



SilverStone SFX Platinum 700W

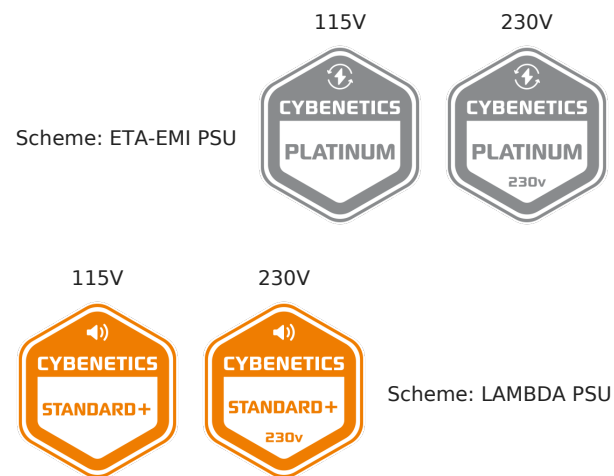
Serial Number DESX700PT019280244

Lab ID SL19700124

Certification ID 25869

Test Result Report ID:

Certificate Issue Date: Oct 15, 2019



A handwritten signature in blue ink, likely belonging to Aristeidis Bitziopoulos.

Aristeidis Bitziopoulos, Certification Body General Manager

General Information

Test Equipment

Electronic Loads	Chroma 63601-5 x2 Chroma 63600-2 Chroma 63640-80-80 x10 Chroma 63610-80-20
AC Sources	Chroma 6530, APM SP300VAC4000W-P, GW Instek ASR-3500
Power Analyzers	Rohde & Schwarz HMC8015 & NPA701
Oscilloscopes	Picoscope 4444, Siglent SDS2104X PLUS
Sound Analyzer	Bruel & Kjaer 2270 G4
Microphone	Bruel & Kjaer Type 4955-A
Temperature Logger	Picoscope TC-08
Tachometer	UNI-T UT372
Multimeters	Keysight 34465A
EMI Analyzer	TekBox TBMR-110M-EU
Isolation Transformer	4kVA
UPS	FSP Champ Tower 3kVA, CyberPower OLS3000E 3kVA
Testing Methodology	Cybenetics PSU Test Protocol

DUT Information(Non-accredited measurements)

Product Identification Details	
Brand	SilverStone
Model	SFX Platinum 700W
OEM/ODM	High Power
Serial Number	DESX700PT019280244
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10
Rated Frequency (Hz)	50-60

Rated Power (W)	700
Operating Temperature (Continuous Full Load) (°C)	
Type	SFX
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	92mm Fluid Dynamic Bearing Fan (S0921512HB)
Semi-Passive Operation	X
Cybenetics Testing Information	
Lab ID	SL19700124
Date of receipt	Sep 30, 2019
Testing Date	Aug 10, 2019
Report Issued Date	Oct 15, 2019
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

Cables and Connectors(Non-accredited measurements)

Modular Cables				
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (300-330mm)	1	1	16-22AWG	No
4+4 pin EPS12V (550mm)	1	1	16AWG	No
4+4 pin EPS12V (405mm)	1	1	16AWG	No
6+2 pin PCIe (550mm+150mm)	1	2	16-18AWG	No
6+2 pin PCIe (400mm+150mm)	1	2	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 (1400mm) - C13 coupler	1	1	18AWG	-
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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				

Parts Description

General Data	
Manufacturer (OEM)	High Power
PCB Type	Double Sided
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 3x CM chokes, 1x MOV, 1x Discharge IC
Inrush Protection	NTC Thermistor & Relay
Bridge Rectifier(s)	2x HY GBU1506L (600V, 15A @ 100°C)
APFC MOSFETS	2x Infineon IPA60R120C7 (650V, 7A @ 100°C, 0.12Ohm)
APFC Boost Diode	1x Infineon IDH08G65C6 (650V, 8A @ 145°C)
Hold-up Cap(s)	1x Rubycon (420V, 470uF, 3,000h @ 85°C, USH)
Main Switchers	2x Infineon IPA60R120C7 (650V, 7A @ 100°C, 0.12Ohm)
IC Driver	1x Silicon Labs Si8233BD
APFC Controller	Infineon ICE3PCS01G
Resonant Controllers	Champion CM6901
Topology	Primary side: Half-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	6x Toshiba TPHP8504PL (40V, 150A @ 25°C, 0.85mOhm)
5V & 3.3V	DC-DC Converters: 6x Infineon BSC0906NS (30V, 40A @ 100°C, 4.5mOhm) PWM Controllers: ANPEC APW7159
Filtering Capacitors	Electrolytics: 3x Nippon Chemi-Con (4-10,000h @ 105°C, KY), 2x Nippon Chemi-Con (1-5,000h @ 105°C, KZE), 2x Rubycon (3-6,000h @ 105°C, YXG) Polymers: 18x FPCAP, 3x United Chemi-Con
Supervisor IC	SITI PS224 (OVP, UVP, OCP, SCP, PG)

Fan Controller	STC 15W408AS
Fan Model	Globe Fan S0921512HB (92mm, 12V, 0.45A, Fluid Dynamic Bearing Fan)
5VSB Circuit	
Rectifier	1x PFC P10V45SP SBR (45V, 10A)
Standby PWM Controller	Sanken STR-A6069H
-12V	
Rectifier	KEC KIA7912PI (-12V, 1A)

