CORSAIR

Corsair Vengeance 750M

Serial Number

Lab ID 422

Certification ID 25422

Test Result Report ID:

Certificate Issue Date: Jun 29, 2018

115V 230V

Scheme: ETA-EMI PSU

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	Corsair
Model	Vengeance 750M
OEM/ODM	HEC
Serial Number	
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	12-6
Rated Frequency (Hz)	47-63

Rated Power (W)	750
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Semi Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	120mm Rifle Bearing Fan (NR120L)
Semi-Passive Operation	✓
Cybenetics Testing Information	
Lab ID	422
Date of receipt	Jun 17, 2018
Testing Date	Jun 27, 2018
Report Issued Date	Jun 29, 2018
DUT Notes	CP-9020176
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

Cables and Connectors(Non-accredited measurements)

Captive Cables				
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (630mm)	1	1	18-22AWG	Yes
4+4 pin EPS12V (660mm)	1	1	18-22AWG	Yes
6+2 pin PCIe (660mm+100mm)	1	2	18AWG	Yes
Modular Cables				
4+4 pin EPS12V (650mm)	1	1	18AWG	No
6+2 pin PCIe (650mm+100mm)	2	4	16-18AWG	No
SATA (470mm+120mm+120mm)	1	3	18AWG	No

SATA (540mm+120mm)	1	2	18AWG	No
4 pin Molex (450mm+100mm+100mm+100mm)	2	8	18AWG	No
FDD Adapter (+105mm)	1	1	20AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	16AWG	-

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	25	20	62.5	3	0.3
	Watts	120		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)	88.013%
Average Noise Output (>1450 Load Combinations)	21.62dBA
Average PF (>1450 Load Combinations)	0.983
Efficiency With 10W (≤500W) or 2% (>500W) Load	63.931%
Standby Power Consumption	0.0523W
Non-Accredited	
12V Ripple (Full Load)	25.07mV
5V Ripple (Full Load)	26.70mV
3.3V Ripple (Full Load)	17.58mV
5VSB Ripple (Full Load)	38.47mV

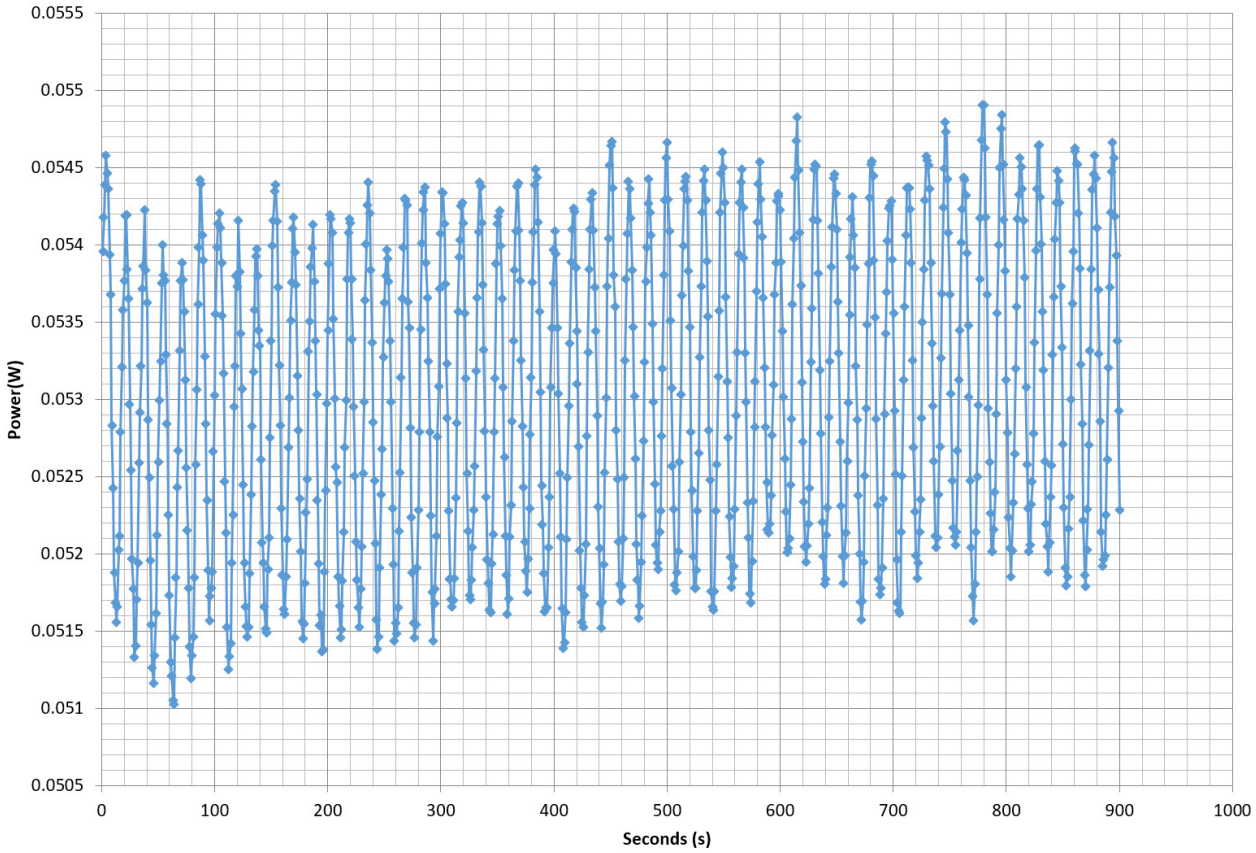
12V Load Regulation	0.84%
5V Load Regulation	0.38%
3.3V Load Regulation	0.75%
5VSB Load Regulation	1.41%
Inrush Current	85.771A

