

Features

- Ultra High Efficiency (Up to 93.5%)
- Full Power at Wide Output Current Range (Constant Power)
- 0-10V/10V PWM Dimmable
- Input Surge Protection: 6kV line-line, 10kV line-earth
- All-Around Protection: OVP, SCP, OTP
- Waterproof (IP67)
- SELV Output
- Suitable for Independent Use
- 5 Years Warranty



Description

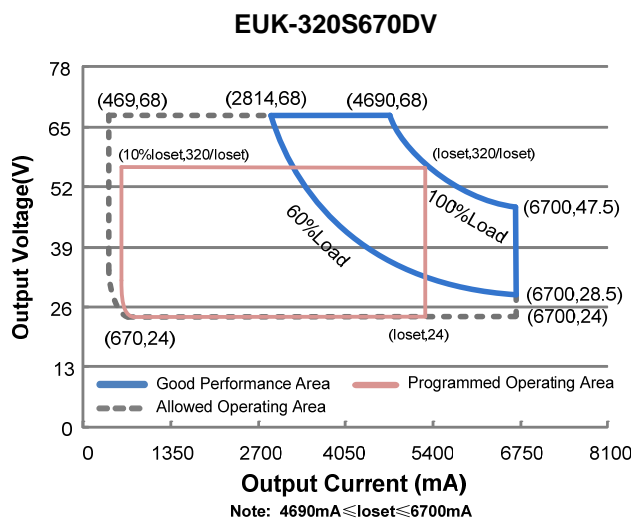
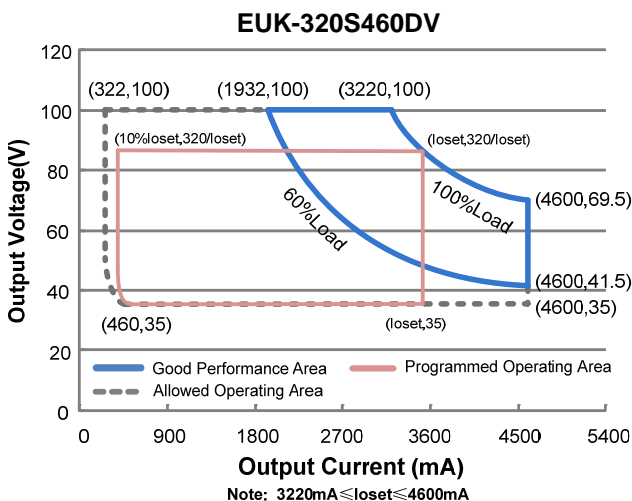
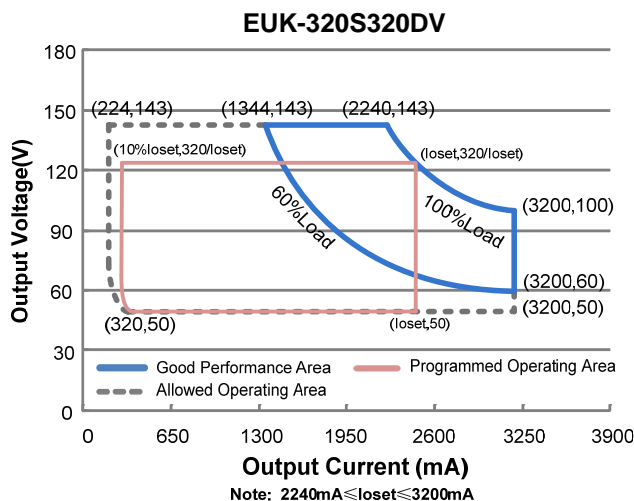
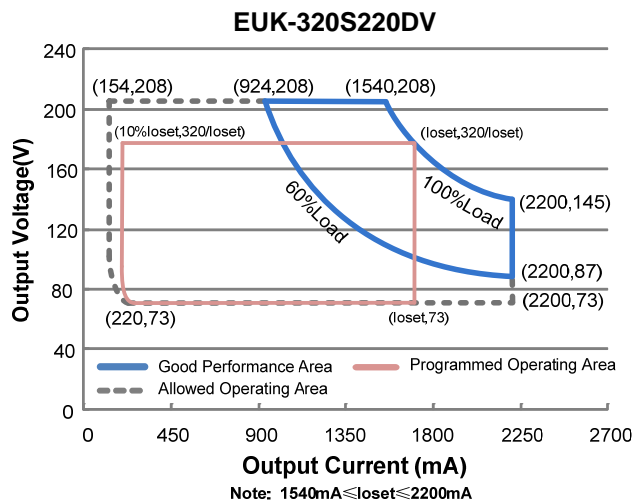
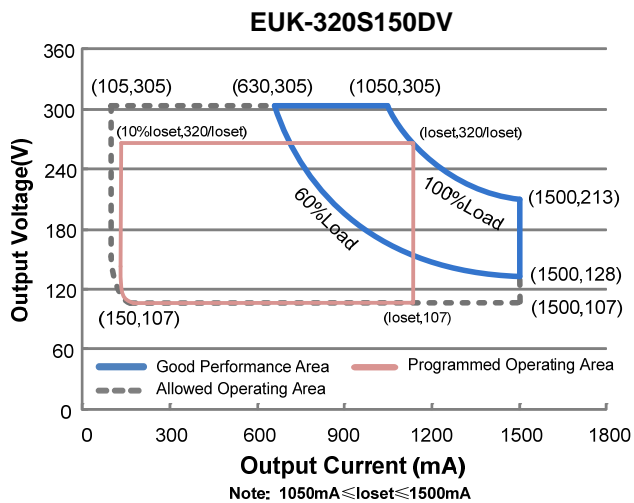
The EUK-320SxxxDV series is a 320W, constant-current, programmable IP67 LED driver that operates from 90-305 Vac input with excellent power factor. It is created for many lighting applications including high bay, high mast, aquaculture and sport. The high efficiency of these drivers and compact metal 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	Full-Power Current Range (1)	Default Output Current	Input Voltage Range(2)	Output Voltage Range	Max. Output Power	Typical Efficiency (3)	Power Factor		Model Number
							120Vac	220Vac	
105-1500mA	1050-1500mA	1400 mA	90~305 Vac/ 127~250 Vdc	107~305Vdc	320 W	93.5%	0.99	0.96	EUK-320S150DV
154-2200mA	1540-2200mA	2100 mA	90~305 Vac/ 127~250 Vdc	73~208Vdc	320 W	93.5%	0.99	0.96	EUK-320S220DV
224-3200mA	2240-3200mA	2800 mA	90~305 Vac/ 127~250 Vdc	50~143Vdc	320 W	92.5%	0.99	0.96	EUK-320S320DV
322-4600mA	3220-4600mA	4200 mA	90~305 Vac/ 127~250 Vdc	35~100Vdc	320 W	92.5%	0.99	0.96	EUK-320S460DV ⁽⁴⁾
469-6700mA	4690-6700mA	6700 mA	90~305 Vac/ 127~250 Vdc	24 ~ 68Vdc	320 W	92.5%	0.99	0.96	EUK-320S670DV ⁽⁴⁾