Test Results

Temperature & Compliance Info

Temperature Range (°C /°F)	28-32 / 82.4-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	90.364%
Average Noise Output (>1450 Load Combinations)	36.22dBA
Average PF (>1450 Load Combinations)	0.990
Efficiency With 10W (≤500W) or 2% (>500W) Load	63.128%
Standby Power Consumption	0.0883W
Non-Accredited	
12V Ripple (Full Load)	55.74mV
5V Ripple (Full Load)	23.25mV
3.3V Ripple (Full Load)	39.42mV
5VSB Ripple (Full Load)	13.52mV
12V Load Regulation	0.82%
5V Load Regulation	1.38%

3.3V Load Regulation	2.23%
5VSB Load Regulation	2.48%
Inrush Current	34.531A

230V

Accredited		
Average Efficiency (>1450 load combinations)	92.102%	
Average Noise Output (>1450 Load Combinations)	35.84dBA	
Average PF (>1450 Load Combinations)	0.956	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.1452W	
Non-Accredited		
12V Ripple (Full Load)	50.43mV	
5V Ripple (Full Load)	20.82mV	
3.3V Ripple (Full Load)	35.89mV	
5VSB Ripple (Full Load)	11.50mV	
12V Load Regulation	0.84%	
5V Load Regulation	1.34%	
3.3V Load Regulation	2.17%	
5VSB Load Regulation	2.42%	
Inrush Current	75.504A	
Hold-Up Time & PWR_OK Signal	6.80ms	
AC Loss to PWR_OK Hold Up Time	8.10ms	
PWR_OK Inactive to DC Loss Delay	-1.30ms	
PSU Timings: T1 (20% / 100%)	102.0ms	102.0ms
PSU Timings: T3 (20% / 100%)	280.0ms	268.0ms
OPP (0.00°C / 0.00°C)	125.03%	-

Hold-Up Time & PWR_OK Signal

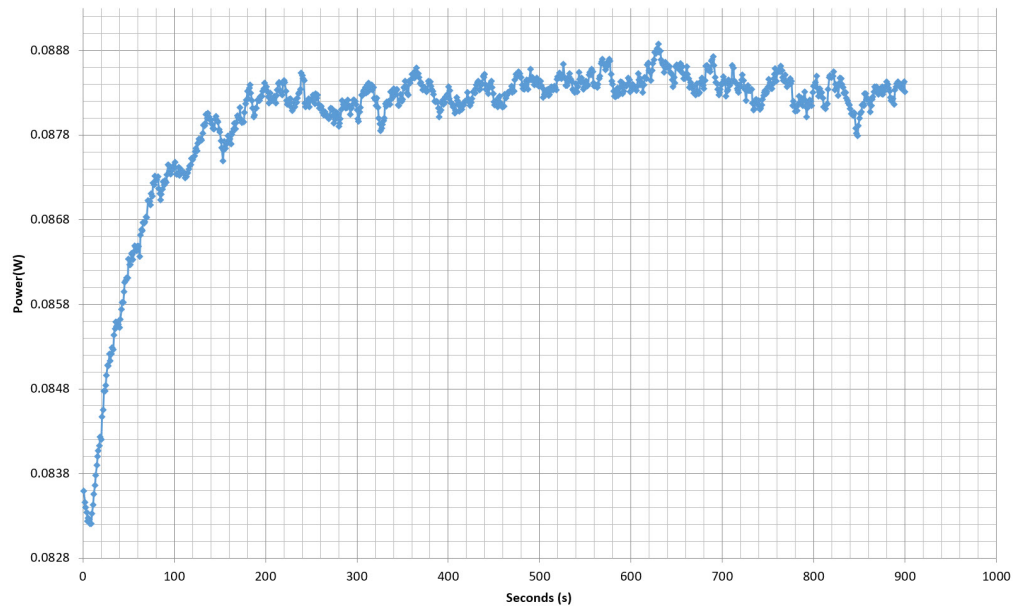
Hold-Up Time (ms)	6.8
AC Loss to PWR_OK Hold Up Time (ms)	8.1
PWR_OK Inactive to DC Loss Delay (ms)	-1.3



