FSP Technology AURUM PT 1200W PT-1200FM

Serial Number S4290000157

Lab ID 300

Certification ID 25300

Test Result Report ID:

Certificate Issue Date: Feb 28, 2018

Scheme: ETA-EMI PSU

115V

230V

115V

230V

Scheme: LAMBDA PSU

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	FSP Technology
Model	AURUM PT 1200W PT-1200FM
OEM/ODM	FSP
Serial Number	S4290000157
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	15-9
Rated Frequency (Hz)	50-60

Rated Power (W)	1200
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	135mm Hydro Dynamic Bearing Fan (PLA13525S12M)
Semi-Passive Operation	✗
Cybenetics Testing Information	
Lab ID	300
Date of receipt	Feb 15, 2018
Testing Date	Feb 26, 2018
Report Issued Date	Feb 28, 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	In Cable Capacitors
ATX connector 20+4 pin (600mm)	1	1	18-24AWG	No
4+4 pin EPS12V (700mm)	2	2	18AWG	No
6+2 pin PCIe (500mm+100mm)	4	8	18AWG	No
SATA (550mm+150mm+150mm)	3	9	18AWG	No
SATA (550mm+50mm+50mm+50mm)	1	4	18AWG	No
4 pin Molex (550mm+150mm+150mm)	2	6	18AWG	No
FDD Adapter (+100mm)	1	1	22AWG	No
AC Power Cord (1380mm) - C13 coupler	1	1	18AWG	-

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	25	25	100	3	0.8
	Watts	160		1200	15	9.6
Total Max. Power (W)		1200				

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)	89.557%
Average Noise Output (>1450 Load Combinations)	32.61dBA
Average PF (>1450 Load Combinations)	0.992
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
Standby Power Consumption	0.0539W
Non-Accredited	
12V Ripple (Full Load)	38.39mV
5V Ripple (Full Load)	7.80mV
3.3V Ripple (Full Load)	10.56mV
5VSB Ripple (Full Load)	22.79mV
12V Load Regulation	0.58%
5V Load Regulation	1.70%
3.3V Load Regulation	2.61%

5VSB Load Regulation	2.30%
Inrush Current	36.185A

230V

Accredited		
Average Efficiency (>1450 load combinations)	91.998%	
Average Noise Output (>1450 Load Combinations)	31.19dBA	
Average PF (>1450 Load Combinations)	0.966	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.0855W	
Non-Accredited		
12V Ripple (Full Load)	35.48mV	
5V Ripple (Full Load)	6.95mV	
3.3V Ripple (Full Load)	12.34mV	
5VSB Ripple (Full Load)	18.47mV	
12V Load Regulation	0.62%	
5V Load Regulation	1.68%	
3.3V Load Regulation	2.55%	
5VSB Load Regulation	2.39%	
Inrush Current	66.485A	
Hold-Up Time & PWR_OK Signal	12.80ms	
AC Loss to PWR_OK Hold Up Time	10.70ms	
PWR_OK Inactive to DC Loss Delay	2.10ms	
OPP (0.00°C / 0.00°C)	-	-

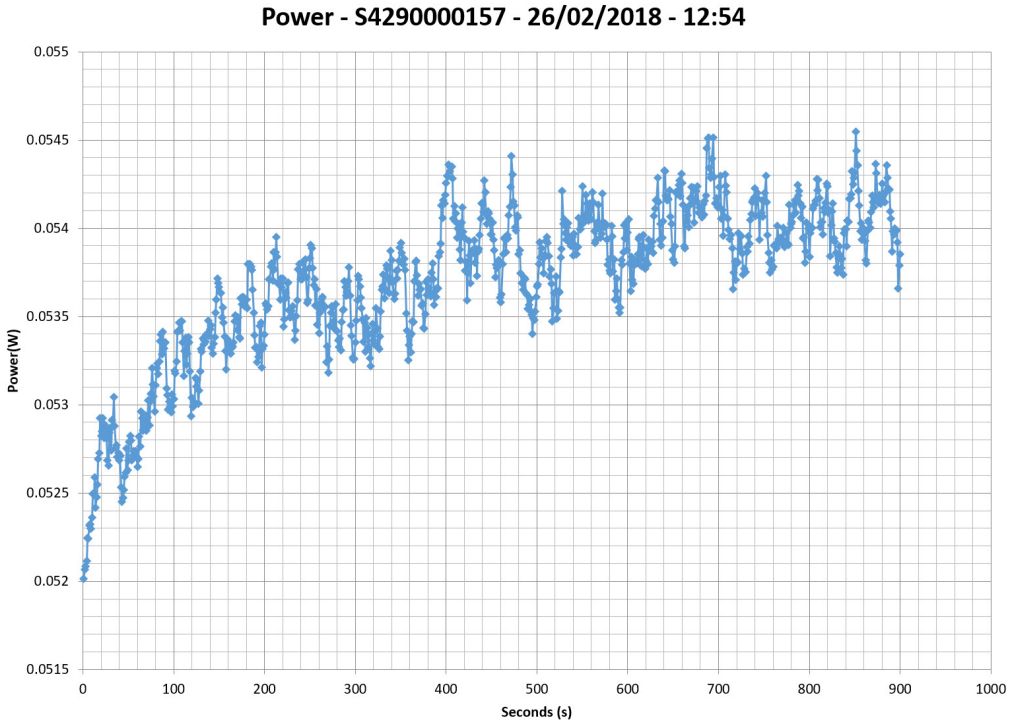
Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	12.8
AC Loss to PWR_OK Hold Up Time (ms)	10.7
PWR_OK Inactive to DC Loss Delay (ms)	2.1