- Notes:** (1) Output current range with constant power at 320W
 (2) Certified input voltage range: 100-240Vac or 127-250Vdc (except CCC)
 (3) Measured at 100% load and 220Vac input (see below "General Specifications" for details).
 (4) SELV Output.

I-V Operating Area



Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 Vac	-	305 Vac	127~250 Vdc
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.70 mA	IEC60598-1; 240Vac/ 60Hz
Input AC Current	-	-	3.20 A	Measured at 100% load and 120 Vac input.
	-	-	1.70 A	Measured at 100% load and 220 Vac input.
Inrush Current(I ² t)	-	-	1.30 A ² s	At 220Vac input, 25°C cold start, duration=3.92 ms, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.9	-	-	At 100-240Vac, 50-60Hz, 60%-100% Load (192-320W)
THD	-	-	20%	
THD	-	-	10%	At 220-240Vac, 50-60Hz, 75%-100% Load (240-320W)

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%loset	-	5%loset	At 100% load condition
Output Current Setting(loset) Range				
EUK-320S150DV	105 mA	-	1500 mA	
EUK-320S220DV	154 mA	-	2200 mA	
EUK-320S320DV	224 mA	-	3200 mA	
EUK-320S460DV	322 mA	-	4600 mA	
EUK-320S670DV	469 mA	-	6700 mA	
Output Current Setting Range with Constant Power				
EUK-320S150DV	1050 mA	-	1500 mA	
EUK-320S220DV	1540 mA	-	2200 mA	
EUK-320S320DV	2240 mA	-	3200 mA	
EUK-320S460DV	3220 mA	-	4600 mA	
EUK-320S670DV	4690 mA	-	6700 mA	
Total Output Current Ripple (pk-pk)	-	5%lomag	10%lomag	At 100% load condition. 20 MHz BW
Output Current Ripple at < 200 Hz (pk-pk)	-	2%lomag	-	At 100% load condition. Only this component of ripple is associated with visible flicker.
Startup Overshoot Current	-	-	10%lomag	At 100% load condition
No Load Output Voltage				
EUK-320S150DV	-	-	350 V	
EUK-320S220DV	-	-	250 V	
EUK-320S320DV	-	-	170 V	
EUK-320S460DV	-	-	120 V	
EUK-320S670DV	-	-	85 V	
Line Regulation	-	-	±0.5%	Measured at 100% load
Load Regulation	-	-	±1.5%	

Output Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
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 I _o set	-	0.03%/°C	-	Case temperature = 0°C ~T _c max