Graphs

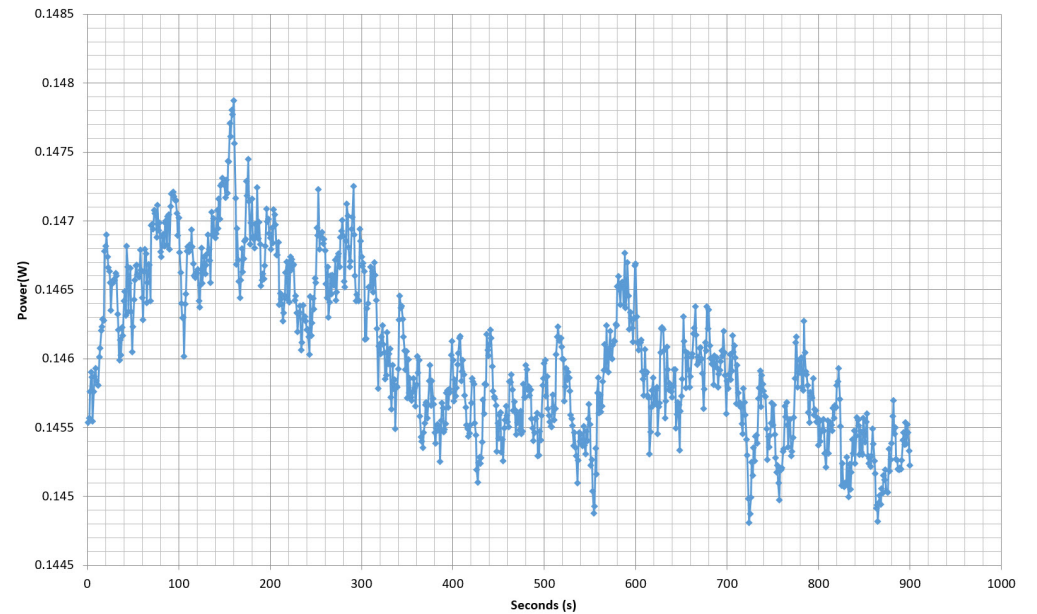
115V

Power - DESX700PT019280244 - 04/10/2019 - 18:30



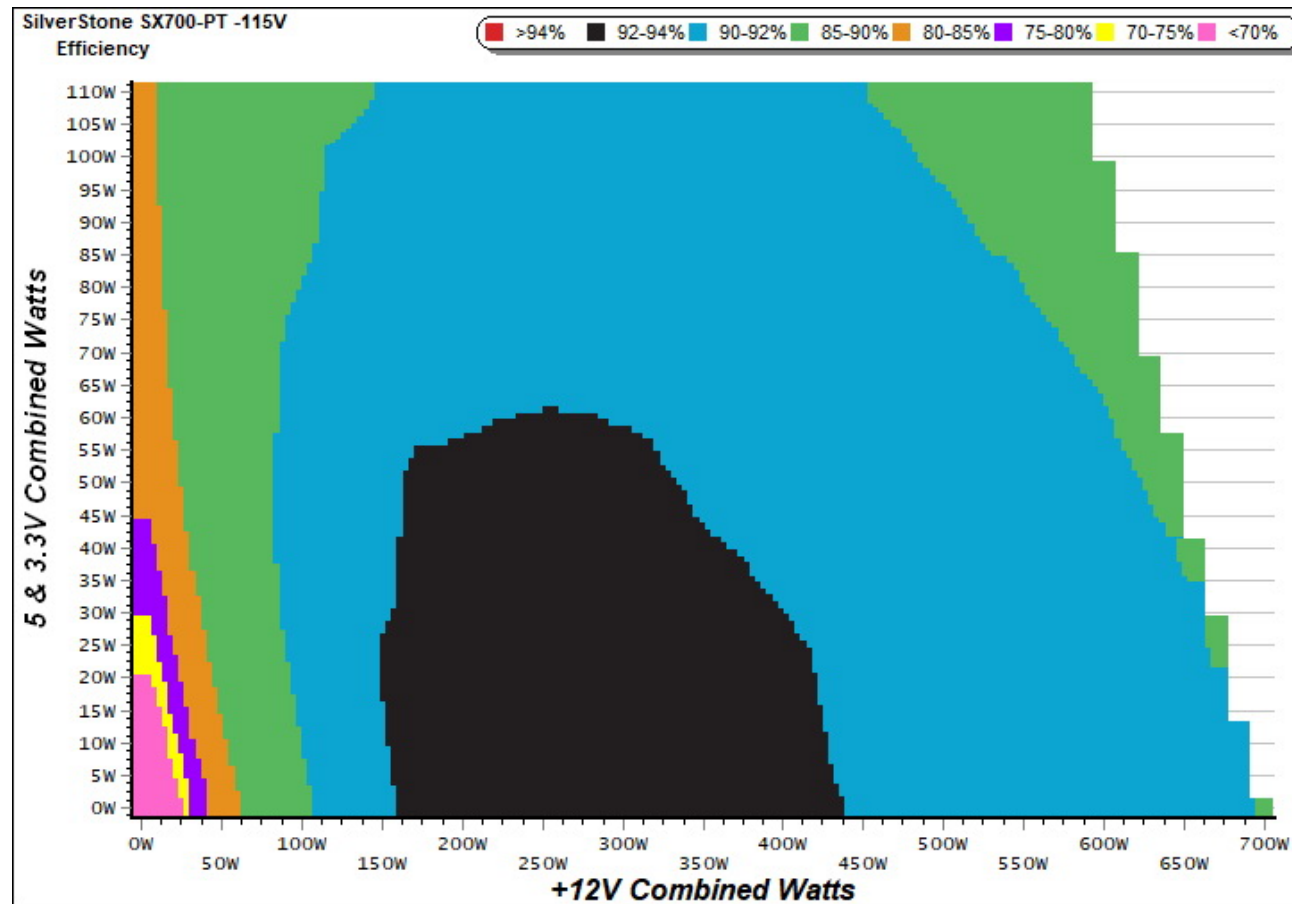
230V

