



SilverStone Strider Titanium 800W

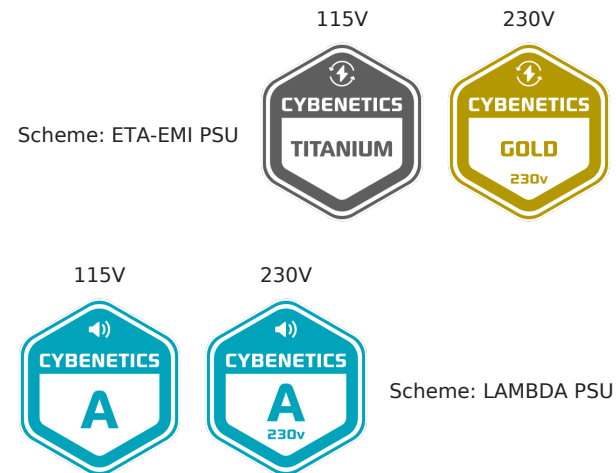
Serial Number 155200454

Lab ID 143

Certification ID 25143

Test Result Report ID:

Certificate Issue Date: Jul 19, 2018



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	Strider Titanium 800W
OEM/ODM	Enhance Electronics
Serial Number	155200454
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	11-5.5
Rated Frequency (Hz)	50-60

Rated Power (W)	800
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	120mm Fluid Dymanic Bearing Fan (HA1225H12F-Z)
Semi-Passive Operation	✓
Cybenetics Testing Information	
Lab ID	143
Date of receipt	Jul 5, 2018
Testing Date	Jul 16, 2018
Report Issued Date	Jul 19, 2018
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
ATX connector 20+4 pin (550mm)	1	1	16-22AWG
4+4 pin EPS12V (550mm)	1	1	16AWG
4+4 pin EPS12V (550mm)	1	1	16AWG
6+2 pin PCIe (560mm)	6	4	16AWG
SATA (600mm+145mm+145mm+145mm)	3	12	18AWG
4 pin Molex (610mm+150mm+150mm)	1	3	18AWG
FDD Adapter (+105mm)	1	1	24AWG

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	22	22	66	2.5	0.3
	Watts	120		792	12.5	3.6
Total Max. Power (W)		800				

Parts Description

Primary Side	
Transient Filter	4x Y caps, 4x X caps, 2x CM chokes, 1x MOV, CM02X
Inrush Protection	NTC Thermistor
Bridge Rectifier(s)	2x Vishay BU1506 (600V, 15A @ 150°C)
APFC MOSFETS	2x Infineon IPP50R140CP (550V, 15A @ 100°C, 0.14 Ohm)
APFC Boost Diode	1x CREE C3D10060A (600V, 8A @ 153°C)
Hold-up Cap(s)	1x Panasonic (450V, 560uF, 2000h @ 105°C, HD)
Main Switchers	2x Infineon IPP50R140CP (550V, 15A @ 100°C, 0.14 Ohm) Driver IC: 1x Silicon Labs Si8230BD
APFC Controller	Champion CM6502S & CM03X Green PFC controller
Switching Controller	Champion CM6901
Topology	Primary side: Half-Bridge & LLC Resonant Converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	8x Infineon BSC014N04LS (40V, 100A @ 100°C, 1.4 mOhm)
5V & 3.3V	DC-DC Converters: 2x BSC050NE2LS FETs (25V, 37A @ 100°C, 5.0mΩ) 2x BSC018NE2LS FETs (25V, 97A @ 100°C, 1.8mΩ) PWM Controller: 2x APW7073
Filtering Capacitors	Electrolytics: Nippon Chemi-Con (105°C, KY 4,000-10,000h, KZH 5,000-6,000h), Rubycon (105°C, ZLH 6,000-10,000h, YXG 3,000-6,000h), Suncon (105°C) Polymers: Unicon (TW)
Supervisor IC	SITI PS223 (OVP, UVP, OCP, SCP, OTP)
Fan Model	Hong Hua HA1225H12F-Z (120mm, 12V, 0.58A, 2200RPM, Fluid Dynamic Bearing)
5VSB Circuit	
Rectifier	1x PFR10V45CT & 1x SG30N04D

Standby PWM Controller	Sanken STR-A6069H
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Test Results

Temperature & Compliance Info

Temperature Range (°C /°F)	28-32 / 82.4-89.6
ErP Lot 3/6 Ready	ErP Lot 3/6 2010: ✓ ErP Lot 3/6 2013: ✓ ErP Lot 3/6 2014, CEC: Partially
(EU) No 617/2013 Compliance	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	91.136%
Average Noise Output (>1450 Load Combinations)	22.77dBA
Average PF (>1450 Load Combinations)	0.980
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
Standby Power Consumption	0.0587W
Non-Accredited	
12V Ripple (Full Load)	99.75mV
5V Ripple (Full Load)	24.68mV
3.3V Ripple (Full Load)	34.95mV
5VSB Ripple (Full Load)	26.18mV
12V Load Regulation	0.52%
5V Load Regulation	1.70%
3.3V Load Regulation	2.32%
5VSB Load Regulation	3.02%
Inrush Current	93.904A

