Corsair RM750

Serial Number 19027121000038930023

Lab ID CR19750014

Certification ID 25664

Test Result Report ID:

Certificate Issue Date: May 4, 2019

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	Corsair
Model	RM750
OEM/ODM	Channel Well Technology
Serial Number	19027121000038930023
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	47-63

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 Rifle Bearing Fan (HA1425M12F-Z)
Semi-Passive Operation	✓
Cybenetics Testing Information	
Lab ID	CR19750014
Date of receipt	Mar 21, 2019
Testing Date	Apr 4, 2019
Report Issued Date	May 4, 2019
DUT Notes	CP-9020195
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 (610mm)	1	1	18-20AWG	No
4+4 pin EPS12V (650mm)	2	2	18AWG	No
6+2 pin PCIe (600mm+150mm)	3	6	16-18AWG	No
SATA (450mm+110mm+110mm+110mm)	1	3	18AWG	No
SATA (500mm+100mm+100mm)	2	6	18AWG	No
4 pin Molex (450mm+100mm+100mm+100mm)	1	4	18AWG	No
AC Power Cord (1420mm) - C13 coupler	1	1	16AWG	-

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62.5	3	0.3
	Watts	150		750	15	3.6
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	✓
(EU) No 617/2013 Compliance	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	88.311%
Average Noise Output (>1450 Load Combinations)	21.44dBA
Average PF (>1450 Load Combinations)	0.990
Efficiency With 10W (≤500W) or 2% (>500W) Load	77.383%
Standby Power Consumption	0.0366W
Non-Accredited	
12V Ripple (Full Load)	16.45mV
5V Ripple (Full Load)	13.77mV
3.3V Ripple (Full Load)	29.86mV
5VSB Ripple (Full Load)	12.41mV
12V Load Regulation	1.25%
5V Load Regulation	0.46%
3.3V Load Regulation	0.73%

5VSB Load Regulation	1.59%
Inrush Current	34.921A

230V

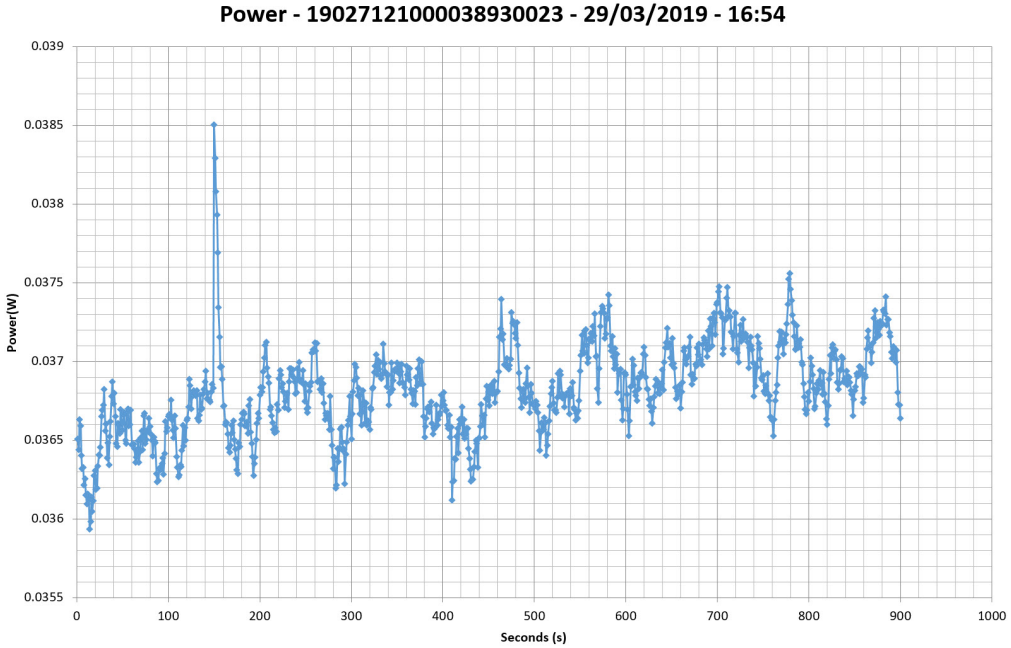
Accredited		
Average Efficiency (>1450 load combinations)		90.380%
Average Noise Output (>1450 Load Combinations)		21.45dBA
Average PF (>1450 Load Combinations)		0.963
Efficiency With 10W (≤500W) or 2% (>500W) Load		-
Standby Power Consumption		0.0612W
Non-Accredited		
12V Ripple (Full Load)		8.00mV
5V Ripple (Full Load)		6.23mV
3.3V Ripple (Full Load)		10.47mV
5VSB Ripple (Full Load)		7.15mV
12V Load Regulation		1.25%
5V Load Regulation		0.44%
3.3V Load Regulation		0.67%
5VSB Load Regulation		1.59%
Inrush Current		70.733A
Hold-Up Time & PWR_OK Signal		20.70ms
AC Loss to PWR_OK Hold Up Time		17.30ms
PWR_OK Inactive to DC Loss Delay		3.40ms
OPP (0.00°C / 0.00°C)	125.35%	-

