Features

- High Efficiency (Up to 91%)
- Full Power at Wide Output Current Range (Constant Power)
- 0-5V/0-10V/PWM/Timer Dimmable
- Input Surge Protection: DM 6kV, CM 10kV
- All-Around Protection: OVP, SCP, OTP
- IP67
- SELV Output
- 7 Years Warranty

Description

The *EUG-075SxxxDV* series is a 75W, constant-current, programmable LED driver that operates from 90-305 Vac input with excellent power factor. It is created for many lighting applications including low bay, tunnel and street, etc. 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.

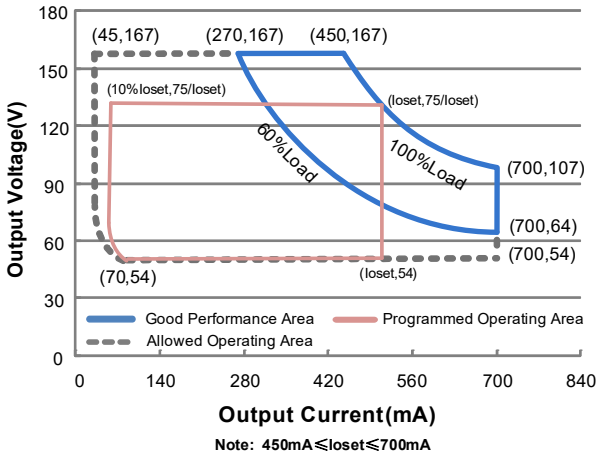
Models

Adjustable Output Current Range (mA)	Full-Power Current Range (mA)(1)	Default Output Current (mA)	Output Voltage Range (Vdc)	Max. Output Power (W)	Typical Efficiency(2)	Typical Power Factor		Model Number(3)(5)
						120Vac	220Vac	
45-700	450-700	530	54-167	75	91.0%	0.99	0.96	EUG-075S070DV
70-1050	700-1050	700	36-107	75	90.5%	0.99	0.96	EUG-075S105DV(4)
119-1750	1190-1750	1400	22-63	75	90.0%	0.99	0.96	EUG-075S175DV(4)
192-2800	1920-2800	2100	14-39	75	89.0%	0.99	0.96	EUG-075S280DV(4)

Notes: (1) Output current range with constant power at 75W.
(2) Measured at 100% load and 220Vac input (see below “General Specifications” for details).
(3) Certified input Voltage range 100-240Vac or 127-250Vdc (except KS and BIS).
(4) SELV output.
(5) For BIS models add suffix -3000.

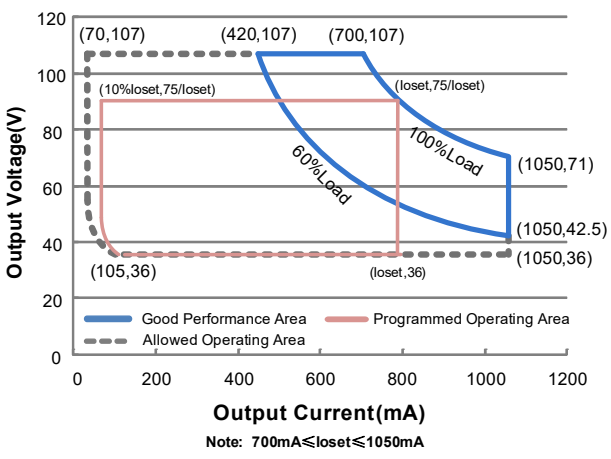
I-V Operating Area

EUG-075S070DV



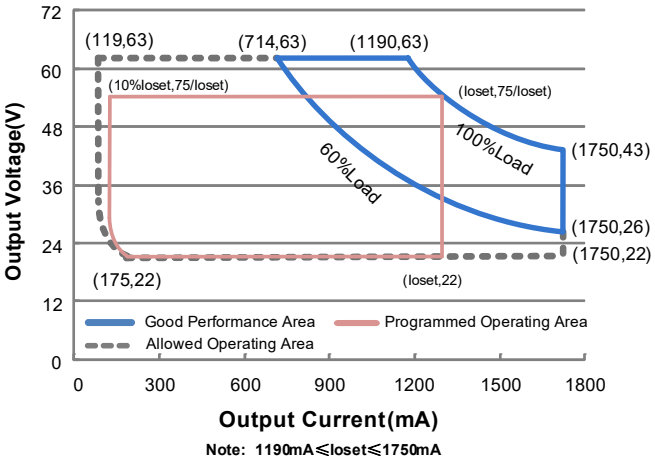
Note: 450mA≤Ioset≤700mA

EUG-075S105DV



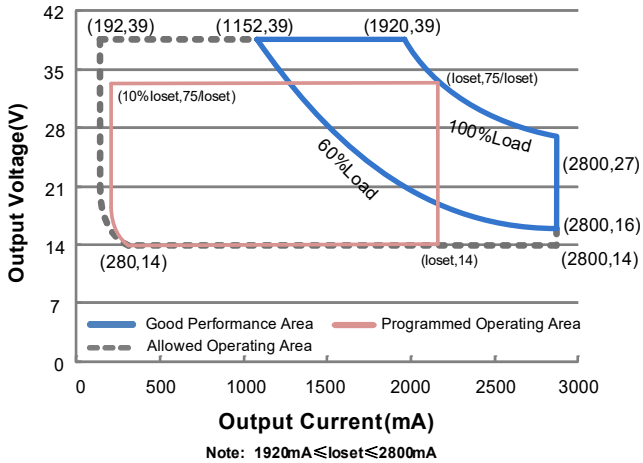
Note: 700mA≤Ioset≤1050mA

EUG-075S175DV



Note: 1190mA≤Ioset≤1750mA

EUG-075S280DV



Note: 1920mA≤Ioset≤2800mA

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	IEC 60598-1; 240Vac/60Hz, grounding effectively
Input AC Current	-	-	1.05 A	Measured at 100% load and 100 Vac input.
	-	-	0.48 A	Measured at 100%load and 220 Vac input.
Inrush Current(I^2t)	-	-	1.3 A^2s	At 220Vac input, 25°C cold start, duration=456 μs, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.

Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
PF	0.9	-	-	At 100-240Vac, 50-60Hz, 60%-100% Load (45-75W)
THD	-	-	20%	
THD	-	-	10%	At 220-240Vac, 50-60Hz, 75%-100% Load (56.25-75W)

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%Ioset	-	5%Ioset	At 100%load condition
Output Current Setting(Ioset) Range EUG-075S070DV EUG-075S105DV EUG-075S175DV EUG-075S280DV	 45 mA 70 mA 119 mA 192 mA	 - - - -	 700 mA 1050 mA 1750 mA 2800 mA	
Output Current Setting Range with Constant Power EUG-075S070DV EUG-075S105DV EUG-075S175DV EUG-075S280DV	 450 mA 700 mA 1190 mA 1920 mA	 - - - -	 700 mA 1050 mA 1750 mA 2800 mA	
Total Output Current Ripple (pk-pk)	-	5%Iomax	10%Iomax	At 100%load condition. 20 MHz BW
Output Current Ripple at < 200 Hz (pk-pk)	-	1%Iomax	-	At 100%load condition. Only this component of ripple is associated with visible flicker.
Startup Overshoot Current	-	-	10%Iomax	At 100%load condition
No Load Output Voltage EUG-075S070DV EUG-075S105DV EUG-075S175DV EUG-075S280DV	 - - - -	 - - - -	 180 V 118 V 67 V 48 V	
Line Regulation	-	-	±0.5%	Measured at 100%load
Load Regulation	-	-	±1.5%	
Turn-on Delay Time	-	-	1.0 s	Measured at 120Vac input, 60%-100% Load
	-	-	0.5 s	Measured at 220Vac input, 60%-100% Load
Temperature Coefficient of Ioset	-	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−“

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 120 Vac input: EUG-075S070DV Io= 450mA Io= 700mA EUG-075S105DV Io= 700mA Io=1050mA EUG-075S175DV Io=1190mA Io=1750mA EUG-075S280DV Io=1920mA Io=2800mA	 86.0% 87.0% 86.0% 86.5% 85.5% 86.0% 85.5% 84.5%	 88.0% 89.0% 88.0% 88.5% 87.5% 88.0% 87.5% 86.5%	 - - - - - - - -	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 220 Vac input: EUG-075S070DV Io= 450mA Io= 700mA EUG-075S105DV Io= 700mA Io=1050mA EUG-075S175DV Io=1190mA Io=1750mA EUG-075S280DV Io=1920mA Io=2800mA	 88.5% 89.0% 88.0% 88.5% 87.5% 88.0% 87.5% 87.0%	 90.5% 91.0% 90.0% 90.5% 89.5% 90.0% 89.5% 89.0%	 - - - - - - - -	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 277 Vac input: EUG-075S070DV Io= 450mA Io= 700mA EUG-075S105DV Io= 700mA Io=1050mA EUG-075S175DV Io=1190mA Io=1750mA EUG-075S280DV Io=1920mA Io=2800mA	 89.0% 89.0% 88.0% 88.5% 88.0% 88.5% 88.0% 87.0%	 91.0% 91.0% 90.0% 90.5% 90.0% 90.5% 90.0% 89.0%	 - - - - - - - -	Measured at 100%load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
MTBF	-	328,000 Hours	-	Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	99,000 Hours	-	Measured at 220Vac input, 80%Load and 70°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	-	+75°C	Case temperature for 7 years warranty. *Please see Inventronics Warranty Statement for complete details.*
Storage Temperature	-40°C	-	+85°C	Humidity: 5%RH to 100%RH
Dimensions Inches (L × W × H) Millimeters (L × W × H)	5.91 × 2.66 × 1.44 150 × 67.5 × 36.5			With mounting ear 6.97 × 2.66 × 1.44 177 × 67.5 × 36.5
Net Weight	-	790 g	-	

Dimming Specifications

Parameter		Min.	Typ.	Max.	Notes
Absolute Maximum Voltage on the Vdim (+) Pin		-20 V	-	20 V	
Source Current on Vdim (+)Pin		200 μA	300 μA	450 μA	Vdim(+) = 0 V
Dimming Output Range	EUG-075S070DV EUG-075S105DV EUG-075S175DV EUG-075S280DV	10%Ioset	-	Ioset	450 mA ⩽ Ioset ⩽ 700 mA 700 mA ⩽ Ioset ⩽ 1050 mA 1190 mA ⩽ Ioset ⩽ 1750 mA 1920 mA ⩽ Ioset ⩽ 2800 mA
	EUG-075S070DV EUG-075S105DV EUG-075S175DV EUG-075S280DV	45 mA 70 mA 119 mA 192 mA	-	Ioset	45 mA ⩽ Ioset < 450 mA 70 mA ⩽ Ioset < 700 mA 119 mA ⩽ Ioset < 1190 mA 192 mA ⩽ Ioset < 1920 mA
Recommended Dimming Range for 0-5V		0 V	-	5 V	Dimming mode set to 0-5V in Inventronics programming software.
Recommended Dimming Range for 0-10V		0 V	-	10 V	Default 0-10V dimming mode with positive logic.
PWM_in High Level		3 V	-	10 V	Dimming mode set to PWM in Inventronics programming software.
PWM_in Low Level		-0.3 V	-	0.6 V	
PWM_in Frequency Range		200 Hz	-	2 KHz	
PWM_in Duty Cycle		1%	-	99%	