Power - DESX700PT019280244 - 04/10/2019 - 18:30



Efficiency Graph

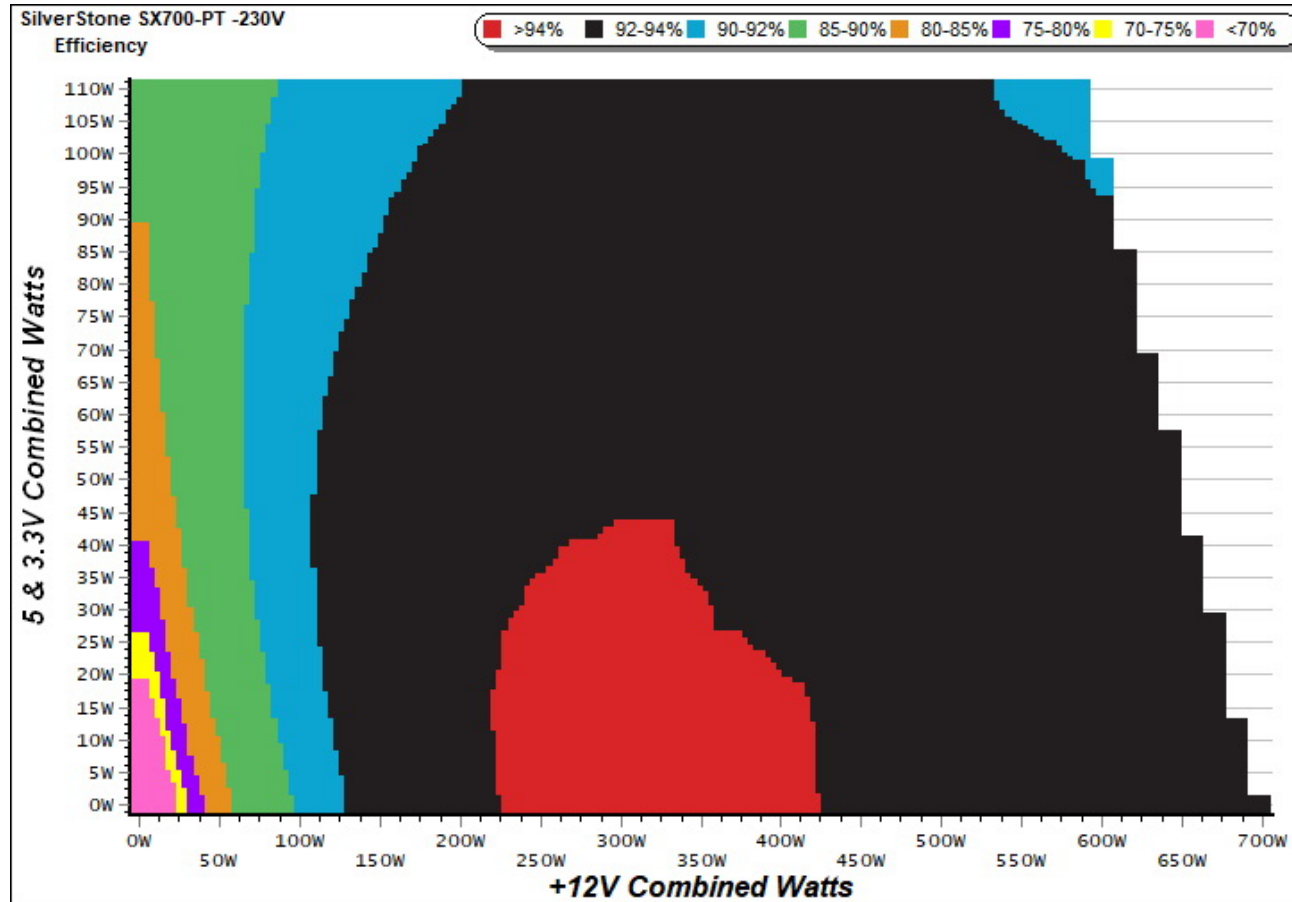
115V



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.

