

Features

- Ultra High Efficiency (Up to 88%)
- Constant Current Output
- Input Surge Protection : DM 10kV
- 0-10V Dimmable down to 10%
- Auxiliary High Source Current Capability(12Vdc, 200 mA)
- All-Around Protection: OVP, SCP, OTP
- Waterproof (IP66)
- SELV Output
- Class II, Double Insulation
- Suitable for Built-in Use



Description

The EUC-042S070DDM (SDM) series is a 42W, Class II, constant-current IP66 LED driver in a metal case that operates from 90-305 Vac input with excellent power factor. It is created for many lighting applications including low bay, tunnel and signage, etc. The high efficiency of these drivers and compact metal case enable 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
					120Vac	220Vac	
700 mA	90 ~ 305 Vac 127 ~ 250 Vdc	28 ~ 56 Vdc	39 W	88%	0.98	0.95	EUC-042S070DDM(SDM)

Notes: (1) Certified input voltage range: 100-240Vac/127-250Vdc (except KS)
 (2) Measured at 100% load and 220 Vac input.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 Vac	-	305 Vac	127~250 Vdc
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.7 mA	IEC60598-1; 240Vac/ 60Hz
Input AC Current	-	-	0.66 A	Measured at 100% load and 100Vac input.
	-	-	0.3 A	Measured at 100% load and 220Vac input.
Inrush Current(I ² t)	-	-	0.53 A ² s	At 220Vac input 25°C cold start, duration= 264 μs, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.90	-	-	At 100-240Vac, 50-60Hz,75%-100% Load (29.25-39W)
THD	-	-	20%	

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%lo	-	5%lo	At 100% load condition
Total Output Current Ripple (pk-pk)	-	-	120%lo	At 100% load condition, 20 MHz BW
Output Current Ripple at < 200 Hz (pk-pk)	-	-	120%lo	At 100% load condition. Only this component of ripple is associated with visible flicker.
Output Current Overshoot / Undershoot	-	5%lo	10%lo	At 100% load condition.
No load Output Voltage	-	-	61 V	
Line Regulation	-	-	±0.5%	Measured at 100% load
Load Regulation	-	-	±1.5%	
Turn-on Delay Time	-	-	1 s	Measured at 120Vac input, 75%-100% Load
	-	-	0.6 s	Measured at 220Vac input, 75%-100% Load
Temperature Coefficient of I _{omax}	-	0.03%/°C	-	Case temperature = 0°C ~T _c 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 tested by Cree XLamp XP-G and typical at 25°C unless otherwise stated.

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 120 Vac input:	86.5%	87.5%	-	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:	87.0%	88.0%	-	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:	86.0%	87.0%	-	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	-	582,000 Hours	-	Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	80,000 Hours	-	Measured at 120Vac 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	-	+90°C	
Operating Case Temperature for Warranty T _{c_w}	-40°C	-	+75°C	
Storage Temperature	-40°C	-	+85°C	Humidity: 5%RH to 100%RH

General Specifications(Continued)

Parameter	Min.	Typ.	Max.	Notes
Dimensions Inches (L × W × H) Millimeters (L × W × H)	4.49 × 2.66 × 1.44 114 × 67.5 × 36.5			With mounting ear 5.32 × 2.66 × 1.44 135 × 67.5 × 36.5
Net Weight	-	580 g	-	

Note: All specifications are tested by Cree XLamp XP-G and typical at 25°C unless otherwise stated.

Dimming Specifications

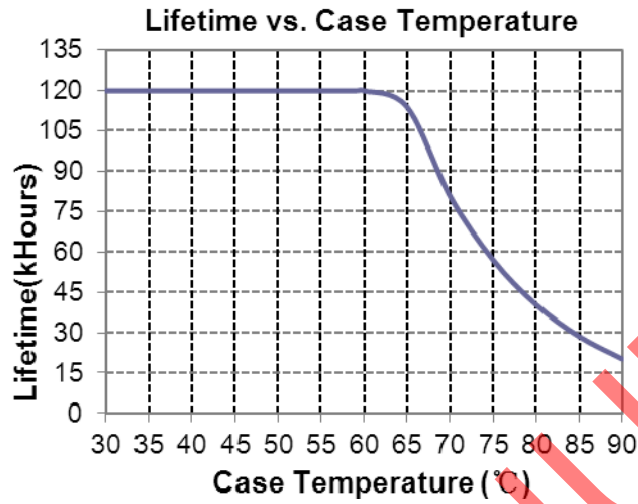
Parameter	Min.	Typ.	Max.	Notes
Absolute Maximum Voltage on the Vdim (+) Pin	-20 V	-	20 V	
Source Current on Vdim (+)Pin	0 μA	200μA	250μA	
Dimming Output Range	10%lo	-	100%lo	
Recommended Dimming Input Range	0 V	-	10 V	

