Features

- HighEfficiency (up to 90.5%)
- Constant Voltage Output
- No-Load Power < 0.5 W
- Input Surge Protection: DM 4kV, CM 6kV
- All-Around Protection: OCP, OVP, SCP, OTP
- IP67
- SELV Output
- 5 Years Warranty

Description

The *EBV-060SxxxSV* series is a 60W, constant-voltage IP67 LED driver that operates from 176-305 Vac input with excellent power factor. It is created for many lighting applications including architectural, decorative and signage. The high efficiency of the driver 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, over current, output over voltage, short circuit, and over temperature.

Models

Output Voltage	Input Voltage Range[1]	Output Current Range	Max. Outp ut Pow er[2]	Typical Efficiency [3]	Typical Power Factor 220Vac	Model Number[4] [5]
12 V	176~305 Vac 190~250 Vdc	0 ~ 5.0 A	60 W	84.5%	0.96	EBV-060S012SV[6]
24 V	176~305 Vac 190~250 Vdc	0 ~ 2.5 A	60 W	88.5%	0.96	EBV-060S024SV
36 V	176~305 Vac 190~250 Vdc	0 ~ 1.7 A	60 W	89.5%	0.96	EBV-060S036SV
48 V	176~305 Vac 190~250 Vdc	0 ~ 1.3 A	60 W	90.5%	0.96	EBV-060S048SV

Note s: (1) CCC certified input voltage range: 220/230/240 Vac; other certified input voltage range except CCC: 200-240 Vac or 190-250Vdc (except KS and BIS).
(2) Operating input voltage range: 90-305Vac, and 90-176Vac is for safety operation (see below “Derating” curve for details)
(3) Measured at 100% load and 220Vac input (see below “General Specifications” for details).
(4) SELV output.
(5) For BIS models add suffix -3000.
(6) The model cannot meet EU Directive 2009/125/EC (ecodesign requirements for energy-related products), but it can be used in the exempt application scenarios listed in the Annex III of the ErP Directive such as the lighting applications including horticulture, UV-LED etc.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input AC Voltage	176 Vac	-	305 Vac	
Input DC Voltage	190 Vdc	-	250 Vdc	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.70 mA	IEC60598-1; 240Vac/60Hz
Input AC Current	-	-	0.36 A	Measured at 100% load and 220Vac input.
Inrush Current(I^2t)	-	-	0.016 A^2s	At 220Vac input, 25 C cold start, duration=112 μs, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.9	-	-	At 220-240Vac, 50-60Hz, 60%-100%load (36-60W)
THD	-	-	20%	
THD	-	-	12%	At 220-240Vac, 50-60Hz, 75%-100%load (45-60W)

Output Specifications

Parameter		Min.	Typ.	Max.	Notes
Output Voltage Tolerance		-5%	-	5%	At 100% load condition
Total Output Voltage Ripple (pk-avg) EBV-060S012SV EBV-060S024SV EBV-060S036SV EBV-060S048SV		 - - - -	 - - - -	 2.0V 2.0V 2.5V 2.5V	At 0% - 100% load condition. Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 μF ceramic capacitor and a 47 μF electrolytic capacitor.
Startup Overshoot / Undershoot		-	-	5%Vo	At 100% load condition
Line Regulation		-	-	±1%	Measured at 100% load
Load Regulation		-	-	±3%	
Turn-on Delay Time		-	-	0.75s	Measured at 220Vac input, 60%-100%load
Load Dynamic Response	Output Deviation	-	-	8%VO	R/S: 1 A/μs Load: 25% ~ 100% load.
	Settling Time	-	-	10 ms	
Temperature Coefficient of Vo		-	0.03%/ C	-	Case temperature = 0 C~Tc max

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General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 220Vac input: EBV-060S012SV EBV-060S024SV EBV-060S036SV EBV-060S048SV	 82.5% 86.5% 87.5% 88.5%	 84.5% 88 .5% 89.5% 90.5%	 - - - -	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	-	671, 000 Hou rs	-	Measured at 220Vac input, 80%load and 25 C ambient temperature (MIL-HDBK-217F)
Lifetime	-	96,000 Hou rs	-	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	Case temperature for 5 years warranty. Humidity: 10% RH to 95% RH.
Storage Temperature	-40°C	-	C	Humidity: 5%RH to 95%RH
Dimensions Inches (L × W × H) Millimeters ((L × W × H)			+85°C	With mounting ear 4.57 x 2.66 x 1.44 116 x 67.5 x 36.5
		3.74 x 2.66x1.44 95 x 67.5x36.5		
Net Weight	-	520g	-	

Safety & EMC Compliance

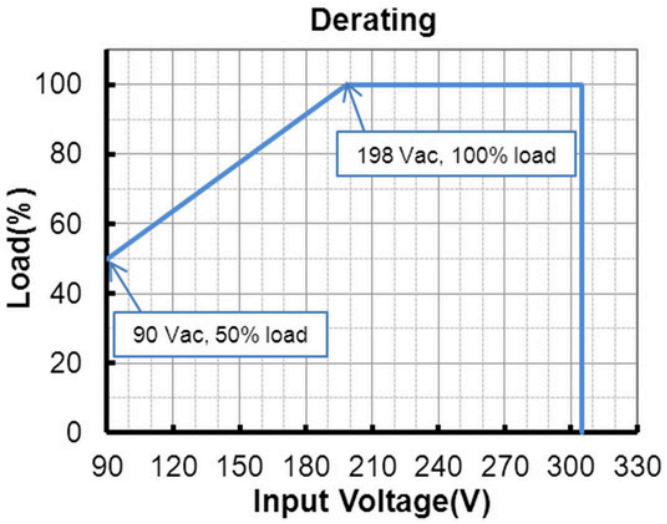
Safety Category	Standard
CE & ENEC	EN 61347-1, EN 61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
CCC	GB 19510.1, GB 19510.14
BIS	IS 15885(PART2/SEC13)
KS	KS C 7655
Performance	**Standard**
ENEC	EN IEC 62384
EMI Standards	**Notes**
EN IEC 55015/GB/T 17743/KS C 9815(1)	Conducted emission Test & Radiated emission Test
EN IEC 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

Safety & EMC Compliance (Continued)

EMS Standards	Notes
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
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61547/KS C 9547	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.

Derating



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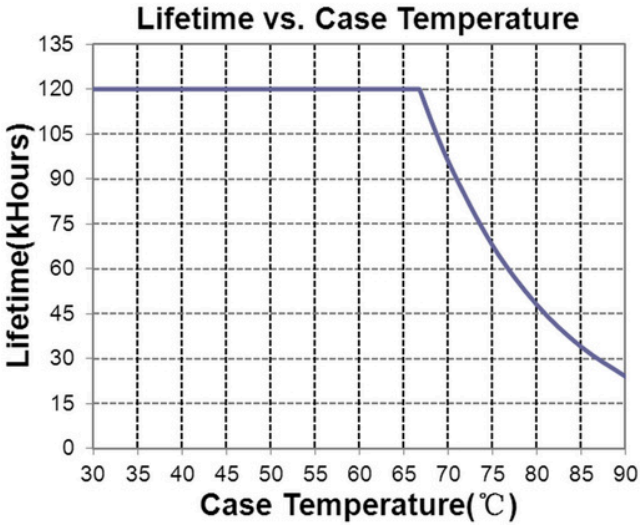
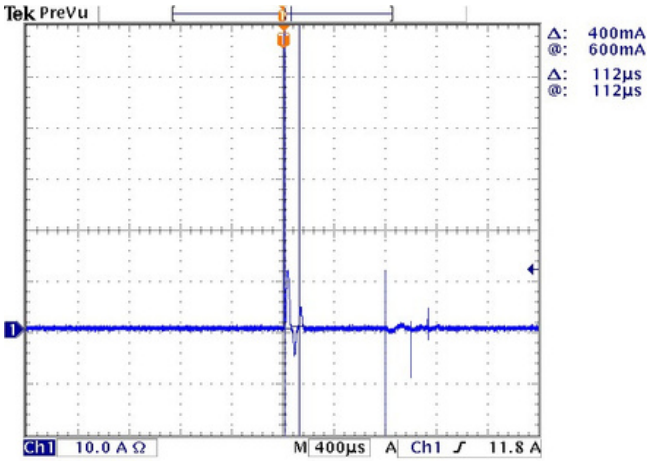
Lifetime vs. Case Temperature

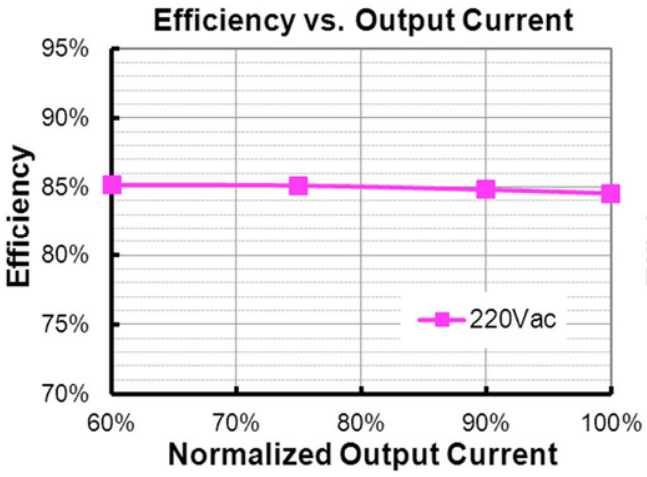


Inrush Current Waveform

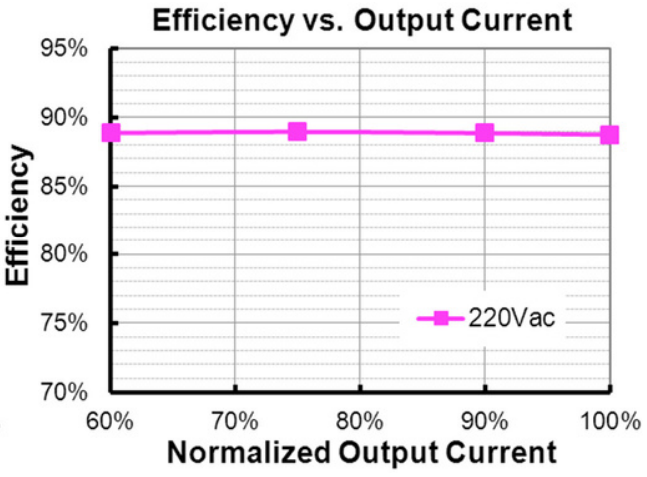


Efficiency vs. Load

EBV -060S012SV



EBV-060S024SV



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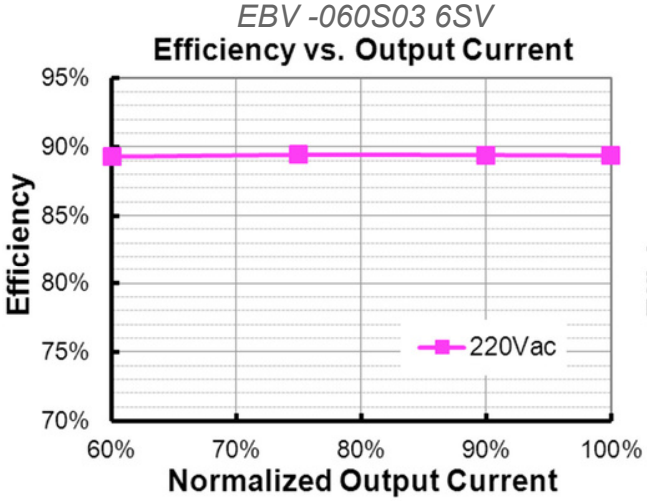
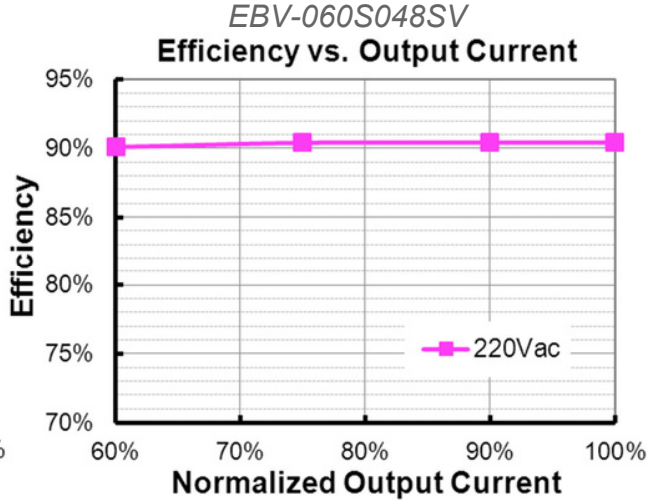
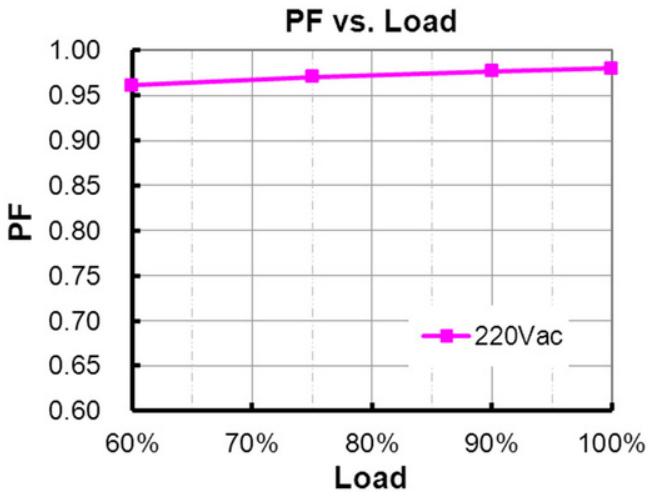
EBV -060S03 6SV



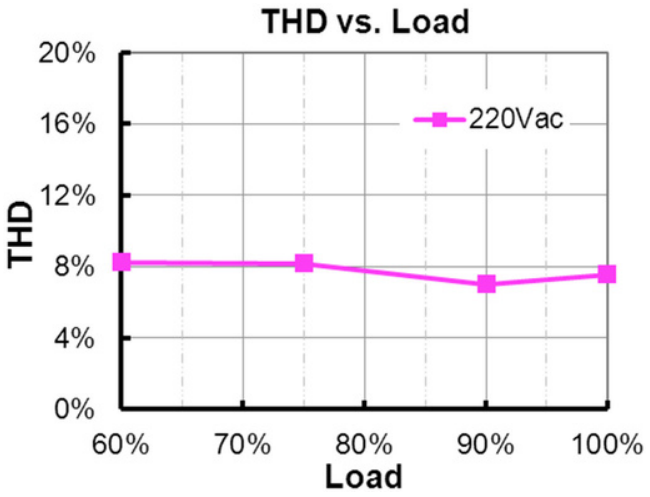
EBV-060S048SV



Power Factor



Total Harmonic Distortion



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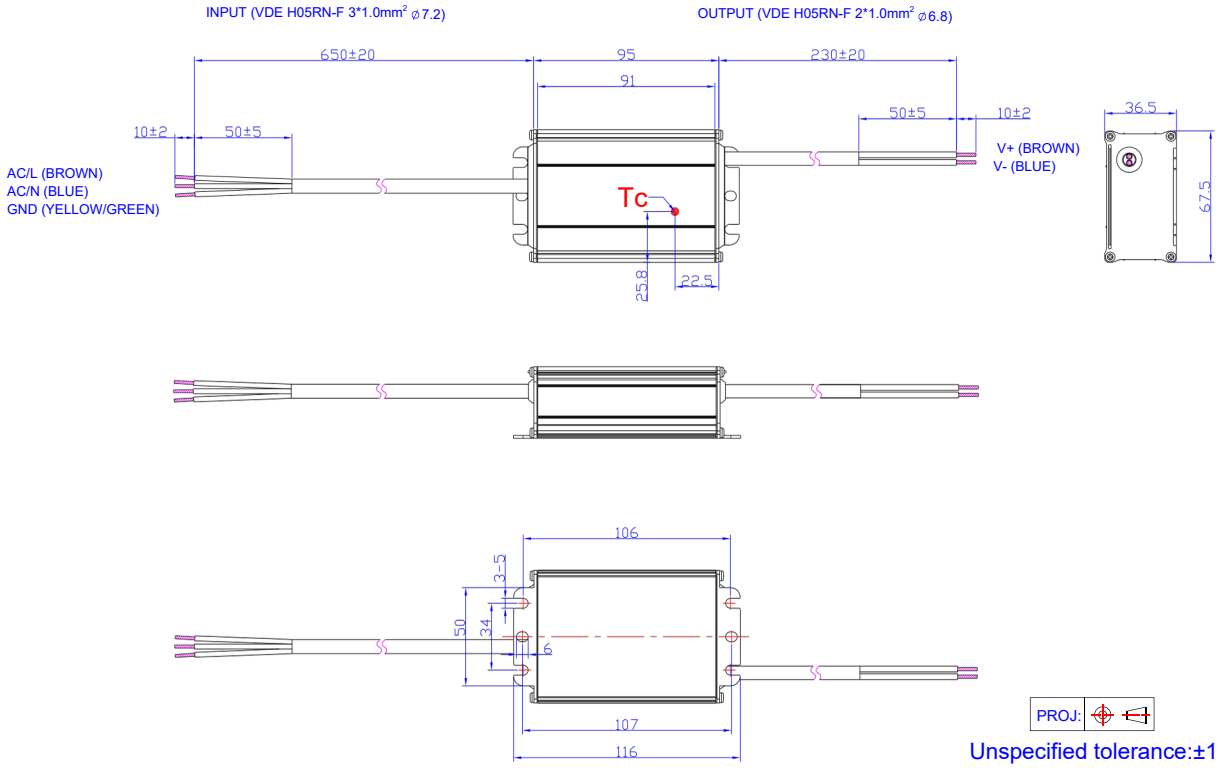
Protection Functions

Parameter	Notes
Over Current Protection	Auto Recovery. The driver shall be self-recovery when the fault condition is removed.
Over Voltage Protection	Limits output voltage at no load and in case the normal voltage limit fails.
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 Temperature Protection	Auto Recovery. Returning to normal after over temperature is removed.

Mechanical Outline

EBV-060SxxxSV



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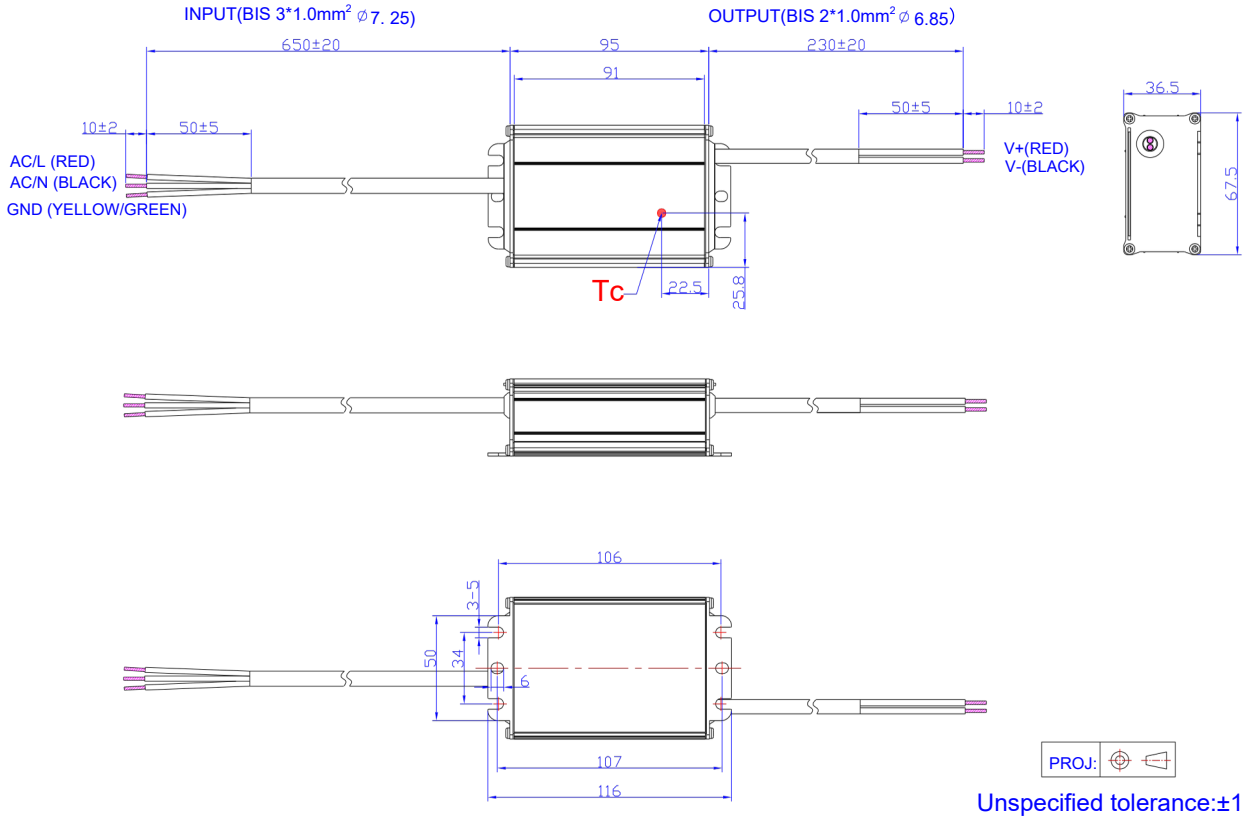
EBV-060SxxxSV-3000



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.

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Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2018-07-18	A	Datasheet Release	/	/
2018-12-06	B	Features	High Efficiency (up to 88.5%)	High Efficiency (up to 90.5%) Updated
		Product image	/	Added
		ENEC certificate	/	Added
		CB certificate	/	Added
		BIS certificate	/	
		Models	EBV-060S012SV EBV-060S036SV EBV-060S048SV	Added
		Note of Models	(1) Certified input voltage range: 200-240Vac or 190-250Vdc (except CCC, KS and BIS).	(1) CCC certified input voltage range: 220/230/240 Vac; other certified input voltage range except CCC: 200-240Vac or 190- 250Vdc (except KS and BIS). Added
		Note of Models	(5) For BIS models add suffix -3000.	0.36 A
		Input AC Current	0.32 A	
		Total Output Voltage Ripple(pk-avg)	EBV-060S012SV EBV-060S036SV EBV-060S048SV	Added
		Efficiency at 220Vac input:	EBV-060S012SV EBV-060S036SV EBV-060S048SV	Added
		MTBF	1,145,000Hours	671,000Hours
		Lifetime	91,000 Hours at Tc=75 C	96,000 Hours at Tc=70 C
		Safety & EMC Compliance	/	Updated
		Lifetime vs. Case Temperature	/	Updated
		Efficiency vs. Load	EBV-060S012SV EBV-060S036SV EBV-060S048SV	Added
		Power Factor curve	/	Updated
		Total Harmonic Distortion curve	/	Updated
2022-01-15	C	KCC logo	/	Added
		Features	/	Updated
		Models	/	Updated

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Revision History (Continued)

Change Date	Rev.	Description of Change		
		Item	From	To
2022-01-15	C	Safety & EMC Compliance	/	Updated
		Mechanical Outline	/	Updated
		RoHS Compliance	/	Updated
2025-09-03	D	Format	/	Updated
		Safety & EMC Compliance	/	Updated

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Features

- HighEfficiency (up to 90%)
- Constant Voltage Output
- No-Load Power < 0.5 W
- Input Surge Protection: DM 4kV, CM 6kV
- All-Around Protection: OCP, OVP, SCP, OTP
- IP67
- SELV Output
- 5 Years Warranty

Description

The *EBV-075SxxxSV* series is a 75W, constant-voltage IP67 LED driver that operates from 176-305 Vac input with excellent power factor. It is created for many lighting applications including architectural, decorative and signage. The high efficiency of the driver 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, over current, output over voltage, short circuit, and over temperature.

