

## Features

- Ultra High Efficiency (Up to 93%)
- Constant Current Output
- Compact Package Design
- Input surge protection: 6 kV line-line, 10 kV line-earth
- All-Around Protection: OVP, SCP, OTP
- Waterproof (IP67)
- Suitable for Independent Use



**TUV CE CB** 

## Description

The *EBC-255S105SV-000x* series is a 250W, constant-current outdoor LED driver that operates from 176-305 Vac input with excellent power factor. It is created for high bay, high mast, arena and roadway lights. 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 (2)	Model Number
700 mA	176 ~ 305 Vac	179-357 Vdc	250 W	93.0%	0.98	EBC-255S105SV-0007
860 mA	176 ~ 305 Vac	160-290 Vdc	250 W	93.0%	0.98	EBC-255S105SV-0004
1050 mA	176 ~ 305 Vac	160-238 Vdc	250 W	92.0%	0.98	EBC-255S105SV-0000

**Notes:** (1) CCC certified input voltage range: 220/230/240 Vac; Other certified input voltage range except CCC: 200-240Vac

(2) Measured at full load and 220 Vac input.

## Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	176 Vac	-	305 Vac	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.70 mA	IEC60598-1; 240Vac/ 60Hz , grounding effectively
Input AC Current	-	-	1.60 A	Measured at full load and 220 Vac input.
Inrush Current( $I^2t$ )	-	-	4.90 A <sup>2</sup> s	At 220Vac input, 25°C cold start, duration=1.76 ms, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.9	-	-	At 220-240Vac, 75%-100% Load (188-250W)
THD	-	-	20%	

## Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%loset	-	5%loset	At full load condition
Total Output Current Ripple (pk-pk)	-	5%lomax	10%lomax	At full load condition, 20 MHz BW
Output Current Ripple at < 200 Hz (pk-pk)	-	1%lomax	-	At full load condition. Only this component of ripple is associated with visible flicker.
Startup Overshoot Current	-	-	10%loset	At full load condition
No Load Output Voltage EBC-255S105SV-000x x = 7,4,0	-	-	367 V	
Line Regulation	-	-	±0.5%	Measured at full load
Load Regulation	-	-	±1.5%	
Turn-on Delay Time	-	0.6 s	1.5 s	Measured at 220Vac input.
Temperature Coefficient	-	-	0.03%/°C	Case temperature = 0°C ~Tc max

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

## General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 220 Vac input: EBC-255S105SV-000x x=7: 700 mA x=4: 860 mA x=0: 1050 mA	91.0% 91.0% 90.0%	93.0% 93.0% 92.0%	- - -	Measured at full load and steady-state temperature in 25°C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)
MTBF	-	287,000 Hours	-	Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	118,000 Hours	-	Measured at 220Vac input, 80%Load and 60°C case temperature; See lifetime vs. Tc curve for the details
Operating Case Temperature for Safety Tc_s	-40°C	-	+90°C	
Operating Case Temperature for Warranty Tc_w	-40°C		+70°C	
Storage Temperature	-40°C	-	+85°C	Humidity: 5%RH to 100%RH
Dimensions Inches (L x W x H) Millimeters (L x W x H)	7.40x 3.47x 1.50 188 x 88 x 38			
Net Weight	-	1300 g	-	

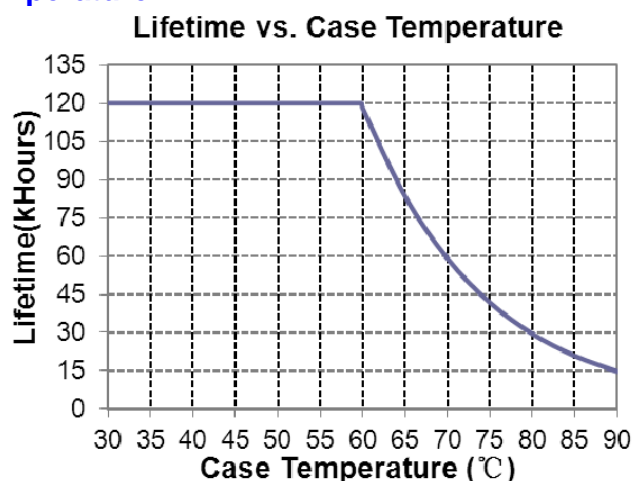
**Note:** All specifications are typical at 25°C unless otherwise stated.