Safety & EMC Compliance

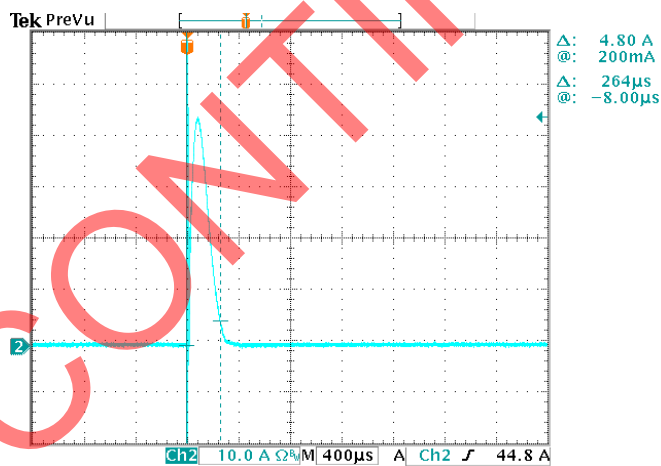
Safety Category	Standard
ENEC & TUV & CE	EN 61347-1, EN61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
KS	KS C 7655
EMI Standards	Notes
EN 55015 ⁽¹⁾	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EMS Standards	Notes
EN 61000-4-2	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 10 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

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.

