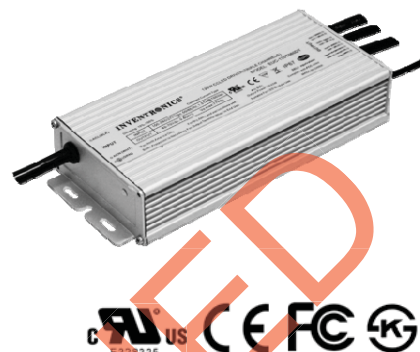


Features

- Ultra High Efficiency (Up to 92%)
- Three Channels Output
- Active Power Factor Correction (0.99 Typical)
- Constant Current Output
- Lightning Protection
- All-Around Protection: SCP, OTP, OVP
- Waterproof (IP67) and Damp & Wet Location
- TYPE HL, for use in a Class I, Division 2 hazardous(Classified) location
- 5 years warranty



Description

The EUC-120TxxxDT(ST) series is a 120W, three-channel, constant-current LED driver that operates from 90-305 Vac input with excellent power factor. It is created for many lighting applications including for flood, tunnel and street. 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 (1)	Input Voltage Range(2)	Output Voltage Range	Max. Output Power	Typical Efficiency (3)	Power Factor		Model Number
					120Vac	220Vac	
350 mA	90 ~ 305 Vac	57~114Vdc	120 W	92.0%	0.99	0.94	EUC-120T035DT(ST)
450 mA	90 ~ 305 Vac	45~90 Vdc	120 W	92.0%	0.99	0.94	EUC-120T045DT(ST)
600 mA	90 ~ 305 Vac	40~70 Vdc	126 W	91.0%	0.99	0.94	EUC-120T060DT(ST)
700 mA	90 ~ 305 Vac	29~57 Vdc	120 W	91.0%	0.99	0.94	EUC-120T070DT(ST)
1050 mA	90 ~ 305 Vac	19~38 Vdc	120 W	90.0%	0.99	0.94	EUC-120T105DT(ST) ⁽⁴⁾
1400 mA	90 ~ 305 Vac	14~29 Vdc	120 W	89.5%	0.99	0.94	EUC-120T140DT(ST) ⁽⁵⁾

Note: (1) The output current is adjustable at factory from 50% to 100%

(2) Certified input Voltage range 100-240Vac for CE only

(3) Measured at 100% load and 220 Vac input

(4) Class 2 output (USR) for Dry & Damp Location, Non-Class 2 output (CNR)

(5) Class 2 output (USR & CNR) for Dry and Damp Location, Class 2 output (CNR only) for Wet Location

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 V	-	305 V	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	1 mA	At 277Vac 60Hz input

Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Input AC Current	-	-	1.51 A	Measured at 100%load and 100 Vac input.
	-	-	0.7 A	Measured at 100%load and 220 Vac input.
Inrush current	-	-	65 A	At 220Vac input, 25°C cold start, duration=0.8 ms, 10%Ipk-10%Ipk.
Inrush Current(I ² t)	-	-	2.4 A ² s	
PF	0.90	-	-	At 100-277Vac, 50-60Hz, 75%-100%load
THD	-	-	20%	

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output channel	-	3	-	
Output Current Tolerance	-5%	-	5%	
No-load Output Voltage EUC-120T035DT(ST) EUC-120T045DT(ST) EUC-120T060DT(ST) EUC-120T070DT(ST) EUC-120T105DT(ST) EUC-120T140DT(ST)	- - - - - -	- - - - - -	120V 97V 77V 64V 51V 50.5V	Hiccup mode.
Output Current Ripple (pk-pk)	-	-	15% I _O	Peak to peak value, rated by output current. At full load condition.
Output Overshoot / Undershoot	-	-	10%	When power on or off.
Line Regulation	-	-	±1%	
Load Regulation	-	-	±3%	
Turn-on Delay Time	-	2.0 s	3.0 s	Measured at 120Vac input, 75%-100%load
	-	2.0 s	3.0 s	Measured at 220Vac input, 75%-100%load
Temperature Coefficient	-	0.03%/°C	-	Case temperature = 0°C ~T _C max

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

Protection Functions

Parameter	Min.	Typ.	Max.	Notes
Over Temperature Protection	-	120 °C	-	When OTP occurs, the output current decreases down to the half of the normal output current. The output shall be auto recovery when case temperature becomes normal.
Short Circuit Protection	Single channel short does not affect the normal work of other channels. The driver recovers after short is removed and AC input recycled. Dual or triple channel short latches the driver and it recovers after the short is removed.			