Safety &EMC Compliance

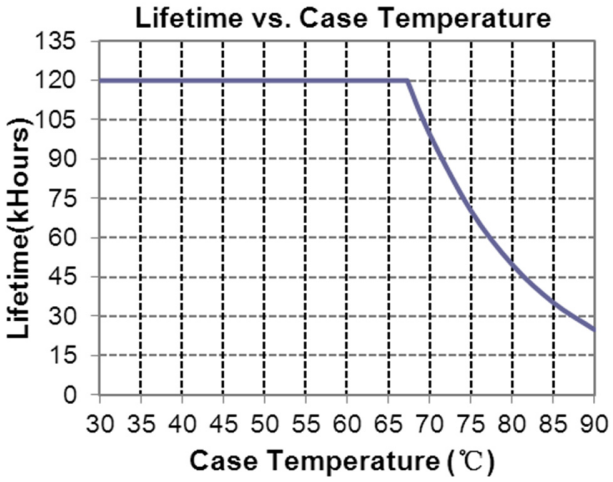
Safety Category	Standard
CE	EN 61347-1, EN 61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
KS	KS C 7655
BIS	IS 15885(Part2/Sec13)
SAA	AS/NZS 61347.1, AS/NZS 61347.2.13
EMI Standards	**Notes**
EN IEC 55015/KS C 9815(1)	Conducted emission Test & Radiated emission Test
EN IEC 61000-3-2	Harmonic current emissions
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, Common Mode 10 kV(2)

Safety &EMC Compliance (Continued)

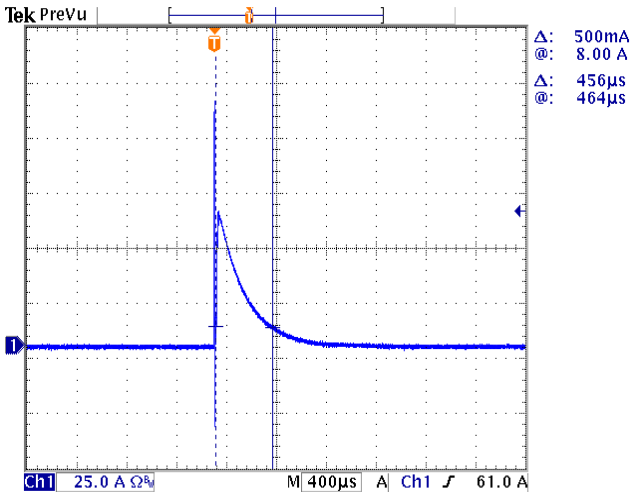
EMS Standards	Notes
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61547/KS C 9547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

Note: (1) 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.
(2) To perform electric strength (hi-pot) testing, the "GDT ground disconnect" (nut and metal lock sheet) on the driver end-cap should be removed temporarily to prevent the internal gas discharge tube from conducting (as allowed by IEC 60598-1 Clause 10.2). After testing is completed, these items must be reinstalled to restore line-to-earth surge protection and secure the end cap.

Lifetime vs. Case Temperature

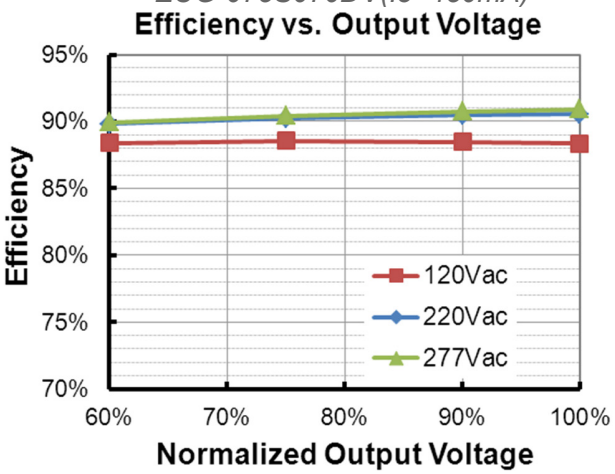


Inrush Current Waveform

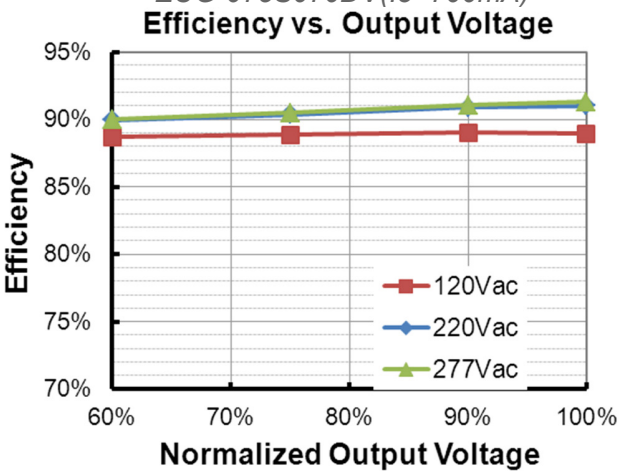


Efficiency vs. Load

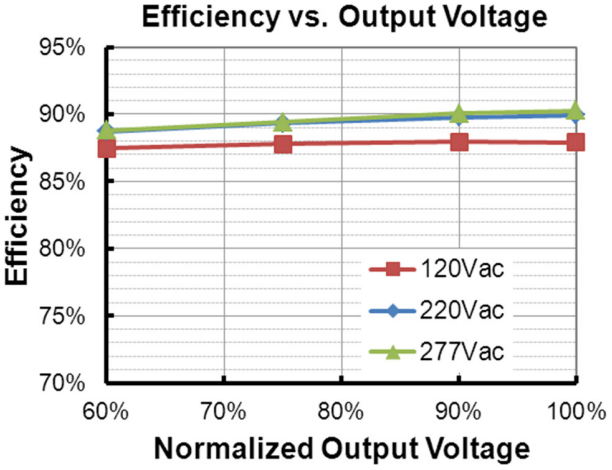
EUG-075S070DV(Io=450mA)