Hold-Up Time & PWR_OK Signal

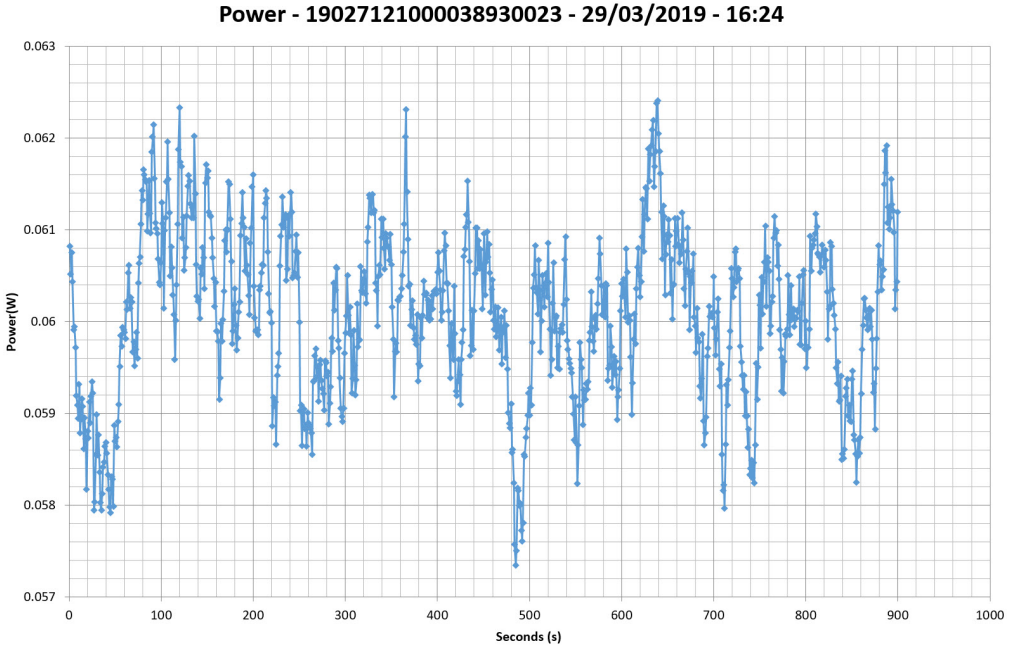
Hold-Up Time (ms)	20.7
AC Loss to PWR_OK Hold Up Time (ms)	17.3
PWR_OK Inactive to DC Loss Delay (ms)	3.4

