Features

- High Efficiency (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.

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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	-	-	0.65 A	Measured at 100% load and 220Vac input.
Inrush Current(I^2t)	-	-	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.
PF	0.9	-	-	At 220-240Vac, 50-60Hz, 60%-100% load(60~100W)
THD	-	-	20%	At 220-240Vac, 50-60Hz, 60%-100% load(60~100W)
THD	-	-	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.)
MTBF	-	436,000 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. 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 2.66 x 1.44 145 x 67.5 x 36.5			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

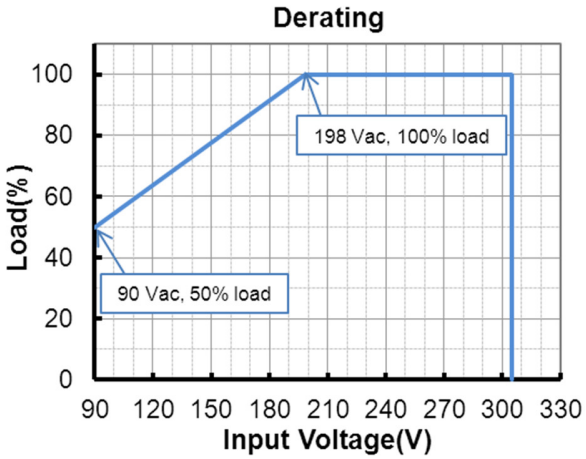
Safety Category	Standard
CE & ENEC	EN 61347-1, EN 61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
CCC	GB 19510.1, GB 19510.14
BIS	IS 15885(PART2/SEC13)
KS	KS C 7655
Performance	**Standard**
ENEC	EN IEC 62384
EMI Standards	**Notes**
EN IEC 55015/GB/T 17743/KS C 9815(1)	Conducted emission Test &Radiated emission Test
EN IEC 61000-3-2/GB 17625.1	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker

Safety & EMC Compliance (Continued)

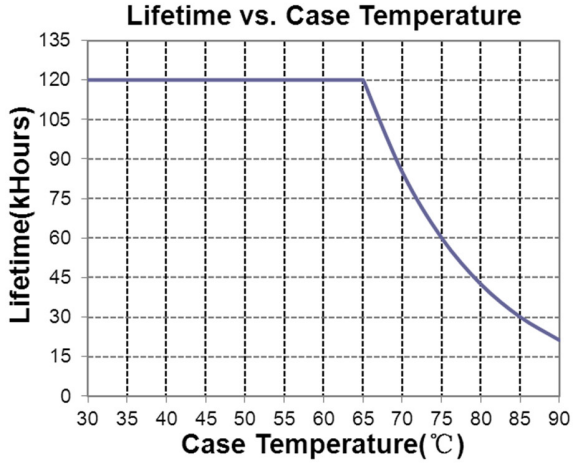
EMS Standards	Notes
EN 61000-4-2	Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-4	Electrical Fast Transient / Burst-EFT
EN 61000-4-5	Surge Immunity Test: AC Power Line: Differential Mode 4 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 connected to the driver and on the fixture itself.

