Aerocool ACP-750FP7

Serial Number D170500002

Lab ID 150

Certification ID 25150

Test Result Report ID: 19PS150A

Certificate Issue Date: Jul 31, 2018

Scheme: ETA-EMI PSU

115V 230V

Scheme: LAMBDA PSU

115V 230V

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	Aerocool
Model	ACP-750FP7
OEM/ODM	Andyson
Serial Number	D170500002
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	50-60

Rated Power (W)	750
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	140mm Fluid Dynamic Bearing Fan (CD1425M12F)
Semi-Passive Operation	✓
Cybenetics Testing Information	
Lab ID	150
Date of receipt	Jul 15, 2018
Testing Date	Jul 27, 2018
Report Issued Date	Jul 31, 2018
DUT Notes	Retested on 7/11/17
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 (600mm)	1	1	16-20AWG
8 pin EPS12V (700mm)	1	1	16AWG
4+4 pin EPS12V (700mm)	1	1	16AWG
6+2 pin PCIe (600mm+150mm) / 6+2 pin PCIe (600mm)	2 / 2	4 / 2	18AWG
SATA (600mm+150mm+150mm+150)	2	8	18AWG
SATA (600mm+150mm) / 4 pin Molex (+150mm+150mm)	1	2 / 2	18AWG
4 pin Molex (600mm+150mm+150mm+150mm)	1	4	18AWG

FDD Adapter (+200mm)	1	1	20AWG
GRB DC Adapter (720mm+110mm)	1	2	28AWG

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62	3	0.5
	Watts	120		744	15	6
Total Max. Power (W)		750				

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)	90.579%
Average Noise Output (>1450 Load Combinations)	17.22dBA
Average PF (>1450 Load Combinations)	0.988
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
Standby Power Consumption	0.0727W
Non-Accredited	
12V Ripple (Full Load)	24.52mV
5V Ripple (Full Load)	12.30mV
3.3V Ripple (Full Load)	13.17mV

5VSB Ripple (Full Load)	22.95mV
12V Load Regulation	0.61%
5V Load Regulation	0.61%
3.3V Load Regulation	0.87%
5VSB Load Regulation	1.82%
Inrush Current	37.526A

230V

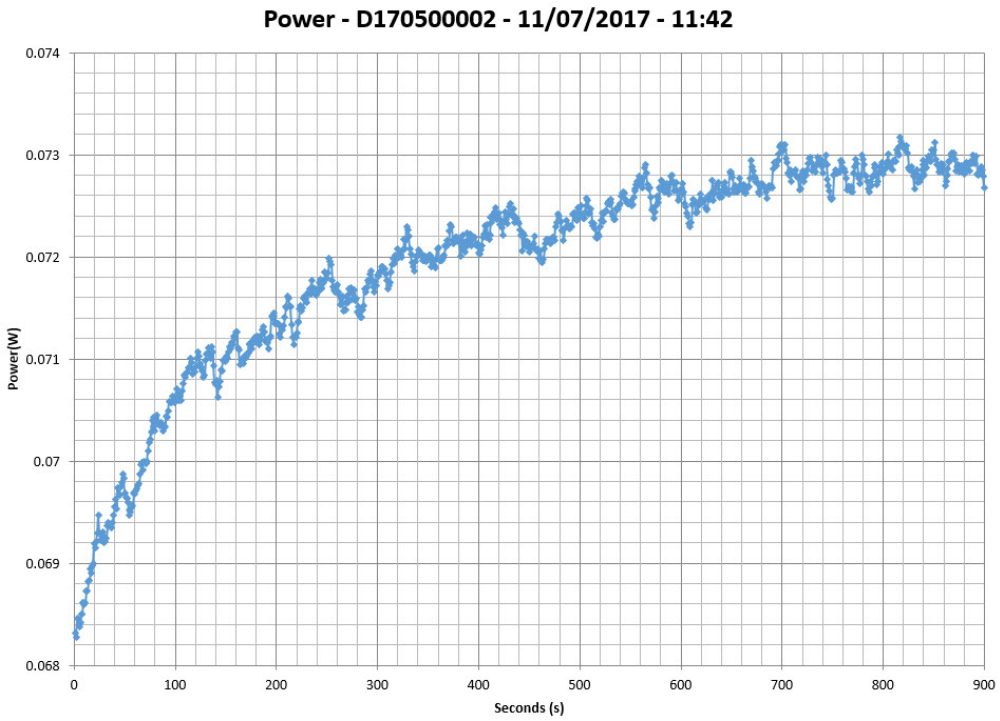
Accredited		
Average Efficiency (>1450 load combinations)	92.214%	
Average Noise Output (>1450 Load Combinations)	16.21dBA	
Average PF (>1450 Load Combinations)	0.953	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.1312W	
Non-Accredited		
12V Ripple (Full Load)	22.50mV	
5V Ripple (Full Load)	11.02mV	
3.3V Ripple (Full Load)	15.41mV	
5VSB Ripple (Full Load)	22.48mV	
12V Load Regulation	0.53%	
5V Load Regulation	0.45%	
3.3V Load Regulation	0.87%	
5VSB Load Regulation	1.76%	
Inrush Current	51.932A	
Hold-Up Time & PWR_OK Signal	17.90ms	
AC Loss to PWR_OK Hold Up Time	15.60ms	
PWR_OK Inactive to DC Loss Delay	2.30ms	
OPP (0.00°C / 0.00°C)	-	-

