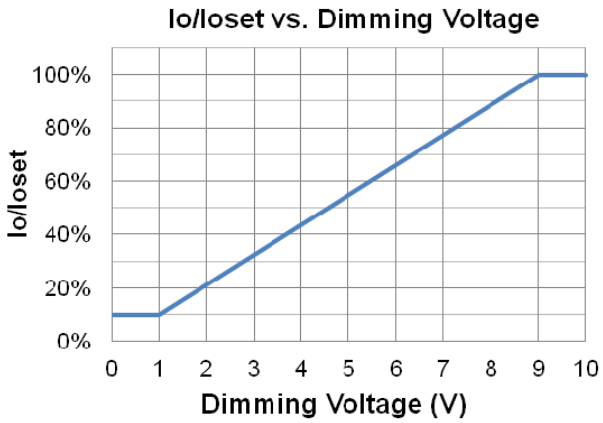
Parameter	Notes
Over Temperature Protection	Decreases output current, returning to normal after over temperature is removed.
Short Circuit Protection	Auto Recovery. No damage will occur when any output is short circuited. The output shall return to normal when the fault condition is removed.
Over Voltage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

Dimming

- **0-10V Dimming**

The recommended implementation of the dimming control is provided below.



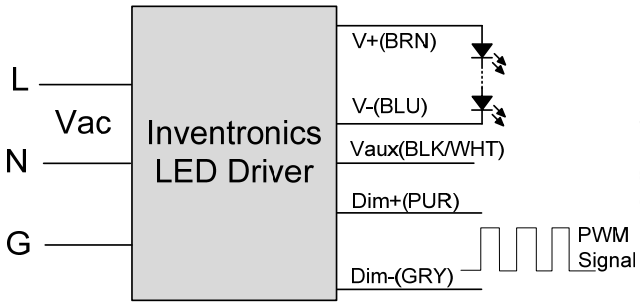


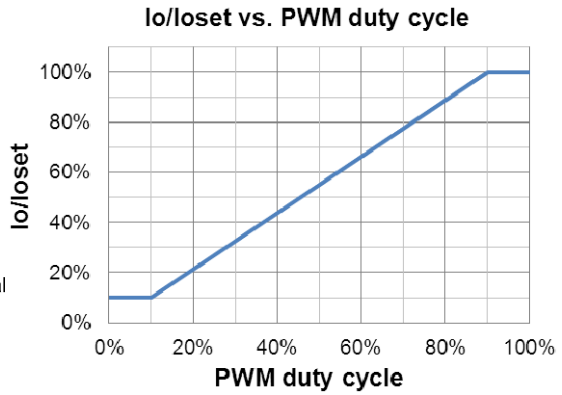
Implementation 1: DC Input

Notes:

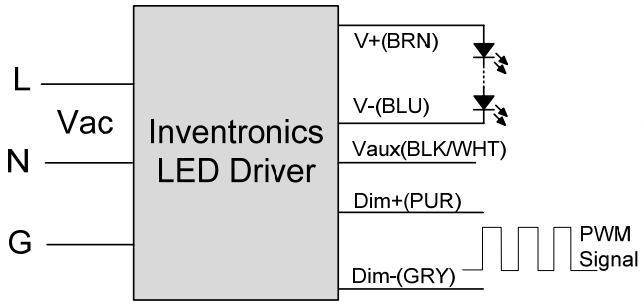
1. The dimmer can also be replaced by an active 0-10V voltage source signal or passive components like resistors and zener.
2. Do NOT connect Dim− to the output V− or V+, otherwise the driver will not work properly.
3. If 0-10V dimming is not used, Dim + should be open.

