

## Features

- Low THD, 10% Max up to 240Vac
- Compact Metal Case with Excellent Thermal Performance
- Input Surge Protection: 4kV line-line, 6kV line-earth
- High Reliability & Long Lifetime: 80,000 hrs. at 70°C
- Suitable for Independent Use and Class I Luminaires
- Input UVP and Input OVP
- Waterproof (IP67)
- SELV Output



## Description

The EUC-035SxxxSVM000x series is a 35W, constant-current IP67 LED driver that operates from 90-305 Vac input with excellent power factor and THD feature. It is created for low bay, tunnel and street lights. 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 input surge, input under voltage, input over voltage, output 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(3)
					120 Vac	220 Vac	
500 mA	90 ~ 305 Vac	32~64 Vdc	32 W	87.0%	0.99	0.96	EUC-035S070SVM0004
700 mA	90 ~ 305 Vac	25~50 Vdc	35 W	87.0%	0.99	0.96	EUC-035S070SVM
860 mA	90 ~ 305 Vac	20~41 Vdc	35 W	86.0%	0.99	0.96	EUC-035S105SVM0004
1050 mA	90 ~ 305 Vac	18~33 Vdc	35 W	86.0%	0.99	0.96	EUC-035S105SVM

**Notes:** (1) Certified input voltage range: 120-240Vac.

(2) Measured at full load and 220 Vac input.

(3) SELV output.

## Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 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 120 Vac input.
	-	-	0.2 A	Measured at full load and 220 Vac input.
Inrush Current(I <sup>2</sup> t)	-	-	0.002 A <sup>2</sup> s	At 220Vac input, 25°C cold start, duration=40 μs, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.

## Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
PF	0.90	-	-	120-240Vac, 75%-100%Load(26~35W)
THD	-	-	10%	

## Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-8%lo	-	8%lo	At full load condition
Total Output Current Ripple (pk-avg)	-	50%lo	75%lo	At full load condition
Startup Overshoot Current	-	-	10%lo	At full load condition
No Load Output Voltage	-	-	82 V	
EUC-035S070SVM0004	-	-	82 V	
EUC-035S070SVM	-	-	60 V	
EUC-035S105SVM	-	-	60 V	
Line Regulation	-	-	±5.0%	Measured at full load
Load Regulation	-	-	±5.0%	
Turn-on Delay Time	-	1.5 s	2.0 s	Measured at 120Vac input, 75%-100%Load.
	-	1.0 s	1.5 s	Measured at 220Vac input, 75%-100%Load.
Temperature Coefficient of Iomax	-	0.06%/°C	-	Case temperature = 0°C ~Tc max

**Note:** All specifications are tested by Cree XLamp XP-G and typical measured at 220Vac and 25°C unless otherwise stated.

## General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 120 Vac input:				Measured at full load and steady-state temperature in 25°C ambient; (Efficiency will be about 1.0% lower if measured immediately after startup.)
EUC-035S070SVM0004	85.0%	86.0%	-	
EUC-035S070SVM	85.0%	86.0%	-	
EUC-035S105SVM0004	84.0%	85.0%	-	
EUC-035S105SVM	83.5%	84.5%	-	
Efficiency at 220 Vac input:				Measured at full load and steady-state temperature in 25°C ambient; (Efficiency will be about 1.0% lower if measured immediately after startup.)
EUC-035S070SVM0004	86.0%	87.0%	-	
EUC-035S070SVM	86.0%	87.0%	-	
EUC-035S105SVM0004	85.0%	86.0%	-	
EUC-035S105SVM	85.0%	86.0%	-	
Efficiency at 277 Vac input:				Measured at full load and steady-state temperature in 25°C ambient; (Efficiency will be about 1.0% lower if measured immediately after startup.)
EUC-035S070SVM0004	86.0%	87.0%	-	
EUC-035S070SVM	86.0%	87.0%	-	
EUC-035S105SVM0004	85.0%	86.0%	-	
EUC-035S105SVM	85.0%	86.0%	-	

## General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
MTBF	-	1172,000 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. 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	Humidity: 10% RH to 100% RH.
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)	3.15 x 2.52 x 1.26 80 x 64 x 32			With mounting ear 3.82 x 2.52 x 1.26 97 x 64 x 32
Net Weight	-	330 g	-	

