

40W Constant Voltage Driver

VTS-40-XX IP67 L

Features

- High efficiency up to 88%
- Built-in active PFC function
- All-Around Protection: OLP,SCP,OTP
- Compact Plastic Case, Free Air Convection
- Waterproof(IP67) and UL Dry/Damp/Wet Location
- Input Surge Protection:2kV line-line
- High Reliability & Long Lifetime & 3 Years Warranty



Description

The VTS-40-XX IP67 L series is a 40W, constant-voltage IP67 LED driver that operates from 198-264Vac input with excellent power factor and THD feature. This series of products is specially designed for direct power supply applications such as LED strips. The high efficiency of these drivers and compact plastic case enable them to run cooler, significantly improving reliability and extending product life. To ensure trouble-free operation, protection is provided against input surge, output over voltage, short circuit, and over temperature.

Models

Model	Input Voltage Range	Output Voltage	Output Current Range	Max output Power	Power Factor	Typical Efficiency
VTS-40-12 IP67 L	198~264Vac	12V	0~3.34A	40W	0.95	86%
VTS-40-24 IP67 L	198~264Vac	24V	0~1.67A	40W	0.95	88%

Note:

1. Test condition: 230Vac/50Hz, at full Load;

40W Constant Voltage Driver

VTS-40-XX IP67 L

Input Specifications

Parameter	Min.	Typ.	Max	Notes
Rated Input Voltage	220V	-	240V	
Range of input voltage	198V	-	264V	
Input Frequency	47Hz	-	63Hz	
Leakage Current	-	-	0.7mA	240Vac
Input Current	-	-	0.25A	198Vac, at full load condition
Inrush Current	-	-	50A	230Vac/50Hz, 90° degree phase, full load, cold start, 50%Ipk~50%Ipk, duration=380μS
No Load Loss	-	-	0.5W	230Vac/50Hz, no load
Power Factor	0.9	0.95	-	230Vac/50Hz, at full load condition
THD	-	10%	15%	220~240Vac, 100%Load

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Voltage				
VTS-40-12 IP67 L	-	12V	-	At full load condition
VTS-40-24 IP67 L	-	24V	-	
Output Voltage Tolerance	-5%	-	5%	At full load condition
Total Output Voltage Ripple	-	-	1%	At full load condition, PK-PK, 230Vac
Startup Overshoot Voltage	-	-	10%	At full load condition
Load Regulation	-3%	-	3%	0%~100% Load
Line Regulation	-3%	-	3%	220Vac~240Vac, full load
Startup times	-	0.5S	1S	

Note:

- 1) All parameters NOT specially mentioned are measured at 230Vac input and 25°C of ambient temperature.
- 2) Ripple & Noise are measured at 20MHz of bandwidth by using a 300mm twisted pair-wire terminated with a 0.1uF & 47 μF parallel capacitor.

40W Constant Voltage Driver

VTS-40-XX IP67 L

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 230Vac input: VTS-40-12 IP67 L VTS-40-24 IP67 L	85% 87%	86% 88%	- -	Measured at 230Vac,full load and steady –state temperature in 25°C ambient Efficiency will be about 1.0% lower if measured immediately after startup
MTBF	-	250,000 Hours	-	Measured at 230Vac input, 80% Load and 25 °C ambient temperature (MIL-HDBK-217F)
Ambient Temperature	-20°C	-	+70°C	Refer to derating curve for the details.
Operating Case Temperature for Safety Tc_s	-20°C	-	+90°C	
Operating Case Temperature for Warranty Tc_w	-20°C	-	+75°C	Case temperature for 3 years warranty. Humidity: 10% RH to 100% RH.
Lifetime	-	30,000 Hours	-	Measured at 230Vac input, 100%Load and 75°C case temperature; See lifetime vs. Case Temperature curve for the details
Storage Temperature	-20°C	-	+85°C	Humidity: 5% RH to 100% RH.
Dimensions	148X 42 X 30 mm			With mounting ear, See Mechanical Outline for the detail
Net Weight	-	280g	-	

40W Constant Voltage Driver

VTS-40-XX IP67 L

Safety Standards

Safety Category	Country / Territory	Standards
CE,TUV	Europe	EN61347-1, EN61347-2-13
CCC	China	GB19510.1, GB19510.14

EMC Compliance

EMC Category	Country / Territory	Standards
CE	Europe	EN 55015, EN 61000-3-2, EN 61000-3-3
		EN61000-4-2,3,4,5,6,8,11
		EN 61547
CCC	China	GB 17743, GB 17625.1

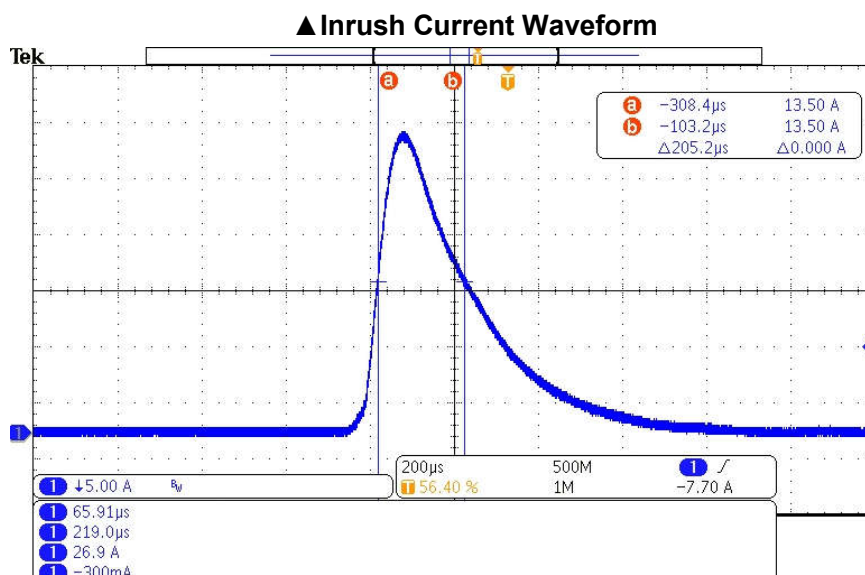
Note :

- 1) This LED driver meets the EMI specifications above, but EMI performance of a lighting fixture also depends on the other devices on the fixture.
- 2) When the withstand voltage test is performed, the gas discharge tube grounding/disconnecting device (nut and metal lock piece) located on the driver input should be temporarily removed to prevent the gas discharge tube inside the driver from functioning(refer to IEC60598-1-10.2).After the test is completed, the nut and metal lock piece must be reinstalled to restore the power line to the ground surge protection function and ensure reliable contact between the metal lock piece and the end cover.