Models

Output Voltage	Input Voltage Range(1)	Output Current Range	Max. Output Power(2)	Typical Efficiency (3)	Typical Power Factor 220Vac	Model Number(4)(5)
24 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 3.2 A	75 W	88.0%	0.96	EBV-075S024SV
36 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 2.1 A	75 W	89.0%	0.96	EBV-075S036SV
48 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 1.6 A	75 W	90.0%	0.96	EBV-075S048SV

Note s: (1) CCC certified input voltage range: 220/230/240 Vac; other certified input voltage range except CCC: 200-240 Vac or 190-250Vdc (except KS and BIS).
(2) Operating input voltage range: 90-305Vac, and 90-176Vac is for safety operation (see below “Derating” curve for details)
(3) Measured at 100% load and 220Vac input (see below “General Specifications” for details).
(4) SELV output.
(5) For BIS models add suffix -3000.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input AC Voltage	176 Vac	-	305 Vac	
Input DC Voltage	190 Vdc	-	250 Vdc	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.70 mA	IEC 60598-1; 240Vac/60Hz

Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Input AC Current	-	-	0.44 A	Measured at 100% load and 220Vac input.
Inrush Current(I^2t)	-	-	0.0033 A^2s	At 220Vac input, 25 C cold start, duration=36 μs, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.9	-	-	At 220-240Vac, 50-60Hz, 60%-100% load
THD	-	-	20%	
THD	-	-	12%	At 220-240Vac, 50-60Hz, 75%-100% load

Output Specifications

Parameter		Min.	Typ.	Max.	Notes
Output Voltage Tolerance		-5%Vo	-	5%Vo	At 100% load condition
Total Output Voltage Ripple (pk-avg) EBV-075S024SV EBV-075S036SV EBV-075S048SV		- - -	- - -	2.0V 2.5V 2.5V	At 0% - 100% load condition. Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1μF ceramic capacitor and a 47μF electrolytic capacitor.
~~Startup Overshoot/Undershoot~~		-	-	5%Vo	At 100% load condition
~~Line Regulation~~		-	-	±1%	Measured at 100% load
~~Load Regulation~~		-	-	±3%	
~~Turn-on Delay Time~~		-	-	0.75 s	Measured at 220Vac input, 100% load
Load Dynamic Response	Output Deviation	-	-	8%VO	R/S: 1 A/μs Load: 25% ~ 100% load.
	Settling Time	-	-	10 ms	
Temperature Coefficient of Vo		-	0.03%/ C	-	Case temperature = 0 C~Tc max

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 220Vac input: EBV-075S024SV EBV-075S036SV EBV-075S048SV	86.0% 87.0% 88.0%	88.0% 89.0% 90.0%	- - -	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	-	888,000 Hours	-	Measured at 220Vac input, 80%Load and 25 C ambient temperature (MIL-HDBK-217F)
Lifetime	-	97,000 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	

General Specifications (Continued)

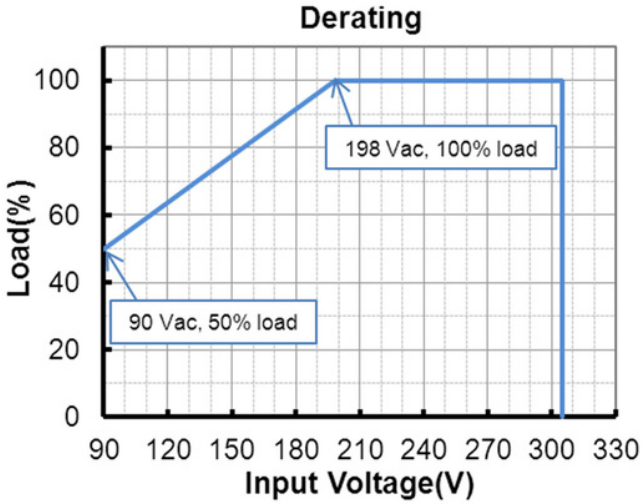
Parameter	Min.	Typ.	Max.	Notes
Operating Case Temperature for Warranty Tc_w	-40°C	-	+75	Case temperature for 5 years warranty. Humidity: 10% RH to 100% RH.
Storage Temperature	-40°C	-	C	Humidity: 5%RH to 100%RH
Dimensions Inches (L × W × H) Millimeters ((L × W × H)			+85°C 3.74 x 2.66x1.44 95 x 67.5x36.5	4.57 x 2.66 x 1.44 116 x 67.5 x 36.5
Net Weight	-	520g	-	

Safety & EMC Compliance

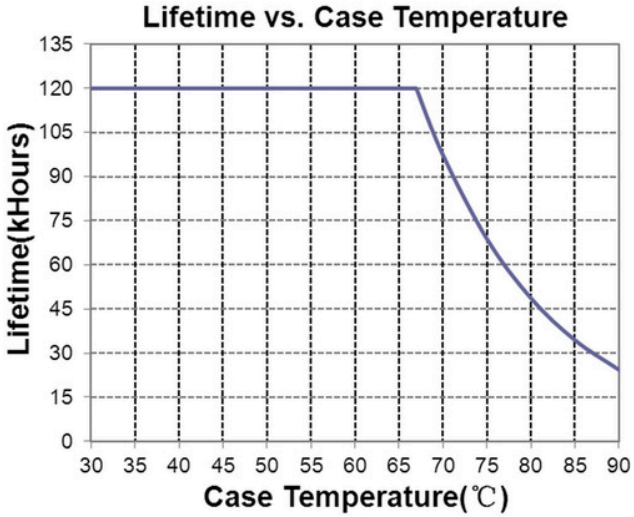
Safety Category	Standard
ENEC & CE	EN 61347-1, EN 61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
CCC	GB 19510.1, GB 19510.14
BIS	IS 15885(PART2/SEC13)
KS	KS C 7655
Performance	**Standard**
ENEC	EN IEC 62384
EMI Standards	**Notes**
EN IEC 55015/GB/T 17743(1)	Conducted emission Test &Radiated emission Test
EN IEC 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: Differential Mode 4 kV, Common Mode 6 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: (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 tothe driverand on the fixture itself.

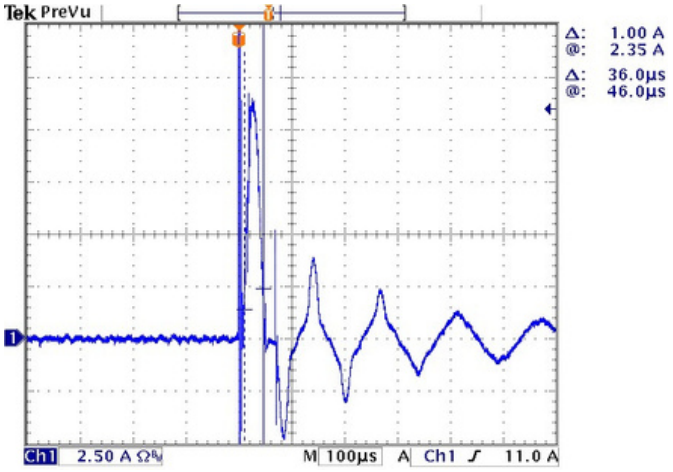
Derating



Lifetime vs. Case Temperature



Inrush Current Waveform



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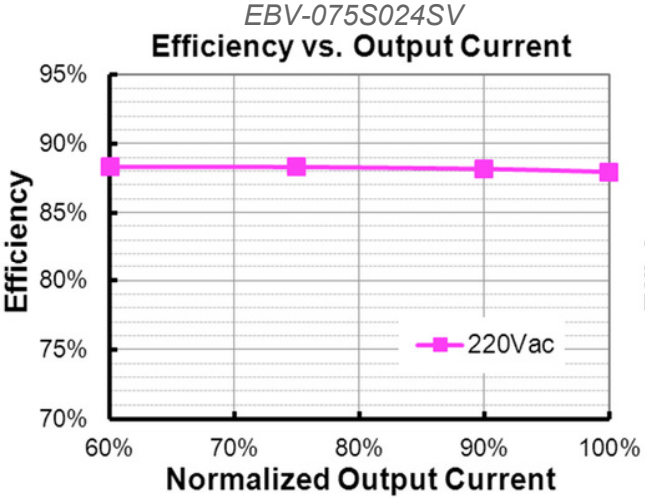
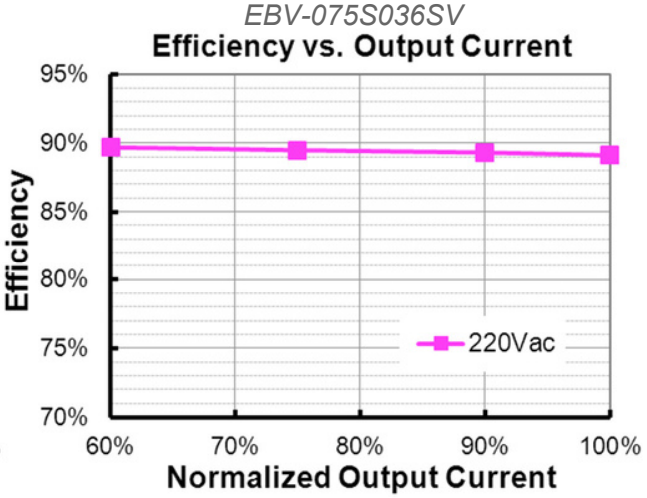
Efficiency vs. Load

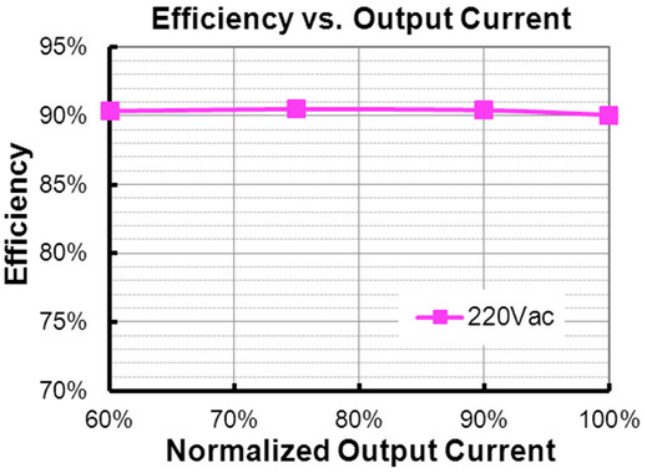
EBV-075S024SV



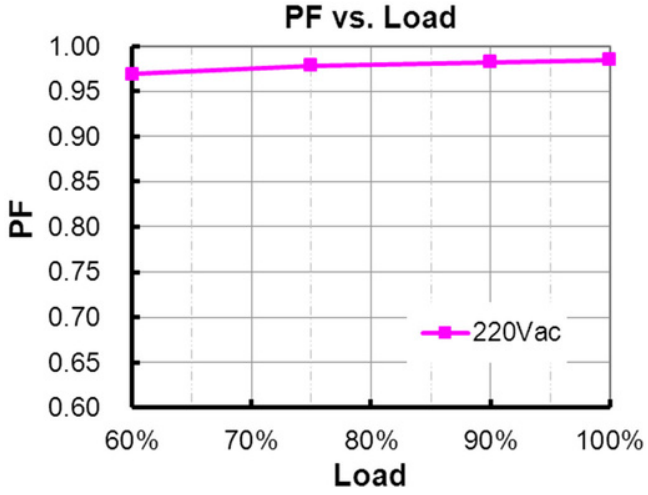
EBV-075S036SV



EBV-075S048SV



Power Factor



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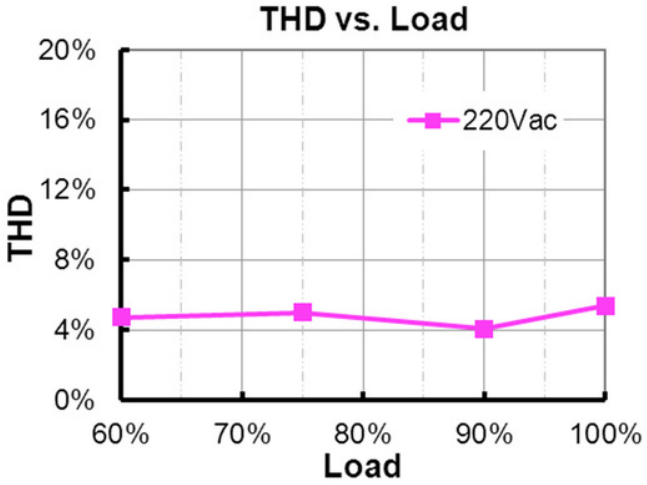
Total Harmonic Distortion



Protection Functions

Parameter	Notes
Over Current Protection	Auto Recovery. The driver shall be self-recovery when the fault condition is removed.
Over Voltage Protection Short	Limits output voltage at no load and in case the normal voltage limit fails.
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 Temperature Protection	Auto Recovery. Returning to normal after over temperature is removed.

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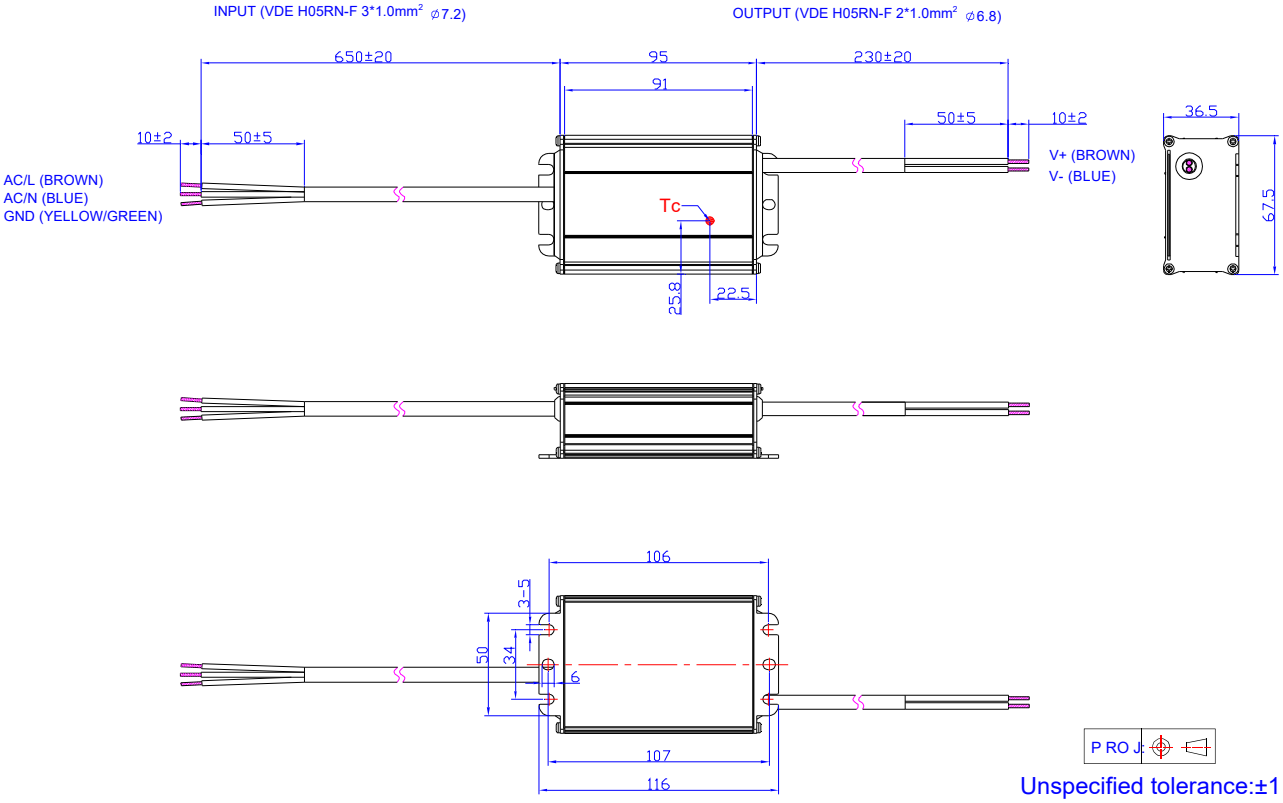
Mechanical Outline

EBV-075SxxxSV



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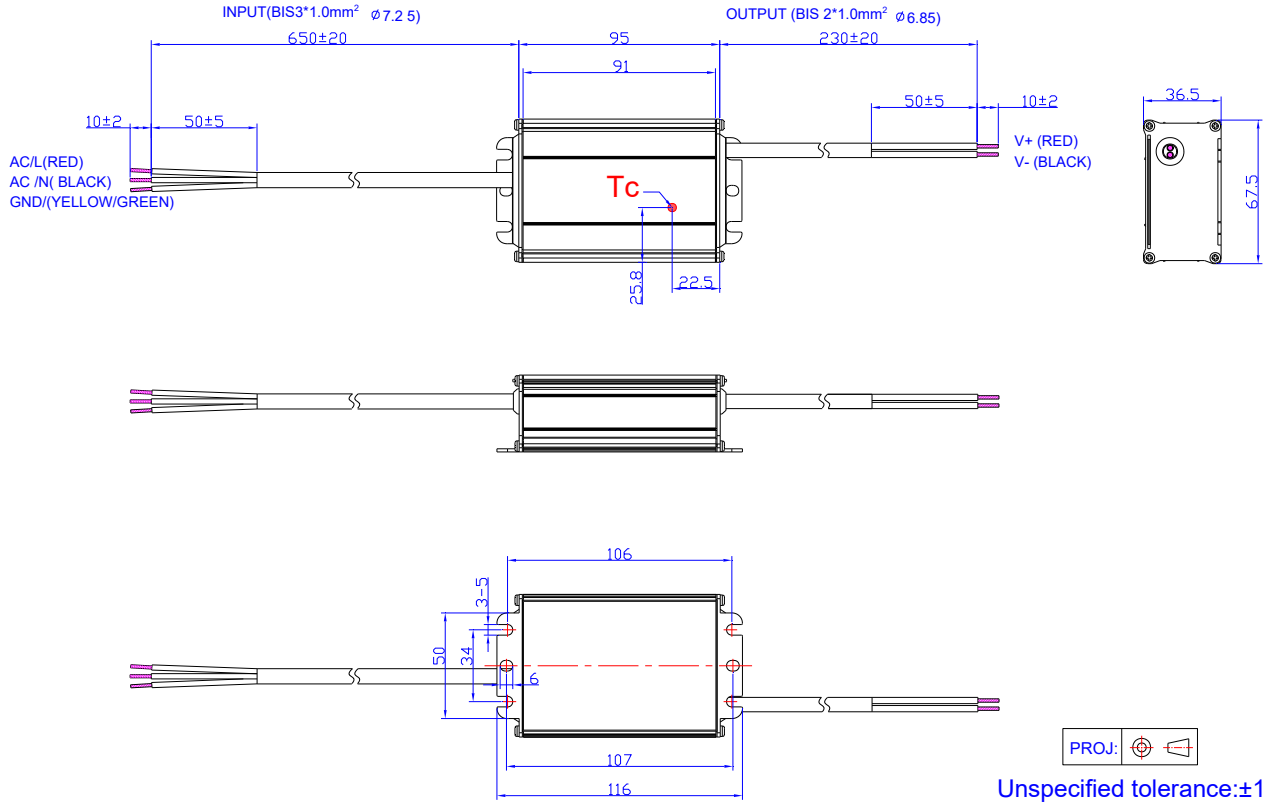
EBV-075SxxxSV-3000



RoHS Compliance

Ourproducts comply withreference to RoHS Directive (EU) 2015/863 amending 2011/65/EU, calling for the elimination of lead and other hazardous substances from electronic products.

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Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2018-09-29	A	Datasheet Release	/	/
2025-01-04	B	Format	/	Updated
		Product Photograph	/	Updated
		Independent logo	/	Added
		Safety &EMC Compliance	/	Updated
		Mechanical Outline	/	Updated
		RoHS Compliance	/	Updated

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Features

- HighEfficiency (Up to 92%)
- Constant Voltage Output
- No-Load Power < 0.5 W
- Input Surge Protection: DM 4kV, CM 6kV
- All-Around Protection: OCP, OVP, SCP, OTP
- IP67
- SELV Output
- 5 Years Warranty

Description

The *EBV-100SxxxSV* series is a 100W, constant-voltage IP67 LED driver that operates from 176-305 Vac input with excellent power factor. It is created for many lighting applications including architectural, decorative and signage. The high efficiency of the driver 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, over current, output over voltage, short circuit, and over temperature.

Models

Output Voltage	Input Voltage Range(1)(2)	Output Current Range	Max. Output Power	Typical Efficiency (3)	Typical Power Factor 220Vac	Model Number(4)(5)
12 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 8.4 A	100 W	85.5%	0.96	EBV-100S012SV(6)
24 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 4.2 A	100 W	90.0%	0.96	EBV-100S024SV
36 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 2.8 A	100 W	91.5%	0.96	EBV-100S036SV
48 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 2.1 A	100 W	92.0%	0.96	EBV-100S048SV

Notes: (1) CCC certified input voltage range: 220/230/240 Vac; other certified input voltage range except CCC: 200-240 Vac or 190-250Vdc (except KS and BIS).
(2) Operating input voltage range: 90-305Vac, and 90-176Vac is for safety operation (see below “Derating” curve for details).
(3) Measured at 100% load and 220Vac input (see below “General Specifications” for details).
(4) SELV output.
(5) For BIS models add suffix -3000.
(6) The model cannot meet EU Directive 2009/125/EC (ecodesign requirements for energy-related products), but it can be used in the exempt application scenarios listed in the Annex III of the ErP Directive such as the lighting applications including horticulture, UV-LED etc.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input AC Voltage	176 Vac 190 Vdc	-	305 Vac 250 Vdc	
Input DC Voltage		-		

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Input Specifications (Continued)

Parameter		Typ.	Max.	Notes
Input Frequency		-	63 Hz	
Leakage Current		-	0.70 mA	
Input AC Current		-	0.65 A	IEC60598-1; 240Vac/60Hz
Inrush Current(I^2t)	-	-		Measured at 100% load and 220Vac input.
PF	0.9	-	0.02 A^2s	At 220Vac input, 25 C cold start, duration=26.4 μs, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
THD	-	-	-	At 220-240Vac, 50-60Hz, 60%-100% load(60~100W)
THD	-	-	20%	At 220-240Vac, 50-60Hz, 60%-100% load(60~100W)
			10%	At 220-240Vac, 50-60Hz, 75%-100% load(75~100W)

Output Specifications

Parameter		Min.	Typ.	Max.	Notes
Output Voltage Tolerance		-5%Vo	-	5%Vo	At 100% load condition
Total Output Voltage Ripple (pk-avg) EBV-100S012SV EBV-100S024SV EBV-100S036SV EBV-100S048SV		- - - -	- - - -	- 2.0 V 2.0 V 2.5 V 2.5 V	At 0% - 100% load condition. Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1μF ceramic capacitor and a 47μF electrolytic capacitor.
Startup Overshoot/Undershoot		-	-	5%Vo	At 100% load condition
Line Regulation		-	-	±1%	Measured at 100% load
Load Regulation		-	-	±3%	
Turn-on Delay Time		-	-	0.75 s	Measured at 220Vac input, 100% load
Load Dynamic Response	Output Deviation	-	-	8%VO	R/S: 1 A/μs Load: 25% ~ 100% load
	Settling Time	-	-	10 ms	
Temperature Coefficient of Vo		-	0.03%/ C	-	Case temperature = 0 C~Tc max

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 220 Vac input: EBV-100S012SV EBV-100S024SV EBV-100S036SV EBV-100S048SV	 83.5% 88.0% 89.5% 90.0%	85.5% 90.0% 91.5% 92.0%	 - - - -	Measured at 100% load and steady-state temperature in 25 C ambient; (Efficiency will be about 2.0% lower if measured immediately after startup.)

General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
MTBF	-	436,000 Hours 85,000 Hours	-	Measured at 220Vac input, 80%load and 25 C ambient temperature (MIL-HDBK-217F)
Lifetime	-	- -	-	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	Case temperature for 5 years warranty. Humidity: 10% RH to 95% RH.
Storage Temperature	-40°C		C	Humidity: 5%RH to 95%RH
Dimensions Inches (L × W × H) Millimeters ((L × W × H)	5.71 x 2.66 x 1.44 145 x 67.5 x 36.5		+85°C	With mounting ear: 6.54 x 2.66 x 1.44 166 x 67.5 x 36.5
Net Weight	-	760 g	-	

Safety & EMC Compliance

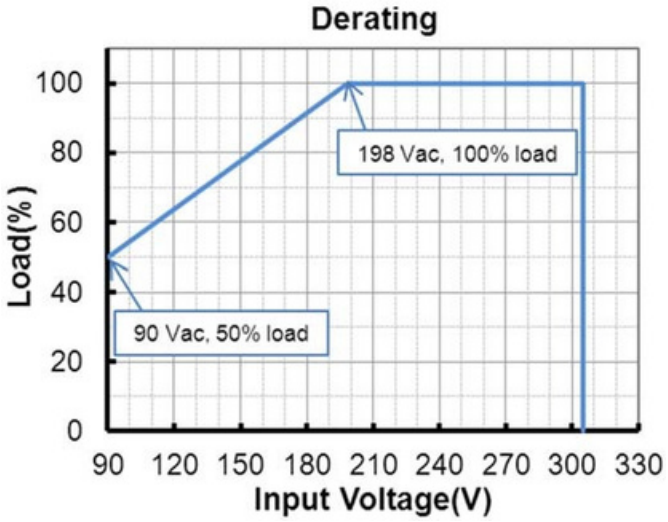
Safety Category	Standard
CE & ENEC CB	EN 61347-1, EN 61347-2-13
CCC	IEC 61347-1, IEC 61347-2-13
BIS	GB 19510.1, GB 19510.14
KS	IS 15885(PART2/SEC13)
	KS C 7655
EMI Standards	**Notes**
EN 55015/GB 17743/KN 15(1)	Conducted emission Test & Radiated emission Test
EN 61000-3-2/GB 17625.1	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EMS Standards	**Notes**
EN 61000-4-2 EN 61000-4-3	Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge
EN 61000-4-4	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-5	Electrical Fast Transient / Burst-EFT
EN 61000-4-6	Surge Immunity Test: AC Power Line: Differential Mode 4 kV, Common Mode 6 kV
EN 61000-4-8	Conducted Radio Frequency Disturbances Test-CS
	Power Frequency Magnetic Field Test

Safety & EMC Compliance (Continued)

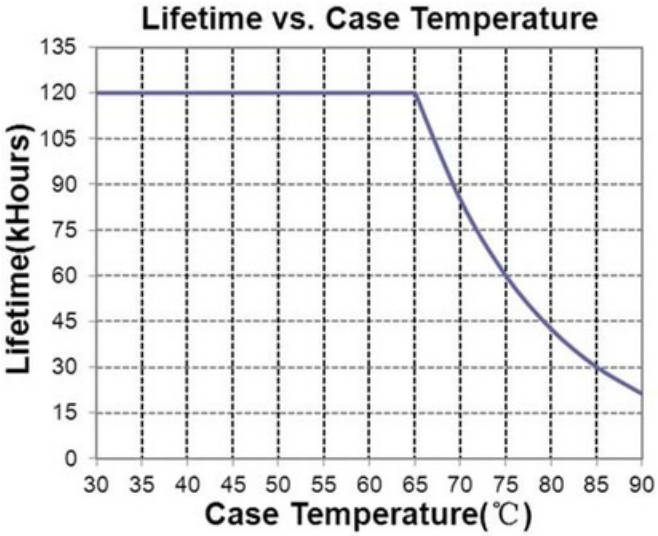
EMS Standards	Notes
EN 61000-4-11	
EN 61547	Voltage Dips
	Electromagnetic Immunity Requirements Applies To Lighting Equipment

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.