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency				
Io=350 mA	87.0%	89.0%	-	Measured at 100%load, 120Vac input, 25°C ambient temperature, after the unit is thermally stabilized.
Io=450 mA	87.0%	89.0%	-	
Io=600 mA	87.0%	89.0%	-	
Io=700 mA	86.5%	88.5%	-	It will be about 2% lower, if measured immediately after startup.
Io=1050 mA	86.5%	88.5%	-	
Io=1400 mA	85.5%	87.5%	-	
Efficiency				
Io=350 mA	90.0%	92.0%	-	Measured at 100%load, 220Vac input, 25°C ambient temperature, after the unit is thermally stabilized.
Io=450 mA	90.0%	92.0%	-	
Io=600 mA	89.0%	91.0%	-	
Io=700 mA	89.0%	91.0%	-	It will be about 2% lower, if measured immediately after startup.
Io=1050 mA	88.0%	90.0%	-	
Io=1400 mA	87.5%	89.5%	-	
Efficiency				
Io=350 mA	90.0%	92.0%	-	Measured at 100%load, 277Vac input, 25°C ambient temperature, after the unit is thermally stabilized.
Io=450 mA	90.0%	92.0%	-	
Io=600 mA	89.0%	91.0%	-	
Io=700 mA	89.0%	91.0%	-	It will be about 2% lower, if measured immediately after startup.
Io=1050 mA	88.0%	90.0%	-	
Io=1400 mA	87.5%	89.5%	-	
MTBF	-	288,000 Hours	-	Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	98,000 Hours	-	Measured at 220Vac input, 80%Load; Case temperature=60°C @ Tc point. See lifetime vs. Tc curve for the details
Operating Case Temperature for Safety Tc_s	-40°C		90 °C	
Operating Temperature	-40 °C		+70°C	Case temperature for 5 years warranty
Storage Temperature	-40 °C	-	+85 °C	Humidity: 5% RH to 100% RH
Dimensions				With mounting ear
Inches (L × W × H)	7.40 × 3.46 × 1.5			8.35 × 3.46 × 1.5
Millimeters (L × W × H)	188 × 88 × 38			212 × 88 × 38
Net Weight	-	1240 g	-	

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

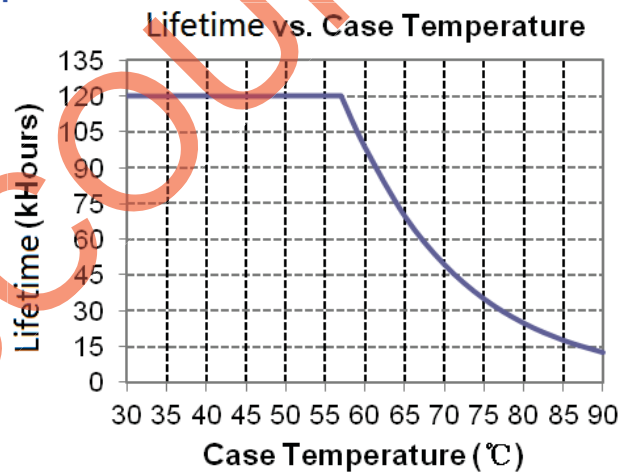
Safety & EMC Compliance

Safety Category	Standard
UL/CUL	UL8750, UL1012, UL1310 Class 2, CSA-C22.2 No. 107.1, CSA C22.2 NO. 223-M91 Class 2
CE	EN 61347-1, EN61347-2-13
KS	KS C 7655

Safety & EMC Compliance (Continued)

EMI Standards	Notes
EN 55015	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
FCC Part 15	ANSI C63.4 Class B
EMS Standards	Notes
EN 61000-4-2	Electrostatic Discharge (ESD): 15 kV air discharge, 8 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