Protection Functions

Parameter	Min.	Typ.	Max.	Note
Over Load Protection	110%	-	150%	Hiccup, Auto Recovery
Short Circuit Protection	-	-	-	Hiccup, Auto Recovery

Curve @VTS-40-12 IP67 L

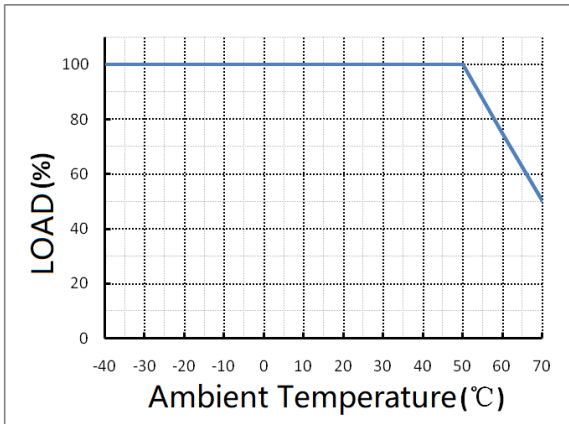


40W Constant Voltage Driver

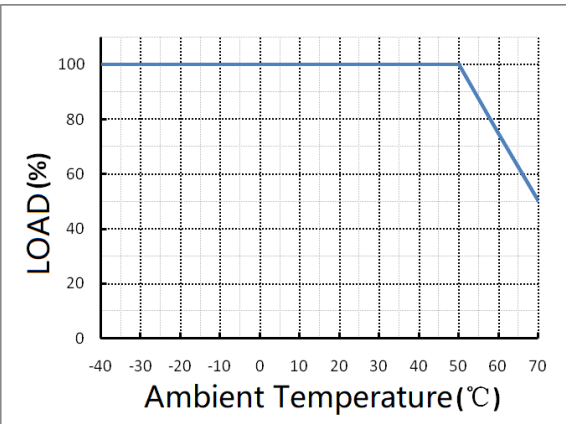
VTS-40-XX IP67 L

▲ Derating

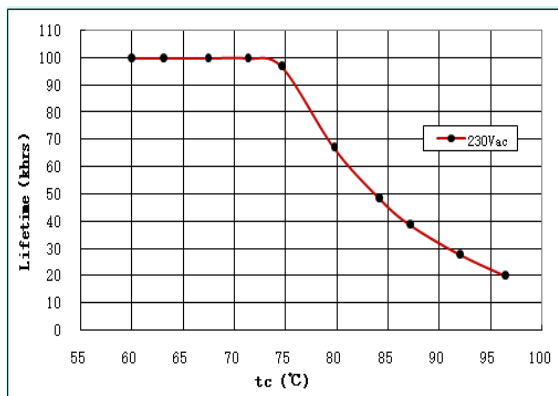
Output Power-Temperature



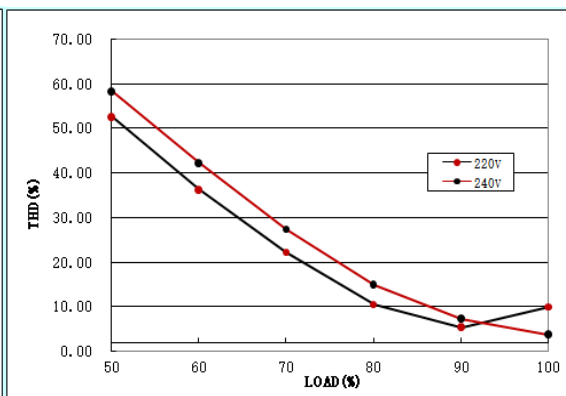
Output Power-Input Voltage



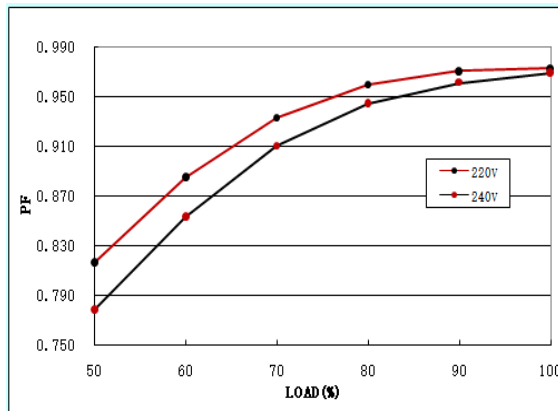
▲ Lifetime



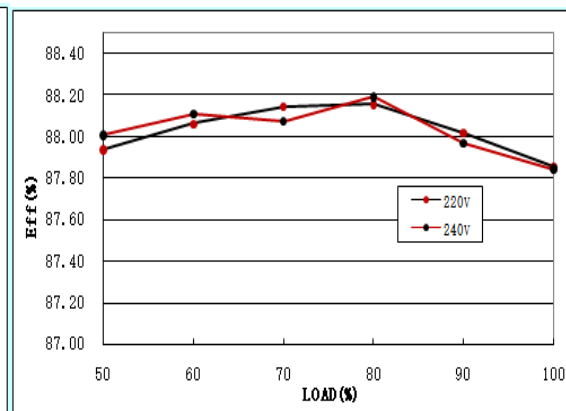
▲ Total Harmonic Distortion



▲ Power Factor



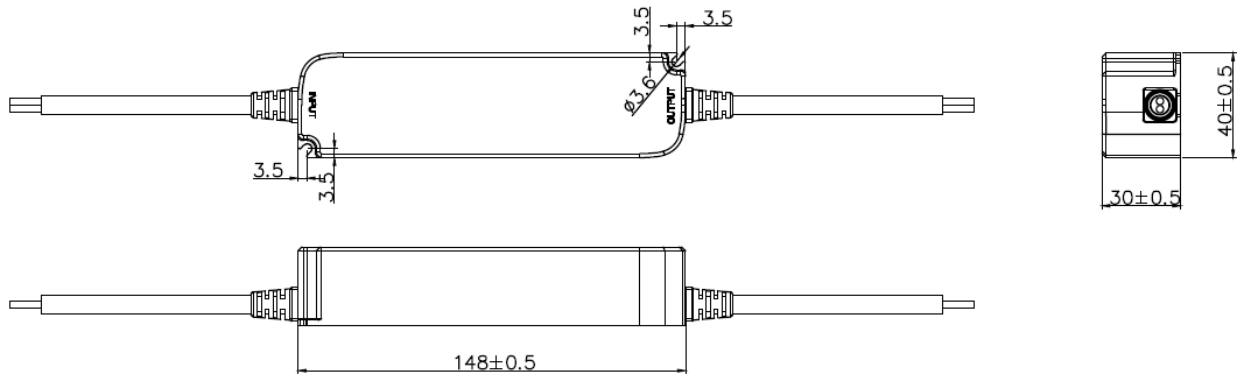
▲ Efficiency



40W Constant Voltage Driver

VTS-40-XX IP67 L

Mechanical Outline

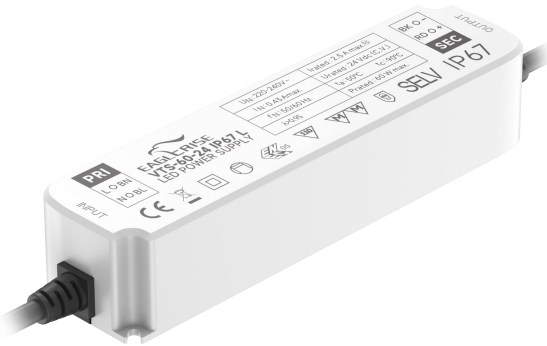


Note: Wire length of input and output can be changed as customer's requirement

TYPE1	Total Length	Outside Color	Inside Wires Color	Wire Model/Diameter
Input wire	0.36M	Black	Brown/Blue	H05RN-F/2X1.0mm ²
Output wire	0.36M	Black	Red/Black	H05RN-F/2X1.0mm ²

TYPE2	Total Length	Outside Color	Inside Wires Color	Wire Model/Diameter
Input wire	0.60M	Brown/Blue	Brown/Blue	AWG18
Output wire	0.60M	Red/Black	Red/Black	AWG18

60W Constant Voltage Driver



Approve



Features

- High efficiency up to 89%
- Built-in active PFC function
- All-Around Protection: OLP,SCP,OTP
- Compact plastic Case, Free Air Convection
- Waterproof(IP67) and UL Dry/Damp/Wet Location
- Input Surge Protection:2kV line-line
- High Reliability & Long Lifetime & 3 Years Warranty

Applications

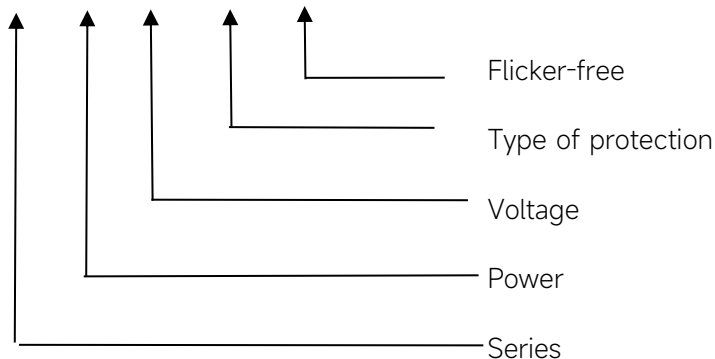