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	14.50
AC Loss to PWR_OK Hold Up Time (ms)	12.90
PWR_OK Inactive to DC Loss Delay (ms)	1.60

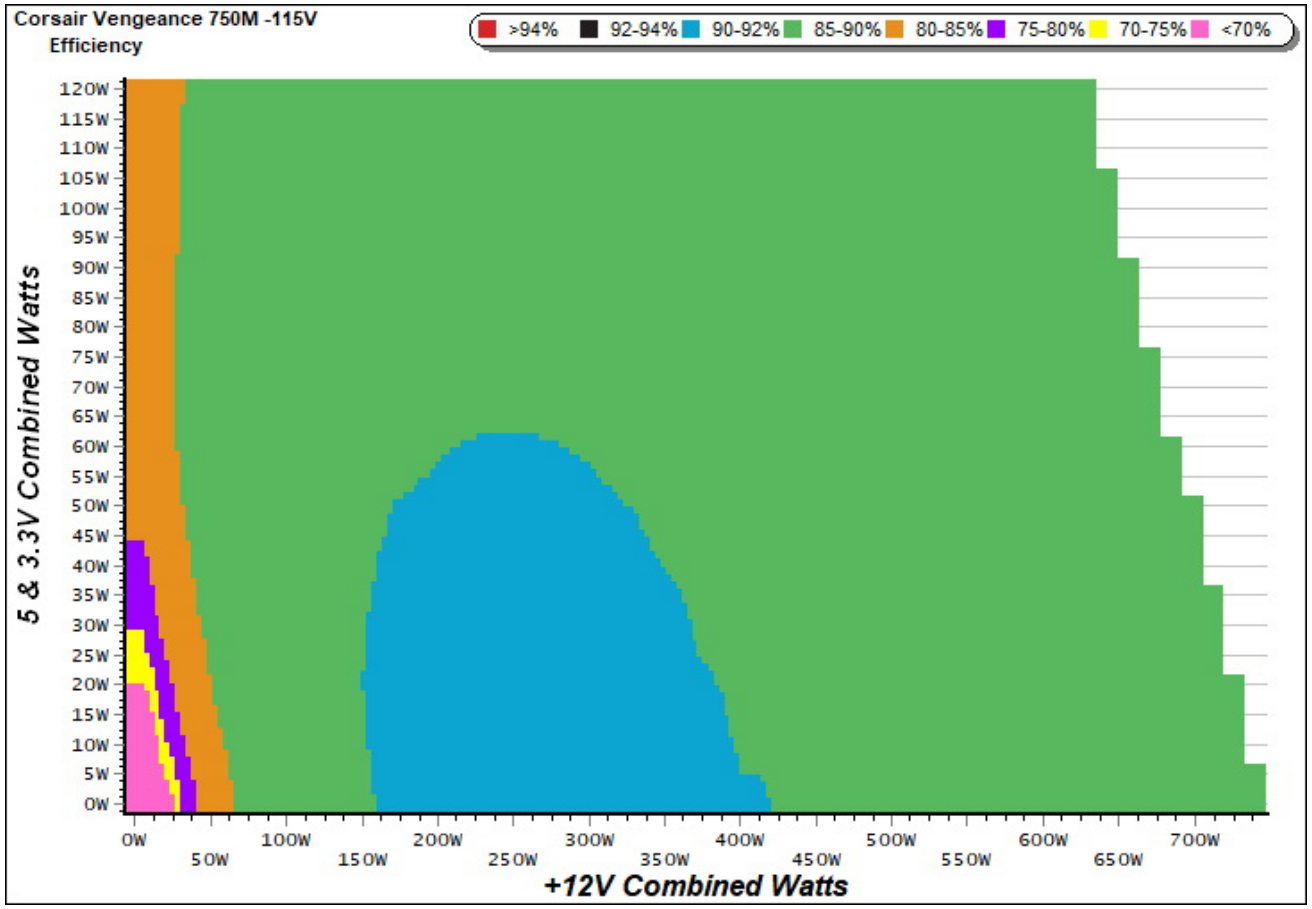
Vampire Power

Graphs 115V



Efficiency Graph

115V

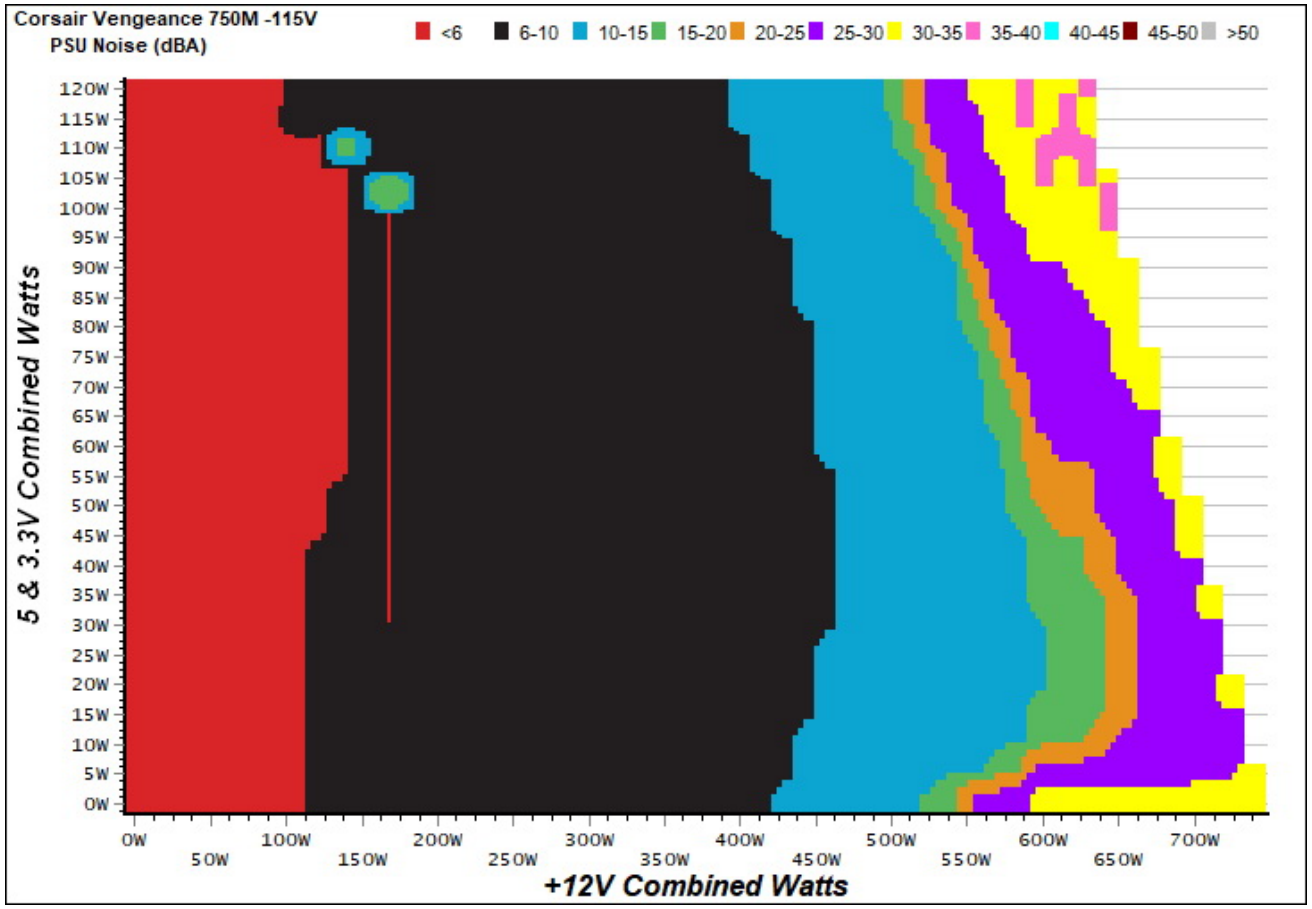


INFO

