

Features

- Ultra High Efficiency (Up to 91%)
- Constant current module
- Thermal Sensing and Protection for LED Module
- Input Surge Protection: 4kV line-line, 6kV line-earth
- All-Around Protection: OVP, SCP, OTP
- Waterproof (IP67) and UL Dry / Damp / Wet Location
In Wet Locations must be Built-In
- SELV Output



Description

The EHC-150W is a 150W, constant-current, IP67 LED driver that operates from 108-305 Vac input with excellent power factor and low THD. It is created for industrial lights, tunnel and street lights. The high efficiency of these drivers and compact metal case enable them to run cooler, significantly improving reliability and extending product life. To ensure trouble-free operation, protection is provided against input surge, input over voltage, output over voltage, short circuit, and over temperature.

Models

Model Number	Input voltage range(Vac)	Max Output Power (w)	Output Voltage Range (Vdc)	Output current (A)	Typical Efficiency	Typical THD	Typical PF	
							120Vac	230Vac
EHC-150B214	108-180V	105W	107-150	0.7A	90%	10%	0.98	0.97
	180-305V	150W	107-215					
EHC-150B174	108-180V	105W	87-122V	0.86A	90%	10%	0.98	0.97
	180-305V	150W	87-174V					
EHC-150B143	108-180V	105W	72-100V	1.05A	88%	10%	0.98	0.97
	180-305V	150W	72-143V					
EHC-150B107	108-180V	105W	60-75V	1.4A	90%	10%	0.98	0.97
	180-305V	150W	60-107V					

Notes: 1. Output current range with constant power at 105W
 2. Measured at full load and 220Vac input (see below "General Specifications" for details), unless otherwise stated.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	108Vac	120-277Vac	305Vac	Please refer to the Derating curve
Input Frequency	47HZ	50/60Hz	63Hz	
Leakage Current	-	-	0.75mA	277V/50Hz
Input AC Current	-	-	1.5A	120-277Vac with full load
Inrush Current(Izt)	-	-	0.1A ² S	230Vac input, Ta = 25°C (cold start)
Power Factor	0.97	0.98	-	120Vac, 105W
	0.95	0.97	-	230Vac, 150W
THD	-	10%	20%	200-230Vac, 105W-150W
	-	10%	15%	120-200Vac, 105W,
	-	10%	15%	200-230Vac, 150W,

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-8%Iset	-	8%Iset	Full load
Total Output Current Ripple(pk-pk)	-	150%	200%	Full load & LED Load, ripple is different with difference LED load. 20MHz BW
Startup Overshoot Current	-	-	10%	200~277Vac & Full load, LED Load
No Load Output Voltage	-	-		
EHC-150B214			290V	
EHC-150B174			200V	
EHC-150B143			180V	
EHC-150B107			150V	
Standby power consumption			5W	
Line Regulation	-	-	8%	25°C±10°C ambient temperature, input voltage changes from 200Vac to 277Vac.
Load Regulation	-	-	8%	25°C±10°C ambient temperature, 230Vac input, load changes from 60% to 100%.
Turn-on Delay Time	-	-	3S	120Vac, 70% Load
	-	0.5S	1S	230Vac, 100% Load

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

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency@176Vac EHC-150B214 EHC-150B174 EHC-150B143 EHC-150B107	86% 86% 84% 84%	88% 88% 86% 86%	-	Measured at 70% load and 25°C ambient temperature
Efficiency@230Vac EHC-150B214 EHC-150B174 EHC-150B143 EHC-150B107	88% 88% 86% 86%	90% 90% 88% 88%		Measured at full load and 25°C ambient temperature
Efficiency@277Vac EHC-150B214 EHC-150B174 EHC-150B143 EHC-150B107	88% 87% 85% 85%	90% 89% 87% 87%		Measured at full load and 25°C ambient temperature
Dielectric Strength input to output		3750Vac	-	60s, current is less than 10mA;
Dielectric Strength input to PE		1600Vac		60s, current is less than 10mA;
Dielectric Strength output to PE		1600Vac		60s, current is less than 10mA;
Grounding Resistance			0.1Ω	Under 25°C±10°C ambient temperature, pass 25A current for 60s,
Insulation Resistance	50MΩ			Under 25°C±10°C ambient temperature and less than 70% relative humidity, apply 500V dc voltage to each port of Input to output, input to GND, output to GND and last 60s
MTBF		200000 Hours		230Vac,80W (MIL-HDBK-217F)
Lifetime		500,000 Hours	-	230Vac&105W ,70°C case temperature, refer to lifetime VS Tc curve for details
Operating Case Temperature for Safety Tc_s	-40°C		+85°C	
Operating Case Temperature for Warranty Tc_w	-40°C	-	+75°C	5 Years Warranty Humidity: 10% to 95% RH
Storage Temperature	-40°C	-	+85°C	Humidity: 5%RH to 100%RH