Hold-Up Time & PWR_OK Signal

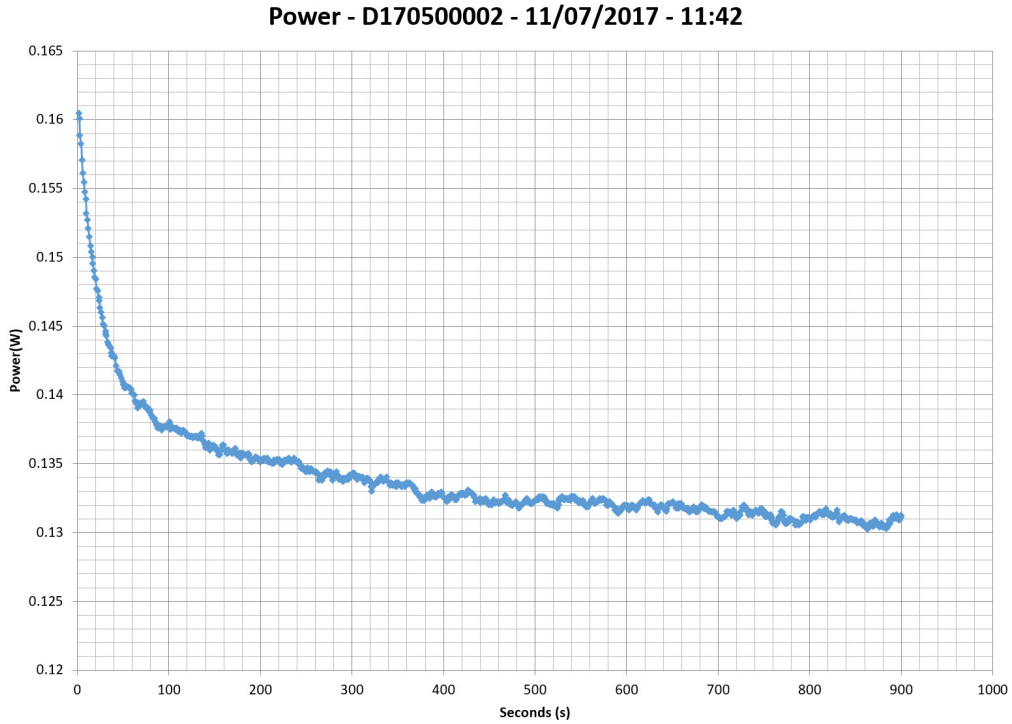
Hold-Up Time (ms)	17.9
AC Loss to PWR_OK Hold Up Time (ms)	15.6
PWR_OK Inactive to DC Loss Delay (ms)	2.3

