Anex

Corsair RM750 (2019) (Sample #2)

Lab ID#: CR19750014
Receipt Date: Mar 21, 2019
Test Date: Apr 4, 2019

Report:
Report Date: May 4, 2019

DUT INFORMATION

Brand	Corsair
Manufacturer (OEM)	Channel Well Technology
Series	RM
Model Number	
Serial Number	19027121000038930023
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

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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RESULTS

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

115V

Average Efficiency	88.311%
Efficiency With 10W (≤500W) or 2% (>500W)	77.383
Average Efficiency 5VSB	77.328%
Standby Power Consumption (W)	0.0366404
Average PF	0.990
Avg Noise Output	21.44 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	A

230V

Average Efficiency	90.380%
Average Efficiency 5VSB	76.935%
Standby Power Consumption (W)	0.0611936
Average PF	0.963
Avg Noise Output	21.45 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	A

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	

HOLD-UP TIME & POWER OK SIGNAL (230V)

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

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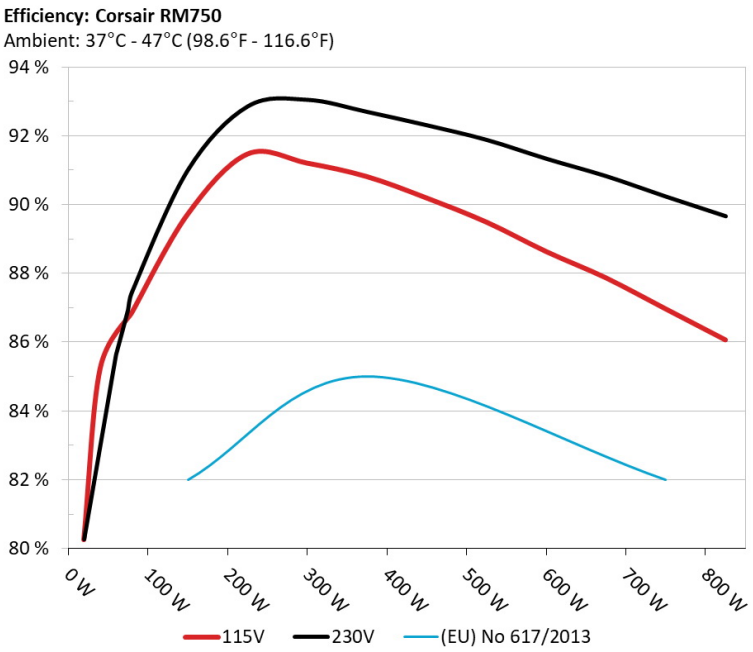
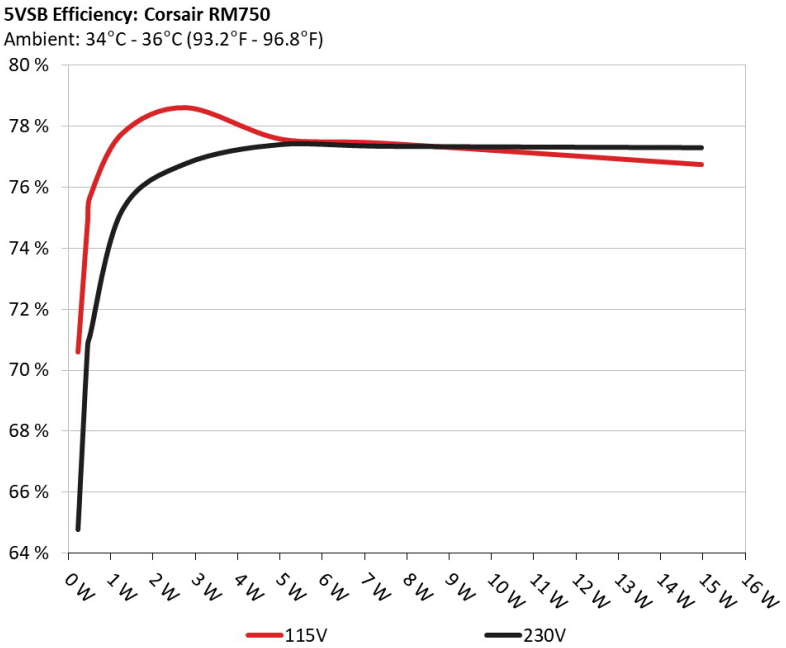
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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