230V

Accredited		
Average Efficiency (>1450 load combinations)	92.598%	
Average Noise Output (>1450 Load Combinations)	21.14dBA	
Average PF (>1450 Load Combinations)	0.930	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.0927W	
Non-Accredited		
12V Ripple (Full Load)	101.80mV	
5V Ripple (Full Load)	23.95mV	
3.3V Ripple (Full Load)	30.66mV	
5VSB Ripple (Full Load)	27.22mV	
12V Load Regulation	0.34%	
5V Load Regulation	1.46%	
3.3V Load Regulation	2.29%	
5VSB Load Regulation	2.08%	
Inrush Current	62.247A	
Hold-Up Time & PWR_OK Signal	11.00ms	
AC Loss to PWR_OK Hold Up Time	15.80ms	
PWR_OK Inactive to DC Loss Delay	-4.80ms	
OPP (0.00°C / 0.00°C)	-	-

Hold-Up Time & PWR_OK Signal

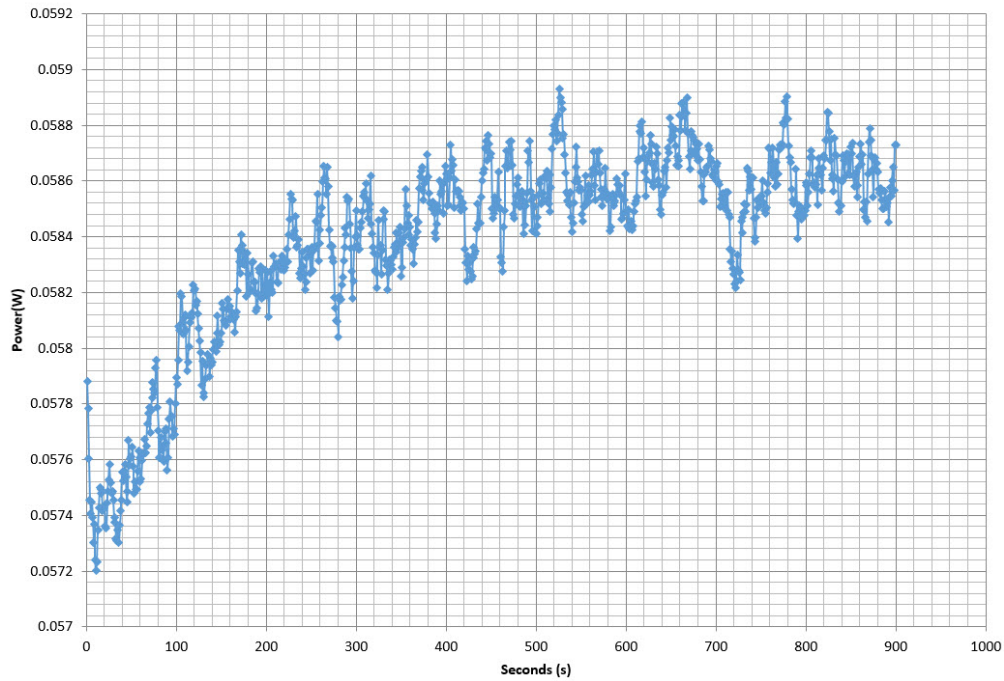
Hold-Up Time (ms)	11
AC Loss to PWR_OK Hold Up Time (ms)	15.8
PWR_OK Inactive to DC Loss Delay (ms)	-4.8