Graphs

115V

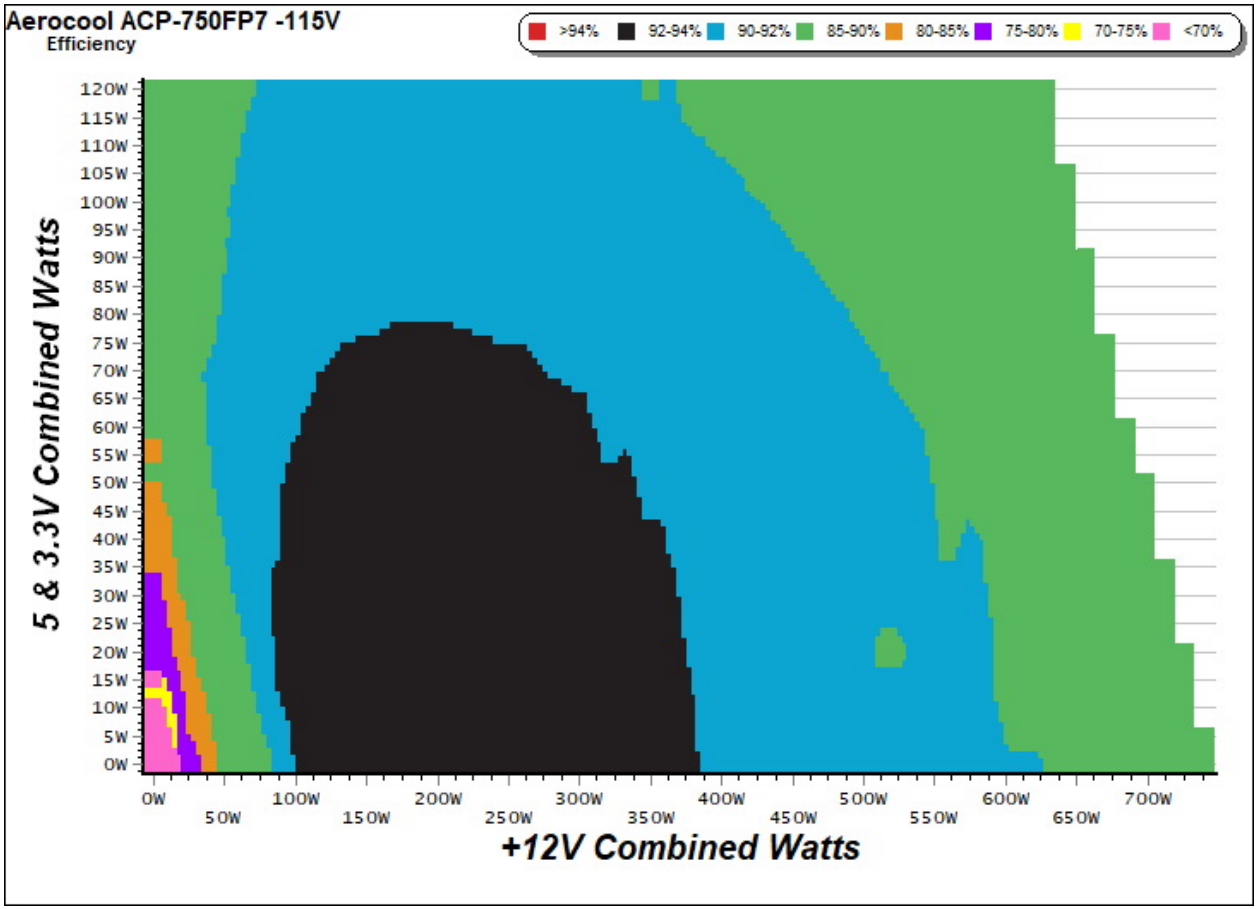


230V



Efficiency Graph

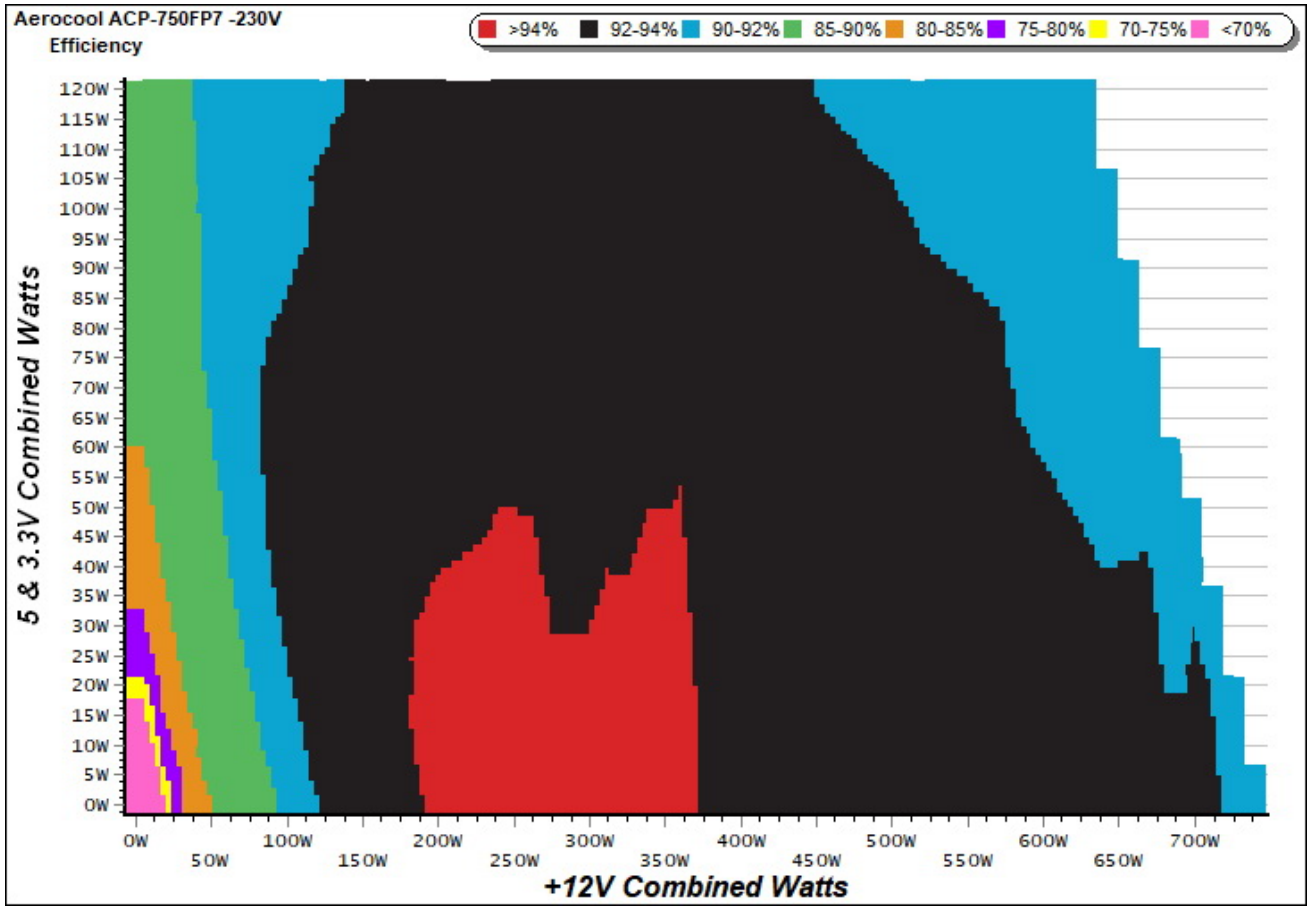
115V