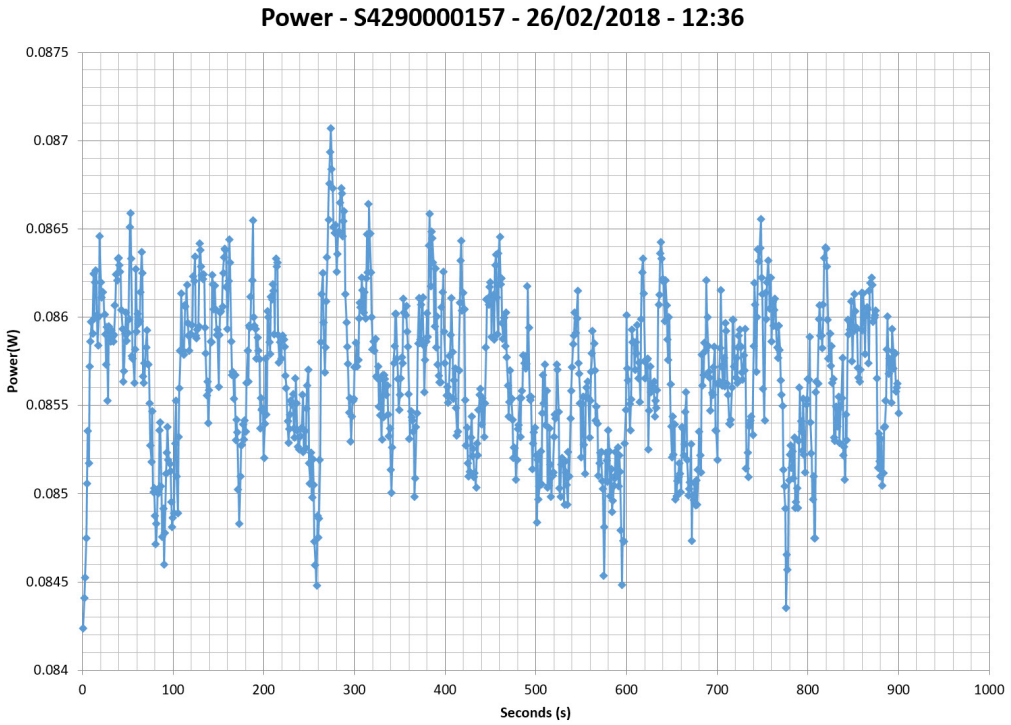
Vampire Power

Graphs

115V

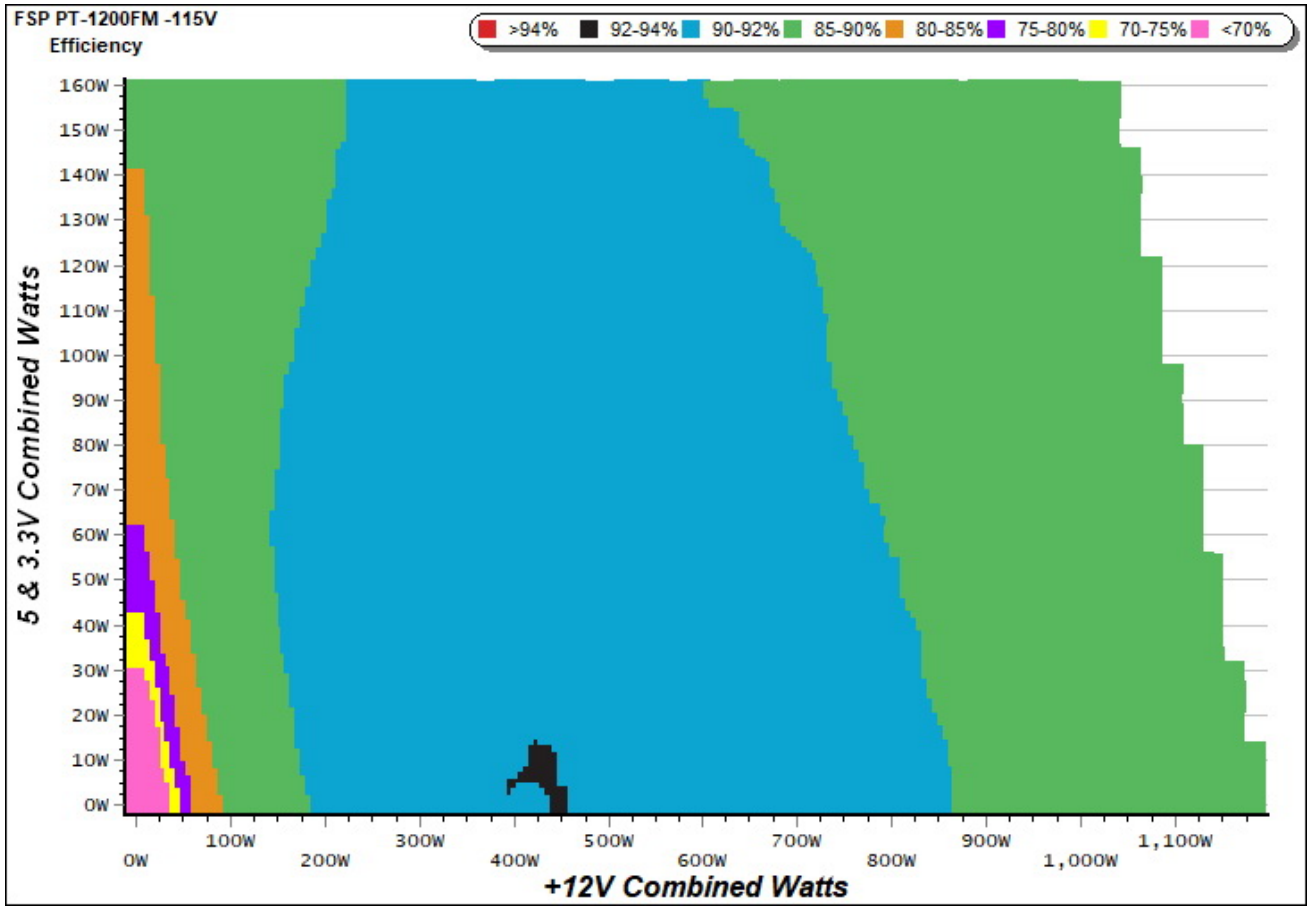


230V



Efficiency Graph

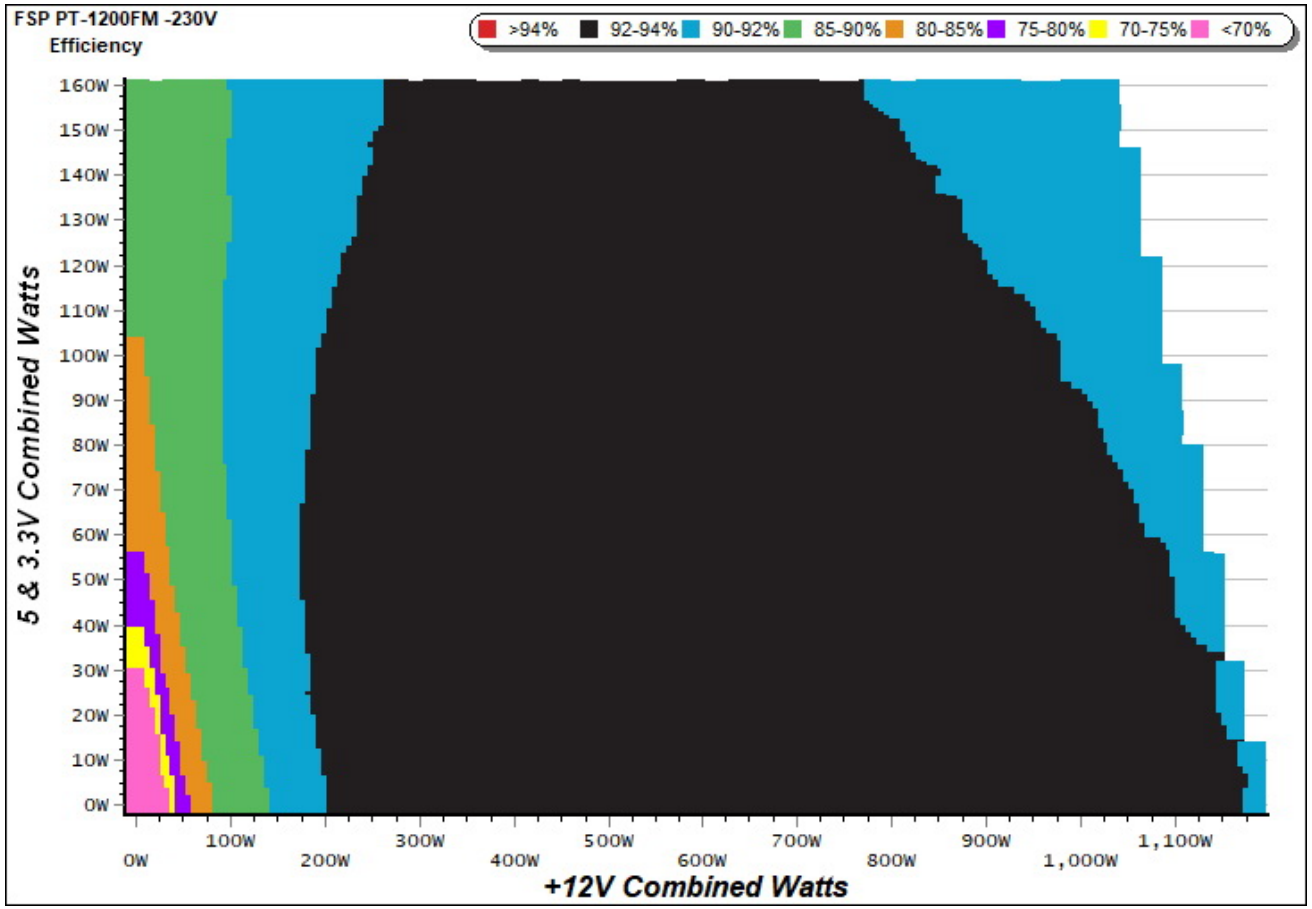
115V



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

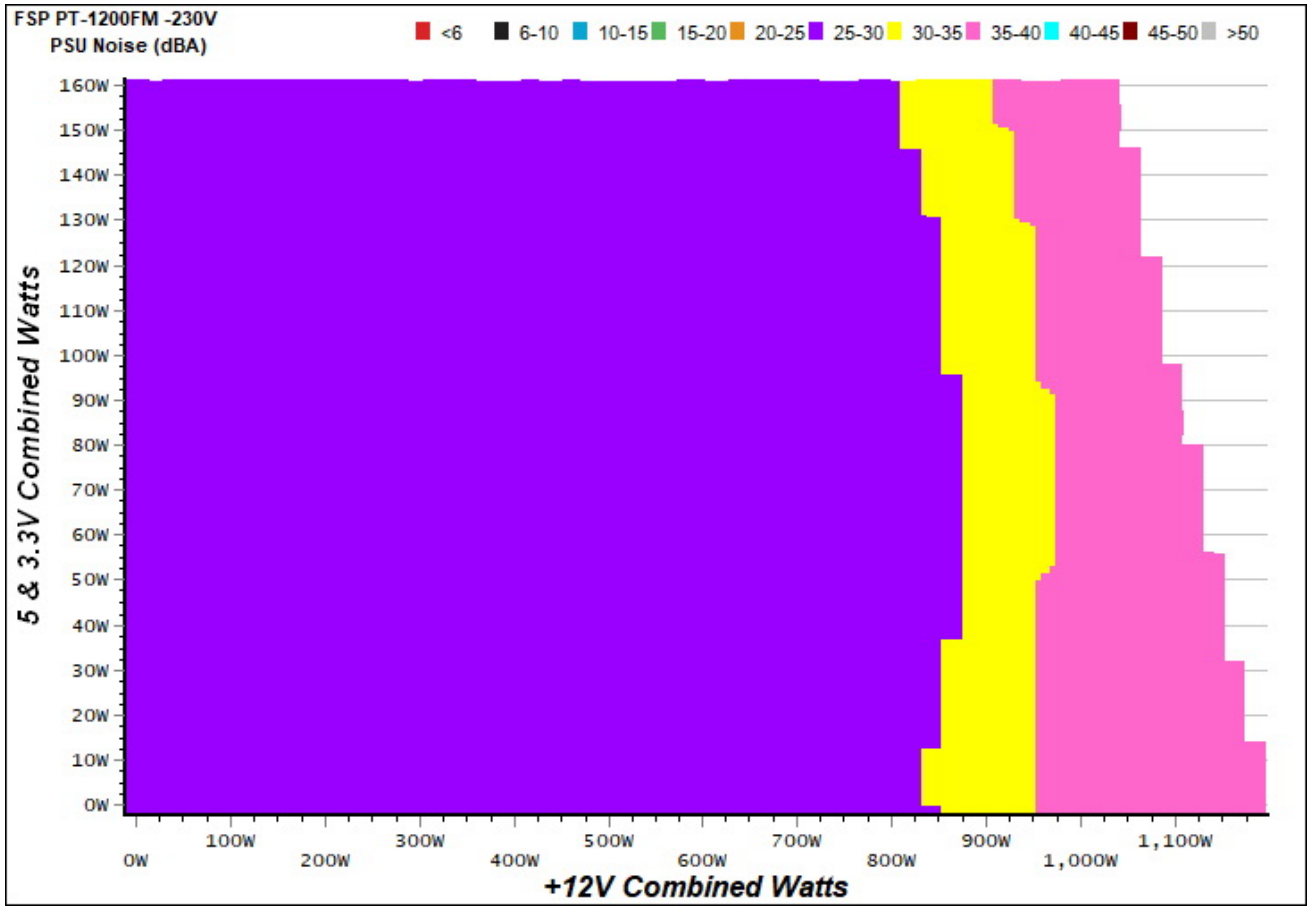


INFO

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

230V

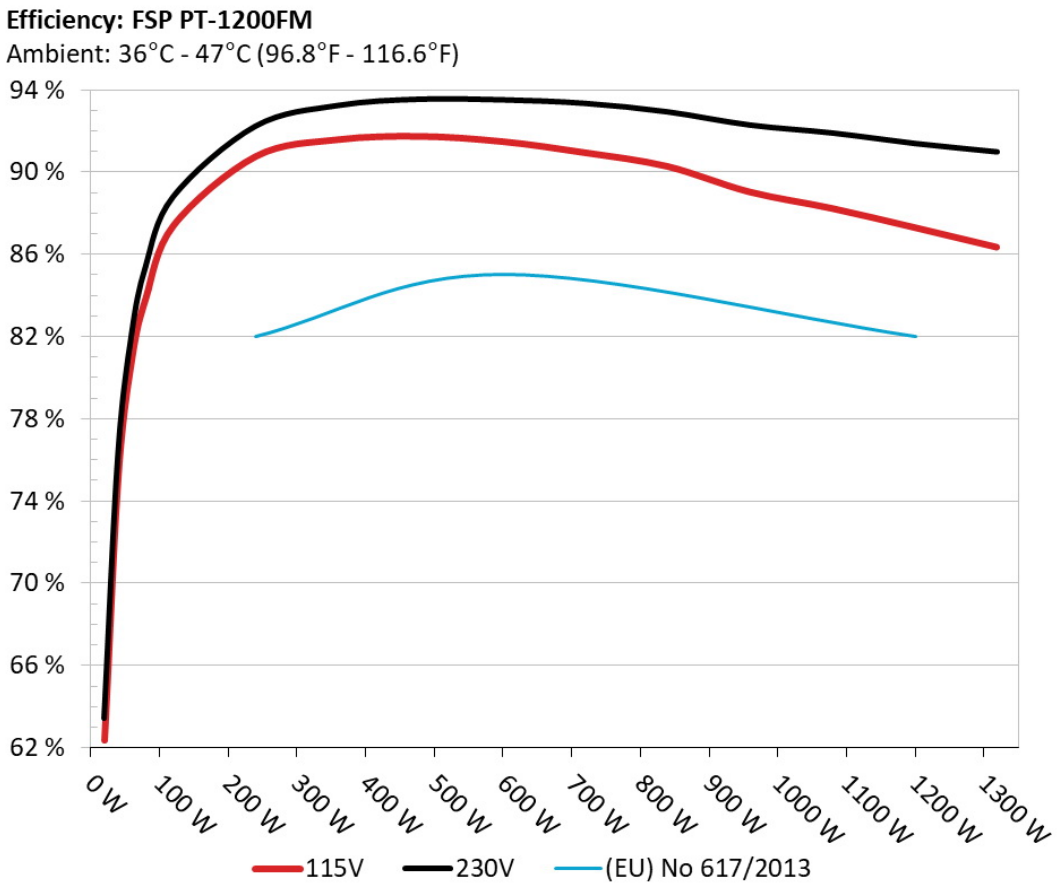


INFO

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

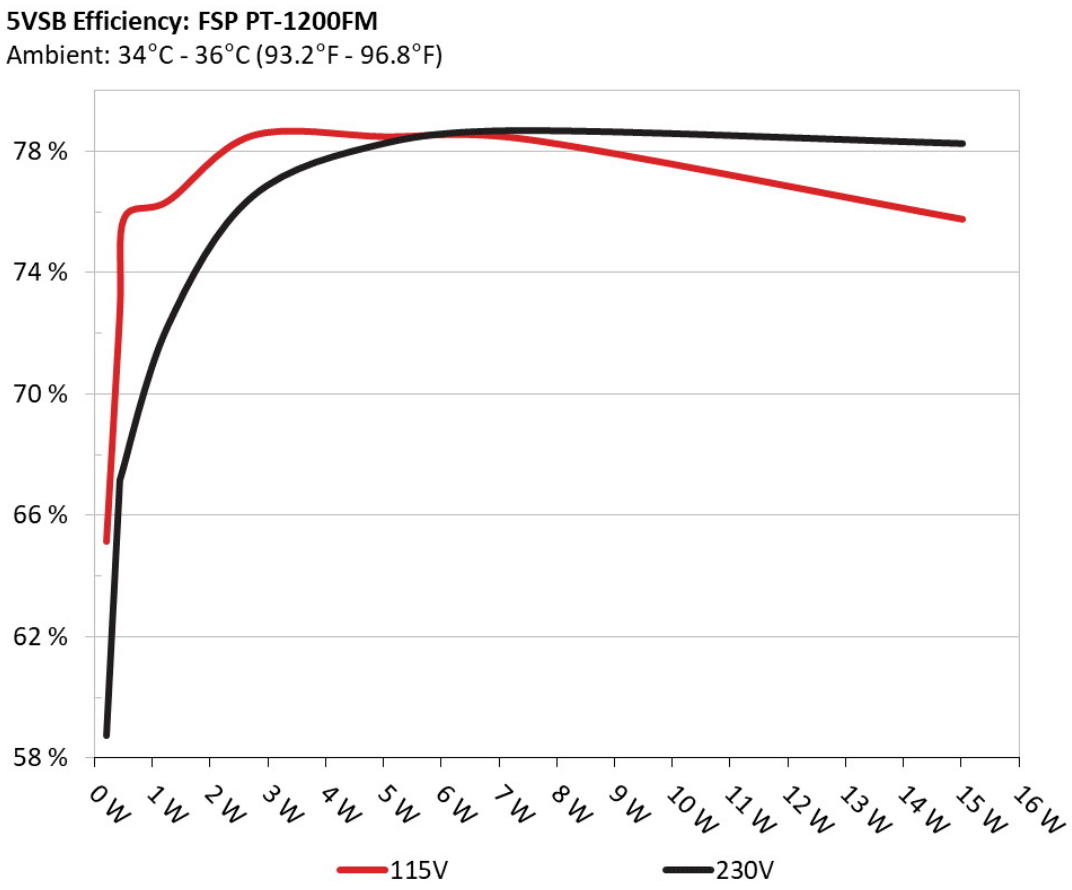
Efficiency under high ambient temperature



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



