

Features

- High Efficiency (Up to 91.0%)
- Three Channels Output
- Constant Current Output
- 0-10V Dimming Control
- Input Surge Protection: 4kV line-line, 6kV line-earth
- All-Around Protection: OVP, SCP, OTP
- Suitable for UL Dry / Damp / Wet Location
- Class 2 Output
- TYPE HL, for use in a Class I, Division 2 hazardous (Classified) location
- 5 Years Warranty



Description

The *EUC-180T210DT(ST)* series is a 180W, three-channel, constant-current outdoor LED driver that operates from 90-305 Vac input with excellent power factor. It is created for many lighting applications including high bay, high mast, sports and roadway. 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	
2100 mA	90 ~ 305 Vac 127 ~ 300 Vdc	14~28.5Vdc	180 W	91.0%	0.99	0.96	EUC-180T210DT(ST)

Notes: (1) Certified input voltage range: 100-277Vac /127-300Vdc

(2) Measured at 100% load and 220Vac input.

(3) Class 2 output

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	90 Vac	-	305 Vac	127~300 Vdc
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.75 MU	UL8750; 277Vac/ 60Hz
Input AC Current	-	-	2.55 A	Measured at 100% load and 100Vac input.
	-	-	1.16 A	Measured at 100% load and 220Vac input.
Inrush Current(I ² t)	-	-	3.15 A ² s	At 220Vac input 25°C cold start, duration= 1.02 ms, 10%lpk-10%lpk. See Inrush Current Waveform for the details.
PF	0.90	-	-	At 100-277Vac, 50-60Hz, 75%-100% load (135-180W)
THD	-	-	20%	

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Channel	-	3	-	
Output Current Tolerance	-5%I _O	-	5%I _O	100%load
Total Output Current Ripple (pk-pk)	-	5%I _O	10%I _O	100%load, 20 MHz BW
Output Current Ripple at < 200 Hz (pk-pk)	-	2%I _O	-	100%load
Startup Overshoot Current	-	-	10%I _O	100%load
No load Output Voltage	-	-	37 V	
Line Regulation	-	-	±0.5%	Measured at 100%load
Load Regulation	-	-	±1.5%	
Turn-on Delay Time	-	1.0 s	2.0 s	Measured at 120V and 220Vac input.
Temperature Coefficient	-	0.03%/°C	-	Case temperature = 0°C ~T _c max
12V Auxiliary Output Voltage	10.8 V	12 V	13.2 V	
12V Auxiliary Output Source Current	0 mA	-	20 mA	Return terminal is "Dim-"

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

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 120 Vac input	86.5%	88.5%	-	Measured at 100%load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
Efficiency at 220 Vac input	89.0%	91.0%	-	Measured at 100%load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
Efficiency at 277 Vac input	89.5%	91.5%	-	Measured at 100%load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
MTBF	-	257,000 Hours	-	Measured at 220Vac input, 80%load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	71,000 Hours	-	Measured at 220Vac input, 80%load and 70°C case temperature; See lifetime vs. T _c curve for the details
Operating Case Temperature for Safety T _{c_s}	-40°C	-	+89°C	
Operating Case Temperature for Warranty T _{c_w}	-40°C	-	+75°C	Case temperature for 5 years warranty
Storage Temperature	-40°C	-	+85°C	Humidity: 5% RH to 100% RH
Dimensions Inches (L × W × H) Millimeters (L × W × H)	8.41 × 3.23 × 1.50 213.5 × 82 × 38			With mounting ear 9.47 × 3.23 × 1.50 240.5 × 82 × 38
Net Weight	-	1400 g	-	

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

Dimming Specifications

Parameter	Min.	Typ.	Max.	Notes
Absolute Maximum Voltage on the Vdim (+) Pin	-20 V	-	20 V	
Source Current on Vdim (+)Pin	100 uA	140 uA	180 uA	
Dimming Output Range	10%I _O	-	100%I _O	
Recommended Dimming Input Range	0 V	-	10 V	

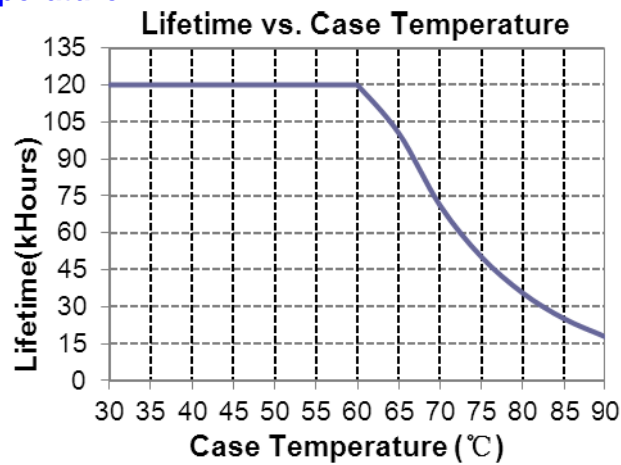
Note: All specifications are typical at 25 °C unless stated otherwise.