Dimensions Millimeters (L × W × H)	164mm*68mm*39mm
Gross Weight	650±100g

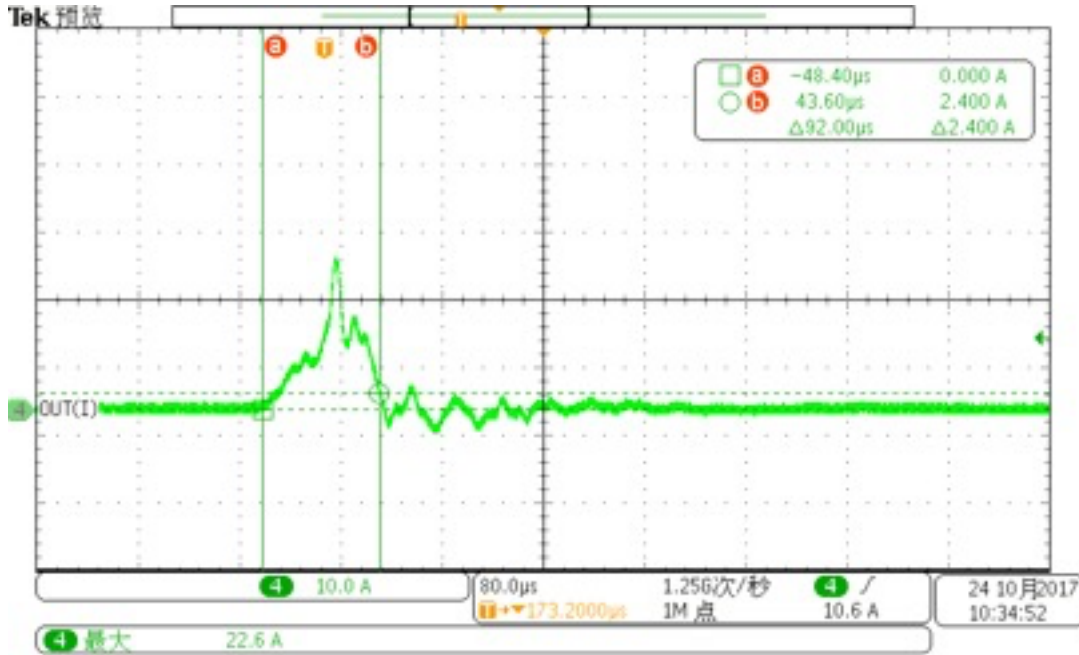
Note: All specifications are tested by Cree XLamp XP-G2 and typical measured at 220Vac and 25°C unless otherwise Stated. Single stage PFC: Higher Ripple & Noise, Not recommended to use in regions with unstable grid.

Safety & EMC Compliance

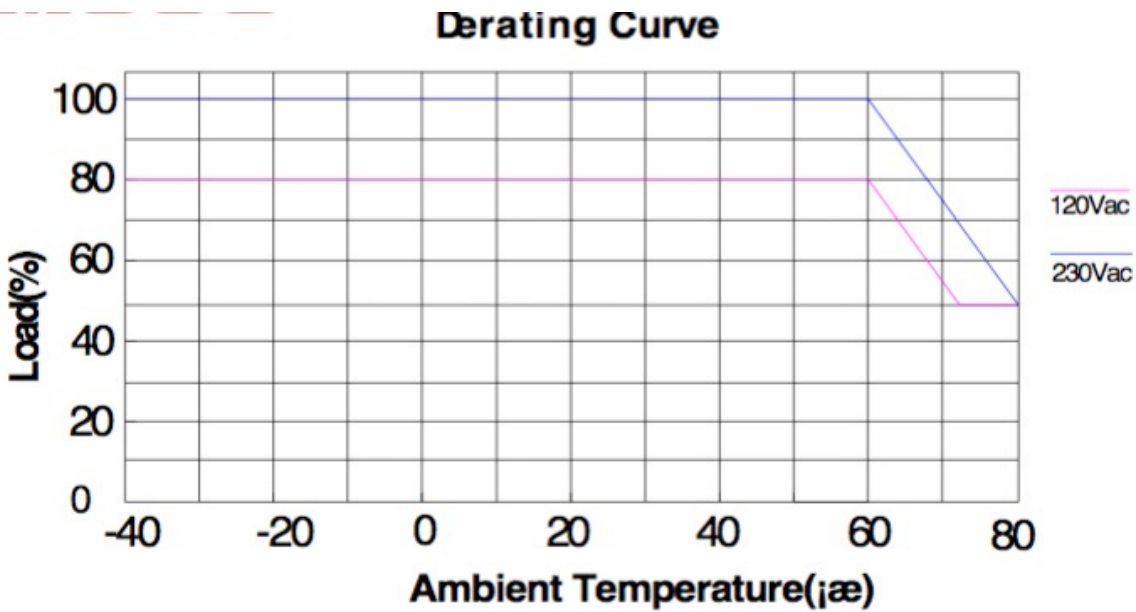
Safety Category	Standard
UL/CUL	UL8750,CAN/CSA-C22.2 No. 250.13-12
CE	EN 61347-1, EN61347-2-13
EMI Standards	Notes
EN 55015 ⁽¹⁾	Conducted emission Test & Radiated emission Test
EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EMS Standards	Notes
EN 61000-4-2	Electrostatic 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 6 kV, line to earth 10 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.
 2.To perform electric strength (hi-pot) testing, the “GDT ground disconnect” (nut and metal lock sheet) on the driver end-cap should be removed temporarily to prevent the internal gas discharge tube from conducting (as allowed by IEC 60598-1 Clause 10.2). After testing is completed, these items must be reinstalled to restore line-to-earth surge protection and secure the end cap