Stromverbrauch im Ruhezustand

Graphs

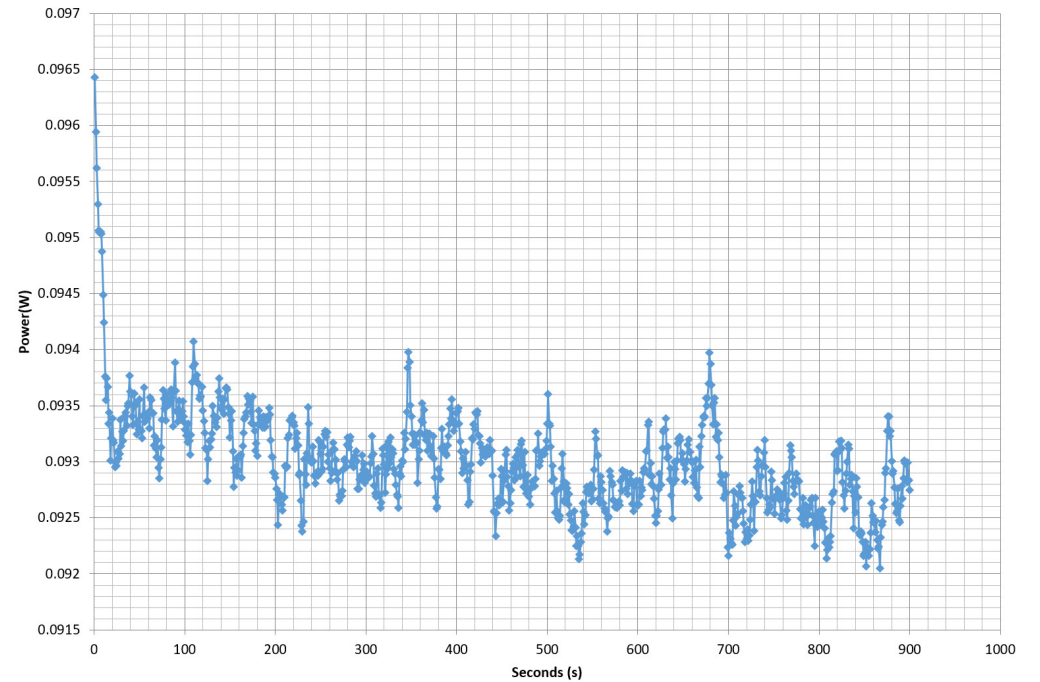
115V

Power - 155200454 - 19/07/2017 - 10:24



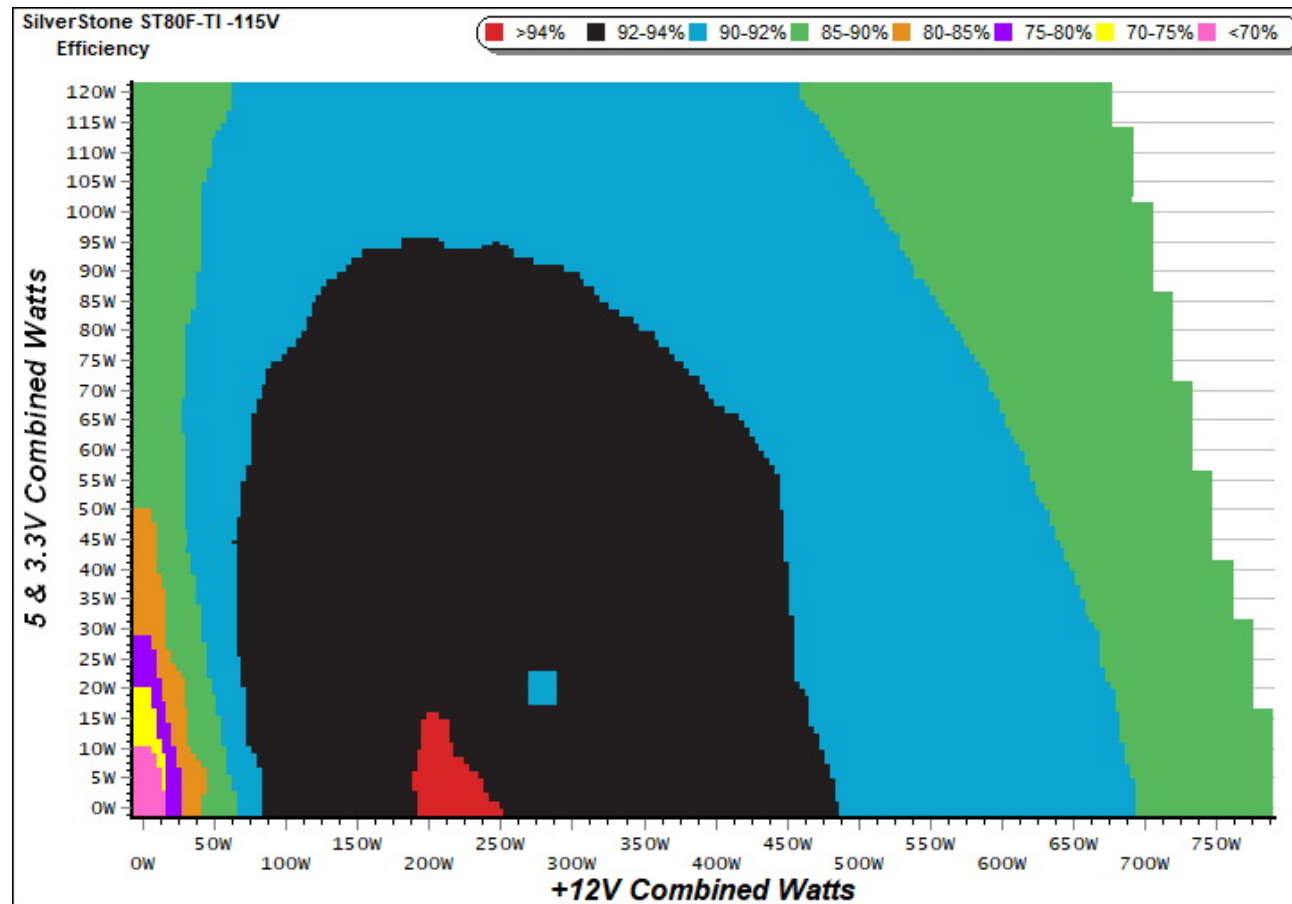
230V

Power - 155200454 - 19/07/2017 - 10:24



Efficiency Graph

