

Lab ID#: SL19750123
Receipt Date: Sep 30, 2019
Test Date: Jul 10, 2019

Report:

Report Date: Oct 15, 2019

DUT INFORMATION

Brand	SilverStone
Manufacturer (OEM)	Enhance Electronics
Series	PT Series
Model Number	SX750-PT
Serial Number	
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	9-4
Rated Frequency (Hz)	50-60
Rated Power (W)	750
Type	SFX
Cooling	92mm Double Ball Bearing Fan (B0921512HB)
Semi-Passive Operation	✓
Cable Design	Fully Modular

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62.5	3	0.3
	Watts	120		750	15	3.6
Total Max. Power (W)		750				

CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (300-340mm)	1	1	16-22AWG	No
4+4 pin EPS12V (400mm)	1	1	16AWG	No
6+2 pin PCIe (400mm+150mm)	2	4	16-18AWG	No
SATA (300mm+190mm+90mm+90mm)	2	8	18AWG	No
4-pin Molex (310mm+200mm+200mm)	1	3	18AWG	No

All data and graphs included in this test report can be used by any individual on the following conditions:

- > It should be mentioned that the test results are provided by Cybenetics
- > The link to the original test results document should be provided in any case

PAGE 1/14

General Data	
Manufacturer (OEM)	Enhance Electronics
PCB Type	Double Sided
Primary Side	
Transient Filter	6x Y caps, 3x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor
Bridge Rectifier(s)	1x
APFC MOSFETS	2x Infineon IPP60R080P7 (650V, 23A @ 100°C, 0.08Ohm)
APFC Boost Diode	1x UnitedSiC UJ3D06516TS (650V, 16A @ 152°C)
Hold-up Cap(s)	1x Rubycon (420V, 470uF, 3,000h @ 105°C, MXK)
Main Switchers	4x Oriental Semiconductor OSG55R140FF (550V, 14.5A @ 100°C, 0.14Ohm)
IC Driver	2x Silicon Labs Si8230BD
APFC Controller	ATK AT6101L & CM03X Green PFC Controller
Resonant Controllers	Champion CM6901T6
Topology	Primary side: Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	6x Infineon BSC014N04LS (40V, 100A @ 100°C, 1.4mOhm)
5V & 3.3V	DC-DC Converters: 4x Infineon BSC018NE2LS (25V, 97A @ 100°C, 1.8mOhm) PWM Controllers: ANPEC APW7159C
Filtering Capacitors	Electrolytics: 3x Nippon Chemi-Con (4-10,000h @ 105°C, KY), 1x Rubycon (3-6,000h @ 105°C, YXG) Polymers: 3x FPCAP, 19x Nichicon
Supervisor IC	SITI PS223 (OCP, OTP, OVP, UVP, SCP, PG)
Fan Model	Globe Fan B0921512HB (92mm, 12V, 0.45A, Ball Bearing Fan)
5VSB Circuit	
Rectifier	1xPFC PFR10V45CT SBR (45V, 10A) & Silan Microelectronics SVF2N70M FET (700V, 1.3A @ 100°C, 6.5Ohm)
Standby PWM Controller	ATK AT6002H

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	90.014%
Efficiency With 10W (≤500W) or 2% (>500W)	70.293
Average Efficiency 5VSB	81.707%
Standby Power Consumption (W)	0.1001980
Average PF	0.990
Avg Noise Output	38.49 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	S+

230V

Average Efficiency	91.353%
Average Efficiency 5VSB	80.696%
Standby Power Consumption (W)	0.1226750
Average PF	0.959
Avg Noise Output	39.09 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	S+

TEST EQUIPMENT

Electronic Loads	Chroma 63601-5 x4 Chroma 63600-2 x2 63640-80-80 x20 63610-80-20 x2
AC Sources	Chroma 6530, Keysight AC6804B
Power Analyzers	N4L PPA1530 x2
Sound Analyzer	Bruel & Kjaer 2270 G4
Microphone	Bruel & Kjaer Type 4955-A
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2
Tachometer	UNI-T UT372 x2
Digital Multimeter	Keysight U1273AX, Fluke 289, Keithley 2015 - THD
UPS	CyberPower OLS3000E 3kVA x2
Transformer	3kVA x2

