



Corsair VS450

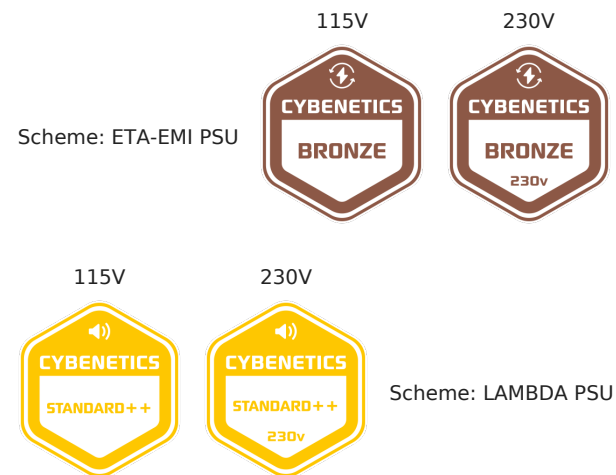
Serial Number 18389842000052518275

Lab ID 562

Certification ID 25562

Test Result Report ID:

Certificate Issue Date: Dec 14, 2018



A handwritten signature in blue ink, appearing to read "A. Bitziopoulos", enclosed within a blue oval stamp.

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	VS450
OEM/ODM	HEC
Serial Number	18389842000052518275
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	47-63

Rated Power (W)	450
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fixed cables
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	120mm Sleeve Bearing Fan (D12SH-12)
Semi-Passive Operation	X
Cybenetics Testing Information	
Lab ID	562
Date of receipt	Nov 30, 2018
Testing Date	Dec 11, 2018
Report Issued Date	Dec 14, 2018
DUT Notes	CP-9020170
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 (560mm)	1	1	18-20AWG	No
4+4 pin EPS12V (620mm)	1	1	18AWG	No
6+2 pin PCIe (580mm+110mm)	1	2	18AWG	No
SATA (460mm+120mm+120mm)	2	6	18AWG	No
SATA (460mm) / 4-pin Molex (+120mm+120mm) / FDD (+120mm)	1	1 / 2 / 1	18-20AWG	No
AC Power Cord (1380mm) - C13 coupler	1	1	18AWG	-

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	36	3	0.3
	Watts	110		432	15	3.6
Total Max. Power (W)		450				

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)	82.734%
Average Noise Output (>1450 Load Combinations)	31.85dBA
Average PF (>1450 Load Combinations)	0.991
Efficiency With 10W (≤500W) or 2% (>500W) Load	55.611%
Standby Power Consumption	0.0452W
Non-Accredited	
12V Ripple (Full Load)	53.24mV
5V Ripple (Full Load)	19.85mV
3.3V Ripple (Full Load)	21.63mV
5VSB Ripple (Full Load)	25.49mV
12V Load Regulation	1.41%
5V Load Regulation	1.11%
3.3V Load Regulation	2.34%

5VSB Load Regulation	3.11%
Inrush Current	43.288A

230V

Accredited		
Average Efficiency (>1450 load combinations)	85.151%	
Average Noise Output (>1450 Load Combinations)	31.77dBA	
Average PF (>1450 Load Combinations)	0.967	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.1033W	
Non-Accredited		
12V Ripple (Full Load)	66.69mV	
5V Ripple (Full Load)	26.95mV	
3.3V Ripple (Full Load)	21.40mV	
5VSB Ripple (Full Load)	30.98mV	
12V Load Regulation	1.41%	
5V Load Regulation	1.34%	
3.3V Load Regulation	2.28%	
5VSB Load Regulation	3.07%	
Inrush Current	43.109A	
Hold-Up Time & PWR_OK Signal	19.60ms	
AC Loss to PWR_OK Hold Up Time	15.40ms	
PWR_OK Inactive to DC Loss Delay	4.20ms	
OPP (0.00°C / 0.00°C)	-	-