230V

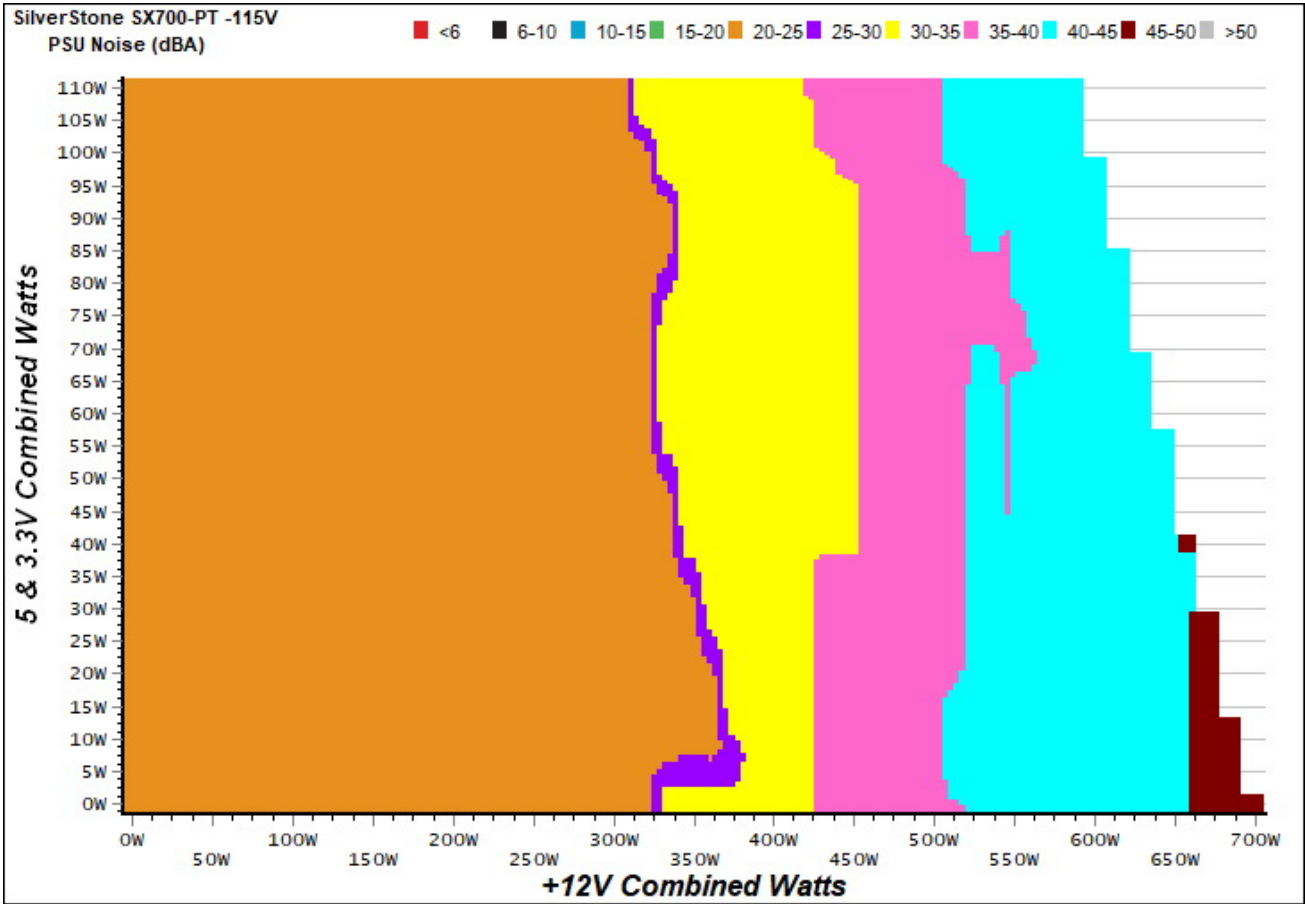


INFO

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

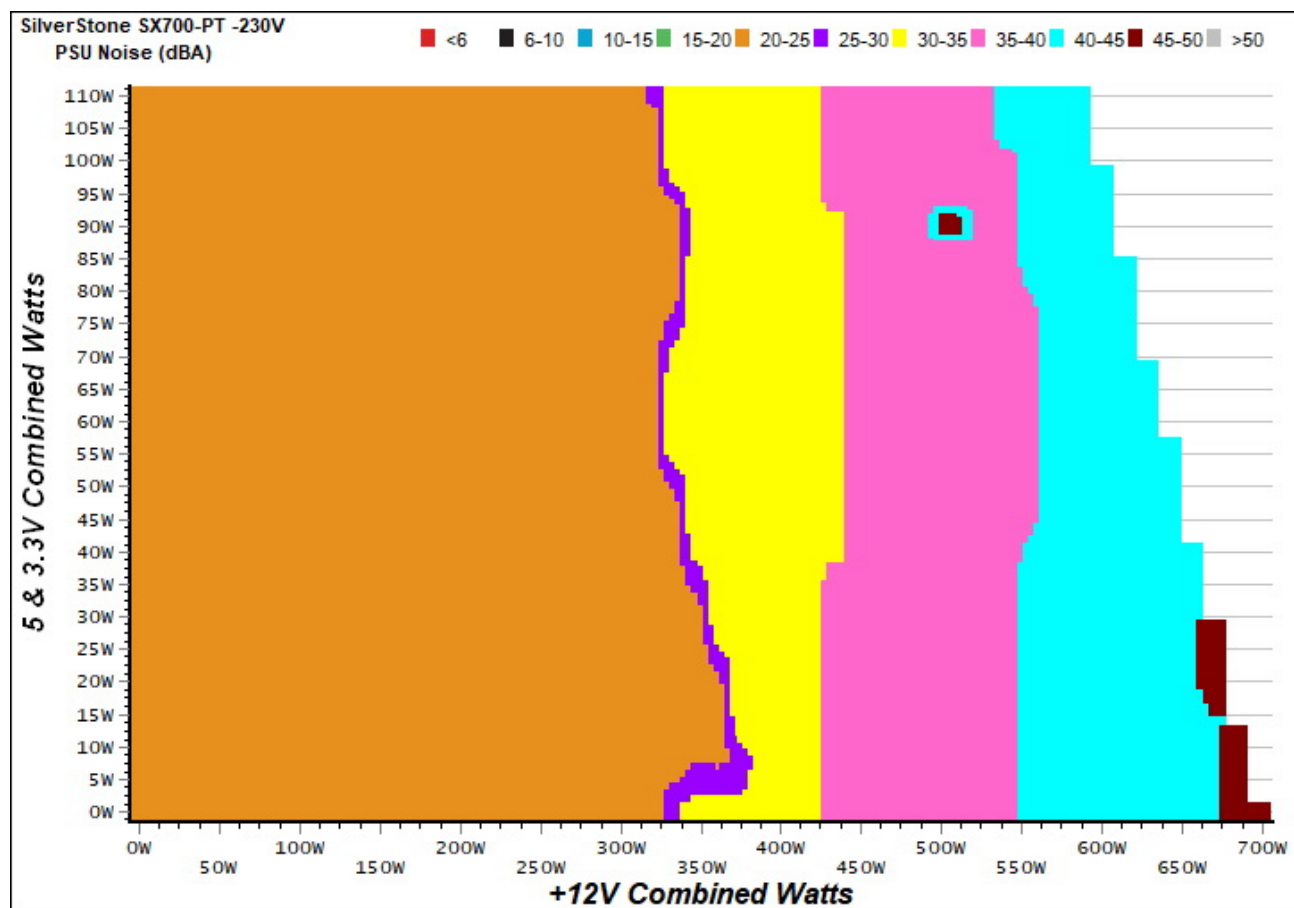
115V



INFO

The PSU`s noise in its entire operational range and under 30-32 °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.