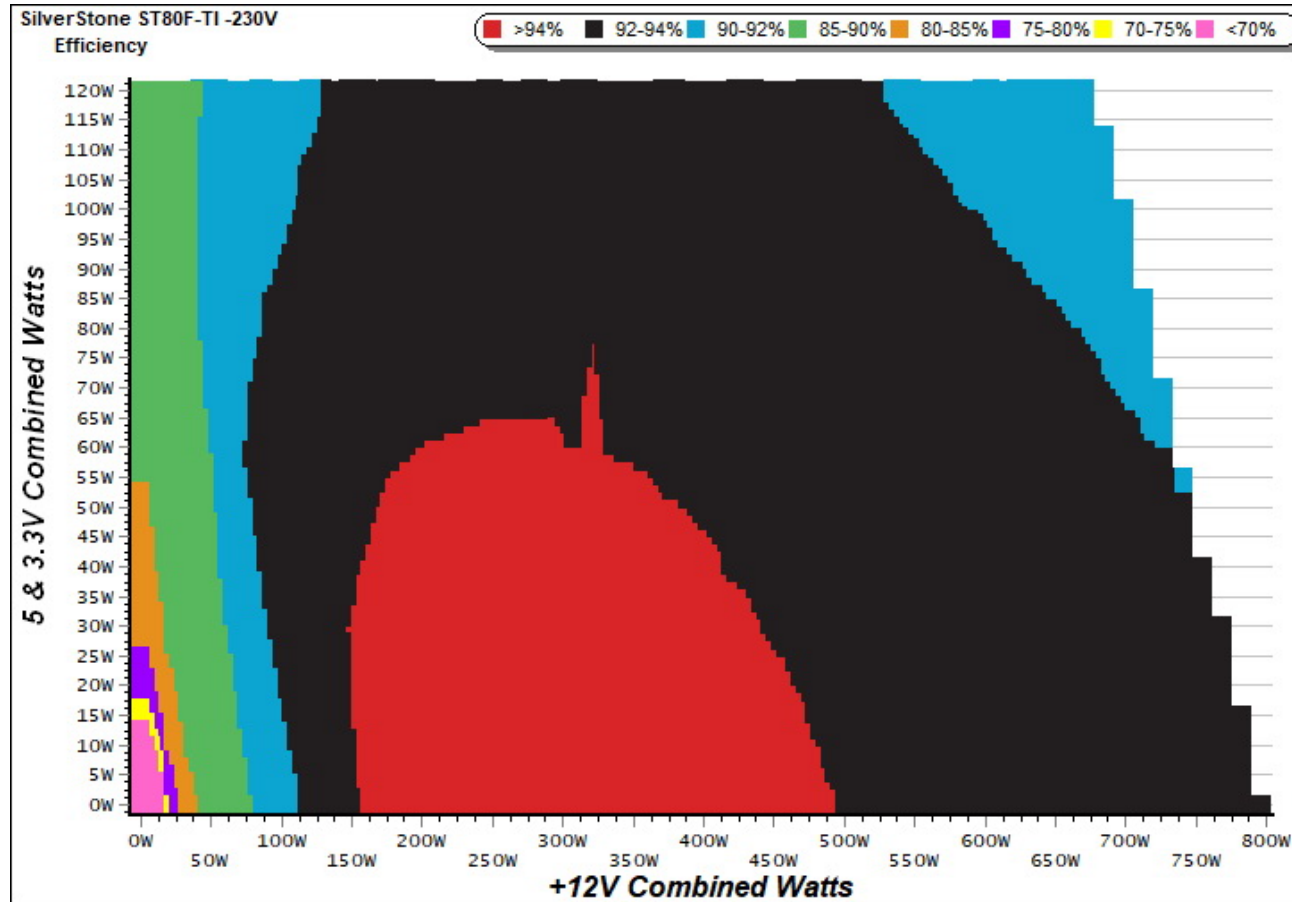
115V



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

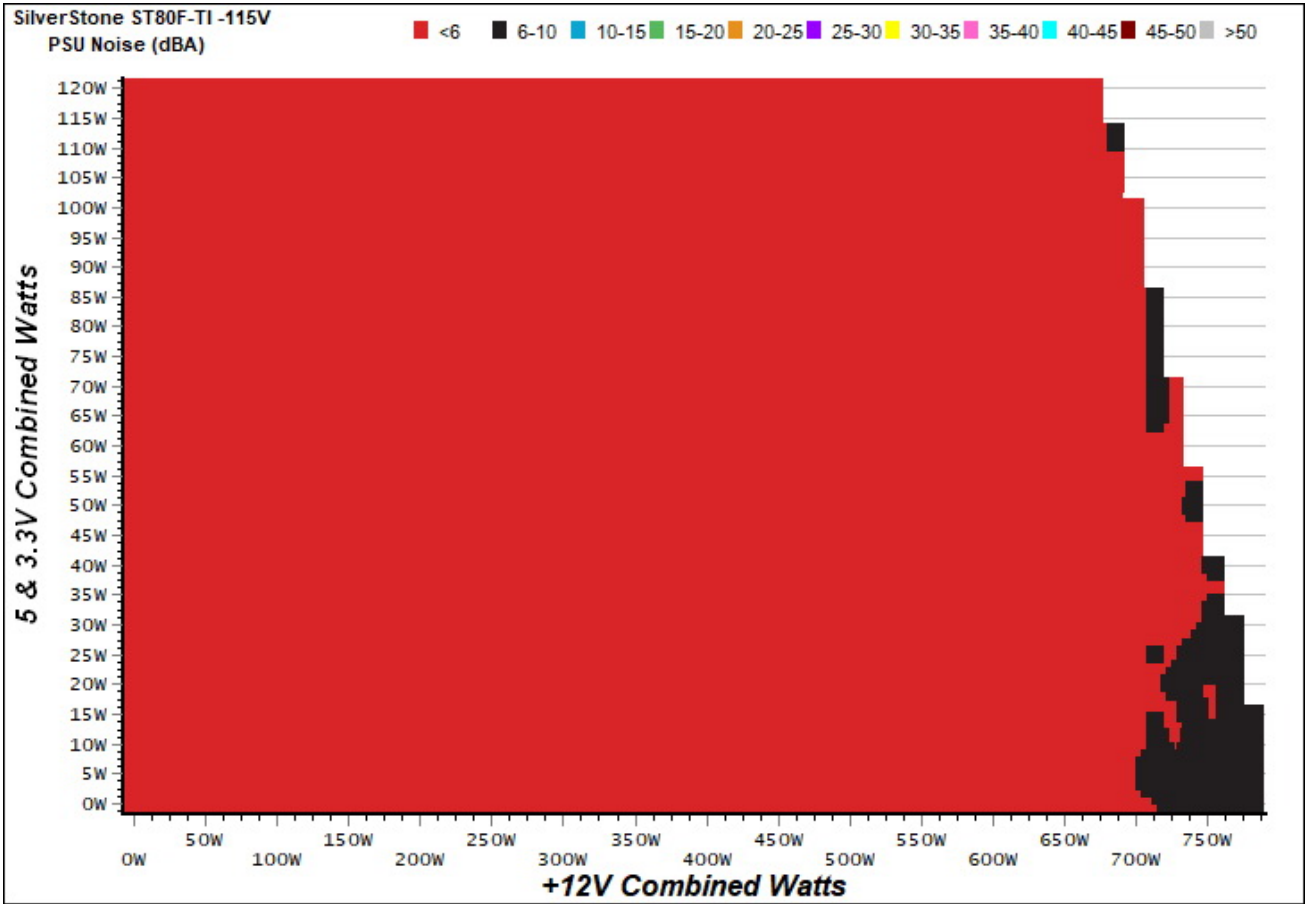


INFO

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

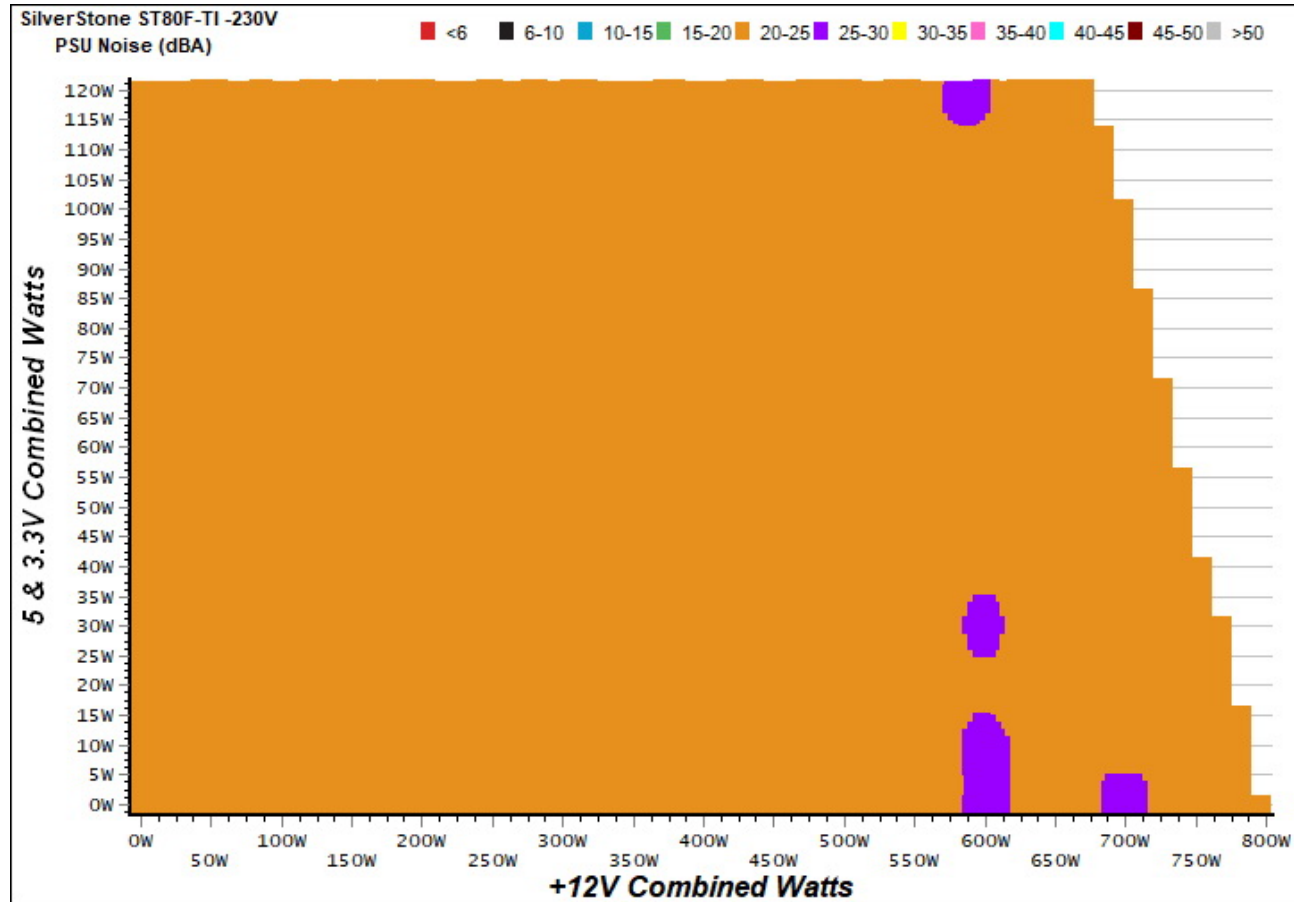