- LED strips

◆ Description

The VTS-60-XX IP67 L series is a 60W, constant-Voltage IP67 LED driver that operates from 176-264Vac input with excellent power factor and THD feature. This series of products is specially designed for direct power supply applications such as LED strips. The high efficiency of these drivers and compact plastic case enable them to run cooler, significantly improving reliability and extending product life. To ensure trouble-free operation, protection is provided against input surge, output over voltage, short circuit, and over temperature.

◆ Model code

VTS-60-XX IP67 L



◆ Specification

Output	Constant Voltage	12VDC	24VDC
	Current Range	0-5A	0-2.5A
	Voltage Accuracy	±5%	
	Output HF current ripple(≥1KHz)	±5%	
	Output LF current ripple(≤120Hz)	±5%	
	SVM	≤0.4	
	P _{st}	≤1	
	Efficiency(Typ.)	86.5%	89%
Input	Rated input voltage	220-240VAC	
	Range of input voltage	176-264VAC	
	Frequency(Hz)	47-63 Hz	
	Displacement factor	≥0.9	
	Power Factor	0.95	
	Input Current max	0.43A	
	Start-up time	< 0.5S	
	No Load Power	≤0.5W	
	THD (Typ.)	<5%	
Protection	Over Load Protection	110-150%	
		YES/Auto Resume	
	Short circuit Protection	YES/Auto Resume	
	Over Temperature Protection	YES/Auto Resume	
Environment	Operating Temperature	-40°C~+70°C	
	Humidity	20%-90%RH	
	Tc	90°C	
	Storage Temperature	-40°C~+85°C	
	Life time	> 50000h@Tc=80°C	
Surface	Dimension	162.5X42.5X32(LXWXH)mm	
standards	EN 61347-1;EN 61347-2-13;EN 62384;EN 61547;EN55015,EN61000-3-2,EN 61000-3-3		
Others	ErP	EU 2019/2020	
	RoHS	RoHS (2011/65/EU) (EU)2015/863	