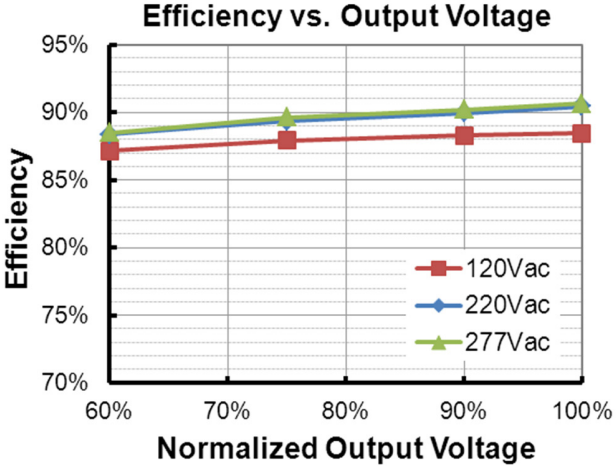
EUG-075S070DV(Io=700mA)



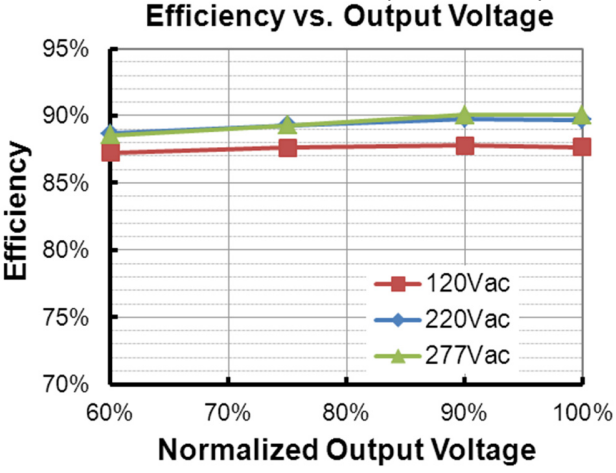
EUG-075S105DV(Io=700mA)



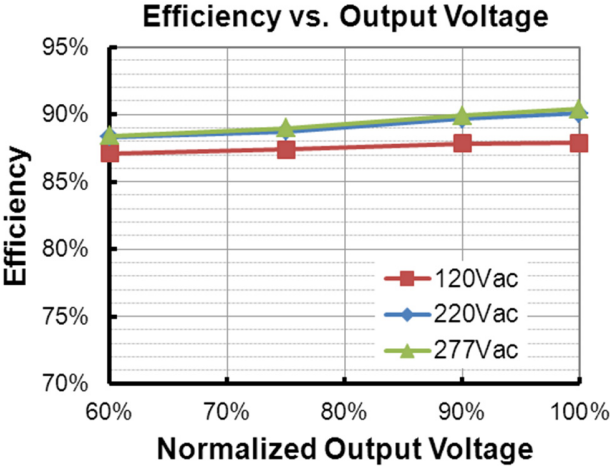
EUG-075S105DV(Io=1050mA)



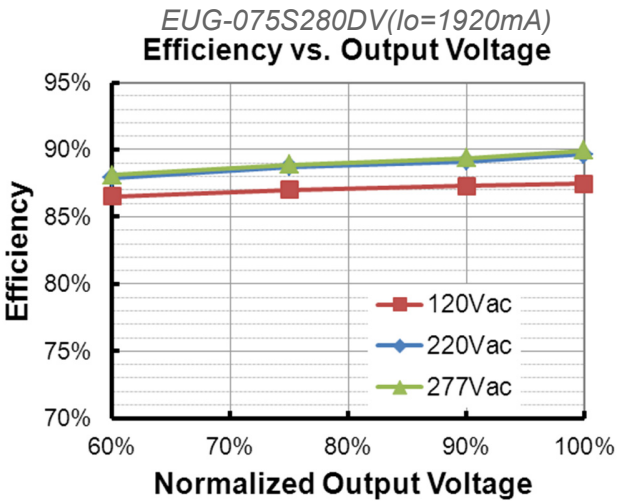
EUG-075S175DV(Io=1190mA)



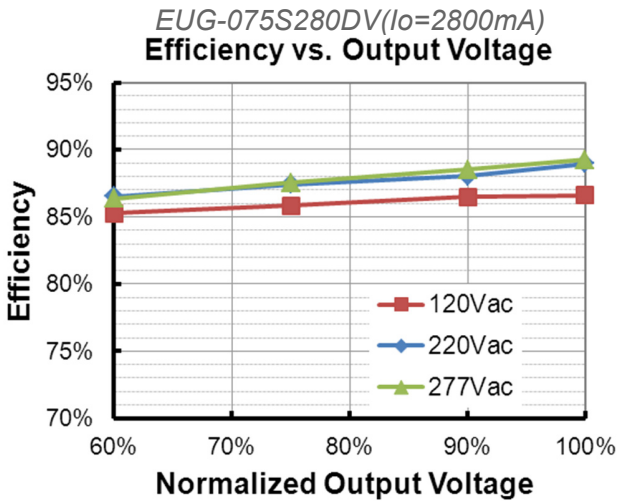
EUG-075S175DV(Io=1750mA)



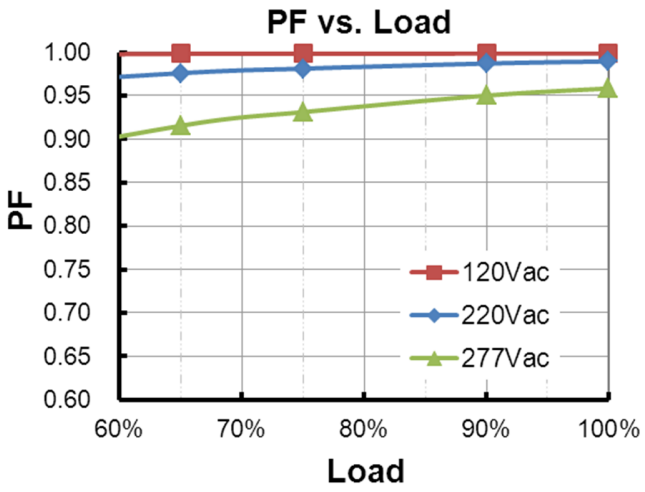
EUG-075S280DV(Io=1920mA)