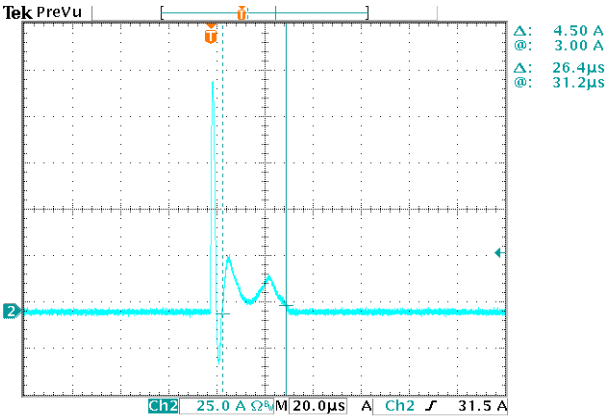
Derating



Lifetime vs. Case Temperature

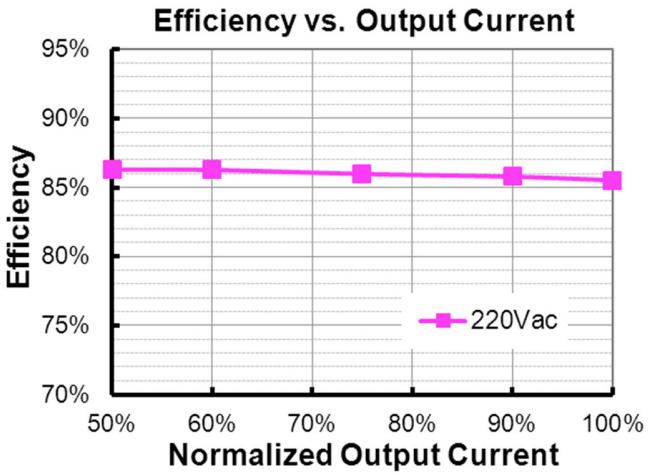


Inrush Current Waveform

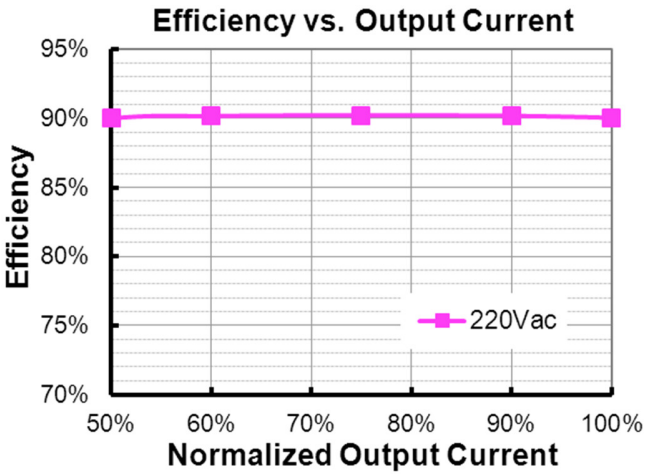


Efficiency vs. Load

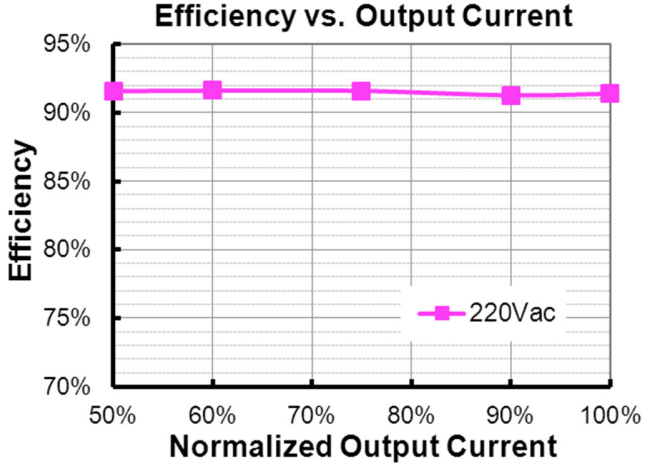
