

## Features

- Ultra High Efficiency (Up to 91%)
- Constant Current Output
- 0-10V Dimming Control
- Input surge protection: 4kV line-line, 6kV line-earth
- All-Around Protection: SCP, OTP, OVP
- Waterproof (IP67)
- SELV Output



## Description

The EUC-100SxxxDV(SV) series is a 100W, constant-current LED driver that operates from 90-305 Vac input with excellent power factor. It is created for low bay, tunnel and street lights. 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

Output Current	Input Voltage Range(1)	Output Voltage Range	Max. Output Power	Typical Efficiency (2)	Power Factor		Model Number (3,4)
					120Vac	220Vac	
350 mA	90 ~ 305 Vac	172~286Vdc	100 W	91.0%	0.99	0.96	EUC-100S035DV(SV)
450 mA	90 ~ 305 Vac	132~222Vdc	100 W	91.0%	0.99	0.96	EUC-100S045DV(SV)
700 mA	90 ~ 305 Vac	86~143Vdc	100 W	90.5%	0.99	0.96	EUC-100S070DV(SV)
1050 mA	90 ~ 305 Vac	57~95 Vdc	100 W	90.5%	0.99	0.96	EUC-100S105DV(SV)(5)
1400 mA	90 ~ 305 Vac	43~71 Vdc	100 W	90.5%	0.99	0.96	EUC-100S140DV(SV)(5)
1750 mA	90 ~ 305 Vac	34~57 Vdc	100 W	90.5%	0.99	0.96	EUC-100S175DV(SV)(5)
2100 mA	90 ~ 305 Vac	29~48 Vdc	100 W	90.5%	0.99	0.96	EUC-100S210DV(SV)(5)
2450 mA	90 ~ 305 Vac	25~41 Vdc	100 W	90.5%	0.99	0.96	EUC-100S245DV(SV)(5)
2800 mA	90 ~ 305 Vac	22~36 Vdc	100 W	90.0%	0.99	0.96	EUC-100S280DV(SV)(5)
3150 mA	90 ~ 305 Vac	19~32 Vdc	100 W	90.0%	0.99	0.96	EUC-100S315DV(SV)(5)
3570 mA	90 ~ 305 Vac	17~28 Vdc	100 W	90.0%	0.99	0.96	EUC-100S357DV(SV)(5)
4200 mA	90 ~ 305 Vac	14~24 Vdc	100 W	89.0%	0.99	0.96	EUC-100S420DV(SV)(5)

- Notes:**
- (1) Certified input Voltage range 100-240 Vac
  - (2) Measured at full load and 220 Vac input.
  - (3) All the models are certificated to TUV, CE, CB, except EUC-100SxxxSV are certificated to PSE
  - (4) All the models are certificated to KS, except EUC-100S035DV(SV) and EUC-100S045DV(SV)
  - (5) SELV output

## Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 Vac	-	305 Vac	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	1 mA	At 277Vac/60Hz input , grounding effectively
Input AC Current	-	-	1.3 A	Measured at full load and 100 Vac input.
	-	-	0.6 A	Measured at full load and 220 Vac input.
Inrush current	-	-	65 A	At 220Vac input, 25°C cold start, duration=1 ms, 10%Ipk-10%Ipk.
Inrush Current(I <sup>2</sup> t)	-	-	1 A <sup>2</sup> s	
Power Factor	0.90	-	-	At 100Vac-220Vac, 75%load-100%load
THD	-	-	20%	At 100Vac-277Vac, 75%load-100%load

## Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%I <sub>o</sub>	-	5%I <sub>o</sub>	At full load condition
Ripple and Noise (pk-pk)	-	-	3% V <sub>O</sub>	Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 uF ceramic capacitor and a 10 uF electrolytic capacitor.
Output Current Ripple at < 200 Hz (pk-pk)	-	2%I <sub>o</sub>	-	At full load condition. Only this component of ripple is associated with visible flicker.
Startup Overshoot Current	-	-	10%I <sub>o</sub>	At full load condition.
No load Output Voltage				
I <sub>o</sub> = 350 mA	-	-	321 V	
I <sub>o</sub> = 450 mA	-	-	253 V	
I <sub>o</sub> = 700 mA	-	-	162 V	
I <sub>o</sub> = 1050 mA	-	-	107 V	
I <sub>o</sub> = 1400 mA	-	-	80 V	
I <sub>o</sub> = 1750 mA	-	-	63 V	
I <sub>o</sub> = 2100 mA	-	-	55 V	
I <sub>o</sub> = 2450 mA	-	-	45.5 V	
I <sub>o</sub> = 2800 mA	-	-	40.5 V	
I <sub>o</sub> = 3150 mA	-	-	36 V	
I <sub>o</sub> = 3570 mA	-	-	32 V	
I <sub>o</sub> = 4200 mA	-	-	27 V	
Line Regulation	-	-	±1%	
Load Regulation	-	-	±3%	
Turn-on Delay Time	-	1.2 s	2.0 s	Measured at 120Vac input.
	-	0.6 s	1.2 s	Measured at 220Vac input.

