Features

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

Description

The *EUC-120SxxxDV(SV)* series is a 120W, constant-current LED driver that operates from 90-305 Vac input with excellent power factor. It is created for many lighting applications including high bay, tunnel and roadway, etc. 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)
					120Vac	220Vac	
350 mA	90 ~ 305 Vac	206~343Vdc	120 W	91.0%	0.99	0.96	EUC-120S035DV(SV)
450 mA	90 ~ 305 Vac	160~266Vdc	120 W	91.0%	0.99	0.96	EUC-120S045DV(SV)
700 mA	90 ~ 305 Vac	103~171Vdc	120 W	91.0%	0.99	0.96	EUC-120S070DV(SV)
1050 mA	90 ~ 305 Vac	68~114Vdc	120 W	90.5%	0.99	0.96	EUC-120S105DV(SV)
1400 mA	90 ~ 305 Vac	52~86 Vdc	120 W	90.5%	0.99	0.96	EUC-120S140DV(SV)(4)
1750 mA	90 ~ 305 Vac	41~68 Vdc	120 W	90.5%	0.99	0.96	EUC-120S175DV(SV)(4)
2100 mA	90 ~ 305 Vac	34~57 Vdc	120 W	90.5%	0.99	0.96	EUC-120S210DV(SV)(4)
2450 mA	90 ~ 305 Vac	29~49 Vdc	120 W	90.5%	0.99	0.96	EUC-120S245DV(SV)(4)
2800 mA	90 ~ 305 Vac	26~43 Vdc	120 W	90.5%	0.99	0.96	EUC-120S280DV(SV)(4)
3150 mA	90 ~ 305 Vac	23~38 Vdc	120 W	90.0%	0.99	0.96	EUC-120S315DV(SV)(4)
3500 mA	90 ~ 305 Vac	20~34 Vdc	120 W	90.0%	0.99	0.96	EUC-120S350DV(SV)(4)
4200 mA	90 ~ 305 Vac	17~28 Vdc	120 W	90.0%	0.99	0.96	EUC-120S420DV(SV)(4)
4900 mA	90 ~ 305 Vac	14~24 Vdc	120 W	89.0%	0.99	0.96	EUC-120S490DV(SV)(4)

Notes: (1) Certified input Voltage range100-240Vac
(2) Measured at 100% load and 220 Vac input.
(3) All the models are certificated to KS, except EUC-120S035DV(SV) and EUC-120S045DV(SV)
(4) SELV

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	-	-	1.5 A	Measured at 100% load and 100 Vac input.
	-	-	0.75 A	Measured at 100% load and 220 Vac input.
Inrush current	-	-	65 A	At 220Vac input, 25℃ cold start, duration=1 ms, 10%Ipk-10%Ipk.
Inrush Current(I^2t)	-	-	1 A^2s	
Power Factor	0.90	-	-	At 100Vac-220Vac, 50-60Hz,75% -100%load (90W-120W)
THD	-	-	20%	At 100Vac-277Vac, 50-60Hz,75%-100%load (90W-120W)

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%Io	-	5%Io	At 100% load condition
Ripple and Noise (pk-pk)	-	-	3% V_O	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%Io	-	At 100% load condition. Only this component of ripple is associated with visible flicker.
Startup Overshoot Current	-	-	10%Io	At 100% load condition.
No load Output Voltage Io = 350 mA Io = 450 mA Io = 700 mA Io = 1050 mA Io = 1400 mA Io = 1750 mA Io = 2100 mA Io = 2450 mA Io = 2800 mA Io = 3150 mA Io = 3500 mA Io = 4200 mA Io = 4900 mA	 - - - - - - - - - - - - -	 - - - - - - - - - - - - -	 387 V 300 V 193 V 132 V 102 V 77 V 63 V 57 V 49 V 43.5 V 38 V 32 V 27 V	Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 uF ceramic capacitor and a 10 uF electrolytic capacitor.
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				
Io = 350 mA	411 V	446 V	480 V	Latch mode. The power supply shall return to normal operation only after the power is turn-on again.
Io = 450 mA	319 V	346 V	373 V	
Io = 700 mA	205 V	222 V	240 V	
Io = 1050 mA	136 V	148 V	160 V	
Io = 1400 mA	103 V	112 V	121 V	
Io = 1750 mA	81 V	88 V	96 V	
Io = 2100 mA	68 V	74 V	80 V	
Io = 2450 mA	58 V	64 V	69 V	
Io = 2800 mA	51 V	56 V	61 V	
Io = 3150 mA	45 V	49 V	54 V	
Io = 3500 mA	40 V	44 V	48 V	
Io = 4200 mA	33 V	36 V	40 V	
Io = 4900 mA	28 V	31 V	34 V	