EBV-100S012SV



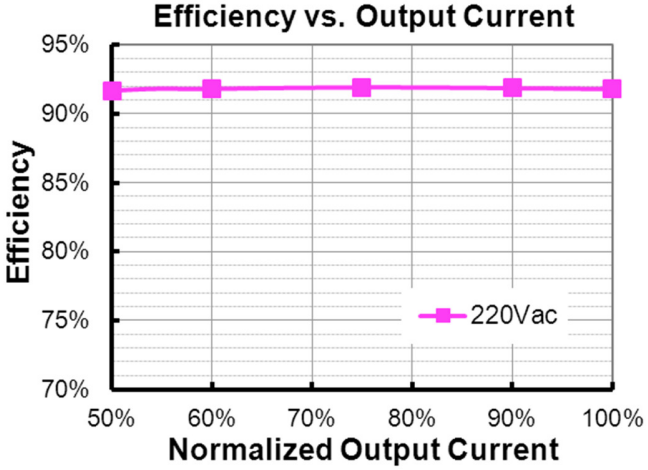
EBV-100S024SV



EBV-100S036SV



EBV-100S048SV



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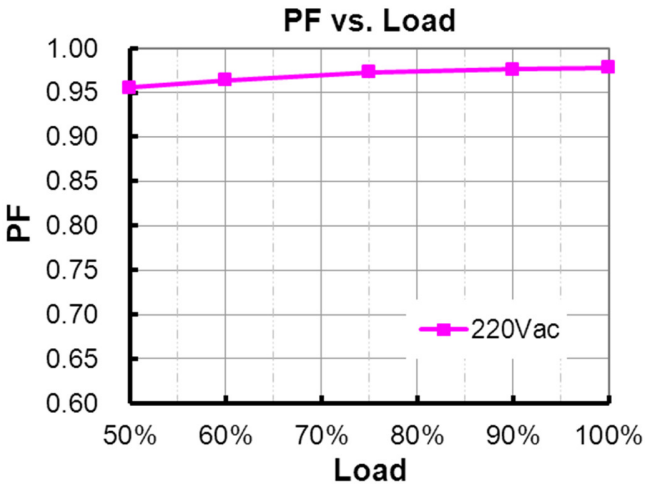
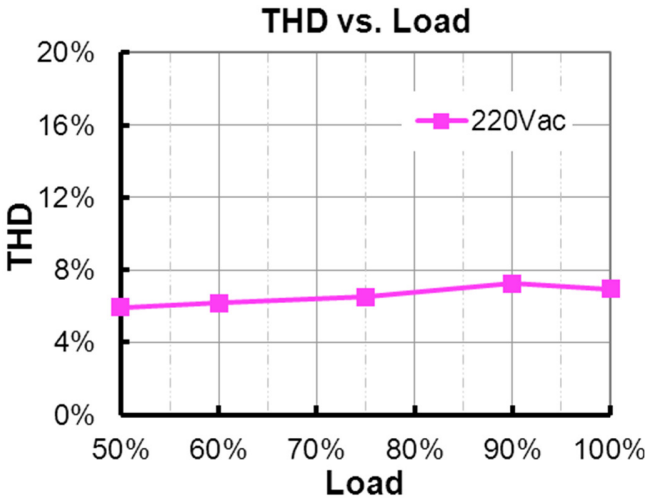
Power Factor