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

## Protection Functions

Parameter	Min.	Typ.	Max.	Notes
Over Temperature Protection	-	100 °C	-	Case temperature
Short Circuit Protection	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 Voltage Protection				Latch mode. The power supply shall return to normal operation only after the power is turn-on again.
$I_o = 350 \text{ mA}$	343 V	372 V	401 V	
$I_o = 450 \text{ mA}$	266 V	289 V	311 V	
$I_o = 700 \text{ mA}$	171 V	186 V	200 V	
$I_o = 1050 \text{ mA}$	114 V	124 V	133 V	
$I_o = 1400 \text{ mA}$	86 V	94 V	101 V	
$I_o = 1750 \text{ mA}$	68 V	74 V	80 V	
$I_o = 2100 \text{ mA}$	57 V	63 V	67 V	
$I_o = 2450 \text{ mA}$	49 V	53 V	58 V	
$I_o = 2800 \text{ mA}$	43 V	47 V	51 V	
$I_o = 3150 \text{ mA}$	38 V	42 V	45 V	
$I_o = 3570 \text{ mA}$	33 V	36 V	40 V	
$I_o = 4200 \text{ mA}$	28V	31 V	34 V	

## General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency				Measured at full load, 120Vac input, 25°C ambient temperature, after the unit is thermally stabilized.  It will be lower about 1%, if measured immediately after startup.
$I_o = 350 \text{ mA}$	88.0%	89.0%	-	
$I_o = 450 \text{ mA}$	88.0%	89.0%	-	
$I_o = 700 \text{ mA}$	87.5%	88.5%	-	
$I_o = 1050 \text{ mA}$	87.5%	88.5%	-	
$I_o = 1400 \text{ mA}$	87.5%	88.5%	-	
$I_o = 1750 \text{ mA}$	87.5%	88.5%	-	
$I_o = 2100 \text{ mA}$	87.5%	88.5%	-	
$I_o = 2450 \text{ mA}$	87.5%	88.5%	-	
$I_o = 2800 \text{ mA}$	87.0%	88.0%	-	
$I_o = 3150 \text{ mA}$	87.0%	88.0%	-	
$I_o = 3570 \text{ mA}$	87.0%	88.0%	-	
$I_o = 4200 \text{ mA}$	86.0%	87.0%	-	
Efficiency				Measured at full load, 220Vac input, 25°C ambient temperature, after the unit is thermally stabilized.  It will be lower about 1%, if measured immediately after startup.
$I_o = 350 \text{ mA}$	90.0%	91.0%	-	
$I_o = 450 \text{ mA}$	90.0%	91.0%	-	
$I_o = 700 \text{ mA}$	89.5%	90.5%	-	
$I_o = 1050 \text{ mA}$	89.5%	90.5%	-	
$I_o = 1400 \text{ mA}$	89.5%	90.5%	-	
$I_o = 1750 \text{ mA}$	89.5%	90.5%	-	
$I_o = 2100 \text{ mA}$	89.5%	90.5%	-	
$I_o = 2450 \text{ mA}$	89.5%	90.5%	-	
$I_o = 2800 \text{ mA}$	89.0%	90.0%	-	
$I_o = 3150 \text{ mA}$	89.0%	90.0%	-	
$I_o = 3570 \text{ mA}$	89.0%	90.0%	-	
$I_o = 4200 \text{ mA}$	88.0%	89.0%	-	
MTBF	-	250,000 hours	-	Measured at 120Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	75,500 hours	-	Measured at 220Vac input, 80%Load, Case temperature=60°C @ Tc point. See life time vs. Tc curve for the details