## Safety & EMC Compliance

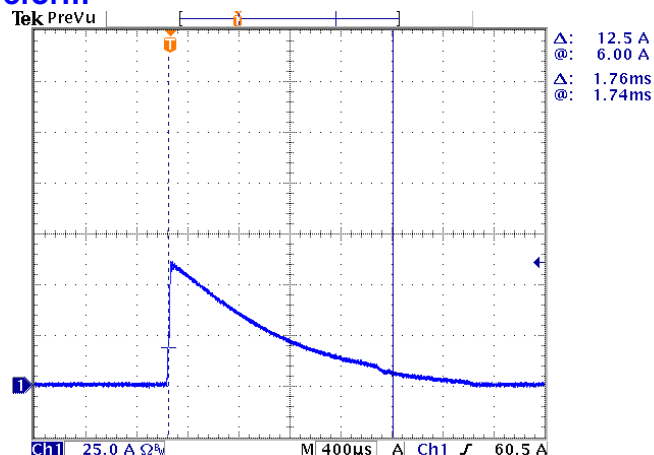
Safety Category	Standard
CE	EN 61347-1, EN61347-2-13
CCC	GB 19510.1, GB 19510.14
EMI Standards	Notes
EN 55015/GB 17743	Conducted emission Test & Radiated emission Test
EN 61000-3-2/GB 17625.1	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EMS Standards	Notes
EN 61000-4-2	Electrostatic 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*
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:** To perform electric strength (hi-pot) testing, the “GDT ground disconnect” (screw 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.

## Lifetime vs. Case Temperature



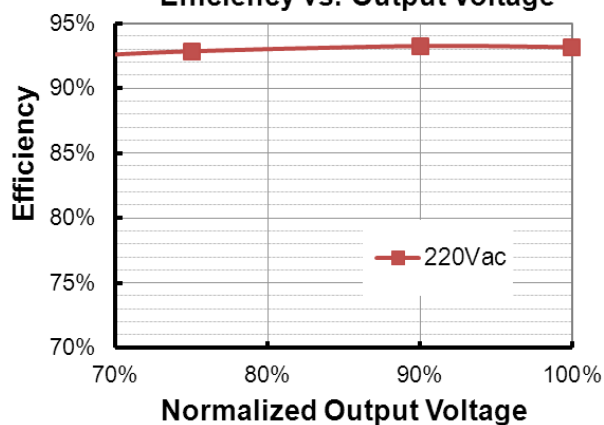
## Inrush Current Waveform



## Efficiency vs. Load

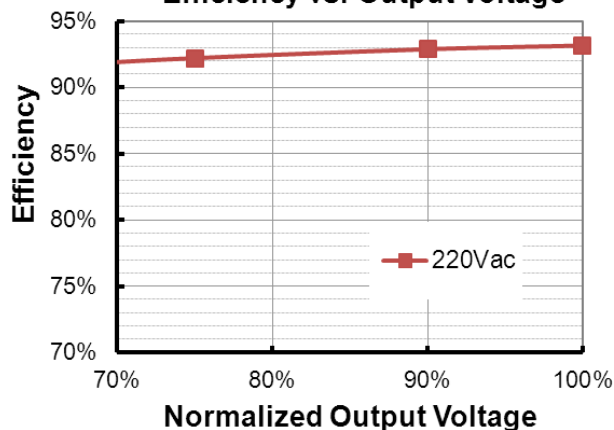
EBC-255S105SV-0007( $I_o=700\text{mA}$ )

Efficiency vs. Output Voltage



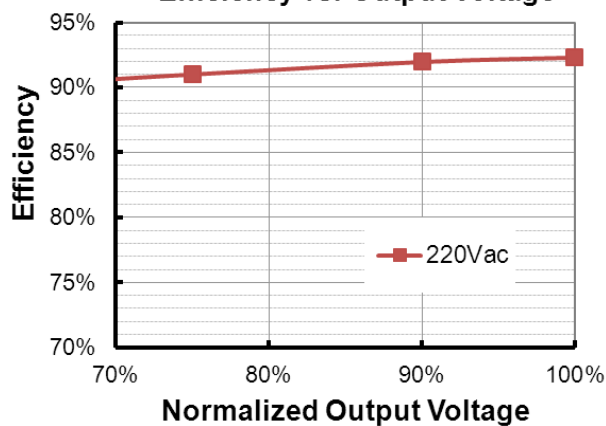
EBC-255S105SV-0004( $I_o=860\text{mA}$ )

