

Lab ID#: 621

Receipt Date: Jul 17, 2019

Test Date: Jul 29, 2019

Report:

Report Date: Aug 2, 2019

DUT INFORMATION

Brand	SilverStone
Manufacturer (OEM)	High Power
Series	SFX
Model Number	SX700-G
Serial Number	DE18440028SX700G00
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10
Rated Frequency (Hz)	50-60
Rated Power (W)	700
Type	SFX
Cooling	92mm Fluid Dynamic Bearing Fan (S0921512HB)
Semi-Passive Operation	X
Cable Design	Fully Modular

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	22	22	58.4	2.5	0.3
	Watts	110		700	12.5	3.6
Total Max. Power (W)		700				

CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (300mm)	1	1	18-22AWG	No
4+4 pin EPS12V (400mm)	1	1	16AWG	No
6+2 pin PCIe (400mm+150mm)	1	1	16-18AWG	No
6+2 pin PCIe (550mm+150mm)	1	1	16-18AWG	No
SATA (300mm+200mm+100mm)	2	6	18AWG	No
4 pin Molex (300mm+200mm+200mm)	1	3	18AWG	No
FDD Adapter (105mm)	1	1	22AWG	No
AC Power Cord (1420mm) - C13 coupler	1	1	18AWG	-

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General Data	
Manufacturer (OEM)	High Power
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 3x CM chokes, 1x MOV, 1x CM02X
Inrush Protection	NTC Thermistor & Diode
Bridge Rectifier(s)	2x GBU1506L (600V, 15A @ 100°C)
APFC MOSFETS	2x Infineon IPA50R140CP (550V, 15A @ 150°C, 0.14Ohm)
APFC Boost Diode	1x Infineon IDH08G65C5 (650V, 8A @ 145°C)
Hold-up Cap(s)	1x Rubycon (420V, 470uF, 3000h @ 85°C, USH)
Main Switchers	2x Infineon IPA50R140CP (550V, 15A @ 150°C, 0.14Ohm)
High-side/Low-Side Driver	Silicon Labs Si8233BD
APFC Controller	Infineon ICE3PCS01G
Resonant Controller	Champion CM6901X
Topology	Primary side: Half-Bridge & LLC Resonant Controller Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	6x Toshiba TPHP85 04PL (SOP Advance Series, 40V, 150A @ 25C, 0.85mOhm)
5V & 3.3V	DC-DC Converters: 6x Infineon BSC0906NS (30V, 40A @ 100°C, 4.5mOhm) PWM Controller: APW7159C
Filtering Capacitors	Electrolytics: 1x Nippon Chemi-Con (4-10,000 @ 105°C, KY), 4x Rubycon (3-6,000 @ 105°C, YXG), 2x Nichicon (4-10,000 @ 105°C, HE) Polymers: Nippon Chemi-Con
Supervisor IC	SITI PS224 (OVP, UVP, OCP,SCP, PG)
Micro Controller	STC 15W408AS
Fan Model	Globe Fan S0921512HB (92mm, 12V, 0.45A, Fluid Dynamic Bearing)
5VSB Circuit	
Rectifier	1x DK5V45R15 SBR (50V, 60A)
Standby PWM Controller	Sanken STR-A6069H
-12V Circuit	
Rectifier	KEC KIA7912PI (-12V, 1A)

RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6 (+-2°C / +- 3.6°F)
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

115V

Average Efficiency	88.896%
Efficiency With 10W (≤500W) or 2% (>500W)	55.243
Average Efficiency 5VSB	80.179%
Standby Power Consumption (W)	0.0894785
Average PF	0.990
Avg Noise Output	36.99 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	S+