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 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
EUK-320S150DV				
I _o =1050 mA	89.50%	91.50%	-	
I _o =1500 mA	89.00%	91.00%	-	
EUK-320S220DV				
I _o =1540 mA	89.00%	91.00%	-	
I _o =2200 mA	89.00%	91.00%	-	
EUK-320S320DV				
I _o =2240 mA	88.00%	90.00%	-	
I _o =3200 mA	88.00%	90.00%	-	
EUK-320S460DV				
I _o =3220 mA	88.50%	90.50%	-	
I _o =4600 mA	88.00%	90.00%	-	
EUK-320S670DV				
I _o =4690 mA	88.00%	90.00%	-	
I _o =6700 mA	87.00%	89.00%	-	
Efficiency at 220 Vac input:				Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
EUK-320S150DV				
I _o =1050 mA	91.50%	93.50%	-	
I _o =1500 mA	91.50%	93.50%	-	
EUK-320S220DV				
I _o =1540 mA	91.50%	93.50%	-	
I _o =2200 mA	91.50%	93.50%	-	
EUK-320S320DV				
I _o =2240 mA	90.50%	92.50%	-	
I _o =3200 mA	90.00%	92.00%	-	
EUK-320S460DV				
I _o =3220 mA	90.50%	92.50%	-	
I _o =4600 mA	90.00%	92.00%	-	
EUK-320S670DV				
I _o =4690 mA	90.50%	92.50%	-	
I _o =6700 mA	89.50%	91.50%	-	

General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 277 Vac input: EUK-320S150DV I _o =1050 mA I _o =1500 mA EUK-320S220DV I _o =1540 mA I _o =2200 mA EUK-320S320DV I _o =2240 mA I _o =3200 mA EUK-320S460DV I _o =3220 mA I _o =4600 mA EUK-320S670DV I _o =4690 mA I _o =6700 mA	92.00% 91.50% 92.00% 91.50% 90.50% 90.50% 90.50% 90.50% 91.00% 90.00%	94.00% 93.50% 94.00% 93.50% 92.50% 92.50% 92.50% 92.50% 93.00% 92.00%	- - - - - - - - - -	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	-	282,000 Hours	-	Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	86,000 Hours	-	Measured at 220Vac input, 80%Load and 70°C case temperature; See lifetime vs. T _c curve for the details
Operating Case Temperature for Safety T _{c_s}	-40°C	-	+85°C	
Operating Case Temperature for Warranty T _{c_w}	-40°C	-	+75°C	Case temperature for 5 years warranty
Storage Temperature	-40°C	-	+85°C	Humidity: 5%RH to 100%RH
Dimensions Inches (L x W x H) Millimeters (L x W x H)	8.82 x 3.15 x 1.57 224 x 80 x 39.7			With mounting ear 9.89 x 3.15 x 1.57 251 x 80 x 39.7
Net Weight	-	1530 g	-	

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

Dimming Specifications

Parameter	Min.	Typ.	Max.	Notes
Absolute Maximum Voltage on the V _{dim} (+) Pin	-20 V	-	20 V	
Source Current on V _{dim} (+)Pin	200 uA	300 uA	450 uA	V _{dim} (+) = 0 V
Recommended Dimming Range for 0-10V	0 V	-	10 V	
PWM_in High Level	-	10V	-	
PWM_in Low Level	-	0V	-	
PWM_in Frequency Range	200 Hz	-	2 KHz	
PWM_in Duty Cycle	0%	-	100%	

Dimming Specifications (Continued)

Parameter		Min.	Typ.	Max.	Notes
Dimming Output Range	EUK-320S150DV EUK-320S220DV EUK-320S320DV EUK-320S460DV EUK-320S670DV	10%loset	-	loset	1050 mA ≤ loset ≤ 1500 mA 1540 mA ≤ loset ≤ 2200 mA 2240 mA ≤ loset ≤ 3200 mA 3220 mA ≤ loset ≤ 4600 mA 4690 mA ≤ loset ≤ 6700 mA
	EUK-320S150DV EUK-320S220DV EUK-320S320DV EUK-320S460DV EUK-320S670DV	105 mA 154 mA 224 mA 322 mA 469 mA	-	loset	105 mA ≤ loset < 1050 mA 154 mA ≤ loset < 1540 mA 224 mA ≤ loset < 2240 mA 322 mA ≤ loset < 3220 mA 469 mA ≤ loset < 4690 mA