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



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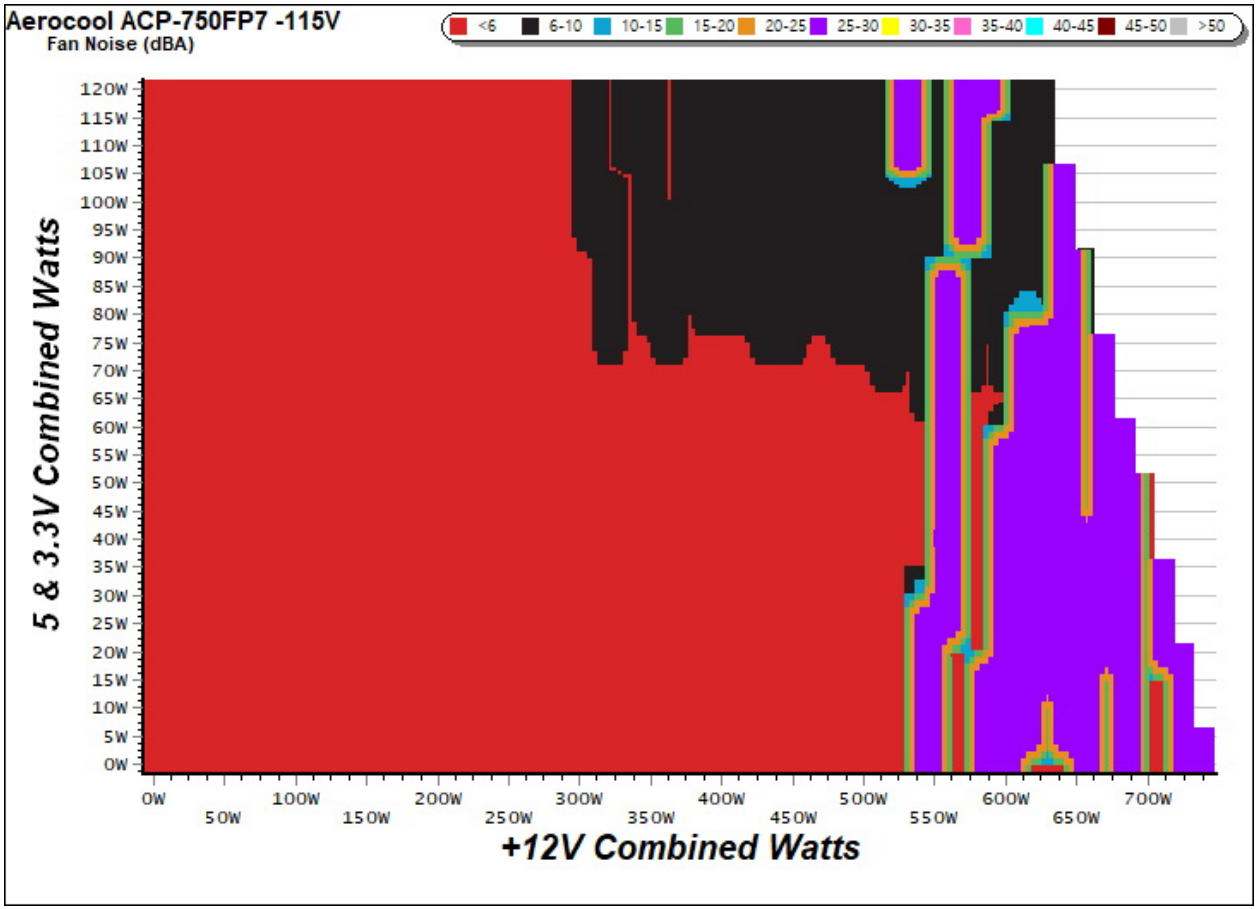
Noise Graph