Note	<p>1.All parameters NOT specially mentioned are measured at 230Vac input and 25°C of ambient temperature.</p> <p>2.Ripple & Noise are measured at 20MHz of bandwidth by using a 300mm twisted pair-wire terminated with a 0.1uF & 47 μF parallel capacitor.</p> <p>3.This LED driver meets the EMI specifications above, but EMI performance of a lighting fixture also depends on the other devices on the fixture.</p> <p>4.When the withstand voltage test is performed, the gas discharge tube grounding/disconnecting device (nut and metal lock piece) located on the driver input should be temporarily removed to prevent the gas discharge tube inside the driver from functioning(refer to IEC60598-1-10.2).After the test is completed, the nut and metal lock piece must be reinstalled to restore the power line to the ground surge protection function and ensure reliable contact between the metal lock piece and the end cover.</p>
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◆ Model list

Model	Input Voltage Range	Output Voltage	Output Current Range	Max output Power	Power Factor	Typical Efficiency
VTS-60-12 IP67 L	176~264Vac	12V	0~5A	60W	0.95	86.5%
VTS-60-24 IP67 L	176~264Vac	24V	0~2.5A	60W	0.95	89.0%

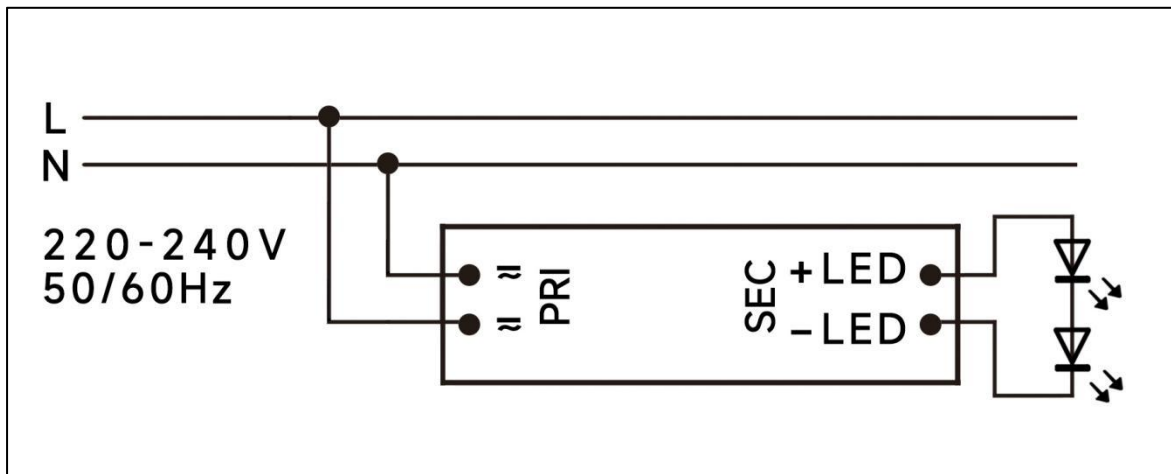
Note:

Test condition: 230Vac/50Hz, at full Load;

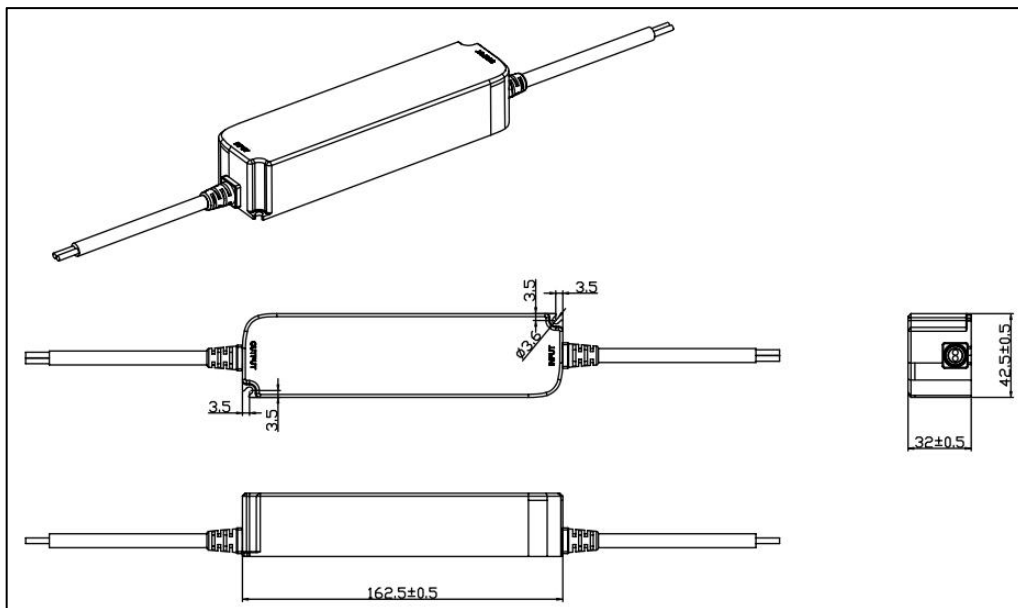
◆ Circuit Breaker

I ^{peak}	T ^{width}	B10	B16	B20	C10	C16	C20
44.2A	229.5μs	8pcs	12pcs	16pcs	13pcs	21pcs	26pcs