Efficiency vs. Output Voltage

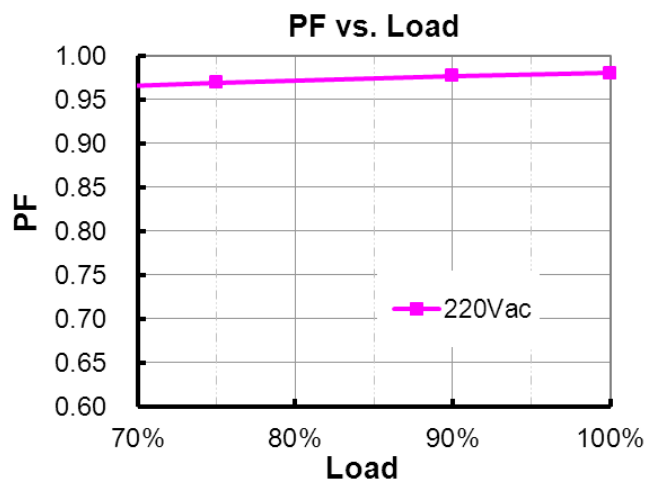


EBC-255S105SV-0000( $I_o=1050\text{mA}$ )

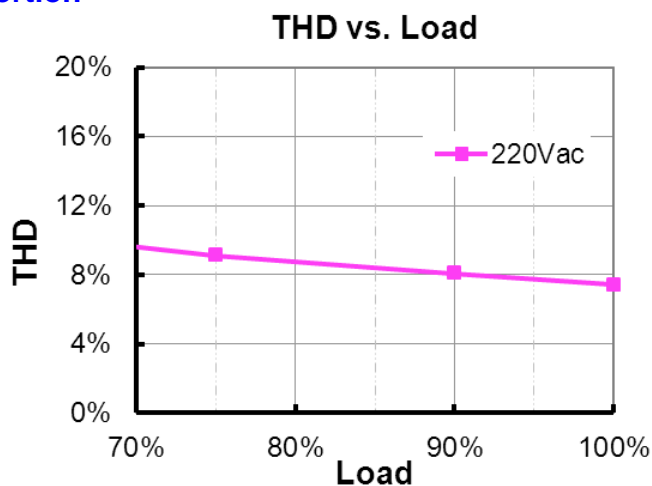
Efficiency vs. Output Voltage



## Power Factor



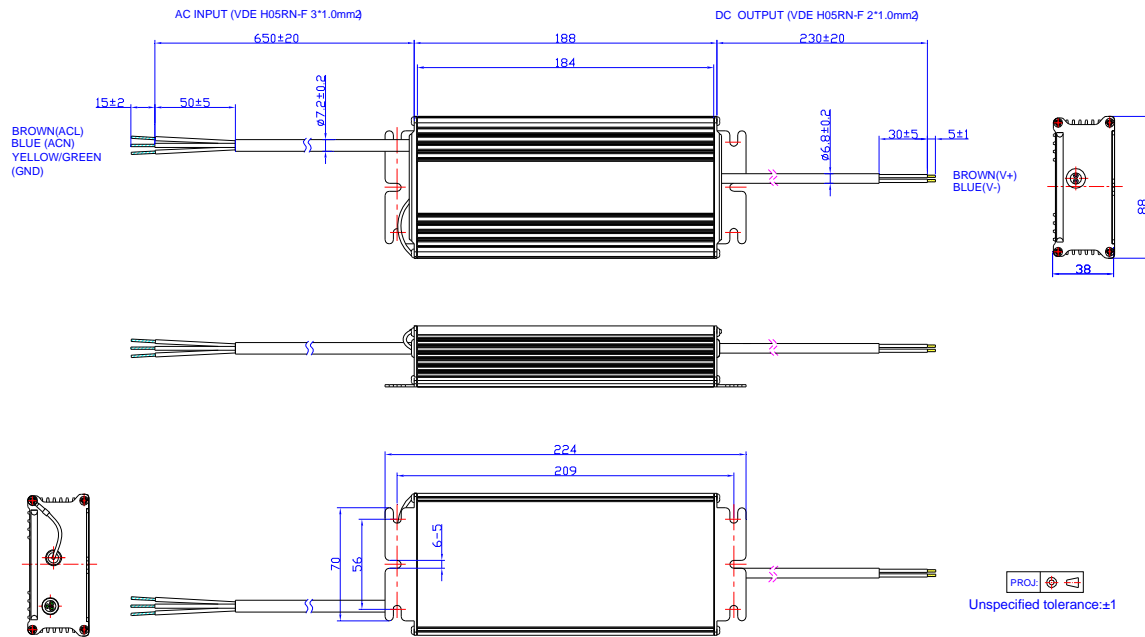
## Total Harmonic Distortion



## 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.

## Mechanical Outline



**Note:** Waterproof connectors certified to CCC & CE are also available for these drivers; please contact Inventronics Sales.

## 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
2015-04-13	A	Datasheets Release	/	/
2015-12-08	B	Input surge protection	/	Updated