

Features

- Ultra High Efficiency (Up to 94%)
- Constant Current Output
- Input surge protection: 6 kV line-line, 10 kV line-earth
- All-Around Protection: OVP, SCP, OTP
- Waterproof (IP67)
- SELV Output
- Suitable for Independent Use
- 5 Years Warranty



Description

The EBC-240SxxxSV-000x series is a 240W, constant-current LED driver that operates from 176-305 Vac input with excellent power factor. It is created for many lighting applications including high bay, high mast, arena 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 (2)	Model Number (3)
700 mA	176~305 Vac	171-343 Vdc	240 W	94.0%	0.98	EBC-240S105SV-0007
860 mA	176~305 Vac	155-279 Vdc	240 W	94.0%	0.98	EBC-240S105SV-0004
1050 mA	176~305 Vac	155-228 Vdc	240 W	93.0%	0.98	EBC-240S105SV-0000
4200 mA	176~305 Vac	29-57 Vdc	240 W	93.0%	0.98	EBC-240S660SV-0007 ⁽⁴⁾
4900 mA	176~305 Vac	26-49 Vdc	240 W	92.5%	0.98	EBC-240S660SV-0005 ⁽⁴⁾
5600 mA	176~305 Vac	26-43 Vdc	240 W	92.0%	0.98	EBC-240S660SV-0003 ⁽⁴⁾
6600 mA	176~305 Vac	26-36 Vdc	240 W	91.0%	0.98	EBC-240S660SV-0000 ⁽⁴⁾

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

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

(3) All the models are certificated to KS, except EBC-240S105SV-000x

(4) SELV Output

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	-	-	1.57 A	Measured at 100%load and 220 Vac input.
Inrush Current(I ² t)	-	-	3.0 A ² s	At 220Vac input, 25°C cold start, duration=1.78 ms, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.

Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
PF	0.9	-	-	At 220-240Vac, 50-60Hz, 65%-100% Load (156-240W)
THD	-	-	20%	

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%loset	-	5%loset	100%load
Total Output Current Ripple (pk-pk)	-	5%lomax	10%lomax	100%load , 20 MHz BW
Output Current Ripple at < 200 Hz (pk-pk)	-	2%lomax	-	100%load .
Startup Overshoot Current	-	-	10%loset	100%load
No Load Output Voltage EBC-240S105SV-000x x = 7, 4, 0	-	-	365 V	
EBC-240S660SV-000x x = 7, 5, 3, 0	-	-	70 V	
Line Regulation	-	-	±0.5%	100%load
Load Regulation	-	-	±1.5%	
Turn-on Delay Time	-	0.6 s	1.5 s	Measured at 220Vac input, 65%-100% Load
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-240S105SV-000x x=7: 700 mA x=4: 860 mA x=0: 1050 mA EBC-240S660SV-000x x=7: 4200 mA x=5: 4900 mA x=3: 5600 mA x=0: 6600 mA	92.0% 92.0% 91.0% 91.0% 90.5% 90.0% 89.0%	94.0% 94.0% 93.0% 93.0% 92.5% 92.0% 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.)
MTBF	-	200,000 Hours	-	Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	85,000 Hours	-	Measured at 220Vac input, 80%Load and 70°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	-	+75°C	Case temperature for 5 years warranty

General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Storage Temperature	-40°C	-	+85°C	Humidity: 5%RH to 100%RH
Dimensions Inches (L × W × H) Millimeters (L × W × H)	8.03 × 2.66 × 1.56 204 × 67.5 × 39.7			With mounting ear 8.86 × 2.66 × 1.56 225 × 67.5 × 39.7
Net Weight	-	1220 g	-	

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

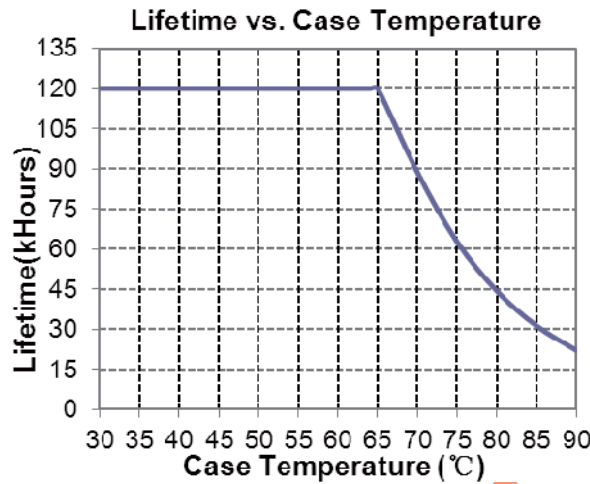
Safety & EMC Compliance

Safety Category	Standard
TUV&CE	EN 61347-1, EN61347-2-13
KS	KS C 7655
CCC	GB 19510.1, GB 19510.14
CB	IEC 61347-1, IEC 61347-2-13
EMI Standards	Notes
EN 55015/GB 17743 ⁽¹⁾	Conducted emission Test & Radiated emission Test
EN 61000-3-2/GB 17625.1	Harmonic current emissions
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