◆ Wiring diagram



◆ 2D diagram

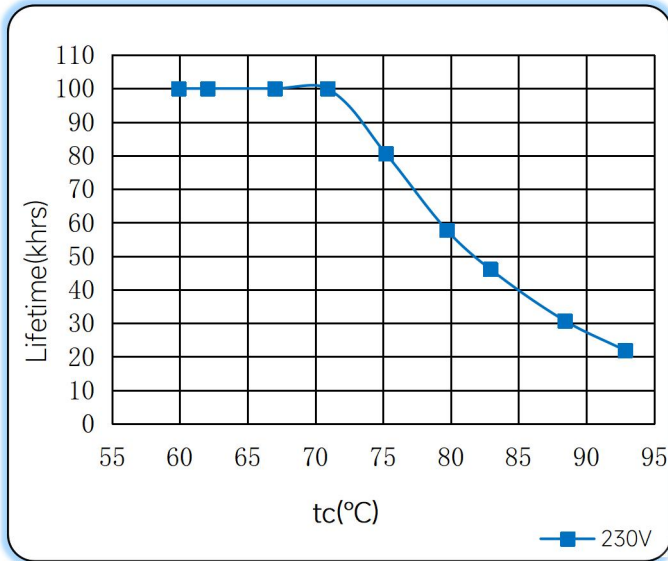


TYPE	Total Length	Outside Color	Inside Wires Color	Wire Model/Diameter
Input wire	0.36M	Black	Brown/Blue	H05RN-F/2x1.0mm ²
Output wire	0.36M	Black	Red/Black	H05RN-F/2x1.0mm ²

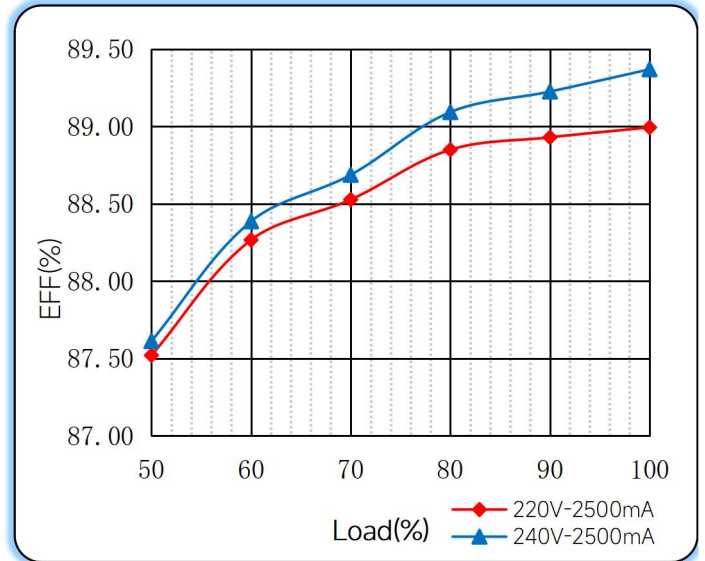
Note: Wire length of input and output can be changed as customer's requirement