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	0.211	65.123%	0.028
	5.057V	0.324		115.08V
2	0.087A	0.441	72.652%	0.052
	5.056V	0.607		115.08V
3	0.542A	2.737	78.514%	0.237
	5.048V	3.486		115.08V
4	1.002A	5.050	78.477%	0.336
	5.039V	6.435		115.08V
5	1.502A	7.555	78.371%	0.395
	5.030V	9.640		115.08V
6	3.001A	15.016	75.754%	0.473
	5.003V	19.822		115.07V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.212	58.726%	0.009
	5.057V	0.361		230.22V
2	0.087A	0.442	66.970%	0.017
	5.056V	0.660		230.22V
3	0.542A	2.737	76.517%	0.088
	5.047V	3.577		230.22V
4	1.002A	5.050	78.282%	0.150
	5.039V	6.451		230.22V
5	1.502A	7.555	78.690%	0.205
	5.030V	9.601		230.22V
6	3.001A	15.019	78.261%	0.313
	5.004V	19.191		230.21V

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	8.063A	1.930A	1.959A	0.991A	119.810	87.393%	775	26.5	39.09°C	0.980
	12.183V	5.180V	3.366V	5.032V	137.093				43.69°C	115.08V
2	17.147A	2.905A	2.948A	1.191A	239.661	90.759%	775	26.5	39.79°C	0.994
	12.175V	5.171V	3.356V	5.022V	264.064				44.64°C	115.12V
3	26.599A	3.383A	3.463A	1.396A	359.738	91.578%	775	26.5	40.82°C	0.994
	12.169V	5.163V	3.348V	5.010V	392.823				46.30°C	115.08V