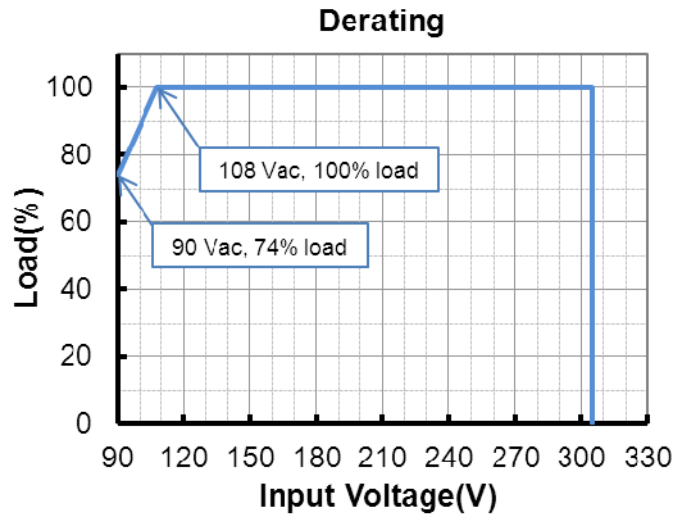
**Note:** All specifications are tested by Cree XLamp XP-G and typical at 25°C unless otherwise stated.

## Safety & EMC Compliance

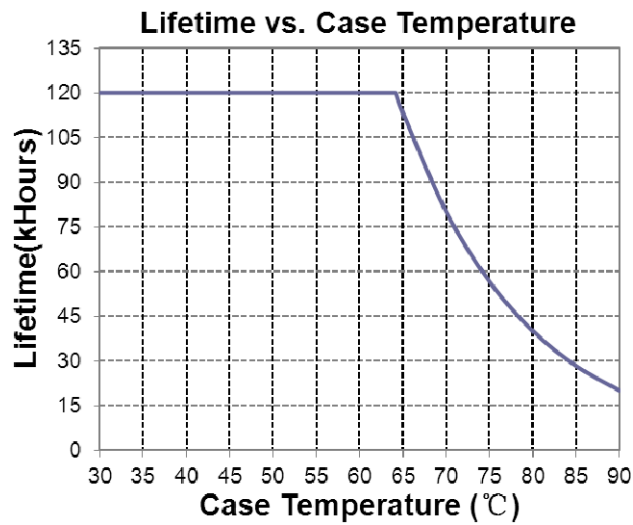
Safety Category	Standard
CE	EN 61347-1, EN61347-2-13
KS	KS C 7655
EMI Standards	Notes
EN 55015 <sup>(1)</sup>	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EMS Standards	Notes
EN 61000-4-2	Electrostatic Discharge (ESD): 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: 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