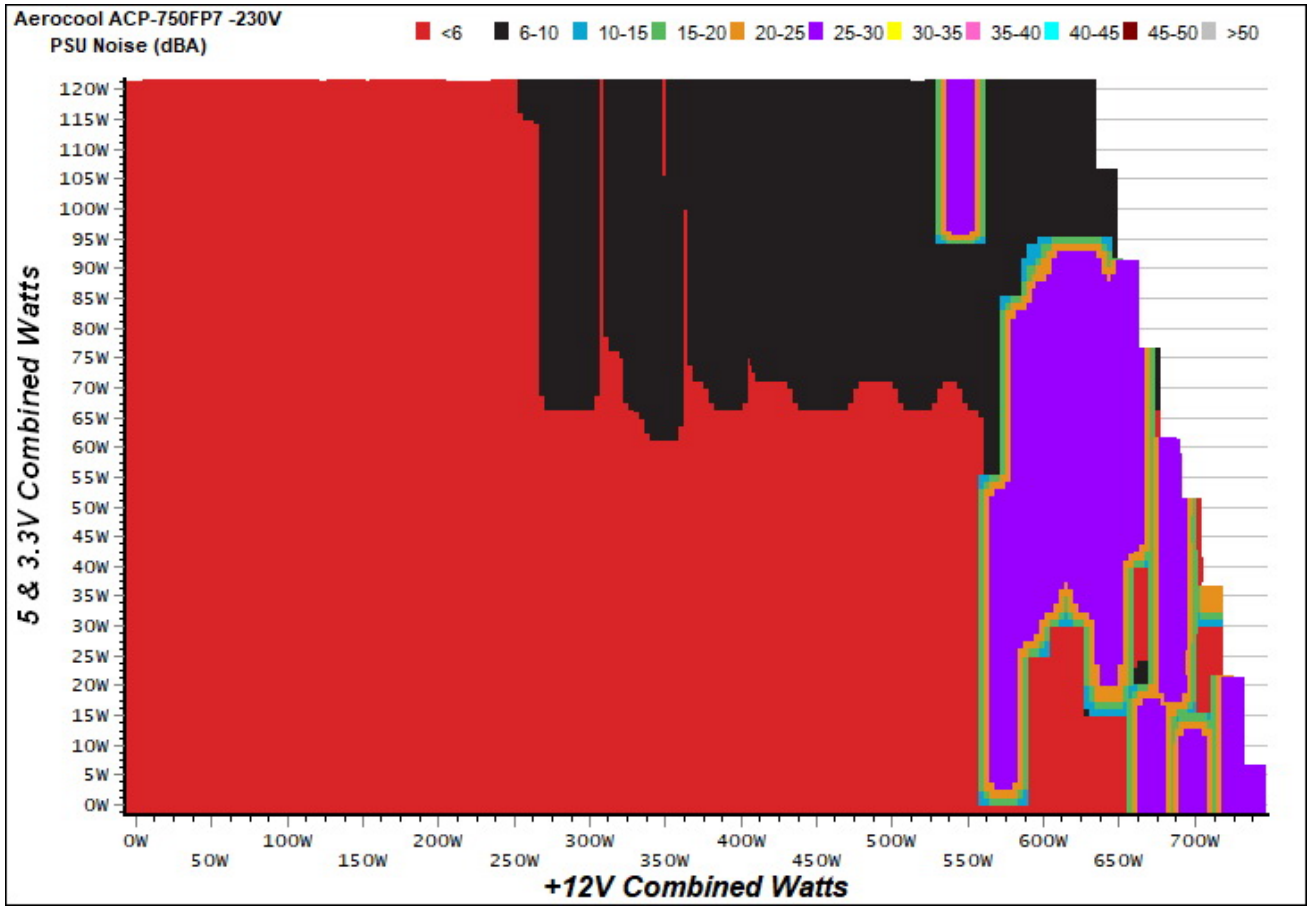
115V



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



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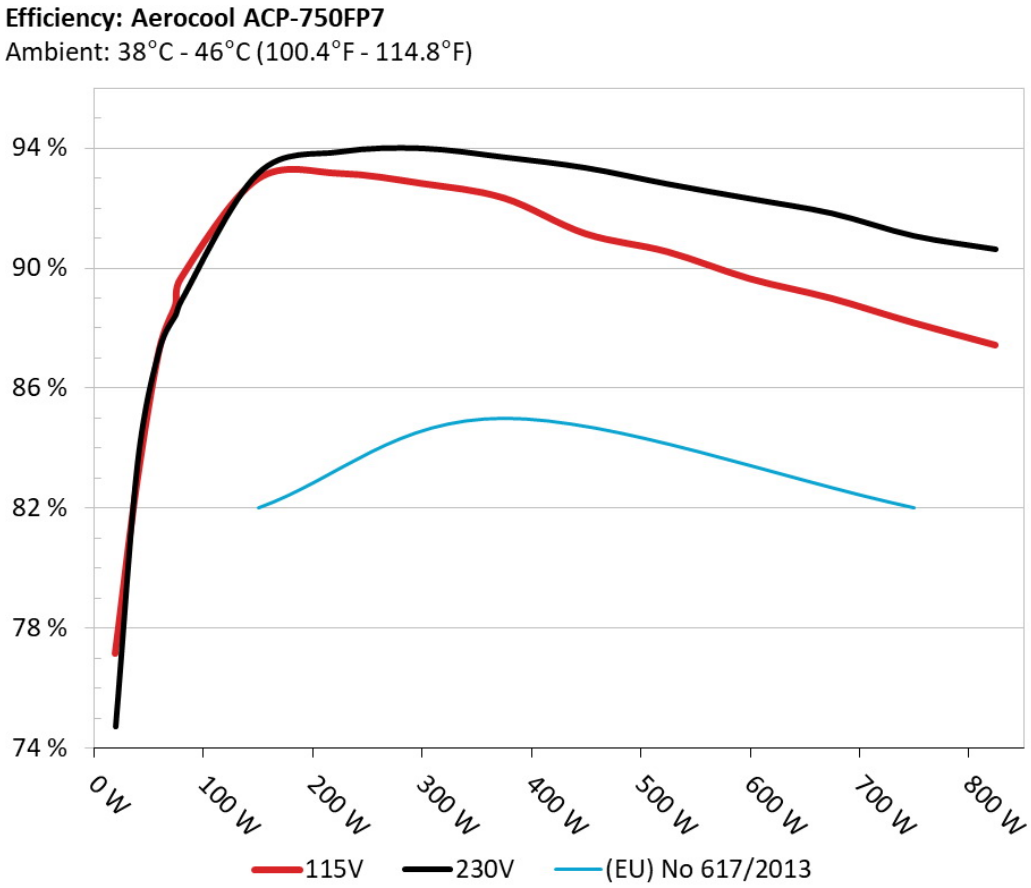
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