Safety & EMC Compliance

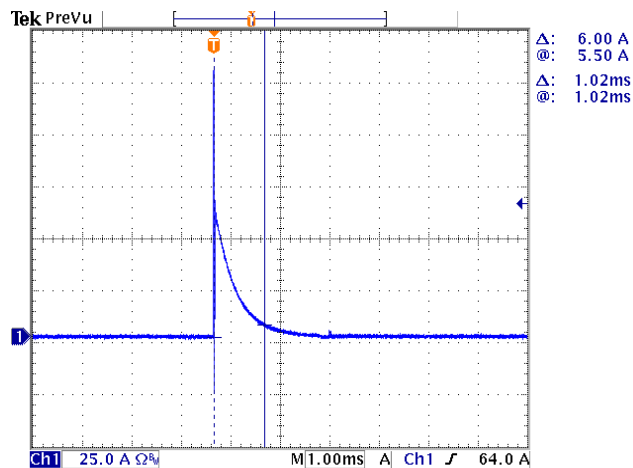
Safety Category	Standard
UL/CUL	UL 8750, CAN/CSA-C22.2 No. 250.13
KS	KS C 7655
EMI Standards	Notes
FCC Part 15 ⁽¹⁾	ANSI C63.4 Class B This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: [1] this device may not cause harmful interference, and [2] this device must accept any interference received, including interference that may cause undesired Operation.
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 ⁽²⁾
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.