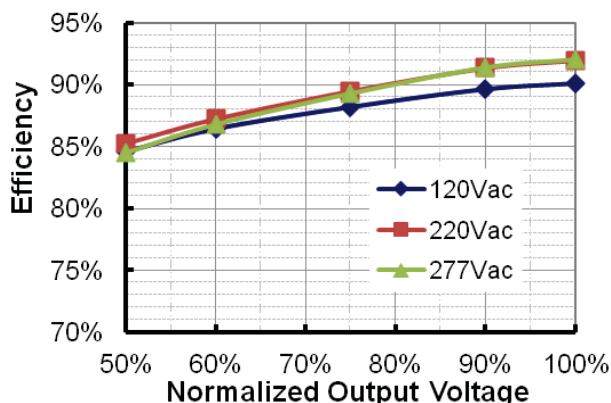
Lifetime vs. Case Temperature Curve



Efficiency vs. Load

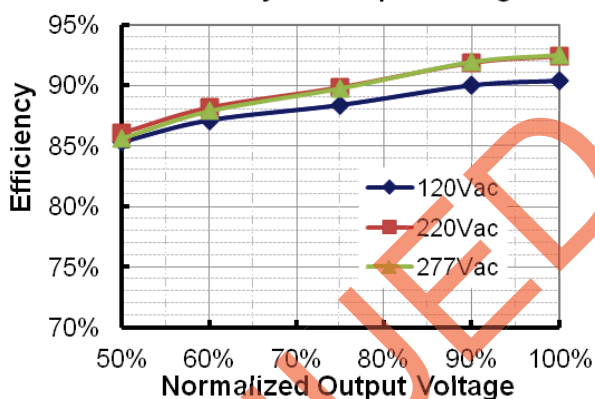
EUC-120T035DT(ST)

Efficiency vs. Output Voltage



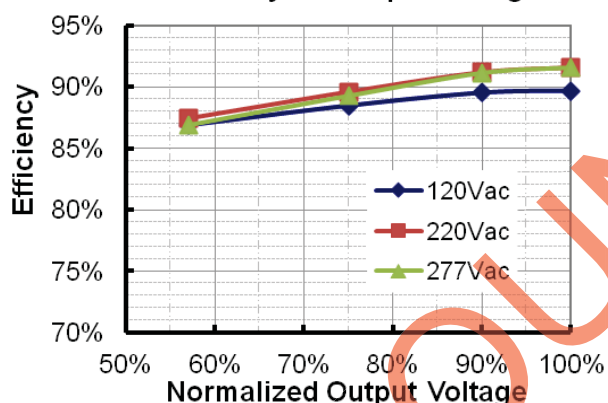
EUC-120T045DT(ST)

Efficiency vs. Output Voltage



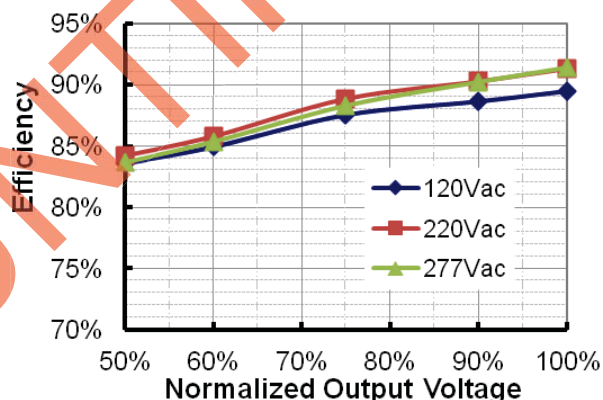
EUC-120T060DT(ST)