**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.

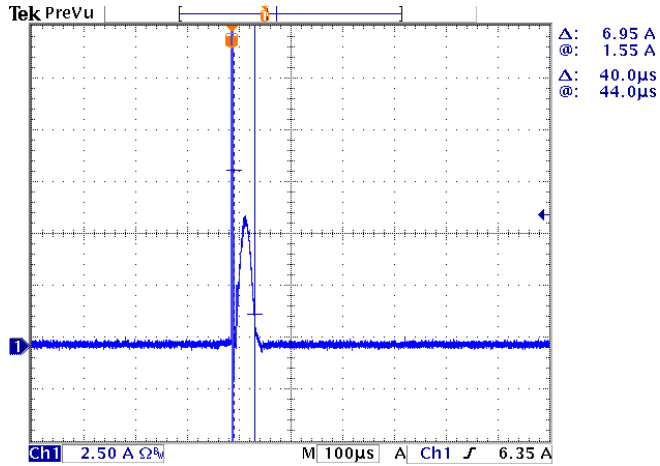
## Derating



## Lifetime vs. Case Temperature



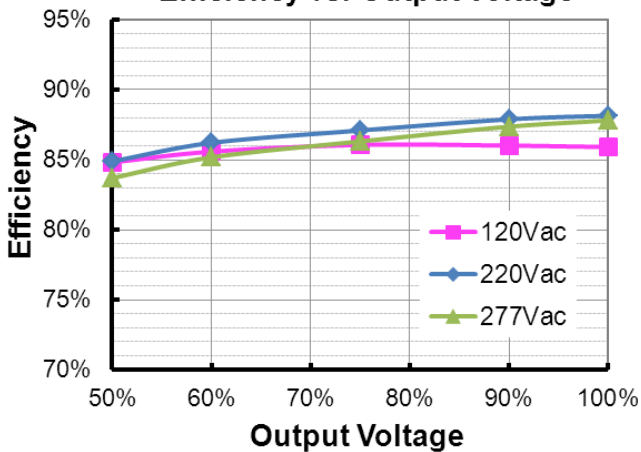
## Inrush Current Waveform



## Efficiency vs. Load

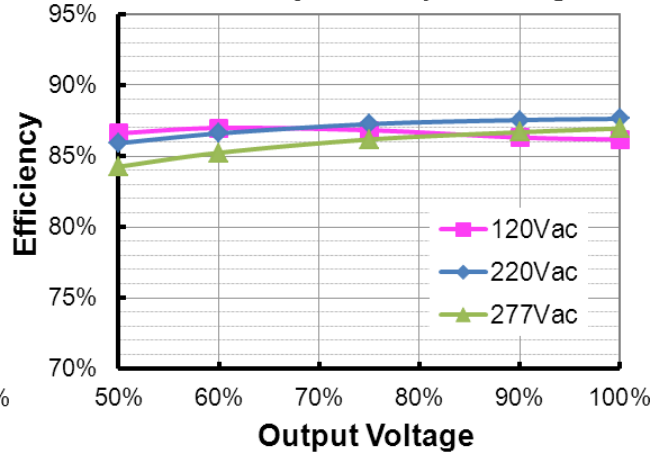
*EUC-035S070SVM* ( $I_o=700mA$ )

Efficiency vs. Output Voltage



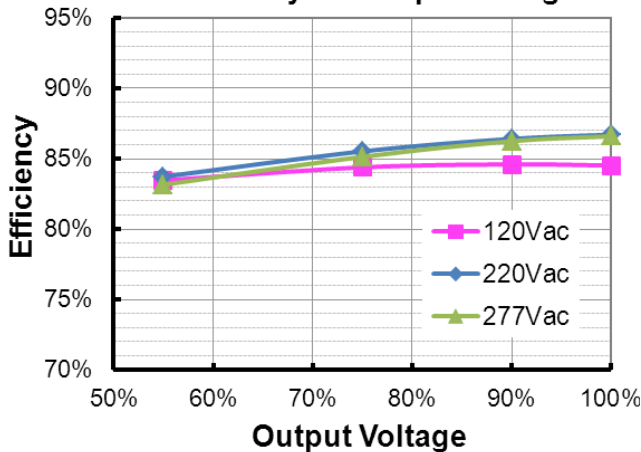
*EUC-035S070SVM0004* ( $I_o=500mA$ )

Efficiency vs. Output Voltage



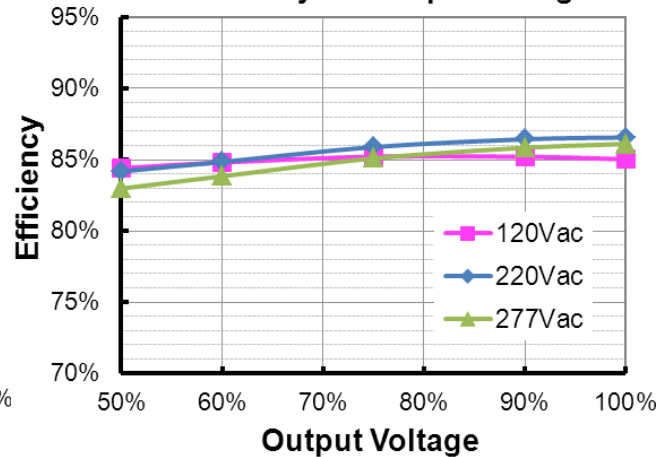
*EUC-035S105SVM* ( $I_o=1050mA$ )