◆ Curve for VTS-60-24 IP67 L

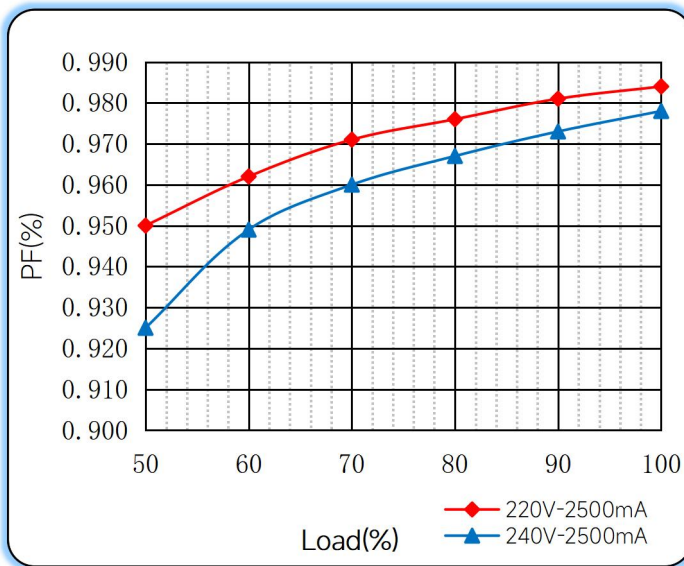
Lifetime vs. Temperature Curve



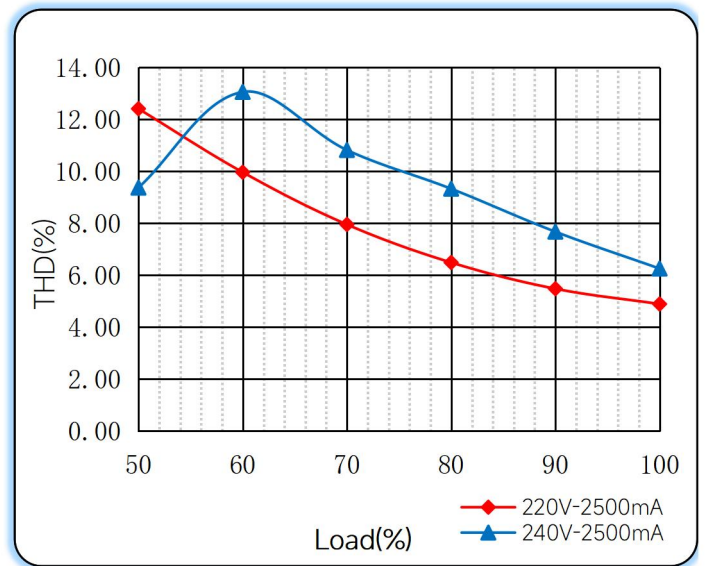
Efficiency vs. Load



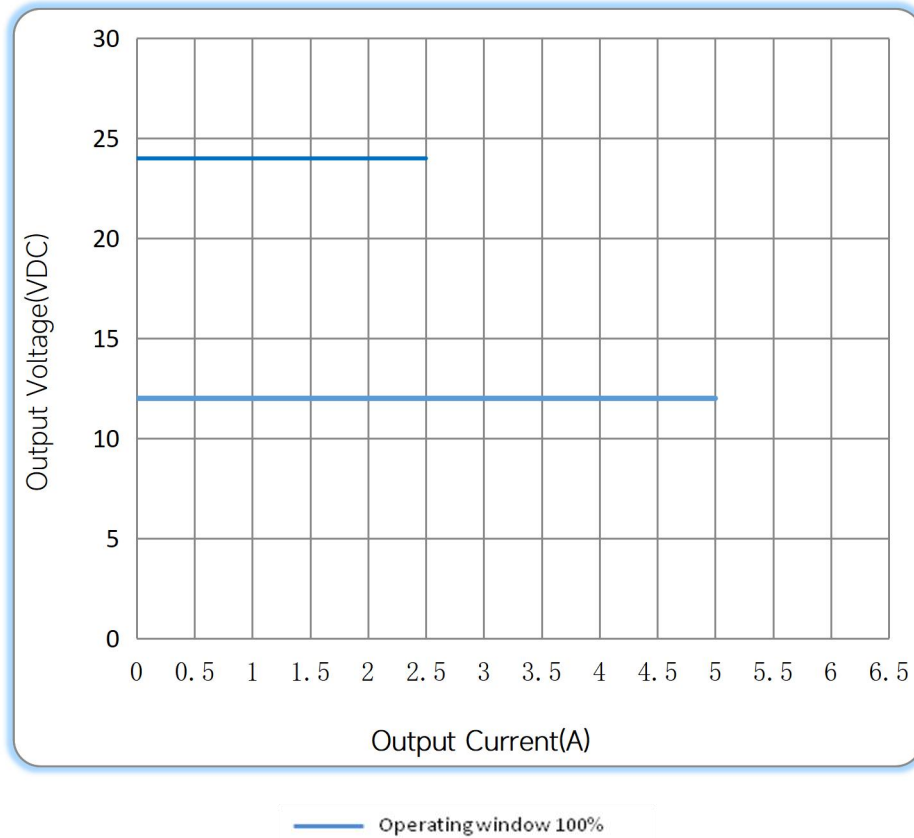
Power Factor Characteristics



THD vs. Load



◆ Operating window



◆ Revision Updates

ITEM	BEFORE	AFTER	VERSION	DATE
Initial			A	2022/05/15

Tel: +86-0757-86256822, +86-0757-86256831

E-mail: sales@eaglerise.com

Website : <https://lighting.eaglerise.com>



EAGLERISE



Manual

100W Constant Voltage Driver

VTS-100-XX IP67 L

Features

- High efficiency up to 89%
- Built-in active PFC function
- All-Around Protection: OLP,SCP,OTP
- Compact plastic Case, Free Air Convection
- Waterproof(IP67) and UL Dry/Damp/Wet Location
- Input Surge Protection:2kV line-line
- High Reliability & Long Lifetime & 3 Years Warranty



Description

The VTS-100-XX IP67 L series is a 100W, constant-voltage IP67 LED driver that operates from 176-264Vac input with excellent power factor and THD feature. It is created for consisting of LED lamps, lampion, architecture and billboard lights. The high efficiency of these drivers and compact plastic case enable them to run cooler, significantly improving reliability and extending product life. To ensure trouble-free operation, protection is provided against input surge, output over voltage, short circuit, and over temperature.

Models

Model	Input Voltage Range	Output Voltage	Output Current Range	Max output Power	Power Factor	Typical Efficiency
VTS-100-12 IP67 L	176~264Vac	12V	0~8.33A	100W	0.95	87%
VTS-100-24 IP67 L	176~264Vac	24V	0~4.17A	100W	0.95	89%

Note:

1. Test condition: 230Vac/50Hz, at full Load;

100W Constant Voltage Driver

VTS-100-XX IP67 L

Input Specifications

Parameter	Min.	Typ.	Max	Notes
Rated Input Voltage	220V	-	240V	
Range of input voltage	176V	-	264V	
Input Frequency	47Hz	-	63Hz	
Leakage Current	-	-	0.7mA	240Vac
Input Current	-	-	0.68A	176Vac, at full load condition
Inrush Current	-	-	60A	230Vac/50Hz, 90-degree phase, full load, cold start, 50%Ipk~50%Ipk, duration=380μS
No Load Loss	-	-	1W	230Vac/50Hz, no load
Power Factor	0.9	0.95	-	230Vac/50Hz, at full load condition
THD	-	5%	10%	220~240Vac, 100%Load, 25°C

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Voltage				
VTS-100-12 IP67 L	-	12V	-	At full load condition
VTS-100-24 IP67 L	-	24V	-	
Output Voltage Tolerance	-5%	-	5%	At full load condition
Total Output Voltage Ripple	-	-	2%	At full load condition, PK-PK
Startup Overshoot Voltage	-	-	10%	At full load condition
Load Regulation	-2%	-	2%	0%~100% Load
Line Regulation	-2%	-	2%	220Vac~240Vac, full load
Startup times	-	0.5S	1S	

Note:

- 1) All parameters NOT specially mentioned are measured at 230Vac input and 25°C of ambient temperature.
- 2) Ripple & Noise are measured at 20MHz of bandwidth by using a 300mm twisted pair-wire terminated with a 0.1uF & 47 μF parallel capacitor.

100W Constant Voltage Driver

VTS-100-XX IP67 L

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 230Vac input:				Measured at 230Vac,full load and steady –state temperature in 25℃ ambient
VTS-100-12 IP67 L	86%	87%	-	
VTS-100-24 IP67 L	88%	89 %	-	Efficiency will be about 1.0% lower if measured immediately after startup
MTBF	-	250,000 Hours	-	Measured at 230Vac input, 80% Load and 25 ℃ ambient temperature (MIL-HDBK-217F)
Ambient Temperature	-40℃	-	+70℃	Refer to derating curve for the details.
Operating Case Temperature for Safety Tc_s	-40℃	-	+90℃	
Operating Case Temperature for Warranty Tc_w	-40℃	-	+75℃	Case temperature for 3 years warranty. Humidity: 10% RH to 100% RH.
Lifetime	-	30,000 Hours	-	Measured at 230Vac input, 100%Load and 75℃ case temperature; See lifetime vs. Case Temperature curve for the details
Storage Temperature	-40℃	-	+85℃	Humidity: 5% RH to 100% RH.
Dimensions	190X52X33mm			With mounting ear, See Mechanical Outline for the detail

Safety Standards

Safety Category	Country / Territory	Standards
CE,TUV	Europe	EN61347-1, EN61347-2-13
CCC	China	GB19510.1, GB19510.14