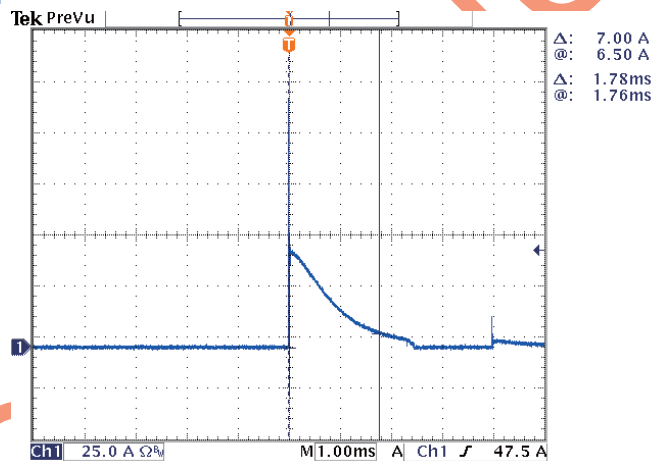
Note: (1) This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

(2) To perform electric strength (hi-pot) testing, the “GDT ground disconnect” (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.

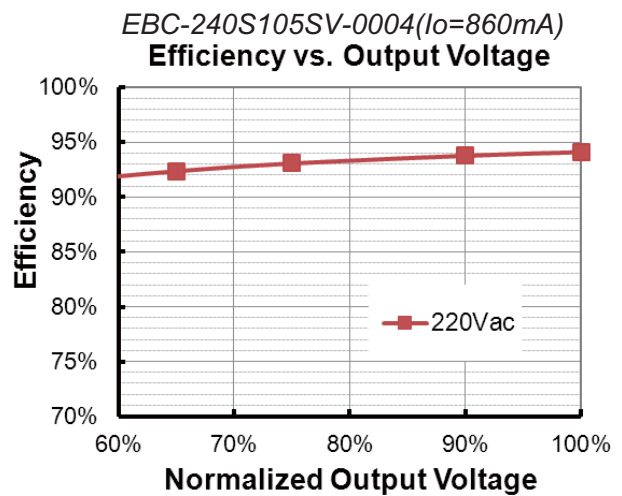
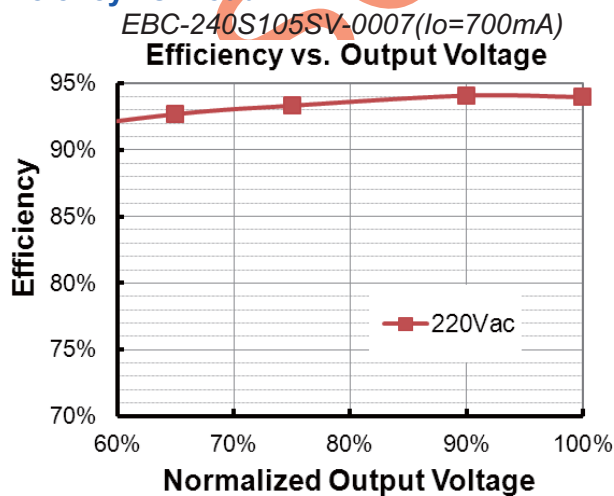
Lifetime vs. Case Temperature