230V



INFO

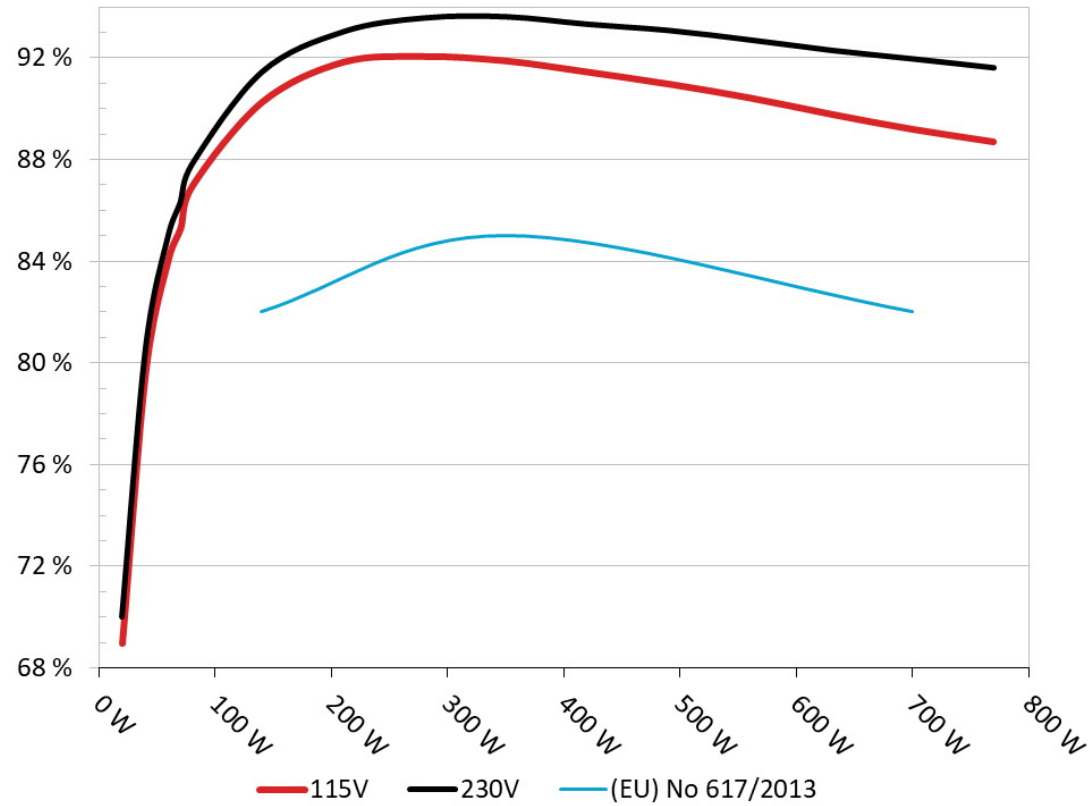
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

Indicative Performance

Efficiency under high ambient temperature

Efficiency: SilverStone SX700-PT

Ambient: 32°C - 41°C (89.6°F - 105.8°F)



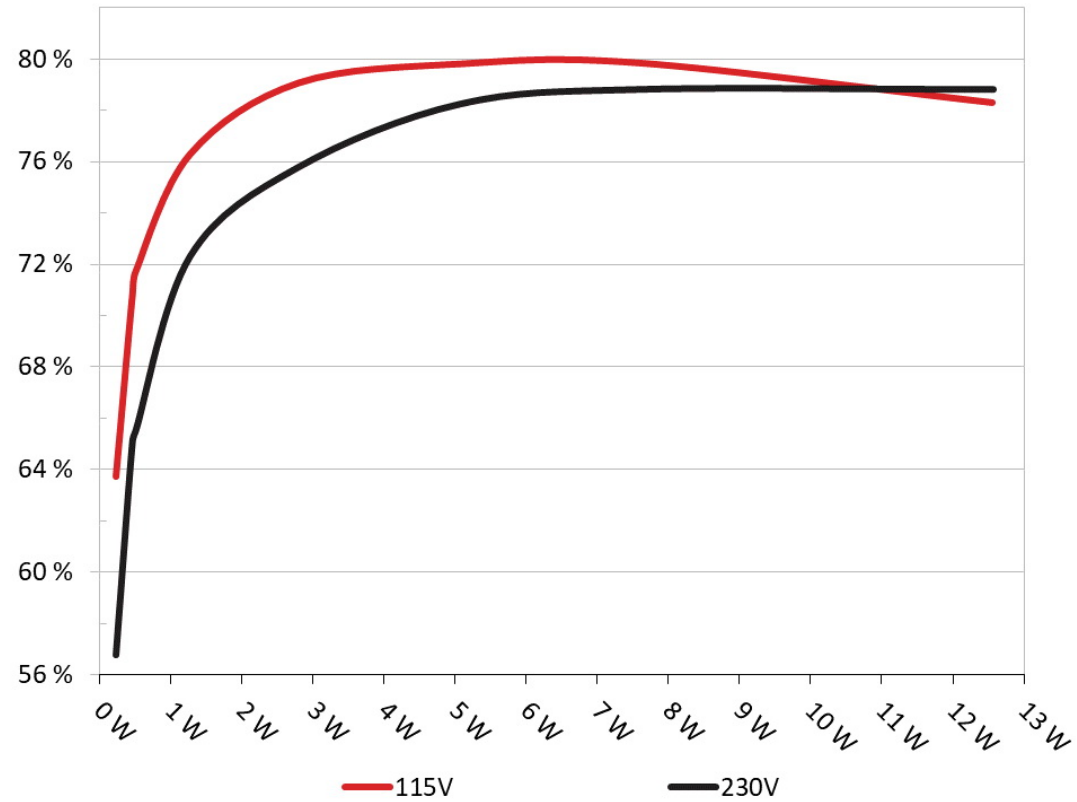
INFO

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-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.