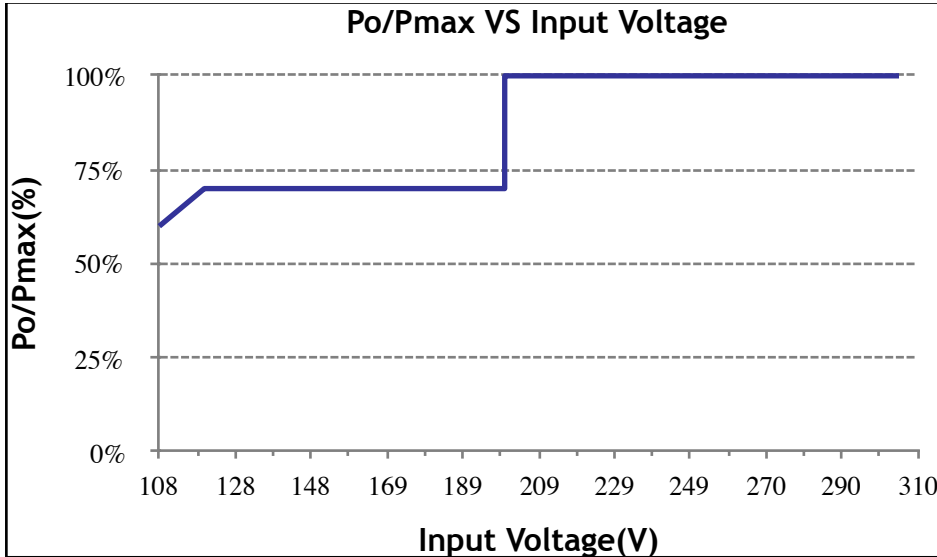
INRUSH CURRENT WAVEFORM



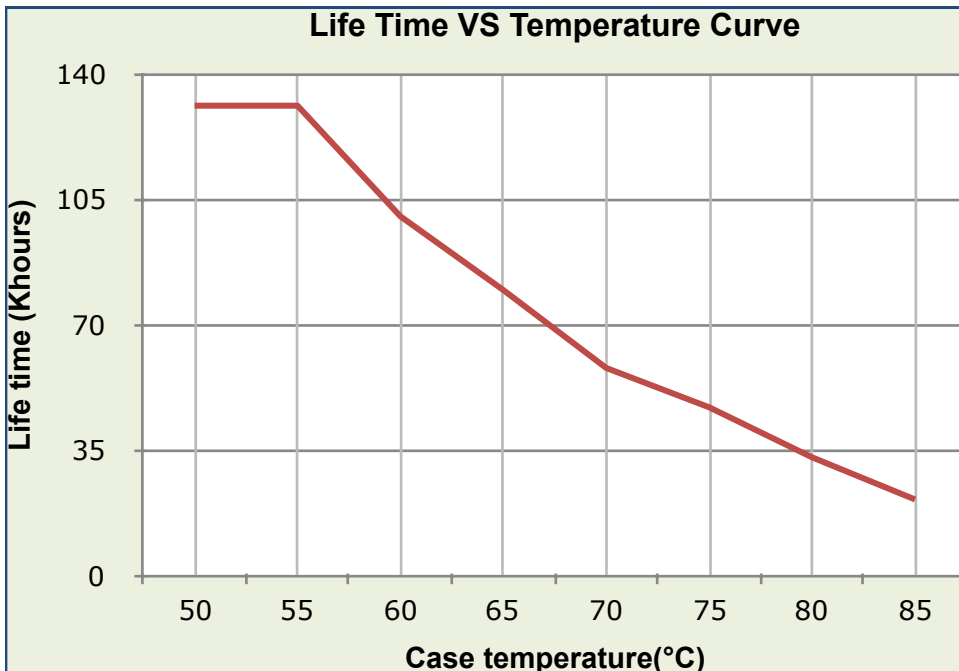
DERATING CURVE



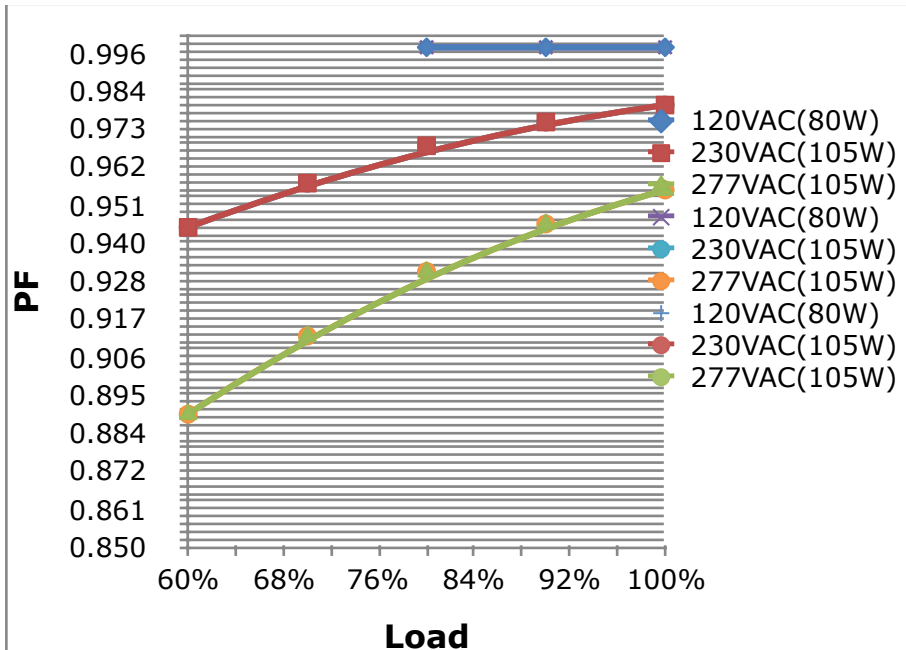
OUTPUT POWER VS INPUT VOLTAGE



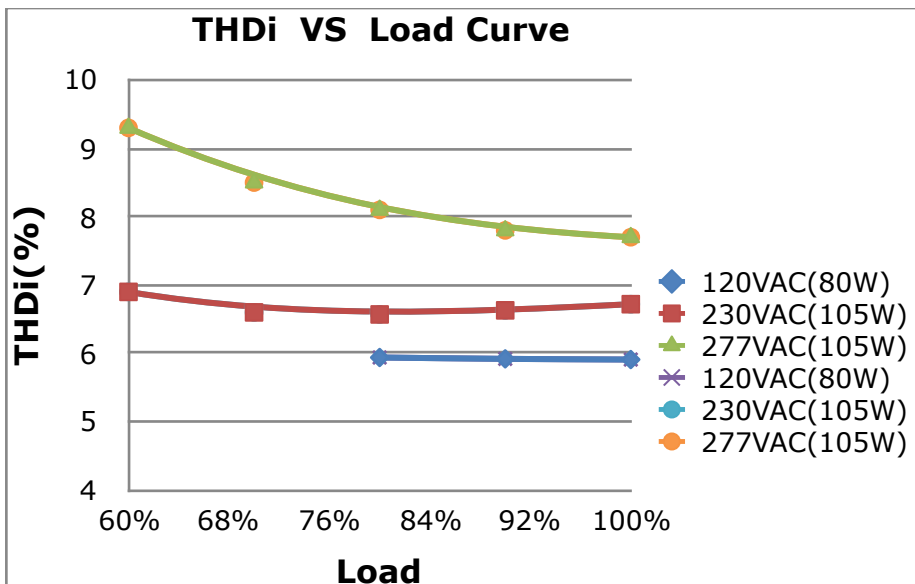
LIFETIME VS CASE TEMPERATURE



Power Factor



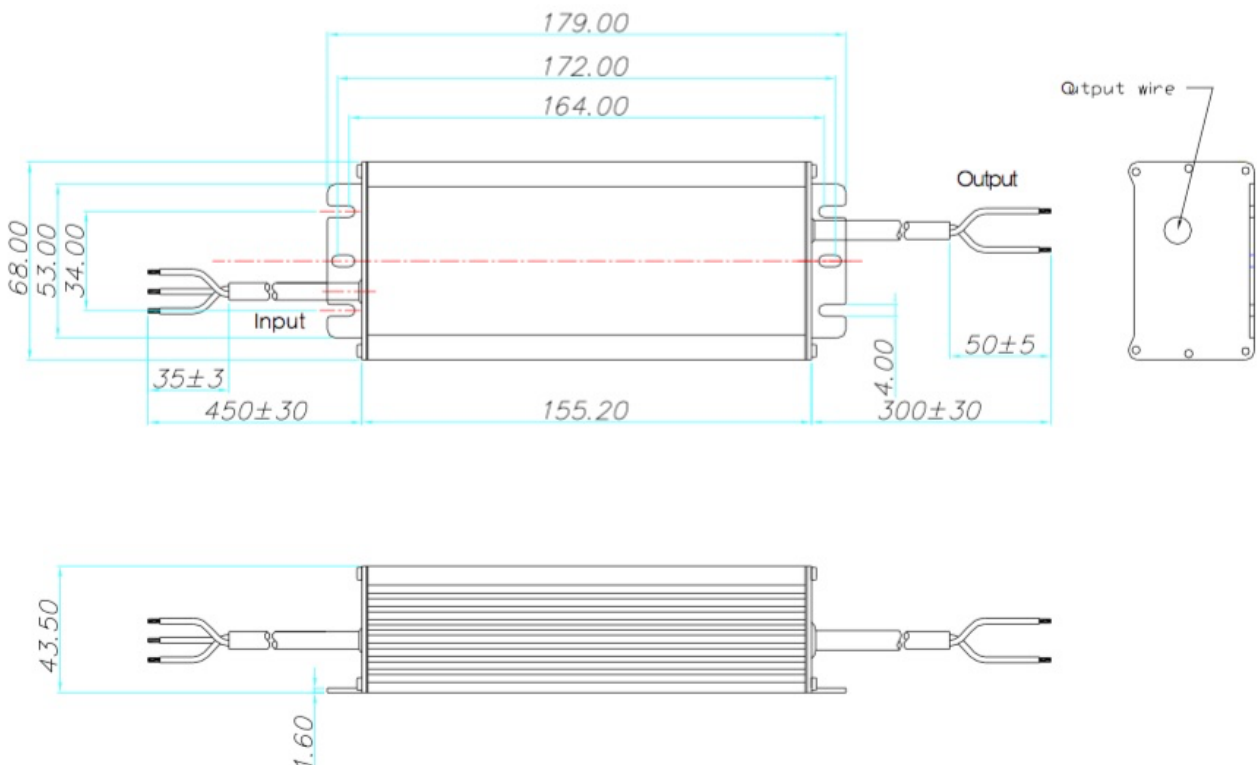
Total Harmonic Distortion



Protection Functions

Parameter		Min.	Typ.	Max.	Notes
Input Over Voltage Protection	Input Protection	320Vac	330Vac	360Vac	Turn off the output when the input voltage exceeds protection voltage.
	Recovery Voltage	300Vac	320Vac	360Vac	Auto Recovery. The driver will restart when the input voltage falls below
	Max. of Input Over Voltage		-	440Vac	The driver can survive for 48 hours with input over-voltage of 440Vac.
Over Temperature Protection			Decreases output current, returning to normal after over temperature is removed.		
Short Circuit Protection			Hiccup mode and auto recovery. No damage will occur when any output is short circuited. The output shall return to normal when the fault condition is removed.		
Output Over Voltage Protection			Limits output voltage at no load and in case the normal voltage limit fail		

MECHANICAL OUTLINE





WINTEK ELECTRONICS TECHNOLOGY LIMITED

EHC-150BXXX

150W constant current IP67 LED DRIVER

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

Rev No.	Date	Description	Approval	Remarks
Preliminary	06/15/2017	Released	Stone Deng	Preliminary
REV 00	07/15/2017	Released	Stone Deng	REV 00
REV 01	12/12/2017	Released	Stone Deng	REV 01



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