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency				
I_O = 350 mA	88.0%	89.0%	-	Measured at 100% load, 120Vac input, 25℃ ambient temperature, after the unit is thermally stabilized. It will be lower about 1%, if measured immediately after startup.
I_O = 450 mA	88.0%	89.0%	-	
I_O = 700 mA	88.0%	89.0%	-	
I_O = 1050 mA	87.5%	88.5%	-	
I_O = 1400 mA	87.5%	88.5%	-	
I_O = 1750 mA	87.5%	88.5%	-	
I_O = 2100 mA	87.5%	88.5%	-	
I_O = 2450 mA	87.5%	88.5%	-	
I_O = 2800 mA	87.5%	88.5%	-	
I_O = 3150 mA	87.0%	88.0%	-	
I_O = 3500 mA	87.0%	88.0%	-	
I_O = 4200 mA	87.0%	88.0%	-	
I_O = 4900 mA	86.0%	87.0%	-	
Efficiency				
I_O = 350 mA	90.0%	91.0%	-	Measured at 100% load, 220Vac input, 25℃ ambient temperature, after the unit is thermally stabilized. It will be lower about 1%, if measured immediately after startup.
I_O = 450 mA	90.0%	91.0%	-	
I_O = 700 mA	90.0%	91.0%	-	
I_O = 1050 mA	89.5%	90.5%	-	
I_O = 1400 mA	89.5%	90.5%	-	
I_O = 1750 mA	89.5%	90.5%	-	
I_O = 2100 mA	89.5%	90.5%	-	
I_O = 2450 mA	89.5%	90.5%	-	
I_O = 2800 mA	89.5%	90.5%	-	
I_O = 3150 mA	89.0%	90.0%	-	
I_O = 3500 mA	89.0%	90.0%	-	
I_O = 4200 mA	89.0%	90.0%	-	
I_O = 4900 mA	88.0%	89.0%	-	
MTBF	-	250,000 hours	-	Measured at 120Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	67,200 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 ℃	-	+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	-	

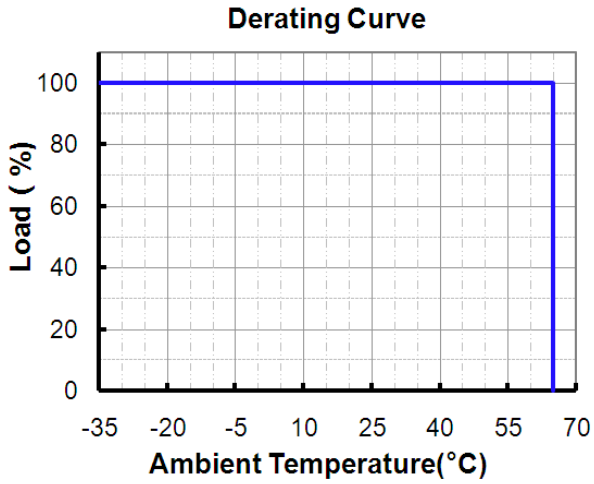
Note: All specifications are typical at 25 °C unless otherwise stated.

