Features

- Low THD, 10% Max up to 240 Vac
- Compact Metal Case with Excellent Thermal Performance
- Isolated 0-10V Dimmable
- Input Surge Protection: DM 4kV, CM 6kV
- High Reliability & Long Lifetime: 93,000 hrs. at 75°C Case Temperature
- Suitable for Class I Luminaires
- IUVP & IOVP
- IP67
- 5 Years Warranty

Description

The *EUC-040SxxxDVM000x* series is a 40W, constant-current IP67 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. 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)	Typical Power Factor		Model Number
					120Vac	220Vac	
500 mA	90 ~ 305 Vac 127 ~ 250 Vdc	40 ~ 80 Vdc	40 W	87%	0.99	0.96	EUC-040S070DVM0004
700 mA	90 ~ 305 Vac 127 ~ 250 Vdc	32 ~ 57 Vdc	40 W	86%	0.99	0.96	EUC-040S070DVM
860 mA	90 ~ 305 Vac 127 ~ 250 Vdc	23 ~ 47 Vdc	40 W	86%	0.99	0.96	EUC-040S105DVM0004
1050 mA	90 ~ 305 Vac 127 ~ 250 Vdc	21 ~ 38 Vdc	40 W	85%	0.99	0.96	EUC-040S105DVM

Notes: (1) Certified input voltage range: 120-240Vac/127-250Vdc.
(2) Measured at 100% load and 220 Vac input.

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
Input AC Current	-	-	0.55 A	Measured at 100% load and 120 Vac input.
	-	-	0.30 A	Measured at 100% load and 220 Vac input.

Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Inrush Current(I^2t)	-	-	0.01 A^2s	At 220Vac input, 25°C cold start, duration= 36 μs, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
Power Factor	0.90	-	-	120-240Vac, 50~60Hz, 75%-100%load (30~40W)
THD	-	-	15%	
THD	-	-	10%	200-240Vac, 50~60Hz, 75%-100%load (30~40W)

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-8%Io	-	8%Io	
Total Output Current Ripple (pk-avg)	-	50%Io	75%Io	At 100% load condition
Output Current Overshoot / Undershoot	-	5%Io	10%Io	At 100% load condition
No Load Output Voltage EUC-040S070DVM0004 EUC-040S070DVM EUC-040S105DVM0004 EUC-040S105DVM	 - - - -	 - - - -	 100 V 100 V 80 V 80 V	
Line Regulation	-	-	±5.0%	Measured at 100% 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 unless otherwise stated.

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 120 Vac input: EUC-040S070DVM0004 EUC-040S070DVM EUC-040S105DVM0004 EUC-040S105DVM	 84.0% 83.0% 83.0% 82.0%	 85.0% 84.0% 84.0% 83.0%	 - - - -	Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 1.0% lower if measured immediately after startup.)
Efficiency at 220 Vac input: EUC-040S070DVM0004 EUC-040S070DVM EUC-040S105DVM0004 EUC-040S105DVM	 86.0% 85.0% 85.0% 84.0%	 87.0% 86.0% 86.0% 85.0%	 - - - -	Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 1.0% lower if measured immediately after startup.)
Efficiency at 277 Vac input: EUC-040S070DVM0004 EUC-040S070DVM EUC-040S105DVM0004 EUC-040S105DVM	 86.0% 85.0% 85.0% 84.0%	 87.0% 86.0% 86.0% 85.0%	 - - - -	Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 1.0% lower if measured immediately after startup.)

General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
MTBF	-	598,000 Hours	-	Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	93,000 Hours	-	Measured at 120Vac input, 80%Load and 75°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 5 years warranty. Humidity: 10% RH to 100% RH.
Storage Temperature	-40 °C	-	+85 °C	Humidity: 5% RH to 100% RH.
Dimensions Inches (L × W × H) Millimeters (L × W × H)	3.46 x 2.52 x 1.26 88 x 64 x 32			With mounting ear 4.13 x 2.52 x 1.26 105 x 64 x 32
Net Weight	-	400 g	-	

Note: All specifications are tested by Cree XLamp XP-G unless otherwise stated.