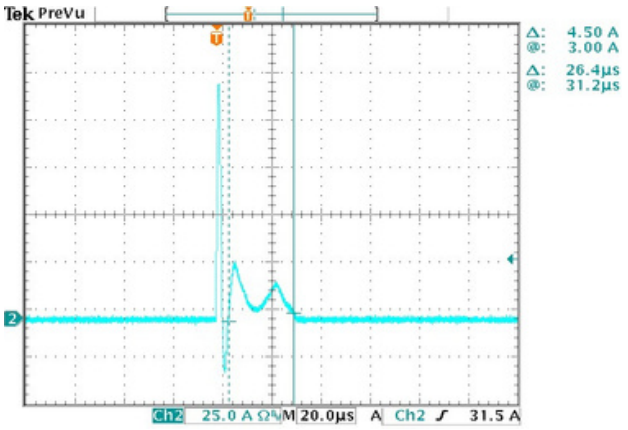
Derating



Lifetime vs. Case Temperature

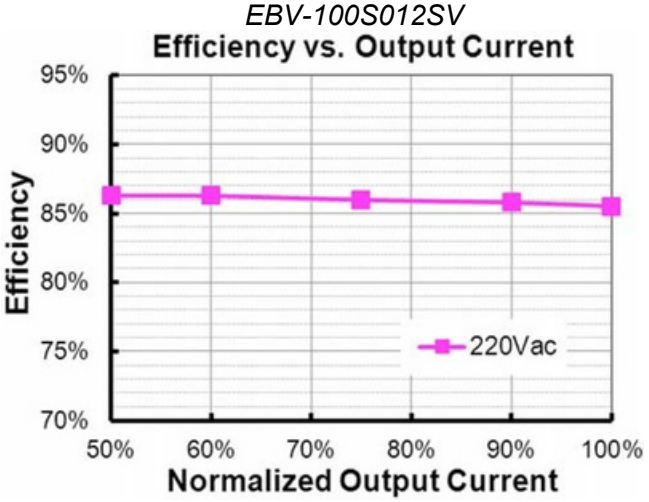


Inrush Current Waveform

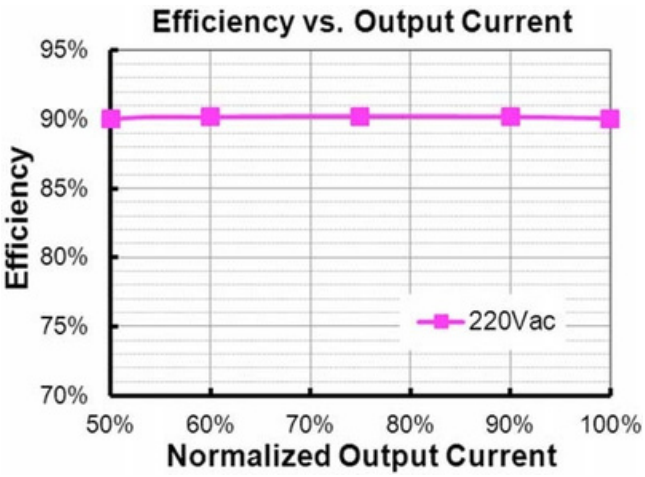


Efficiency vs. Load

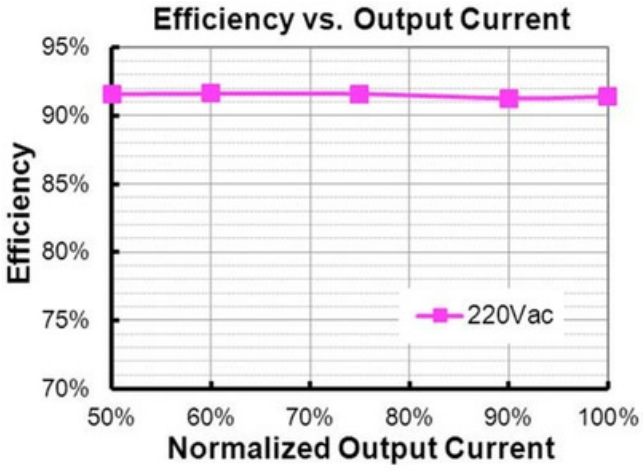
EBV-100S012SV



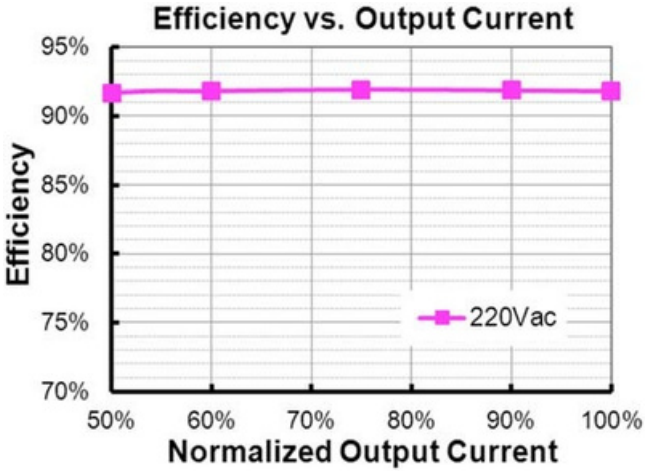
EBV-100S024SV



EBV-100S036SV



EBV-100S048SV



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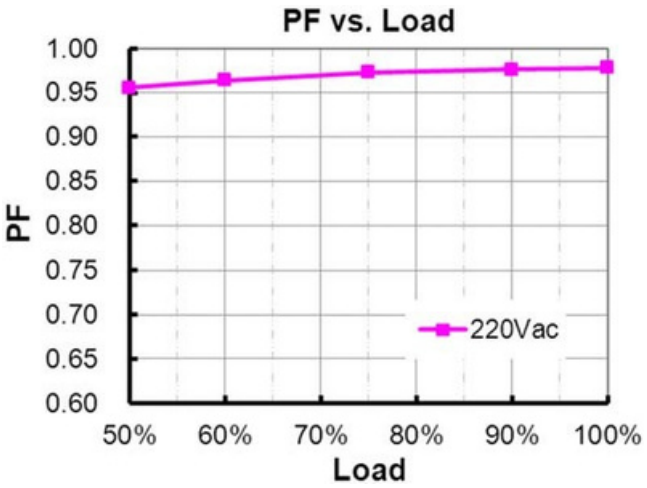
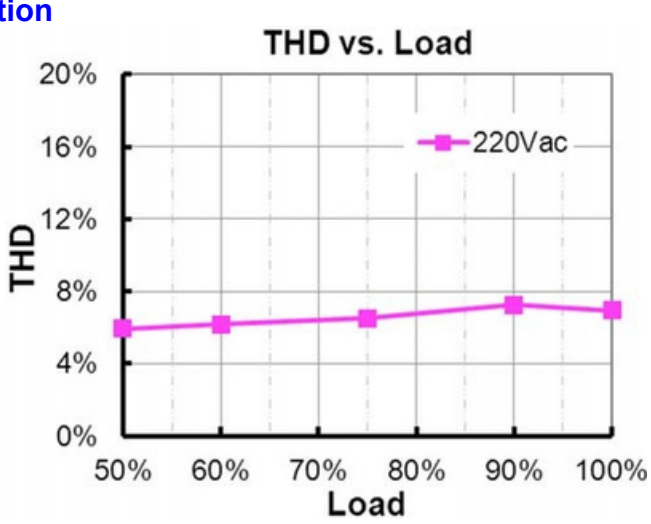
Power Factor



Total Harmonic Distortion



Protection Functions

Parameter	Notes
Over Current Protection	Auto Recovery. The driver shall be self-recovery when the fault condition is removed.
Over Voltage Protection Short	Limits output voltage at no load and in case the normal voltage limit fails.
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 Temperature Protection	Auto Recovery. Returning to normal after over temperature is removed.

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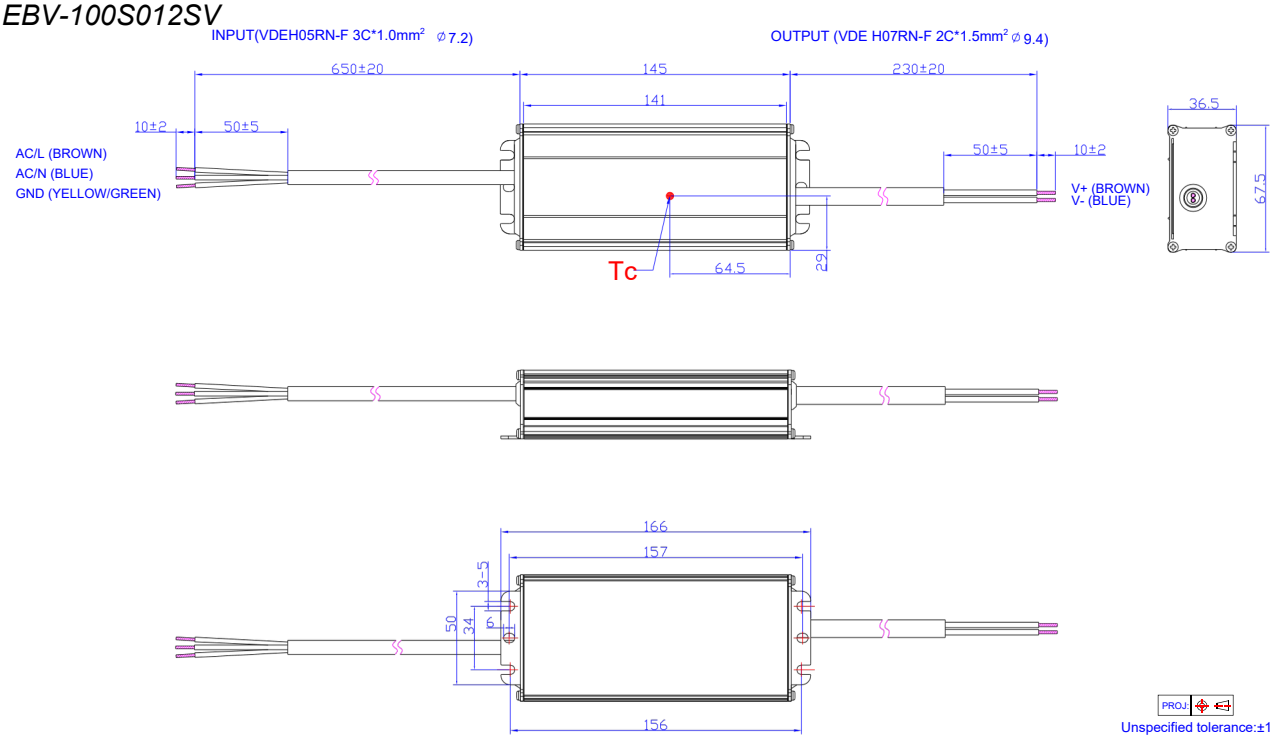
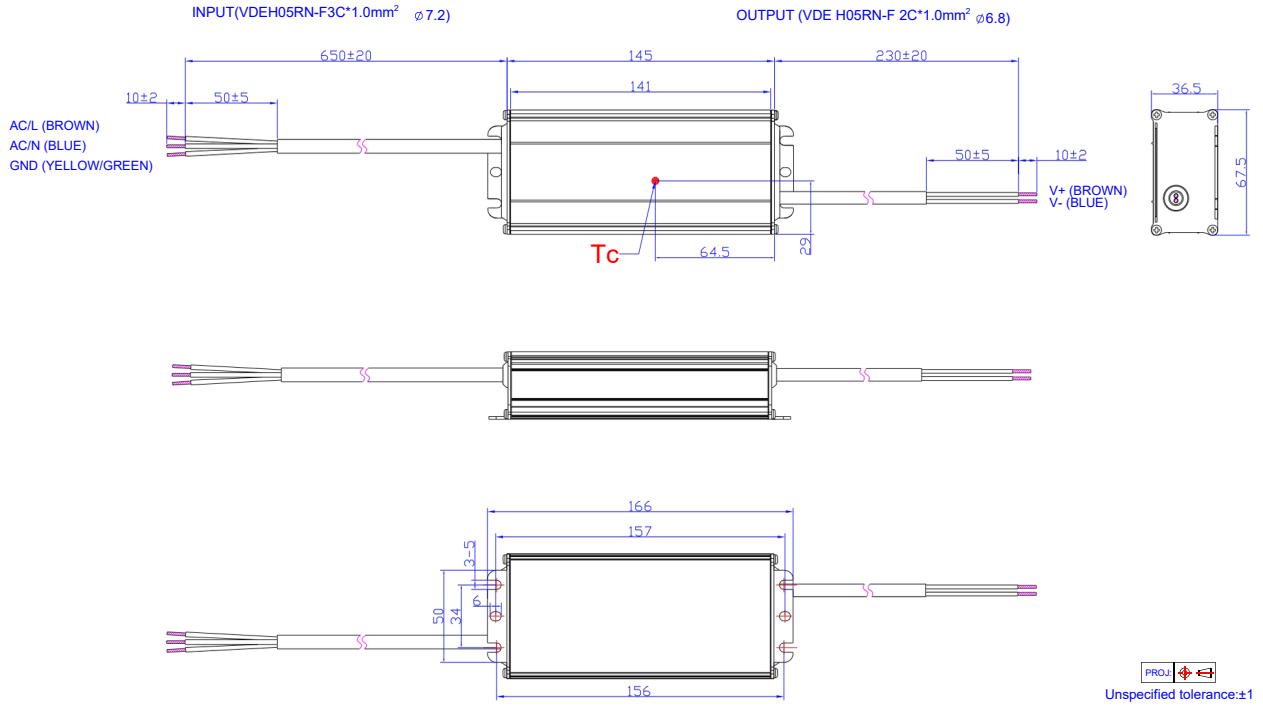
Mechanical Outline

EBV-100S012SV



EBV-100S024/036/048SV



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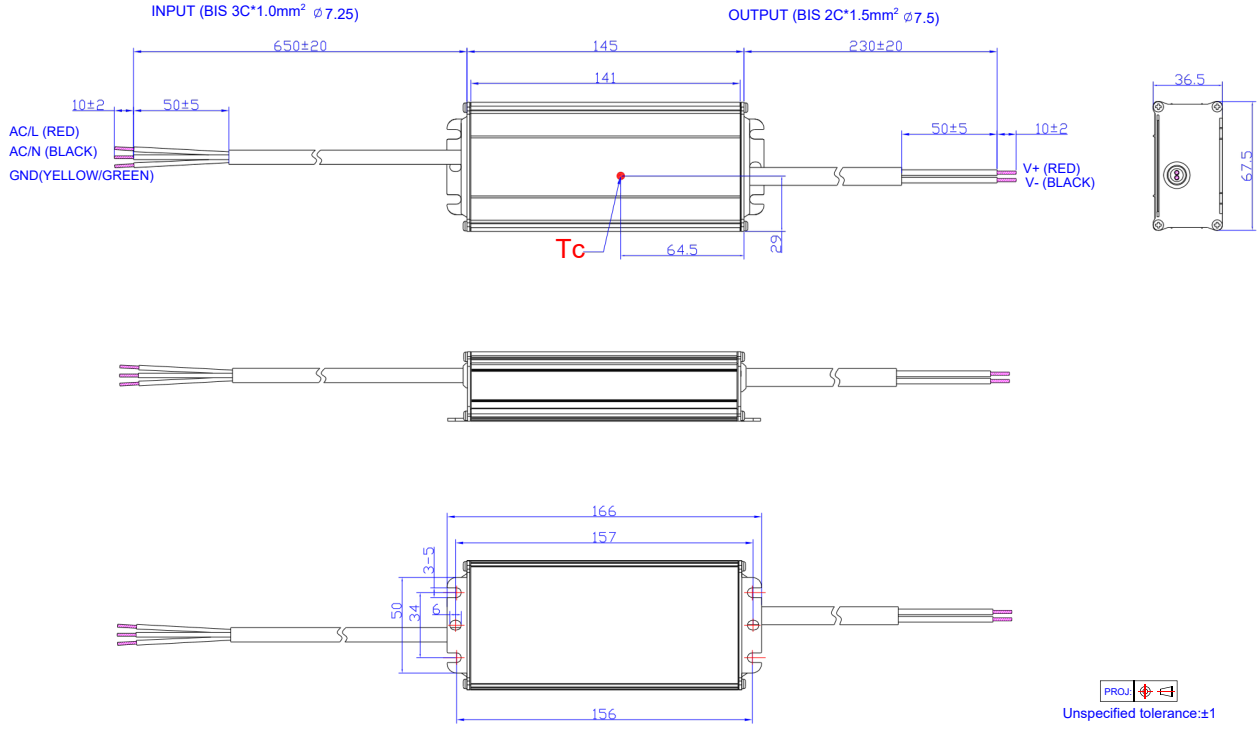
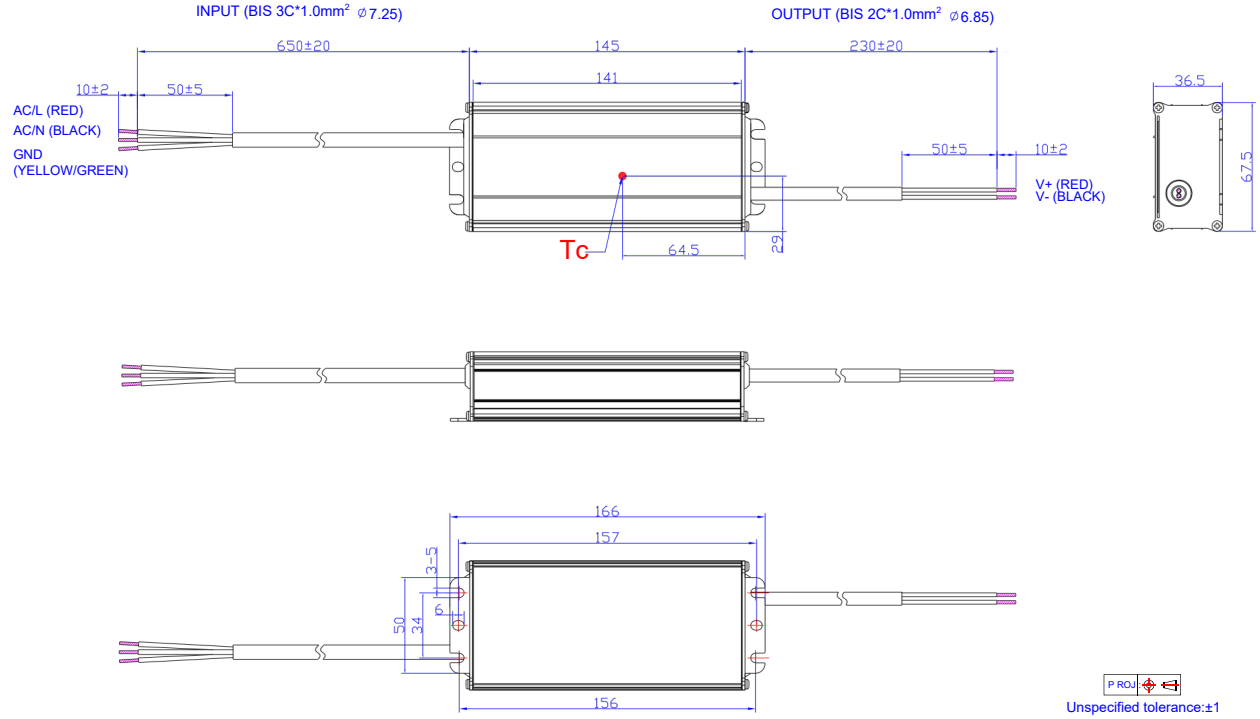


EBV-100S024/036/048SV-3000



RoHS & Compliance

Ourproducts complywithreference to RoHS Directive (EU) 2015/863 amending 2011/65/EU, calling for the elimination of lead and other hazardous substances fromelectronic products.

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Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2018-06-08	A	Datasheet Release	/	/
2018-09-29	B	Product image	/	Updated
		CE logo	/	Added
		CB logo	/	Added
		ENEC logo	/	Added
		BIS logo	/	Added
		Models	EBV-100S012SV EBV-100S024SV EBV-100S048SV	Added
		Note of Models	(4) SELV output.	Added
		Note of Models	(5) For BIS models add suffix -3000.	Added
		Inrush Current(I^2t)	0.56 A^2s	0.02 A^2s
		Input AC Current	0.51 A EBV-100S012SV	0.65 A
		Total Output Voltage Ripple (pk-avg)	EBV-100S024SV EBV-100S048SV EBV-100S012SV	Added
		Efficiency at 220 Vac input	EBV-100S024SV EBV-100S048SV	Added
		MTBF	764,000 Hours 117,000 Hours	436,000 Hours
		Lifetime	/	85,000 Hours
		Lifetime vs. Case Temperature	/	Updated
		Inrush Current Waveform	EBV-100S012SV	Updated
		Efficiency vs. Load curve	EBV-100S024SV EBV-100S048SV /	Added
		Power Factor curve	/	Updated
		Total Harmonic Distortion curve	EBV-100S012SV	Updated
		Mechanical Outline	/	Added
2022-01-15	C	KCC logo	/	Added
		Features	/	Updated
		Models	/	Updated
		Safety & EMC Compliance	/	Updated
		Mechanical Outline	/	Updated
		RoHS & Compliance		Updated

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Features

- HighEfficiency (up to 91.5%)
- Constant Voltage Output
- Input Surge Protection: DM 4kV, CM 6kV
- All-Around Protection: OCP, OVP, SCP, OTP
- IP67
- SELV Output
- 5 Years Warranty

Description

The *EBV-150SxxxSV* series is a 150W, constant-voltage IP67 LED driver that operates from 176-305 Vac input with excellent power factor. It is created for many lighting applications including architectural, decorative and signage. The high efficiency of the driver 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, over current, output over voltage, short circuit, and over temperature.

Models

Output Voltage	Input Voltage Range(1)	Output Current Range	Max. Output Pow er(2)	Typical Efficiency(3)	Typical Power Factor 220Vac	Model Number(4) (5)
12 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 10.0 A	120 W	85.5%	0.96	EBV-150S012SV(6)
24 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 6.3 A	150 W	89.0%	0.96	EBV-150S024SV
36 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 4.2 A	150 W	91.5%	0.96	EBV-150S036SV
48 V		0 ~ 3.2 A	150 W	91.5%	0.96	EBV-150S048SV

Note s:(1) Certified input voltage range: CCC: 220/230/240 Vac; otherwise: 200-240 Vac or 190-250Vdc (except KS and BIS).
(2) Operating input voltage range: 90-305Vac, and 90-176Vac is for safety operation (see below “Derating” curve for details).
(3) Measured at 100% load and 220Vac input (see below “General Specifications” for details).
(4) SELV output.
(5) For BIS models add suffix -3000.
(6) The model cannot meet EU Directive 2009/125/EC (ecodesign requirements for energy-related products), but it can be used in the exempt application scenarios listed in the Annex III of the ErP Directive such as the lighting applications including horticulture, UV-LED etc.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input AC Voltage	176 Vac	-	305 Vac	
Input DC Voltage	190 Vdc	-	250 Vdc	
Input Frequency	47 Hz	-	63 Hz	

Input Specifications (Continued)

Parameter		Min.	Typ.	Max.	Notes
Leakage Current		-	-	0.70 mA	IEC 60598-1; 240Vac/60Hz
Input AC Current		-	-	0.84 A	Measured at 100% load and 220Vac input.
Inrush Current(I^2t)		-	-	0.042 A^2s	At 220Vac input, 25 C cold start, duration=27.6 μs, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF		0.9	-	-	At 220-240Vac, 50-60Hz, 60%-100% load(90-150W)
THD		-	-	20%	At 220-240Vac, 50-60Hz, 60%-100% load(90-150W)
THD	EBV-150S024SV	-	-	12%	At 220-240Vac, 50-60Hz, 75%-100% load(112.5-150W)
	EBV-150S036SV EBV-150S048SV	-	-	10%	At 220-240Vac, 50-60Hz, 75%-100% load(112.5-150W)

Output Specifications

Parameter		Min.	Typ.	Max.	Notes
Output Voltage Tolerance		-5%Vo	-	5%Vo	At 100% load condition
Total Output Voltage Ripple (pk-avg)	EBV-150S012SV EBV-150S024SV	-	-	2.0 V	At 0% - 100% load condition. Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 uF ceramic capacitor and a 47 uF electrolytic capacitor.
	EBV-150S036SV EBV-150S048SV	-	-	2.5 V	
Startup Overshoot/Undershoot		-	-	5%Vo	At 100% load condition
Line Regulation		-	-	±1%	Measured at 100% load
Load Regulation		-	-	±3%	
Turn-on Delay Time		-	-	0.75 s	Measured at 220Vac input, 100% load
Load Dynamic Response	Output Deviation	-	-	8%VO	R/S: 1 A/μs Load: 25% ~ 100% load.
	Settling Time	-	-	10 ms	
Temperature Coefficient of Vo		-	0.03%/ C	-	Case temperature = 0 C~Tc max

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 220Vac input: EBV-150S012SV EBV-150S024SV EBV-150S036SV EBV-150S048SV	 83.5% 87.0% 89.5% 89.5%	 85.5% 89.0% 91.5% 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.)