TEST EQUIPMENT

Electronic Loads	Chroma 6314A x2 63123A x6 63102A 63101A	Chroma 63601-5 x4 Chroma 63600-2 x2 63640-80-80 x20 63610-80-20 x2
AC Sources	Chroma 6530, Chroma 61604, Keysight AC6804B	
Power Analyzers	N4L PPA1530 x2, N4L PPA5530	
Oscilloscopes	Picoscope 4444 & 3424, Keysight DSOX3024A, Rigol DS2072A	
Voltmeter	Keithley 2015 THD 6.5 Digit	
Sound Analyzer	Bruel & Kjaer 2250-L G4	
Microphone	Bruel & Kjaer Type 4955-A, Bruel & Kjaer Type 4189	
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2	

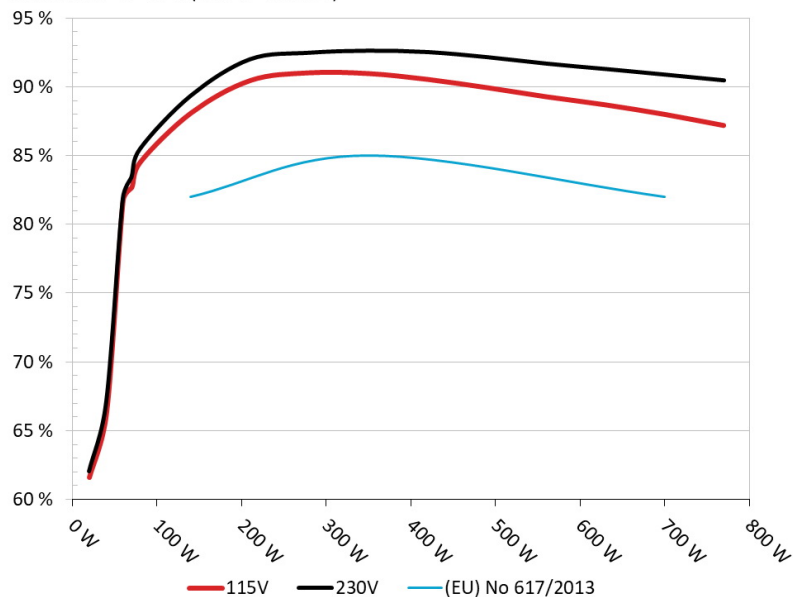
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: SilverStone SX700-G

Ambient: 37°C - 47°C (98.6°F - 116.6°F)



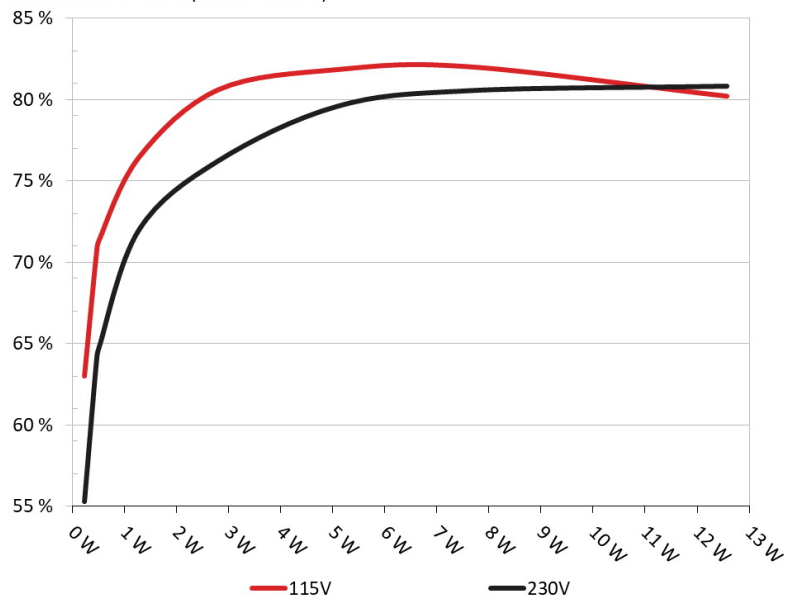
INFO

The PSU's efficiency under high ambient temperatures with 115V and 230V input. For this graph the results of the 10-110% load regulation table are used