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5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

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

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

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

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115V

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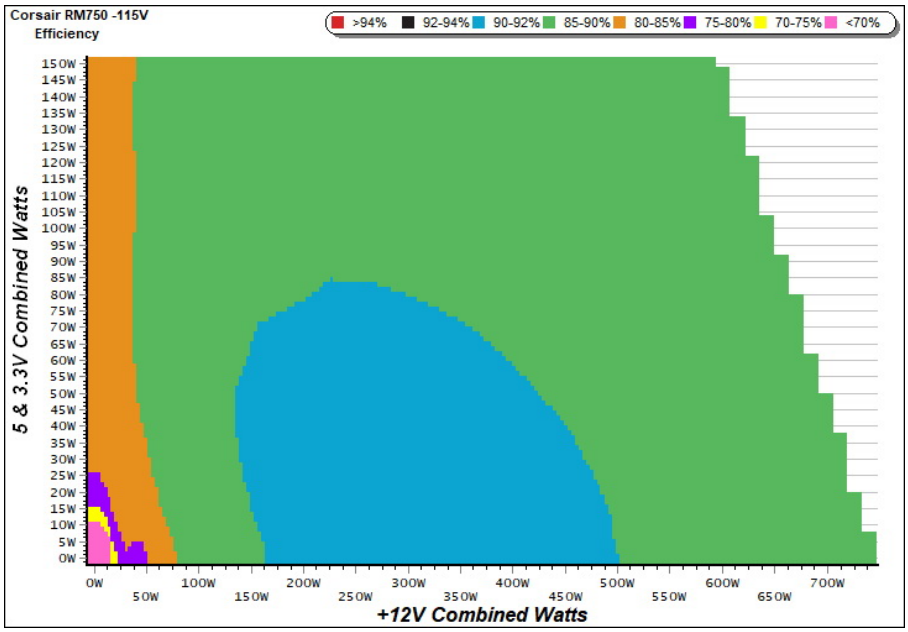
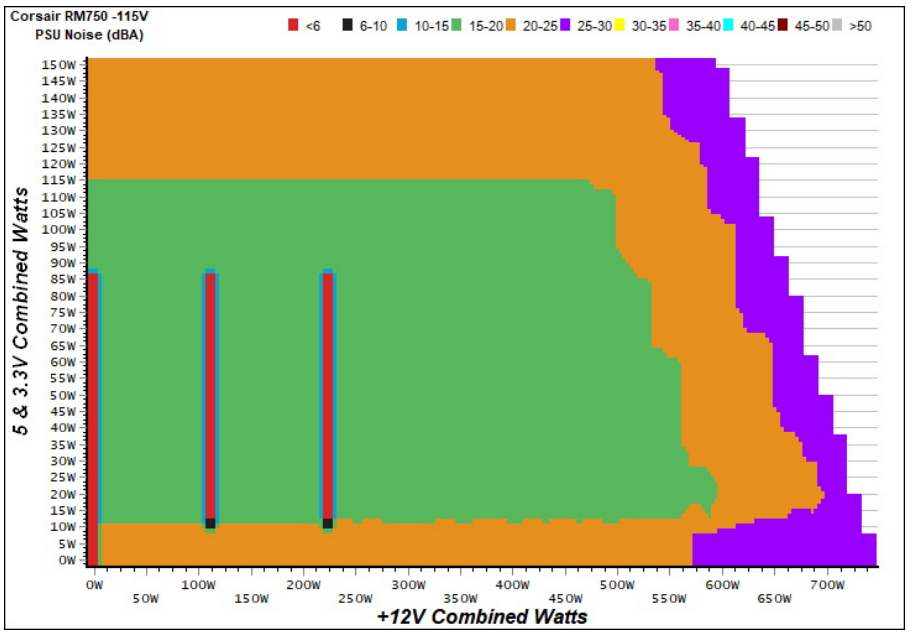
EFFICIENCY GRAPH 115V