General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
MTBF	-	355, 000 Hou rs	-	Measured at 220Vac input, 80%Load and 25 C ambient temperature (MIL-HDBK-217F)
Lifetime	-	83 ,000 Hou rs	-	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. Humidity: 10% RH to 95% RH.
Storage Temperature	-40 °C	-	+85 °C	Humidity: 5%RH to 95%RH
Dimensions Inches (L × W × H) Millimeters ((L × W × H)	5.71 x 2.66x1.56 145 x 67.5x39.7			With mounting ear 6.54 x 2.66 x 1.56 166 x 67.5 x 39.7
Net Weight	-	830g	-	

Safety & EMC Compliance

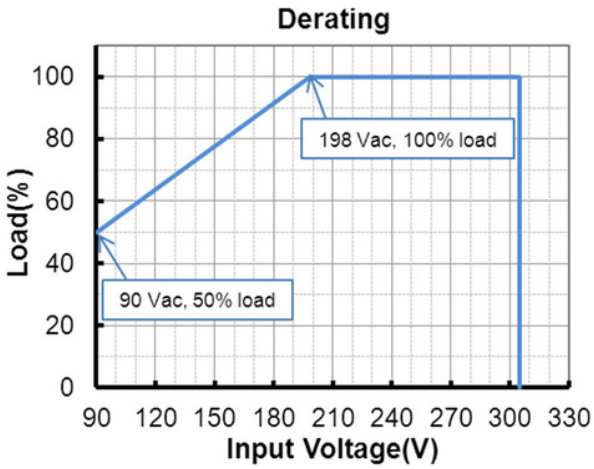
Safety Category	Standard
CE & ENEC	EN 61347-1, EN 61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
CCC	GB 19510.1, GB 19510.14
BIS	IS 15885(PART2/SEC13)
KS	KS C 7655
Performance	**Standard**
ENEC	EN IEC 62384
EMI Standards	**Notes**
EN IEC 55015/GB/T 17743/KS C 9815(1)	Conducted emission Test &Radiated emission Test
EN IEC 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: Differential Mode 4 kV, Common Mode 6 kV

Safety & EMC Compliance (Continued)

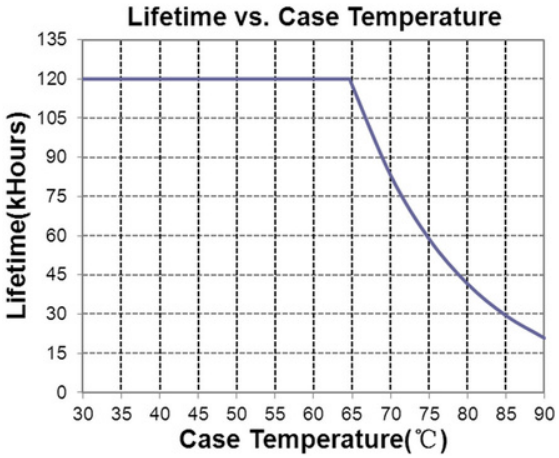
EMS Standards	Notes
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61547/KS C 9547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

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.

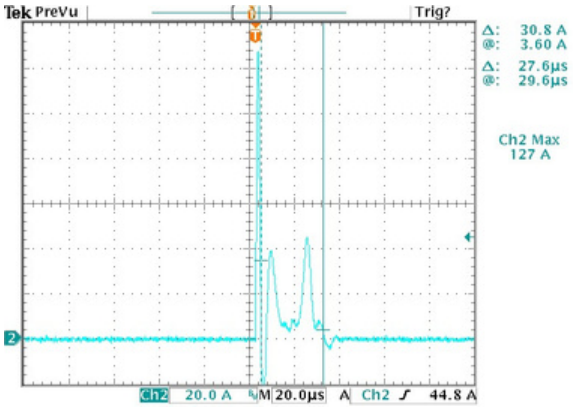
Derating



Lifetime vs. Case Temperature

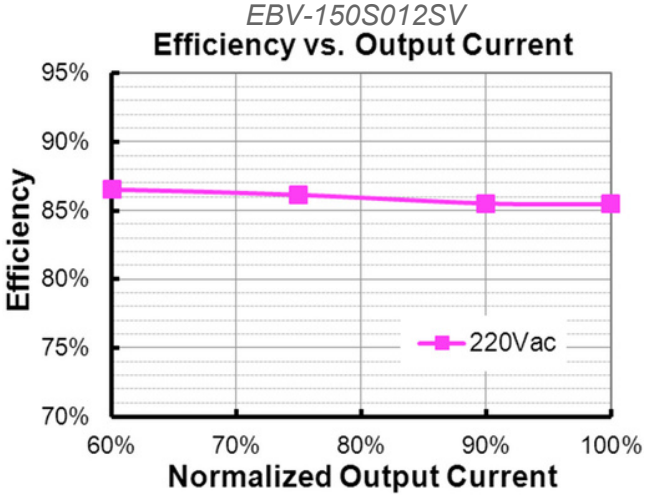


Inrush Current Waveform

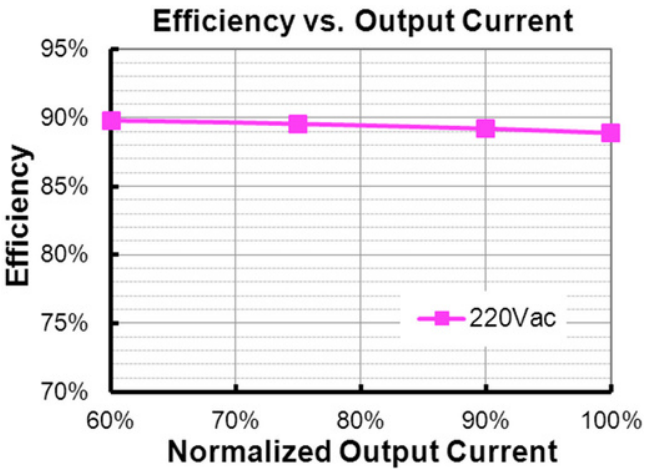


Efficiency vs. Load

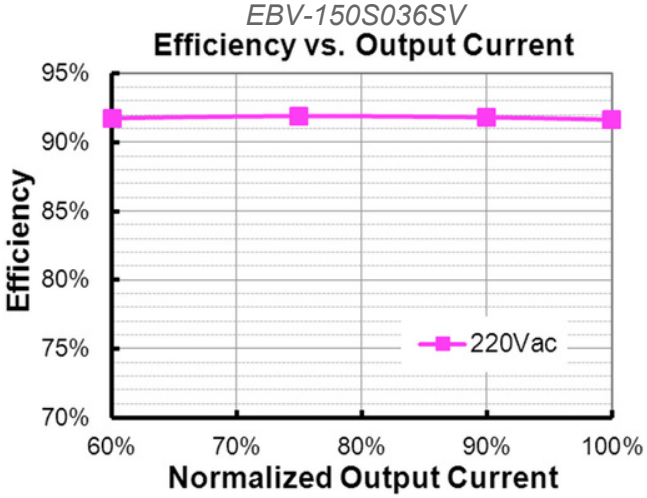
EBV-150S012SV



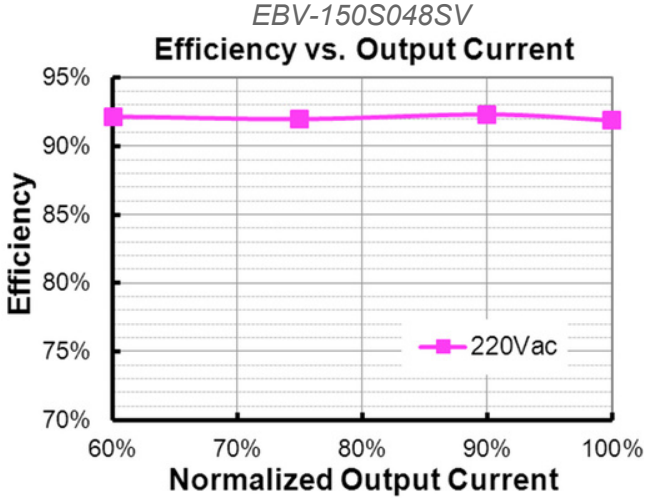
EBV-150S024SV



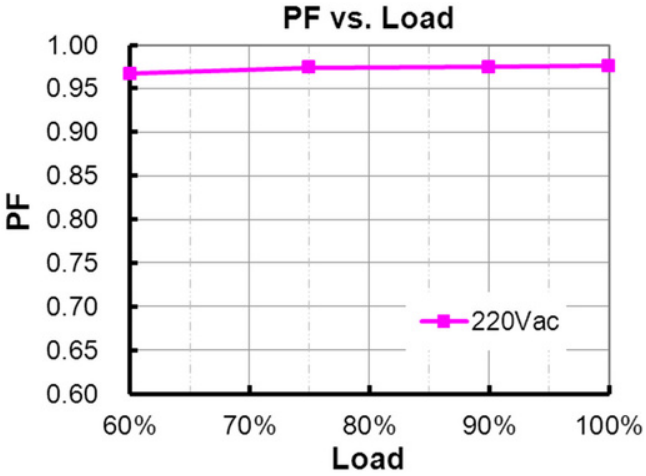
EBV-150S036SV



EBV-150S048SV

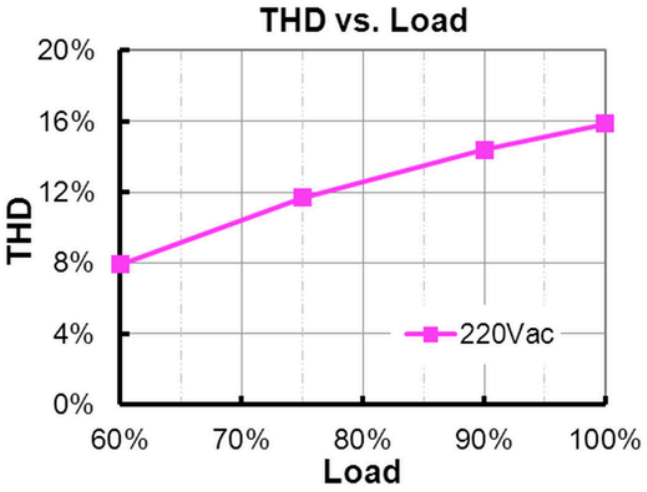


Power Factor

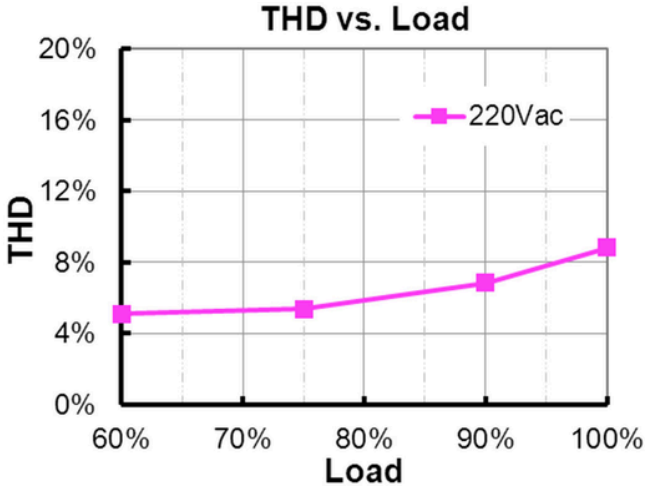


Total Harmonic Distortion

EBV-150S012SV



Other Models



Protection Functions

Parameter	Notes
Over Current Protection	Auto Recovery. The driver shall be self-recovery when the fault condition is removed.
Over Voltage Protection	Limits output voltage at no load and in case the normal voltage limit fails.
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 Temperature Protection	Auto Recovery. Returning to normal after over temperature is removed.

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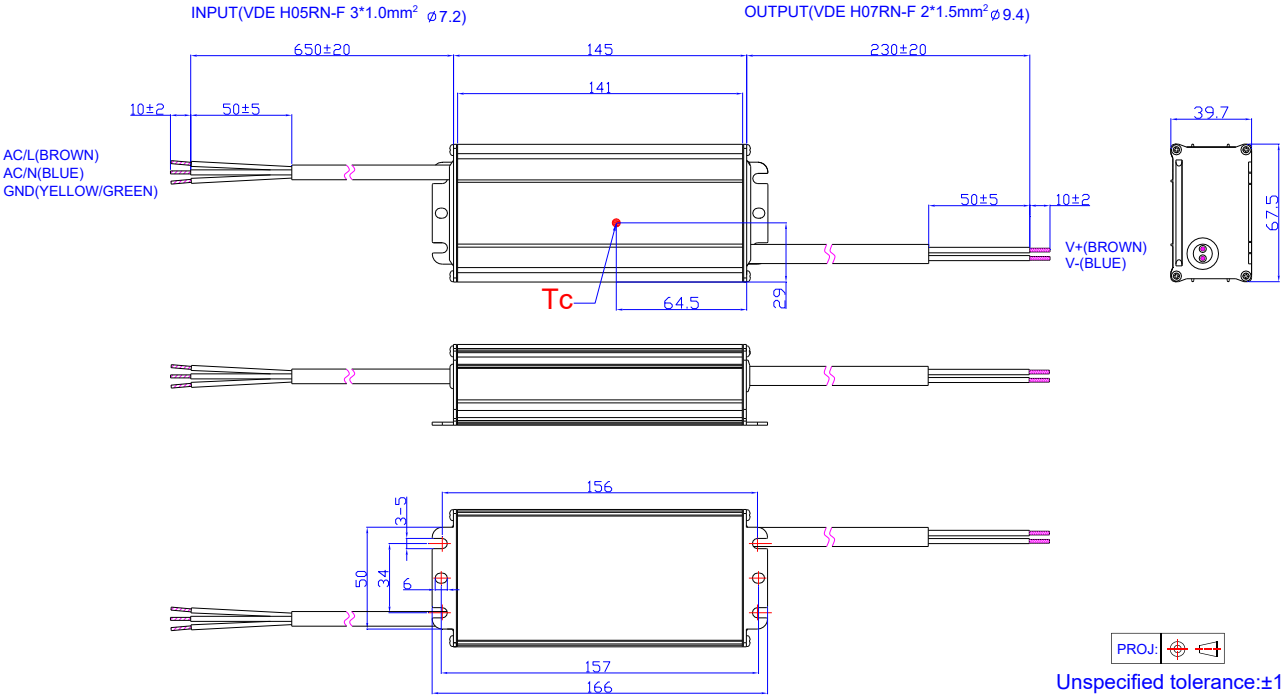
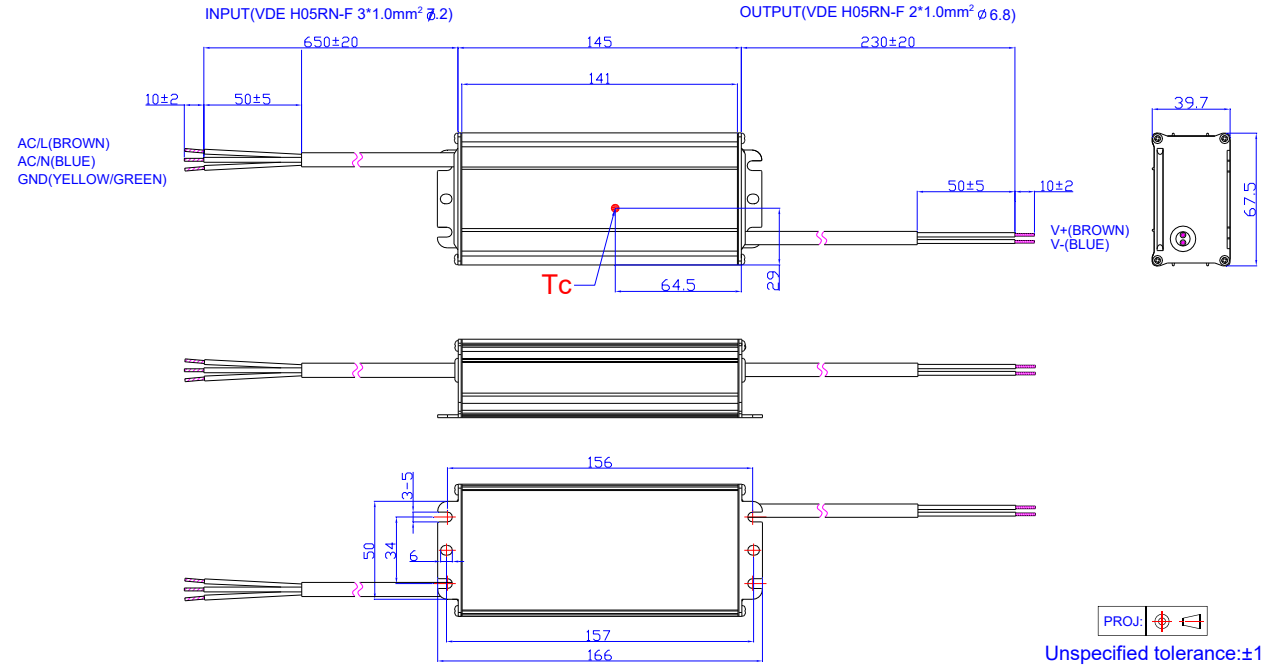
Mechanical Outline

EBV-150S012SV



Unspecified tolerance:±1

EBV-150S024SV/EBV-150S036SV/EBV-150S048SV



Unspecified tolerance:±1

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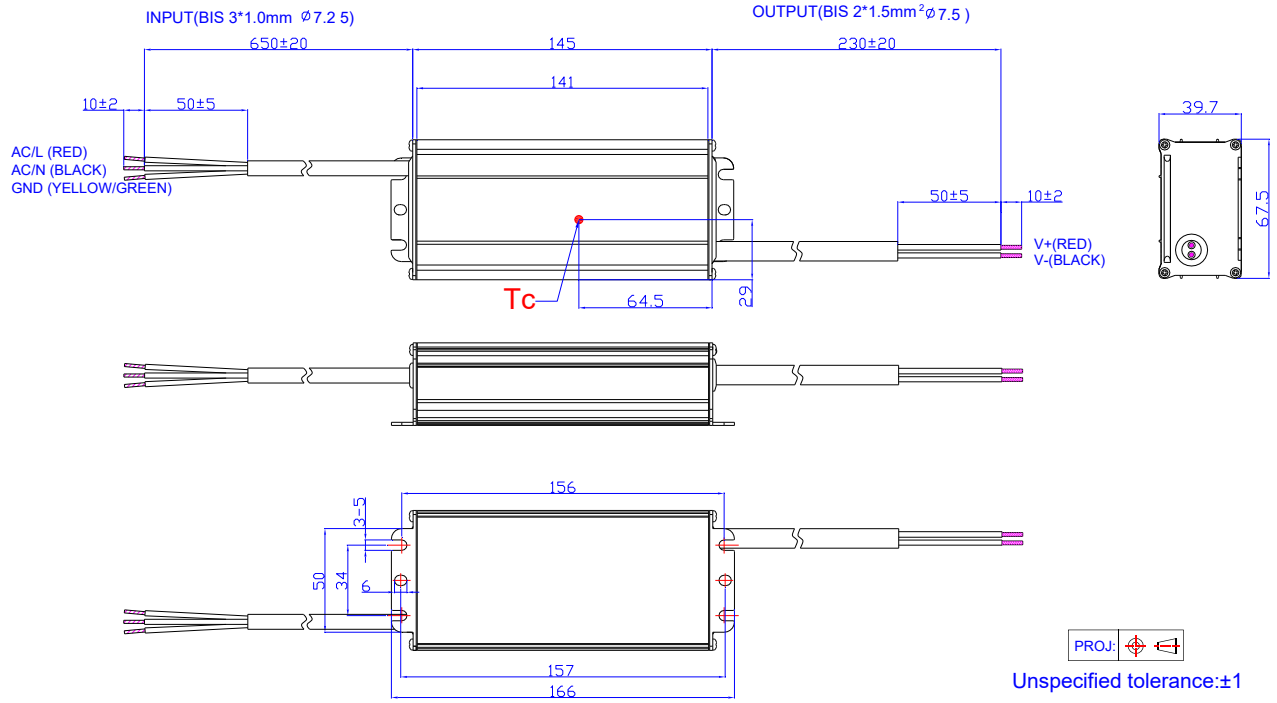
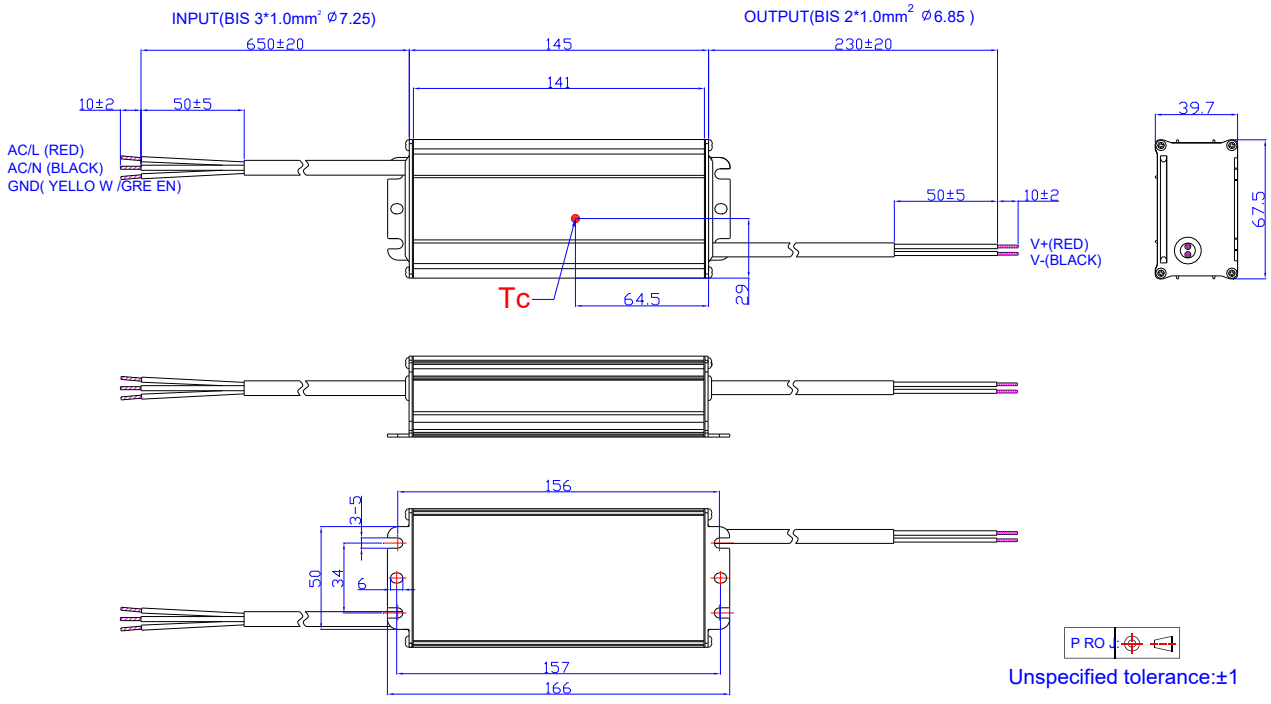
EBV-150S012SV-3000 2



EBV-150S024SV-3000/EBV-150S036SV-3000/ EBV-150S048SV-3000



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.

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Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2018-06-29	A	Datasheet Release	/	/
2018-10-25	B	CE logo	/	Added
		CB logo	/	Added
		BIS logo	/	Added
		Models	EBV-150S012SV EBV-150S036SV	Added
		Note of Models	(1) Certified input Voltage range: 200-240Vac or 190-250Vdc (except CCC, KS and BIS).	(1) CCC certified input voltage range: 220/230/240 Vac; other certified input voltage range except CCC: 200-240 Vac or 190-250Vdc (except KS and BIS).
		Note of Models	(5) For BIS models add suffix -3000.	Added
		Input AC Current	1.05 A	0.84 A
		Inrush Current(I^2t)	0.33 A^2s	0.042 A^2s
		THD<10%	EBV-150S036SV	Added
		Total Output Voltage Ripple (pk-avg)	EBV-150S012SV EBV-150S036SV	Added
		Efficiency at 220Vac input:	EBV-150S012SV EBV-150S036SV	Added
		MTBF	483,000Hours	355,000Hours
		Lifetime	86,000Hours	83,000Hours
		Safety & EMC Compliance	/	Updated
		Lifetime vs. Case Temperature curve	/	Updated
		Inrush Current Waveform	/	Updated
		Efficiency vs. Load curve	EBV-150S012SV EBV-150S036SV	Added
		Power Factor curve	/	Updated
		Total Harmonic Distortion curve	/	Updated
		Mechanical Outline	EBV-150S012SV	Added
2022-01-15	C	KCC logo	/	Added
		Features	/	Updated
		Models	/	Updated
		Safety & EMC Compliance	/	Updated

Revision History (Continued)

Change Date	Rev.	Description of Change		
		Item	From	To
2022-01-15	C	Mechanical Outline	/	Updated
		RoHS & Compliance	/	Updated
2022-04-08	D	Features	/	Updated
		Models	/	Updated
		General Specifications	/	Updated
		Safety & EMC Compliance	/	Updated
2025-09-03	E	Format	/	Updated
		Safety & EMC Compliance	/	Updated

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Features

- High Efficiency (up to 93.5%)
- Constant Voltage Output
- Input Surge Protection: 4kV line-line, 6kV line-earth
- All-Around Protection: OCP, OVP, SCP, OTP
- Waterproof (IP67)
- SELV Output
- Independent Design
- 5YearsWarranty

Description

The *EBV-200SxxxSV* series is a 200W, constant-voltage, the LED driver that operates from 176-305 Vac input with excellentpower factor. It is created for architectural lighting, decorative lighting, signage lighting and similar applications requiring industry safety compliance, superior electrical performance and robust packaging for challenging environments. The high efficiency of the driver 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, over current, output over voltage, short circuit, and over temperature.