Dimming Specifications

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

Safety & EMC Compliance

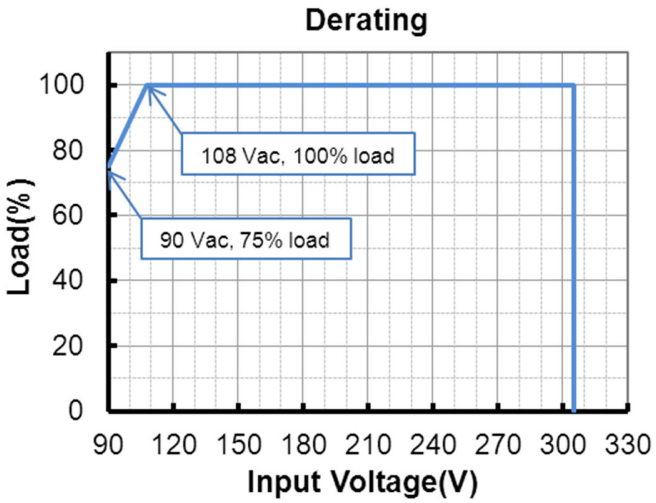
Safety Category	Standard
CE & TUV	EN 61347-1, EN61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
CCC	GB/T 19510.1, GB/T 19510.213
KS	KS C 7655
EAC	TP TC 004, TP TC 020
EMI Standards	**Notes**
EN IEC 55015/GB/T 17743(1)	Conducted emission Test &Radiated emission Test
EN IEC 61000-3-2/GB 17625.1	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker

Safety & EMC Compliance (Continued)

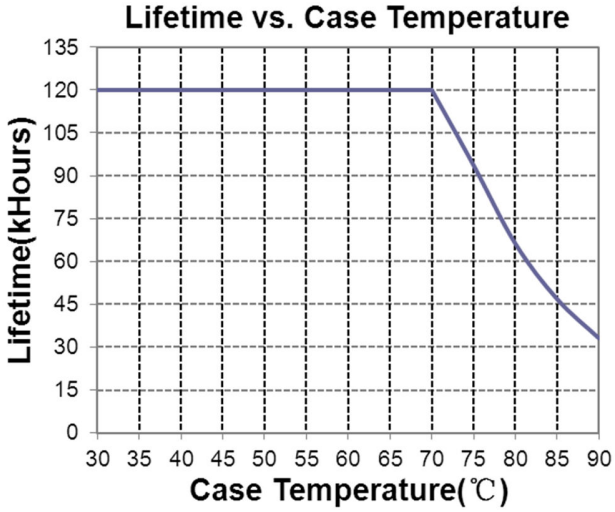
EMS Standards	Notes
EN 61000-4-2	Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-4	Electrical Fast Transient / Burst-EFT
EN 61000-4-5	Surge Immunity Test: AC Power Line: Differential Mode 4 kV, Common Mode 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 IEC 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.