Indicative Performance

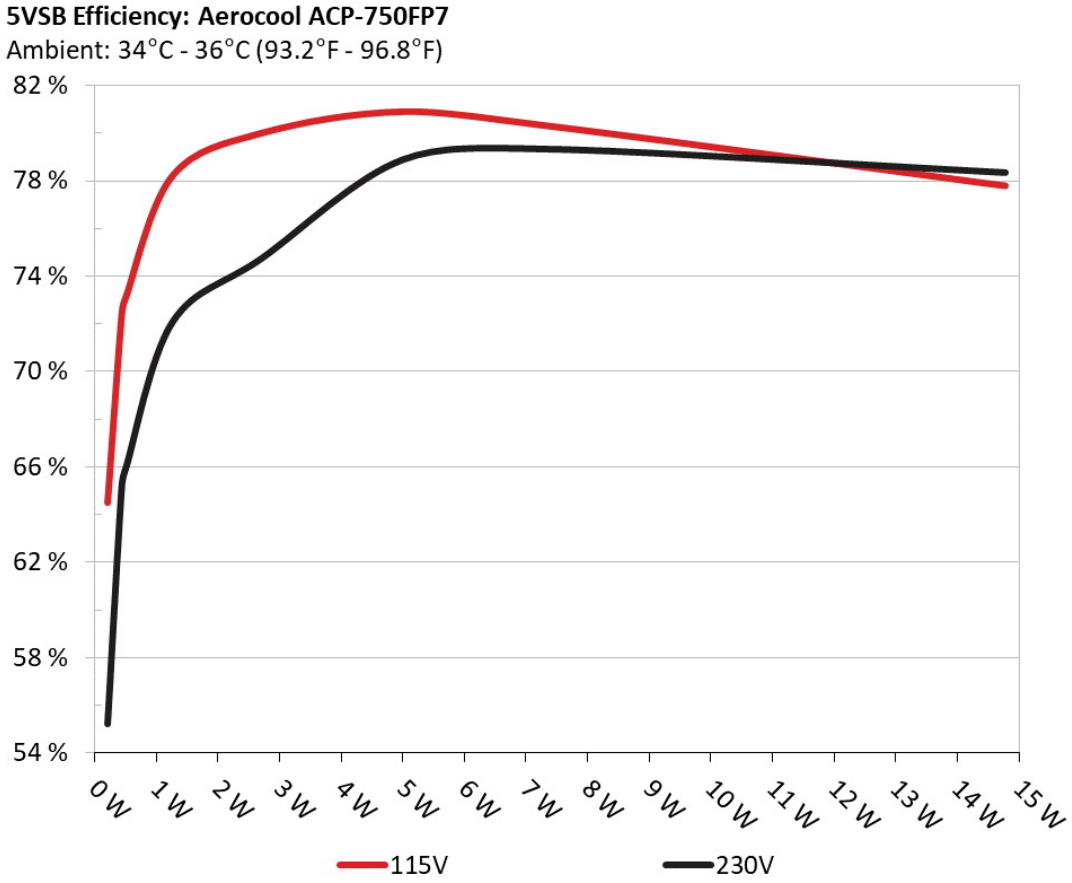
Efficiency under high ambient temperature



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	0.041A	0.207	64.486%	0.025
	5.031V	0.321		115.21V
2	0.086A	0.435	72.379%	0.047
	5.030V	0.601		115.21V
3	0.541A	2.713	80.029%	0.222
	5.013V	3.390		115.20V
4	1.001A	5.003	80.929%	0.323
	4.997V	6.182		115.20V
5	1.501A	7.475	80.290%	0.386
	4.980V	9.310		115.20V
6	3.001A	14.786	77.809%	0.467
	4.927V	19.003		115.20V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.041A	0.207	55.200%	0.009
	5.031V	0.375		230.48V
2	0.087A	0.435	65.120%	0.016
	5.029V	0.668		230.48V
3	0.541A	2.713	74.738%	0.083
	5.011V	3.630		230.48V
4	1.001A	5.003	78.874%	0.138
	4.996V	6.343		230.48V
5	1.501A	7.473	79.306%	0.192
	4.979V	9.423		230.47V
6	3.001A	14.782	78.328%	0.301
	4.926V	18.872		230.48V