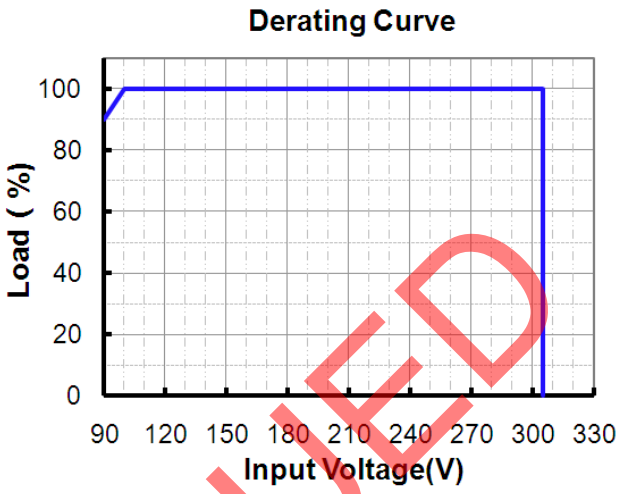
Safety & EMC Compliance

Safety Category	Standard
TUV & CE	EN 61347-1, EN61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
PSE	J 61347-1, J 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 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 61547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

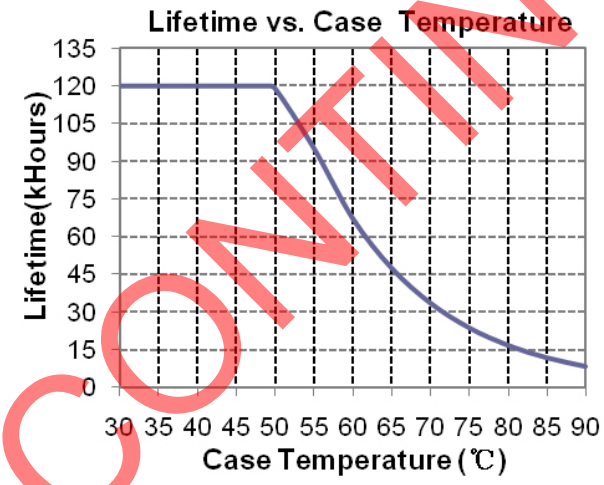
Notes: (1) This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

