EFFICIENCY AND NOISE REPORT IN ACCORDANCE WITH
CYBENETICS ETA AND CYBENETICS LAMBDA PROCEDURE

Corsair RM750 (2019)

Lab ID#: CR19750011
Receipt Date: Mar 21, 2019
Test Date: Mar 29, 2019

Report: 19PS658A
Report Date: Jan 4, 2019

DUT INFORMATION

Brand	Corsair
Manufacturer (OEM)	Channel Well Technology
Series	RM
Model Number	
Serial Number	19027121000038930024
DUT Notes	CP-9020195

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	47-63
Rated Power (W)	750
Type	ATX12V
Cooling	140mm Rifle Bearing Fan (HA1425M12F-Z)
Semi-Passive Operation	✓
Cable Design	Fully Modular

TEST EQUIPMENT

Electronic Loads	Chroma 6314A x2 63123A x6 63102A 63101A	Chroma 63601-5 x4 Chroma 63600-2 x2 63640-80-80 x20 63610-80-20 x2
AC Sources	Chroma 6530, Chroma 61604, Keysight AC6804B	
Power Analyzers	N4L PPA1530 x2, N4L PPA5530	
Oscilloscopes	Picoscope 4444 & 3424, Keysight DSOX3024A, Rigol DS2072A	
Voltmeter	Keithley 2015 THD 6.5 Digit	
Sound Analyzer	Bruel & Kjaer 2250-L G4	
Microphone	Bruel & Kjaer Type 4955-A, Bruel & Kjaer Type 4189	
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2	

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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6 (+-2°C / +- 3.6°F)
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

115V

Average Efficiency	88.623%
Efficiency With 10W (≤500W) or 2% (>500W)	76.846
Average Efficiency 5VSB	77.317%
Standby Power Consumption (W)	0.0360372
Average PF	0.990
Avg Noise Output	21.00 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	A

230V

Average Efficiency	90.642%
Average Efficiency 5VSB	76.965%
Standby Power Consumption (W)	0.0589868
Average PF	0.964
Avg Noise Output	20.92 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	A

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				

CABLES AND CONNECTORS

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	-

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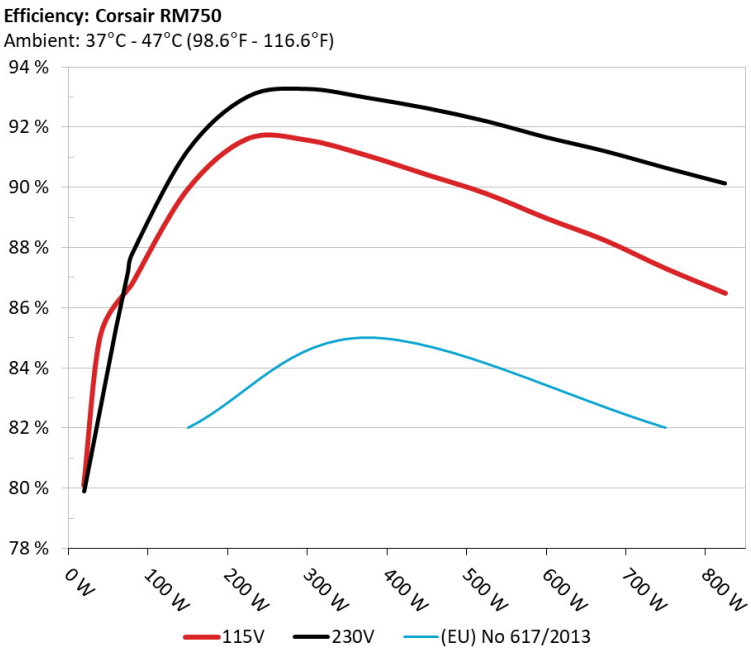
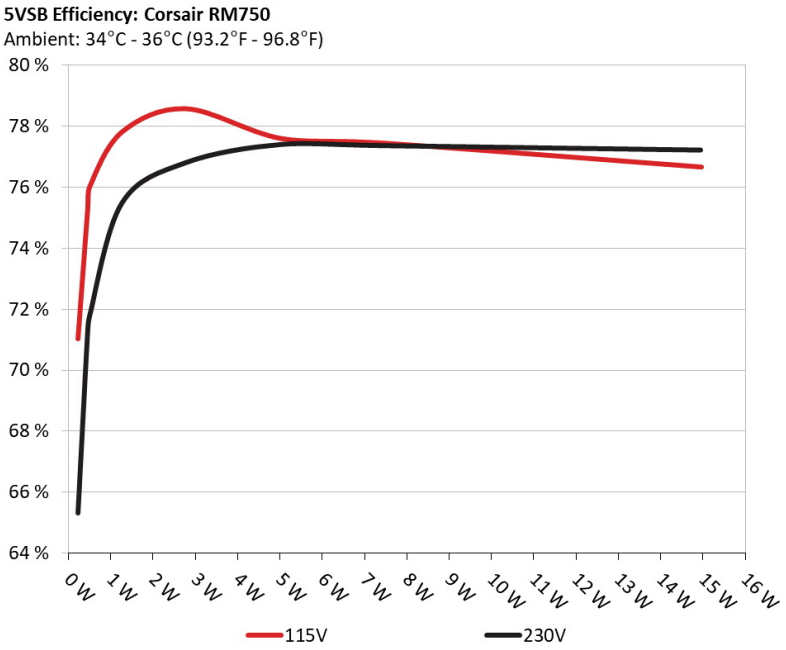
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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 -115V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.228	71.028%	0.033
	5.061V	0.321		115.10V
2	0.090A	0.456	75.248%	0.061
	5.061V	0.606		115.10V
3	0.550A	2.778	78.563%	0.260
	5.051V	3.536		115.10V
4	1.000A	5.039	77.583%	0.348
	5.039V	6.495		115.10V
5	1.500A	7.539	77.426%	0.396
	5.026V	9.737		115.11V
6	3.000A	14.958	76.653%	0.457
	4.986V	19.514		115.11V