115V



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

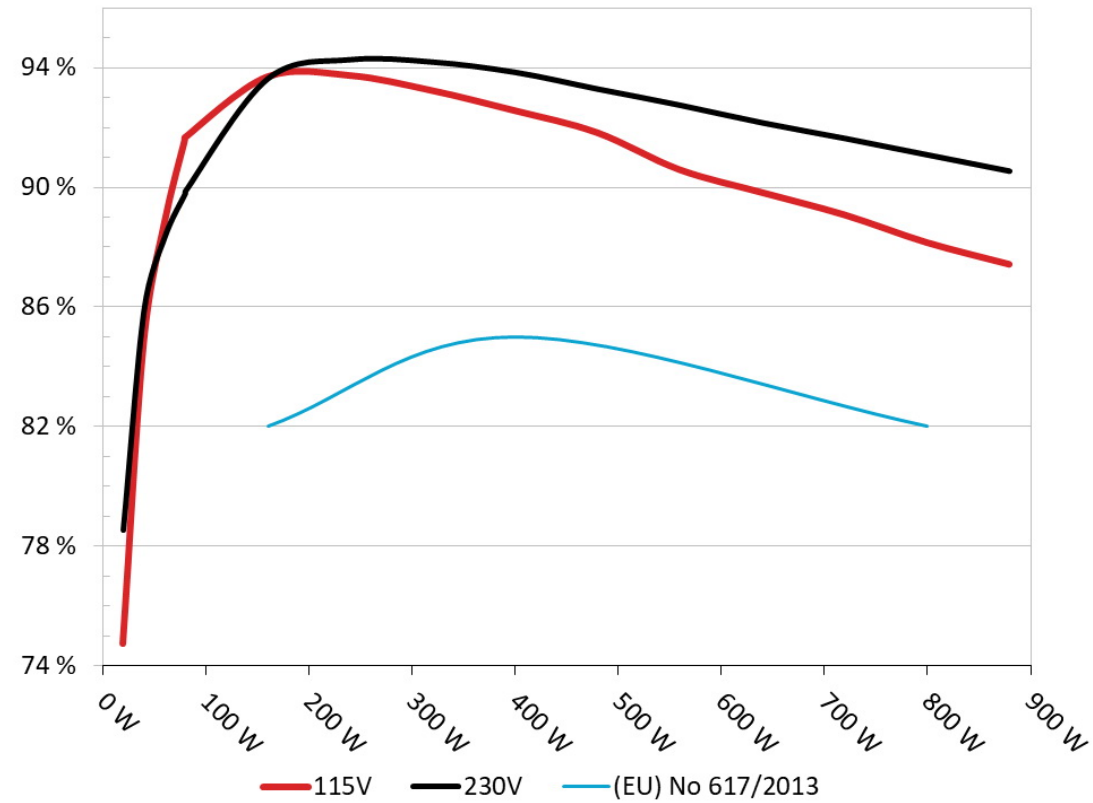
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

Indicative Performance

Efficiency under high ambient temperature