## General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Operating Case Temperature for Safety Tc_s	-35 °C	-	+90 °C	
Operating Case Temperature for Warranty Tc_w	-35 °C	-	+65 °C	
Storage Temperature	-40 °C	-	+85 °C	Humidity: 5% RH to 100% RH
Dimensions Inches (L × W × H) Millimeters (L × W × H)	7.64 × 2.66 × 1.44 194 × 67.5 × 36.5			With mounting ear 8.70 × 2.66 × 1.44 221 × 67.5 × 36.5
Net Weight	-	1000 g	-	

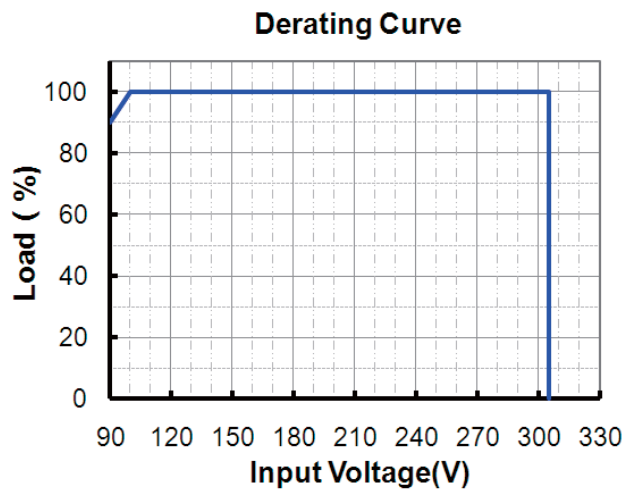
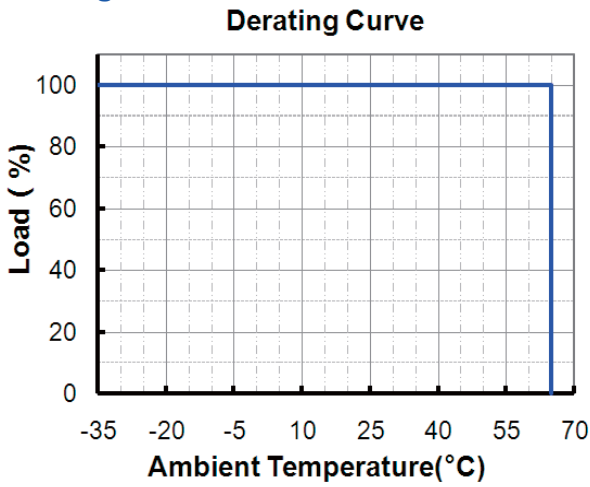
**Note:** All specifications are typical at 25 °C unless otherwise stated.

## Safety & EMC Compliance

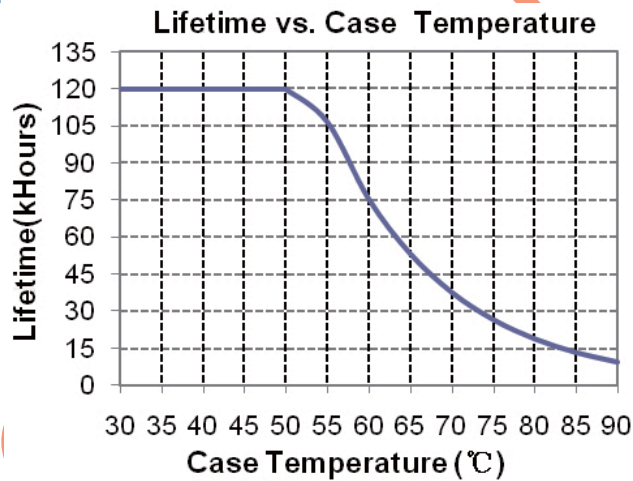
Safety Category	Standard
CE	EN 61347-1, EN61347-2-13
KS	KS C 7655
EMI Standards	Notes
EN 55015 <sup>(1)</sup>	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EMS Standards	Notes
EN 61000-4-2	Electrostatic Discharge (ESD):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