Graphs

115V

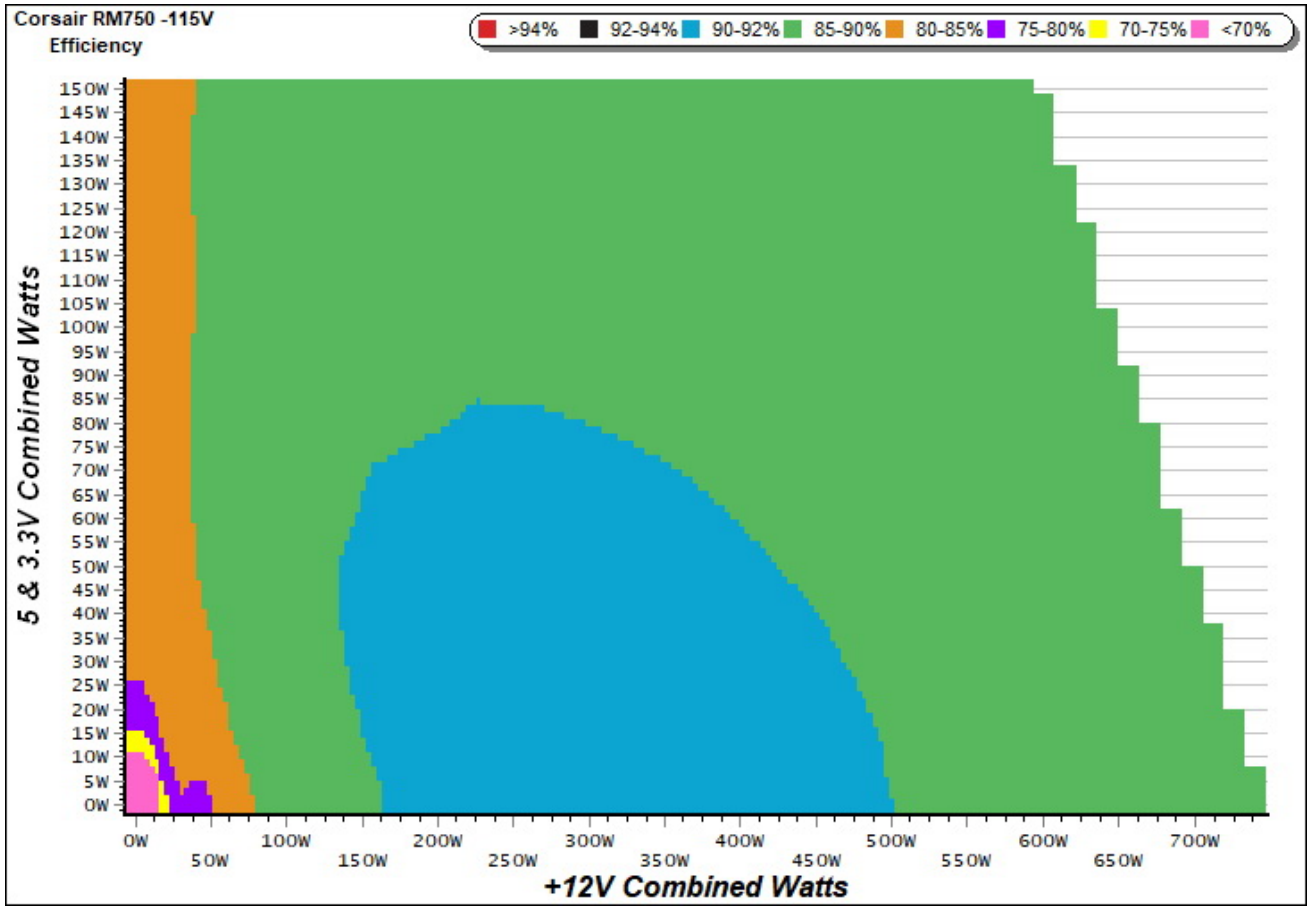


230V



Efficiency Graph

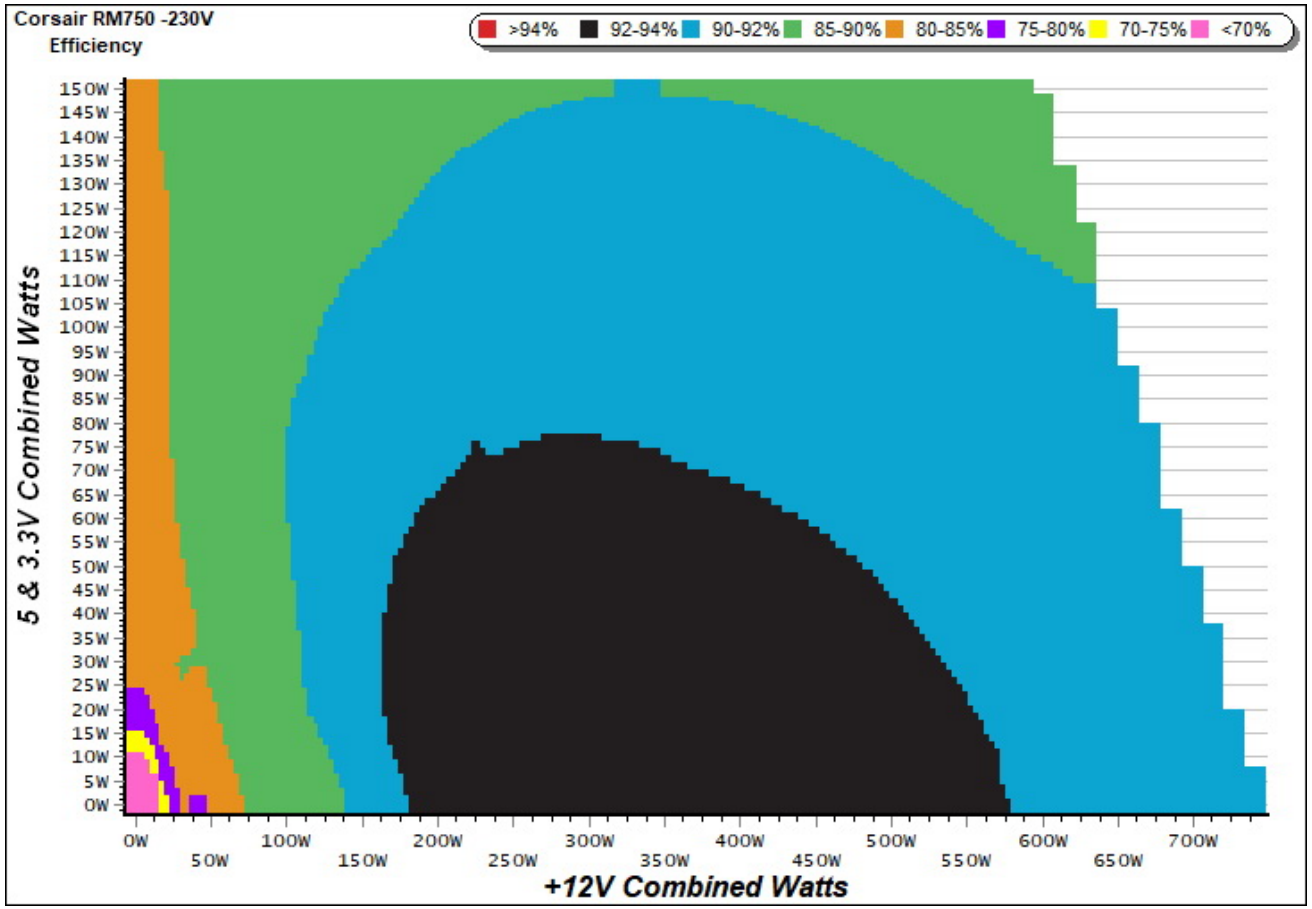
115V



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

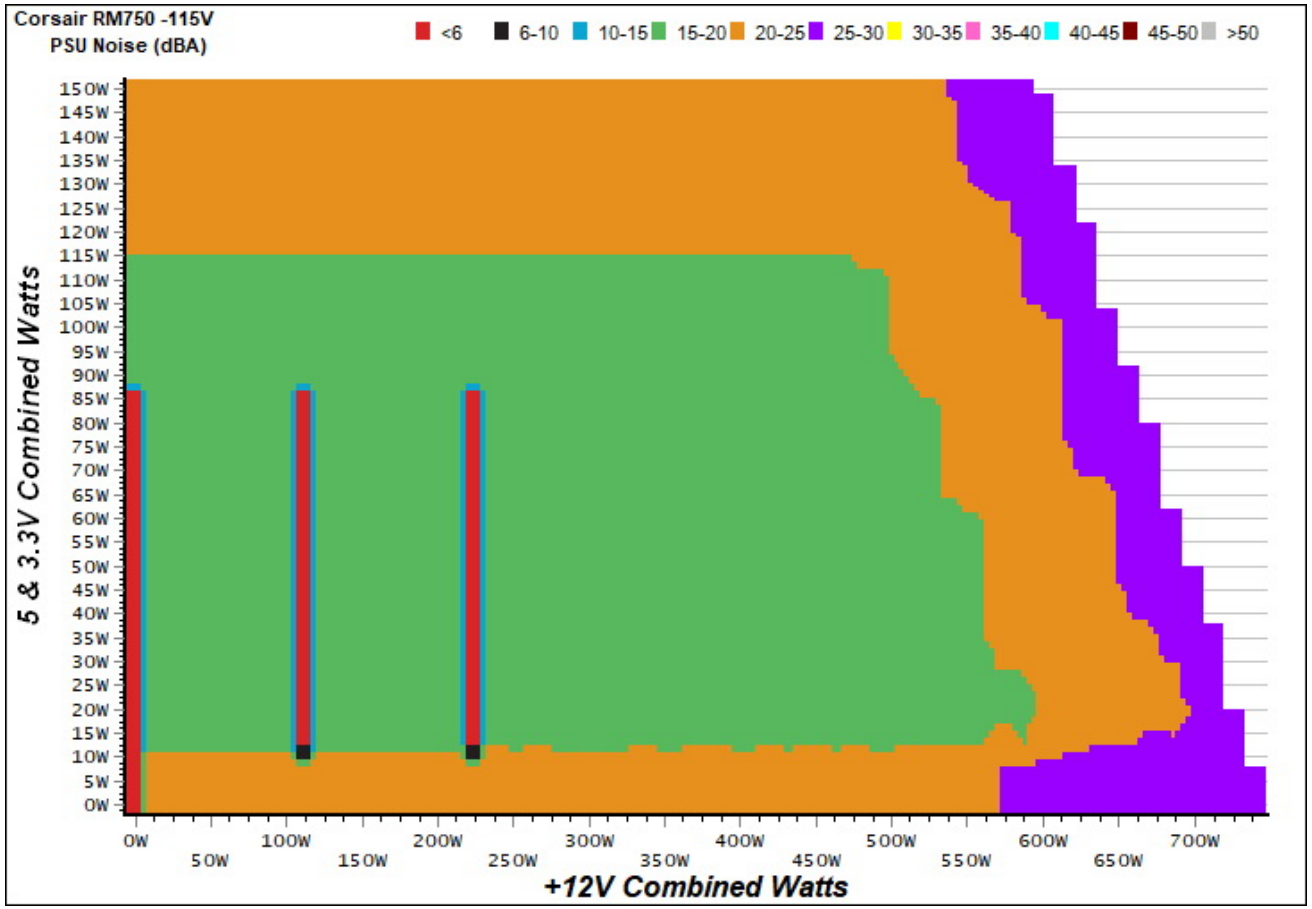


INFO

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

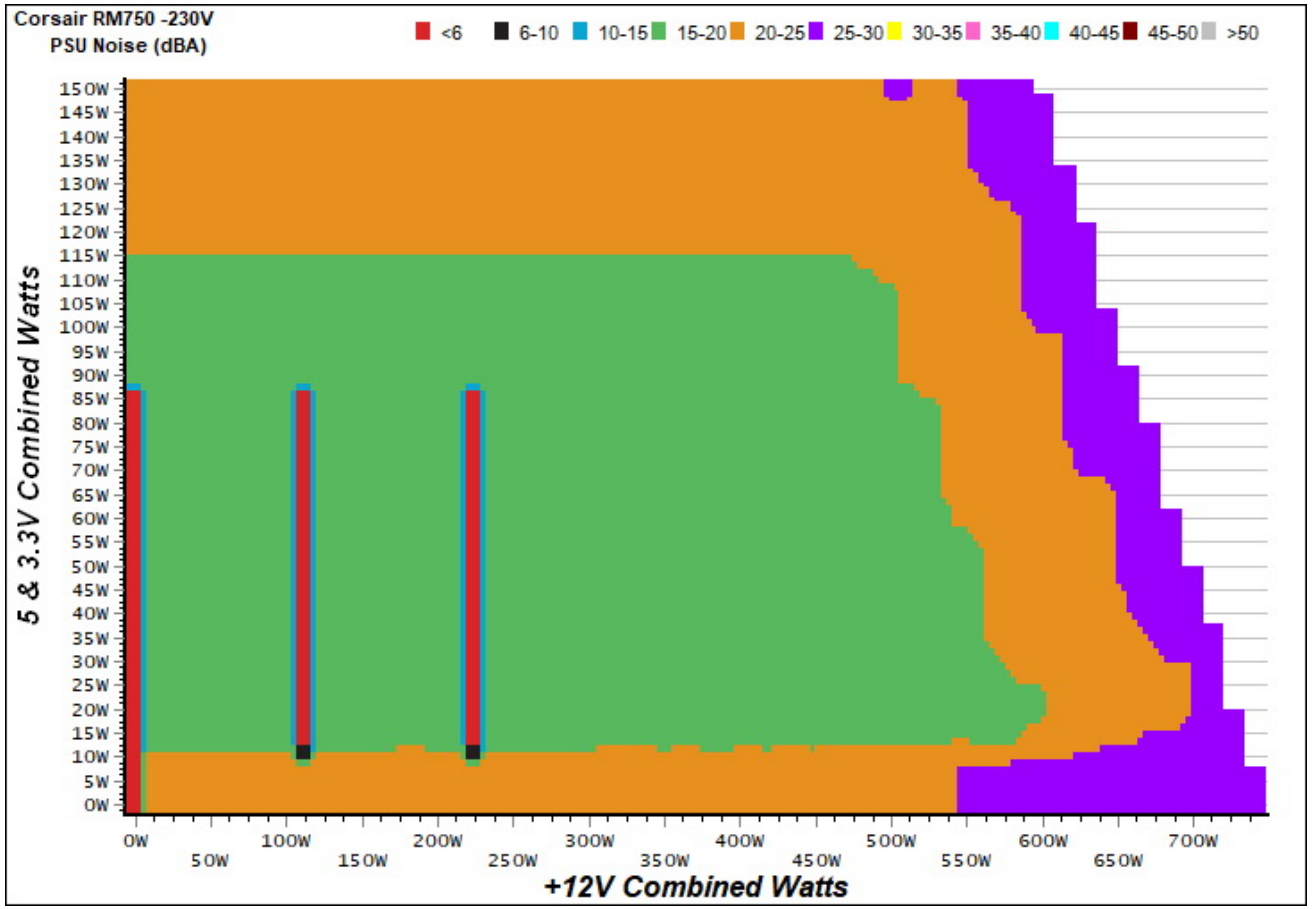