All data and graphs included in this test report can be used by any individual on the following conditions:

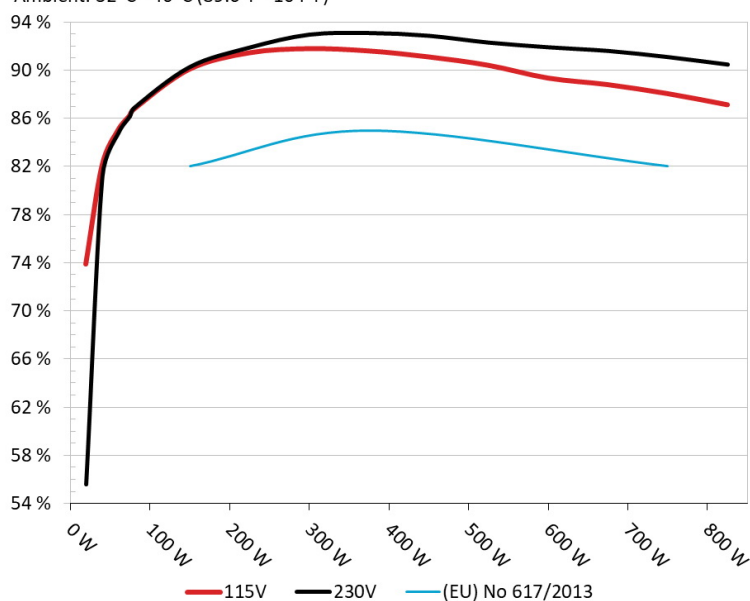
- > It should be mentioned that the test results are provided by Cybenetics
- > The link to the original test results document should be provided in any case

PAGE 3/14

EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: SilverStone SX750-PT

Ambient: 32°C - 40°C (89.6°F - 104°F)



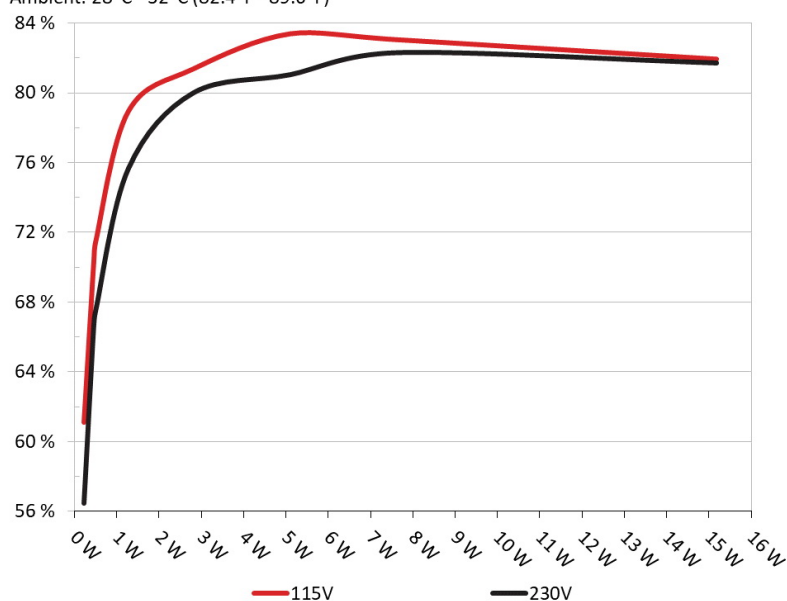
INFO

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 SX750-PT

Ambient: 28°C - 32°C (82.4°F - 89.6°F)



INFO

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

All data and graphs included in this test report can be used by any individual on the following conditions:

- > It should be mentioned that the test results are provided by Cybenetics
- > The link to the original test results document should be provided in any case

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231	61.111%	0.026
	5.124V	0.378		115.17V
2	0.090A	0.462	70.320%	0.045
	5.123V	0.657		115.16V
3	0.550A	2.813	81.395%	0.198
	5.112V	3.456		115.16V
4	1.000A	5.104	83.412%	0.279
	5.102V	6.119		115.16V
5	1.500A	7.639	83.069%	0.332
	5.092V	9.196		115.16V
6	3.000A	15.178	81.955%	0.400
	5.059V	18.520		115.16V