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 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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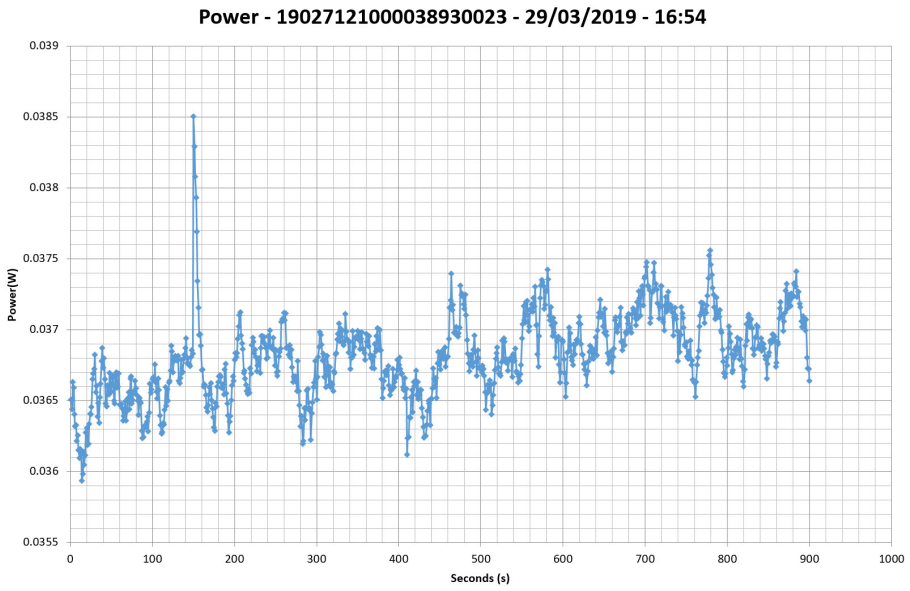
Corsair RM750 (2019) (Sample #2)

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

Anex

Corsair RM750 (2019) (Sample #2)

10-110% 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

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20-80W 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

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

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Corsair RM750 (2019) (Sample #2)

230V

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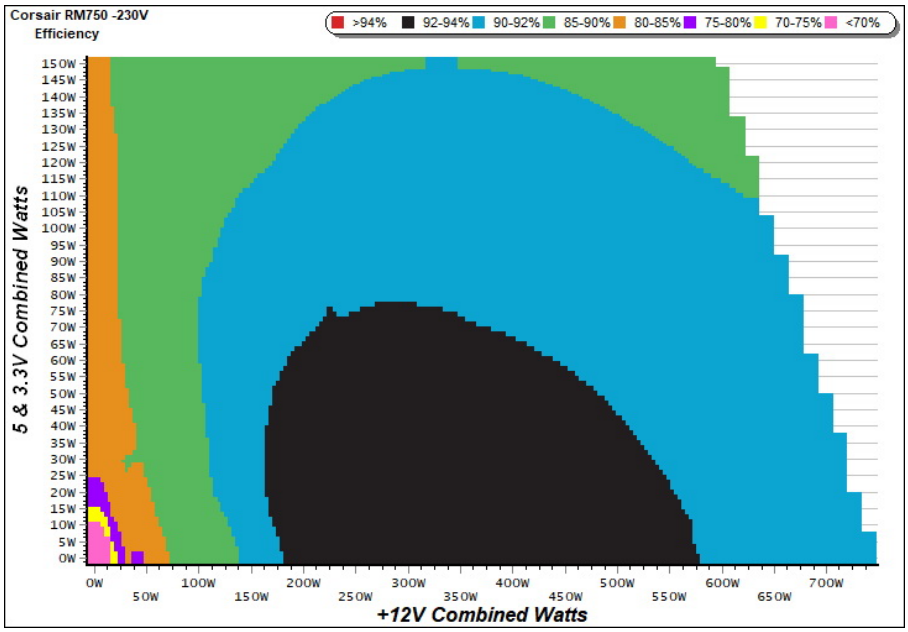
Corsair RM750 (2019) (Sample #2)