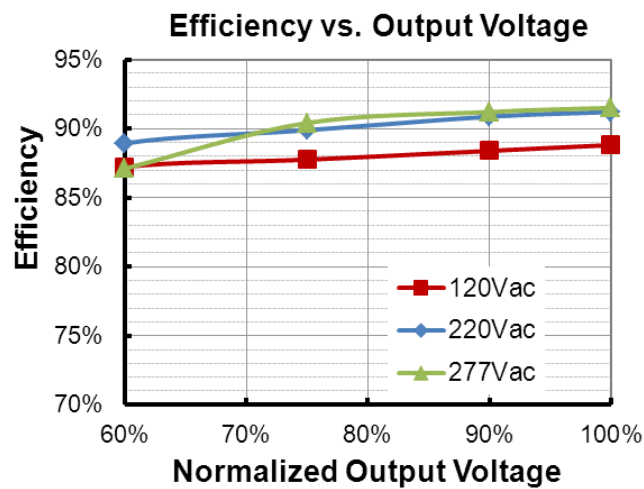
Lifetime vs. Case Temperature



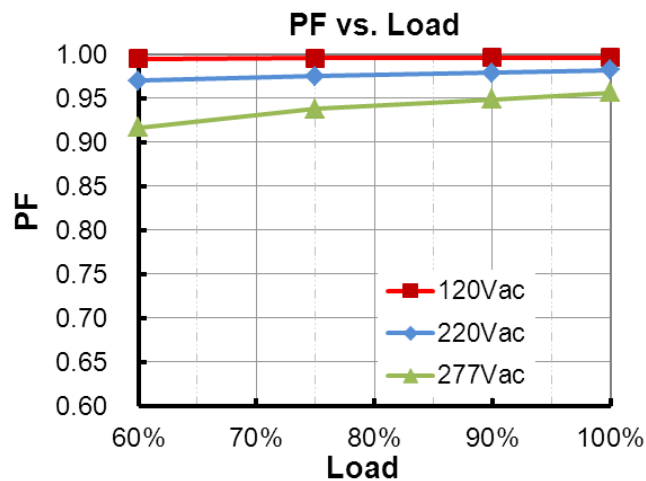
Inrush Current Waveform



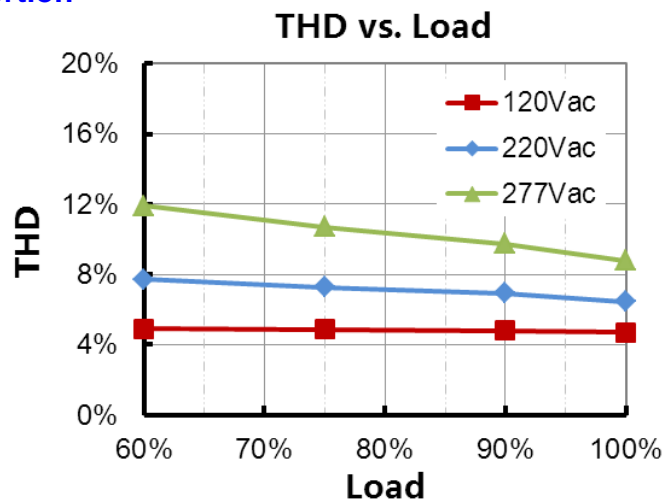
Efficiency vs. Load



Power Factor



Total Harmonic Distortion



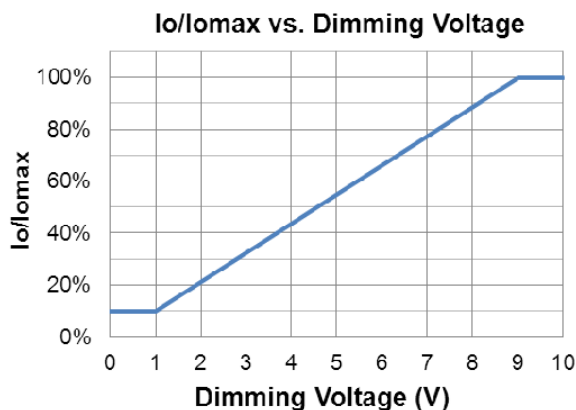
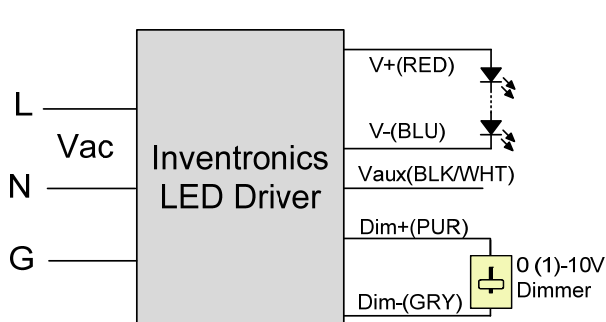
Protection Functions

Parameter	Notes
Over Temperature Protection	Decreases output current, returning to normal after over temperature is removed.
Short Circuit Protection	Auto Recovery. No damage will occur when any output is short circuited. The output shall return to normal when the fault condition is removed.
Over Voltage Protection	Limits output voltage at no load and in case the normal voltage limit fails.

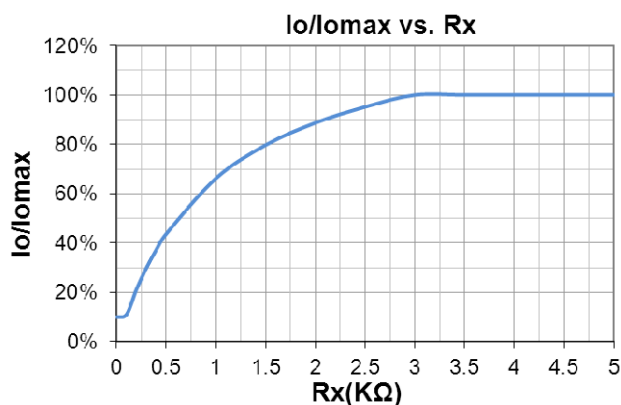
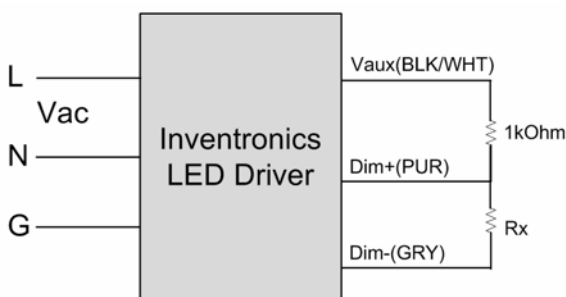
Dimming

● 0-10V Dimming

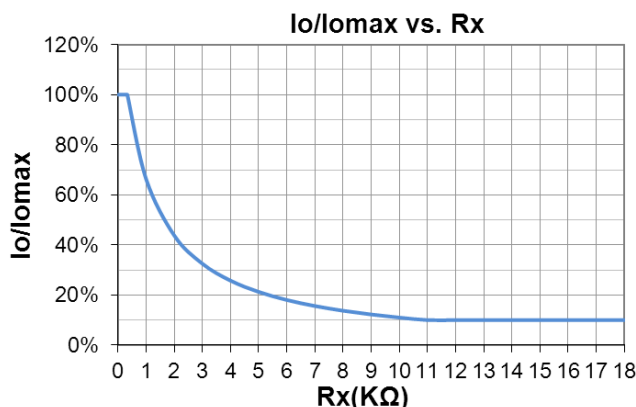
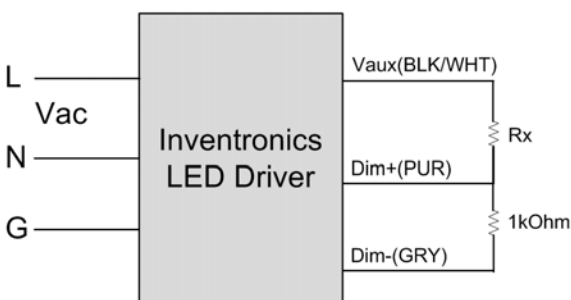
Recommended implementations of the dimming control are provided below.