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	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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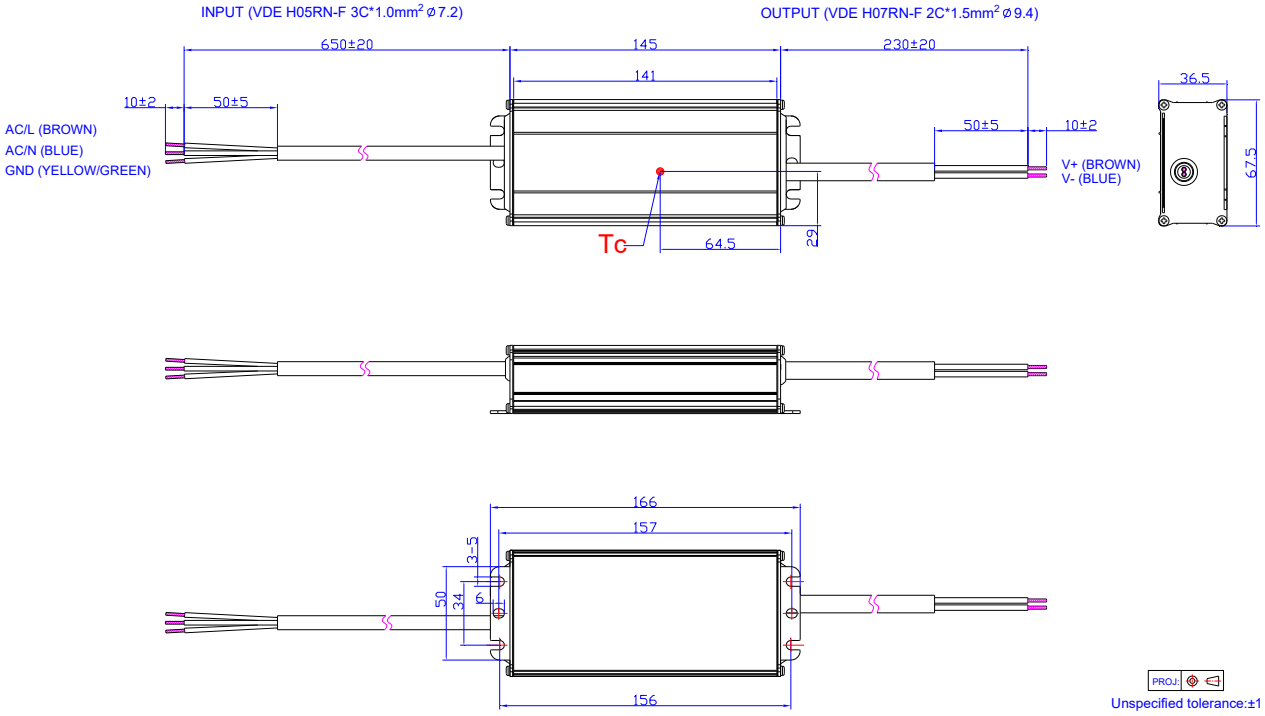
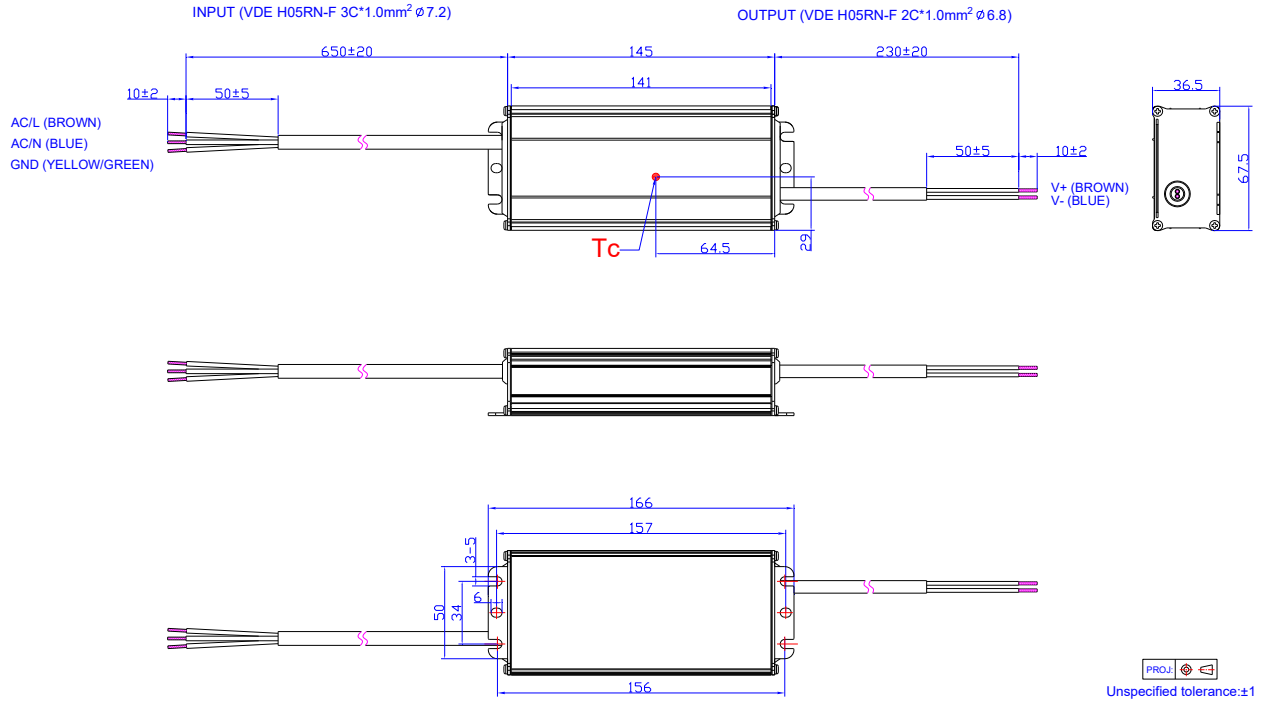
Mechanical Outline