EFFICIENCY GRAPH 230V



INFO

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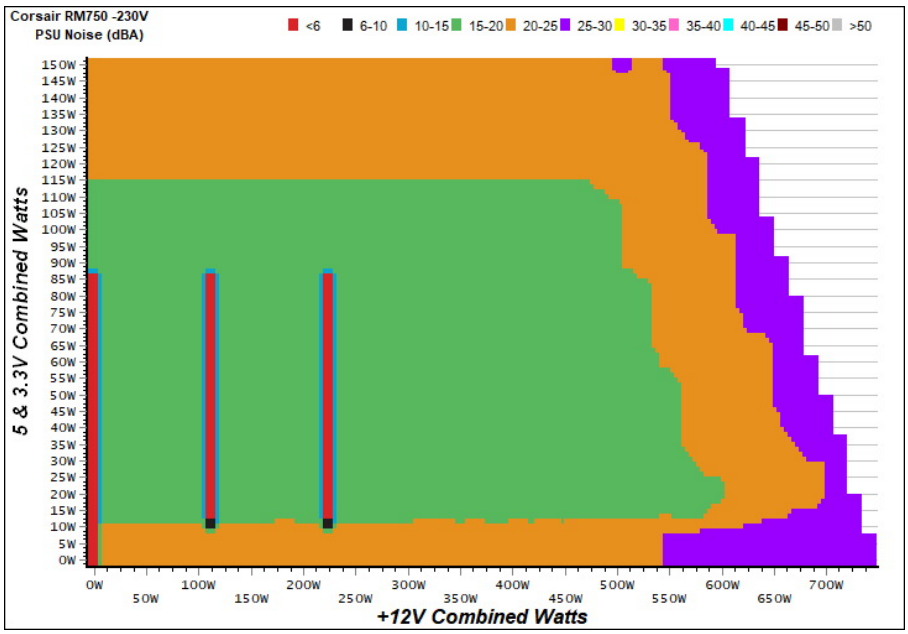
NOISE GRAPH 230V



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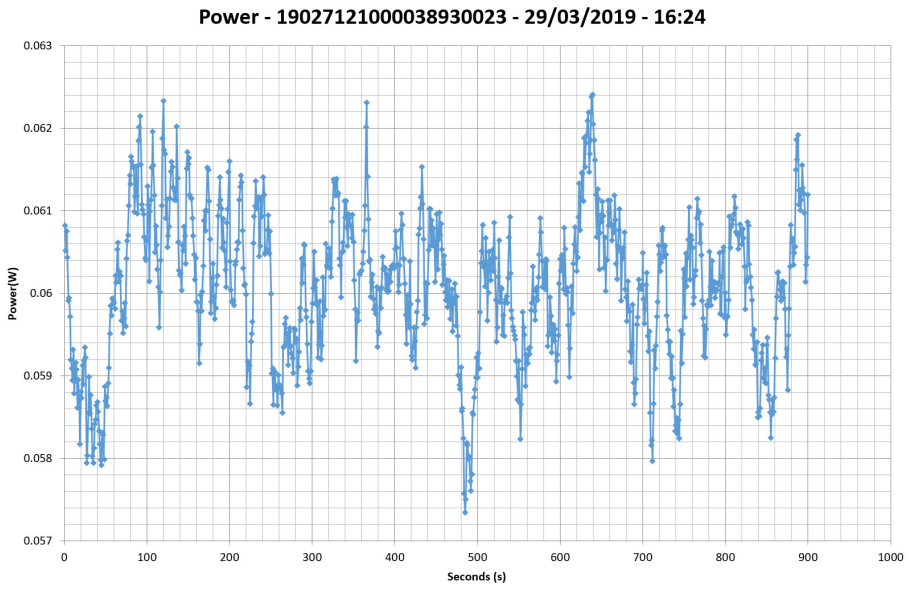
VAMPIRE POWER -230V



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Corsair RM750 (2019) (Sample #2)

10-110% LOAD TESTS 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

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20-80W LOAD TESTS 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

RIPPLE MEASUREMENTS 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
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

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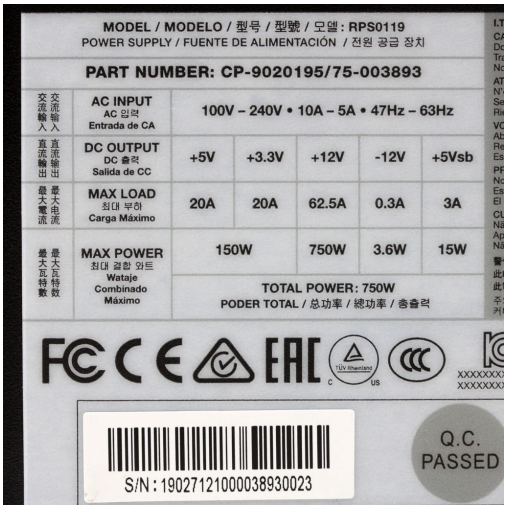
Top side



Power specifications label

CERTIFICATIONS 115V

CERTIFICATIONS 230V