**Notes:** (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.

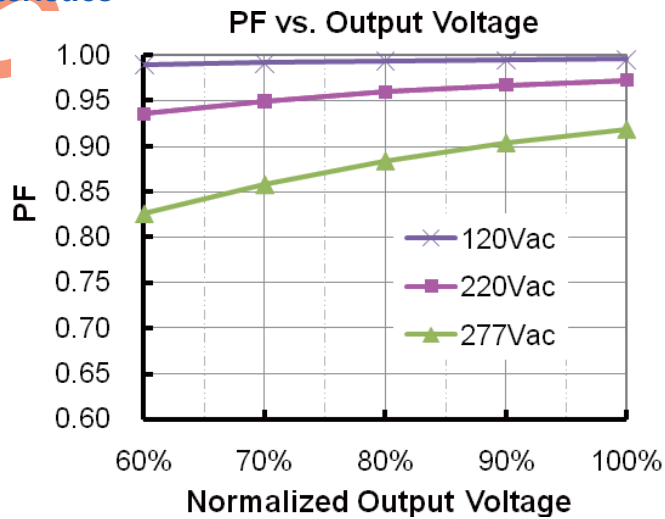
## Derating Curve



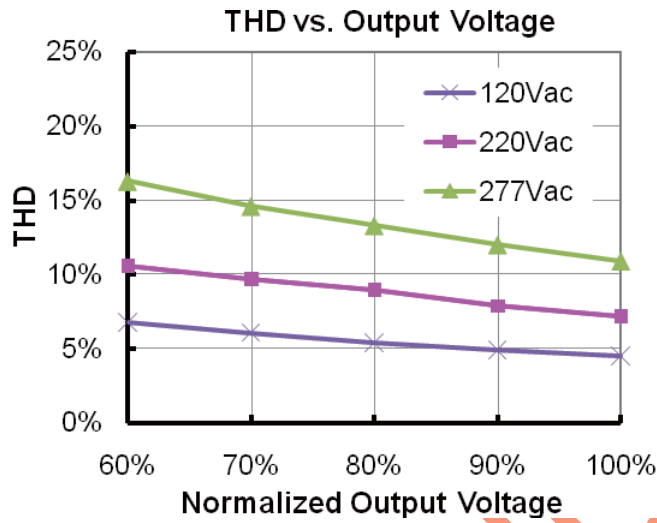
## Lifetime vs. Case Temperature Curve



## Power Factor Characteristics

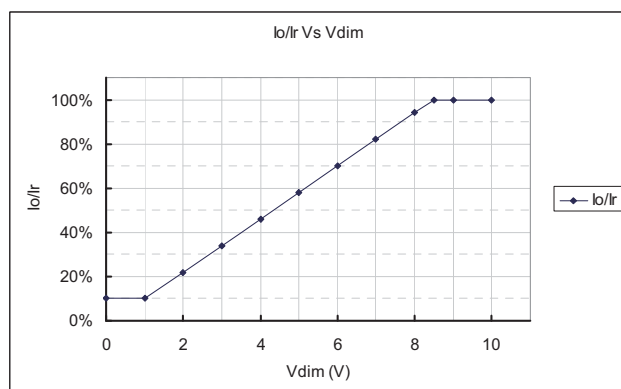
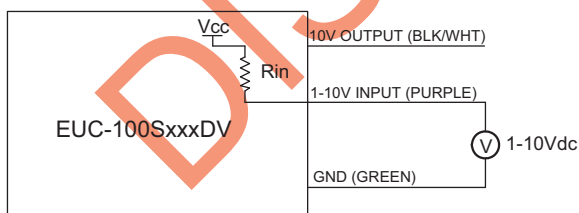


## Total Harmonic Distortion

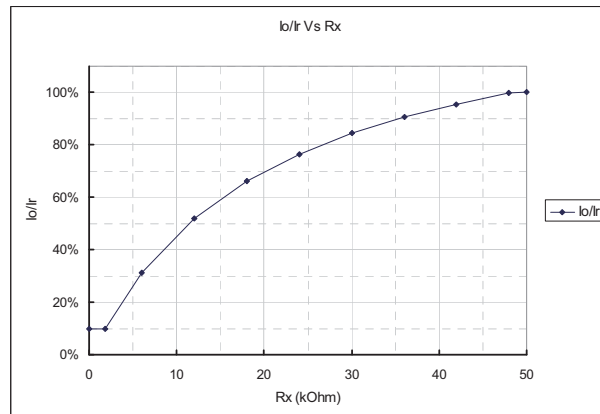
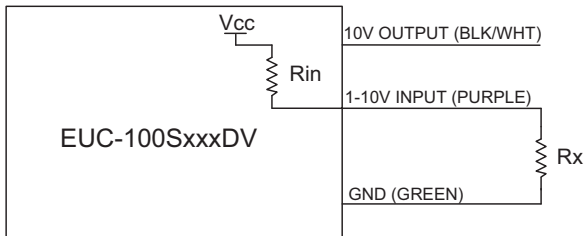