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

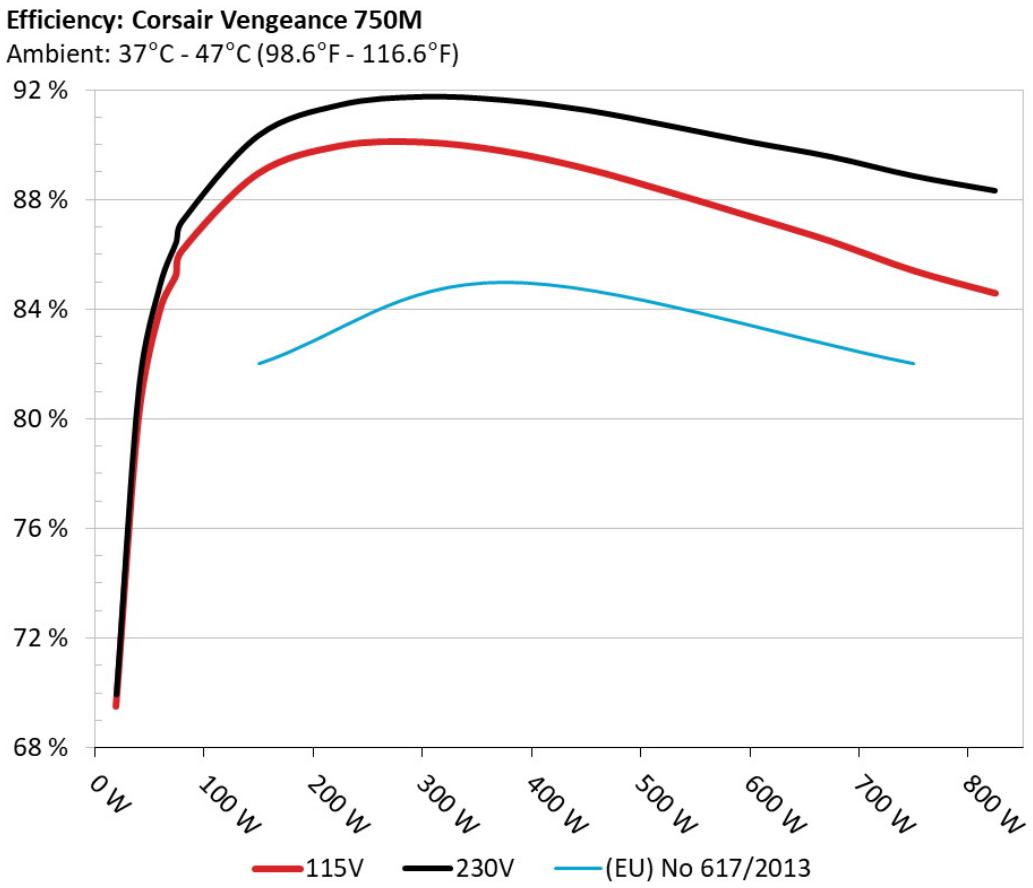


INFO

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.