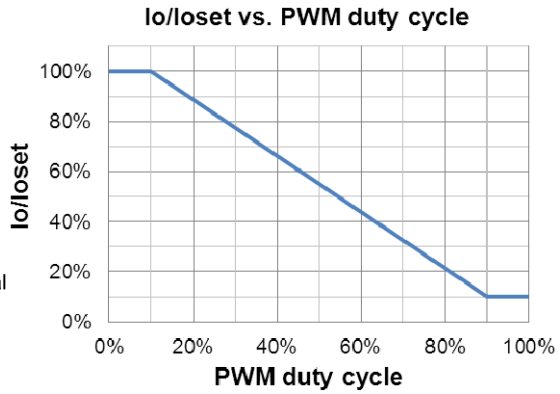
- **PWM Dimming**





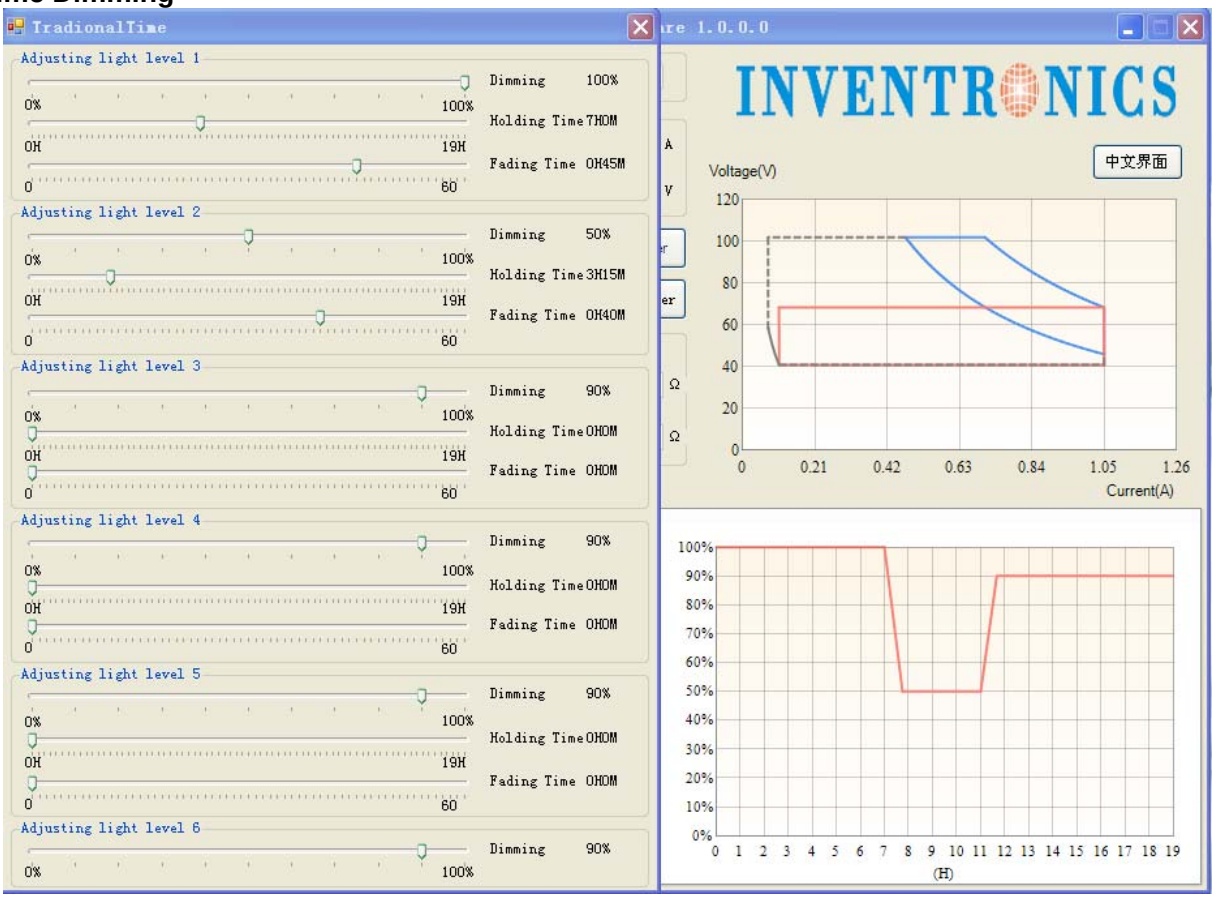
Implementation 2: Positive logic





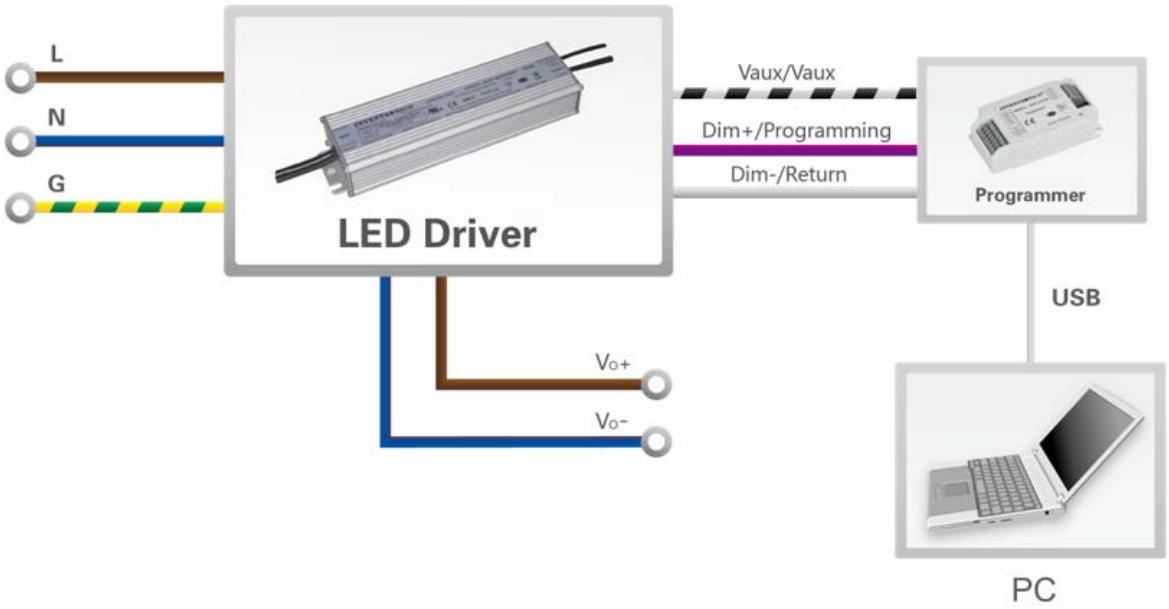
Implementation 3: Negative logic