5VSB EFFICIENCY

5VSB Efficiency: SilverStone SX700-G

Ambient: 34°C - 36°C (93.2°F - 96.8°F)



INFO

This graph depicts the efficiency levels of the 5VSB rail with 115V and 230V input

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5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.230	63.014%	0.062
	5.110V	0.365		115.13V
2	0.090A	0.460	70.552%	0.106
	5.108V	0.652		115.13V
3	0.550A	2.802	80.610%	0.313
	5.093V	3.476		115.12V
4	1.000A	5.080	81.843%	0.370
	5.079V	6.207		115.12V
5	1.500A	7.597	82.023%	0.402
	5.064V	9.262		115.13V
6	2.500A	12.569	80.211%	0.435
	5.027V	15.670		115.13V

5VSB EFFICIENCY -230V (ERP LOT 3/6 & CEC)

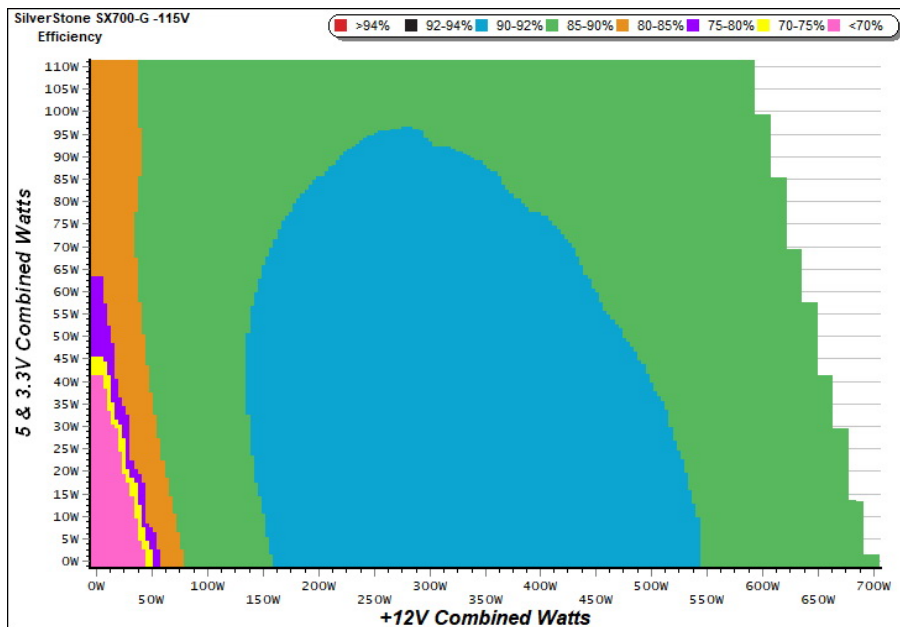
Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.230	55.288%	0.022
	5.110V	0.416		230.27V
2	0.090A	0.460	63.889%	0.037
	5.108V	0.720		230.27V
3	0.550A	2.800	76.211%	0.161
	5.090V	3.674		230.27V
4	1.000A	5.077	79.552%	0.231
	5.076V	6.382		230.28V
5	1.500A	7.592	80.518%	0.277
	5.061V	9.429		230.28V
6	2.500A	12.577	80.798%	0.328
	5.030V	15.566		230.27V