115V



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

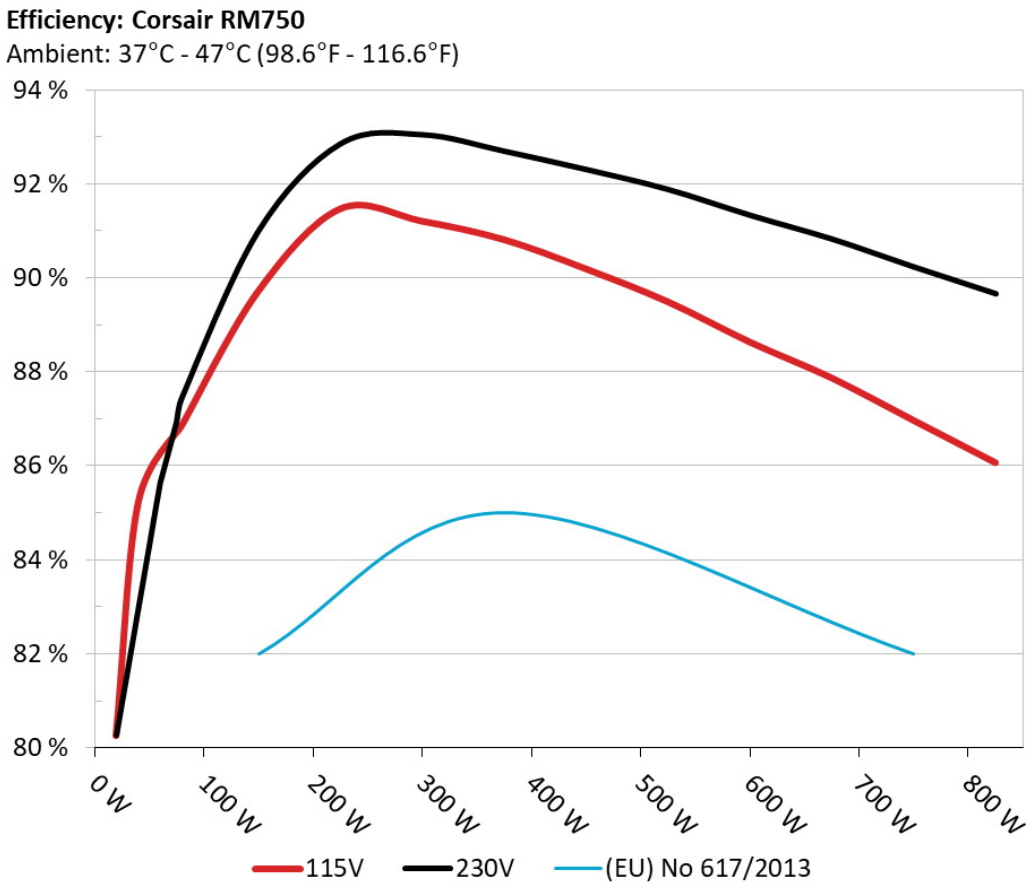


INFO

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

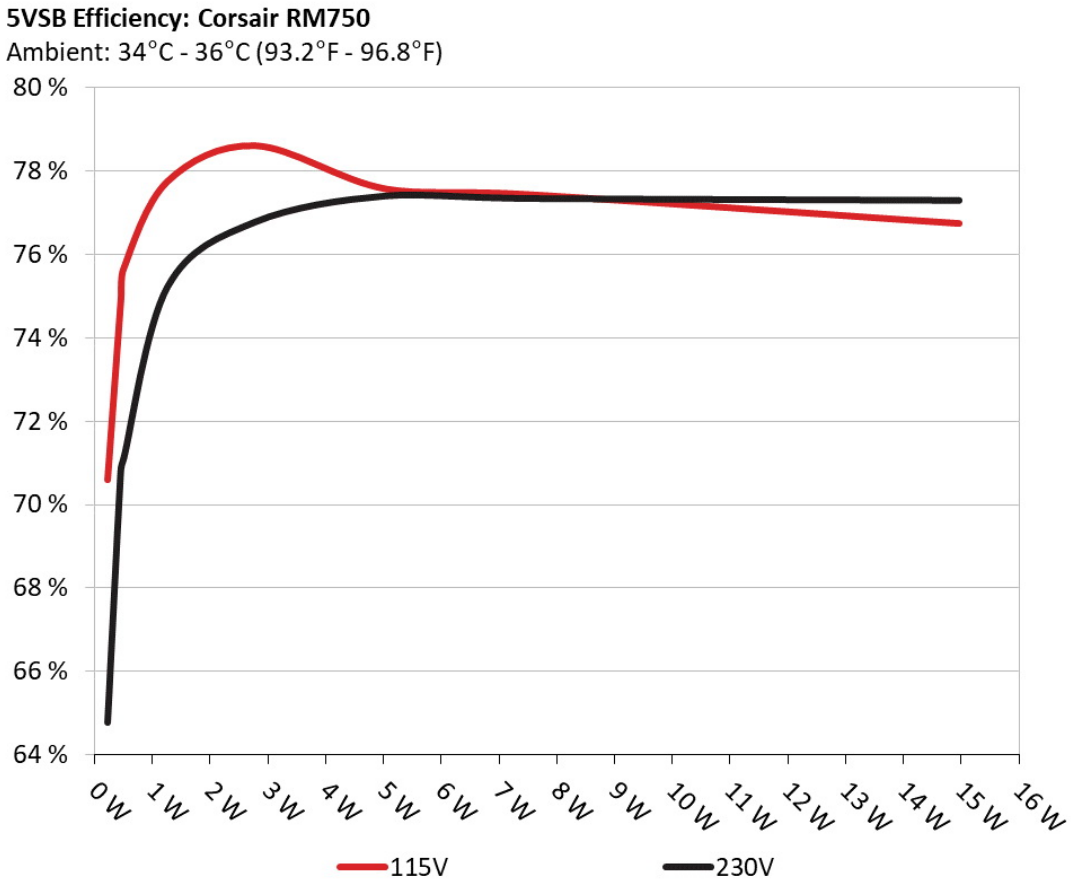
Efficiency under high ambient temperature



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	0.045A	0.228	70.588%	0.032
	5.065V	0.323		115.14V
2	0.090A	0.456	74.877%	0.060
	5.065V	0.609		115.14V
3	0.550A	2.780	78.620%	0.257
	5.053V	3.536		115.13V
4	1.000A	5.042	77.581%	0.345
	5.041V	6.499		115.13V
5	1.500A	7.543	77.444%	0.393
	5.029V	9.740		115.13V
6	3.000A	14.965	76.751%	0.455
	4.988V	19.498		115.13V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.228	64.773%	0.011
	5.064V	0.352		230.29V
2	0.090A	0.456	70.807%	0.019
	5.065V	0.644		230.27V
3	0.550A	2.780	76.774%	0.101
	5.053V	3.621		230.27V
4	1.000A	5.041	77.399%	0.166
	5.041V	6.513		230.27V
5	1.500A	7.542	77.338%	0.222
	5.028V	9.752		230.25V
6	3.000A	14.962	77.291%	0.318
	4.987V	19.358		230.24V