Efficiency: SilverStone ST80F-TI

Ambient: 37°C - 46°C (98.6°F - 114.8°F)



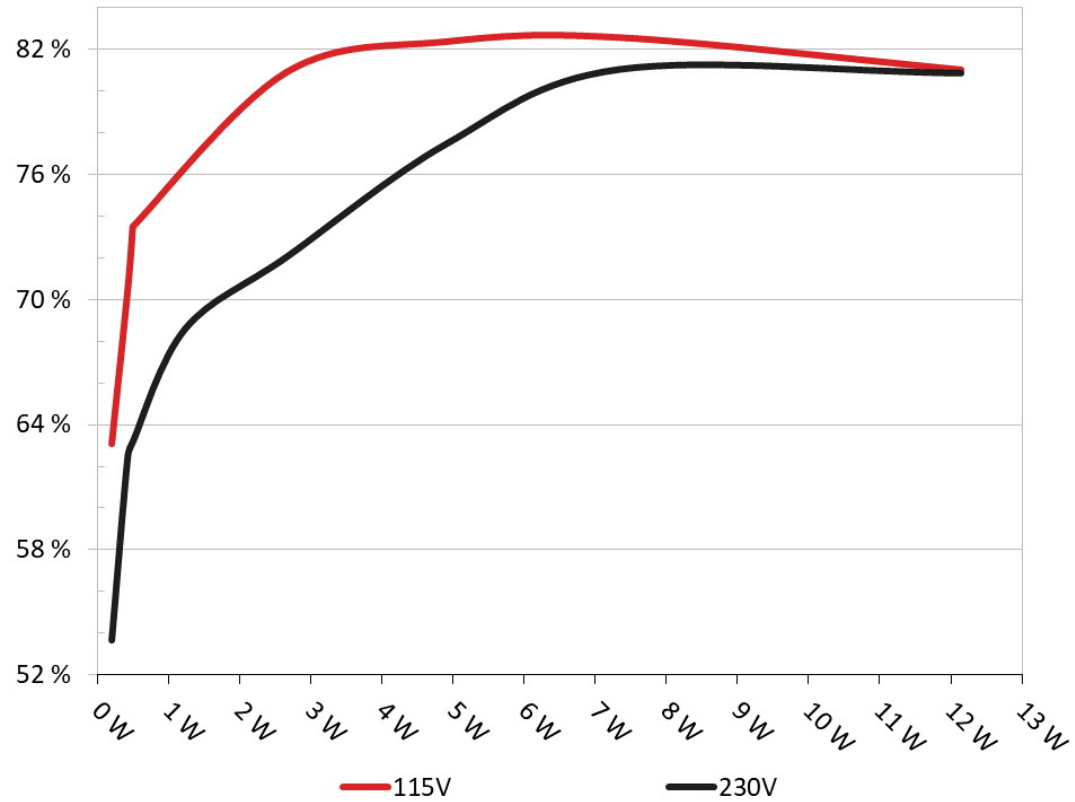
INFO

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 ST80F-TI

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.