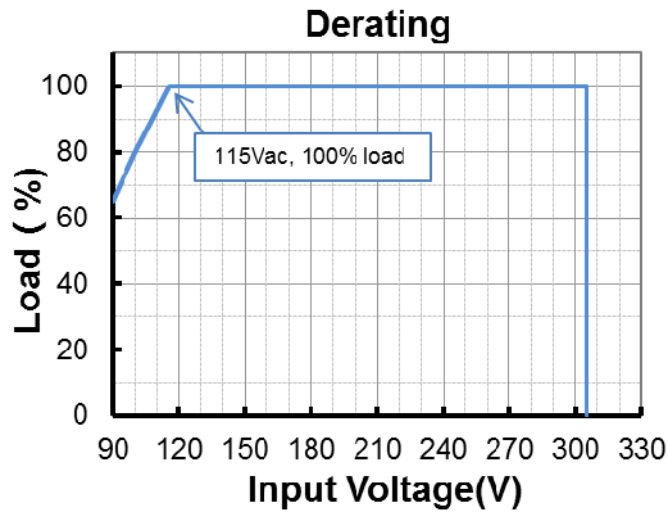
Safety & EMC Compliance

Safety Category	Standard
ENEC & TUV & CE	EN 61347-1, EN61347-2-13
CCC	GB 19510.1, GB 19510.14
EMI Standards	Notes
EN 55015/GB 17743 ⁽¹⁾	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
EN 61000-4-5	Surge Immunity Test: AC Power Line: line to line 6 kV, line to earth 10 kV ⁽²⁾
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

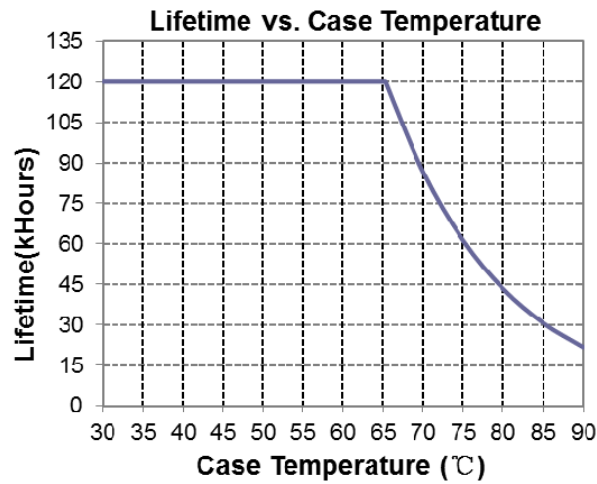
Note: (1) This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

(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.