EMC Compliance

EMC Category	Country / Territory	Standards
CE	Europe	EN 55015, EN 61000-3-2, EN 61000-3-3
		EN61000-4-2,3,4,5,6,8,11
		EN 61547
CCC	China	GB 17743, GB 17625.1

Note :

- 1) This LED driver meets the EMI specifications above, but EMI performance of a lighting fixture also depends on the other devices on the fixture.
- 2) When the withstand voltage test is performed, the gas discharge tube grounding/disconnecting device (nut and metal lock piece) located on the driver input should be temporarily removed to prevent the gas discharge tube inside the driver from functioning(refer to IEC60598-1-10.2).After the test is completed, the nut and metal lock piece must be reinstalled to restore the power line to the ground surge protection function and ensure

100W Constant Voltage Driver

VTS-100-XX IP67 L

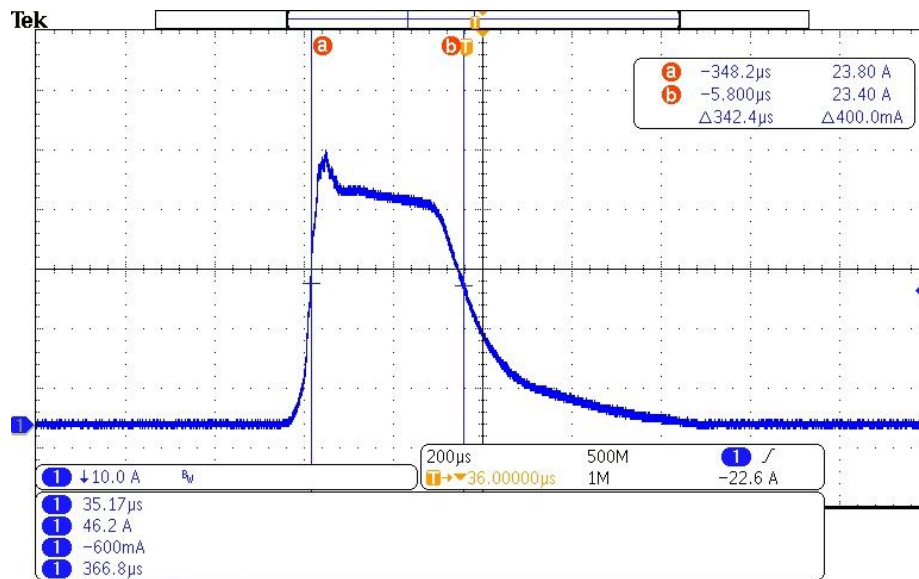
reliable contact between the metal lock piece and the end cover.

Protection Functions

Parameter	Min.	Typ.	Max.	Note
Over Load Protection	110%	-	150%	Hiccup, Auto Recovery
Short Circuit Protection	-	-	-	Hiccup, Auto Recovery
Over Voltage Protection	-	-	-	Latch off, recovery after start on
Over Temperature Protection	-	-	-	Hiccup, Auto Recovery