Derating Curve

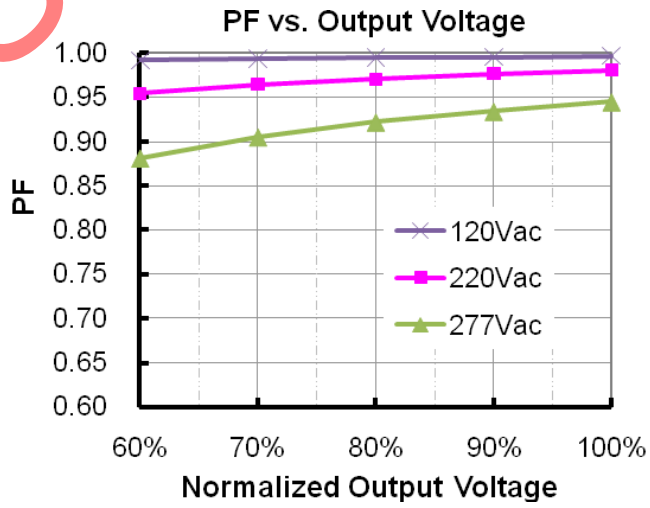




Lifetime vs. Case Temperature Curve

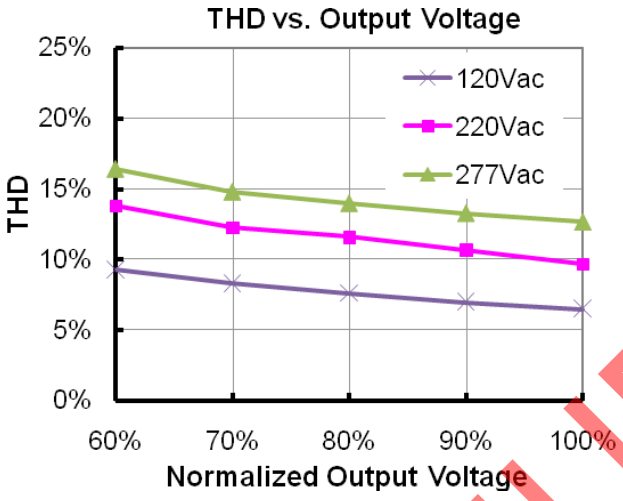


Power Factor Characteristics



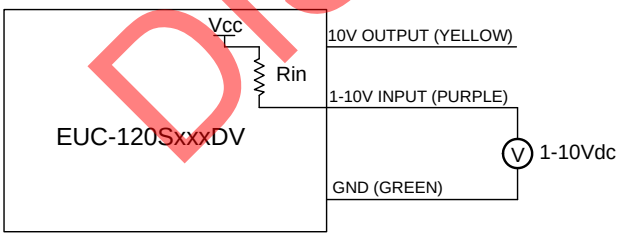
www.inventronics-co.com Tel: 86-571-56565800 Fax: 86-571-86601139 sales@inventronics-co.com

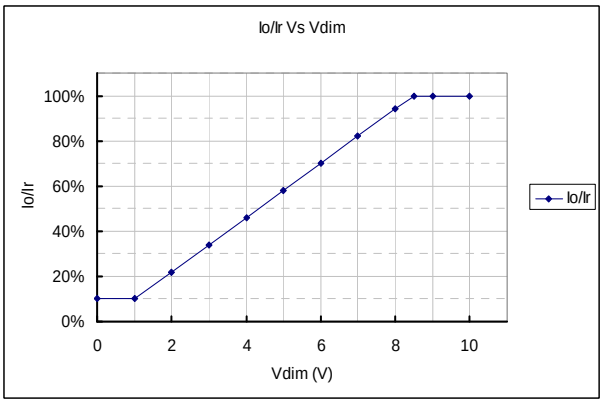
Total Harmonic Distortion



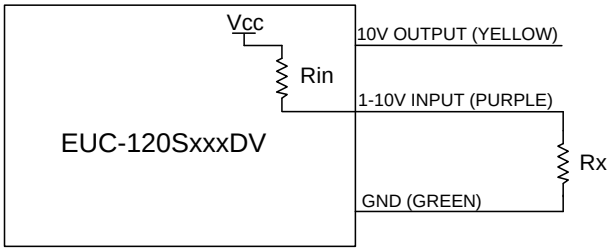
Dimming

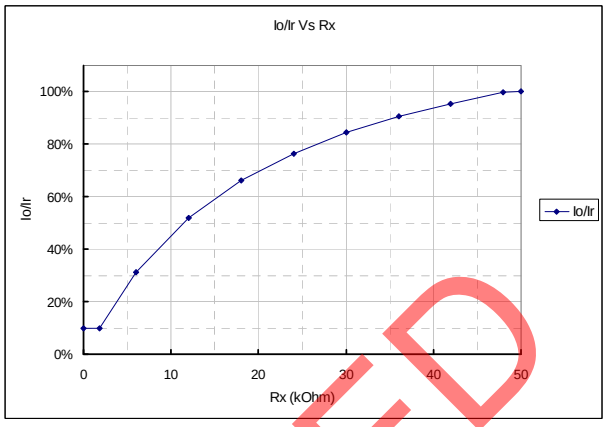
Parameter	Min.	Typ.	Max.	Notes
Vcc	9.5 V	10 V	10.5 V	
10V output source current	0 mA	-	10 mA	
Absolute maximum voltage on the 1~10V input pin	-2 V	-	12 V	
Source current on 1~10V input pin	0 mA	-	0.5 mA	
Value of Rin (the resistor inside the LED driver which locate between the 1-10V input and 10V output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