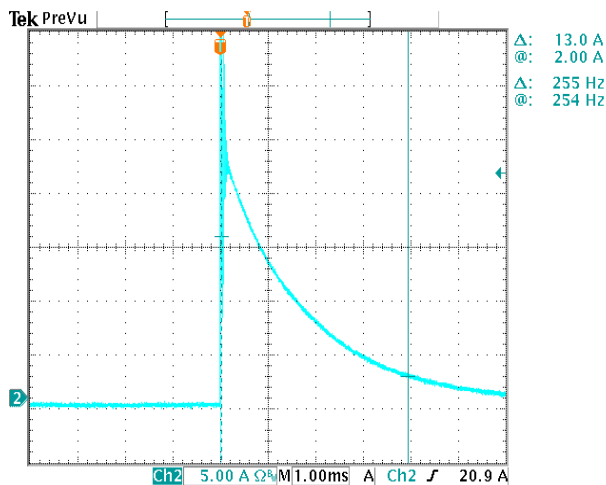
Derating



Lifetime vs. Case Temperature

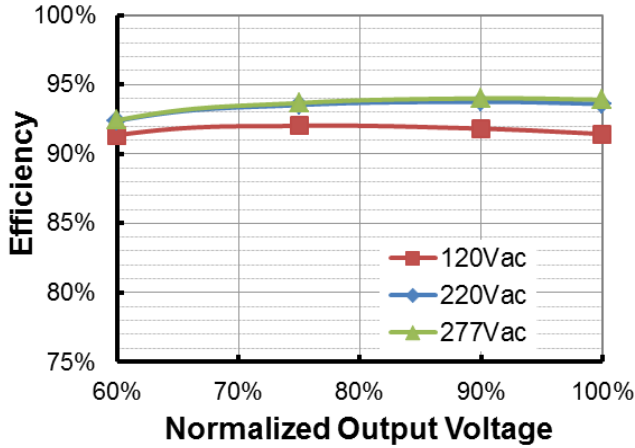


Inrush Current Waveform

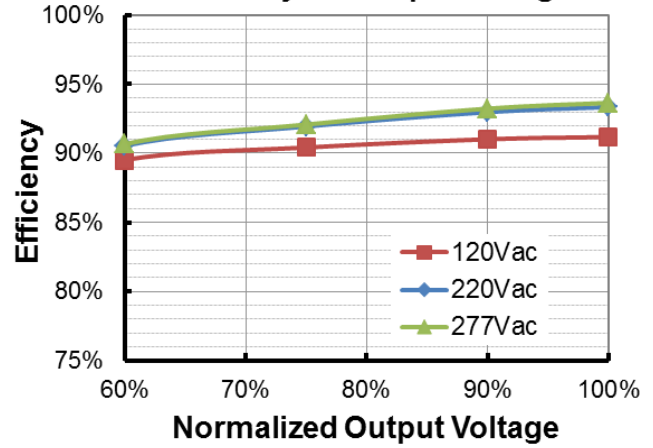


Efficiency vs. Load

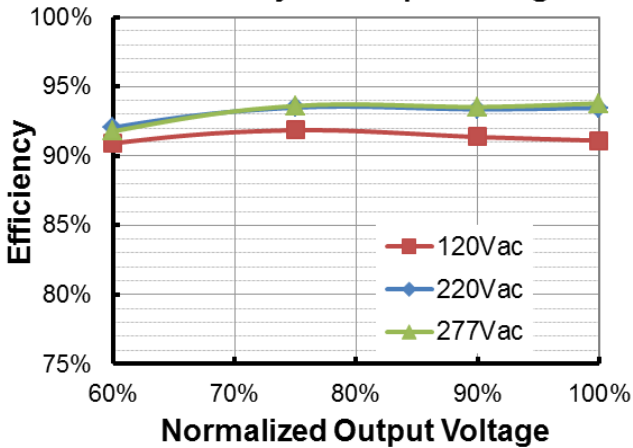
EUK-320S150DV ($I_o=1050mA$)
Efficiency vs. Output Voltage



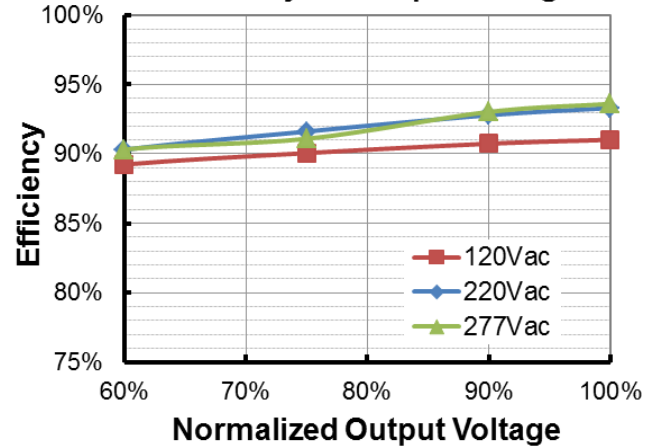
EUK-320S150DV ($I_o=1500mA$)
Efficiency vs. Output Voltage



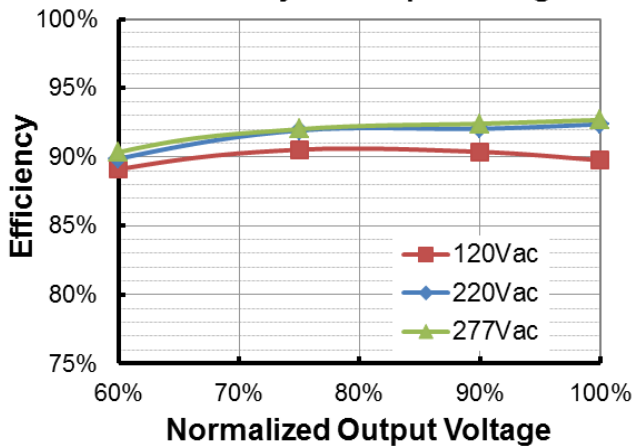
EUK-320S220DV ($I_o=1540mA$)
Efficiency vs. Output Voltage



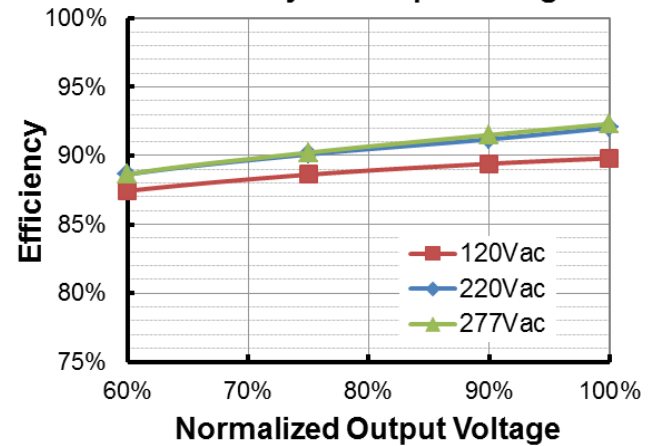
EUK-320S220DV ($I_o=2200mA$)
Efficiency vs. Output Voltage