Efficiency vs. Output Voltage



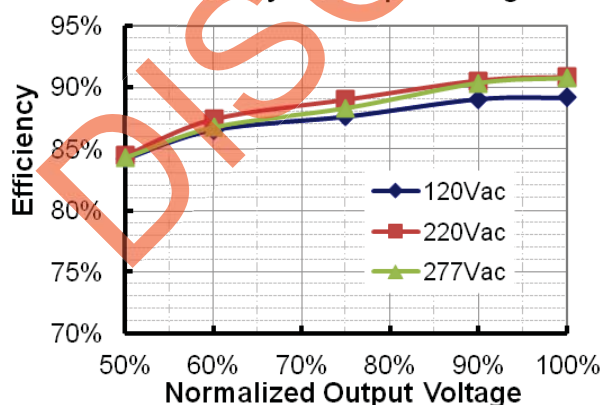
EUC-120T070DT(ST)

Efficiency vs. Output Voltage



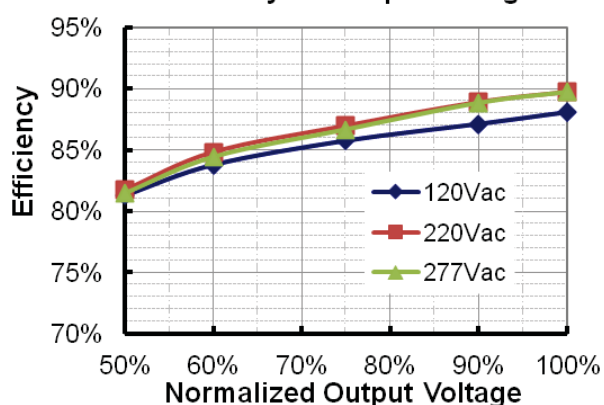
EUC-120T105DT(ST)

Efficiency vs. Output Voltage

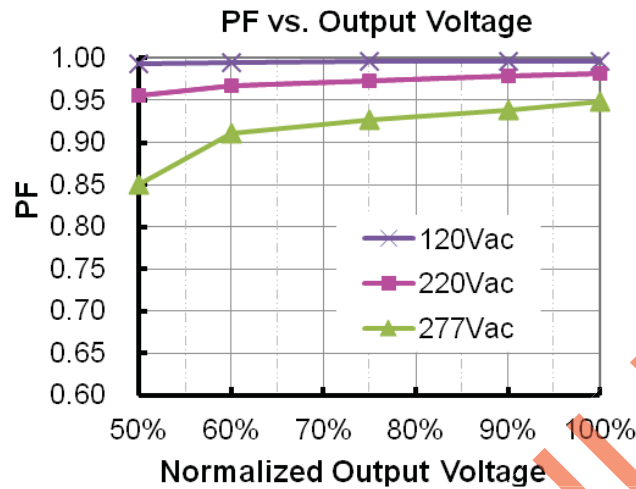


EUC-120T140DT(ST)