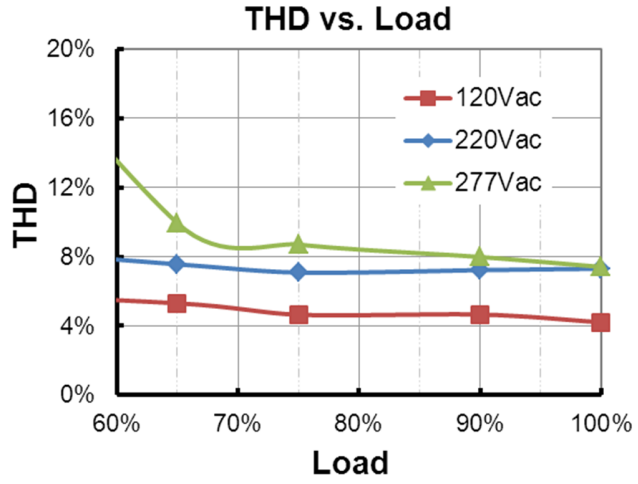
EUG-075S280DV(Io=2800mA)



Power Factor



Total Harmonic Distortion



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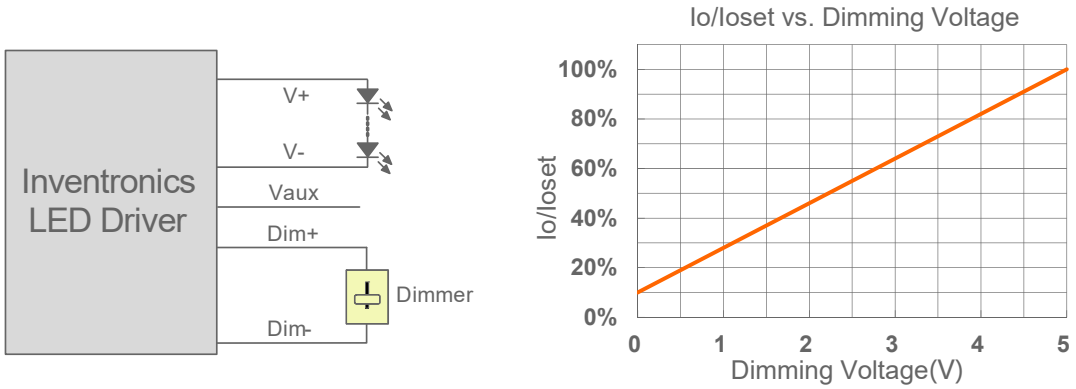
Protection Functions

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.

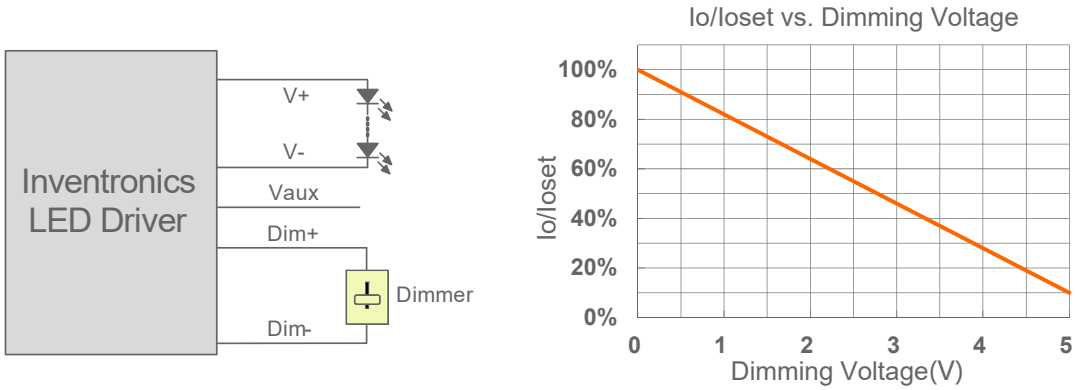
Dimming

0-5V Dimming

The recommended implementation of the dimming control is provided below.



Implementation 1: Positive logic



Implementation 2: Negative logic

Notes:

1. Do NOT connect Dim− to the output V− or V+, otherwise the driver will not work properly.
2. The dimmer can also be replaced by an active 0-5V voltage source signal or passive components like zener.
3. When 0-5V negative logic dimming mode and Dim+ is open, the driver will output maximum current.