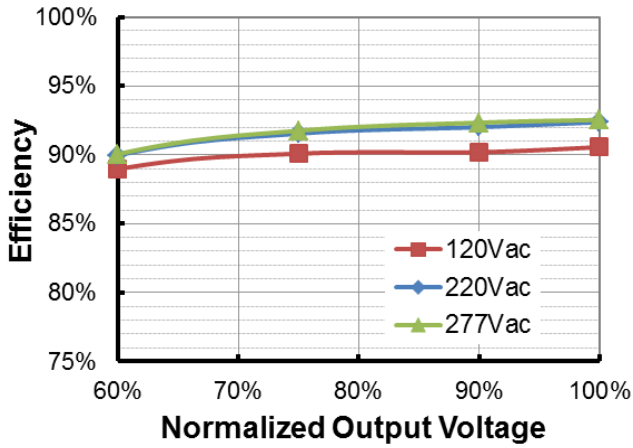
EUK-320S320DV ($I_o=2240mA$)
Efficiency vs. Output Voltage



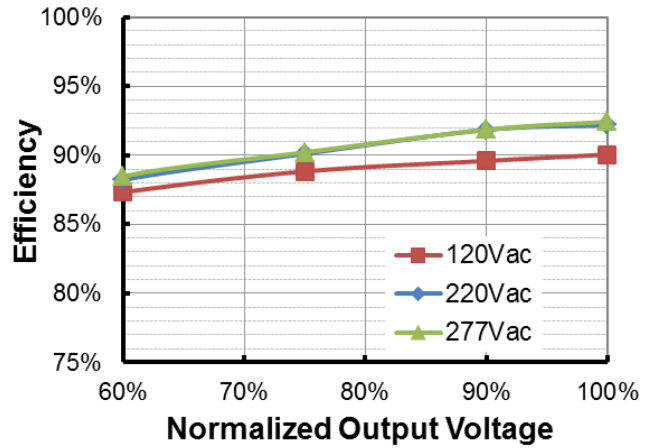
EUK-320S320DV ($I_o=3200mA$)
Efficiency vs. Output Voltage



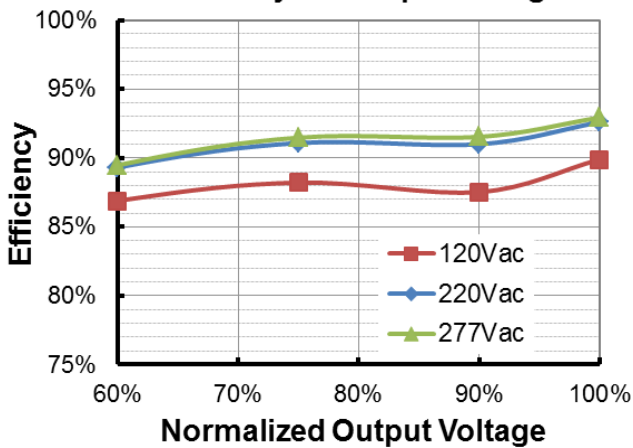
EUK-320S460DV ($I_o=3220mA$)
Efficiency vs. Output Voltage



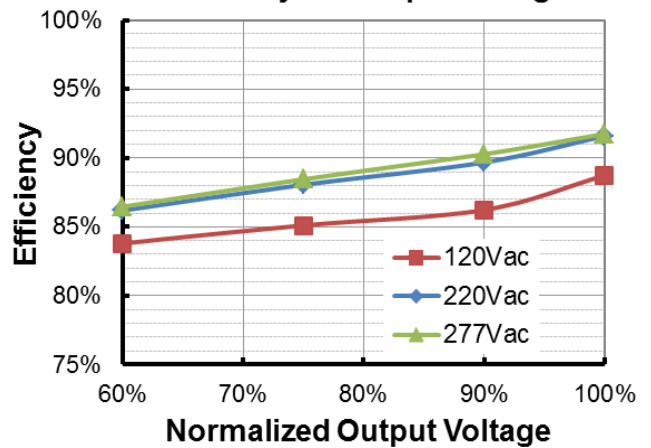
EUK-320S460DV ($I_o=4600mA$)
Efficiency vs. Output Voltage



