Features

- Ultra High Efficiency (Up to 91%)
- Ultra High Input Voltage (312~528Vac)
- Constant Voltage Output
- Input Surge Protection: DM 4kV, CM 6kV
- All-Around Protection: SCP, OTP, OVP, OCP
- IP67 and UL Dry / Damp / Wet Location
- SELV Output
- TYPE HL, for use in a Class I, Division 2 hazardous (Classified) location

Description

The *ETV-300SxxxST* series is a 300W, constant-voltage LED driver that operates from 312-528 Vac input with excellent power factor. It is created for many lighting applications including high bay, high mast, horticultural and roadway, etc. The high efficiency of these drivers enables them to run cooler, significantly improving reliability and extending product life. To ensure trouble-free operation, protection is provided against short circuit, over temperature, over voltage, and over current.

Models

Output Voltage	Input Voltage Range	Output Current Range	Max. Output Power	Typical Efficiency (1)	Power Factor		Model Number (2)
					347Vac	480Vac	
24 Vdc	312~ 528 Vac	0~12.5 A	300 W	90%	0.96	0.94	ETV-300S024ST
28 Vdc	312~ 528 Vac	0~10.7 A	300 W	91%	0.96	0.94	ETV-300S028ST
36 Vdc	312~ 528 Vac	0~8.33A	300 W	91%	0.96	0.94	ETV-300S036ST
42 Vdc	312~ 528 Vac	0~7.15 A	300 W	91%	0.96	0.94	ETV-300S042ST
48 Vdc	312~ 528 Vac	0~6.25 A	300 W	91%	0.96	0.94	ETV-300S048ST

Notes: (1) Measured at 25 °C, 100% load and 480 Vac input.
(2) SELV output.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	312 Vac	-	528 Vac	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.9 mA	At 480Vac 60Hz input; grounding effectively
Input AC Current	-	-	1.2 A	Measured at 100% load and 347 Vac input.
	-	-	0.8 A	Measured at 100% load and 480 Vac input.

Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Inrush Current	-	-	135 A	At 480Vac input 25°C Cold start, Duration= 1.2 ms, 10%Ipk-10%Ipk
Inrush Current(I^2t)	-	-	9 A^2s	
PF	0.92	-	-	At 347-480Vac, 50-60Hz, 75%-100% Load (225-300W)
THD	-	-	20%	

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Voltage Tolerance	-3%	-	3%	ETV-300S024ST
	-2.5%	-	2.5%	Other models except ETV-300S024ST
Output Voltage Ripple (pk-pk)	-	-	2% V_O	At 100% load condition
Output Voltage Overshoot / Undershoot	-	-	2% Vo	When power on and off
Line Regulation	-	-	±1.0%	Measured at 100% load
Load Regulation	-	-	±1.5%	
Turn-on Delay Time	-	1.0 s	3.0 s	Measured at 347Vac and 480Vac input.
Temperature Coefficient of Vo	-	0.03%/°C	-	Case temperature = 0°C ~Tc max

Protection Functions

Parameter	Min.	Typ.	Max.	Notes
Over Current Protection	110% I_O	145% I_O	190%I_O	Hiccup mode. The power supply shall be self-recovery when the fault condition is removed.
Over Temperature Protection	Auto recovery mode. When the case temperature is higher than about 100°C, the power supply will turn off automatically; when the case temperature is lower than about 65°C, the power supply will be auto recovered.			
Short Circuit Protection	Hiccup and no damage shall occur when any output operating in a short circuit condition.			

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency				Measured at 100% load, 347Vac input, 25°C ambient temperature, after the unit is thermally stabilized. It will be about 1% lower, if measured immediately after startup.
V_O = 24 V	90.0%	91.0%	-	
V_O = 28 V	91.0%	92.0%	-	
V_O = 36 V	91.0%	92.0%	-	
V_O = 42 V	91.0%	92.0%	-	
V_O = 48 V	91.0%	92.0%	-	