EBV-100S012SV



EBV-100S024/036/048SV



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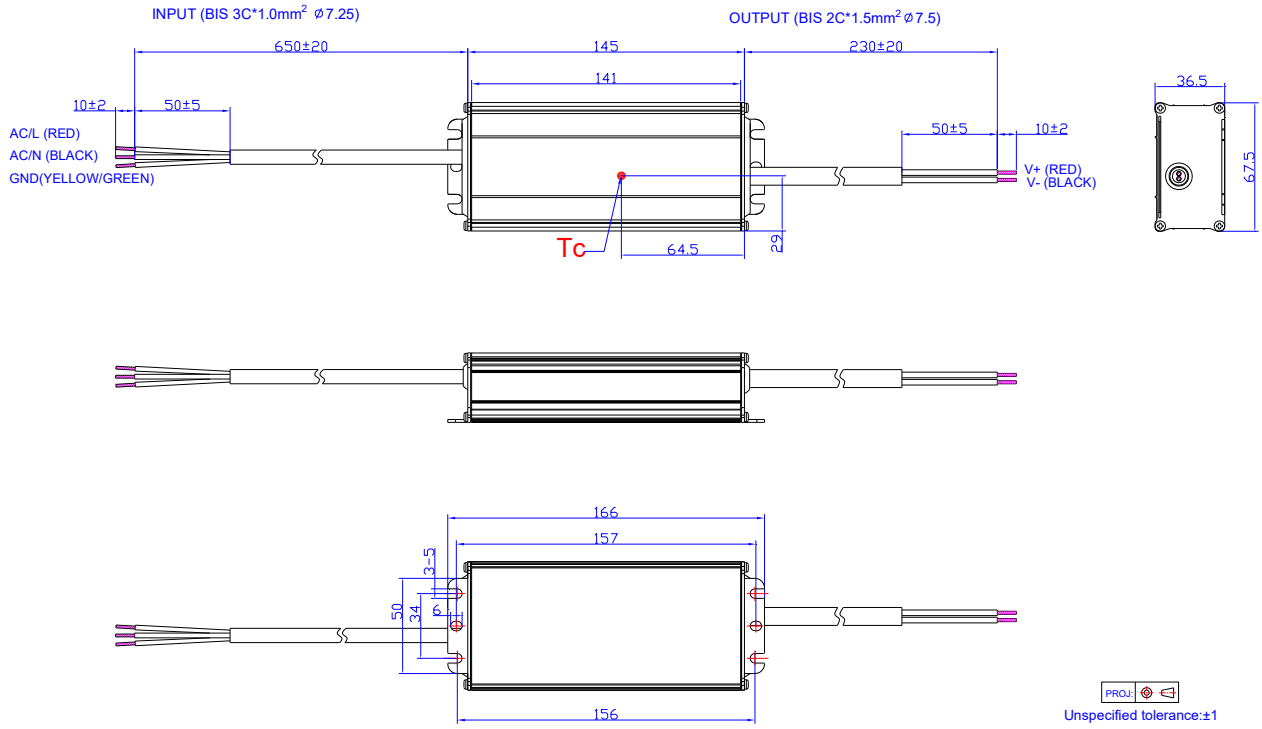
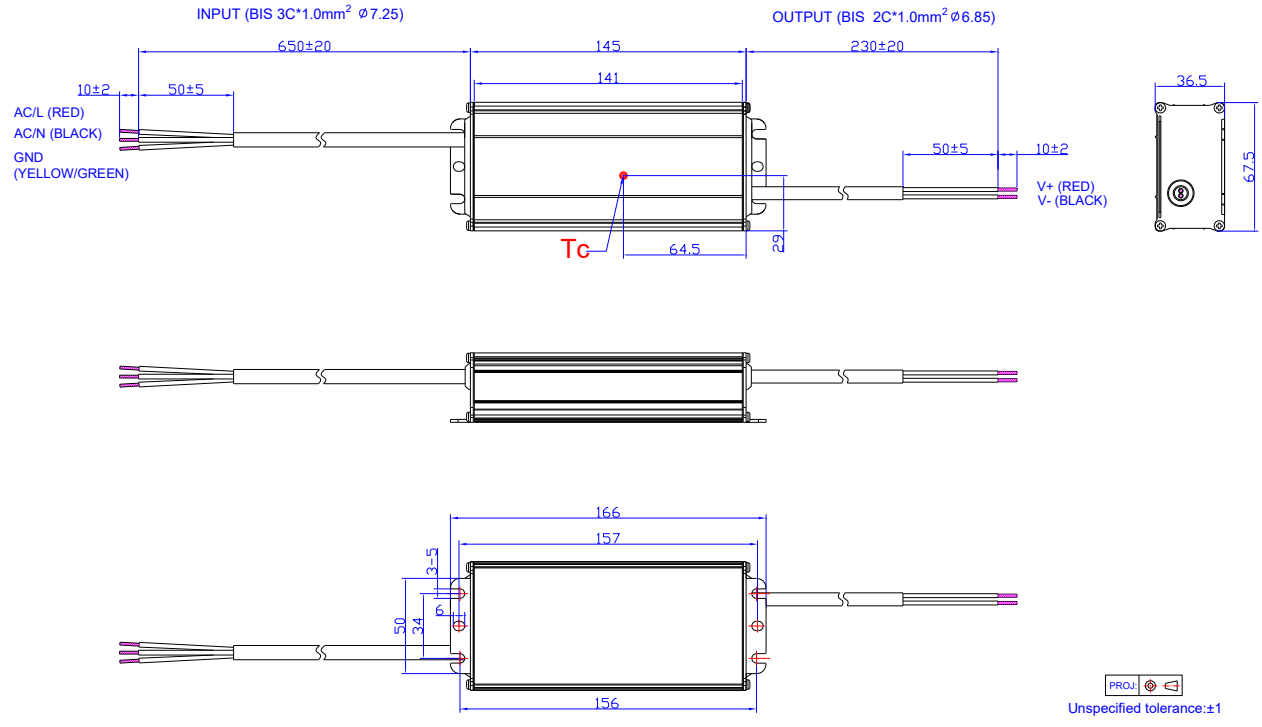
EBV-100S012SV-3000



EBV-100S024/036/048SV-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.

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	0.65 A
		Total Output Voltage Ripple (pk-avg)	EBV-100S012SV EBV-100S024SV EBV-100S048SV	Added
		Efficiency at 220 Vac input	EBV-100S012SV EBV-100S024SV EBV-100S048SV	Added
		MTBF	764,000 Hours	436,000 Hours
		Lifetime	117,000 Hours	85,000 Hours
		Lifetime vs. Case Temperature	/	Updated
		Inrush Current Waveform	/	Updated
		Efficiency vs. Load curve	EBV-100S012SV EBV-100S024SV EBV-100S048SV	Added
		Power Factor curve	/	Updated
		Total Harmonic Distortion curve	/	Updated
		Mechanical Outline	EBV-100S012SV	Added
2022-01-15	C	KCC logo	/	Added
		Features	/	Updated
		Models	/	Updated
		Safety & EMC Compliance	/	Updated
		Mechanical Outline	/	Updated
		RoHS & Compliance	/	Updated

Revision History (Continued)

Change Date	Rev.	Description of Change		
		Item	From	To
2025-10-28	D	Format	/	Updated
		Safety & EMC Compliance	/	Updated