5VSB EFFICIENCY -230V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.228	65.330%	0.011
	5.062V	0.349		230.28V
2	0.090A	0.456	71.250%	0.019
	5.061V	0.640		230.28V
3	0.550A	2.778	76.804%	0.102
	5.050V	3.617		230.27V
4	1.000A	5.038	77.401%	0.168
	5.038V	6.509		230.27V
5	1.500A	7.537	77.358%	0.224
	5.024V	9.743		230.27V
6	3.000A	14.951	77.214%	0.320
	4.983V	19.363		230.28V

115V

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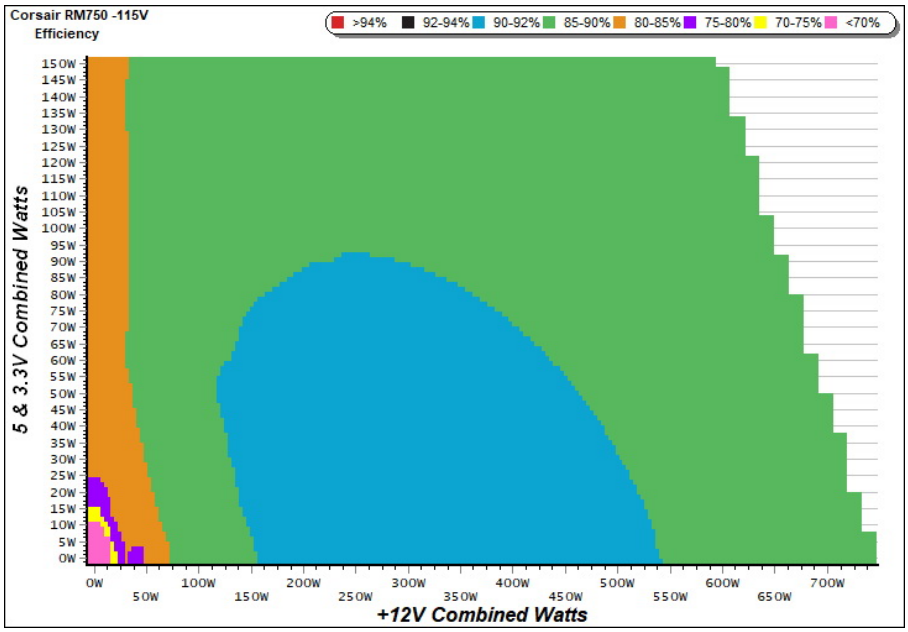
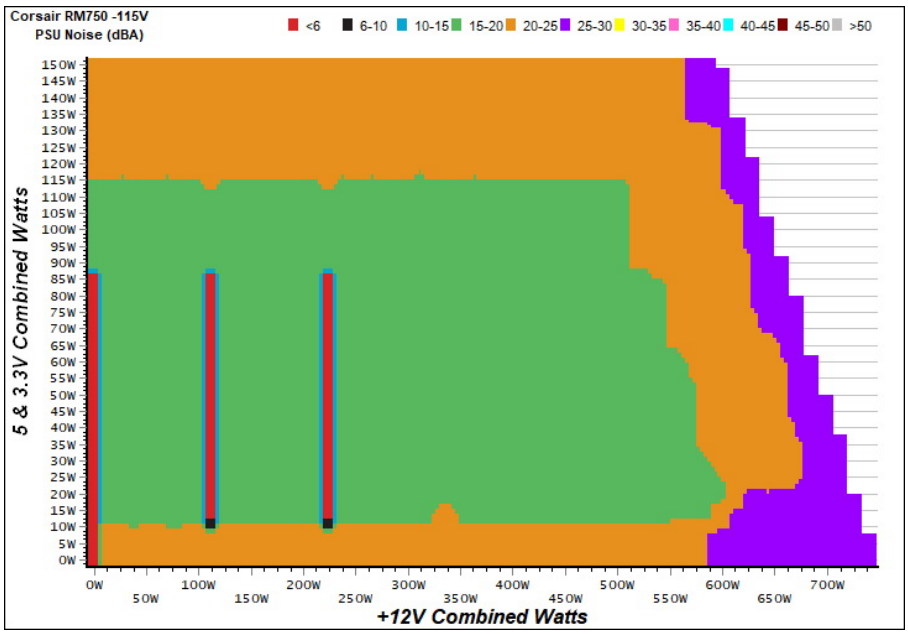
EFFICIENCY GRAPH 115V