General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Efficiency V_O = 24 V V_O = 28 V V_O = 36 V V_O = 42 V V_O = 48 V	 89.0% 90.0% 90.0% 90.0% 90.0%	 90.0% 91.0% 91.0% 91.0% 91.0%	 - - - - -	Measured at 100% load, 480Vac input, 25°C ambient temperature, after the unit is thermally stabilized. It will be about 1% lower, if measured immediately after startup.
MTBF	-	210,000 Hours	-	Measured at 480Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	120,000 Hours	-	Measured at 480Vac input, 80%load; Case temperature=60°C @ Tc point. See life time vs. Tc curve for the details
Operating Case Temperature for Safety Tc_s	-40 °C	-	+87°C	
Operating Case Temperature for Warranty Tc_w	-40 °C	-	+75°C	
Storage Temperature	-40 °C	-	+85 °C	Humidity: 5% RH to 100% RH
Dimensions Inches (L × W × H) Millimeters (L × W × H)	 8.82 × 3.70 × 1.71 224 × 93.9 × 43.5			With mounting ear 9.88 × 3.70 × 1.71 251 × 93.9 × 43.5
Net Weight	-	1710 g	-	

Safety & EMC Compliance

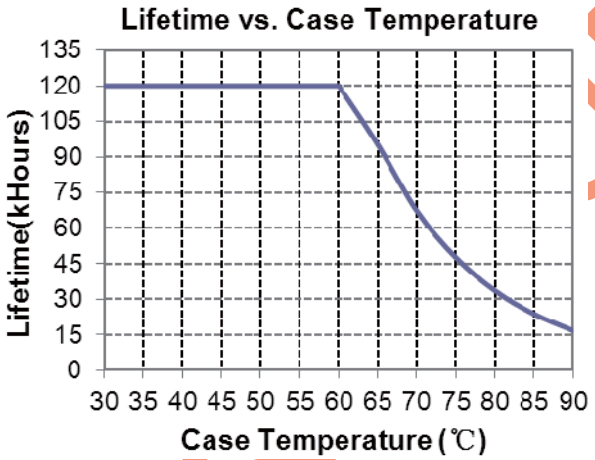
Safety Category	Standard
UL/CUL	UL8750,CAN/CSA-C22.2 No. 250.13
CE	EN 61347-1,EN 61347-2-13
EMI Standards	**Notes**
EN 55015(1)	Conducted emission Test &Radiated emission Test
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
FCC Part15(1)	ANSI C63.4 Class B This device 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: Differential Mode 4 kV, Common Mode 6 kV
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS

Safety & EMC Compliance (Continued)

EMS Standards	Notes
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

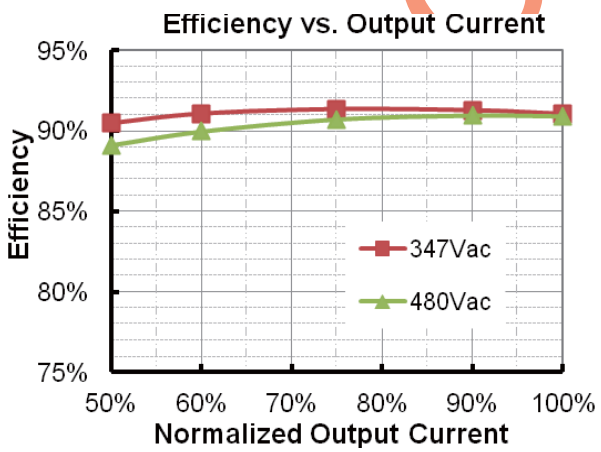
Note: (1) This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