Efficiency vs. Output Voltage

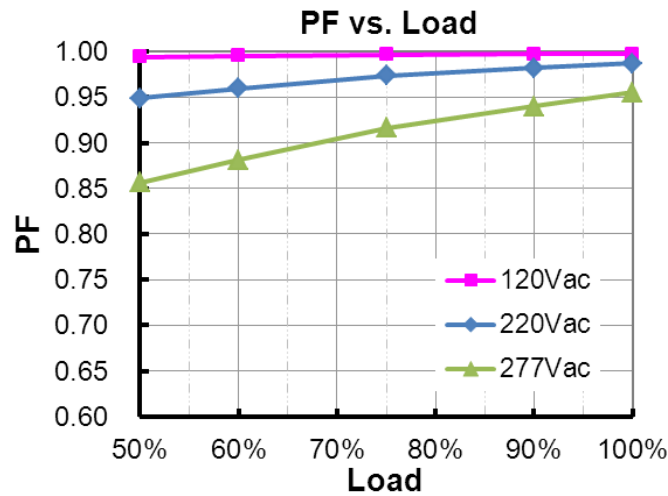


*EUC-035S105SVM0004* ( $I_o=860mA$ )

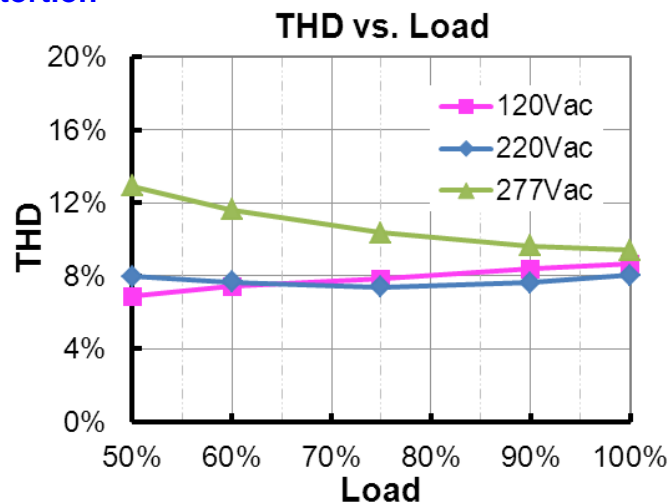
Efficiency vs. Output Voltage



## Power Factor



## Total Harmonic Distortion



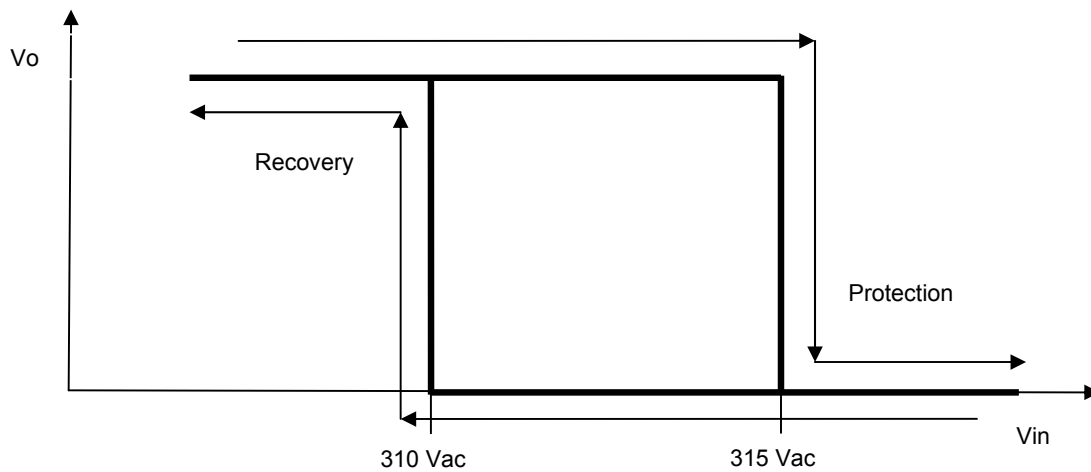
## Protection Functions

Parameter		Min.	Typ.	Max.	Notes
Over Voltage Protection		Limits output voltage at no load and in case the normal voltage limit fails.			
Short Circuit Protection		Auto Recovery. No damage shall occur when any output operating in a short circuit condition. The power supply shall be self-recovery when the fault condition is removed.			
Over Temperature Protection		Decreases output current. Returning to normal after over temperature is removed.			
Input Under Voltage Protection		Auto Recovery. Turn off the output when the input voltage falls below $80 \pm 10V$ . And the driver will restart when the input voltage exceeds $85 \pm 10V$ .			
Input Over Voltage Protection	Input Protection Voltage	305 Vac	315 Vac	325 Vac	Turn off the output when the input voltage exceeds protection voltage.
	Recovery Voltage	290 Vac	310 Vac	330 Vac	Auto Recovery. The driver will restart when the input voltage falls below recovery voltage.