Indicative Performance

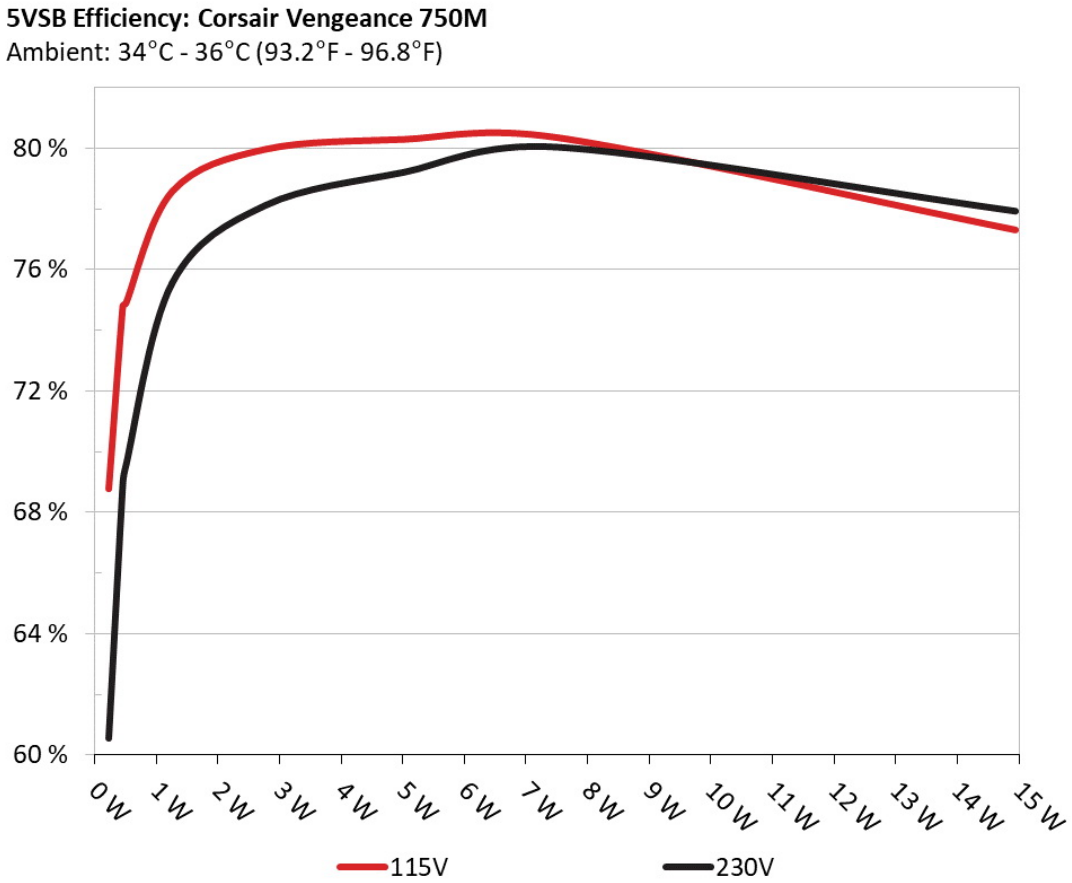
Efficiency under high ambient temperature



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	0.227	68.788%	0.028
	5.037V	0.330		115.37V

2	0.090A	0.454	74.794%	0.050
	5.035V	0.607		115.37V
3	0.550A	2.765	79.960%	0.234
	5.026V	3.458		115.37V
4	1.000A	5.018	80.288%	0.331
	5.018V	6.250		115.36V
5	1.500A	7.514	80.346%	0.389
	5.009V	9.352		115.37V
6	3.000A	14.946	77.308%	0.465
	4.982V	19.333		115.34V

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	4.356A	2.006A	1.982A	0.996A	74.497	85.232%	0	<6.0	45.38°C	0.972
	12.145V	4.986V	3.326V	5.019V	87.405				39.25°C	115.27V
2	9.764A	3.011A	2.979A	1.197A	149.397	88.930%	427	7.4	40.46°C	0.974
	12.136V	4.983V	3.322V	5.014V	167.994				46.81°C	115.18V
3	15.578A	3.514A	3.464A	1.398A	224.904	89.947%	427	7.4	40.93°C	0.979
	12.126V	4.981V	3.320V	5.008V	250.041				47.98°C	115.13V
4	21.333A	4.018A	3.979A	1.599A	299.677	90.085%	429	7.5	41.93°C	0.984
	12.116V	4.979V	3.318V	5.003V	332.659				49.74°C	115.07V
5	26.776A	5.024A	4.978A	1.801A	374.608	89.752%	527	8.5	42.26°C	0.988
	12.104V	4.978V	3.315V	4.997V	417.383				50.31°C	114.96V
6	32.230A	6.030A	5.976A	2.004A	449.533	89.123%	655	9.2	42.86°C	0.989
	12.092V	4.976V	3.313V	4.992V	504.397				51.90°C	114.85V
7	37.725A	7.038A	6.978A	2.207A	524.833	88.279%	788	11.6	43.56°C	0.988
	12.080V	4.975V	3.310V	4.986V	594.515				53.41°C	114.83V
8	43.229A	8.046A	7.982A	2.410A	600.143	87.377%	1191	26.4	43.99°C	0.989
	12.069V	4.973V	3.307V	4.980V	686.847				54.40°C	114.72V