Models

Output Voltage	Input Voltage Range(1)	Output Current Range	Max. Output Power(2)	Typical Efficiency (3)	Power Factor	Model Number(4)(5)
					220Vac	
12 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 16.7 A	200 W	91.5%	0.96	EBV-200S012SV
24 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 8.4 A	200 W	93.0%	0.96	EBV-200S024SV
36 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 5.6 A	200 W	92.5%	0.96	EBV-200S036SV
48 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 4.2 A	200 W	93.5%	0.96	EBV-200S048SV

Notes: (1) CCC certified input voltage range: 220/230/240 Vac; other certified input voltage range except CCC: 200-240 Vac or 190-250Vdc (except BIS, KCC and KS).
(2) Operating input voltage range: 90-305Vac, and 90-176Vac is for safety operation (see below “Derating” curve for details)
(3) Measured at 100% load and 220Vac input (see below “General Specifications” for details).
(4) SELV output.
(5) For BIS models add suffix -3000.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	176 Vac 47 Hz	-	305 Vac 63 Hz	190-250 Vdc
Input Frequency	-	-	0.70 mA	
Leakage Current	-		1.1 A	IEC60598-1; 240Vac/ 60Hz
Input AC Current				Measured at 100% load and 220Vac input.

Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Inrush Current(I^2t)	-	-	2.22 A^2s	At 220Vac input, 25℃ cold start, duration=808 μs, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.9	-	-	At 220-240Vac, 50-60Hz, 60%-100%load(120-200W)
THD	-	-	20%	
THD	-	-	10%	At 220-240Vac, 50-60Hz, 75%-100%load(150-200W)

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Voltage Tolerance	-2.5%Vo		2.5%Vo	At 100% load condition
Total Output Voltage Ripple (pk-pk)	-	-	2%Vo	Measured at 220-240VacVac input, 0% - 100% load condition. Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 μF ceramic capacitor and a 10 μF electrolytic capacitor.
Startup Overshoot/ Undershoot	-	-	5%	At 100% load condition
Line Regulation	-	-	±0.5%	Measured at 100% load
Load Regulation	-	-	±1%	
Turn-on Delay Time	-	-	0.5 s	Measured at 220Vac input, 100% load
Output Load Dynamic Response: Deviation	-	-	5%VO	R/S: 1 A/μs Load: 25% ~ 100% load. Case temperature = 0 C~Tc max
Output Load Dynamic Response: Settling Time	-	-	10 ms	
Temperature Coefficient of Vo	-	0.03%/ C	-	

Note: Allspecifications are typical at 25 C unless otherwise stated.

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiencyat220Vacinput: EBV-200S012SV EBV-200S024SV EBV-200S036SV EBV-200S048SV	 89.5% 91.0% 90.5% 91.5%	 91.5% 93.0% 92.5% 93.5%	-	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	-	437,000 Hours	-	Measured at 220Vac input, 80%Load and 25 C ambient temperature (MIL-HDBK-217F)
Lifetime	-	106,000 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	

General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Operating Case Temperature for Warranty Tc_w	-40°C	-	+85°C	Case temperature for 5 years warranty. Humidity: 10% RH to 100% RH.
Storage Temperature	-40°C	-	+75°C	Humidity: 5%RH to 100%RH
Dimensions Inches (L × W × H) Millimeters (L × W × H)	6.65 x 2.66 x 1.56 169 x 67.5 x 39.7			With mounting ear 7.48 × 2.66 x 1.56 190 × 67.5 x 39.7
Net Weight	-	900 g	-	

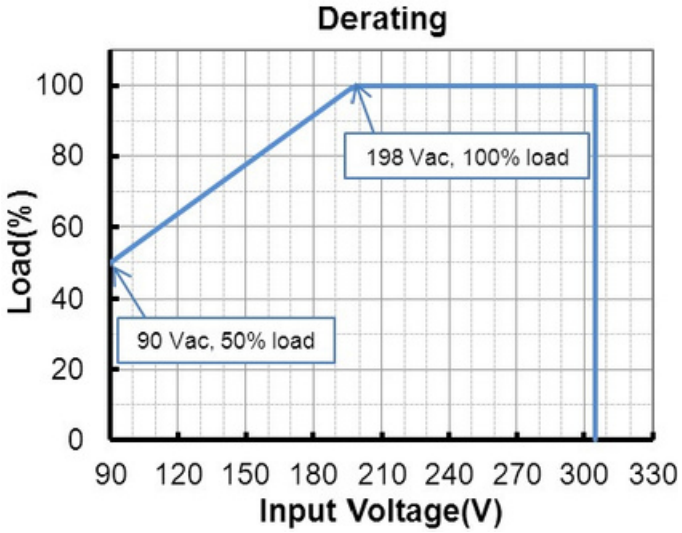
Note: All specifications are typical at 25 C unless otherwise stated.

Safety & EMC Compliance

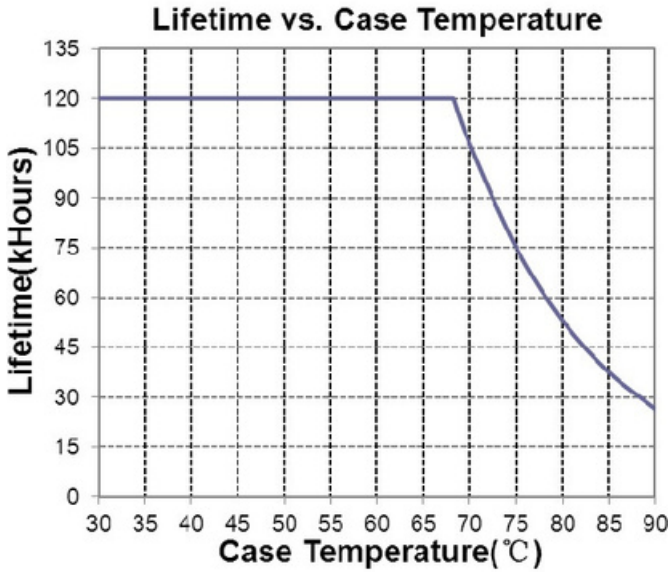
Safety Category	Standard
CE & ENEC	EN 61347-1, EN61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
CCC	GB 19510.1, GB 19510.14
BIS	IS 15885(PART2/SEC13)
KS	KS C 7655
EMI Standards	**Notes**
EN 55015/GB 17743/KN 15[(1)]	Conducted emission Test &Radiated emission Test
EN 61000-3-2/GB 17625.1	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EMS Standards	**Notes**
EN 61000-4-2/KN 61000-4-2	Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge
EN 61000-4-3/KN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-4/KN 61000-4-4	Electrical Fast Transient / Burst-EFT
EN 61000-4-5/KN 61000-4-5	Surge Immunity Test: AC Power Line: line to line 4 kV, line to earth 6 kV
EN 61000-4-6/KN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8/KN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11/KN 61000-4-11	Voltage Dips
EN 61547/KN 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.

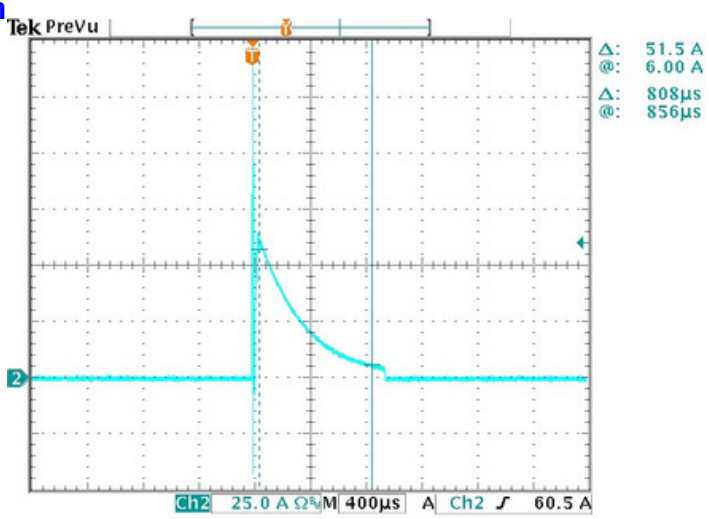
Derating



Lifetime vs. Case Temperature

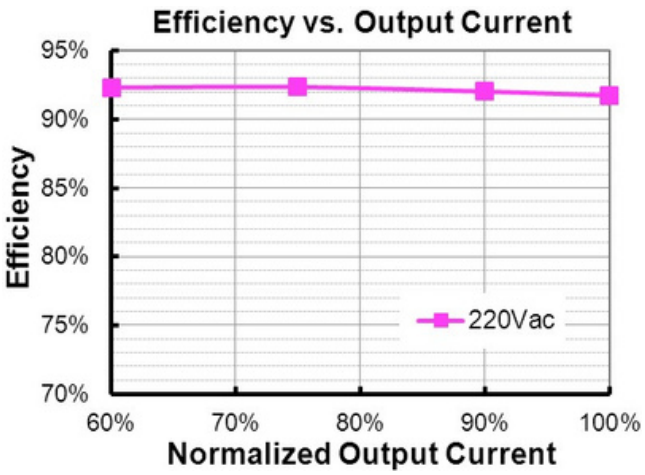


Inrush Current Waveform

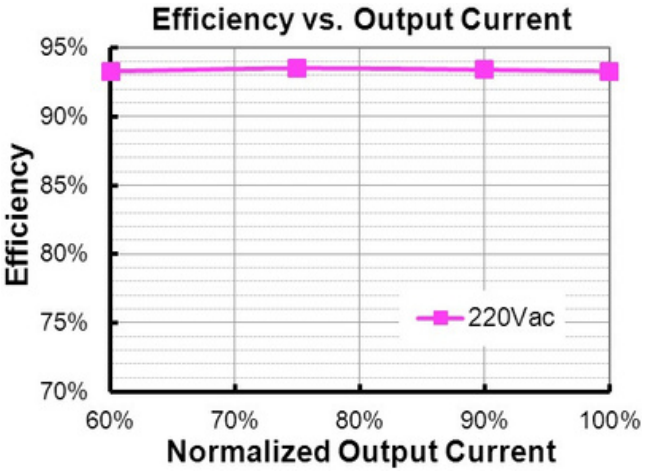


Efficiency vs. Load

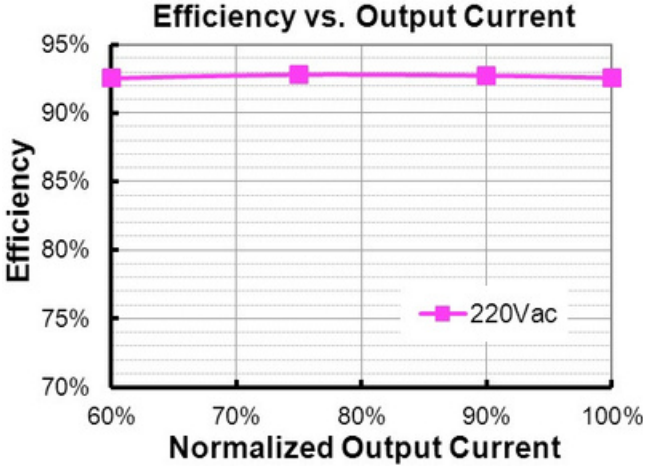
EBV-200S012SV



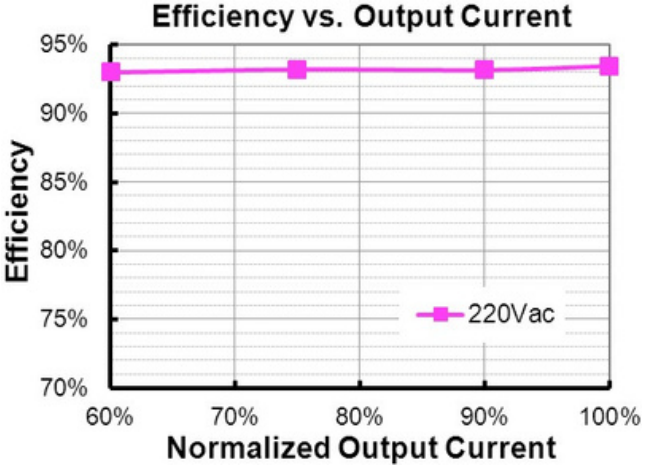
EBV-200S024SV



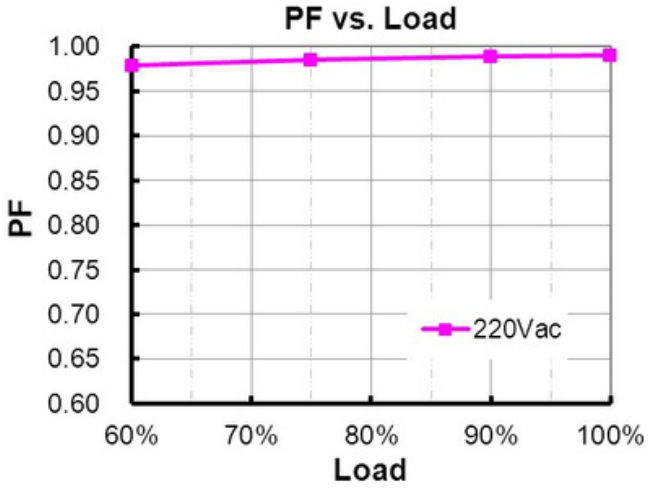
EBV-200S036SV



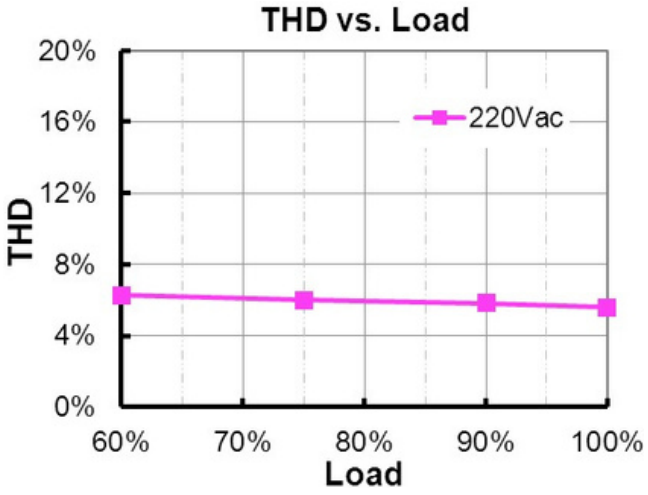
EBV-200S048SV



Power Factor



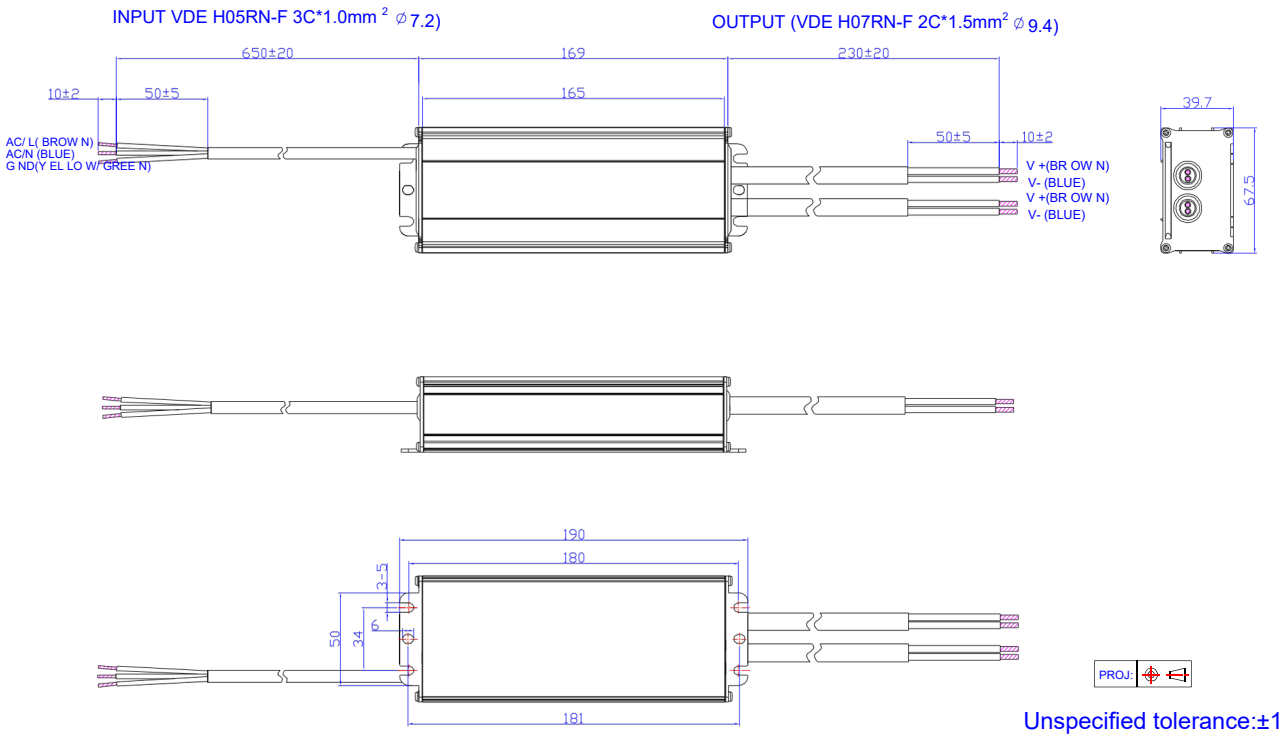
Total Harmonic Distortion



Protection Functions

Parameter	Notes
Over Current Protection	Auto Recovery. The driver shall be self-recovery when the fault condition is removed.
Over Voltage Protection Short	Limits output voltage at no load and in case the normal voltage limit fails.
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 Temperature Protection	Auto Recovery. Returning to normal after over temperature is removed.

Mechanical Outline



Unspecified tolerance:±1

Note: The 2 DC output cables are connected in parallel internally because one 1.5mm² wire can only carry 14.5A. Please connect the 2 brown wires together and 2 blue wires together in application, or ensure each cable carries same current.

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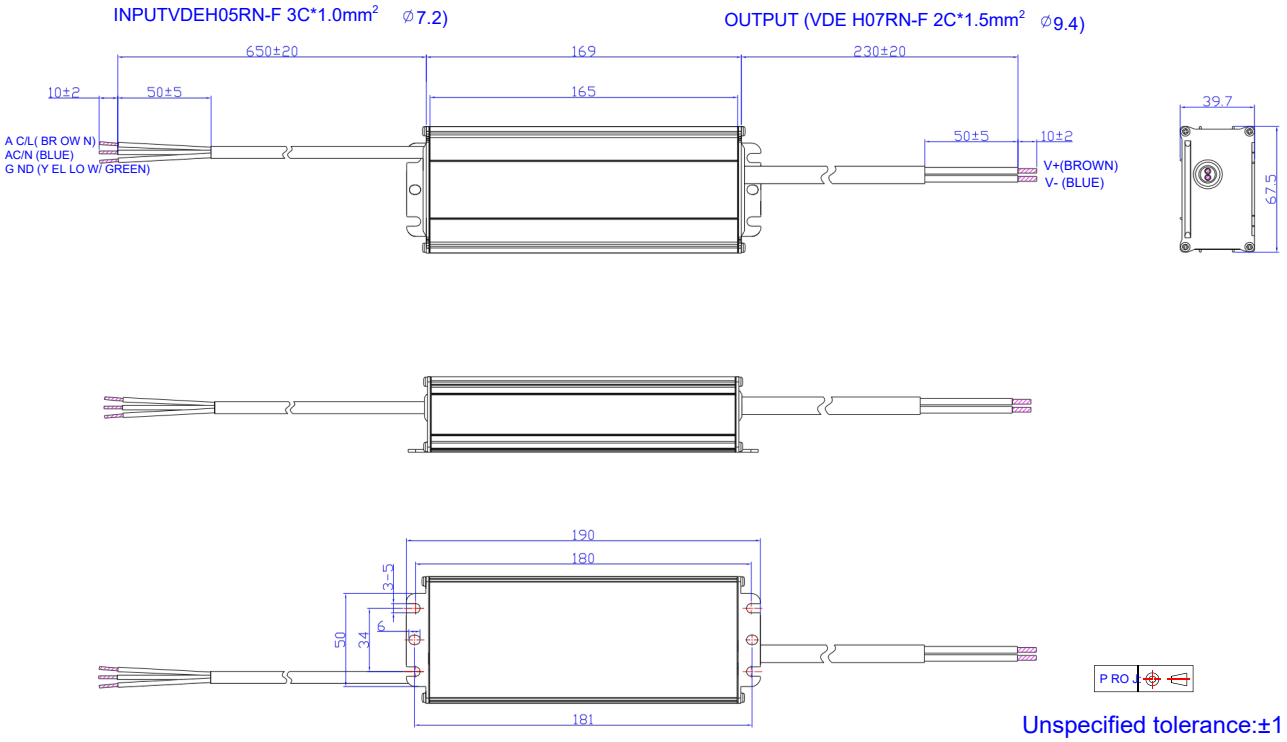
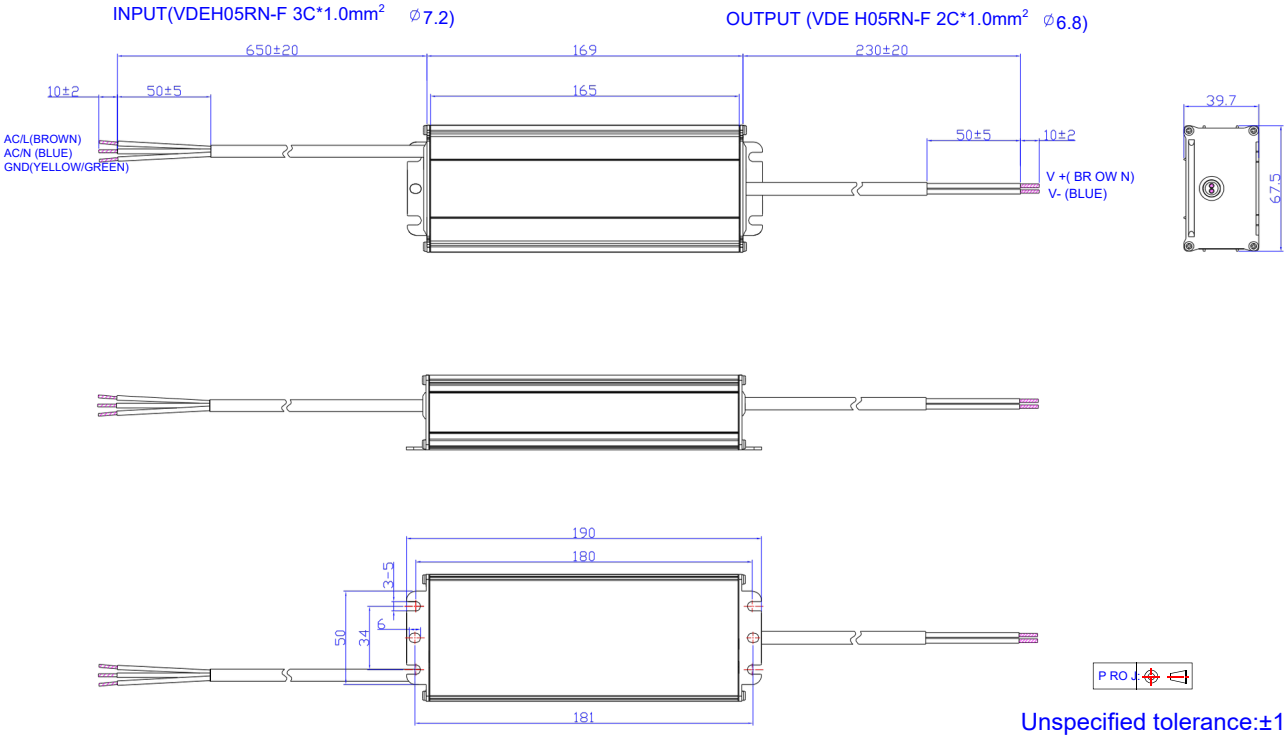
EBV-200S024SV



Unspecified tolerance:±1

EBV-200S036/048SV



Unspecified tolerance:±1

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RoHS Compliance

Ourproductscomplywith the European Directive 2011/65/EU, calling for the elimination of lead and other hazardous substances from electronic products.

Revision History

Change Date	Rev.	Description ofChange		
2018-12-14		Item	From	To
	A	Datasheet Release	/	/
2019-01-25	B	KCC certificate	/	Added
		Notes of Models	(1) CCC certified input voltage range: 220/230/240 Vac; other certified input voltage range except CCC: 200-240 Vac or 190-250Vdc (except BIS and KS).	(1) CCC certified input voltage range: 220/230/240 Vac; other certified input voltage range except CCC: 200-240 Vac or 190-250Vdc (except BIS, KCC and KS).
		Dimensions Inches (L × W × H) Millimeters (L × W × H)	 6.50 x 2.66 x 1.56 165 x 67.5 x 39.7	 6.65 x 2.66 x 1.56 169 x 67.5 x 39.7
		Safety & EMC Compliance	/	Updated

Features

- HighEfficiency (up to 93.5%)
- Constant Voltage Output
- Input Surge Protection: DM 4kV, CM 6kV
- All-Around Protection: OCP, OVP, SCP, OTP
- IP67
- SELV Output
- 5 Years Warranty

Description

The *EBV-250SxxxSV* series is a 250W, constant-voltage IP67 LED driver that operates from 176-305 Vac input with excellent power factor. It is created for many lighting applications including architectural, decorative and signage. The high efficiency of the driver 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, over current, output over voltage, short circuit, and over temperature.

Models

Output Voltage	Input Voltage Range(1)	Output Current Range	Max. Output Power(2)	Typical Efficiency (3)	Typical Power Factor 220Vac	Model Number(4)(5)
12 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 18.4 A	220 W	91.5%	0.96	EBV-250S012SV
24 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 10.5 A	250 W	93.0%	0.96	EBV-250S024SV
36 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 7.0 A	250 W	92.5%	0.96	EBV-250S036SV
48 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 5.3 A	250 W	93.5%	0.96	EBV-250S048SV

Note s:(1) CCC certified input voltage range: 220/230/240 Vac; other certified input voltage range except CCC: 200-240 Vac or 190-250Vdc (except BIS, KCC and KS).
(2) Operating input voltage range: 90-305Vac, and 90-176Vac is for safety operation (see below “Derating” curve for details)
(3) Measured at 100% load and 220Vac input (see below “General Specifications” for details).
(4) SELV output.
(5) For BIS models add suffix -3000.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input AC Voltage	176 Vac	-	305 Vac	
Input DC Voltage	190 Vdc	-	250 Vdc	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.70 mA	IEC 60598-1; 240Vac/60Hz
Input AC Current	-	-	1.38 A	Measured at 100% load and 220Vac input.

Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Inrush Current(I^2t)	-	-	2.22 A^2s	At 220Vac input, 25 C cold start, duration=808 μs, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.9	-	-	At 220-240Vac, 50-60Hz, 60%-100%load(150-250W)
THD	-	-	20%	
THD	-	-	10%	At 220-240Vac, 50-60Hz, 75%-100%load(187.5~250W)

Output Specifications

Parameter		Min.	Typ.	Max.	Notes
Output Voltage Tolerance		-2.5%	-	2.5%	At 100% load condition Measured at 220-240Vac input, 0% - 100%
Total Output Voltage Ripple (pk-pk)		-	-	2%Vo	load condition. Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 μF ceramic capacitor and a 10 μF electrolytic capacitor.
Startup Overshoot/ Undershoot		-	-	5%Vo	At 100% load condition
Line Regulation		-	-	± 0.5%	Measured at 100% load
Load Regulation		-	-	± 1%	
Turn-on Delay Time		-	-	0.5 s	Measured at 220Vac input, 100% load
Load Dynamic Response	Output Deviation	-	-	5%VO	R/S: 1 A/μs Load: 25% ~ 100% load.
	Settling Time	-	-	10 ms	
Temperature Coefficient of Vo		-	0.03%/ C	-	Case temperature = 0 C ~Tc max

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 220Vac input: EBV-250S012SV EBV-250S024SV EBV-250S036SV EBV-250S048SV	 89.5% 91.0% 90.5% 91.5%	 91.5% 93.0% 92.5% 93.5%	 - - - -	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	-	389,000 Hours	-	Measured at 220Vac input, 80%Load and 25 C ambient temperature (MIL-HDBK-217F)
Lifetime	-	96,000 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	

General Specifications (Continued)

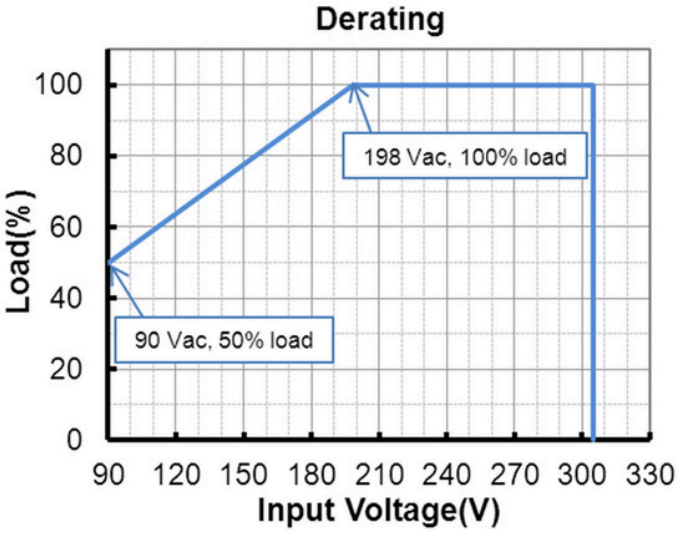
Parameter	Min.	Typ.	Max.	Notes
Operating Case Temperature for Warranty Tc_w	-40°C	-	+75	Case temperature for 5 years warranty. Humidity: 10% RH to 100% RH.
Storage Temperature	-40°C	-	C	Humidity: 5%RH to 100%RH
Dimensions Inches (L × W × H) Millimeters (L × W × H)			+85°C 6.65 x 2.66x1.56 169 x 67.5x39.7	With mounting ear 7.48 × 2.66 x 1.56 190 × 67.5 x 39.7
Net Weight	-	900g	-	

Safety & EMC Compliance

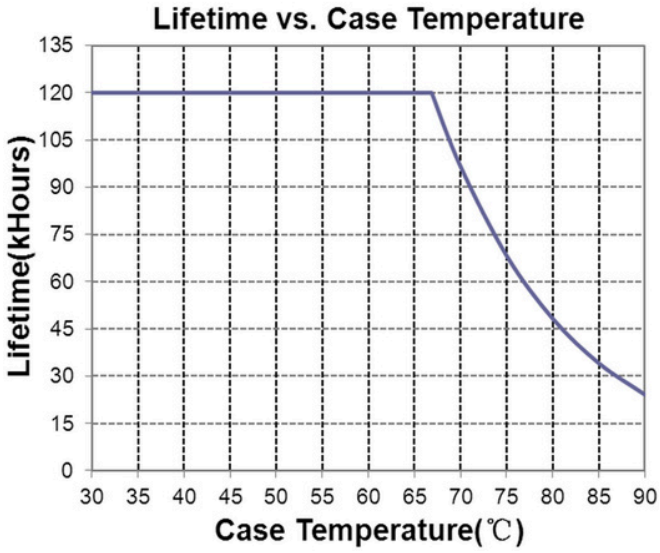
Safety Category	Standard
CE & ENEC	EN 61347-1, EN 61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
CCC	GB 19510.1, GB 19510.14
BIS	IS 15885(PART2/SEC13)
KS	KS C 7655
Performance	**Standard**
ENEC	EN IEC 62384
EMI Standards	**Notes**
EN IEC 55015/GB/T 17743/KS C 9815(1)	Conducted emission Test &Radiated emission Test
EN IEC 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: Differential Mode 4 kV, Common Mode 6 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/KS C 9547	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 connectedtothedriverand on the fixture itself.

Derating



Lifetime vs. Case Temperature



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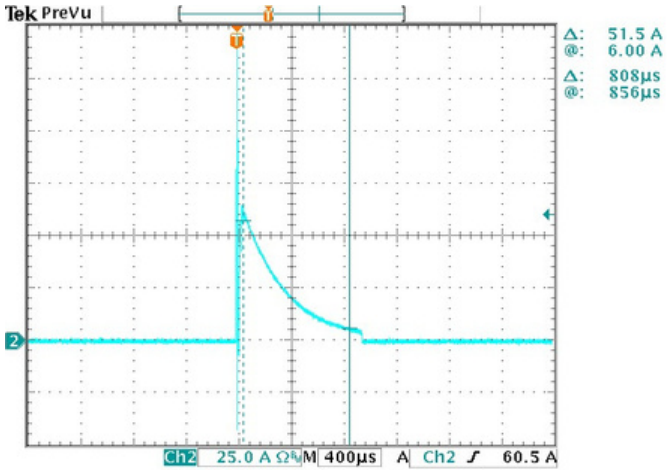
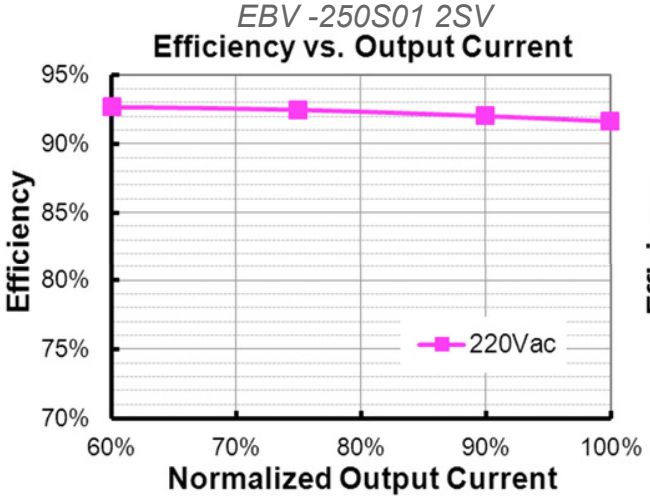
Inrush Current Waveform

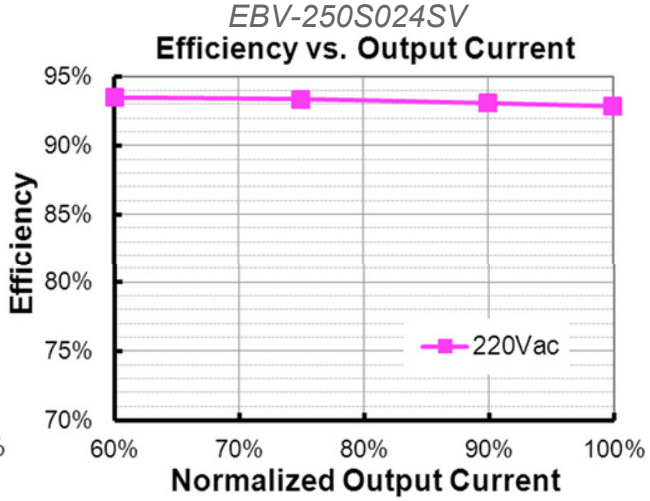


Efficiency vs. Load

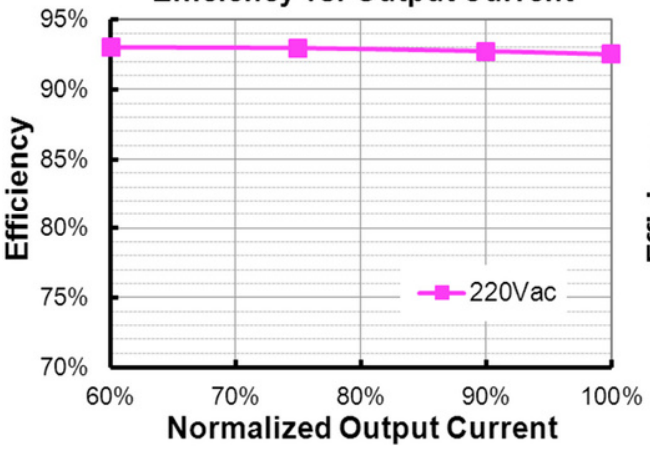
EBV -250S01 2SV



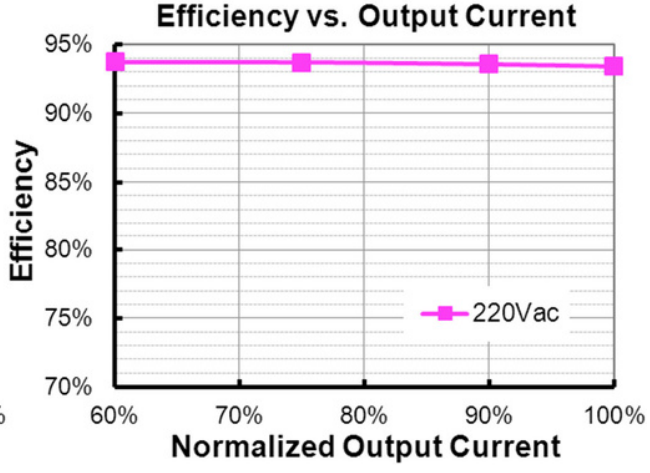
EBV-250S024SV



EBV -250S03 6SV



EBV-250S048SV



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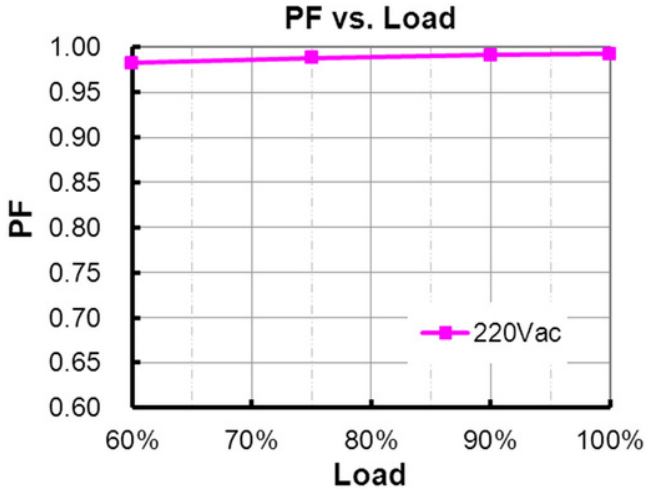
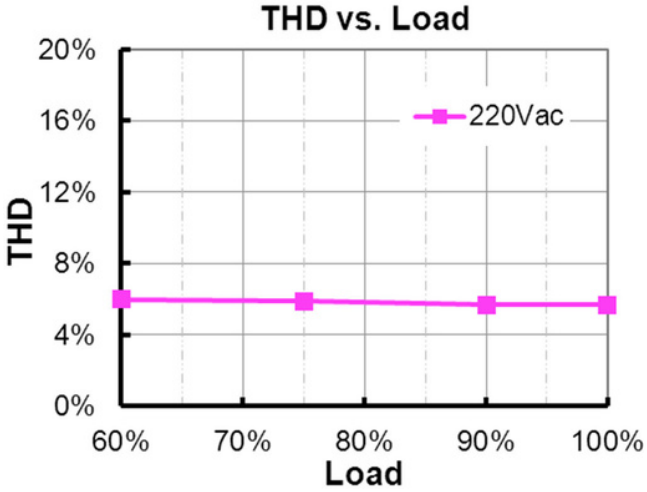
Power Factor



Total Harmonic Distortion

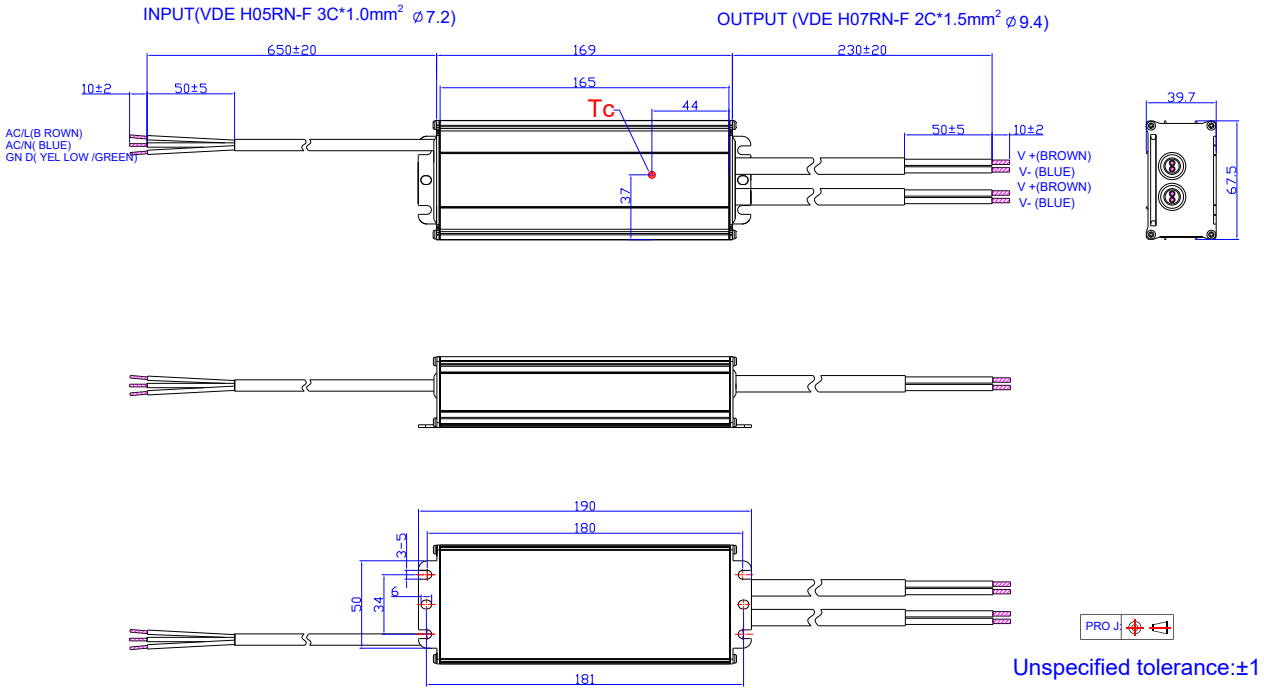


Protection Functions

Parameter	Notes
Over Current Protection	Auto Recovery. The driver shall be self-recovery when the fault condition is removed.
Over Voltage Protection	Limits output voltage at no load and in case the normal voltage limit fails.
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 Temperature Protection	Auto Recovery. Returning to normal after over temperature is removed.

Mechanical Outline

EBV-250S012SV



Unspecified tolerance:±1

Note: The 2 DC output cables are connected in parallel internally because one 1.5mm² wire can only carry 14.5A. Please connect the 2 brown wires together and 2 blue wires together in application, or ensure each cable carries same current.

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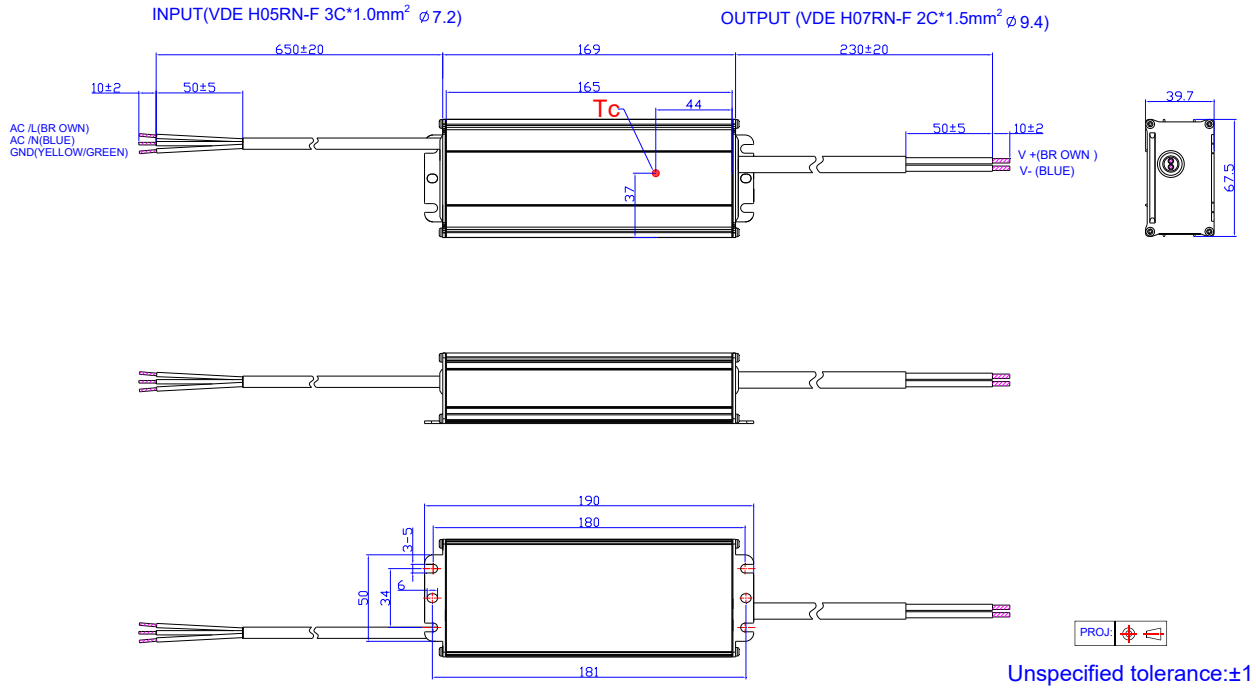
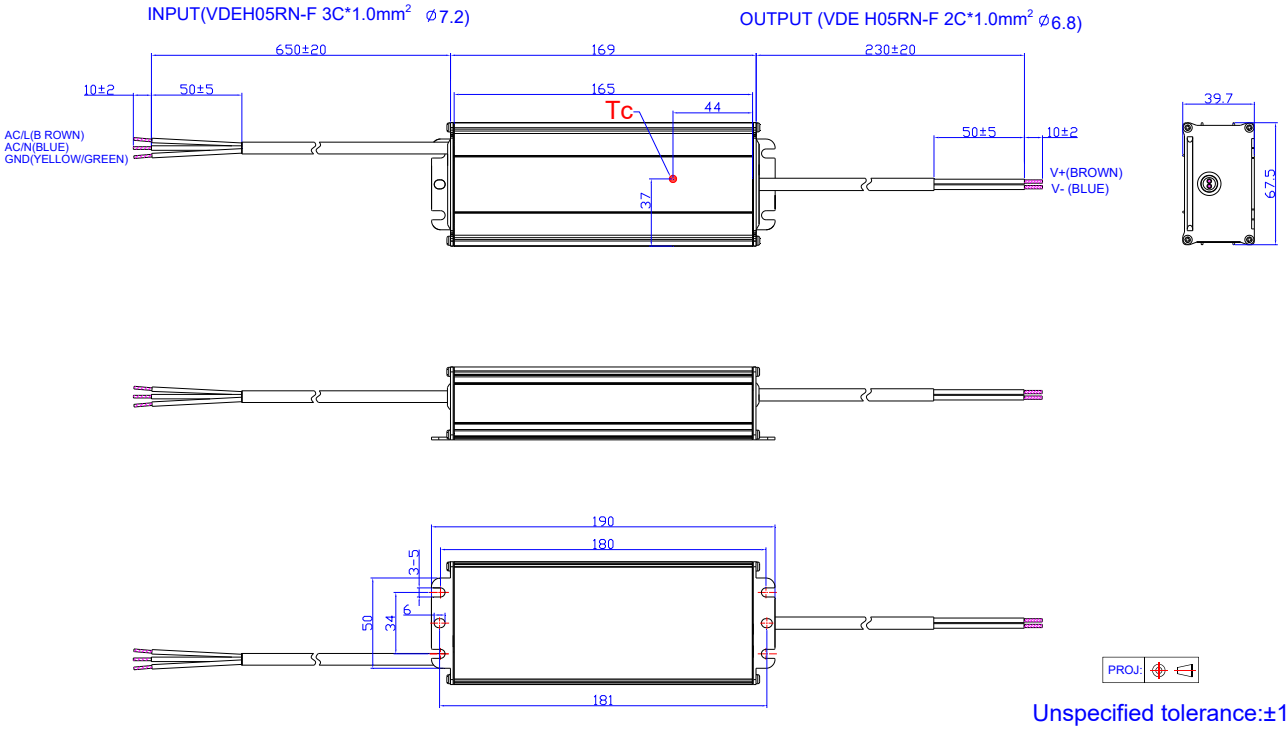
EBV-250S024SV



Unspecified tolerance:±1

EBV-250S036/048SV



Unspecified tolerance:±1

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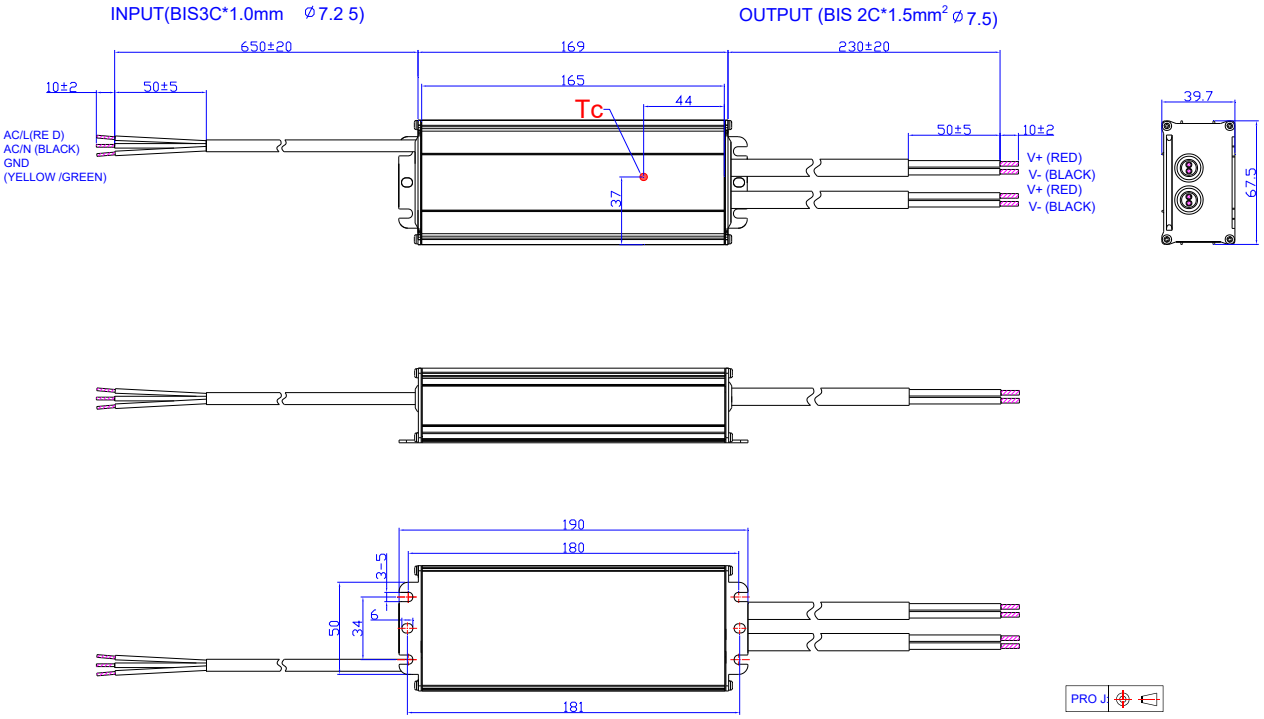
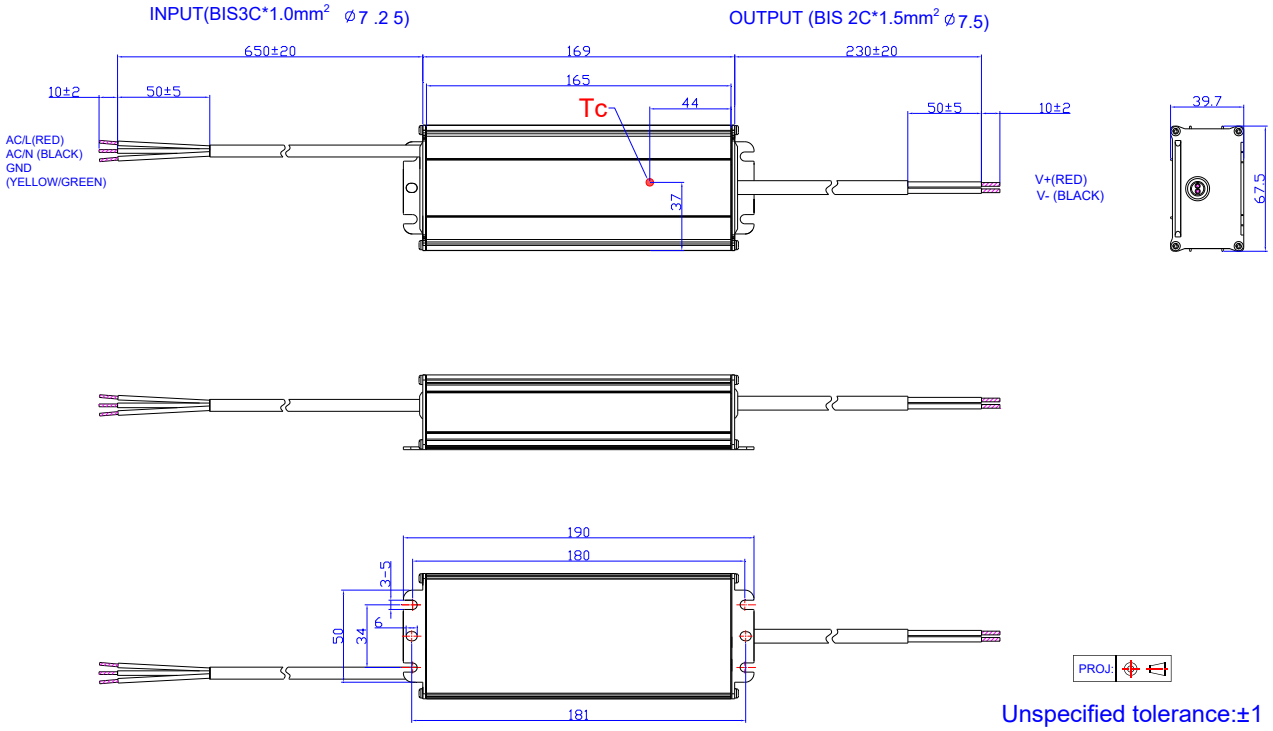
EBV-250S012SV-3000 2