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

115V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.205	63.077%	0.022
	4.937V	0.325		115.16V
2	0.087A	0.430	70.492%	0.041
	4.935V	0.610		115.16V
3	0.542A	2.665	80.905%	0.188
	4.919V	3.294		115.15V
4	1.002A	4.913	82.364%	0.274
	4.904V	5.965		115.16V
5	1.502A	7.338	82.561%	0.329
	4.887V	8.888		115.16V
6	2.501A	12.139	81.018%	0.385
	4.853V	14.983		115.16V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.205	53.665%	0.008
	4.937V	0.382		230.38V
2	0.087A	0.429	62.445%	0.014
	4.935V	0.687		230.39V
3	0.542A	2.666	72.054%	0.072
	4.919V	3.700		230.39V
4	1.002A	4.912	77.476%	0.119
	4.904V	6.340		230.39V
5	1.501A	7.337	81.036%	0.160
	4.887V	9.054		230.39V
6	2.501A	12.136	80.858%	0.231
	4.852V	15.009		230.39V

Supplementary Tests (For Reference)

Typical Load Tests

115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	Fan Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	4.912A	2.006A	1.962A	1.006A	79.771	91.586%	765	19.8	38.16°C	0.937
	11.845V	4.993V	3.355V	4.960V	87.100				39.92°C	115.17V
2	10.881A	3.004A	2.954A	1.210A	159.640	93.682%	765	19.8	38.47°C	0.964
	11.837V	4.984V	3.347V	4.945V	170.406				40.35°C	115.16V
3	17.225A	3.514A	3.471A	1.415A	239.827	93.727%	765	19.8	38.97°C	0.978
	11.830V	4.975V	3.340V	4.933V	255.879				41.30°C	115.16V
4	23.557A	4.027A	3.955A	1.625A	319.740	93.222%	910	22.1	39.59°C	0.981
	11.825V	4.968V	3.334V	4.915V	342.988				42.05°C	115.16V
5	29.548A	5.043A	4.959A	1.835A	399.649	92.553%	1200	27.0	40.15°C	0.984
	11.817V	4.958V	3.324V	4.901V	431.807				42.63°C	115.16V
6	35.550A	6.067A	5.968A	2.044A	479.650	91.819%	1500	33.5	40.74°C	0.986
	11.810V	4.949V	3.316V	4.887V	522.387				43.23°C	115.16V
7	41.556A	7.085A	6.982A	2.255A	559.566	90.580%	1920	39.2	41.50°C	0.988
	11.803V	4.939V	3.308V	4.874V	617.760				44.02°C	115.16V
8	47.574A	8.119A	8.001A	2.466A	639.576	89.815%	2100	43.3	42.35°C	0.990
	11.796V	4.930V	3.298V	4.858V	712.105				45.00°C	115.16V
9	54.033A	8.639A	8.536A	2.470A	719.595	89.069%	2180	44.3	43.78°C	0.991
	11.789V	4.923V	3.290V	4.853V	807.904				46.79°C	115.17V
10	60.438A	9.162A	9.049A	2.580A	799.415	88.145%	2250	44.1	45.25°C	0.991
	11.784V	4.914V	3.282V	4.842V	906.933				48.70°C	115.17V
11	67.255A	9.173A	9.069A	2.582A	879.326	87.418%	2250	44.1	46.40°C	0.992
	11.778V	4.908V	3.274V	4.835V	1005.890				50.43°C	115.17V
CL1	0.099A	14.026A	14.004A	0.004A	117.619	86.114%	2100	43.3	43.93°C	0.959
	11.840V	4.970V	3.336V	5.027V	136.585				45.65°C	115.18V

CL2	65.777A	1.003A	1.003A	1.002A	788.536	88.725%	2250	44.1	44.96°C	0.991
	11.788V	4.933V	3.294V	4.896V	888.737				48.13°C	115.17V

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	4.918A	2.005A	1.967A	1.006A	79.839	89.924%	765	19.8	38.21°C	0.776
	11.841V	4.993V	3.353V	4.970V	88.785				40.94°C	230.27V
2	10.877A	3.002A	2.956A	1.206A	159.652	93.779%	765	19.8	38.55°C	0.883
	11.843V	4.985V	3.344V	4.963V	170.242				41.53°C	230.27V
3	17.218A	3.512A	3.471A	1.411A	239.855	94.432%	765	19.8	38.86°C	0.921
	11.837V	4.977V	3.337V	4.949V	253.997				42.49°C	230.26V
4	23.545A	4.026A	3.961A	1.616A	319.768	94.295%	925	22.3	39.57°C	0.939
	11.832V	4.970V	3.330V	4.940V	339.116				43.56°C	230.26V
5	29.529A	5.035A	4.967A	1.825A	399.709	93.914%	1395	30.2	40.28°C	0.950
	11.827V	4.962V	3.320V	4.929V	425.613				44.69°C	230.26V
6	35.516A	6.058A	5.973A	2.031A	479.682	93.440%	1710	37.9	41.44°C	0.956
	11.823V	4.953V	3.312V	4.918V	513.359				46.13°C	230.25V
7	41.519A	7.073A	6.992A	2.241A	559.651	92.967%	1877	38.2	41.99°C	0.961
	11.816V	4.945V	3.302V	4.908V	601.988				47.14°C	230.25V
8	47.518A	8.108A	8.014A	2.446A	639.645	92.445%	2125	43.5	43.05°C	0.965
	11.811V	4.937V	3.294V	4.899V	691.921				48.87°C	230.25V
9	53.953A	8.626A	8.548A	2.451A	719.696	91.965%	2155	44.1	44.07°C	0.966
	11.808V	4.930V	3.287V	4.894V	782.572				50.31°C	230.27V
10	60.350A	9.142A	9.055A	2.555A	799.495	91.452%	2155	44.1	45.25°C	0.968
	11.803V	4.923V	3.279V	4.887V	874.228				52.05°C	230.25V
11	67.140A	9.155A	9.073A	2.560A	879.460	90.936%	2155	44.1	46.30°C	0.969
	11.800V	4.917V	3.273V	4.882V	967.117				53.52°C	230.25V
CL1	0.102A	14.025A	14.004A	0.005A	117.557	86.153%	1877	38.2	43.17°C	0.855
	11.837V	4.972V	3.327V	5.044V	136.452				48.54°C	230.25V