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

NOISE GRAPH 115V



INFO

The PSU's noise in its entire operational range and under 30-32 °C (+-2 °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

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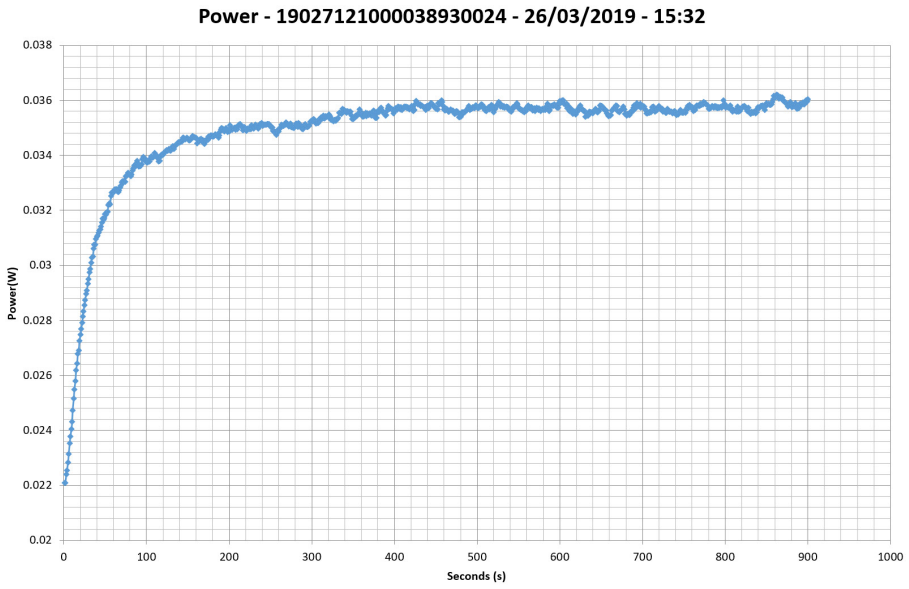
VAMPIRE POWER -115V



INFO

This graph is generated by the PPA Standby Power Analysis software which takes full control of the power analyzer during the whole procedure. This application features all of the EN50564 & IEC62301 test limits for standby power software testing