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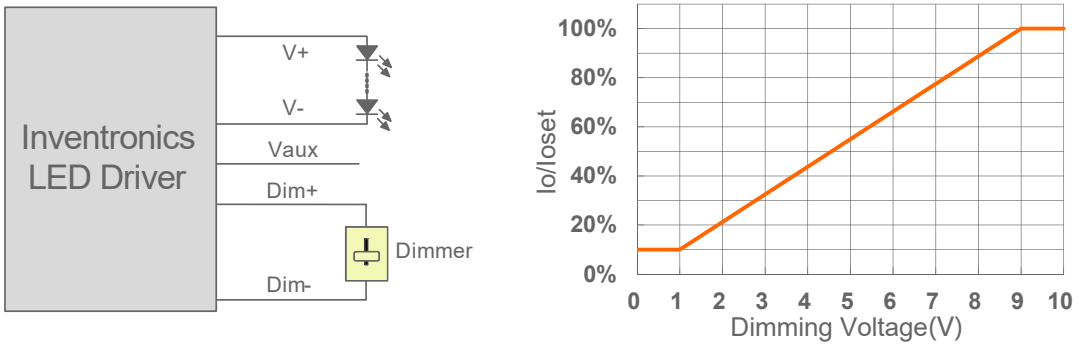
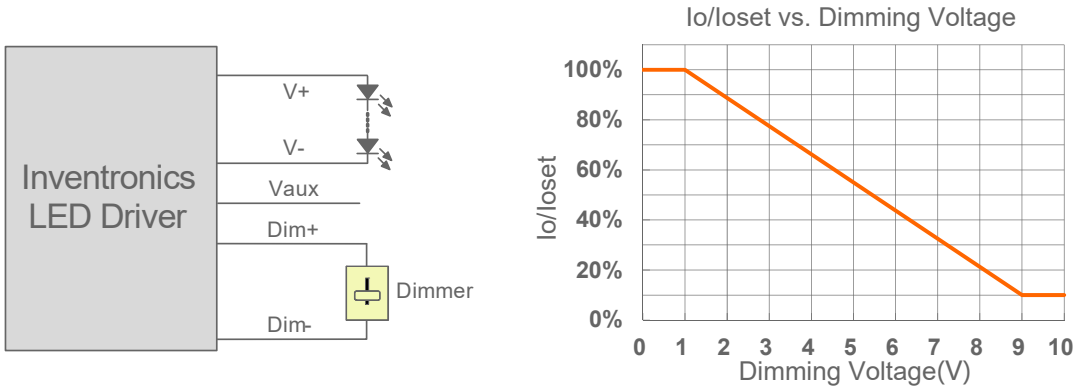
0-10V Dimming

The recommended implementation of the dimming control is provided below.



Implementation 3: Positive logic

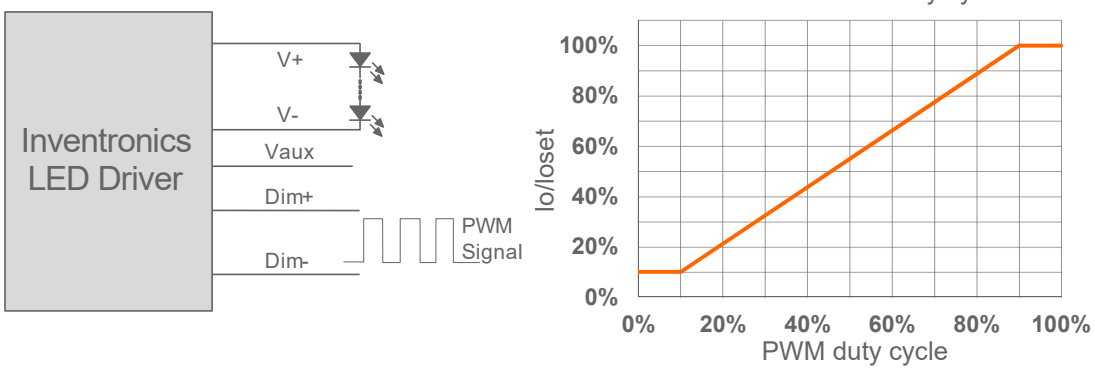


Implementation 4: Negative logic

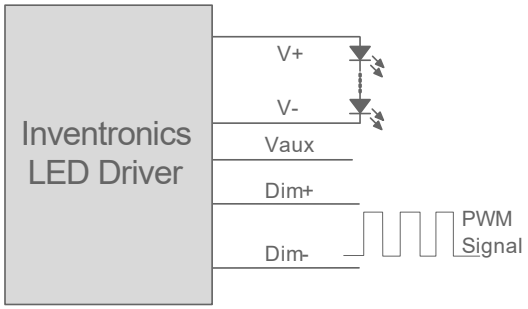
Notes:

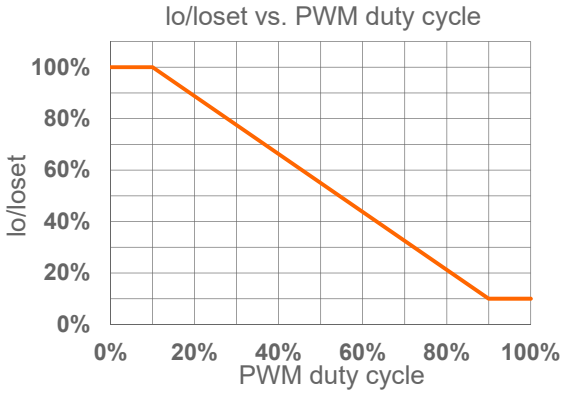
1. Do NOT connect Dim− to the output V− or V+, otherwise the driver will not work properly.
2. The dimmer can also be replaced by an active 0-10V voltage source signal or passive components like zener.
3. When 0-10V negative logic dimming mode and Dim+ is open, the driver will output minimum current.