Unspecified tolerance:±1

EBV-250S024SV-3000



Unspecified tolerance:±1

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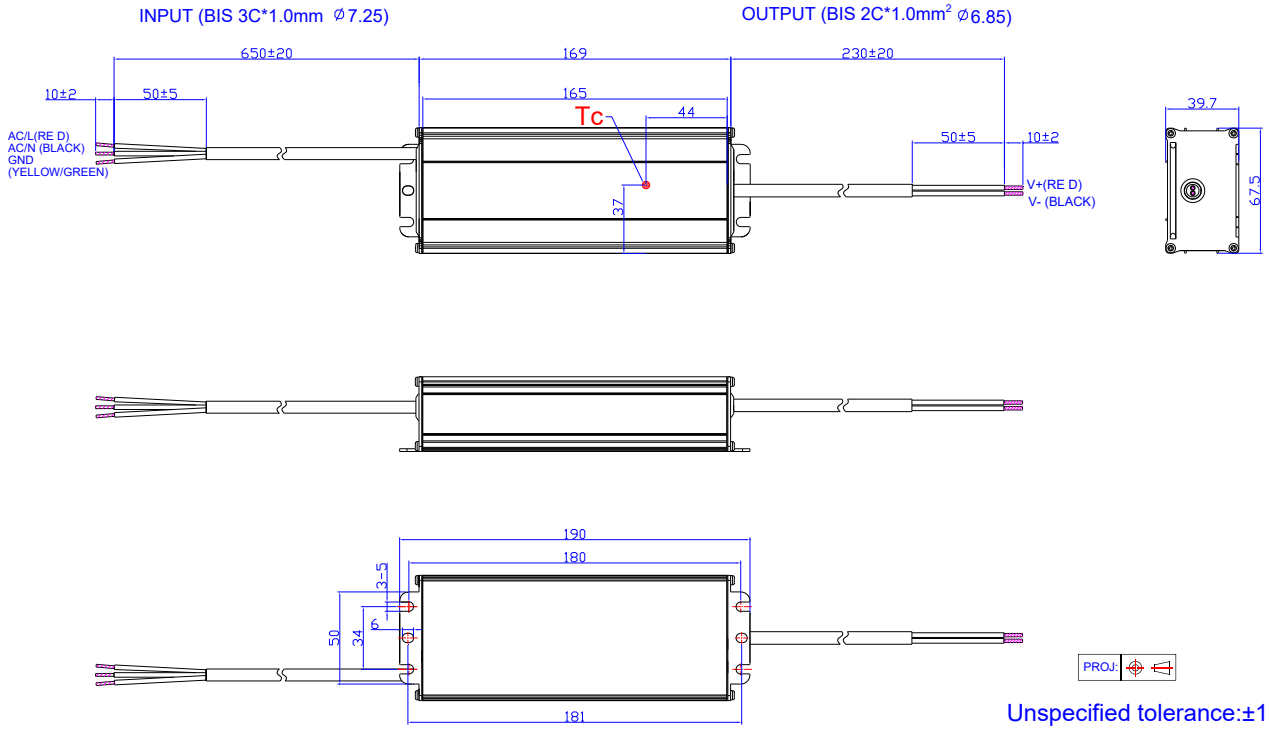
EBV-250S036/048SV-3000 2



RoHS Compliance

Ourproducts complywithreference to RoHS Directive (EU) 2015/863 amending 2011/65/EU, calling for the elimination of lead and other hazardous substances from electronic products.

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Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2018-12-14	A	Datasheet Release	/	/
2019-01-25	B	KCC certificate	/	Added
		Notes of Models	(1) CCC certified input voltage range: 220/230/240 Vac; other certified input voltage range except CCC: 200-240 Vac or 190-250Vdc (except BIS and KS).	(1) CCC certified input voltage range: 220/230/240 Vac; other certified input voltage range except CCC: 200-240 Vac or 190-250Vdc (except BIS, KCC and KS).
		Dimensions Inches (L × W × H) Millimeters (L × W × H)	 6.50 x 2.66 x 1.56 165 x 67.5 x 39.7	 6.65 x 2.66 x 1.56 169 x 67.5 x 39.7
		Safety & EMC Compliance	/	Updated
2020-04-27	C	Input Specification – Input DC Voltage	/	Added
		Mechanical Outline	/	Updated
		RoHS Compliance	/	Updated
		Format	/	Updated
2025-01-15	D	Format	/	Updated
		Product Photograph	/	Updated
		Independent logo	/	Added
		Safety &EMC Compliance	/	Updated
		Mechanical Outline	/	Updated
		RoHS Compliance	/	Updated

Features

- High Efficiency (up to 93%)
- Constant Voltage Output
- Input Surge Protection: DM 4kV , CM 6kV
- All-Around Protection: OCP, OVP, SCP, OTP
- IP67
- SELV Output
- 5 Years Warranty

Description

The *EBV-400SxxxSV* series is a 400W, constant-voltage IP67 LED driver that operates from 176-305 Vac input with excellent power factor. It is created for many lighting applications including architectural, decorative and signage, etc. The high efficiency of the driver 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, over current, output over voltage, short circuit, and over temperature.

Models

Output Voltage	Input Voltage Range(1)	Output Current Range	Max. Output Power(2)	Typical Efficiency (3)	Typical Power Factor 220Vac	Model Number(4)(5)
12 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 28.4 A	340 W	91.0%	0.96	EBV-400S012SV
24 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 16.7 A	400 W	93.0%	0.96	EBV-400S024SV
36 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 11.2 A	400 W	93.0%	0.96	EBV-400S036SV
48 V	176 ~ 305 Vac 190 ~ 250 Vdc	0 ~ 8.4 A	400 W	92.5%	0.96	EBV-400S048SV

Notes: (1) CCC certified input voltage range: 220/230/240 Vac; other certified input voltage range except CCC: 200-240 Vac or 190-250Vdc (except BIS).
(2) Operating input voltage range: 90-305Vac, and 90-176Vac is for safety operation (see below “Derating” curve for details)
(3) Measured at 100% load and 220Vac input (see below “General Specifications” for details).
(4) SELV output.
(5) For BIS models add suffix -3000.

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input AC Voltage	176 Vac 190 Vdc	-	305 Vac 250 Vdc	
Input DC Voltage	47 Hz	-	63 Hz	
Input Frequency	-	-	0.70 mA	
Leakage Current	-	-	2.2 A	IEC60598-1; 240Vac/60Hz
Input AC Current		-		Measured at 100% load and 220Vac input.

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Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Inrush Current(I^2t)	-	-	3.776 A^2s	At 220Vac input, 25□cold start, duration=1.38 ms, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.9	-	-	At 220-240Vac, 50-60Hz, 60%-100% load (240~400W)
THD	-	-	20%	
THD	-	-	10%	At 220-240Vac, 50-60Hz, 75%-100% load (300~400W)

Output Specifications

Parameter		Min.	Typ.	Max.	Notes
Output Voltage Tolerance		-2.5%Vo		2.5%Vo	At 100% load condition
Total Output Voltage Ripple (pk-pk)		-	-	2%Vo	Measured at 220Vac input, 0% - 100% load condition. Measured by 20 MHz bandwidth oscilloscope and the output paralleled a 0.1 μF ceramic capacitor and a 10 μF electrolytic capacitor.
Startup Overshoot / Undershoot		-	-	5%Vo	At 100% load condition
Line Regulation		-	-	±0.5%	Measured at 100% load
Load Regulation		-	-	±1%	
Turn-on Delay Time		-	-	0.5 s	Measured at 220Vac input, 100% load
Load Dynamic Response	Output Deviation	-	-	5%VO	R/S: 1 A/μs Load: 25%~100% load Case temperature = 0 C~Tc max
	Settling Time	-	-	10 ms	
Temperature Coefficient of Vo		-	0.03%/ C	-	

GeneralSpecifications

Parameter	Min.	Typ.	Max.	Notes
Efficiencyat220Vacinput: EBV-400S012SV EBV-400S024SV EBV-400S036SV EBV-400S048SV	 89.0% 91.0% 91.0% 90.5%	 91.0% 93.0% 93.0% 92.5%	 - - - -	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	-	217,000 Hours	-	Measured at 220Vac input, 80%load and 25 C ambient temperature (MIL-HDBK-217F)
Lifetime	-	97,000 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. Humidity: 10% RH to 95% RH.
Storage Temperature	-40°C	-	+85°C	Humidity: 5%RH to 95%RH

GeneralSpecifications (Continued)

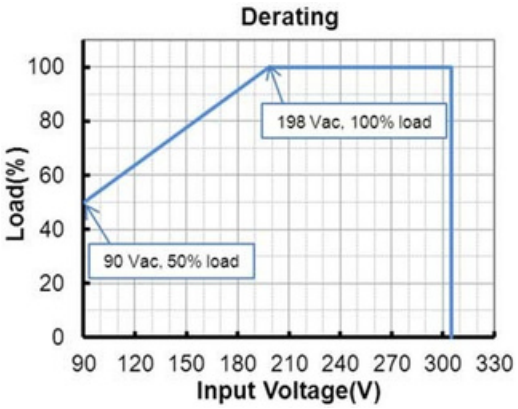
Parameter	Min.	Typ.	Max.	Notes
Dimensions Inches (L × W × H) Millimeters ((L × W × H)		7.87x3.15x1.65 200x80x42		With mounting ear 8.94 x 3.15 x 1.65 227 x 80 x 42
Net Weight	-	1350 g	-	

Safety&EMCCompliance

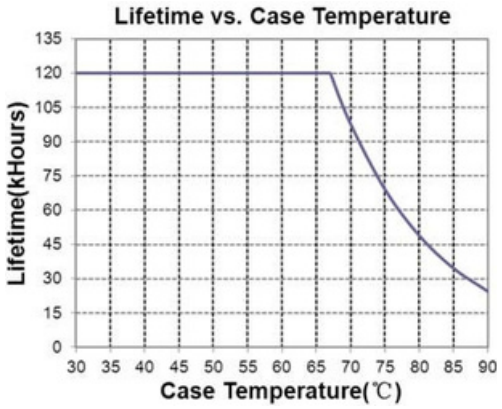
Safety Category	Standard
ENEC & CE	EN 61347-1, EN 61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
CCC	GB 19510.1, GB 19510.14
KC	K 61347-1, K 61347-2-13
BIS	IS 15885(PART2/SEC13)
EMI Standards	**Notes**
EN 55015/GB 17743/KN 15(1)	Conducted emission Test & Radiated emission Test
EN 61000-3-2/GB 17625.1	Harmonic 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: Differential Mode 4 kV, Common Mode 6 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: (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.

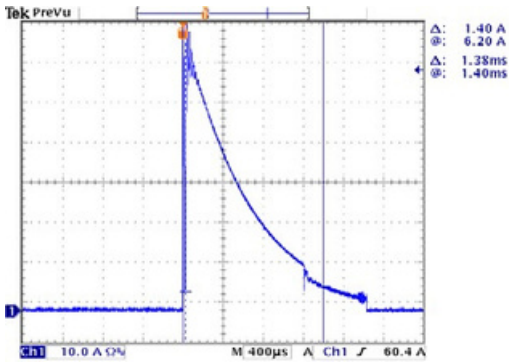
Derating



Lifetime vs. Case Temperature

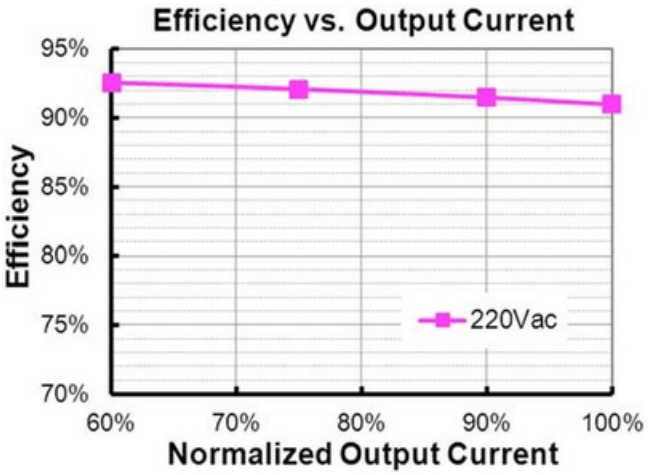


Inrush Current Waveform

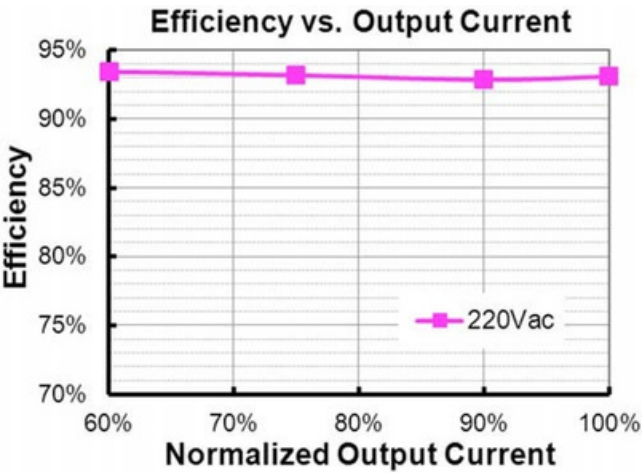


Efficiency vs. Load

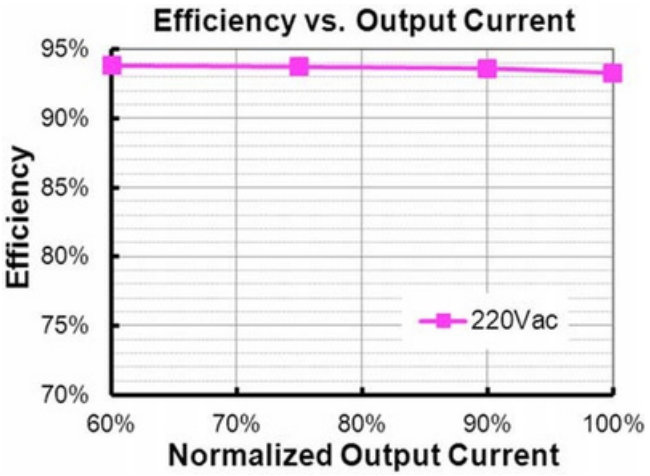
EBV-400S012SV



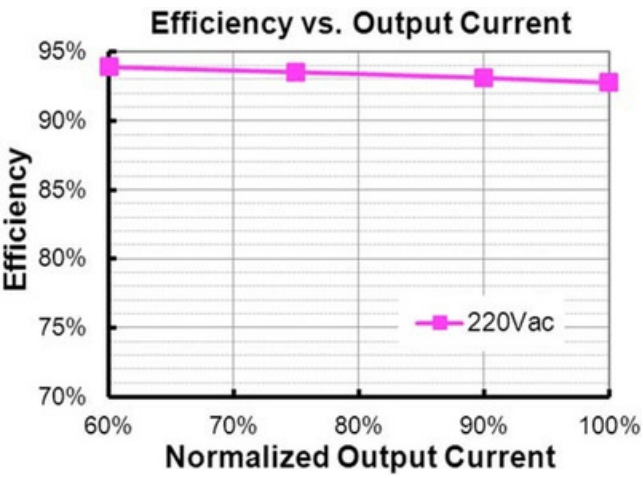
EBV-400S024SV



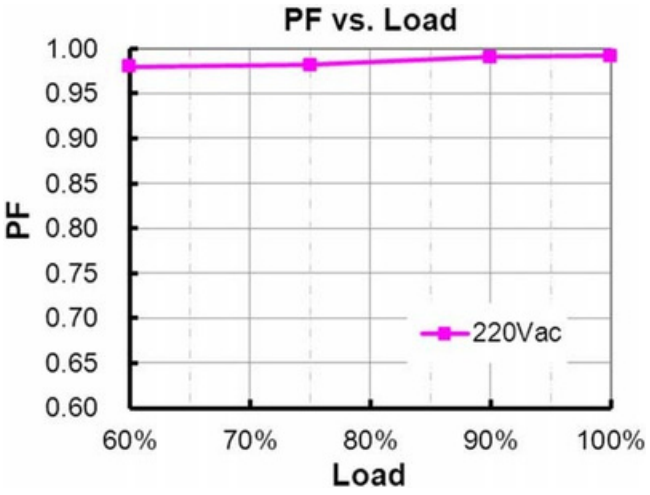
EBV-400S036SV



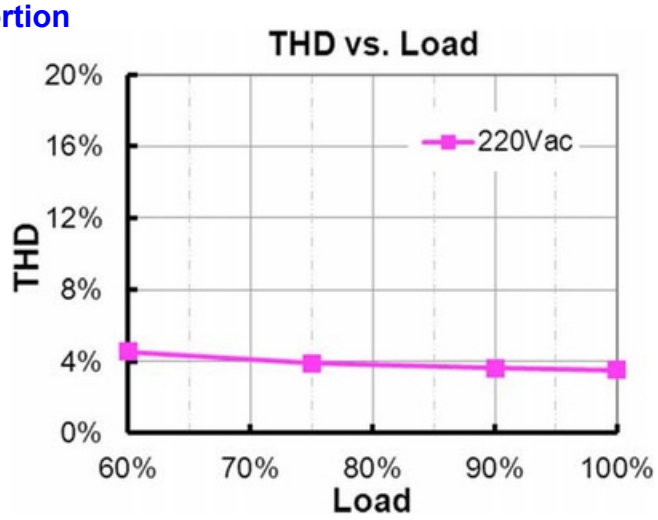
EBV-400S048SV



Power Factor



Total Harmonic Distortion

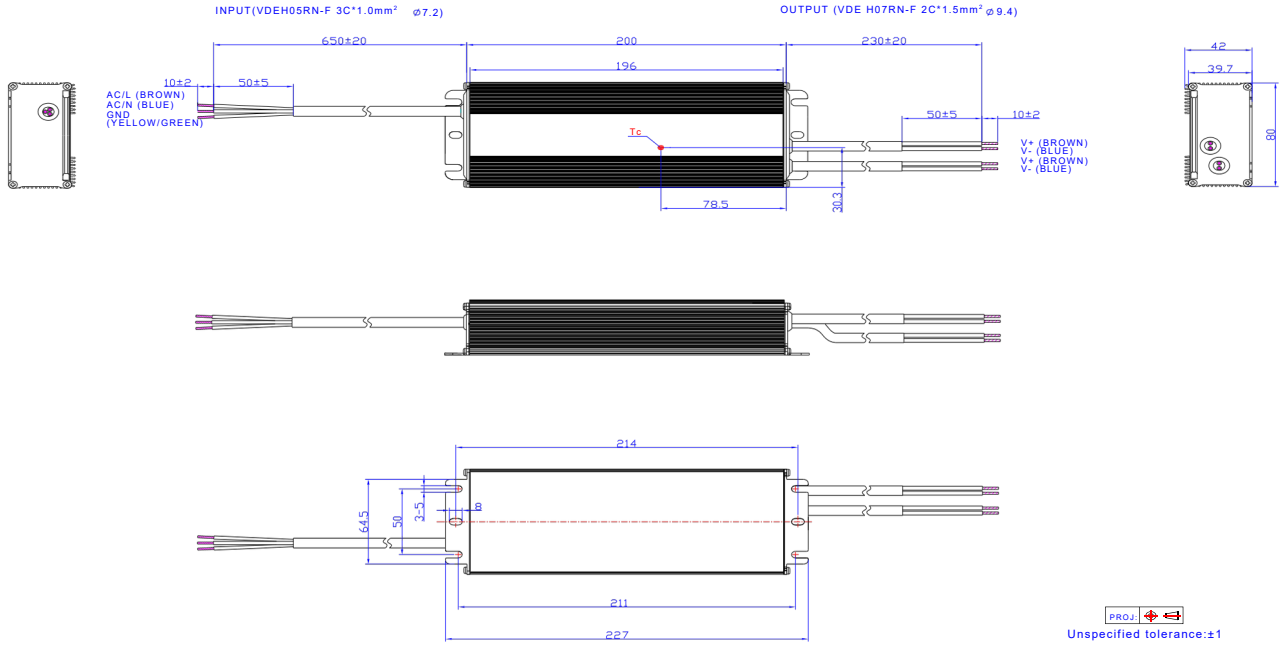


ProtectionFunctions

Parameter	Notes
Over Current Protection	Auto Recovery. The driver shall be self-recovery when the fault condition is removed.
Over Voltage Protection	Limits output voltage at no load and in case the normal voltage limit fails.
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 Temperature Protection	Auto Recovery. Returning to normal after over temperature is removed.