Implementation 1: DC Input



Implementation 2: External Resistor



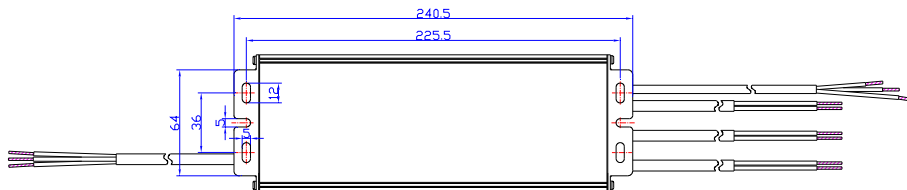
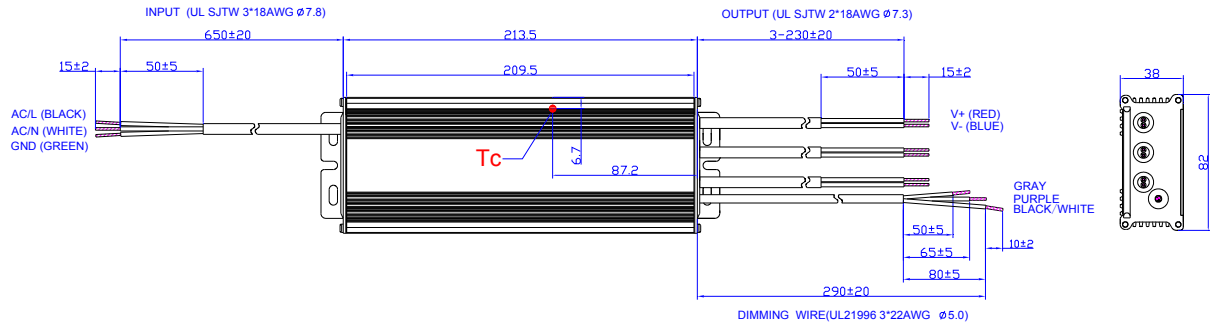
Implementation 3: External Resistor

Notes:

1. The dimmer can also be replaced by an active 0-10V voltage source signal or passive components like resistors and zener.
2. Do NOT connect Dim- to the output V- or V+, otherwise the driver will not work properly.
3. If 0-10V dimming is not used, Dim + can be either open or connected to Vaux.

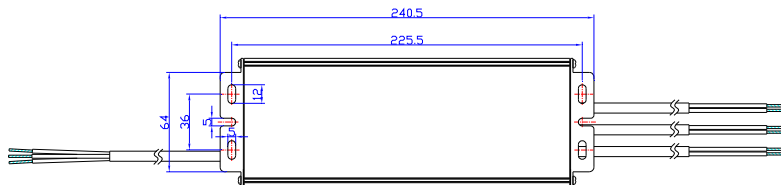
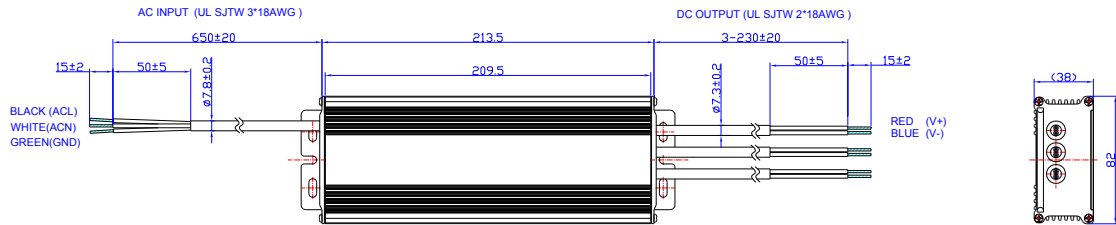
Mechanical Outline

EUC-180T210DT



Unspecified tolerance: ± 1

EUC-180T210ST



Unspecified tolerance: ± 1

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
2015-07-08	A	Datasheets Release	/	/
2015-08-19	B	Lifetime	/	Updated
2018-03-21	C	KS	/	Added
		Features	5 Years Warranty	Added
		Description	/	Updated
		Input Specifications	PF/THD	Updated
		Temperature Coefficient	Max 0.03%/°C	Typ0.03%/°C
		General Specifications	Operating Case Temperature for Warranty Tc_w	Updated
		Dimensions	With mounting ear	Updated
		Safety &EMC Compliance	/	Updated
		Mechanical Outline	/	Updated
2019-03-13	D	General Specifications - Net Weight	1270g	1400g