PWM Dimming



Implementation 5: Positive logic



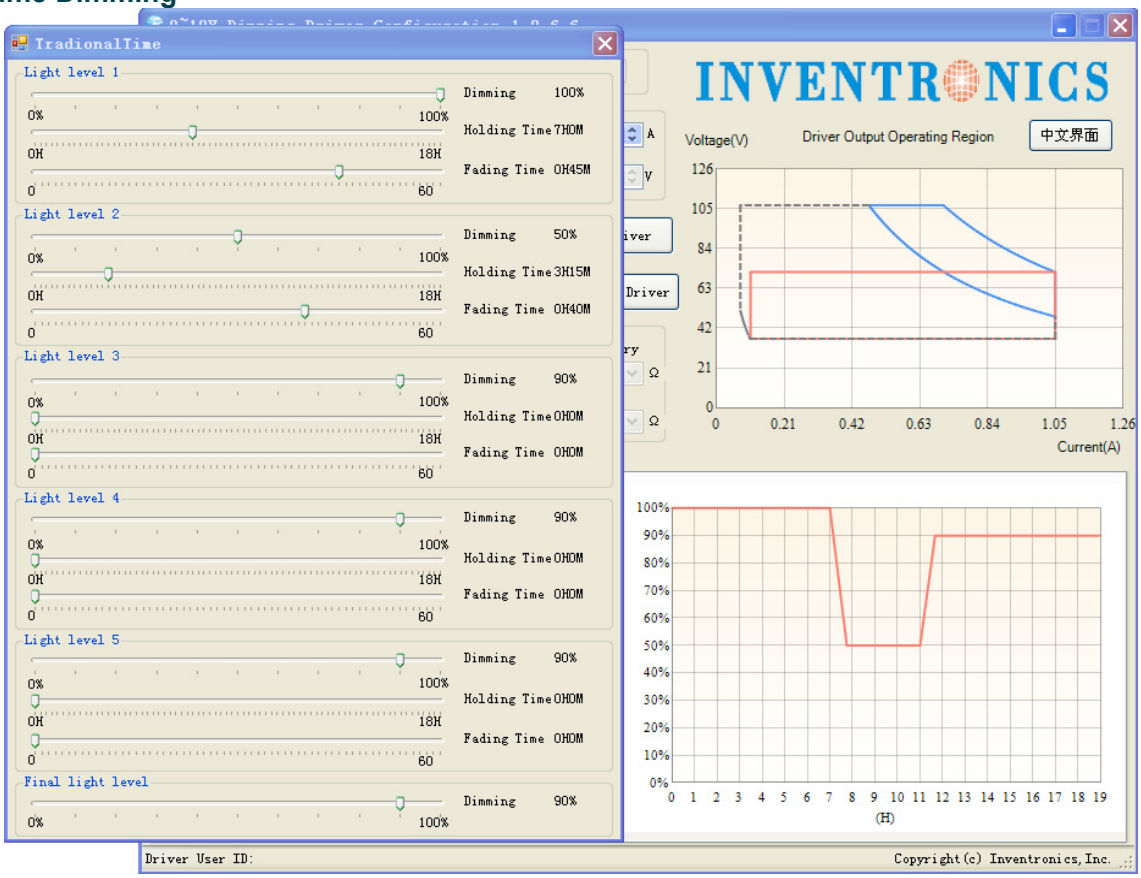


Implementation 6: Negative logic

Notes:

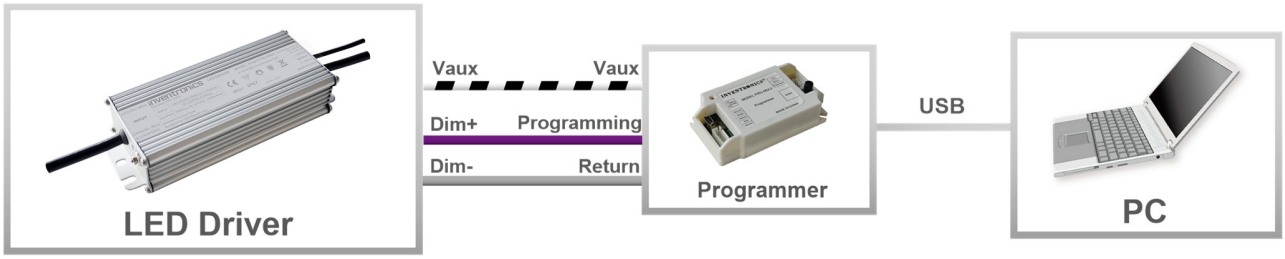
1. Do NOT connect Dim− to the output V− or V+, otherwise the driver will not work properly.
2. When PWM negative logic dimming mode and Dim+ is open, the driver will output minimum current.

● Time Dimming



Set the timing curve by pulling the sliders.

Programming Connection Diagram

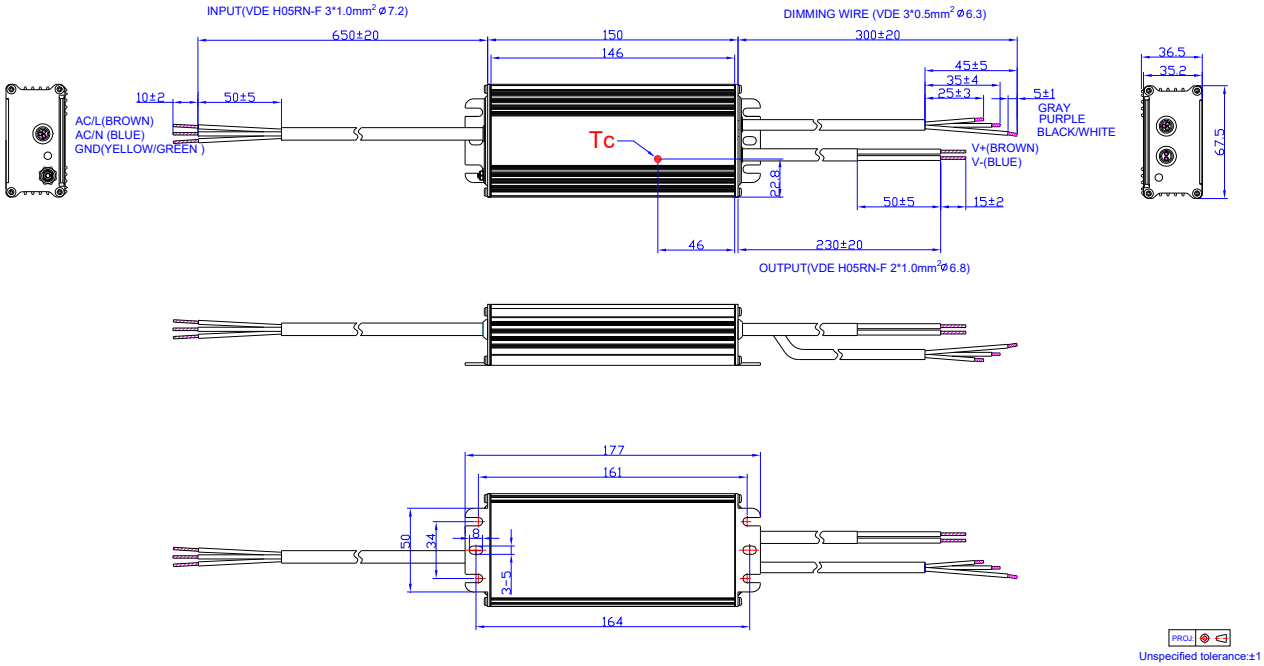


Note: The driver does not need to be powered on during the programming process.