Mechanical Outline

EBV-400S012/024SV



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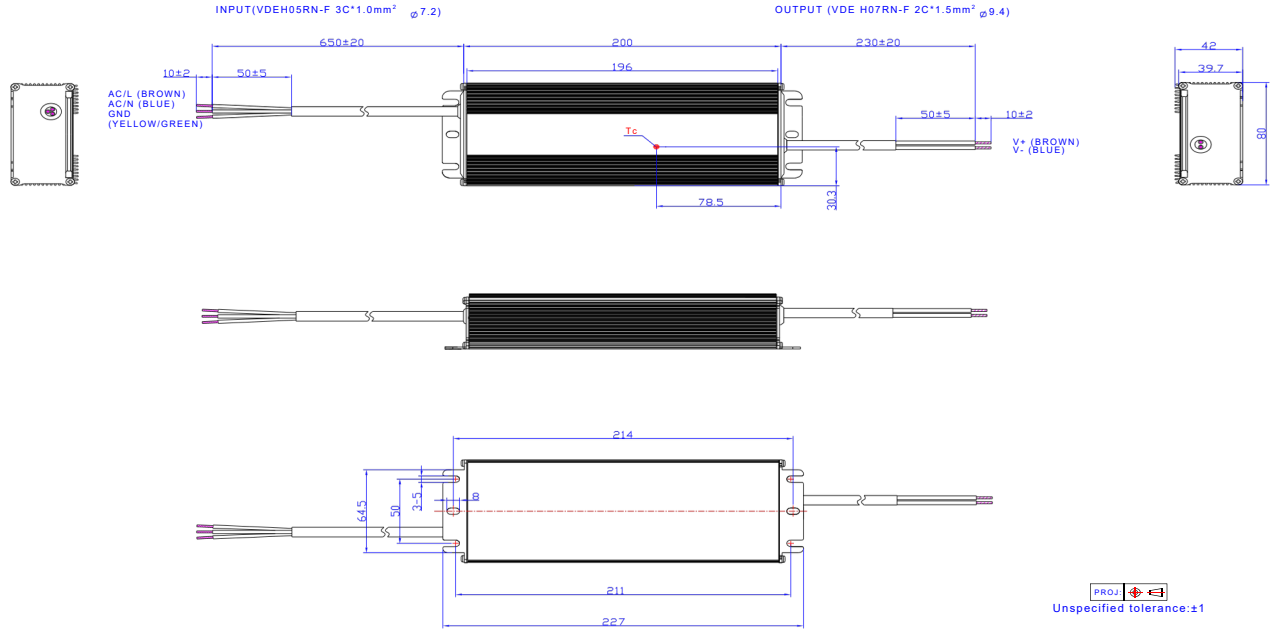
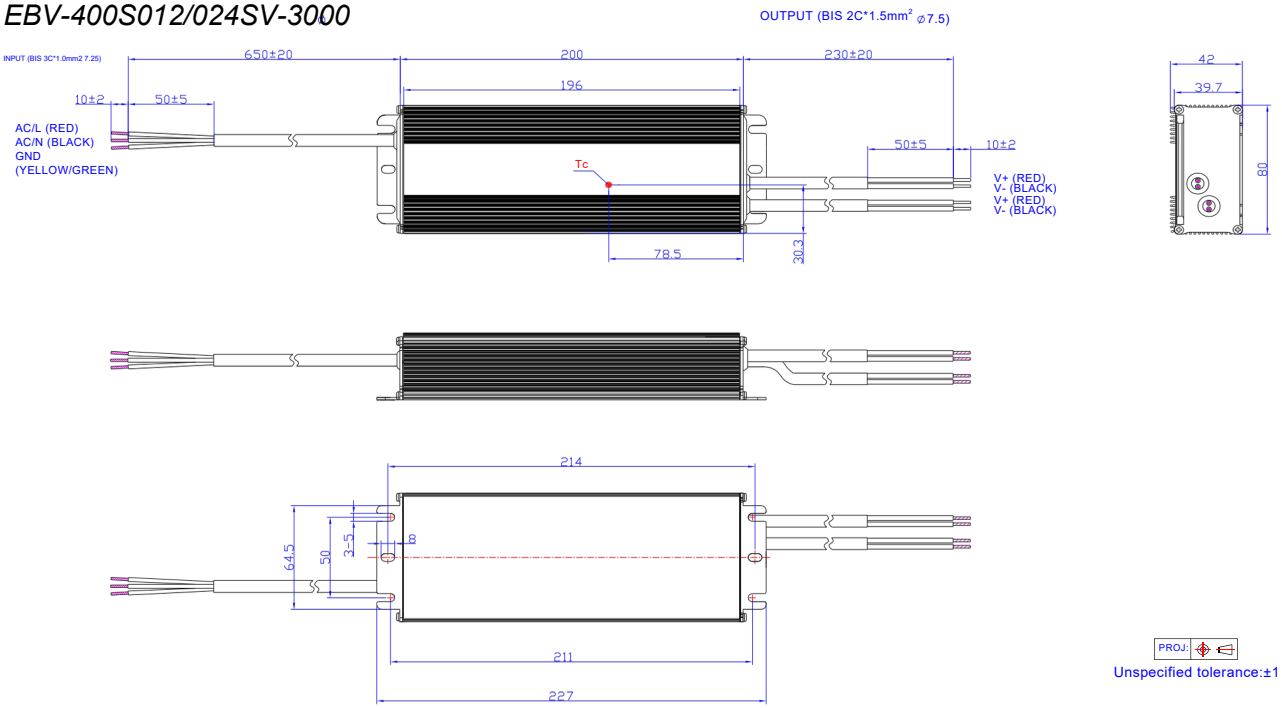
Note: The 2 DC output cables are connected in parallel internally because one 1.5mm^2 wire can only carry 14.5A. Please connect the 2 brown wires together and 2 blue wires together in application, or ensure each cable carries same current.

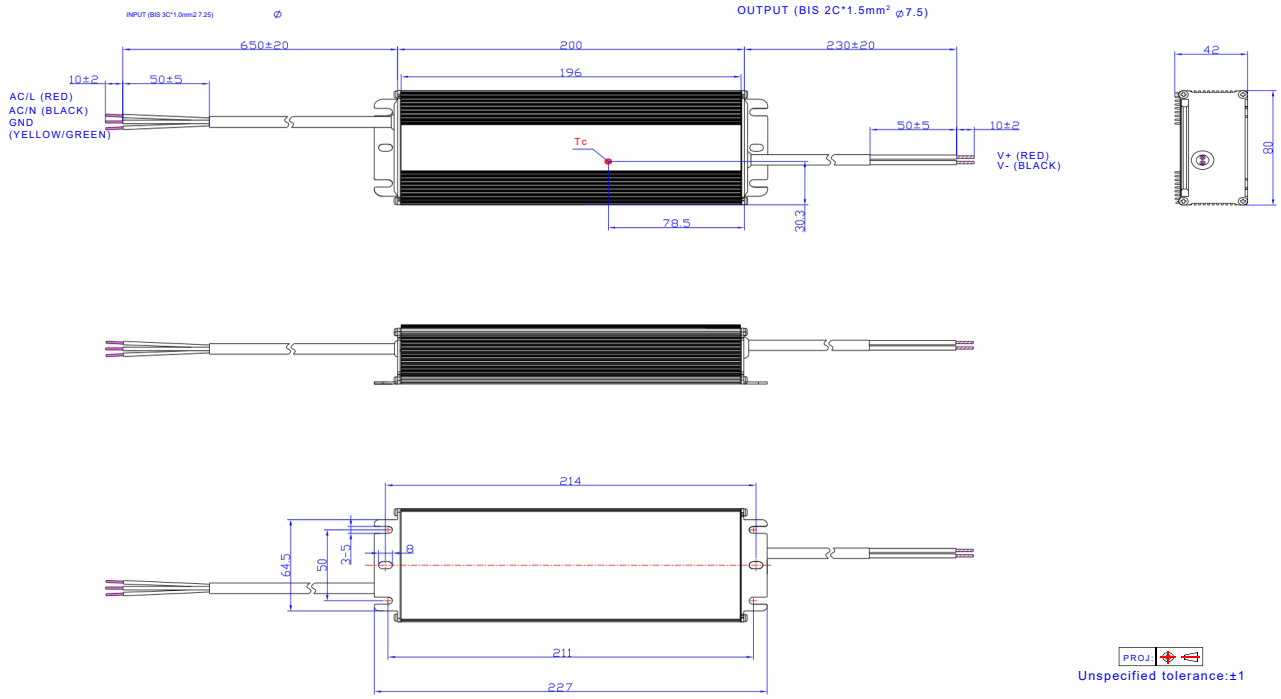
EBV-400S036/048SV



EBV-400S012/024SV-3000



EBV-400S036/048SV-3000



RoHS & Compliance

Ourproducts comply withreference 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		
2018-07-23		Item	From	To
	A	Datasheet Release	/	/
2018-12-29	B	Product image	/	Updated
		CE certificate	/	Added
		CB certificate	/	Added
		ENEC certificate	/	Added
		BIS certificate	/	Added
		Models	EBV-400S012SV EBV-400S036SV EBV-400S048SV	Added
		Notes of Models	(1) Certified input Voltage range: 200-240Vac or 190-250Vdc (except CCC and BIS).	~~(1) CCC certified input~~ voltage range: 220/230/240 Vac; other certified input voltage range except CCC: 200-240 Vac or 190-250Vdc (except BIS).
		Notes of Models	(5) For BIS models add suffix -3000.	Added
		Input AC Current	2.42 A	2.2 A
		Hold Up Time	/	Deleted
		Efficiency at 220Vac input:	EBV-400S012SV EBV-400S036SV EBV-400S048SV	Added
		~~MTBF~~	240,000Hours	~~217,000Hours~~
		~~Lifetime~~	104,000Hours	~~97,000Hours~~
		~~Safety & EMC Compliance~~	/	~~Updated~~
		~~Efficiency vs. Load curve~~	~~EBV-400S012SV~~ EBV-400S036SV EBV-400S048SV	~~Added~~
		Power Factor curve		Updated
		Total Harmonic Distortion curve	/	Updated
		Mechanical Outline	~~EBV-400S012SV~~	Updated
		Mechanical Outline – note of EBV-400S012/024SV	EBV-400S024SV	Added
		Mechanical Outline	~~EBV-400S036SV~~ EBV-400S048SV	Added

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Revision History (Continued)

Change Date	Rev.	Description of Change		
		Item	From	To
2019-12-17	C	KC / KCC Logo	/	Added
		Independent Logo	/	Added
		Features	4kV line-line, 6kV line-earth	DM 4kV , CM 6kV
		Features	Waterproof (IP67)	IP67
		Features	Suitable for Independent Use	Deleted
		Safety &EMC Compliance	KC	Added
		Safety &EMC Compliance	EN 55015/GB 17743	EN 55015/GB 17743/KN 15[1)]
		Safety &EMC Compliance	EN 61000-4-5	Updated
		Mechanical Outline	EBV-400S024SV-3000	Added
		RoHS Compliance	/	Updated
2021-09-02	D	Mechanical Outline	EBV-400S012/024SV	Updated
		Mechanical Outline	EBV-400S036/048SV	Updated
		Mechanical Outline	EBV-400S012SV-3000	Added
		Mechanical Outline	EBV-400S036/048SV-3000	Added

Features

- Ultra High Efficiency (Up to 94.5%)
- Constant Voltage Output
- Input surge protection: DM 4kV, CM 6kV
- All-Around Protection: SCP, OTP, OVP, OCP
- IP67
- SELV Output

Description

The *EBV-500SxxxSV* series is a 500W, constant-voltage IP67 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 lights. 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 input surge, output short circuit, over temperature, over voltage, and over current.

Models

Output Voltage	Input Voltage Range(1)	Output Current Range	Max. Output Power	Typical Efficiency (2)	Typical Power Factor		Model Number (3)
					220 Vac	277 Vac	
24 Vdc	176 ~ 305 Vac	0~20.83 A	500 W	93.5%	0.99	0.96	EBV-500S024SV
28 Vdc	176 ~ 305 Vac	0~17.85 A	500 W	93.5%	0.99	0.96	EBV-500S028SV
36 Vdc	176 ~ 305 Vac	0~13.88 A	500 W	94.0%	0.99	0.96	EBV-500S036SV
42 Vdc	176 ~ 305 Vac	0~11.90 A	500 W	94.5%	0.99	0.96	EBV-500S042SV
48 Vdc	176 ~ 305 Vac	0~10.41 A	500 W	94.5%	0.99	0.96	EBV-500S048SV

Note s:(1) Certified input voltage range: 200-240Vac.
(2) Measured at 100% load and 220Vac input (see below “General Specifications” for details).
(3) SELV output

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input AC Voltage	176 Vac	-	305 Vac	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.70 mA	IEC 60598-1; 240Vac/ 60Hz
Input AC Current	-	-	2.75 A	Measured at 100% load and 220 Vac input.
Inrush Current(I^2t)	-	-	1.6 A^2s	At 220Vac input 25°C Cold start, Duration= 3.26 ms, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.90	-	-	At 220-240Vac, 75%-100% Load (375-500W)
THD	-	-	20%	

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Voltage Tolerance	-5%Vo	-	5%Vo	At 100% load condition
Output Voltage Ripple(pk-pk)	-	-	2%Vo	At 100% load condition, 20 MHz BW
Startup Overshoot Voltage	-	-	5%Vo	At 100% load condition
Line Regulation	-	-	±0.5%	Measured at 100% load
Load Regulation	-	-	±1.0%	
Turn-on Delay Time	-	-	2.0 s	Measured at 220Vac and 277Vac input.
Temperature Coefficient of Vo	-	-	0.03%/ C	Case temperature = 0 C ~Tc max

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 220 Vac input: EBV-500S024SV EBV-500S028SV EBV-500S036SV EBV-500S042SV EBV-500S048SV	 91.5% 91.5% 92.0% 92.5% 92.5%	 93.5% 93.5% 94.0% 94.5% 94.5%	 - - - - -	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 277 Vac input: EBV-500S024SV EBV-500S028SV EBV-500S036SV EBV-500S042SV EBV-500S048SV	 92.0% 92.0% 92.5% 93.0% 93.0%	 94.0% 94.0% 94.5% 95.0% 95.0%	 - - - - -	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	-	232,000 Hours	-	Measured at 220Vac input, 80%Load and 25 C ambient temperature (MIL-HDBK-217F)
Lifetime	-	117,000 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	Humidity: 10% RH to 95% RH
Storage Temperature	-40 C	-	+85 C	Humidity: 5% RH to 95% RH
Dimensions Inches (L × W × H) Millimeters (L × W ×H)	10.4 × 4.25 × 1.8 264 × 108 × 45.5			With mounting ear 11.5 × 4.25 × 1.8 291 × 108 × 45.5
Net Weight	-	2500 g	-	

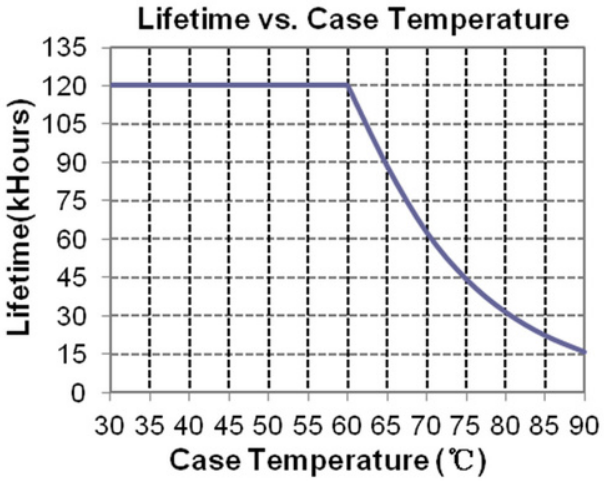
Safety & EMC Compliance

Safety Category	Standard
CE	EN 61347-1, EN 61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
CCC	GB 19510.1, GB 19510.14
EMI Standards	**Notes**
EN IEC 55015/GB/T 17743(1)	Conducted emission Test & Radiated emission Test
EN IEC 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: Differential Mode 4 kV, Common Mode 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

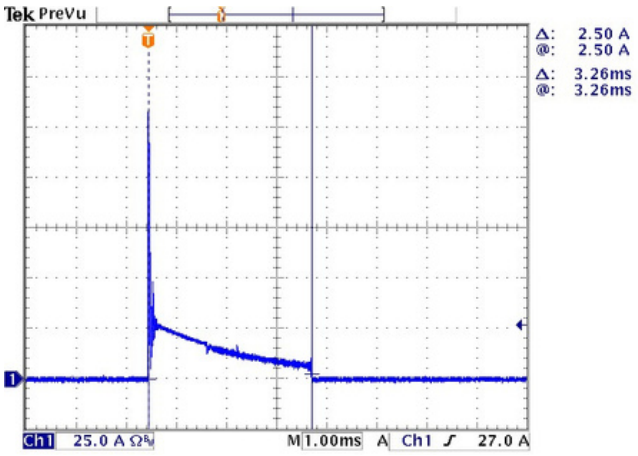
Note: (1) This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

(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 compete, these items must be reinstalled to restore line-to-earth surge protection and secure the end cap.

Lifetime vs. Case Temperature

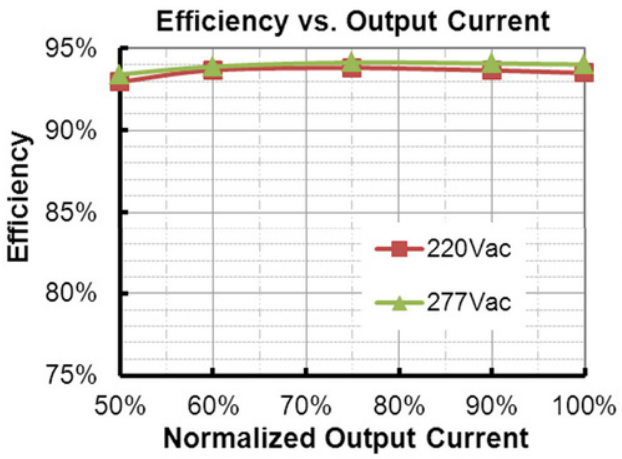


Inrush Current Waveform

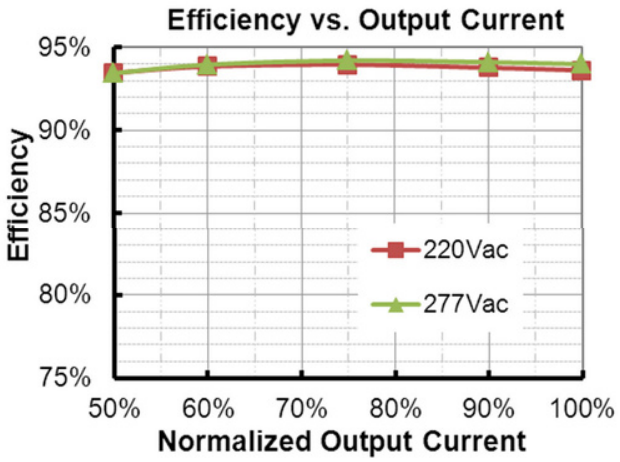


Efficiency vs. Load

EBV-500S024SV



EBV-500S028SV



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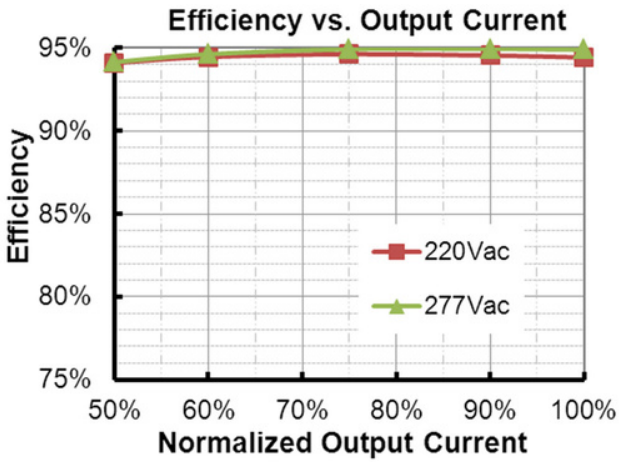
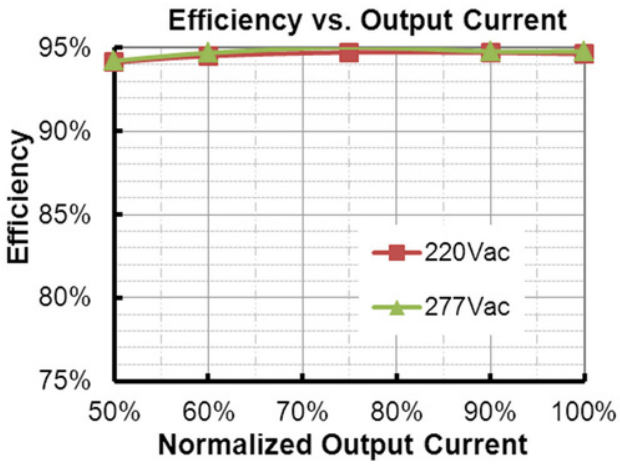
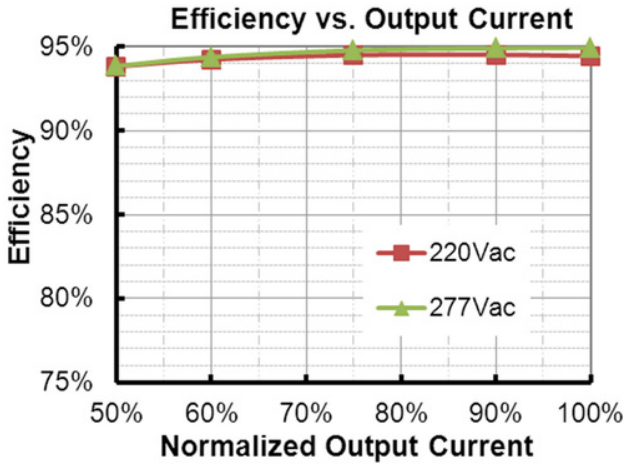
EBV-500S036SV



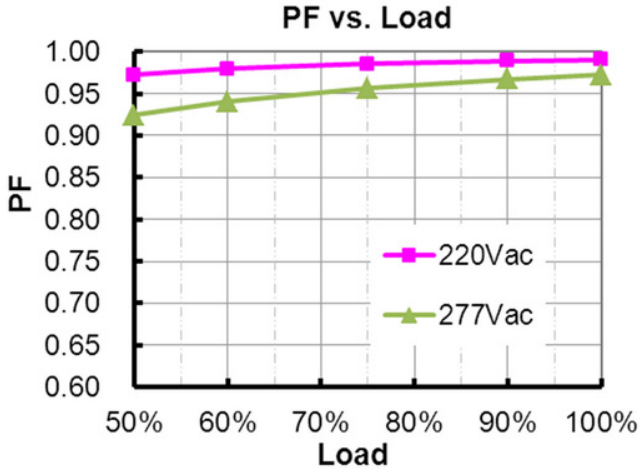
EBV-500S042SV



EBV-500S048SV



Power Factor



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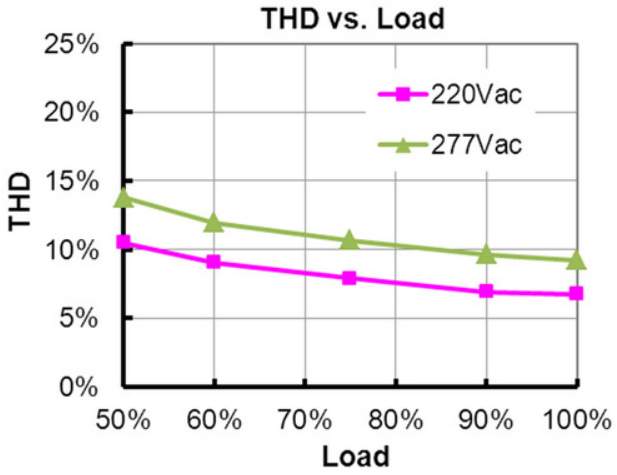
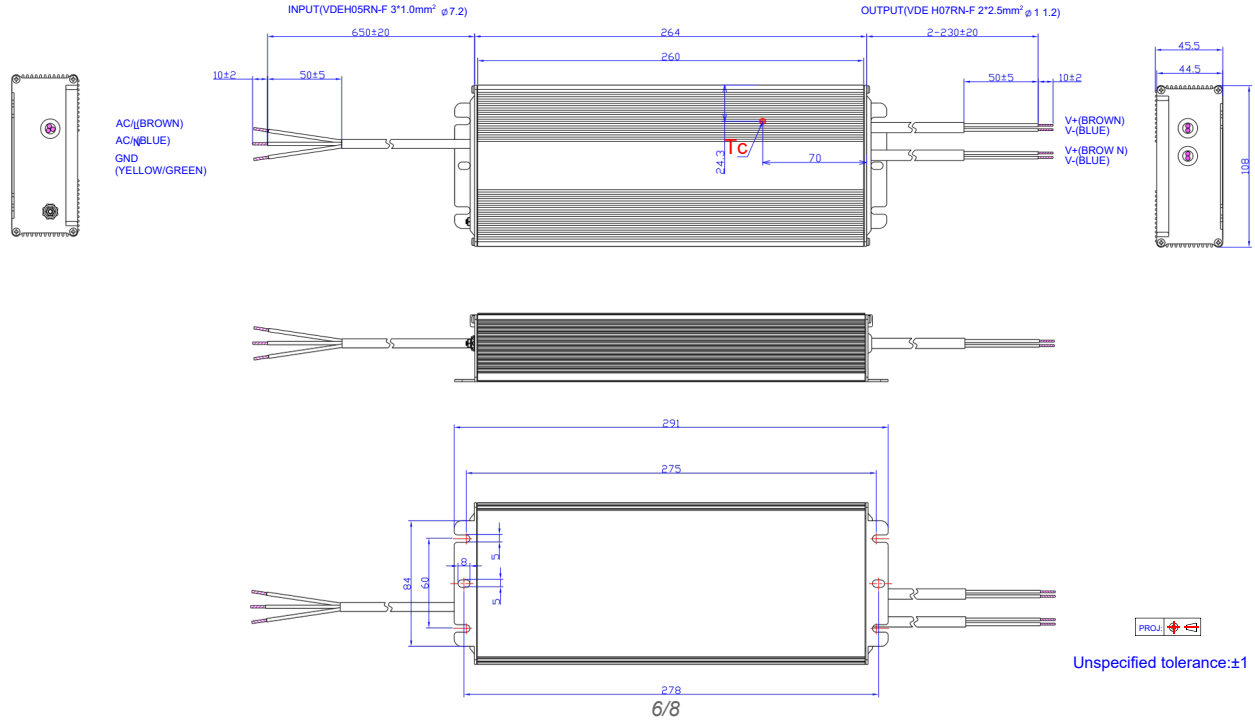
Total Harmonic Distortion



Protection Functions

Parameter	Min.	Typ.	Max.	Notes
Over Current Protection	110% I_o	145% I_o	180%I_o	Hiccup mode. The power supply shall be self-recovery when the fault condition is removed.
Over Temperature Protection	Auto recovery. The power supply shall be self-recovery after the case temperature becomes normal.			
Short Circuit Protection	Hiccup mode. The power supply shall be self-recovery when the fault condition is removed.			
Over Voltage Protection	Latch mode. The power supply shall return to normal operation only after the power is turn-on again			

Mechanical Outline



Specifications are subject to changes without notice. *All specifications are typical at 25□C unless otherwise stated.*

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RoHS Compliance

Ourproducts comply withreference to RoHS Directive (EU) 2015/863 amending 2011/65/EU, calling for the elimination of lead and other hazardous substances from electronic products.

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Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2015-06-01	A	Datasheets Release	/	/
2022-05-13	B	Product Photograph	/	Updated
		TUV/CCC/global-mark/Independent logo	/	Added
		Features	/	Updated
		Models	Notes	Updated
		General Specifications	Humidity	Updated
		Safety & EMC Compliance	/	Updated
		Mechanical Outline	/	Updated
		RoHS Compliance	/	Updated
2024-05-15	C	Product Photograph	/	Updated
		TUV logo	/	Deleted
		Safety & EMC Compliance	/	Updated
2024-08-09	D	Format	/	Updated
		global-mark logo	/	Deleted
		Safety & EMC Compliance	/	Updated
2025-02-14	E	Product Photograph	/	Updated