9	49.104A	8.554A	8.475A	2.411A	674.664	86.466%	1635	34.2	45.10°C	0.991
	12.059V	4.970V	3.304V	4.979V	780.265				55.98°C	114.59V
10	54.795A	9.060A	8.993A	3.022A	749.879	85.400%	1785	37.1	45.98°C	0.992
	12.048V	4.968V	3.302V	4.965V	878.077				57.42°C	114.57V
11	61.087A	9.068A	9.005A	3.023A	825.083	84.575%	1783	37.1	46.57°C	0.993
	12.038V	4.964V	3.298V	4.964V	975.566				58.61°C	114.45V
CL1	0.144A	14.004A	13.999A	0.000A	117.990	83.209%	464	7.1	42.29°C	0.976
	12.131V	4.986V	3.316V	5.034V	141.799				51.68°C	115.19V
CL2	62.513A	1.001A	1.000A	1.000A	766.573	85.903%	1783	37.1	45.55°C	0.993
	12.050V	4.971V	3.308V	5.007V	892.375				57.16°C	114.56V

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	1.191A	0.502A	0.480A	0.199A	19.577	69.521%	0	<6.0	0.847
	12.153V	4.987V	3.328V	5.036V	28.160				115.34V
2	2.446A	1.004A	0.990A	0.398A	40.023	79.961%	0	<6.0	0.937
	12.150V	4.987V	3.327V	5.032V	50.053				115.31V
3	3.628A	1.505A	1.472A	0.597A	59.476	83.914%	0	<6.0	0.965
	12.148V	4.986V	3.327V	5.028V	70.877				115.29V
4	4.884A	2.005A	1.984A	0.796A	79.908	86.126%	0	<6.0	0.976
	12.145V	4.985V	3.326V	5.023V	92.780				115.27V

The results above are not used in the certification process

Ripple Measurements 115V

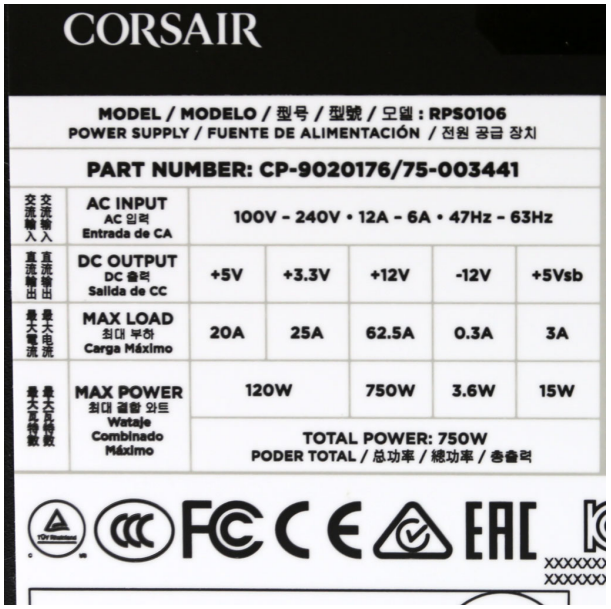
Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	15.2 mV	11.3 mV	8.5 mV	5.4 mV	Pass
20% Load	9.1 mV	14.4 mV	9.3 mV	8.7 mV	Pass
30% Load	9.7 mV	13.1 mV	10.5 mV	10.0 mV	Pass
40% Load	17.4 mV	14.3 mV	10.4 mV	13.1 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
50% Load	14.2 mV	16.0 mV	11.0 mV	16.9 mV	Pass
60% Load	15.3 mV	18.2 mV	13.4 mV	17.0 mV	Pass
70% Load	16.6 mV	18.9 mV	12.8 mV	17.0 mV	Pass
80% Load	18.7 mV	22.2 mV	14.1 mV	20.0 mV	Pass
90% Load	22.1 mV	22.5 mV	15.2 mV	24.3 mV	Pass
100% Load	25.1 mV	26.7 mV	17.6 mV	38.5 mV	Pass
110% Load	26.1 mV	28.4 mV	18.7 mV	40.1 mV	Pass
Crossload 1	9.2 mV	30.9 mV	20.8 mV	10.0 mV	Pass
Crossload 2	26.5 mV	24.9 mV	11.6 mV	23.3 mV	Pass

The results above are not used in the certification process

Corsair Vengeance 750M

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

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