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	4.359A	1.954A	1.968A	0.980A	74.725	88.784%	0	| 6	42.31°C	0.966
	12.194V	5.115V	3.351V	5.084V	84.165				38.14°C	115.21V
2	9.747A	2.929A	2.954A	1.180A	149.704	92.985%	0	| 6	43.41°C	0.983
	12.194V	5.110V	3.348V	5.078V	160.998				38.57°C	115.20V
3	15.490A	3.427A	3.464A	1.379A	224.837	93.174%	0	| 6	43.71°C	0.985
	12.186V	5.106V	3.345V	5.070V	241.309				38.74°C	115.20V
4	21.229A	3.915A	3.946A	1.579A	299.693	92.840%	0	| 6	44.08°C	0.985
	12.178V	5.104V	3.343V	5.062V	322.805				39.01°C	115.20V
5	26.641A	4.907A	4.938A	1.780A	374.731	92.356%	0	| 6	44.68°C	0.990
	12.170V	5.099V	3.340V	5.054V	405.745				39.46°C	115.21V
6	32.052A	5.884A	5.932A	1.979A	449.588	91.163%	395	6.5	40.82°C	0.992
	12.162V	5.097V	3.336V	5.049V	493.171				48.60°C	115.21V
7	37.479A	6.874A	6.931A	2.180A	524.590	90.559%	395	6.5	41.67°C	0.993
	12.153V	5.094V	3.333V	5.042V	579.283				49.83°C	115.22V
8	42.915A	7.860A	7.929A	2.380A	599.557	89.664%	1025	27.8	43.08°C	0.994
	12.144V	5.091V	3.329V	5.036V	668.674				51.35°C	115.22V
9	48.782A	8.357A	8.446A	2.380A	674.605	89.004%	1045	28.2	43.81°C	0.995
	12.136V	5.088V	3.325V	5.035V	757.945				52.33°C	115.22V
10	54.404A	8.855A	8.933A	2.991A	749.443	88.191%	1045	28.2	45.08°C	0.996
	12.127V	5.084V	3.323V	5.009V	849.795				54.30°C	115.22V
11	60.611A	8.861A	8.940A	2.995A	824.307	87.446%	1045	28.2	46.19°C	0.996
	12.120V	5.081V	3.321V	5.005V	942.652				56.50°C	115.22V
CL1	0.098A	14.029A	14.004A	0.000A	119.418	86.951%	395	6.5	44.44°C	0.977
	12.196V	5.097V	3.336V	5.154V	137.339				52.98°C	115.22V

CL2	61.934A	1.004A	1.001A	1.001A	764.956	88.462%	1045	28.2	45.68°C	0.996
	12.133V	5.091V	3.332V	5.060V	864.731				54.39°C	115.22V

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	4.365A	1.953A	1.966A	0.981A	74.804	88.602%	0	<6.0	46.10°C	0.824
	12.197V	5.115V	3.350V	5.084V	84.427				38.93°C	365.12V
2	9.749A	2.927A	2.954A	1.181A	149.781	93.280%	0	<6.0	47.56°C	0.919
	12.199V	5.113V	3.348V	5.078V	160.572				39.66°C	230.24V
3	15.489A	3.425A	3.466A	1.380A	224.912	94.012%	0	<6.0	48.89°C	0.950
	12.191V	5.108V	3.345V	5.071V	239.238				40.63°C	230.23V
4	21.222A	3.911A	3.948A	1.580A	299.748	94.125%	0	<6.0	49.32°C	0.964
	12.185V	5.105V	3.343V	5.060V	318.456				40.86°C	230.23V
5	26.632A	4.896A	4.938A	1.780A	374.795	93.626%	395	6.5	41.85°C	0.971
	12.178V	5.104V	3.338V	5.055V	400.310				50.78°C	230.22V
6	32.038A	5.879A	5.934A	1.980A	449.678	93.304%	395	6.5	42.03°C	0.977
	12.170V	5.101V	3.335V	5.049V	481.947				51.33°C	230.22V
7	37.460A	6.866A	6.931A	2.180A	524.670	92.913%	395	6.5	43.48°C	0.978
	12.162V	5.098V	3.331V	5.042V	564.692				53.17°C	230.22V
8	42.881A	7.855A	7.931A	2.380A	599.575	92.177%	1025	27.8	44.80°C	0.980
	12.154V	5.096V	3.327V	5.035V	650.457				55.34°C	230.22V
9	48.754A	8.345A	8.454A	2.380A	674.712	91.751%	1025	27.8	45.28°C	0.982
	12.145V	5.095V	3.323V	5.035V	735.373				56.12°C	230.23V
10	54.364A	8.838A	8.940A	2.991A	749.549	91.221%	1025	27.8	46.25°C	0.984
	12.138V	5.092V	3.321V	5.010V	821.687				57.76°C	230.23V
11	60.566A	8.843A	8.949A	2.994A	824.482	90.735%	1025	27.8	46.93°C	0.985
	12.132V	5.090V	3.318V	5.007V	908.669				58.60°C	230.24V
CL1	0.102A	14.025A	14.004A	0.004A	119.662	86.933%	395	6.5	42.49°C	0.906
	12.191V	5.105V	3.342V	5.153V	137.648				51.86°C	230.25V

CL2	61.943A	1.000A	1.003A	1.002A	765.866	91.610%	1045	28.2	45.06°C	0.984
	12.146V	5.097V	3.326V	5.063V	836.011				55.41°C	230.22V