Lifetime vs. Case Temperature

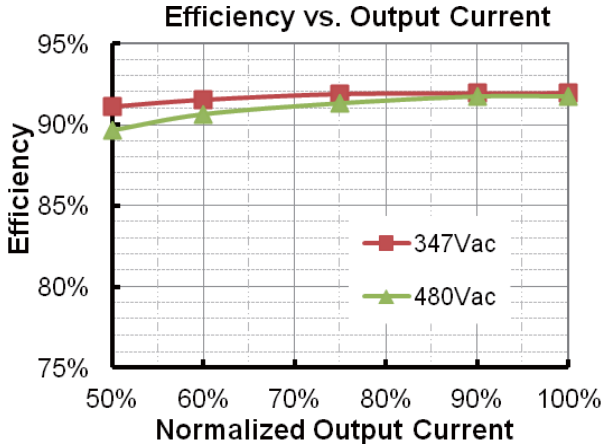


Efficiency vs. Load

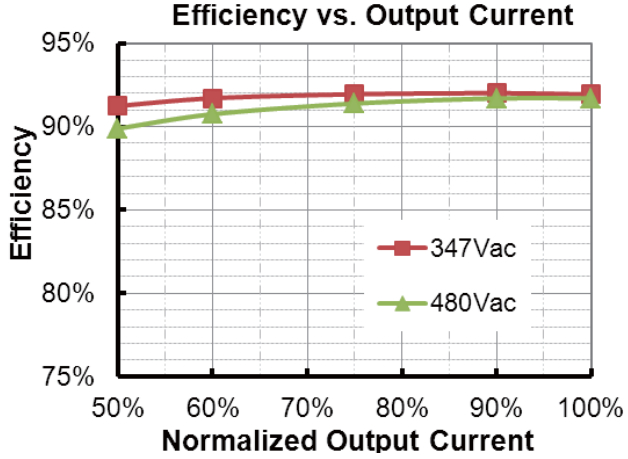
ETV-300S024ST



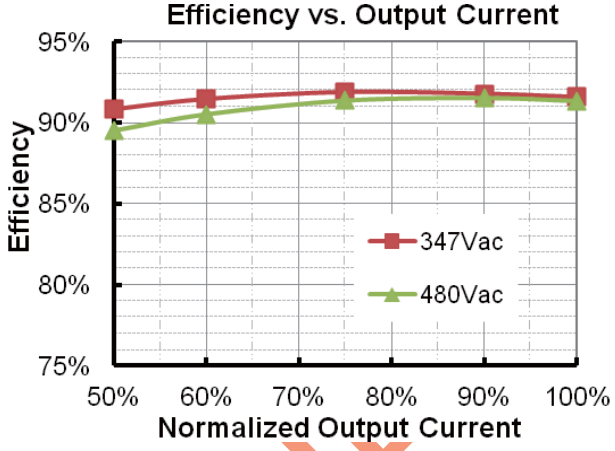
ETV-300S028ST



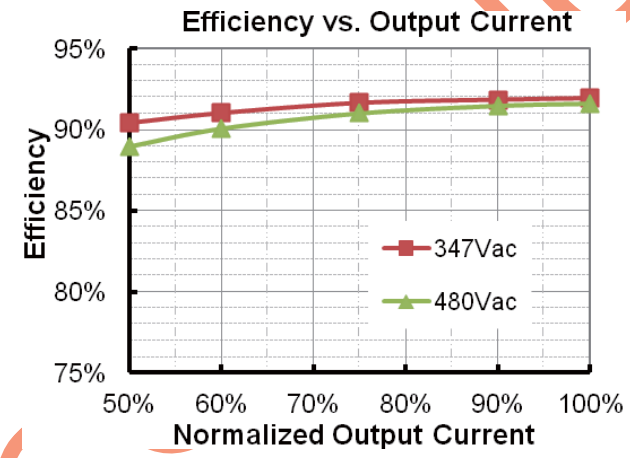
ETV-300S036ST



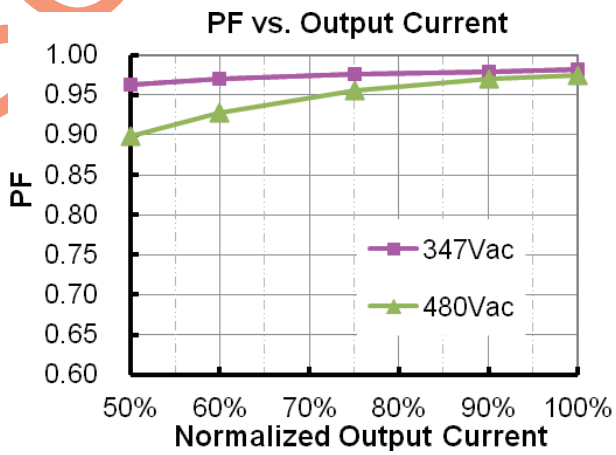
ETV-300S042ST



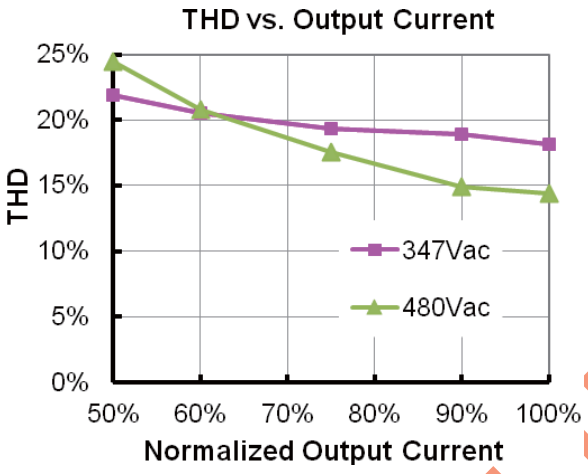
ETV-300S048ST



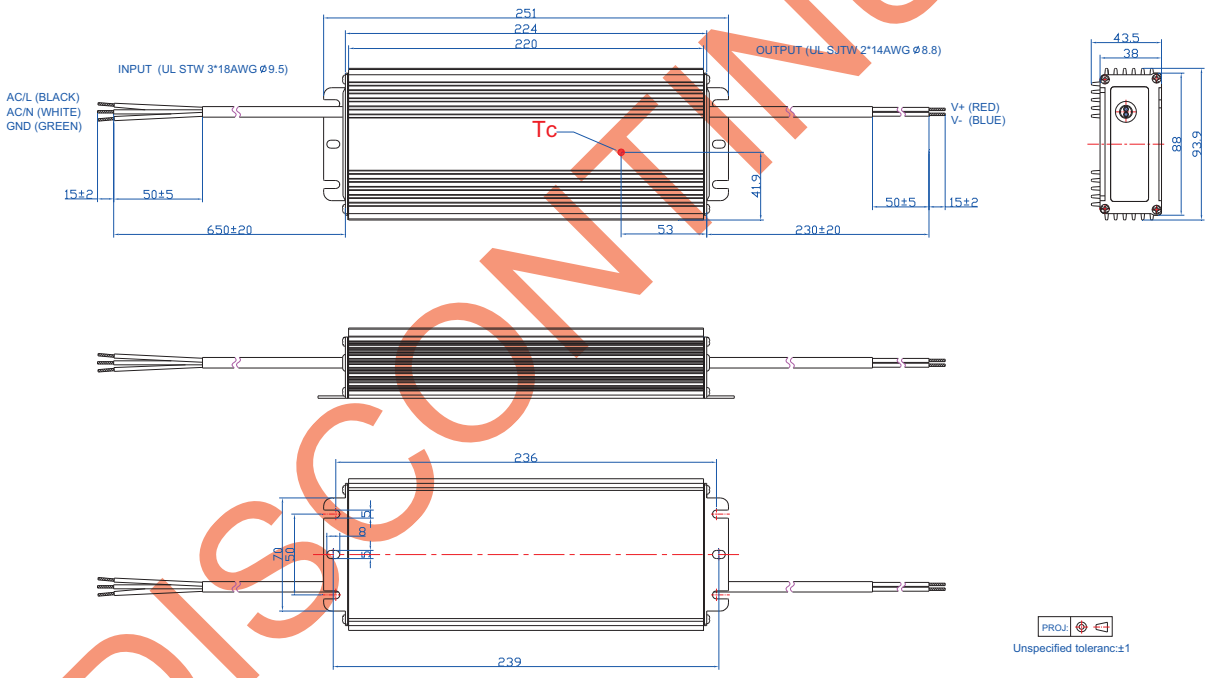
Power Factor Characteristics



Total Harmonic Distortion



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
2013-08-04	A	Datasheet Release	/	/
2013-10-23	B	Output Voltage Tolerance	/	Updated
2013-12-17	C	Life time	78,500 Hours	120,000 Hours
		Life time curve	/	Updated
2015-01-05	D	Format	/	Updated
		36Vdc model	/	Added
		Ripple and Noise	Ripple and Noise	Output Voltage Ripple (pk-pk)
		No Load Power Dissipation	/	Delete
		Case Temperature	Case Temperature	Operating Case Temperature for Safety Tc_s
		Operating Case Temperature for Warranty Tc_w	/	Added
2017-06-20	E	CE	/	Added
		Features	/	Updated
		Description	/	Updated
		Models	SELV	Added
		Temperature Coefficient	/	Updated
		General specifications	Storage Temperature	Added
		General specifications	With mounting ear	Added
		Environmental Specifications	/	Delete
		Safety & EMC Compliance	/	Updated
		Mechanical Outline	/	Updated
2019-01-10	F	Description	/	Updated
		Input Specifications	PF/THD	Updated
		General Specifications	Net Weight	Updated
		Safety & EMC Compliance	/	Updated
2020-01-13	G	Features	4kV line-line, 6kV line-earth	DM 4kV, CM 6kV
		Features	Waterproof (IP67)	IP67
		Safety &EMC Compliance	EN 61000-4-5	Updated
		Derating Curve	/	Deleted
		RoHS Compliance	/	Updated

Revision History (Continued)

Change Date	Rev.	Description of Change		
		Item	From	To
2020-01-13	G	Format	Page footer	Updated