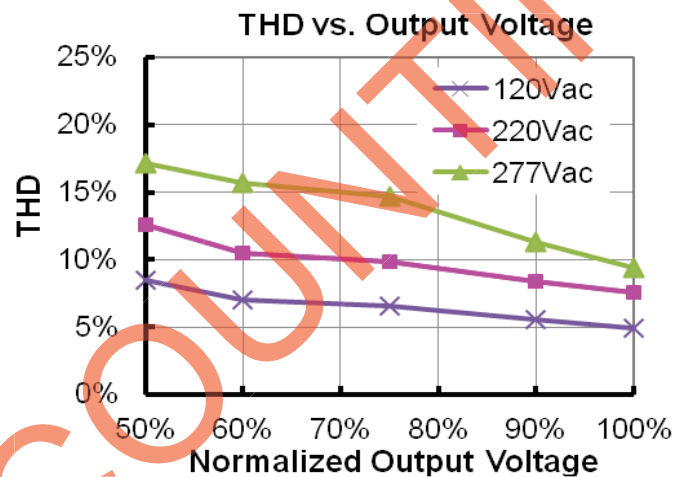
Efficiency vs. Output Voltage



Power Factor Characteristics



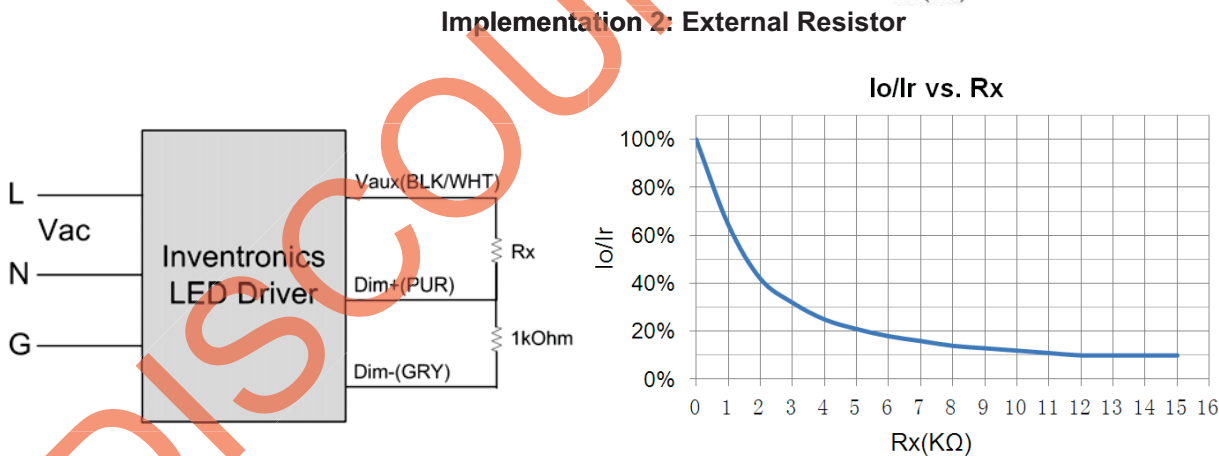
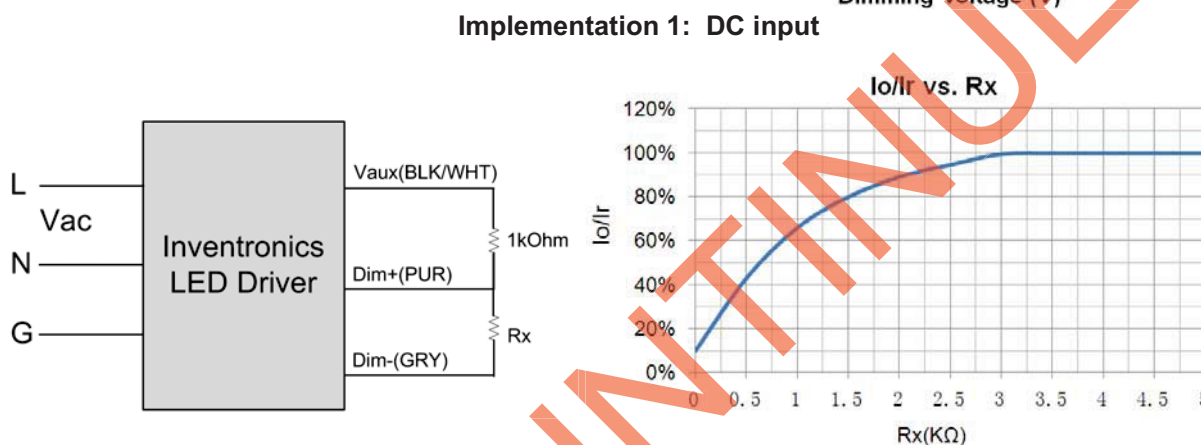
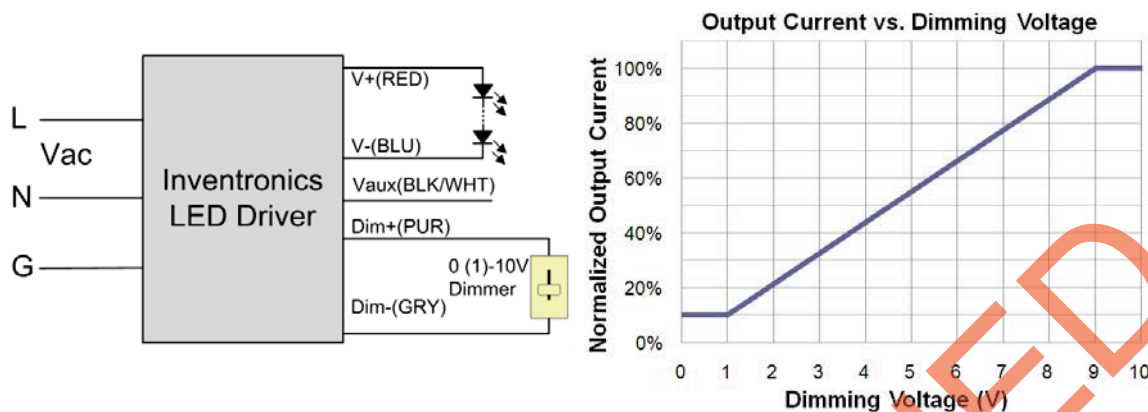
Total Harmonic Distortion