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

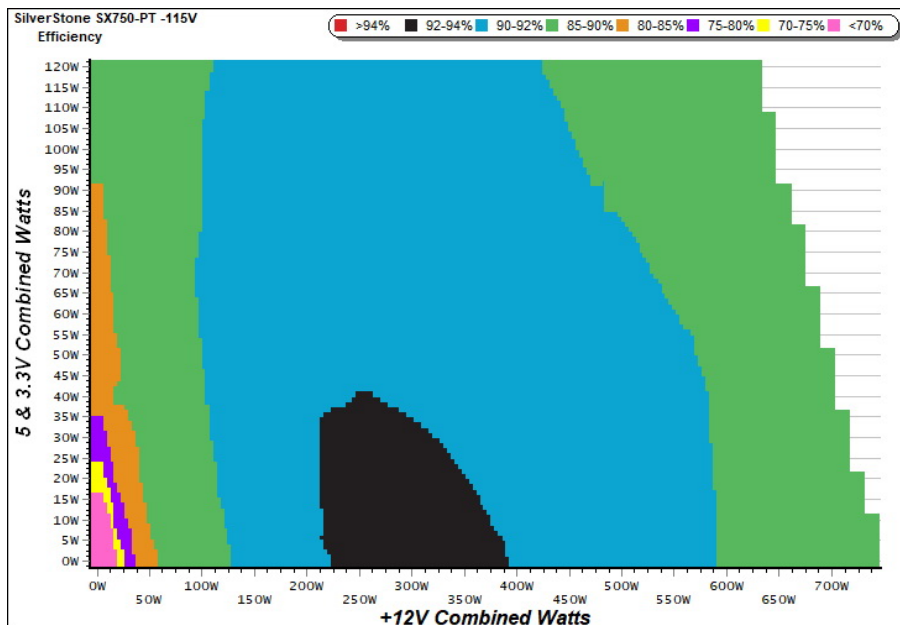
Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231	56.479%	0.009
	5.124V	0.409		230.35V
2	0.090A	0.462	66.667%	0.014
	5.123V	0.693		230.35V
3	0.550A	2.813	79.983%	0.071
	5.112V	3.517		230.36V
4	1.000A	5.104	81.029%	0.121
	5.103V	6.299		230.35V
5	1.500A	7.639	82.290%	0.167
	5.092V	9.283		230.35V
6	3.000A	15.179	81.700%	0.264
	5.059V	18.579		230.35V

All data and graphs included in this test report can be used by any individual on the following conditions:

- > It should be mentioned that the test results are provided by Cybenetics
- > The link to the original test results document should be provided in any case