## Dimming

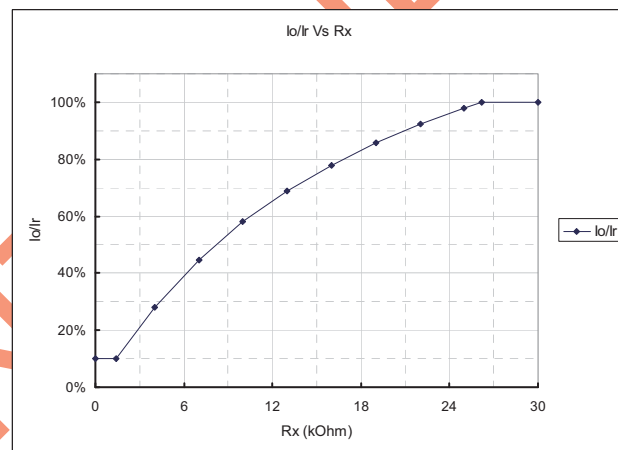
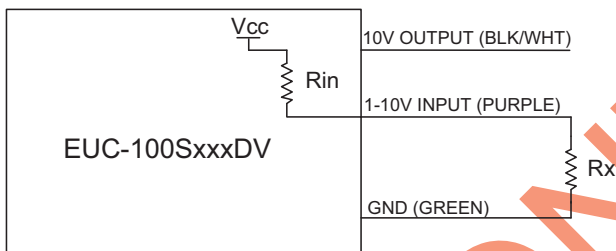
Parameter	Min.	Typ.	Max.	Notes
Vcc	9.5 V	10 V	10.5 V	
10V output source current	0 mA	-	10 mA	
Absolute maximum voltage on the 1~10V input pin	-2 V	-	12 V	
Source current on 1~10V input pin	0 mA	-	0.5 mA	
Value of Rin ( the resistor inside the LED driver which locate between the 1-10V input and 10V output pin)	19.8 K	20 K	20.2 K	