EUK-320S670DV ($I_o=4690mA$)
Efficiency vs. Output Voltage

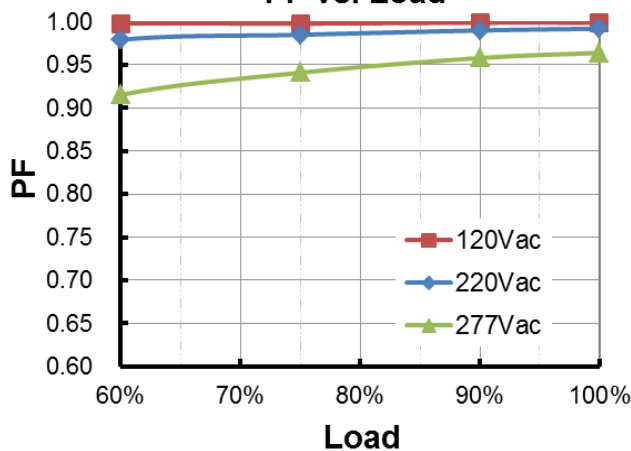


EUK-320S670DV ($I_o=6700mA$)
Efficiency vs. Output Voltage

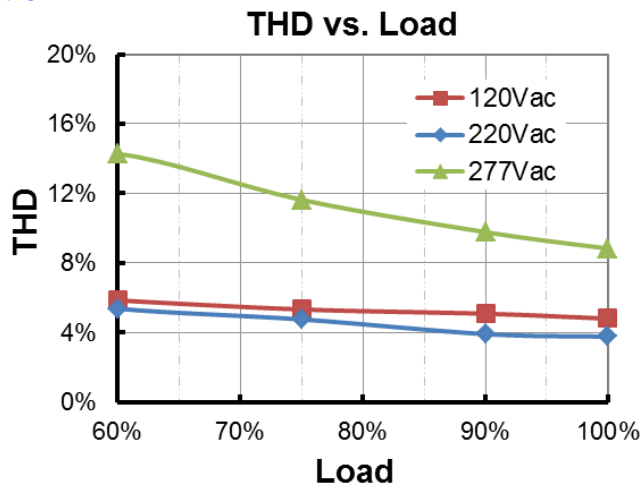


Power Factor

PF vs. Load



Total Harmonic Distortion



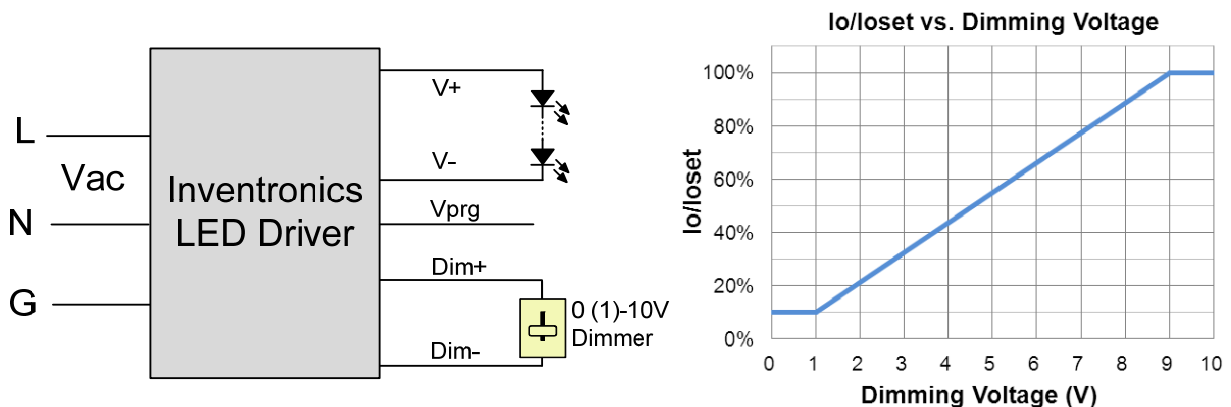
Protection Functions

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.



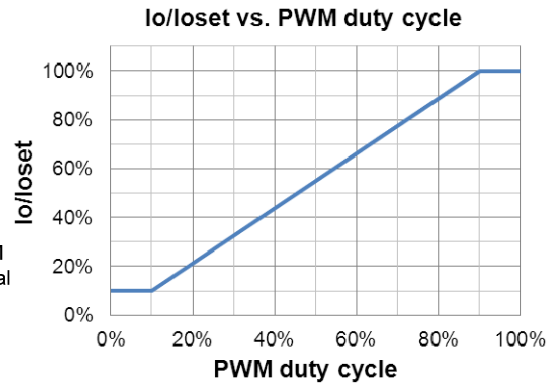
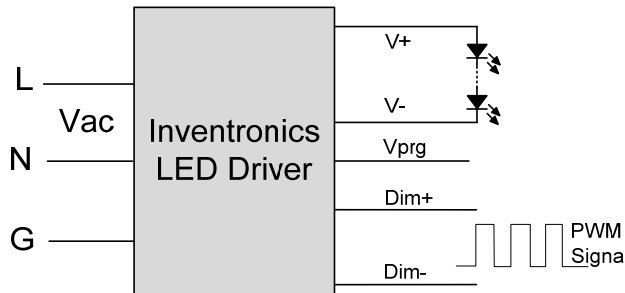
Implementation 1: Positive logic

Notes:

1. The dimmer can also be replaced by an active 0-10V voltage source signal or passive components like resistors and zener.
2. If 0-10V dimming is not used, Dim + should be open.