- **Time Dimming**



Set the timing curve by pulling the sliders.

Programming Connection Diagram



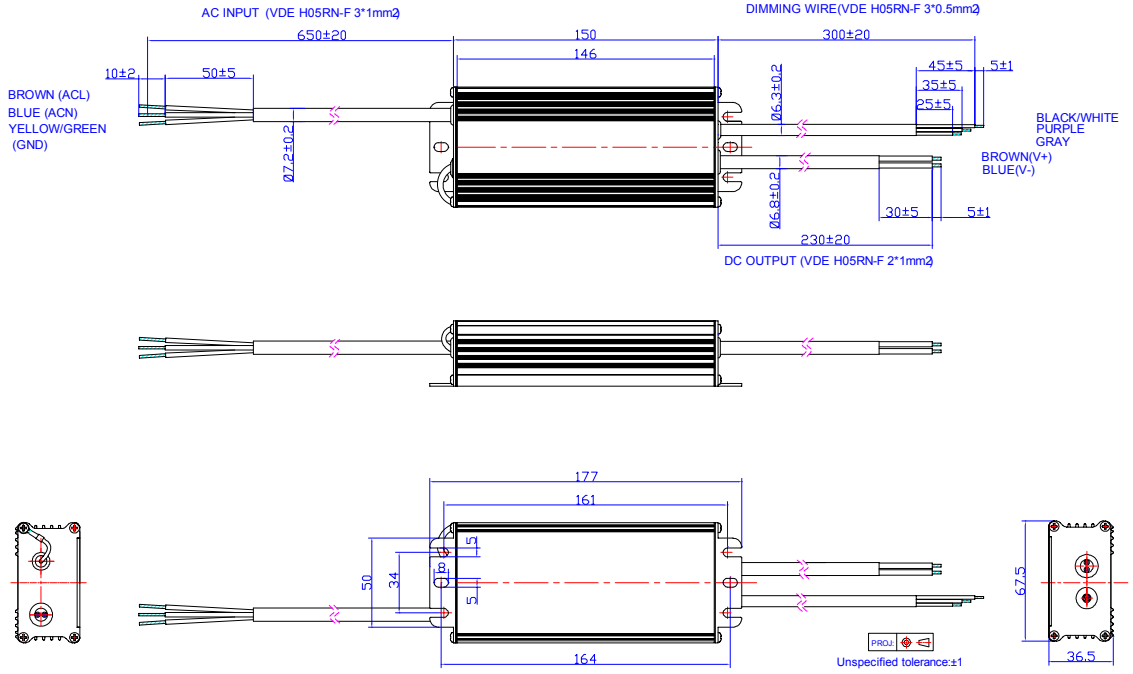
Note: The driver does not need to be powered on during the programming process.