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	4.359A	1.982A	1.998A	0.995A	74.438	85.961%	0	<6.0	43.90°C	0.973
	12.123V	5.045V	3.301V	5.024V	86.595				39.90°C	115.10V
2	9.782A	2.975A	2.999A	1.196A	149.317	89.693%	0	<6.0	44.71°C	0.988
	12.106V	5.043V	3.298V	5.018V	166.476				40.43°C	115.10V
3	15.639A	3.474A	3.489A	1.397A	224.846	91.461%	0	<6.0	45.76°C	0.991
	12.075V	5.040V	3.295V	5.011V	245.837				41.09°C	115.11V
4	21.441A	3.970A	4.007A	1.599A	299.665	91.199%	791	16.3	41.85°C	0.993
	12.054V	5.040V	3.295V	5.005V	328.583				46.80°C	115.11V
5	26.923A	4.964A	5.012A	1.801A	374.580	90.808%	793	16.3	42.13°C	0.992
	12.037V	5.037V	3.292V	4.999V	412.495				47.71°C	115.11V
6	32.418A	5.962A	6.019A	2.003A	449.507	90.188%	794	16.4	42.56°C	0.992
	12.021V	5.034V	3.289V	4.993V	498.413				49.19°C	115.11V
7	37.955A	6.959A	7.024A	2.207A	524.838	89.484%	795	16.4	43.21°C	0.993
	12.007V	5.032V	3.287V	4.987V	586.513				50.92°C	115.11V
8	43.490A	7.957A	8.040A	2.411A	600.167	88.626%	1131	28.4	43.80°C	0.994
	11.997V	5.028V	3.284V	4.980V	677.188				52.23°C	115.11V
9	49.418A	8.460A	8.528A	2.411A	674.717	87.866%	1298	32.4	44.65°C	0.994
	11.983V	5.027V	3.284V	4.980V	767.897				53.98°C	115.11V
10	55.146A	8.959A	9.051A	3.025A	749.919	86.961%	1642	39.2	45.71°C	0.995
	11.972V	5.024V	3.281V	4.960V	862.367				56.27°C	115.11V
11	61.479A	8.963A	9.051A	3.027A	825.137	86.058%	1780	41.3	46.54°C	0.995
	11.962V	5.022V	3.282V	4.958V	958.818				57.72°C	115.11V
CL1	0.136A	18.006A	17.998A	0.000A	151.320	82.647%	1022	25.0	42.59°C	0.989
	12.099V	5.025V	3.289V	5.076V	183.092				47.81°C	115.13V

CL2	62.521A	1.004A	0.999A	1.000A	762.085	87.491%	1547	37.6	45.46°C	0.995
	11.976V	5.030V	3.285V	5.001V	871.043				56.11°C	115.11V

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	4.364A	1.981A	1.999A	0.996A	74.501	86.937%	0	<6.0	43.64°C	0.827
	12.123V	5.045V	3.301V	5.023V	85.695				39.91°C	230.26V
2	9.786A	2.975A	3.000A	1.196A	149.367	90.999%	0	<6.0	44.60°C	0.929
	12.106V	5.043V	3.298V	5.018V	164.142				40.46°C	230.26V
3	15.642A	3.473A	3.488A	1.397A	224.875	92.867%	0	<6.0	45.85°C	0.958
	12.075V	5.040V	3.295V	5.011V	242.148				41.27°C	230.26V
4	21.432A	3.972A	4.008A	1.599A	299.649	93.059%	0	<6.0	46.79°C	0.971
	12.059V	5.037V	3.292V	5.003V	322.000				41.70°C	230.25V
5	26.923A	4.965A	5.012A	1.801A	374.579	92.709%	791	16.3	42.30°C	0.978
	12.037V	5.036V	3.292V	4.999V	404.039				48.26°C	230.25V
6	32.416A	5.961A	6.021A	2.004A	449.483	92.320%	794	16.4	42.73°C	0.981
	12.021V	5.033V	3.289V	4.993V	486.873				49.37°C	230.25V
7	38.086A	6.959A	6.700A	2.105A	524.803	91.894%	795	16.4	43.43°C	0.983
	12.006V	5.031V	3.288V	4.989V	571.097				50.82°C	230.25V
8	43.493A	7.956A	8.037A	2.410A	600.104	91.343%	1063	26.1	43.71°C	0.985
	11.995V	5.028V	3.285V	4.980V	656.976				52.04°C	230.25V
9	49.414A	8.459A	8.529A	2.411A	674.648	90.840%	1298	32.4	44.53°C	0.987
	11.983V	5.026V	3.283V	4.979V	742.678				53.76°C	230.25V
10	55.141A	8.959A	9.052A	3.025A	749.861	90.245%	1656	39.4	45.64°C	0.987
	11.972V	5.024V	3.281V	4.960V	830.918				56.01°C	230.24V
11	61.476A	8.962A	9.058A	3.027A	825.089	89.673%	1777	41.3	46.68°C	0.988
	11.962V	5.022V	3.279V	4.957V	920.107				58.01°C	230.25V
CL1	0.141A	18.004A	17.999A	0.000A	151.267	83.847%	1021	25.0	42.28°C	0.938
	12.097V	5.024V	3.284V	5.075V	180.408				48.66°C	230.26V