115V

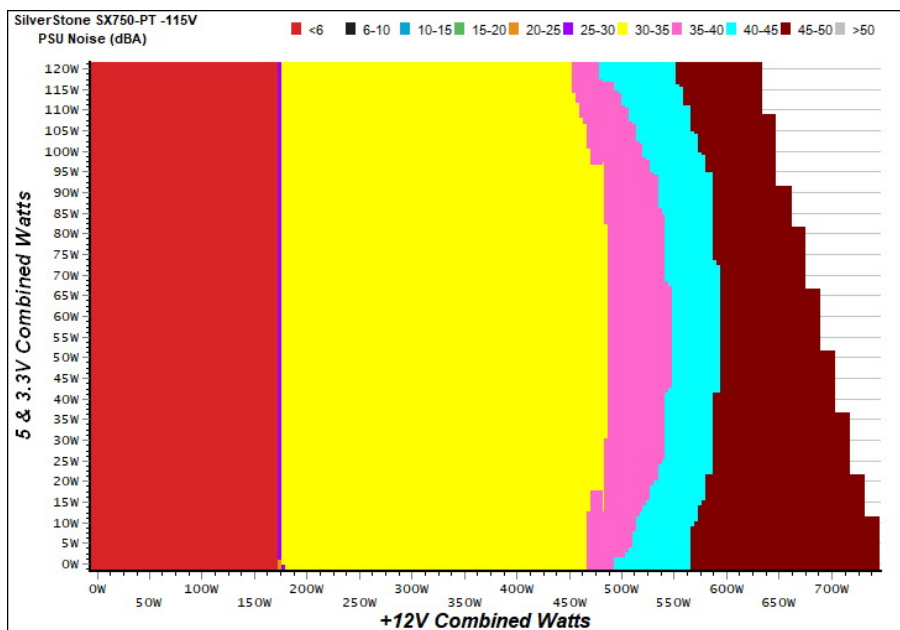
EFFICIENCY GRAPH 115V



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

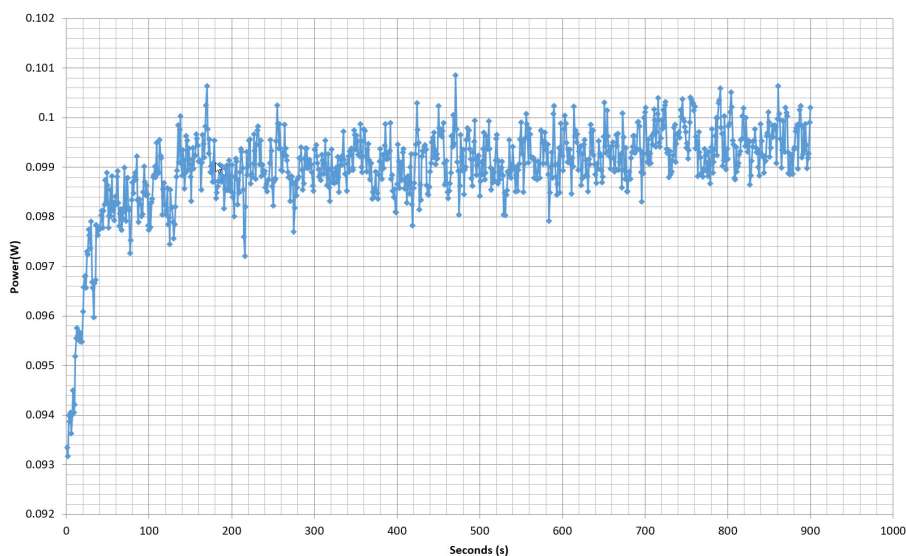
The PSU's noise in its entire operational range and under 30-32 °C (+2 °C) ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

All data and graphs included in this test report can be used by any individual on the following conditions:

- > It should be mentioned that the test results are provided by Cybenetics
- > The link to the original test results document should be provided in any case

VAMPIRE POWER -115V

Power - 03/10/2019 - 17:57



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

All data and graphs included in this test report can be used by any individual on the following conditions:

- › It should be mentioned that the test results are provided by Cybenetics
- › The link to the original test results document should be provided in any case

PAGE 8/14

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

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	4.382A	1.961A	1.997A	0.982A	74.522	86.218%	0	<6.0	38.33°C	0.974
	12.075V	5.104V	3.303V	5.095V	86.434				34.33°C	115.16V
2	9.823A	2.947A	3.005A	1.181A	149.433	90.062%	0	<6.0	39.05°C	0.992
	12.066V	5.093V	3.294V	5.082V	165.923				34.65°C	115.16V
5	26.909A	4.940A	5.048A	1.785A	374.715	91.590%	1822	30.6	36.02°C	0.999
	12.048V	5.063V	3.269V	5.044V	409.124				42.26°C	115.18V
10	55.000A	8.979A	9.215A	3.017A	750.044	88.046%	3061	45.4	39.46°C	1.000
	12.006V	5.013V	3.223V	4.973V	851.879				48.22°C	115.22V