Implementation 1: DC input



**Implementation 2: External resistor (Vcc=12V) [EUC-100S315DV& EUC-100S420DV]**



**Implementation 3: External resistor (Vcc=15V) [Other Models]**

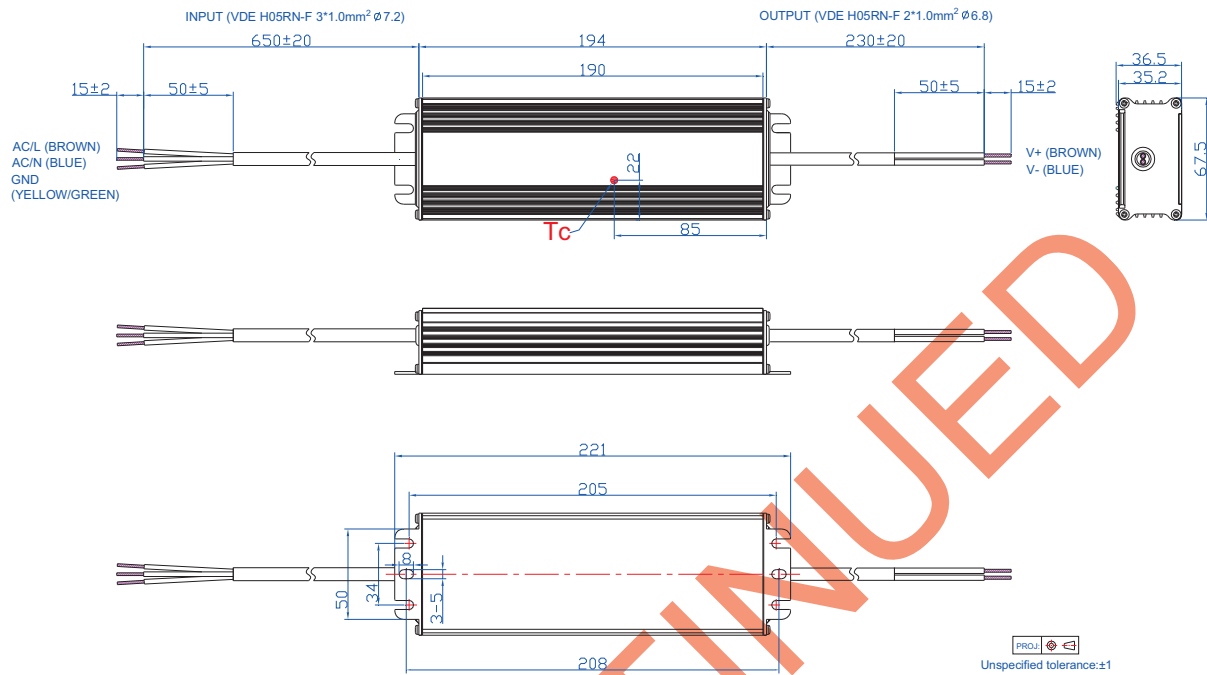
**Notes:**

1. If the dimming function is not used, please let the dimming leads floated; the output is full load when the dimming leads are floated.
2.  $I_o$  is actual output current and  $I_r$  is rated current without dimming control.
3. For the driver to operate properly, the load voltage must be maintained above the minimum voltage threshold (approx.60% of the max. output voltage for any given model).
4. If the output voltage is maintained above 60% of the maximum output voltage, the dimming control may be operated over the entire 1-10V range with output current varying from 100% down to practically 10%.
5. The dimming signal is allowed to be less than 1V, however, when it for 0-1V, the output current can maintain about 10% $I_r$ . When it for 8.5-10V, the output current can maintain about 100% $I_r$ .
6. Do not connect the GND of dimming to the output; otherwise, the LED driver cannot work normally.





EUC-100SxxxSV



## 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
2010-03-23	A	Add Leakage Current in Input Specifications	/	Max. 1 Ma At 277Vac 50Hz input
		Change the Max. value of Operating Temperature	+70 °C	+65 °C
		Change the Max. Ambient Temperature in Derating Curve	+70 °C	+65 °C
		Change the MTBF data and testing condition	450,000 hours / Measured at EUC-100S140DV(SV)	350,000 hours / Measured at EUC-100S105DV(SV)
		Change the Life Time testing condition	Measured at EUC-100S140DV(SV)	Measured at EUC-100S105DV(SV)
		Add one note in Dimming Control	/	7. Do not connect the GND of dimming to the output; otherwise, the LED driver can not work normally.
		Change the dimming control line in Mechanical Outline	/	/
2010-05-31	B	Add star rank for recommended models	/	☆: Popular model.
2010-10-22	C	Update the part of dimming control	/	/
2010-10-18	D	Add another dimming version with pull-down resistor	/	/
2011-01-14	E	Change popular models	/	/
		Update MTBF & Life Time Date	For One Model	For Two Models
2011-09-07	F	Dimming Control	/	/
2012-02-07	G	Turn-on Delay Time at 110 Vac	1.0 s	1.5 s
2012-06-11	H	Mechanical outline	/	Updated
		Life time Curve	/	Added
2012-07-17	I	Max Case Temperature	/	Updated
		Surge Immunity Test: AC Power Line	line to line 2 kV, line to earth 4 kV	line to line 4 kV, line to earth 6 kV
2012-07-24	J	External resistor in pull-up resistor	/	Updated
2012-09-21	K	Inrush Current(I <sup>2</sup> t)	/	Added
		MTBF, Life time	/	Typical Value added
		Life time Curve	/	Updated
		Min PF, THD Max	/	Added
2013-03-25	L	Efficiency of Model 4900mA	/	1% lower
		Turn-on delay time @120Vac	Typ 0.6s; Max1.5s	Typ 1.2s; Max2.0s
		Turn-on delay time @220Vac	Typ 0.6s; Max1.0s	Typ 0.6s; Max1.2s
		PF Curve	/	Added
		THD Curve	/	Added
		OTP	/	Updated

## Revision History (Continued)

Change Date	Rev.	Description of Change		
		Item	From	To
2013-03-25	L	Life time and Life time Curve	/	Updated
		Mechanical outline	/	Updated
2016-04-13	M	CCC, PSE, KS	/	Added
		Format	/	Updated
		Features	/	Updated
		Description	/	Updated
		Models	/	Updated
		General Specifications	/	Updated
		Environmental Specifications	/	Delete
		With pull-down resistor: (The model number has a suffix -0040)	/	Delete
2019-08-20	N	CCC	/	Deleted
		Models	Notes(3)	Updated
		Safety & EMC Compliance	KS	Updated
		Mechanical outline	/	Updated