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

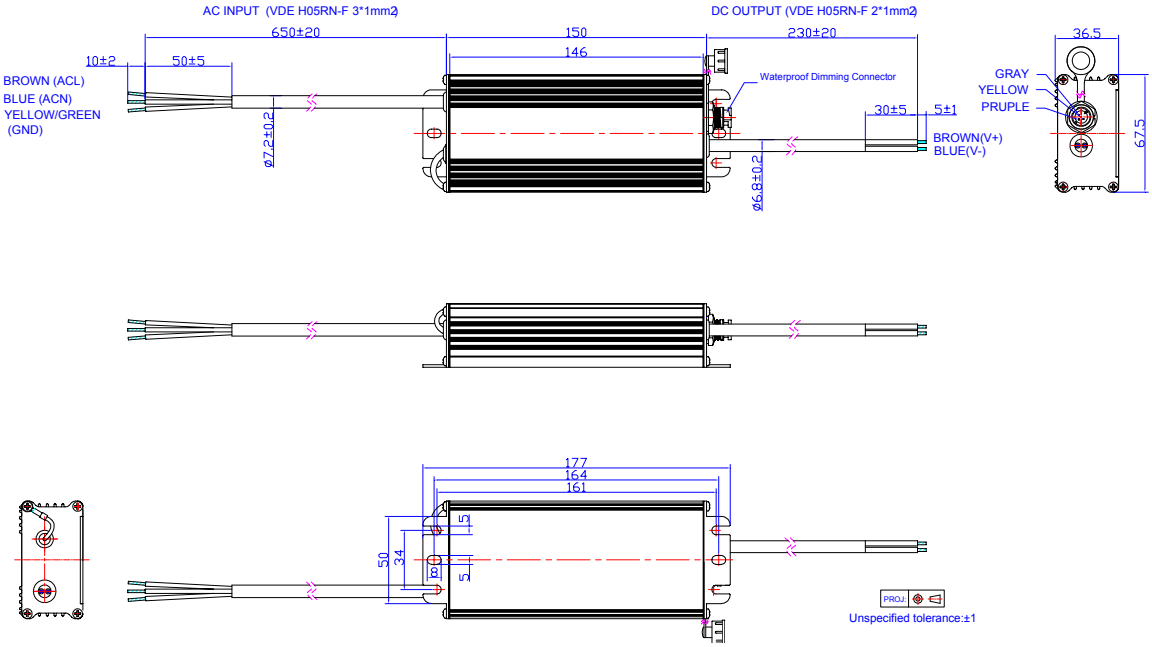
http://www.inventronics-co.com/cp_det.aspx?c_kind=2&c_kind2=177&c_kind3=179&id=220&productName=SDD-AAPNP