4	36.037A	3.873A	3.949A	1.598A	479.460	91.736%	775	26.5	41.63°C	0.995
	12.163V	5.155V	3.339V	5.001V	522.652				47.59°C	115.06V
5	45.159A	4.855A	4.950A	1.801A	599.268	91.483%	775	26.5	44.04°C	0.995
	12.155V	5.146V	3.331V	4.991V	655.061				50.26°C	115.08V
6	54.286A	5.839A	5.959A	2.006A	719.297	90.943%	805	27.0	45.09°C	0.995
	12.149V	5.137V	3.321V	4.981V	790.929				51.55°C	115.08V
7	63.416A	6.823A	6.975A	2.211A	839.131	90.278%	1255	34.6	45.41°C	0.994
	12.143V	5.127V	3.312V	4.970V	929.494				52.81°C	115.11V
8	72.583A	7.820A	7.993A	2.416A	959.113	89.036%	1630	39.9	45.01°C	0.994
	12.134V	5.118V	3.301V	4.960V	1077.217				53.14°C	115.08V
9	82.166A	8.323A	8.532A	2.421A	1078.946	88.237%	1875	44.8	45.93°C	0.993
	12.126V	5.108V	3.293V	4.953V	1222.780				54.55°C	115.09V
10	91.540A	8.826A	9.043A	3.037A	1198.777	87.308%	2000	45.6	46.48°C	0.993
	12.116V	5.098V	3.284V	4.935V	1373.050				55.35°C	115.08V
11	101.489A	8.840A	9.068A	3.041A	1318.723	86.353%	2000	45.6	46.88°C	0.992
	12.110V	5.091V	3.275V	4.929V	1527.125				56.46°C	115.08V
CL1	0.099A	19.028A	19.001A	0.005A	162.840	84.788%	935	27.4	42.79°C	0.988
	12.179V	5.156V	3.342V	5.041V	192.055				48.36°C	115.11V