Dimming Control (On the secondary side)

Parameter	Min.	Typ.	Max.	Notes
12V output voltage	10.8 V	12 V	13.2 V	
12V output source current	0 mA	-	20 mA	
Absolute maximum voltage on the 1~10V input pin	0 V	-	12 V	
Source current on 1~10V input pin	0 uA	-	200 uA	

The dimmer control is operated from an input signal of 0 –10 Vdc. Recommended implementations are provided below.

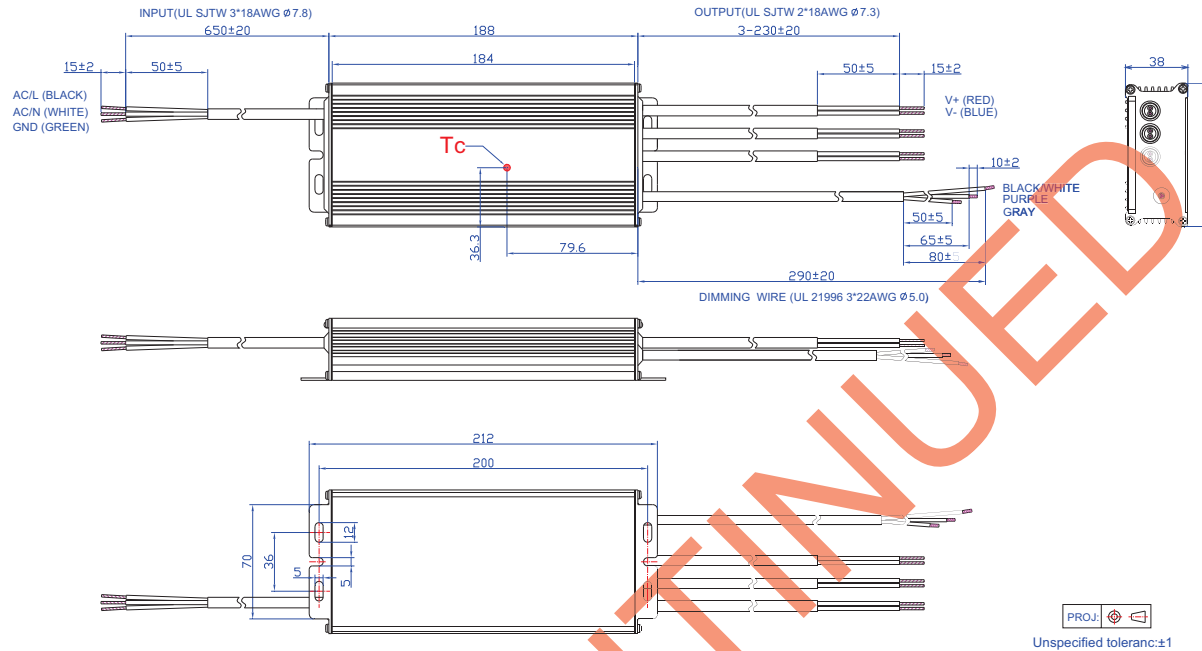


Notes:

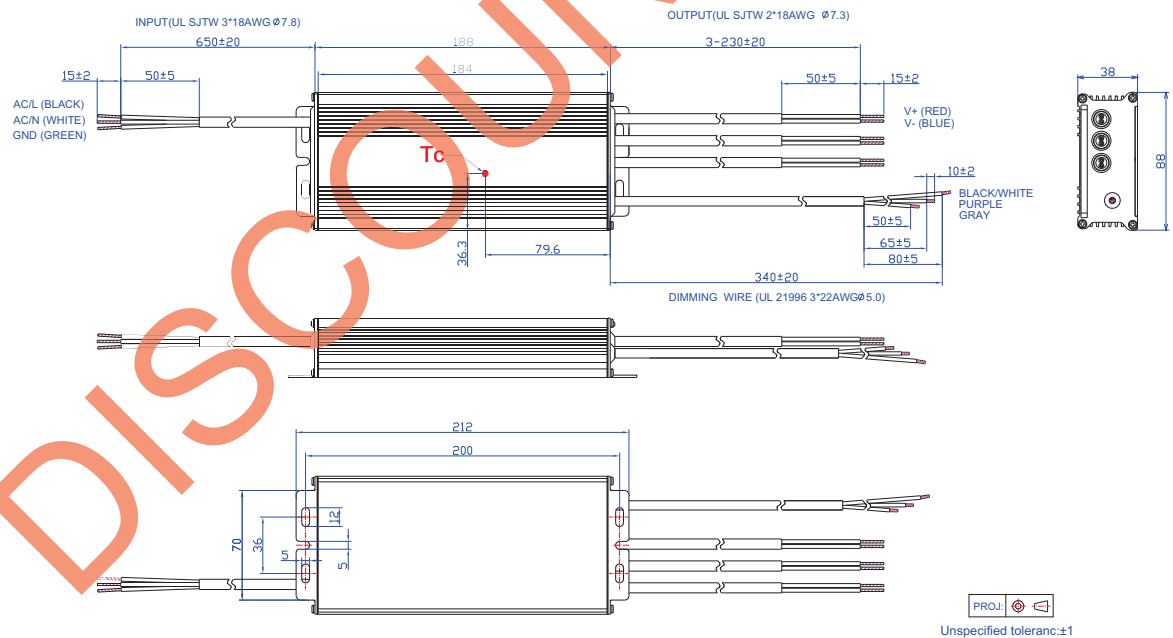
1. I_o is actual output current and I_r is rated current without dimming control.
2. For the driver to operate properly, the load voltage must be maintained above the minimum voltage threshold (approx. 50% of the max. output voltage for any given model).
3. If the output voltage is maintained above 50% of the maximum output voltage, the dimming control may be operated over the entire 1-10V range with output current varying from 10% to 100% of I_r .
4. The dimming signal is allowed to be less than 1V, however, when it for 0-1V, the output current is 10% I_o .
5. Do not connect the GND of dimming to the output; otherwise, the LED driver cannot work normally.
6. If 0-10V dimming is not used, Dim + can be either open or connected to Vaux.