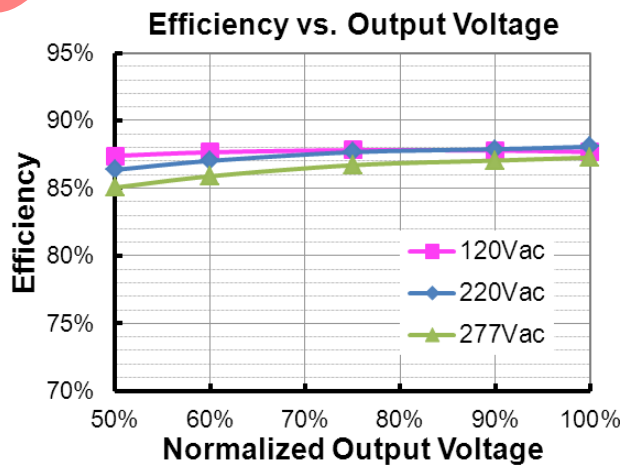
Lifetime vs. Case Temperature



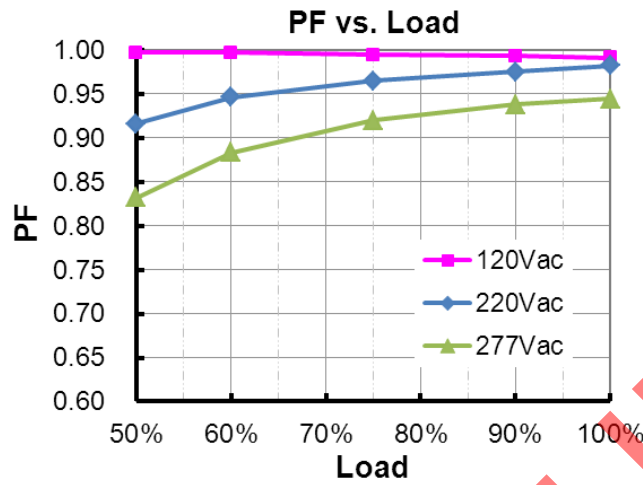
Inrush Current Waveform



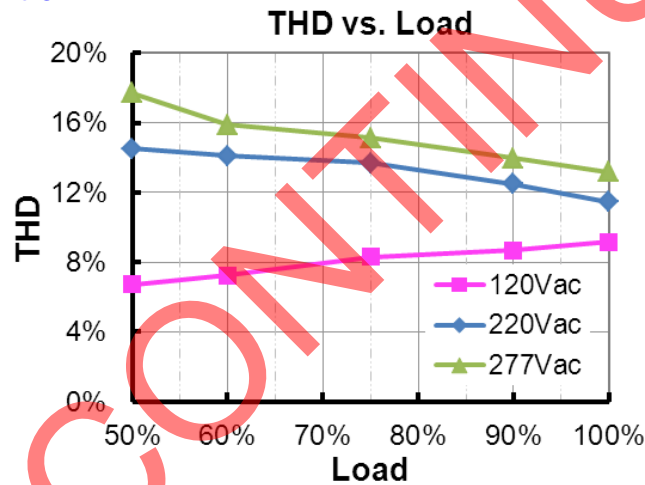
Efficiency vs. Load



Power Factor



Total Harmonic Distortion



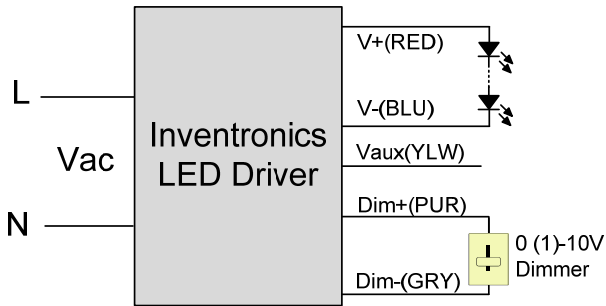
Protection Functions

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.

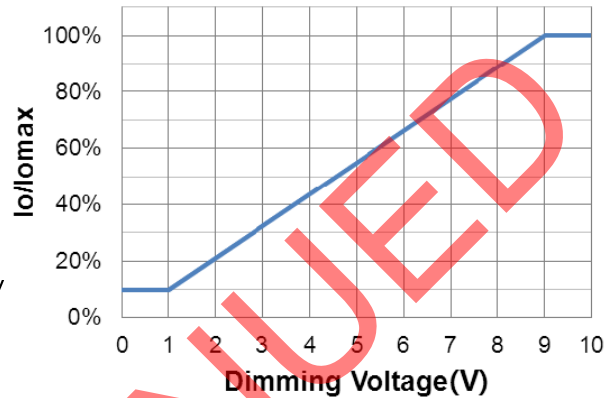
Dimming

● 0-10V Dimming

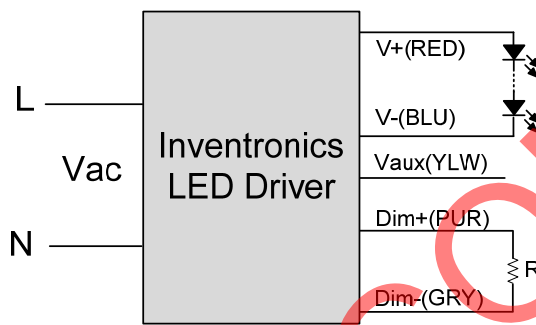
Recommended implementations of the dimming control are provided below.



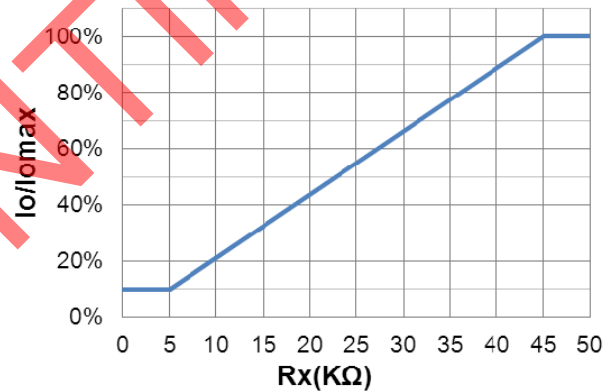
Io/Iomax vs. Dimming Voltage



Implementation 1: DC Input



Io/Iomax vs. Rx



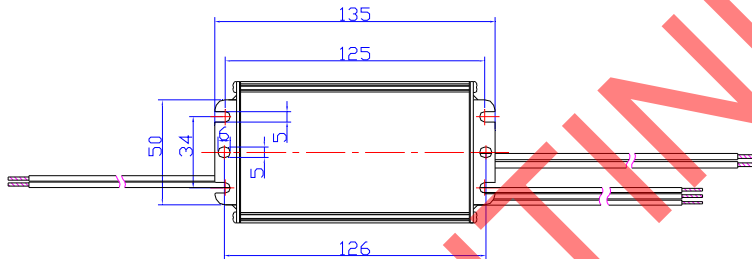
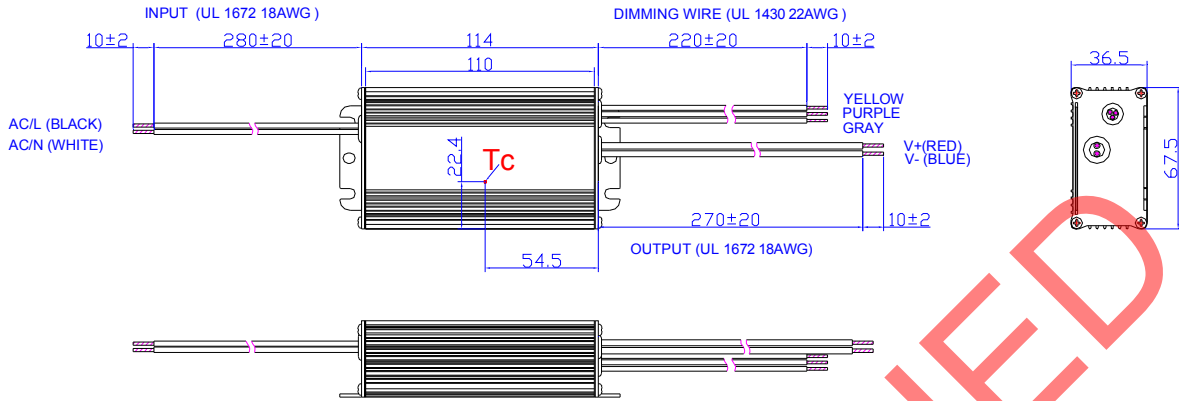
Implementation 2: External Resistor