CL2	99.961A	1.002A	1.002A	1.002A	1224.539	87.606%	1990	45.6	45.67°C	0.993
	12.116V	5.110V	3.295V	4.979V	1397.773				54.61°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	8.061A	1.931A	1.958A	0.990A	119.784	88.775%	775	26.5	38.21°C	0.852
	12.183V	5.180V	3.367V	5.033V	134.930				41.56°C	230.18V
2	17.145A	2.905A	2.946A	1.191A	239.638	92.213%	775	26.5	38.40°C	0.939
	12.175V	5.172V	3.357V	5.024V	259.875				42.17°C	230.24V
3	26.597A	3.388A	3.463A	1.395A	359.710	93.220%	775	26.5	38.94°C	0.965
	12.168V	5.163V	3.348V	5.012V	385.874				43.07°C	230.26V
4	36.034A	3.874A	3.951A	1.599A	479.363	93.527%	775	26.5	39.53°C	0.977
	12.161V	5.155V	3.340V	4.995V	512.540				44.06°C	230.22V
5	45.165A	4.854A	4.950A	1.800A	599.347	93.494%	775	26.5	40.36°C	0.981
	12.153V	5.146V	3.332V	4.991V	641.053				45.34°C	230.22V
6	54.294A	5.843A	5.958A	2.032A	719.278	93.325%	775	26.5	41.63°C	0.984
	12.146V	5.137V	3.321V	4.932V	770.726				47.04°C	230.23V
7	63.434A	6.826A	6.974A	2.210A	839.104	92.911%	1220	33.7	43.01°C	0.984
	12.139V	5.127V	3.312V	4.970V	903.126				48.80°C	230.23V
8	72.591A	7.823A	7.995A	2.426A	958.968	92.270%	1595	40.1	43.88°C	0.985
	12.130V	5.118V	3.302V	4.947V	1039.309				49.84°C	230.28V
9	82.202A	8.325A	8.531A	2.430A	1079.076	91.884%	1875	44.8	45.45°C	0.984
	12.122V	5.108V	3.293V	4.941V	1174.395				52.30°C	230.29V
10	91.548A	8.829A	9.043A	3.036A	1198.703	91.378%	2000	45.6	46.36°C	0.983
	12.114V	5.098V	3.284V	4.935V	1311.813				53.67°C	230.28V
11	101.500A	8.843A	9.065A	3.045A	1318.550	90.969%	2000	45.6	47.16°C	0.982
	12.107V	5.091V	3.275V	4.920V	1449.450				54.88°C	230.29V
CL1	0.099A	19.024A	19.002A	0.005A	162.824	86.682%	1065	30.5	43.43°C	0.906
	12.176V	5.156V	3.342V	5.041V	187.841				46.54°C	230.33V

CL2	99.946A	1.003A	1.003A	1.002A	1224.464	91.817%	1855	44.6	46.48°C	0.983
	12.117V	5.110V	3.294V	4.978V	1333.593				50.12°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	1.201A	0.480A	0.470A	0.196A	19.703	62.377%	775	26.5	0.848
	12.187V	5.188V	3.373V	5.051V	31.587				115.08V
2	2.423A	0.954A	0.977A	0.396A	39.770	75.295%	775	26.5	0.924
	12.187V	5.186V	3.372V	5.047V	52.819				115.08V
3	3.645A	1.445A	1.482A	0.594A	59.898	81.030%	775	26.5	0.951
	12.186V	5.184V	3.370V	5.042V	73.921				115.08V
4	4.860A	1.924A	1.957A	0.791A	79.766	83.869%	775	26.5	0.966
	12.185V	5.183V	3.368V	5.036V	95.108				115.08V