CL2	65.965A	1.002A	1.002A	1.002A	792.028	91.972%	2155	44.1	44.34°C	0.969
	11.807V	4.940V	3.299V	4.914V	861.160				50.59°C	230.25V

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)	Fan Noise (dB[A])	PF/AC Volts
1	1.233A	0.492A	0.475A	0.201A	19.662	74.735%	765	19.8	0.817
	11.841V	5.003V	3.362V	4.993V	26.309				115.17V
2	2.491A	0.999A	0.979A	0.400A	39.768	84.806%	765	19.8	0.886
	11.839V	4.999V	3.360V	4.985V	46.893				115.17V
3	3.748A	1.499A	1.484A	0.600A	59.856	88.785%	765	19.8	0.922
	11.846V	4.996V	3.358V	4.975V	67.417				115.17V
4	4.999A	2.006A	1.962A	0.805A	79.808	91.652%	765	19.8	0.937
	11.844V	4.993V	3.356V	4.968V	87.077				115.17V

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	1.237A	0.491A	0.474A	0.201A	19.704	78.775%	765	19.8	0.408
	11.843V	5.003V	3.361V	4.995V	25.013				230.30V
2	2.493A	0.997A	0.979A	0.401A	39.795	85.995%	765	19.8	0.604
	11.842V	4.999V	3.359V	4.988V	46.276				230.29V
3	3.754A	1.497A	1.486A	0.601A	59.914	88.472%	765	19.8	0.716
	11.841V	4.996V	3.357V	4.983V	67.721				230.29V
4	5.005A	2.005A	1.966A	0.801A	79.848	89.990%	765	19.8	0.776
	11.840V	4.993V	3.353V	4.977V	88.730				230.29V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	24.2 mV	6.9 mV	6.7 mV	6.8 mV	Pass
20% Load	28.6 mV	7.8 mV	7.8 mV	7.9 mV	Pass
30% Load	38.7 mV	18.4 mV	11.6 mV	18.2 mV	Pass
40% Load	46.2 mV	10.9 mV	15.8 mV	10.9 mV	Pass
50% Load	56.6 mV	12.9 mV	14.2 mV	14.3 mV	Pass
60% Load	66.0 mV	15.5 mV	17.4 mV	16.9 mV	Pass
70% Load	72.9 mV	21.9 mV	26.7 mV	21.7 mV	Pass
80% Load	84.1 mV	47.3 mV	32.0 mV	46.9 mV	Pass
90% Load	91.3 mV	41.2 mV	33.0 mV	41.6 mV	Pass
100% Load	99.8 mV	24.7 mV	35.0 mV	26.2 mV	Pass
110% Load	109.1 mV	26.5 mV	37.5 mV	27.8 mV	Pass
Crossload 1	26.7 mV	9.4 mV	8.4 mV	8.6 mV	Pass
Crossload 2	98.6 mV	23.3 mV	23.7 mV	24.5 mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	20.2 mV	7.0 mV	23.2 mV	7.5 mV	Pass
20% Load	33.0 mV	8.4 mV	25.7 mV	8.7 mV	Pass
30% Load	41.1 mV	10.8 mV	15.1 mV	11.5 mV	Pass
40% Load	49.5 mV	12.2 mV	16.9 mV	13.7 mV	Pass
50% Load	58.4 mV	15.2 mV	19.7 mV	16.3 mV	Pass
60% Load	66.7 mV	14.7 mV	27.2 mV	16.9 mV	Pass
70% Load	71.2 mV	33.4 mV	31.0 mV	34.6 mV	Pass
80% Load	75.3 mV	52.2 mV	35.0 mV	53.6 mV	Fail

Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	76.9 mV	50.0 mV	37.2 mV	52.3 mV	Fail
100% Load	101.8 mV	24.0 mV	30.7 mV	27.2 mV	Pass
110% Load	110.5 mV	24.5 mV	29.9 mV	30.7 mV	Pass
Crossload 1	34.9 mV	8.2 mV	25.7 mV	8.5 mV	Pass
Crossload 2	102.5 mV	23.1 mV	43.8 mV	26.3 mV	Pass

The results above are not used in the certification process

SilverStone Strider Titanium 800W



Top side



Power specifications label

Cybenetics bietet freiwillige Zertifizierungsprogramme für Netzteile – ETA für Effizienz, LAMBDA für Lautstärke und SAFE für Sicherheit und korrekten Betrieb – sowie für Kühlprodukte mit DELTA für die Schalldämmung von Gehäusen und PHI für Luftstrom und statischen Druck von Lüftern

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