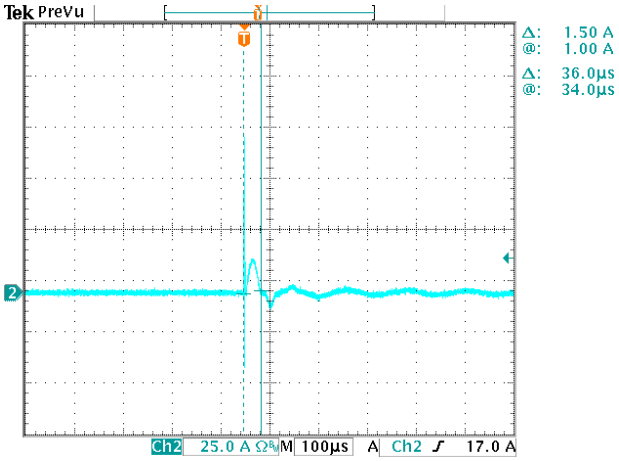
Derating



Lifetime vs. Case Temperature

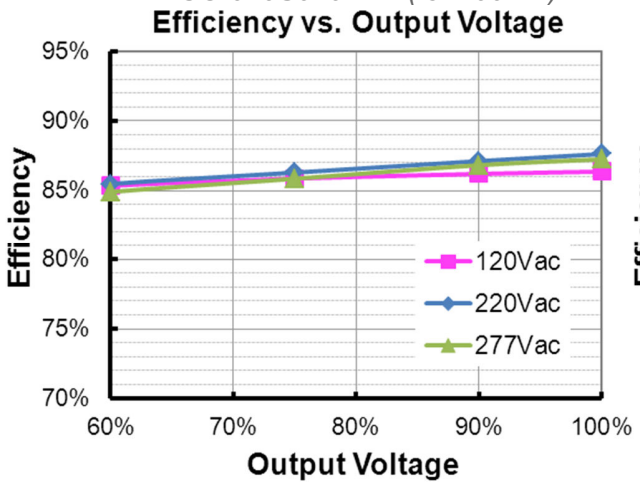


Inrush Current Waveform

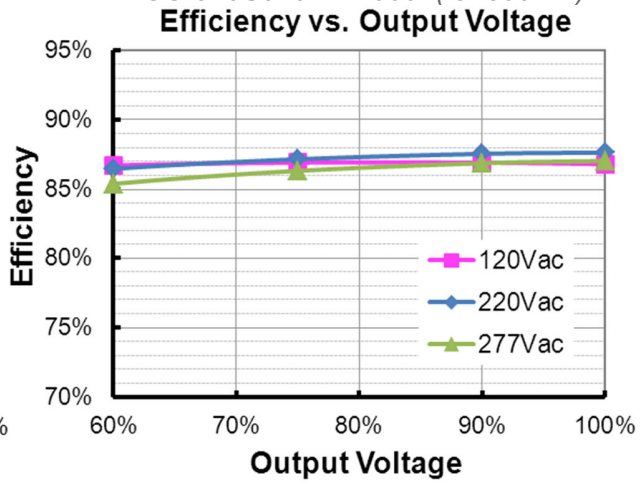


Efficiency vs. Load

EUC-040S070DVM(Io=700mA)

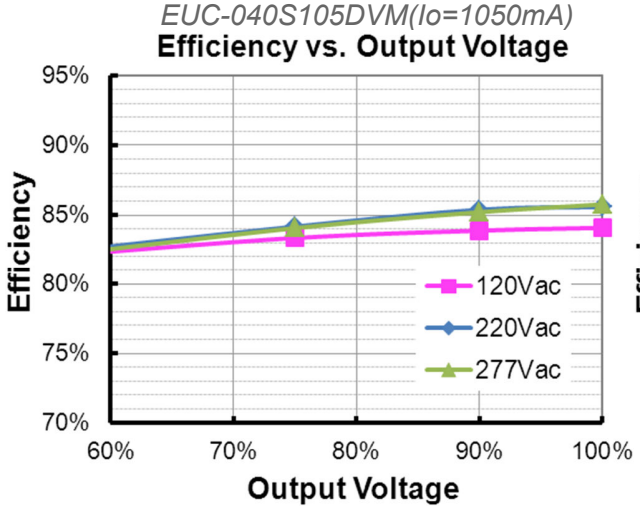


EUC-040S070DVM0004(Io=500mA)

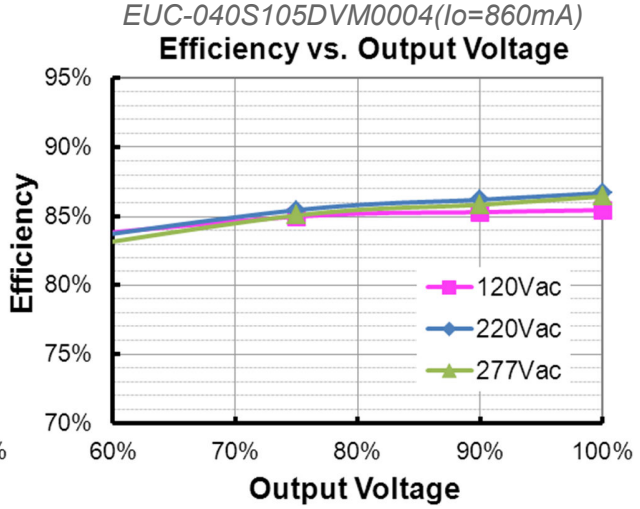


www.inventronics-co.com Tel: 86-571-56565800 Fax: 86-571-86601139 sales@inventronicsglobal.com

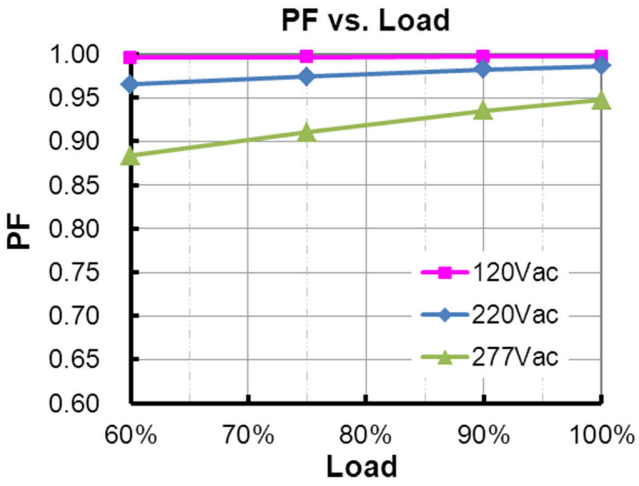
EUC-040S105DVM(Io=1050mA)