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	1.199A	0.482A	0.471A	0.195A	19.688	63.459%	775	26.5	0.407
	12.188V	5.188V	3.374V	5.052V	31.025				230.15V
2	2.421A	0.959A	0.977A	0.406A	39.760	76.264%	775	26.5	0.573
	12.188V	5.187V	3.373V	4.884V	52.135				230.16V
3	3.646A	1.447A	1.480A	0.591A	59.906	82.174%	775	26.5	0.688
	12.187V	5.185V	3.370V	5.043V	72.901				230.17V
4	4.858A	1.926A	1.955A	0.791A	79.755	85.359%	775	26.5	0.763
	12.186V	5.183V	3.369V	5.039V	93.435				230.17V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	19.7 mV	4.1 mV	6.8 mV	11.1 mV	Pass
20% Load	25.4 mV	4.6 mV	7.2 mV	12.0 mV	Pass
30% Load	29.1 mV	5.2 mV	8.1 mV	11.8 mV	Pass
40% Load	32.6 mV	4.9 mV	8.9 mV	15.2 mV	Pass
50% Load	32.6 mV	5.1 mV	8.0 mV	13.0 mV	Pass
60% Load	33.0 mV	5.1 mV	8.3 mV	14.6 mV	Pass
70% Load	34.8 mV	6.6 mV	15.1 mV	15.1 mV	Pass
80% Load	29.4 mV	7.1 mV	12.1 mV	18.5 mV	Pass
90% Load	31.3 mV	7.1 mV	12.5 mV	20.8 mV	Pass
100% Load	38.4 mV	7.8 mV	10.6 mV	22.8 mV	Pass
110% Load	40.8 mV	8.0 mV	10.8 mV	24.6 mV	Pass
Crossload 1	21.7 mV	4.5 mV	7.3 mV	11.3 mV	Pass
Crossload 2	38.8 mV	7.4 mV	8.9 mV	20.8 mV	Pass

The results above are not used in the certification process

230V

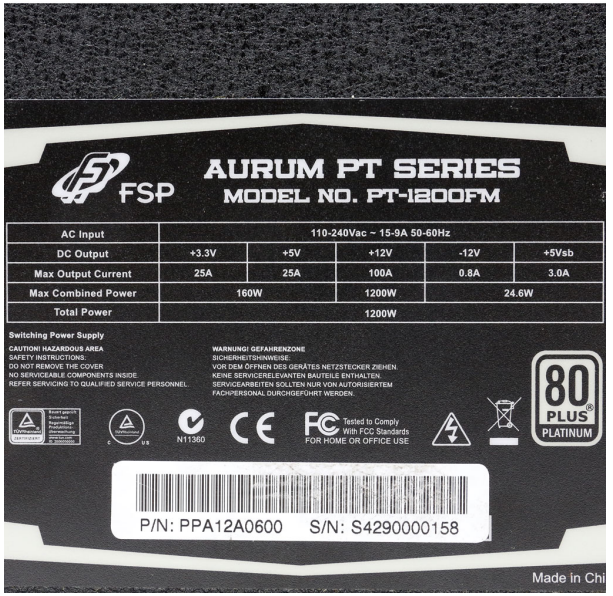
Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	18.5 mV	4.5 mV	6.7 mV	10.6 mV	Pass
20% Load	22.5 mV	4.4 mV	7.0 mV	11.8 mV	Pass
30% Load	27.3 mV	4.8 mV	7.7 mV	10.8 mV	Pass
40% Load	29.9 mV	5.0 mV	8.5 mV	13.9 mV	Pass
50% Load	30.7 mV	5.1 mV	8.1 mV	11.4 mV	Pass
60% Load	29.4 mV	5.0 mV	10.5 mV	12.7 mV	Pass
70% Load	30.3 mV	5.9 mV	13.8 mV	12.8 mV	Pass
80% Load	29.0 mV	5.9 mV	11.3 mV	14.4 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	31.3 mV	6.4 mV	9.9 mV	48.1 mV	Pass
100% Load	35.5 mV	7.0 mV	12.3 mV	18.5 mV	Pass
110% Load	37.7 mV	6.7 mV	13.3 mV	18.4 mV	Pass
Crossload 1	19.8 mV	4.0 mV	8.5 mV	11.8 mV	Pass
Crossload 2	35.7 mV	6.7 mV	11.5 mV	13.3 mV	Pass

The results above are not used in the certification process

FSP Technology AURUM PT 1200W PT-1200FM

Top side



Power specifications label

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

Cybenetics runs voluntary certification programs for power supplies - ETA for efficiency, LAMBDA for noise and SAFE for safety and correct operation - and for cooling products, with DELTA for chassis soundproofing and PHI for fan airflow and static pressure. THETA rates cooler performance on AMD AM5 and Intel LGA1851 outside ISO 17065 and accreditation scope

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

www.cybenetics.com - info@cybenetics.com