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115V

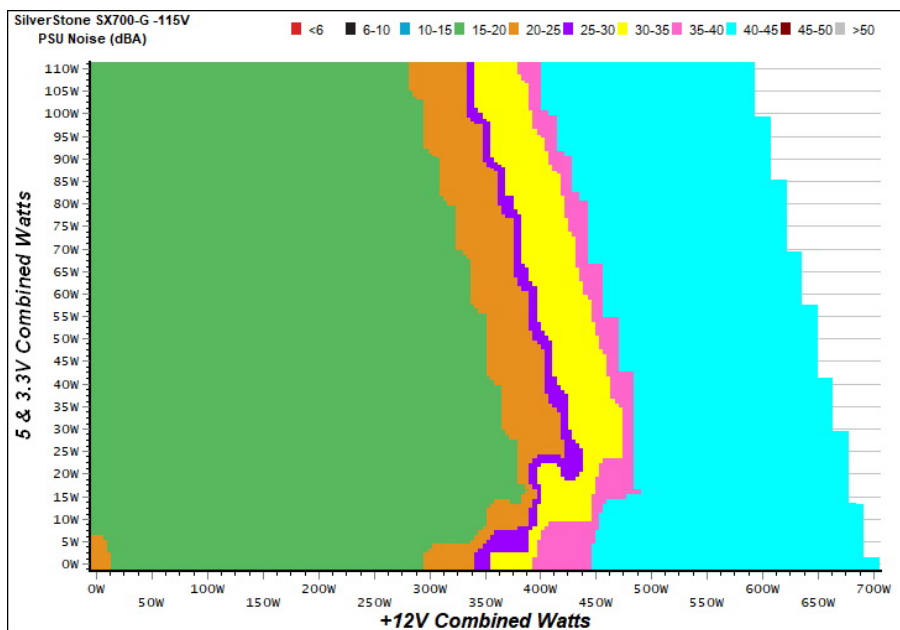
EFFICIENCY GRAPH 115V



INFO

This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations

NOISE GRAPH 115V



INFO

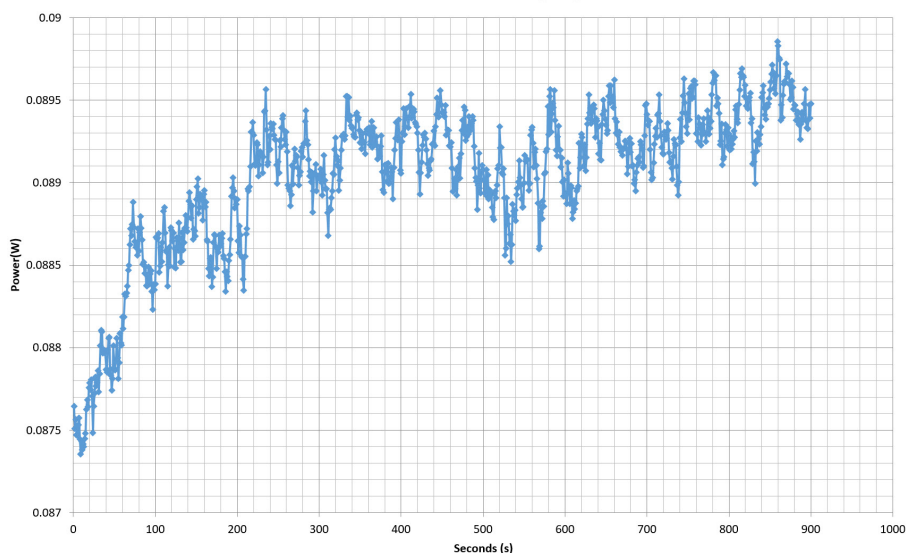
The PSU's noise in its entire operational range and under 30-32 °C (+2 °C) ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

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VAMPIRE POWER -115V

Power - DE18440028SX700G00 - 01/02/2019 - 08:56



INFO

This graph is generated by the PPA Standby Power Analysis software which takes full control of the power analyzer during the whole procedure. This application features all of the EN50564 & IEC62301 test limits for standby power software testing

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COMMISSION REGULATION (EU) NO 617/2013 TESTING 115V

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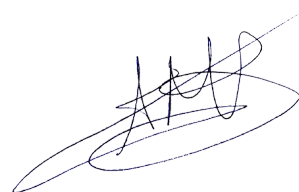


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Power specifications label

CERTIFICATIONS 115V

Aris Mpitsiopoulos
Lab Director

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