● **10V PWM Dimming**

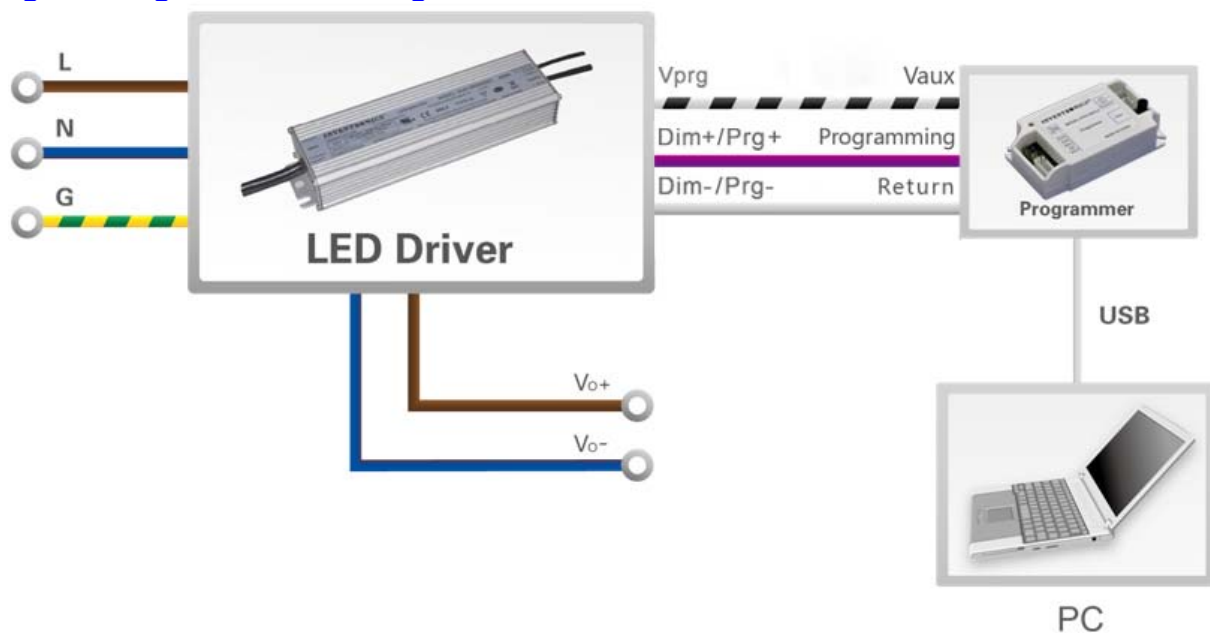
The recommended implementation of the dimming control is provided below.



Implementation 2: Positive logic

Notes: If PWM dimming is not used, Dim + should be open.

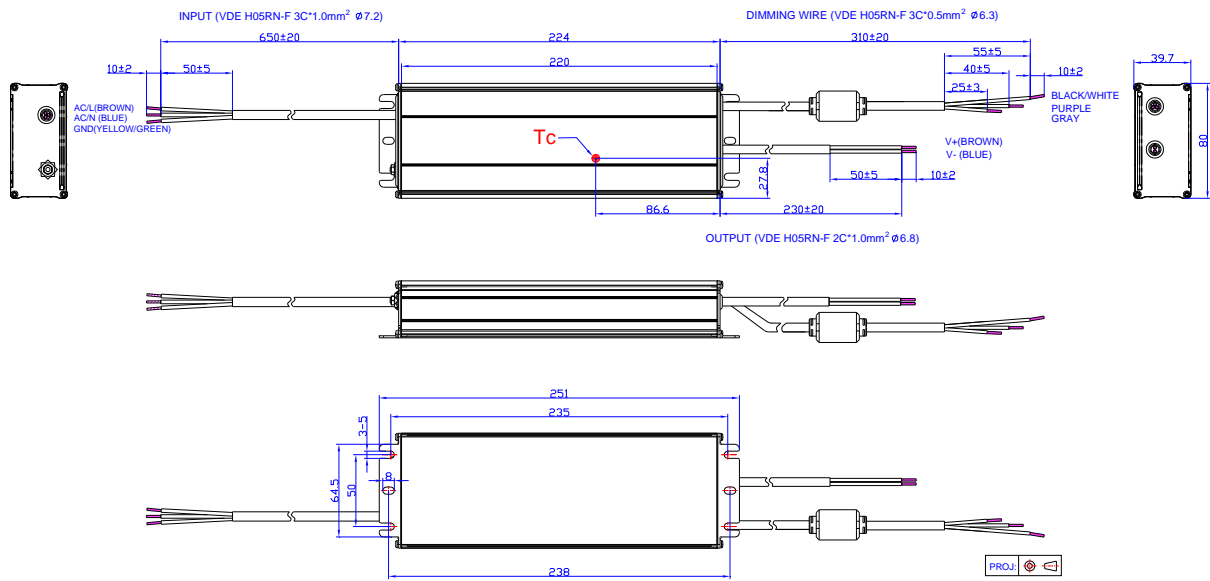
Programming Connection Diagram



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

- Please refer to [PRG-MUL2](#) Multi-Programmer datasheet for details.

Mechanical Outline



Unspecified tolerance: ±1

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
2018-12-14	A	Datasheets Release	/	/