5VSB Efficiency (ERP LOT 3/6 & CEC)

115V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.230	63.712%	0.062
	5.101V	0.361		115.12V
2	0.090A	0.460	70.769%	0.107
	5.099V	0.650		115.12V
3	0.550A	2.798	79.062%	0.324
	5.086V	3.539		115.13V
4	1.000A	5.074	79.805%	0.383
	5.073V	6.358		115.13V
5	1.500A	7.591	79.838%	0.414
	5.060V	9.508		115.13V
6	2.500A	12.549	78.294%	0.446
	5.019V	16.028		115.12V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.230	56.790%	0.021
	5.100V	0.405		230.27V
2	0.090A	0.460	65.064%	0.037
	5.098V	0.707		230.27V
3	0.550A	2.794	75.800%	0.164
	5.080V	3.686		230.27V
4	1.000A	5.069	78.262%	0.236
	5.068V	6.477		230.26V
5	1.500A	7.582	78.831%	0.285
	5.054V	9.618		230.27V
6	2.500A	12.567	78.830%	0.337
	5.026V	15.942		230.27V

Supplementary Tests (For Reference)

Typical Load Tests

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	3.946A	1.975A	1.965A	0.989A	69.727	85.291%	1299	20.0	34.35°C	0.960
	12.197V	5.063V	3.357V	5.058V	81.752				38.48°C	115.12V
2	8.941A	2.968A	2.956A	1.190A	139.821	90.258%	1303	20.1	34.85°C	0.981
	12.182V	5.054V	3.349V	5.044V	154.913				39.53°C	115.12V
3	14.278A	3.467A	3.440A	1.390A	209.762	91.835%	1305	20.1	35.03°C	0.994
	12.170V	5.048V	3.342V	5.036V	228.411				40.59°C	115.12V
4	19.626A	3.969A	3.960A	1.592A	279.773	92.059%	1306	20.2	35.23°C	0.996
	12.155V	5.041V	3.336V	5.026V	303.906				41.19°C	115.12V
5	24.642A	4.970A	4.956A	1.796A	349.886	91.885%	1310	20.2	35.42°C	0.995
	12.149V	5.034V	3.328V	5.010V	380.785				42.03°C	115.12V
6	29.666A	5.971A	5.965A	2.002A	419.988	91.449%	1899	32.5	36.64°C	0.996
	12.141V	5.026V	3.319V	4.997V	459.257				43.73°C	115.12V
7	34.710A	6.977A	6.978A	2.206A	490.115	90.977%	2183	36.4	37.25°C	0.996
	12.129V	5.018V	3.311V	4.988V	538.725				44.85°C	115.12V
8	39.755A	7.986A	7.997A	2.412A	560.214	90.429%	2473	39.4	37.39°C	0.997
	12.119V	5.010V	3.302V	4.978V	619.505				45.80°C	115.12V
9	45.212A	8.497A	8.499A	2.414A	629.953	89.790%	2938	44.9	38.51°C	0.997
	12.108V	5.004V	3.295V	4.972V	701.581				47.42°C	115.11V
10	50.676A	9.009A	9.034A	2.520A	700.255	89.196%	3072	45.7	39.76°C	0.997
	12.097V	4.997V	3.288V	4.962V	785.071				49.35°C	115.11V
11	56.456A	9.012A	9.045A	2.522A	769.765	88.706%	3067	45.7	40.80°C	0.998
	12.090V	4.994V	3.284V	4.957V	867.768				50.74°C	115.10V
CL1	0.144A	13.003A	12.999A	0.000A	110.335	84.563%	1369	21.5	36.02°C	0.974
	12.218V	5.029V	3.322V	5.076V	130.476				42.27°C	115.12V

CL2	58.354A	1.002A	1.001A	1.000A	719.459	89.681%	3074	45.7	39.61°C	0.998
	12.100V	5.031V	3.318V	5.013V	802.245				49.10°C	115.10V

The results above are not used in the certification process

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	3.941A	1.975A	1.964A	0.989A	69.686	86.295%	1311	20.3	35.34°C	0.828
	12.202V	5.064V	3.358V	5.058V	80.753				39.69°C	230.24V
2	8.934A	2.968A	2.954A	1.190A	139.778	91.432%	1311	20.3	35.59°C	0.930
	12.187V	5.055V	3.350V	5.043V	152.876				40.46°C	230.24V
3	14.269A	3.467A	3.441A	1.390A	209.717	93.024%	1311	20.3	36.52°C	0.960
	12.174V	5.049V	3.343V	5.035V	225.444				41.72°C	230.24V
4	19.611A	3.966A	3.957A	1.592A	279.732	93.570%	1313	20.3	37.18°C	0.972
	12.163V	5.043V	3.336V	5.026V	298.954				42.89°C	230.25V
5	24.631A	4.967A	4.958A	1.796A	349.848	93.618%	1317	20.4	37.52°C	0.979
	12.153V	5.035V	3.328V	5.010V	373.698				43.51°C	230.25V
6	29.663A	5.972A	5.965A	2.002A	419.956	93.323%	1905	32.5	37.73°C	0.984
	12.141V	5.026V	3.319V	4.997V	450.001				44.52°C	230.25V
7	34.700A	6.976A	6.978A	2.206A	490.100	93.080%	2188	36.5	38.28°C	0.988
	12.132V	5.019V	3.311V	4.988V	526.538				46.12°C	230.24V
8	39.752A	7.986A	7.994A	2.411A	560.210	92.706%	2654	41.6	38.35°C	0.991
	12.120V	5.011V	3.302V	4.978V	604.288				46.54°C	230.26V
9	45.212A	8.497A	8.498A	2.414A	629.951	92.298%	3038	45.2	39.18°C	0.993
	12.108V	5.004V	3.295V	4.973V	682.517				47.79°C	230.26V
10	50.668A	9.008A	9.033A	2.519A	700.256	91.961%	3062	45.6	39.87°C	0.994
	12.099V	4.998V	3.288V	4.963V	761.469				49.11°C	230.26V
11	56.459A	9.012A	9.048A	2.522A	769.858	91.612%	3060	45.6	40.62°C	0.995
	12.091V	4.994V	3.283V	4.957V	840.350				50.40°C	230.26V
CL1	0.149A	13.003A	12.999A	0.000A	110.356	85.403%	1349	20.7	36.96°C	0.876
	12.219V	5.027V	3.321V	5.076V	129.218				43.43°C	230.26V