COMMISSION REGULATION (EU) NO 617/2013 TESTING 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	4.360A	1.985A	2.005A	0.997A	74.493	86.177%	0	<6.0	42.73°C	0.974
	12.130V	5.040V	3.291V	5.018V	86.442				39.84°C	115.12V
2	9.778A	2.979A	3.010A	1.197A	149.392	89.931%	0	<6.0	44.42°C	0.988
	12.118V	5.037V	3.288V	5.013V	166.119				40.76°C	115.11V
5	26.864A	4.972A	5.029A	1.802A	374.613	91.076%	780	15.9	42.36°C	0.992
	12.064V	5.031V	3.283V	4.995V	411.318				47.71°C	115.11V
10	54.905A	8.970A	9.071A	3.026A	749.954	87.314%	1633	39.0	46.43°C	0.995
	12.025V	5.018V	3.275V	4.958V	858.914				55.76°C	115.12V

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230V

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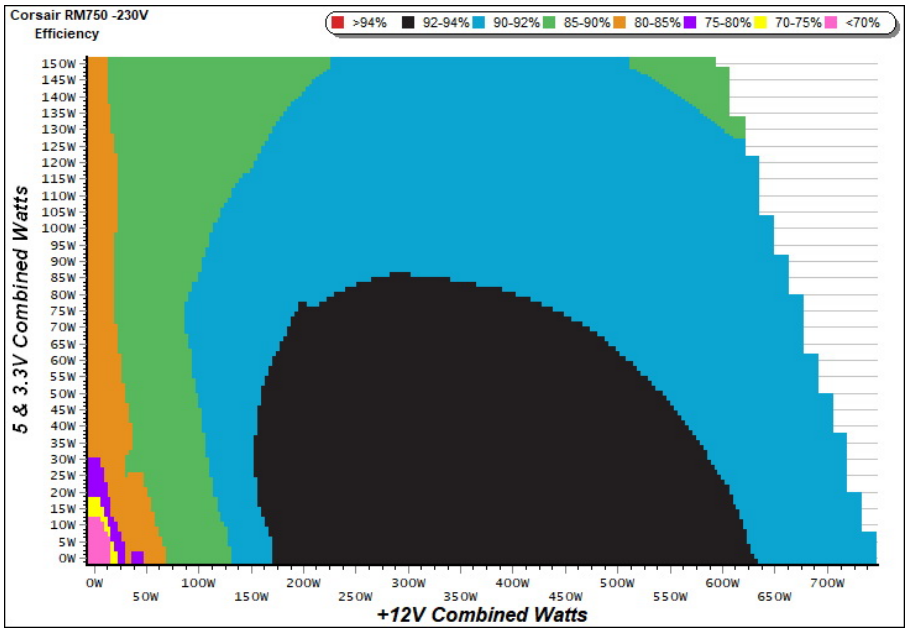
EFFICIENCY GRAPH 230V



INFO

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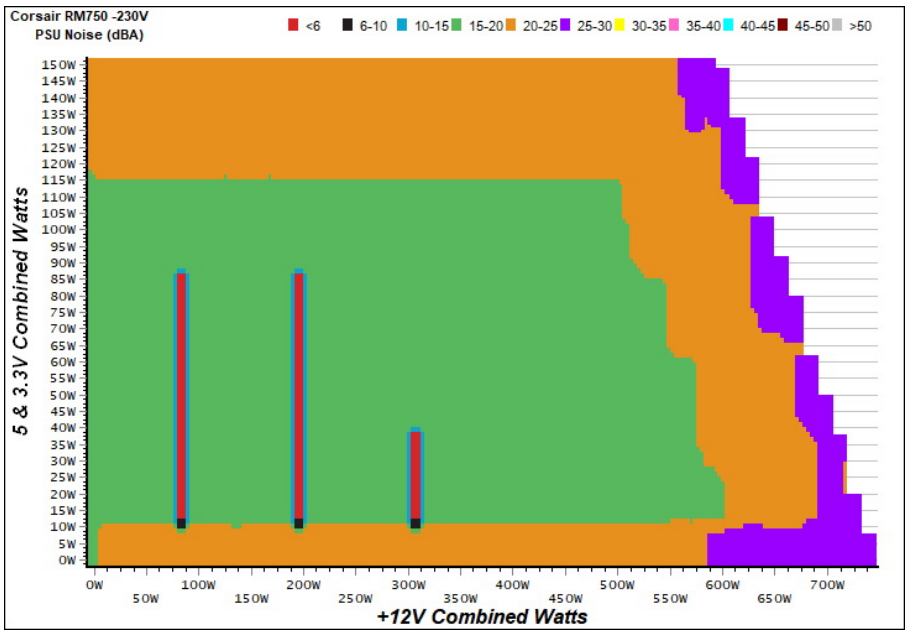
NOISE GRAPH 230V