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	1.193A	0.482A	0.473A	0.195A	19.599	77.155%	0	| 6	0.856
	12.201V	5.112V	3.350V	5.102V	25.402				115.21V
2	2.415A	0.967A	0.982A	0.390A	39.685	82.903%	0	| 6	0.929
	12.198V	5.115V	3.352V	5.100V	47.869				115.21V
3	3.640A	1.459A	1.487A	0.585A	59.822	87.283%	0	| 6	0.961
	12.196V	5.115V	3.352V	5.096V	68.538				115.21V
4	4.849A	1.955A	1.968A	0.785A	79.754	89.683%	0	| 6	0.968
	12.202V	5.113V	3.350V	5.092V	88.929				115.21V

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	1.200A	0.480A	0.475A	0.195A	19.682	75.396%	0	<6.0	0.453
	12.203V	5.110V	3.349V	5.102V	26.105				230.24V
2	2.418A	0.969A	0.983A	0.391A	39.749	83.561%	0	<6.0	0.671
	12.201V	5.116V	3.351V	5.101V	47.569				230.24V
3	3.643A	1.459A	1.489A	0.586A	59.880	87.486%	0	<6.0	0.777
	12.199V	5.116V	3.350V	5.097V	68.445				230.24V
4	4.859A	1.952A	1.969A	0.786A	79.847	89.096%	0	<6.0	0.836
	12.197V	5.115V	3.350V	5.092V	89.619				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	9.6 mV	6.4 mV	6.6 mV	8.4 mV	Pass
20% Load	9.1 mV	7.1 mV	7.6 mV	11.4 mV	Pass
30% Load	10.6 mV	7.3 mV	8.0 mV	13.2 mV	Pass
40% Load	12.0 mV	8.8 mV	8.5 mV	14.2 mV	Pass
50% Load	13.9 mV	8.6 mV	11.0 mV	15.0 mV	Pass
60% Load	16.0 mV	9.4 mV	8.6 mV	16.3 mV	Pass
70% Load	17.8 mV	9.6 mV	9.7 mV	17.4 mV	Pass
80% Load	20.1 mV	10.4 mV	11.7 mV	18.9 mV	Pass
90% Load	21.6 mV	11.1 mV	13.6 mV	20.0 mV	Pass
100% Load	24.5 mV	12.3 mV	13.2 mV	23.0 mV	Pass
110% Load	26.7 mV	13.3 mV	13.8 mV	23.9 mV	Pass
Crossload 1	11.5 mV	8.5 mV	9.5 mV	12.0 mV	Pass
Crossload 2	24.8 mV	11.7 mV	12.3 mV	22.3 mV	Pass

The results above are not used in the certification process

230V

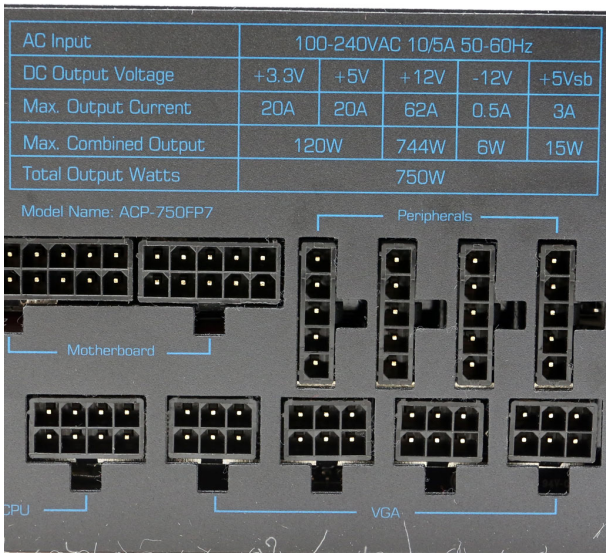
Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	7.9 mV	5.7 mV	9.5 mV	6.6 mV	Pass
20% Load	10.4 mV	6.8 mV	10.6 mV	9.1 mV	Pass
30% Load	10.7 mV	6.8 mV	10.3 mV	11.6 mV	Pass
40% Load	11.7 mV	6.7 mV	10.7 mV	13.1 mV	Pass
50% Load	13.0 mV	7.6 mV	12.0 mV	14.0 mV	Pass
60% Load	14.8 mV	7.9 mV	12.0 mV	15.8 mV	Pass
70% Load	16.7 mV	8.6 mV	13.3 mV	16.8 mV	Pass
80% Load	19.2 mV	9.4 mV	18.1 mV	18.4 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	20.5 mV	9.7 mV	17.8 mV	19.9 mV	Pass
100% Load	22.5 mV	11.0 mV	15.4 mV	22.5 mV	Pass
110% Load	24.7 mV	11.5 mV	17.1 mV	23.4 mV	Pass
Crossload 1	25.4 mV	7.4 mV	11.8 mV	8.0 mV	Pass
Crossload 2	22.4 mV	10.1 mV	16.6 mV	21.6 mV	Pass

The results above are not used in the certification process

Aerocool ACP-750FP7

Top side



Power specifications label