Curve @VTS-100-12 IP67 L

▲ Inrush Current Waveform

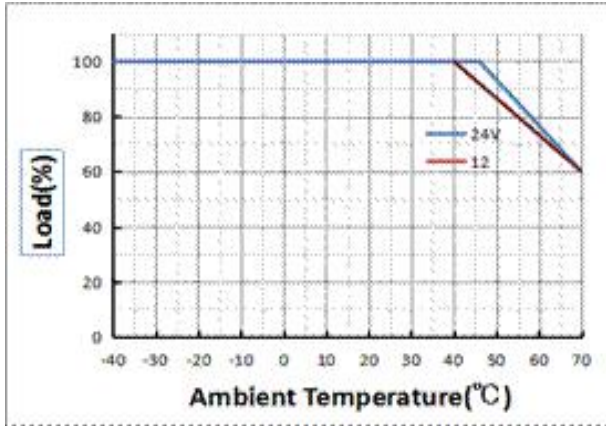


100W Constant Voltage Driver

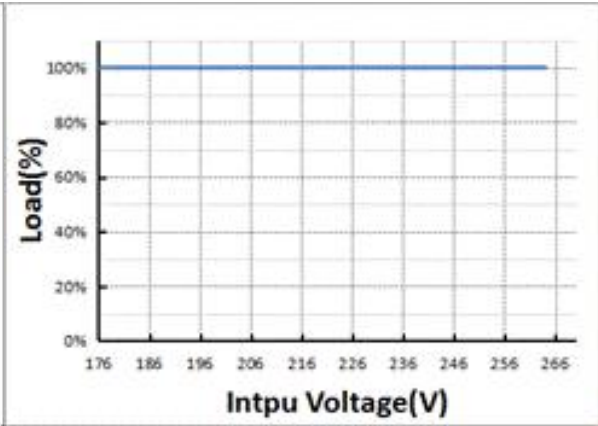
VTS-100-XX IP67 L

▲ Derating

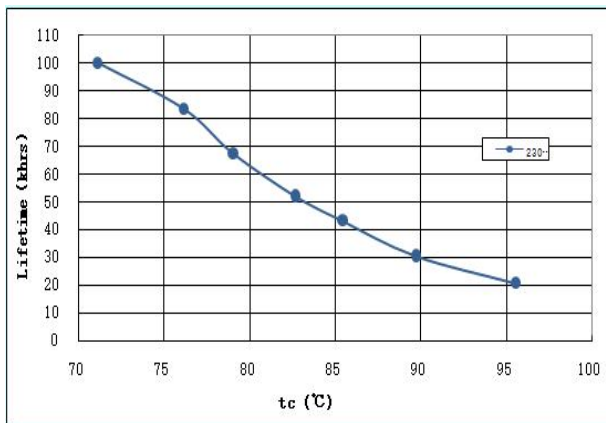
Output Power-Temperature



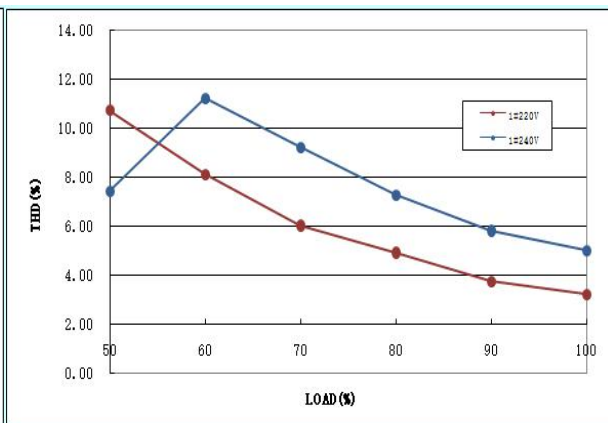
Output Power-Input Voltage



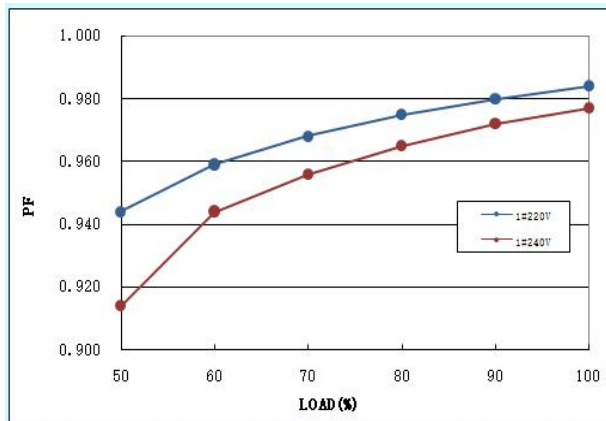
▲ Lifetime



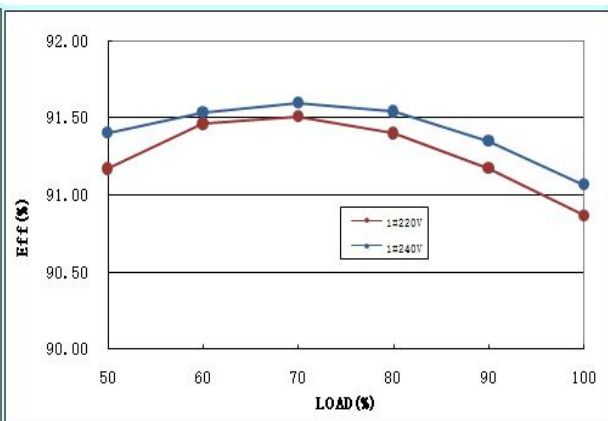
▲ Total Harmonic Distortion



▲ Power Factor



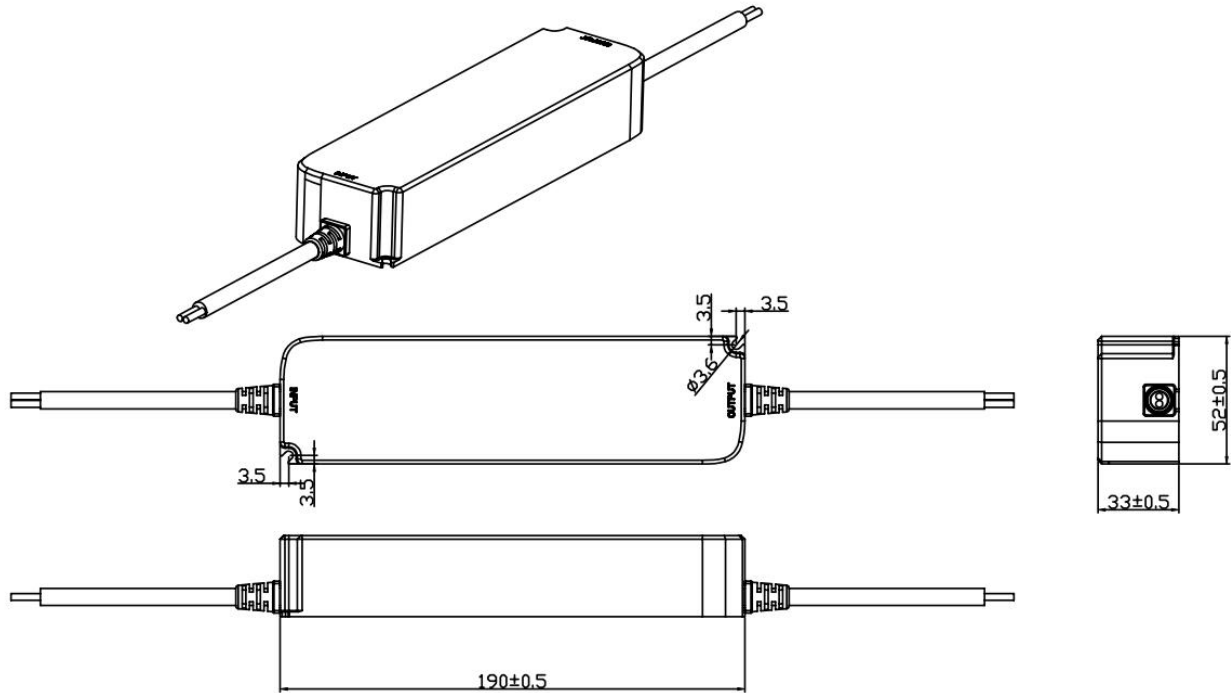
▲ Efficiency



100W Constant Voltage Driver

VTS-100-XX IP67 L

Mechanical Outline



Note: Wire length of input and output can be changed as customer's requirement

TYPE1	Total Length	Outside Color	Inside Wires Color	Wire Model/Diameter
Input wire	0.36M	Black	Brown/Blue	H05RN-F/2x1.0mm ²
Output wire	0.36M	Black	Red/Black	H05RN-F/2x1.0mm ²

TYPE2	Total Length	Outside Color	Inside Wires Color	Wire Model/Diameter
Input wire	0.60M	Brown/Blue	Brown/Blue	AWG18
Output wire	0.60M	Red/Black	Red/Black	AWG14