## Protection Functions (Continued)

Parameter		Min.	Typ.	Max.	Notes
Input Over Voltage Protection	Max. of Input Over Voltage	-	-	380 Vac	

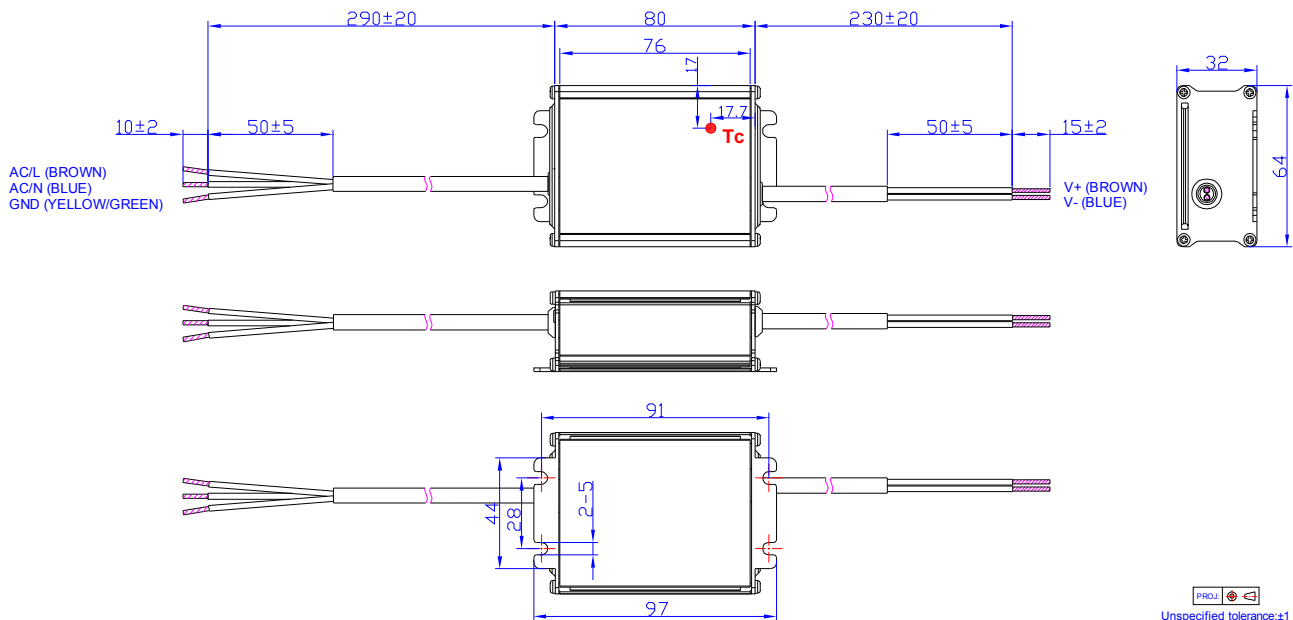
### ● Input Over Voltage Protection Diagram



## Mechanical Outline

INPUT (VDE H05RN-F 3\*1.0mm<sup>2</sup>  $\phi$ 7.2)

OUTPUT (VDE H05RN-F 2\*1.0mm<sup>2</sup>  $\phi$ 6.8)



## 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
2016-07-04	A	Datasheet Release	/	/
2016-12-26	B	Input Voltage Range(Vac)	108 ~ 305 Vac	90 ~ 305 Vac
		Input Voltage Range(Vdc)	127 ~ 300 Vdc	Deleted
		Model Number - EUC-036S070SVM(Io=700mA)	EUC-035S070SVM0000	EUC-035S070SVM
		Model Number - EUC-035S105SVM(Io=1050mA)	EUC-035S105SVM0000	EUC-035S105SVM
		Total Output Current Ripple	Total Output Current Ripple (pk-pk) Max.= 150%Io	Total Output Current Ripple (pk-avg) Max.= 75%Io
		Derating Curve	/	Added
2017-03-20	C	Features	/	Updated
		Description	/	Updated
		MTBF	Min.=600,000Hours	Typ.=1172,000 Hours
		Protection Functions	/	Updated
		Input Over Voltage Protection Diagram	/	Added