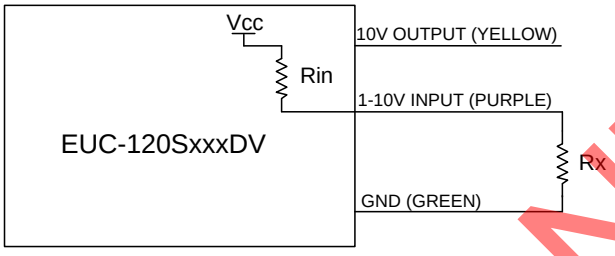


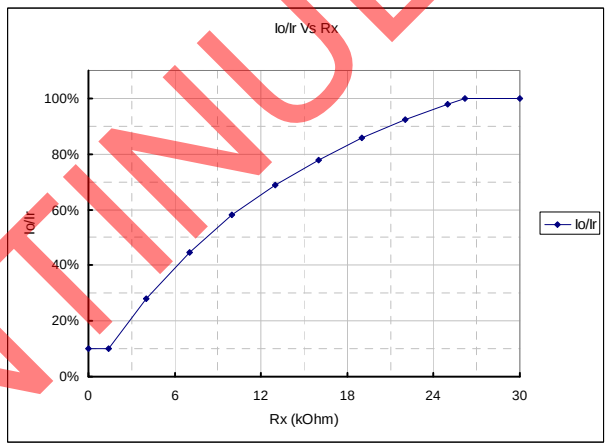
Implementation 1: DC input





Implementation 2: External resistor (Vcc=12V)【EUC-120S490DV】





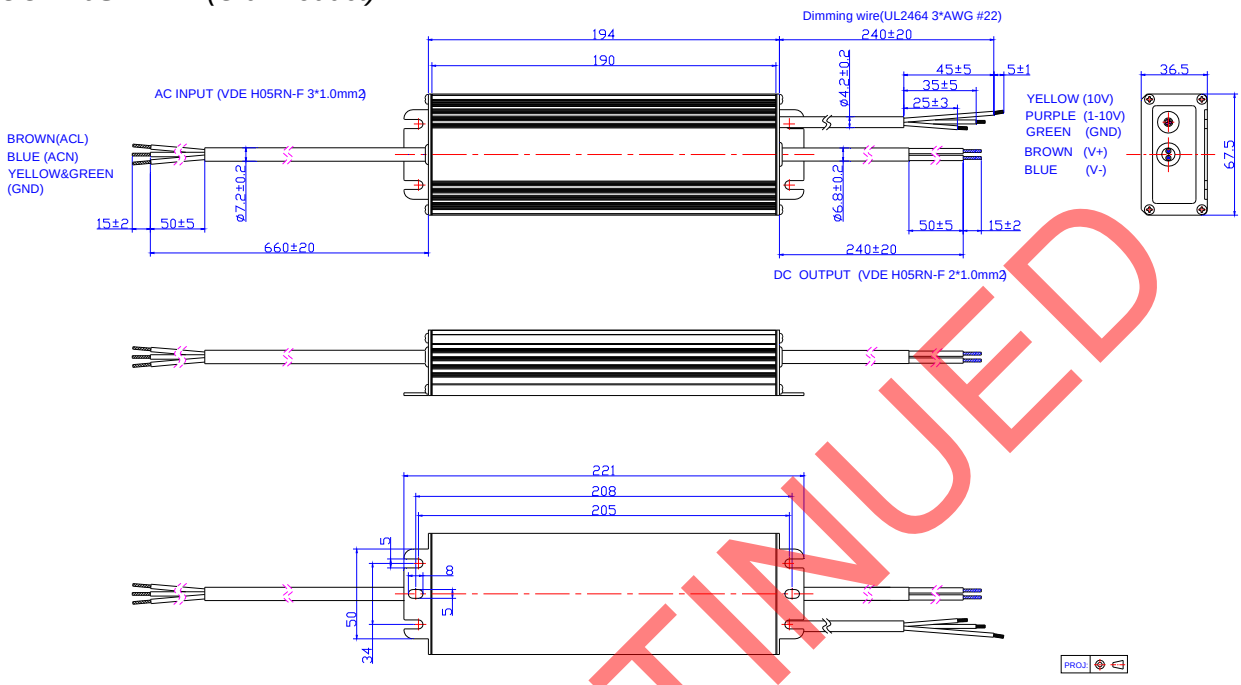
Implementation 3: External resistor (Vcc=15V)【Other Models】

Notes:

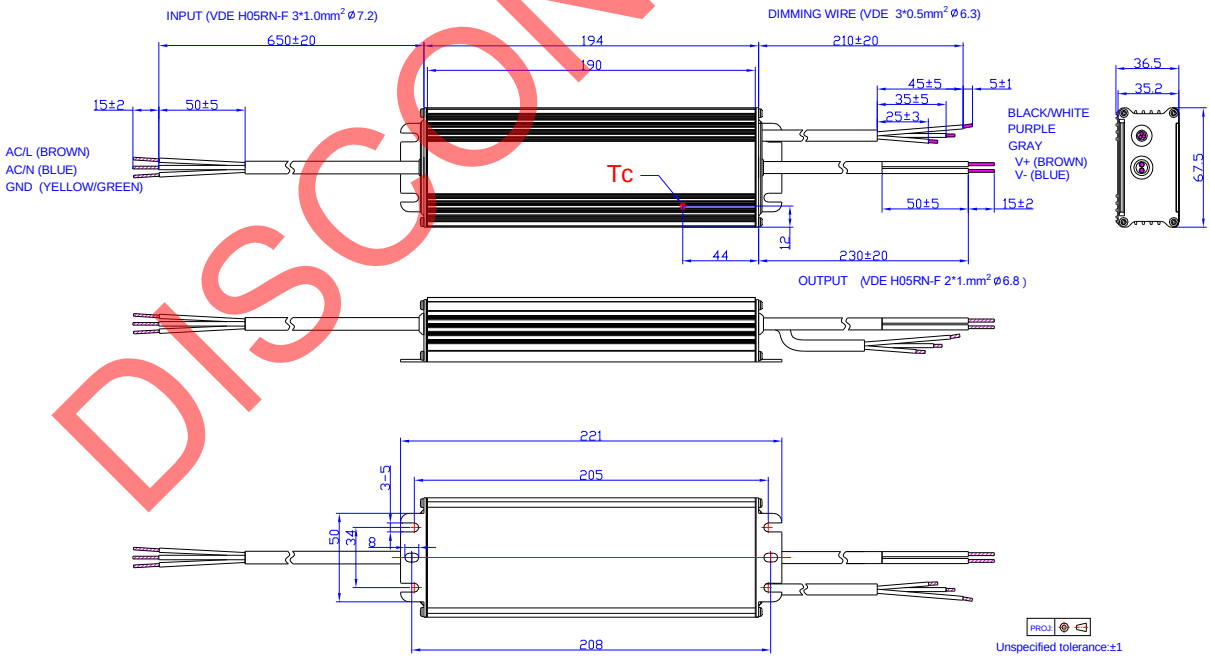
1. If the dimming function is not used, please let the dimming leads floated; the output is full load when the dimming leads are floated.
2. Io is actual output current and Ir is rated current without dimming control.
3. For the driver to operate properly, the load voltage must be maintained above the 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%Ir. When it for 8.5-10V, the output current can maintain about 100%Ir.
6. Do not connect the GND of dimming to the output; otherwise, the LED driver can not work normally.

Mechanical Outline

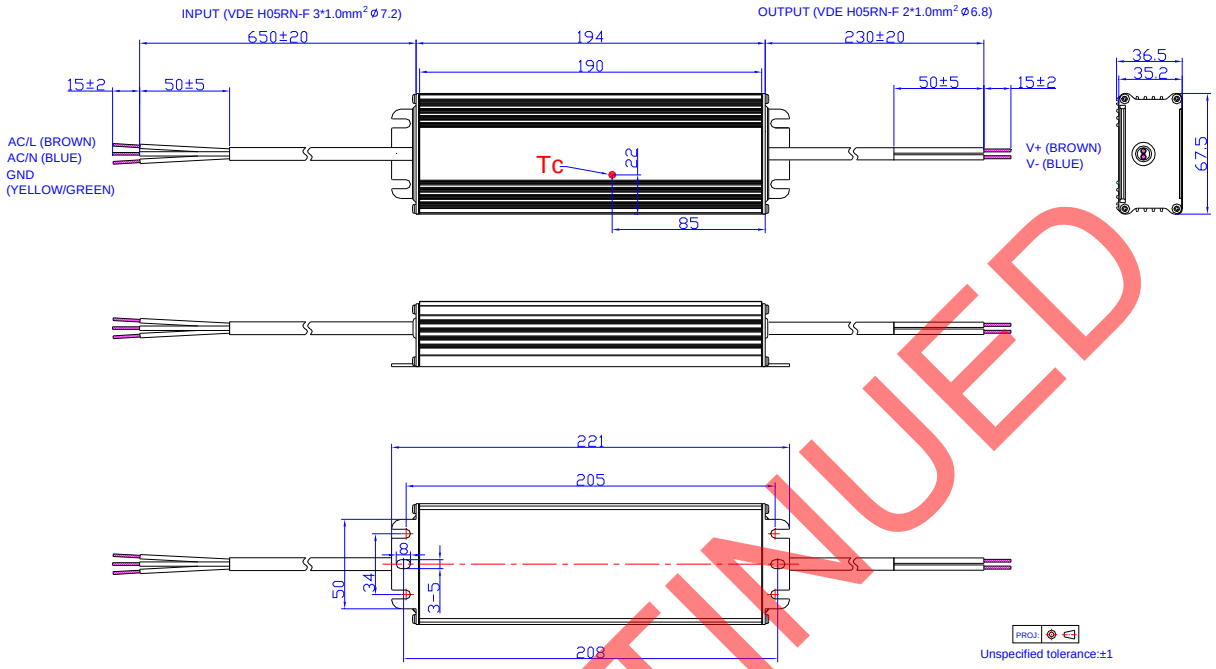
EUC-120SxxxDV (Old Product)