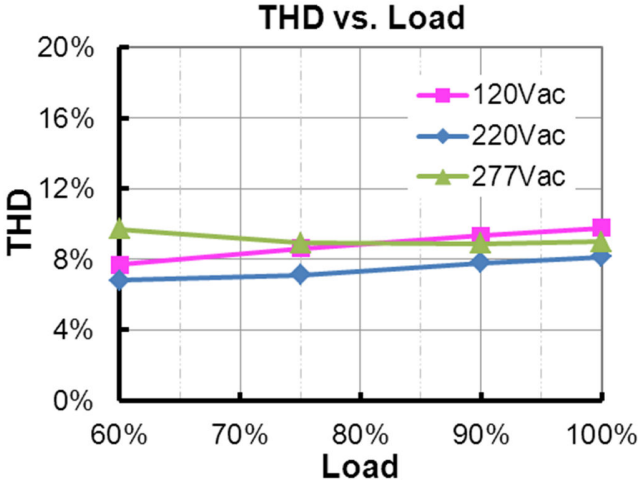
EUC-040S105DVM0004(Io=860mA)



Power Factor



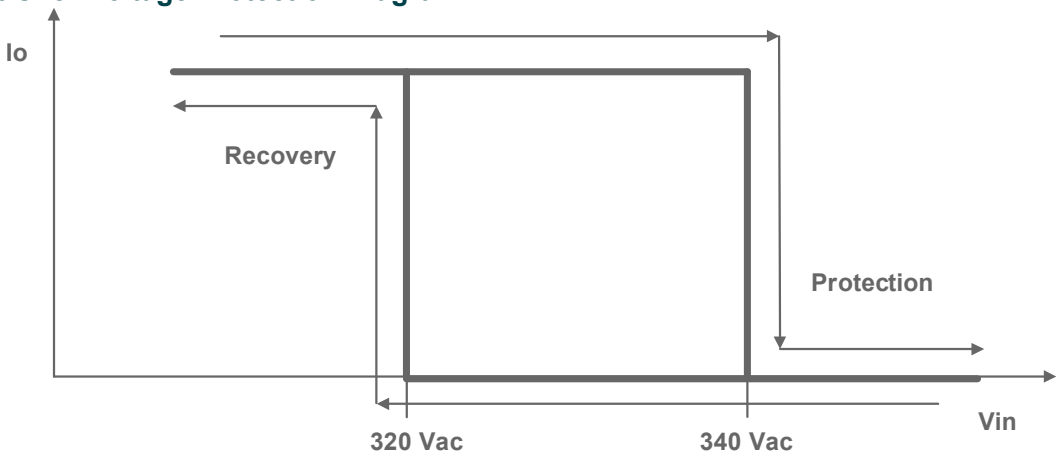
Total Harmonic Distortion



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 83±10V. And the driver will restart when the input voltage exceeds 88±10V.			
Input Over Voltage Protection	Input Protection Voltage	330 Vac	340 Vac	350 Vac	Turn off the output when the input voltage exceeds protection voltage.
	Recovery Voltage	300 Vac	320 Vac	340 Vac	Auto Recovery. The driver will restart when the input voltage falls below recovery voltage.
	Max. of Input Over Voltage	-	-	380 Vac	