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.

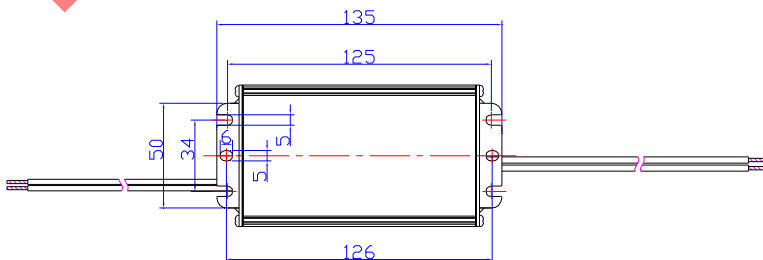
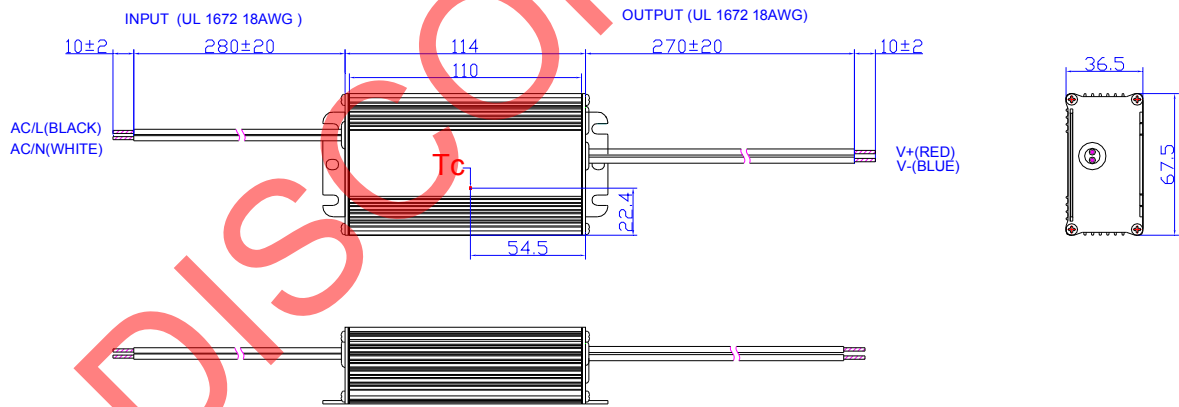
Mechanical Outline

EUC-042S070DDM



PROJ: Unspecified tolerance:±1

EUC-042S070SDM



PROJ: Unspecified tolerance:±1

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 .

DISCONTINUED

Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2015-06-30	A	Datasheets Release	/	/
2016-04-18	B	Net Weight	500 g	580 g
		Source Current on Vdim (+) Pin Max.	220 uA	250 uA
		KS Certificate Regulation	/	Added
		Note of EMI Standard	/	Added
2019-08-21	C	TUV Logo	/	Updated
		ENEC Logo	/	Updated
		Features	Input surge protection	Updated
		Description	/	Updated
		Models	Notes (1)	Updated
		Input Specifications(PF/THD)	/	Updated
		Safety &EMC Compliance	TUV	Added
		Safety &EMC Compliance	CB	Added
		Safety &EMC Compliance	KS	Updated
		Safety &EMC Compliance	Performance	Deleted
Safety &EMC Compliance	EN 61000-4-5	Updated		
Mechanical Outline	/	Updated		
RoHS Compliance	/	Updated		