CL2	58.350A	1.003A	1.000A	1.000A	719.353	92.491%	3062	45.6	39.53°C	0.995
	12.099V	5.030V	3.317V	5.013V	777.752				47.63°C	230.26V

The results above are not used in the certification process

Light Load Tests

115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.187A	0.493A	0.475A	0.197A	19.561	68.969%	1285	19.7	0.847
	12.182V	5.070V	3.365V	5.088V	28.362				115.12V
2	2.436A	0.987A	0.982A	0.394A	39.989	79.763%	1293	19.9	0.932
	12.186V	5.067V	3.363V	5.079V	50.135				115.12V
3	3.618A	1.480A	1.460A	0.592A	59.509	84.125%	1298	20.0	0.955
	12.191V	5.065V	3.360V	5.068V	70.739				115.12V
4	4.866A	1.975A	1.966A	0.790A	79.933	86.970%	1298	20.0	0.970
	12.194V	5.062V	3.357V	5.064V	91.909				115.12V

The results above are not used in the certification process

230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.186A	0.493A	0.475A	0.197A	19.563	70.008%	1297	20.0	0.529
	12.193V	5.072V	3.366V	5.087V	27.944				230.25V
2	2.434A	0.987A	0.981A	0.394A	39.982	80.588%	1303	20.1	0.696
	12.193V	5.069V	3.363V	5.078V	49.613				230.24V
3	3.614A	1.480A	1.458A	0.592A	59.484	85.020%	1308	20.2	0.793
	12.199V	5.066V	3.360V	5.067V	69.965				230.24V
4	4.860A	1.974A	1.965A	0.790A	79.873	87.811%	1311	20.3	0.854
	12.198V	5.063V	3.357V	5.062V	90.960				230.24V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	12.4 mV	8.6 mV	9.6 mV	6.4 mV	Pass
20% Load	11.6 mV	8.5 mV	12.6 mV	6.4 mV	Pass
30% Load	11.4 mV	9.1 mV	16.5 mV	9.2 mV	Pass
40% Load	14.5 mV	16.2 mV	21.1 mV	8.1 mV	Pass
50% Load	18.3 mV	16.5 mV	21.1 mV	7.5 mV	Pass
60% Load	22.5 mV	19.2 mV	21.2 mV	10.1 mV	Pass
70% Load	26.8 mV	21.0 mV	25.0 mV	12.6 mV	Pass
80% Load	37.9 mV	21.9 mV	31.9 mV	12.2 mV	Pass
90% Load	44.5 mV	22.0 mV	33.9 mV	12.7 mV	Pass
100% Load	55.7 mV	23.3 mV	39.4 mV	13.5 mV	Pass
110% Load	60.4 mV	24.9 mV	34.8 mV	13.8 mV	Pass
Crossload 1	18.8 mV	13.6 mV	42.2 mV	15.5 mV	Pass
Crossload 2	47.4 mV	20.2 mV	20.4 mV	10.1 mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	11.43mV	7.86mV	10.04mV	6.45mV	Pass
20% Load	11.22mV	9.39mV	14.80mV	5.94mV	Pass
30% Load	10.66mV	9.57mV	16.77mV	9.25mV	Pass
40% Load	13.29mV	9.82mV	20.05mV	8.01mV	Pass
50% Load	17.29mV	14.56mV	21.22mV	7.88mV	Pass
60% Load	21.86mV	15.07mV	21.25mV	9.51mV	Pass
70% Load	25.43mV	18.02mV	25.66mV	12.11mV	Pass
80% Load	36.78mV	19.34mV	33.25mV	11.22mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	43.52mV	20.92mV	33.30mV	11.55mV	Pass
100% Load	50.43mV	20.82mV	35.89mV	11.50mV	Pass
110% Load	60.00mV	20.56mV	35.50mV	11.49mV	Pass
Crossload1	18.74mV	15.23mV	41.28mV	15.40mV	Pass
Crossload2	44.41mV	17.26mV	20.62mV	7.94mV	Pass

The results above are not used in the certification process

SilverStone SFX Platinum 700W



Top side



Power specifications label

Cybenetics [REDACTED] ETA[REDACTED] LAMBDA[REDACTED] SAFE[REDACTED] DELTA[REDACTED] PHI[REDACTED]

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

www.cybenetics.com - info@cybenetics.com