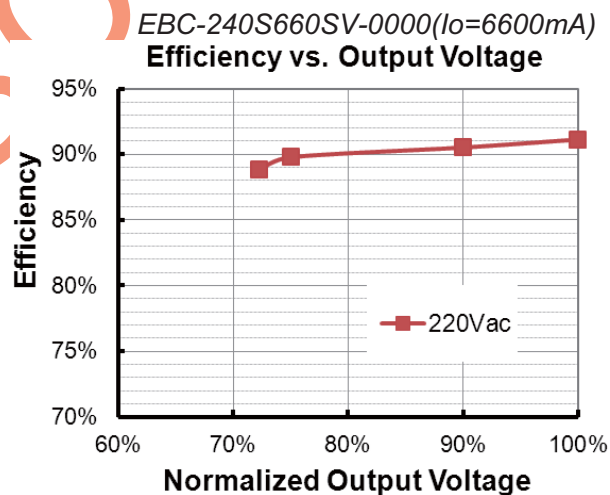
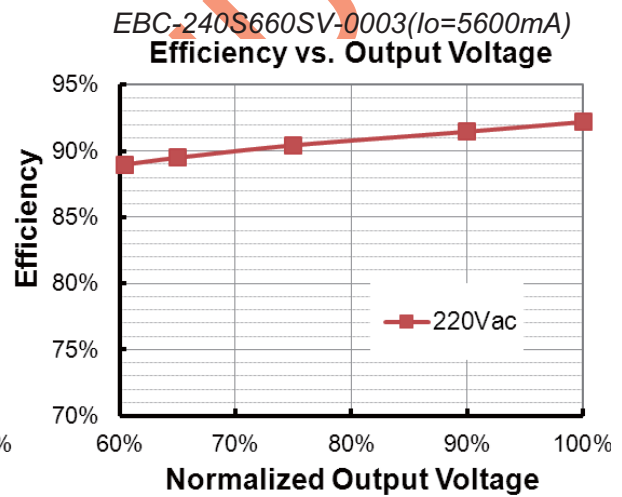
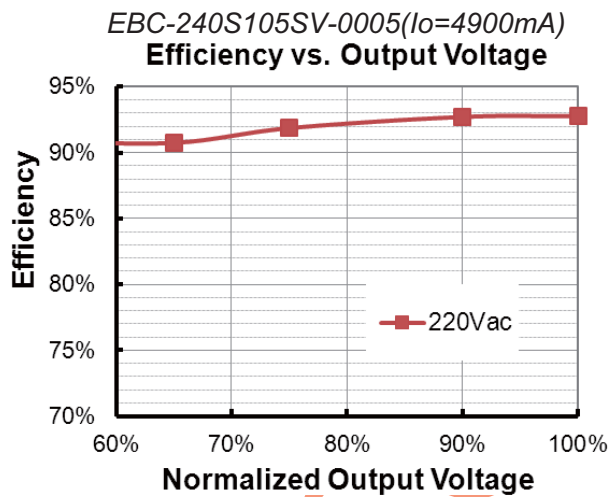
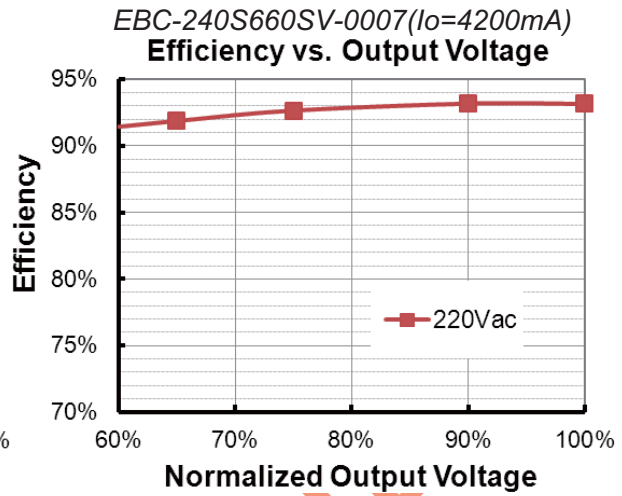
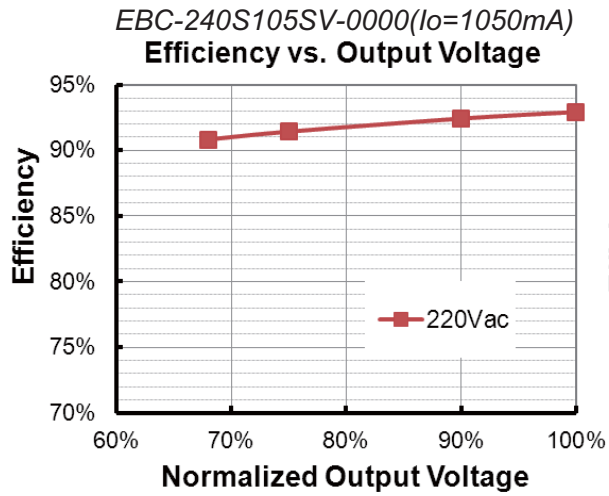