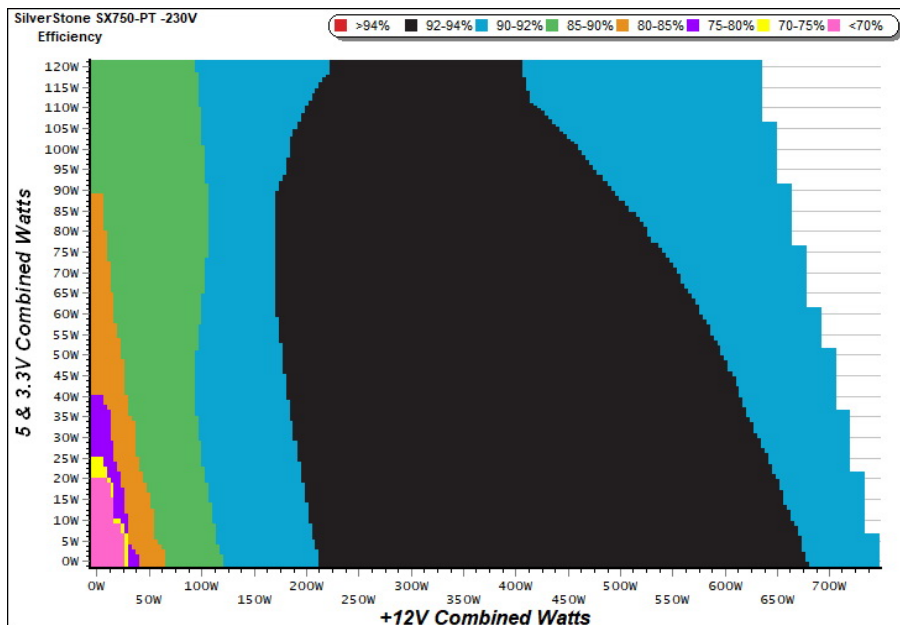
All data and graphs included in this test report can be used by any individual on the following conditions:

- › It should be mentioned that the test results are provided by Cybenetics
- › The link to the original test results document should be provided in any case