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

Mechanical Outline

EUG-075SxxxDV



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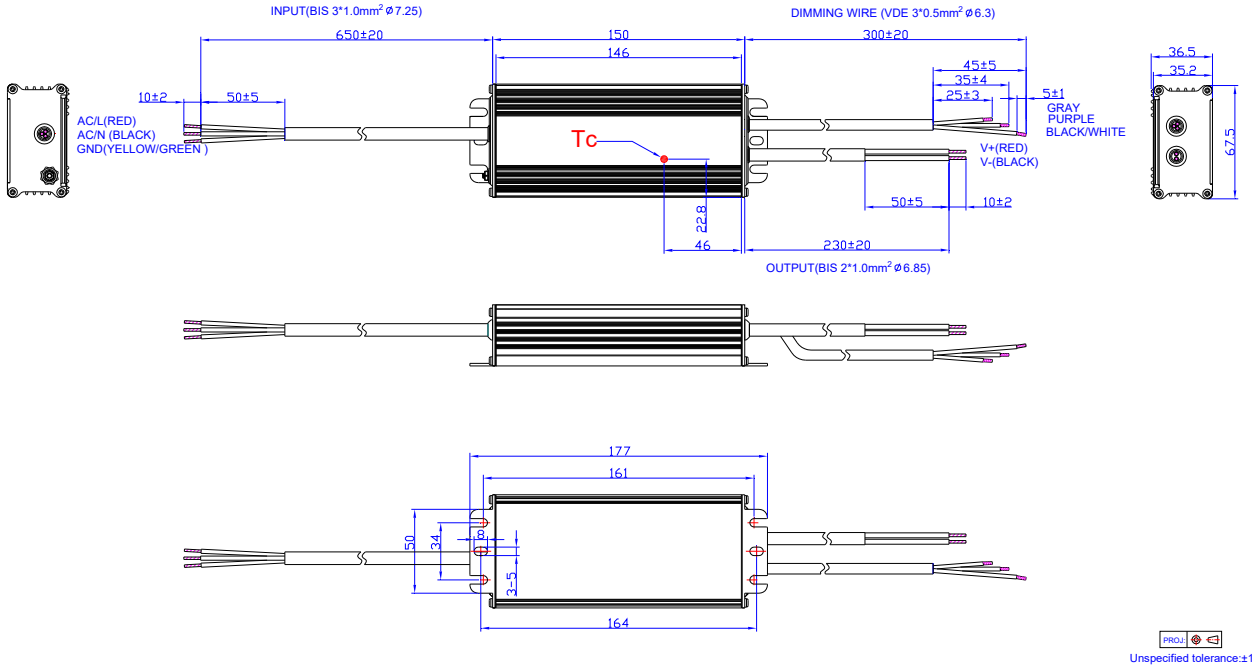
EUG-075SxxxDV-3000



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.

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Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2015-12-28	A	Datasheets Release	/	/
2016-04-12	B	General Specifications	Net Weight	Added
		General Specifications	With mounting ear	Added
		Safety &EMC Compliance	/	Updated
		Mechanical Outline	/	Updated
2017-07-26	C	Models	Notes	Updated
		Input Specifications	PF/THD	Updated
		Output Specifications	Temperature Coefficient of Ioset	Updated
		General Specifications	Efficiency at 277 Vac input	Updated
		Mechanical Outline	/	Updated
		Safety &EMC Compliance	/	Updated
2017-10-25	D	Features	7 Years Warranty	Added
		Operating Case Temperature for Warranty Tc_w	/	Updated
2020-03-18	E	CCC Logo	/	Updated
		KCC Logo	/	Added
		Global Mark Logo	/	Added
		Independent Logo	/	Added
		Features	6kV line-line, 10kV line-earth	DM 6kV, CM 10kV
		Features	Waterproof (IP67)	IP67
		Features	Suitable for Independent Use	Deleted
		Description	Application environment	Updated
		Models	Notes(5)	Added
		Safety &EMC Compliance	ENEC	Added
		Safety &EMC Compliance	TUV	Added
		Safety &EMC Compliance	CB	Added
		Safety &EMC Compliance	CCC	Added
		Safety &EMC Compliance	PSE	Added
		Safety &EMC Compliance	BIS	Added
		Safety &EMC Compliance	Global Mark	Added

Revision History (Continued)

Change Date	Rev.	Description of Change		
		Item	From	To
2020-03-18	E	Safety &EMC Compliance	EN 55015 (1)	EN 55015/GB 17743/KN 15(1)
		Safety &EMC Compliance	EN 61000-3-2	EN 61000-3-2/GB 17625.1
		Safety &EMC Compliance	EN 61000-4-5	Updated
		Dimming	/	Updated
		Programming Connection Diagram	EUG-075SxxxDV-3000	Added
		Mechanical Outline	EUG-075SxxxDV-3000	Added
		RoHS Compliance	/	Updated
		Format	Page footer	Updated
2023-08-28	F	Product Photograph	/	Updated
		TUV/PSE/global-mark logo	/	Deleted
		SAA logo	/	Added
		Safety &EMC Compliance	/	Updated
		Programming Connection Diagram	/	Updated
2024-05-11	G	Product Photograph	/	Updated
		ENEC logo	/	Deleted
		Safety &EMC Compliance	/	Updated
2024-08-16	H	Format	/	Updated
		CCC logo	/	Deleted
		Safety &EMC Compliance	CCC	Deleted

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