Inrush Current Waveform

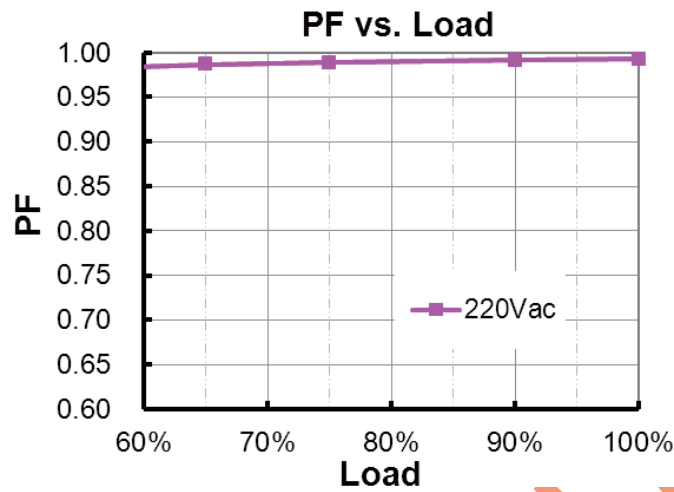


Efficiency vs. Load

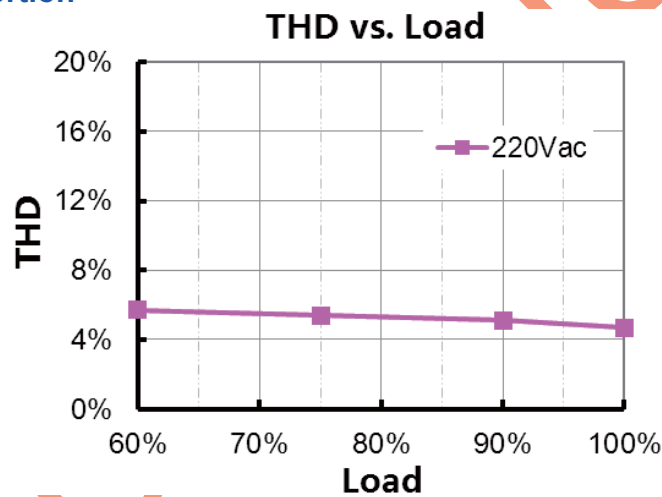




Power Factor



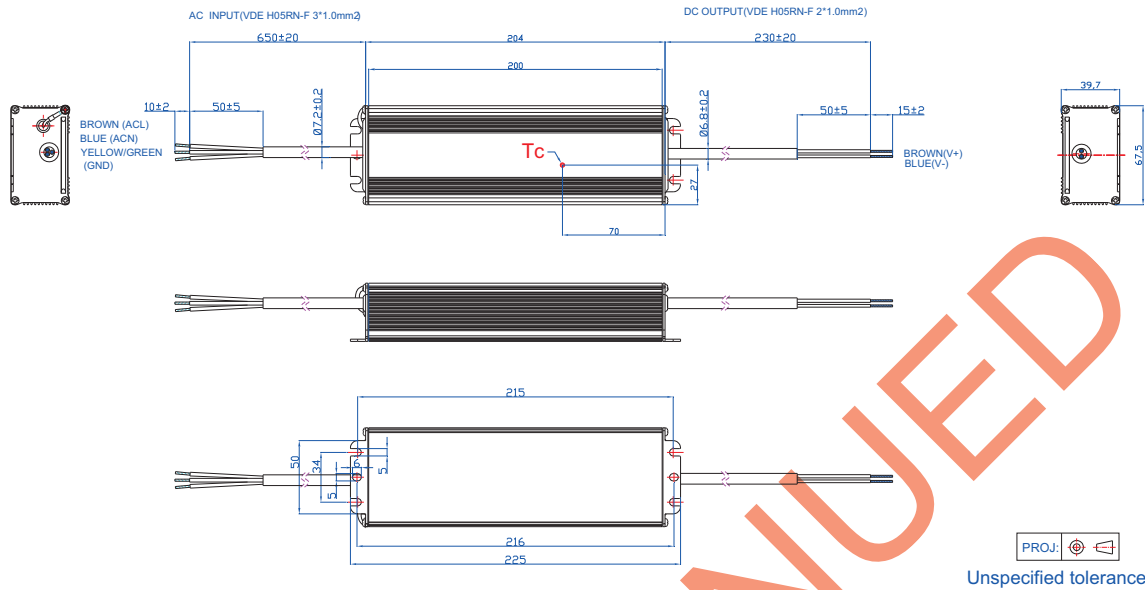
Total Harmonic Distortion



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
2015-08-17	A	Datasheets Release	/	/
2015-12-08	B	KS	/	Added
		Input surge protection	/	Updated
2016-03-30	C	General Specifications	Lifetime	Updated
		General Specifications	With mounting ear	Added
		General Specifications	Net Weight	Updated
		Safety &EMC Compliance	/	Updated
		Mechanical Outline	/	Updated
2018-11-19	D	TUV	/	Updated
		Features	5 Years Warranty	Added
		Description	/	Updated
		PF/THD	Notes	Updated
		Turn-on Delay Time	Notes	Updated
		Temperature Coefficient	Max 0.03%/°C	Typ 0.03%/°C
		EBC-240S660SV-000x x=5: 4900 mA x=3: 5600 mA	Typ 93.0% 92.5%	Typ 92.5% 92.0%
		Operating Case Temperature for Warranty Tc_w	Notes	Updated
		Safety &EMC Compliance	/	Updated