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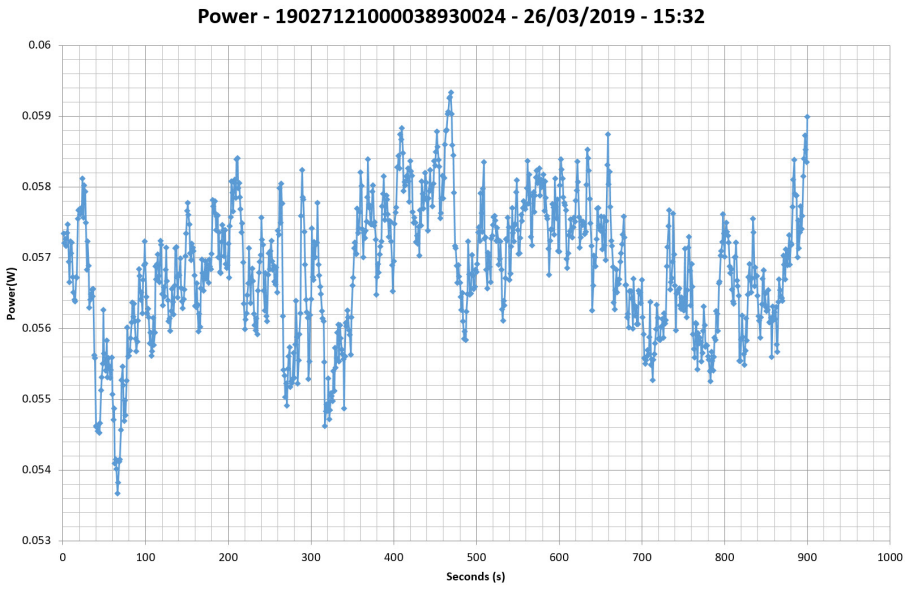
VAMPIRE POWER -230V



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COMMISSION REGULATION (EU) NO 617/2013 TESTING 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	4.352A	1.984A	2.004A	0.997A	74.403	87.183%	0	<6.0	42.54°C	0.832
	12.134V	5.038V	3.292V	5.017V	85.341				39.21°C	230.25V
2	9.770A	2.977A	3.007A	1.197A	149.304	91.220%	0	<6.0	44.38°C	0.931
	12.121V	5.036V	3.289V	5.012V	163.675				40.47°C	230.25V
5	26.856A	4.971A	5.025A	1.802A	374.518	92.990%	781	16.0	42.34°C	0.978
	12.065V	5.030V	3.283V	4.994V	402.751				48.63°C	230.24V
10	54.895A	8.970A	9.063A	3.026A	749.814	90.663%	1675	39.7	45.45°C	0.988
	12.025V	5.018V	3.276V	4.957V	827.034				55.88°C	230.24V

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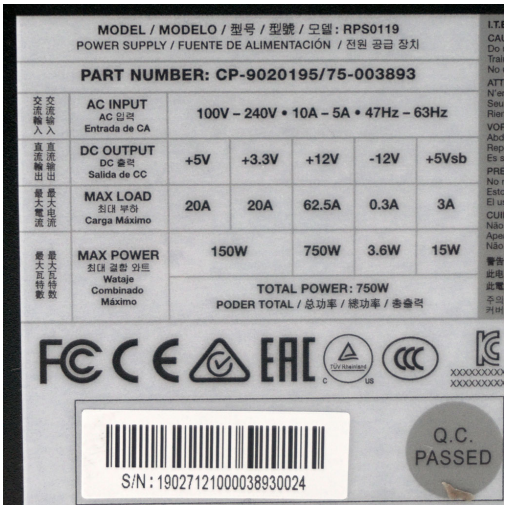
Corsair RM750 (2019)

Top side



Power specifications label

CERTIFICATIONS 115V

CYBENETICS GOLD

CYBENETICS A

CERTIFICATIONS 230V

CYBENETICS GOLD 230v

CYBENETICS A 230v

Aristeidis Bitziopoulos
Lab Director