CL2	62.509A	1.002A	1.000A	1.000A	761.806	90.778%	1474	36.3	45.72°C	0.987
	11.974V	5.030V	3.282V	5.000V	839.201				56.08°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)	PSU Noise (dB[A])	PF/AC Volts
1	1.194A	0.496A	0.484A	0.198A	19.483	80.246%	0	<6.0	0.818
	12.048V	5.045V	3.299V	5.040V	24.279				115.11V
2	2.461A	0.989A	0.998A	0.397A	39.955	85.219%	0	<6.0	0.932
	12.054V	5.047V	3.305V	5.039V	46.885				115.11V
3	3.653A	1.487A	1.481A	0.596A	59.425	86.852%	0	<6.0	0.961
	12.052V	5.047V	3.304V	5.034V	68.421				115.11V
4	4.890A	1.983A	1.997A	0.795A	79.853	86.397%	0	<6.0	0.975
	12.117V	5.046V	3.303V	5.030V	92.426				115.11V

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	1.202A	0.497A	0.485A	0.199A	19.597	80.276%	0	<6.0	0.434
	12.052V	5.044V	3.298V	5.040V	24.412				230.28V
2	2.469A	0.991A	0.999A	0.397A	40.068	85.639%	0	<6.0	0.652
	12.056V	5.046V	3.304V	5.038V	46.787				230.28V
3	3.638A	1.487A	1.485A	0.596A	59.519	85.014%	0	<6.0	0.777
	12.125V	5.046V	3.303V	5.034V	70.011				230.27V
4	4.900A	1.983A	2.000A	0.796A	79.886	87.483%	0	<6.0	0.840
	12.097V	5.045V	3.302V	5.029V	91.316				230.27V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	5.9 mV	7.1 mV	9.7 mV	9.3 mV	Pass
20% Load	6.7 mV	8.0 mV	11.0 mV	9.8 mV	Pass
30% Load	10.8 mV	8.8 mV	12.3 mV	9.7 mV	Pass
40% Load	9.4 mV	9.2 mV	12.4 mV	9.9 mV	Pass
50% Load	9.7 mV	10.7 mV	13.3 mV	11.3 mV	Pass
60% Load	9.4 mV	10.6 mV	13.6 mV	10.5 mV	Pass
70% Load	10.1 mV	11.5 mV	14.0 mV	10.9 mV	Pass
80% Load	10.7 mV	12.0 mV	17.3 mV	11.2 mV	Pass
90% Load	11.7 mV	12.8 mV	20.5 mV	13.1 mV	Pass
100% Load	16.5 mV	13.8 mV	29.9 mV	12.4 mV	Pass
110% Load	16.9 mV	14.5 mV	29.7 mV	14.0 mV	Pass
Crossload 1	18.4 mV	12.2 mV	20.1 mV	12.0 mV	Pass
Crossload 2	16.2 mV	11.8 mV	19.6 mV	12.3 mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.9 mV	7.4 mV	11.5 mV	10.6 mV	Pass
20% Load	6.7 mV	8.1 mV	12.7 mV	11.1 mV	Pass
30% Load	11.3 mV	9.1 mV	13.4 mV	10.7 mV	Pass
40% Load	9.7 mV	9.3 mV	13.3 mV	10.6 mV	Pass
50% Load	9.6 mV	11.2 mV	15.4 mV	11.9 mV	Pass
60% Load	9.3 mV	11.0 mV	15.0 mV	10.9 mV	Pass
70% Load	9.6 mV	11.3 mV	15.9 mV	10.9 mV	Pass
80% Load	10.4 mV	12.0 mV	16.4 mV	11.4 mV	Pass

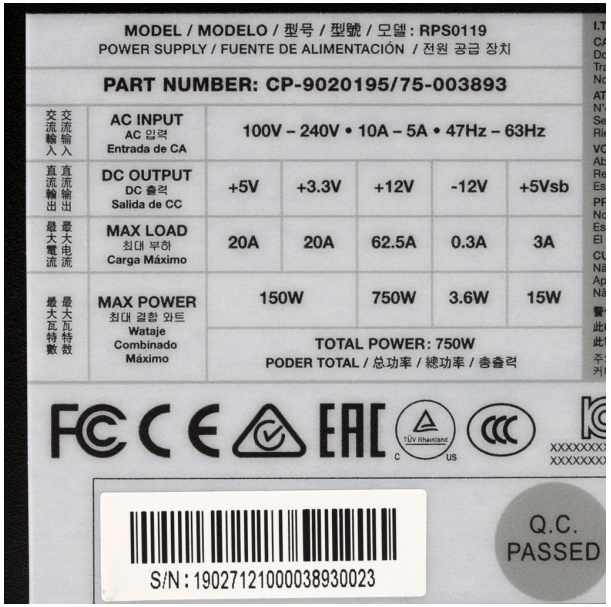
Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	10.8 mV	12.9 mV	17.4 mV	12.0 mV	Pass
100% Load	15.8 mV	14.1 mV	17.9 mV	12.5 mV	Pass
110% Load	17.9 mV	14.5 mV	30.8 mV	12.0 mV	Pass
Crossload 1	21.7 mV	11.6 mV	18.1 mV	10.3 mV	Pass
Crossload 2	15.9 mV	12.1 mV	16.5 mV	11.4 mV	Pass

The results above are not used in the certification process

Corsair RM750



Top side



Power specifications label