Mechanical Outline

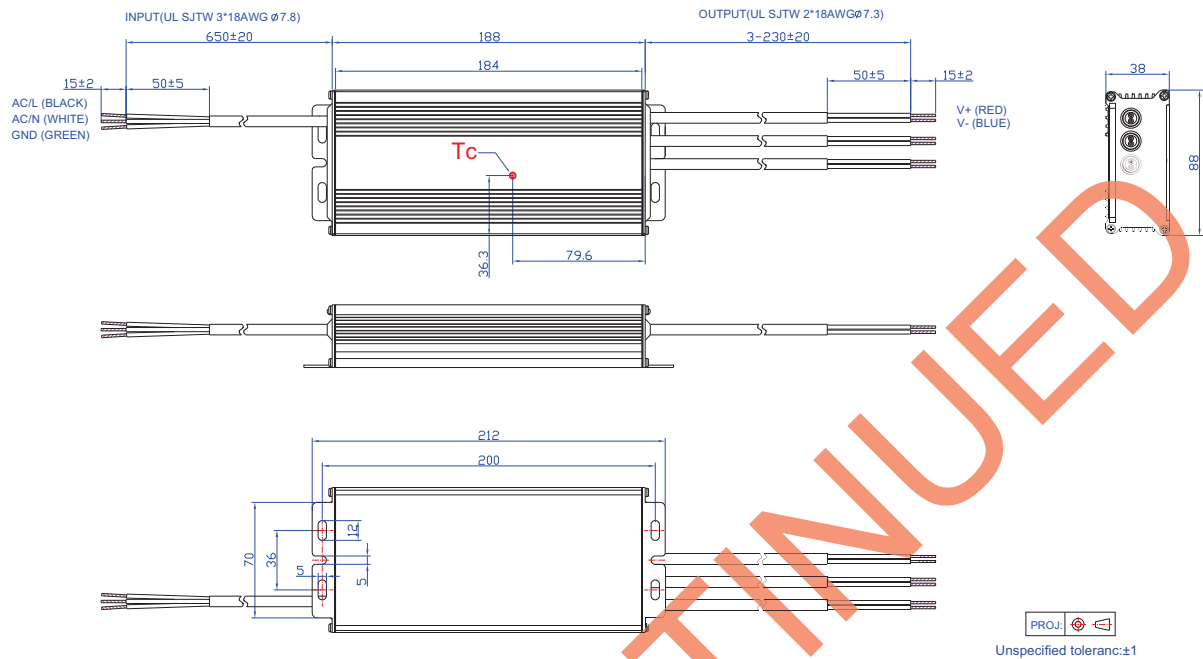
EUC-120T035/045/070DT



EUC-120T060/105/140DT



EUC-120TxxxST



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
2012-03-06	A	Datasheets Release	/	/
2012-05-02	B	450 mA Model	/	Added
		1400 mA Model	/	Added
		Output Power---600mA Updated	120W	126W
		No Load Output Voltage	/	Updated
		Efficiency Curve, PF Curve	/	Corrected
		Class 2	/	Corrected
2012-05-17	C	Max of No Load Voltage	/	Added
		Operating Temperature	-35℃	-40℃
2012-05-22	D	Output Current Ripple Max	30% Io	15%Io
		Inrush Current	50 A	65 A
2012-07-09	E	Derating Curve	/	Updated
2012-07-17	F	Max Case Temperature	/	Updated
2012-09-05	G	Derating Curve	/	Updated
		Life time Curve	/	Updated
		Turn-on delay time @120Vac	Type 1.0s, max 3.0s	Type 1.0s, max 2.0s
		Turn-on delay time @220Vac	Type 1.0s, max 3.0s	Type 0.5s, max 1.5s
		PF Min	/	Added
		THD Max	/	Added
		Inrush Current(I ² t)	/	Added
		Temperature Coefficient	/	Added
2013-09-09	H	Output Current Ripple	/	Updated
		Temperature Coefficient	0.02%/°C	0.03%/°C
		Over Temperature Protection-Tc point corrected	115 °C	120 °C
		Turn-on delay time @120Vac	Type 1.0s, max 2.0s	Type 2.0s, max 3.0s
		@220Vac	Type 0.5s, max 1.5s	Type 2.0s, max 3.0s
		Derating curve	/	Updated
		Life time	53,500 Hours	98,000 Hours
		Life time curve	/	Updated
		Efficiency Min value of all models Model 1400mA Model 600 mA@120Vac Typical Model 1050 mA@120Vac Typical	 / / 88.5% 87%	 1% lower 0.5% lower 89% 88.5%

Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2013-09-09	H	Efficiency curves of other models except 350mA	/	Added
		PF curve	/	Added
		THD curve	/	Added
		Io/ rv s.Rx Dimming curve	/	Added
2013-10-10	I	No-load Output Voltage	/	Updated
2018-04-16	J	KS	/	Added
		Features	/	Updated
		Description	/	Updated
		Models	Notes	Updated
		No-load Output Voltage	/	Updated
		Input Specifications	PF/THD	Updated
		Output Specifications	Turn-on Delay Time	Updated
		Output Specifications	Temperature Coefficient	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
		General Specifications	With mounting ear	Added
		Environmental Specifications	/	Deleted
		Safety & EMC Compliance	/	Updated
		Derating Curve	/	Updated
		Mechanical Outline	/	Updated