PAGE 9/14

230V

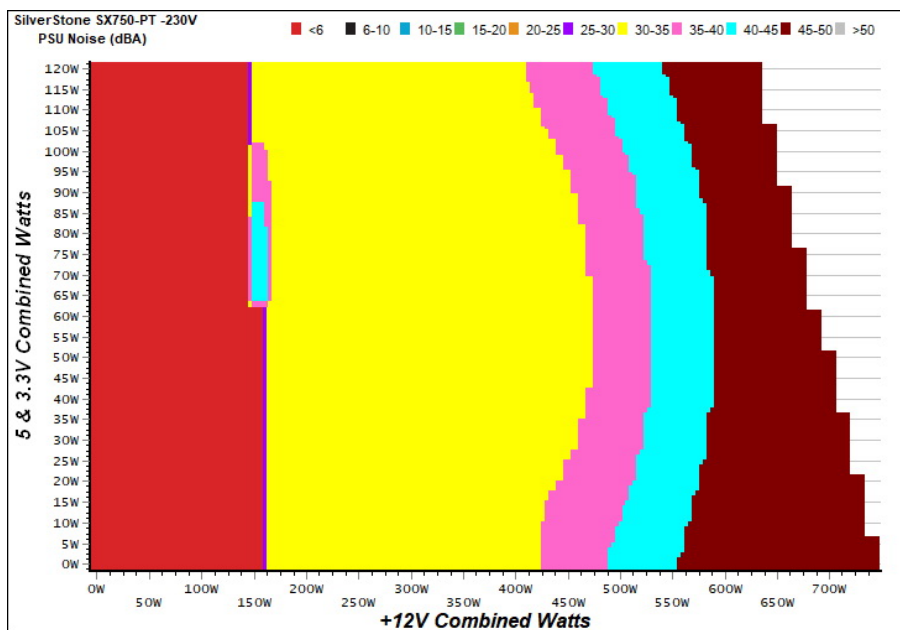
EFFICIENCY GRAPH 230V



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 230V



INFO

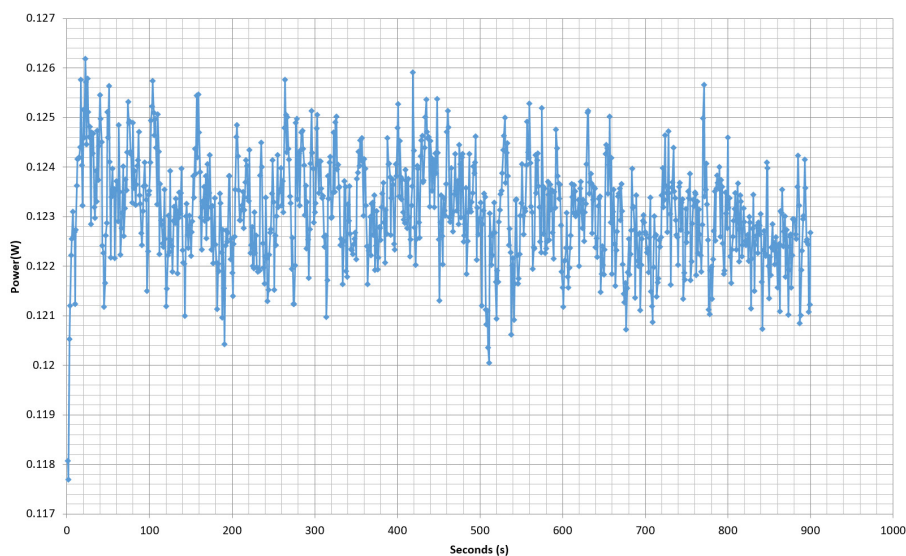
The PSU's noise in its entire operational range and under 30-32 °C (+2 °C) ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

All data and graphs included in this test report can be used by any individual on the following conditions:

- › It should be mentioned that the test results are provided by Cybenetics
- › The link to the original test results document should be provided in any case

VAMPIRE POWER -230V

Power - 03/10/2019 - 17:57



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

All data and graphs included in this test report can be used by any individual on the following conditions:

- › It should be mentioned that the test results are provided by Cybenetics
- › The link to the original test results document should be provided in any case

COMMISSION REGULATION (EU) NO 617/2013 TESTING 230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	4.383A	1.960A	1.998A	0.980A	74.528	86.148%	0	<6.0	38.27°C	0.773
	12.077V	5.104V	3.302V	5.095V	86.512				34.07°C	230.36V
2	9.822A	2.946A	3.004A	1.181A	149.435	90.241%	0	<6.0	39.25°C	0.914
	12.068V	5.094V	3.293V	5.083V	165.596				34.45°C	230.37V
5	26.909A	4.939A	5.048A	1.785A	374.711	93.071%	1825	30.7	36.20°C	0.983
	12.048V	5.064V	3.268V	5.044V	402.608				42.48°C	230.39V
10	55.002A	8.974A	9.219A	3.017A	750.002	91.074%	3037	45.3	39.30°C	0.995
	12.005V	5.014V	3.222V	4.973V	823.509				48.27°C	230.37V

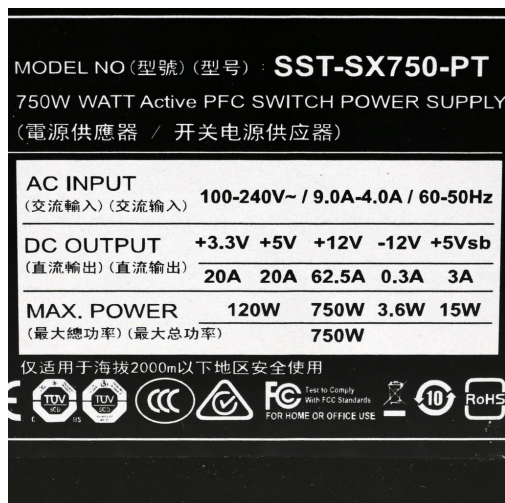
All data and graphs included in this test report can be used by any individual on the following conditions:

- › It should be mentioned that the test results are provided by Cybenetics
- › The link to the original test results document should be provided in any case

PAGE 13/14

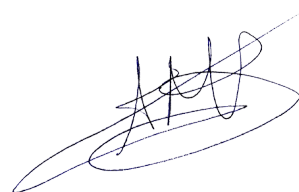


Top side



Power specifications label

CERTIFICATIONS 115V

Aris Mpitsiopoulos
Lab Director

CERTIFICATIONS 230V



All data and graphs included in this test report can be used by any individual on the following conditions:

- > It should be mentioned that the test results are provided by Cybenetics
- > The link to the original test results document should be provided in any case