EUC-120SxxxDV (New Product)



EUC-120SxxxSV



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
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 ℃	+65 ℃
		Change the Max. Ambient Temperature in Derating Curve	+70 ℃	+65 ℃
		Change the MTBF data and testing condition	460,000 hours / Measured at EUC-120S140DV(SV)	320,000 hours / Measured at EUC-120S280DV(SV)
		Change the Life Time testing condition	Measured at EUC-120S140DV(SV)	Measured at EUC-120S280DV(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	/	/
2010-10-22	B	Update the part of dimming control	/	/
2010-10-18	C	Add another dimming version with pull-down resistor	/	/
2011-01-14	D	Update MTBF & Life Time Date	For One Model	For Two Models
2011-09-07	E	Dimming Control	/	/
2012-06-11	F	Mechanical Outline	/	Updated
		Life time curve	/	Added
2012-7-17	G	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
2012-7-24	H	External resistor in pull-up resistor	/	Updated
2012-9-21	I	Inrush Current(I^2t)	/	Added
		MTBF, Life time	/	Typical Value added
		Life time Curve	/	Updated
		Min PF, THD Max	/	Added
2013-03-25	J	Efficiency of Model 4900mA	/	1% lower
		Turn-on delay time @120Vac	Typ 0.6s; Max1.5s	Typ 1.2s; Max 2.0s
		Turn-on delay time @220Vac	Typ 0.6s; Max1.0s	Typ 0.6s; Max 1.2s
		PF Curve	/	Added
		THD Curve	/	Added
		OTP	/	Updated
		Mechanical Outline	/	Updated

Revision History (Continued)

Change Date	Rev.	Description of Change		
		Item	From	To
2016-04-14	K	CCC, PSE, KS	/	Added
		Format	/	Updated
		Features	/	Updated
		Description	/	Updated
		Models	Notes	Updated
		General Specifications	Case Temperature	Operating Case Temperature for Safety Tc_s
		General Specifications	Operating Case Temperature for Warranty Tc_w	Added
		General Specifications	Storage Temperature	Added
		Environmental Specifications	/	Delete
		With pull-down resistor: (The model number has a suffix - 0040)	/	Delete
		Mechanical Outline	/	Updated
2019-08-24	L	TUV Logo	/	Updated
		CCC Logo	/	Deleted
		PSE Logo	/	Updated
		Features	Input surge protection	Updated
		Description	/	Updated
		Input Specifications(PF)	50-60Hz	Added
		Input Specifications (THD)	50-60Hz	Added
		Safety &EMC Compliance	TUV	Added
		Safety &EMC Compliance	CB	Added
		Safety &EMC Compliance	PSE	Added
		Safety &EMC Compliance	KS	Updated
		Safety &EMC Compliance	EN 61000-4-5	Updated
		Mechanical Outline	/	Updated
		RoHS Compliance	/	Updated