Mechanical Outline

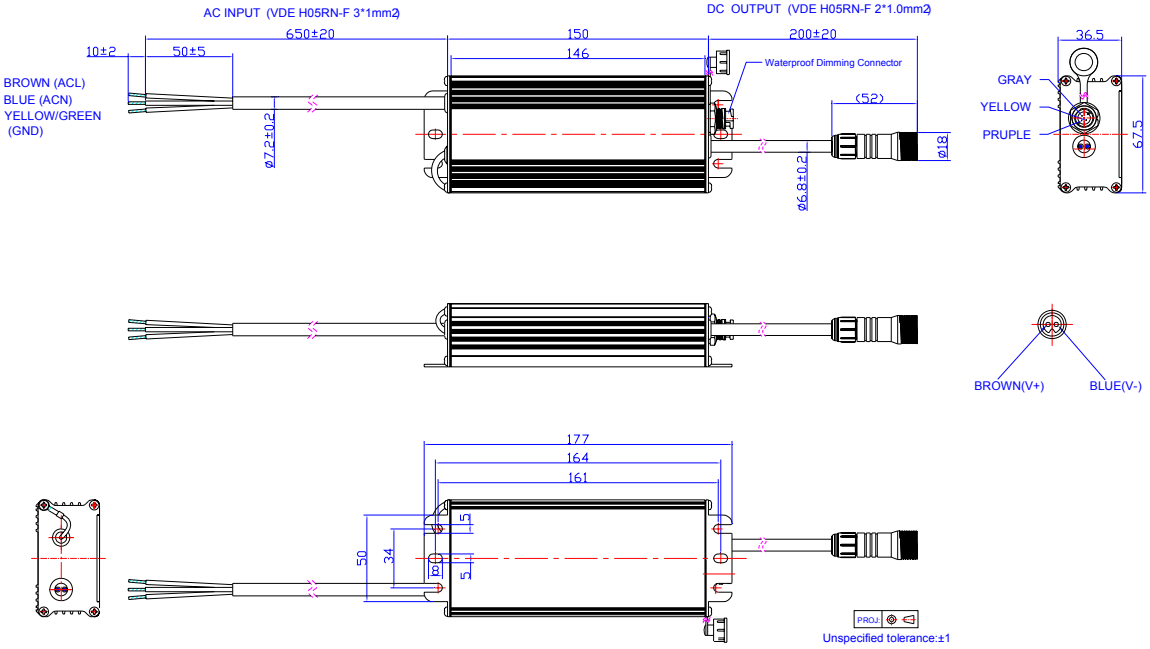
EBD-075SxxxDV-0000



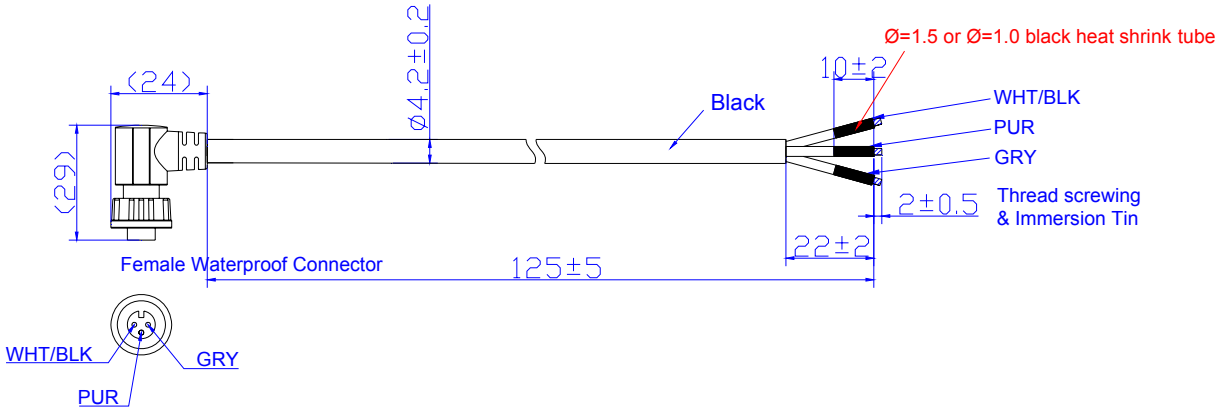
EBD-075SxxxDV-00V0



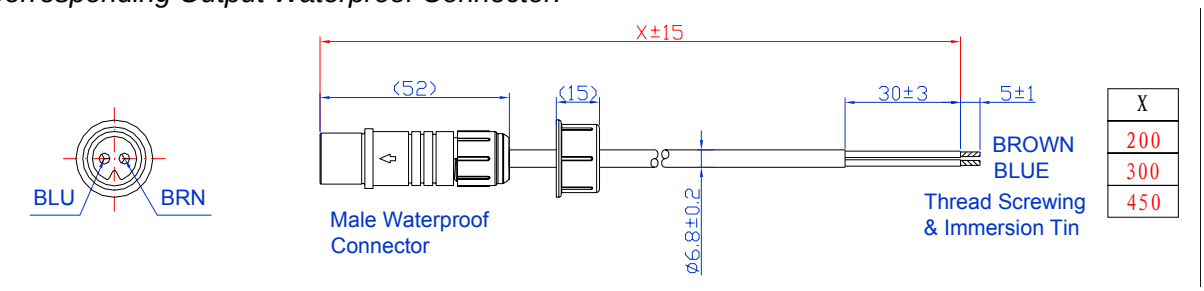
EBD-075SxxxDV-00D0



Corresponding Dimming/programming Waterproof Connector:



Corresponding Output Waterproof Connector:



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.