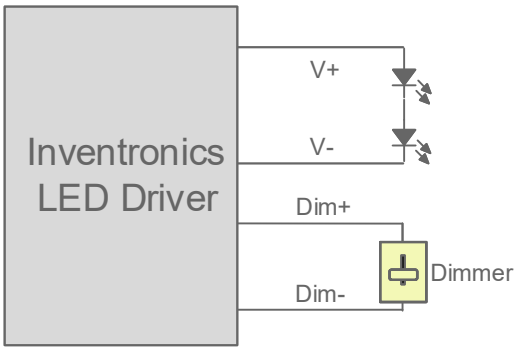
Input Over Voltage Protection Diagram

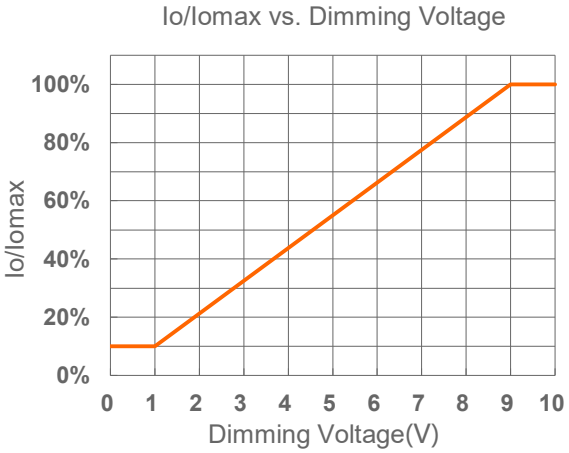


Dimming

0-10V Dimming

The recommended implementation is provided below.

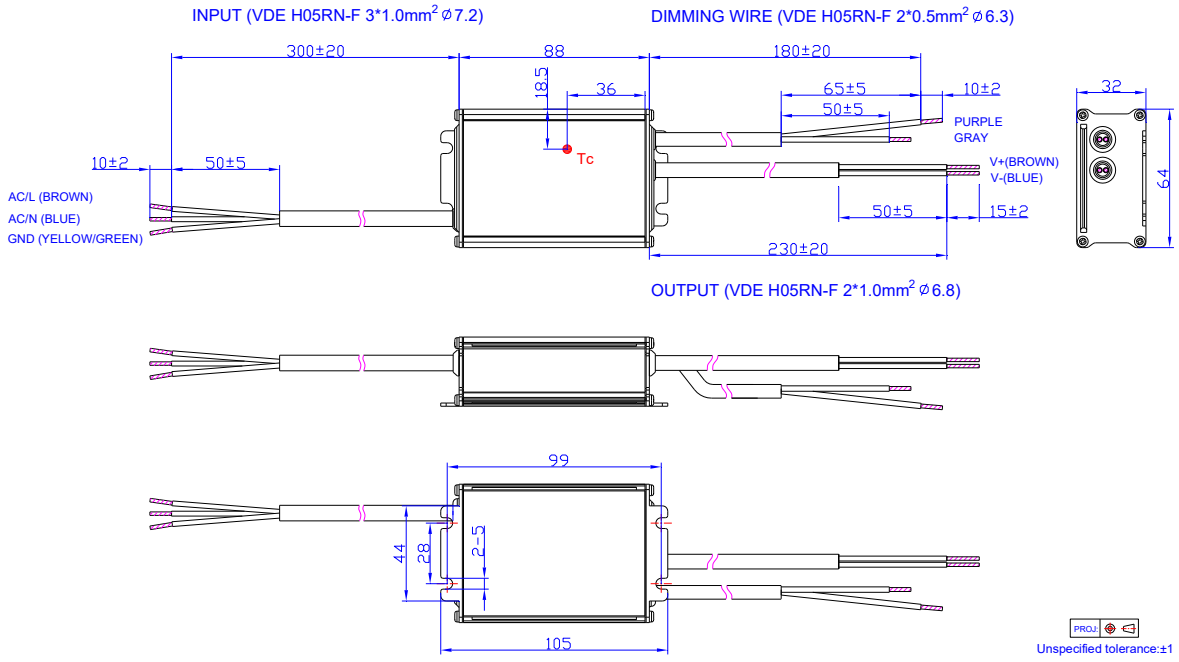




Implementation 1: DC Input

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.

Mechanical Outline



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.

Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2016-12-30	A	Datasheet Release	/	/
2017-08-29	B	Features	/	Updated
		Input Voltage Range(Vac)	108 ~ 305 Vac	90 ~ 305 Vac
		Dimming Specifications - Absolute Maximum Voltage on the 0~10V Input Pin	Min.=0V	Min.=-20V
		Derating Curve	/	Added
		Dimming - 0-10V Dimming - Implementation 1: DC Input	/	Corrected
		Dimming - 0-10V Dimming - Implementation 2: External Resistor	/	Deleted
2018-03-23	C	Description	/	Updated
		MTBF	732,000 Hours	598,000 Hours
		Safety & EMC Compliance - Safety Category - CCC	/	Added
2026-04-15	D	Format	/	Updated
		Product photograph	/	Updated
		CCC logo	/	Updated
		EAC logo	/	Added
		Independent logo	/	Added
		General Specifications	/	Updated
		Safety &EMC Compliance	/	Updated
		RoHS Compliance	/	Updated