Hold-Up Time & PWR_OK Signal

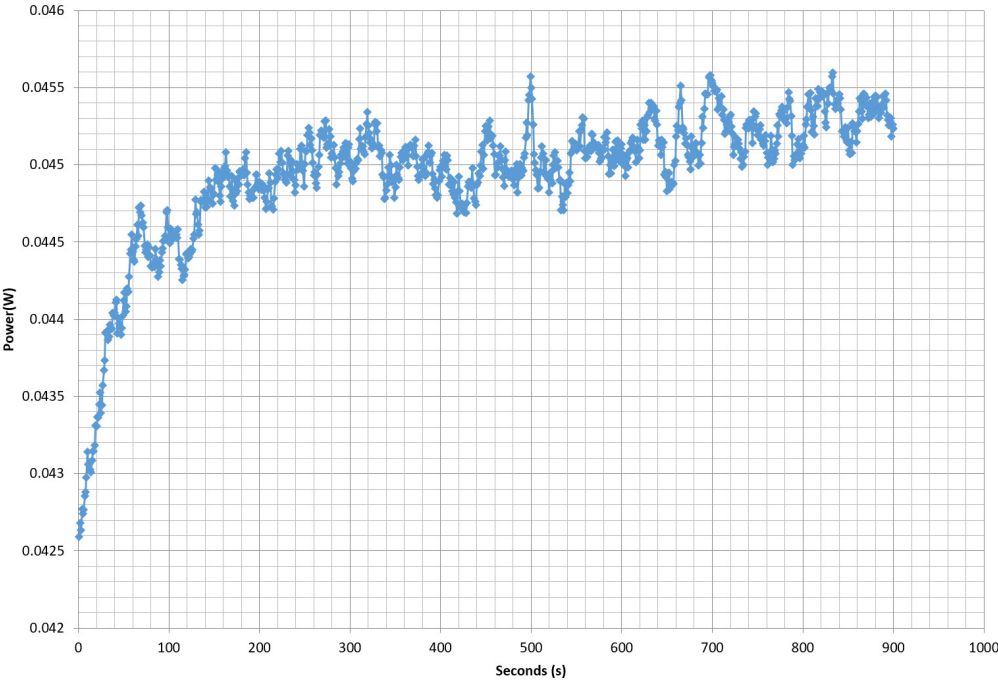
Hold-Up Time (ms)	19.6
AC Loss to PWR_OK Hold Up Time (ms)	15.4
PWR_OK Inactive to DC Loss Delay (ms)	4.2

Vampire Power

Graphs

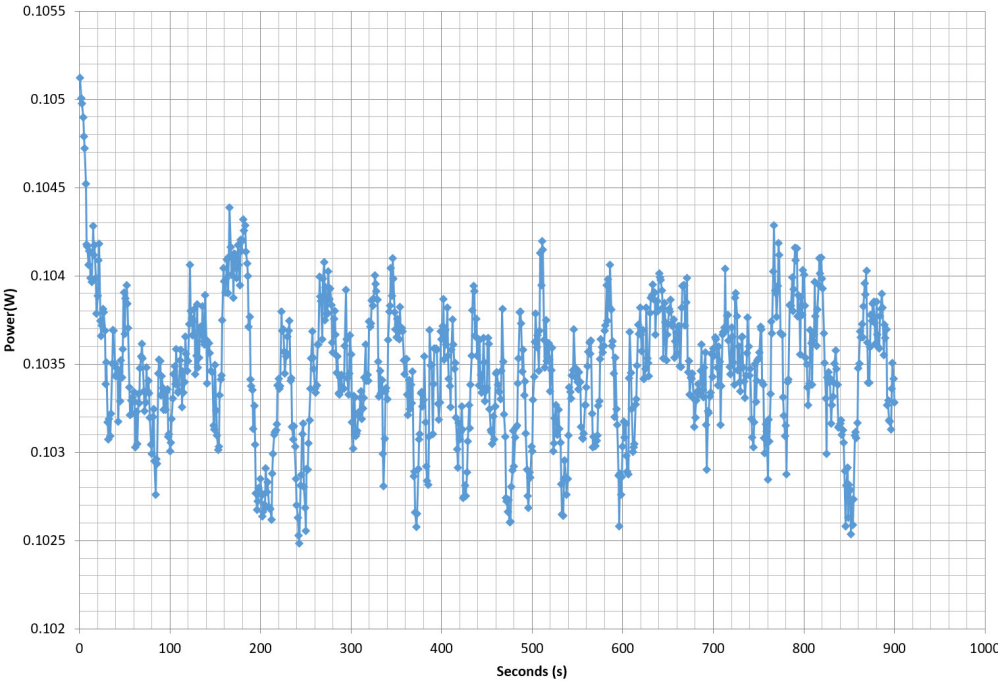
115V

Power - 18389842000052518275 - 10/12/2018 - 09:45



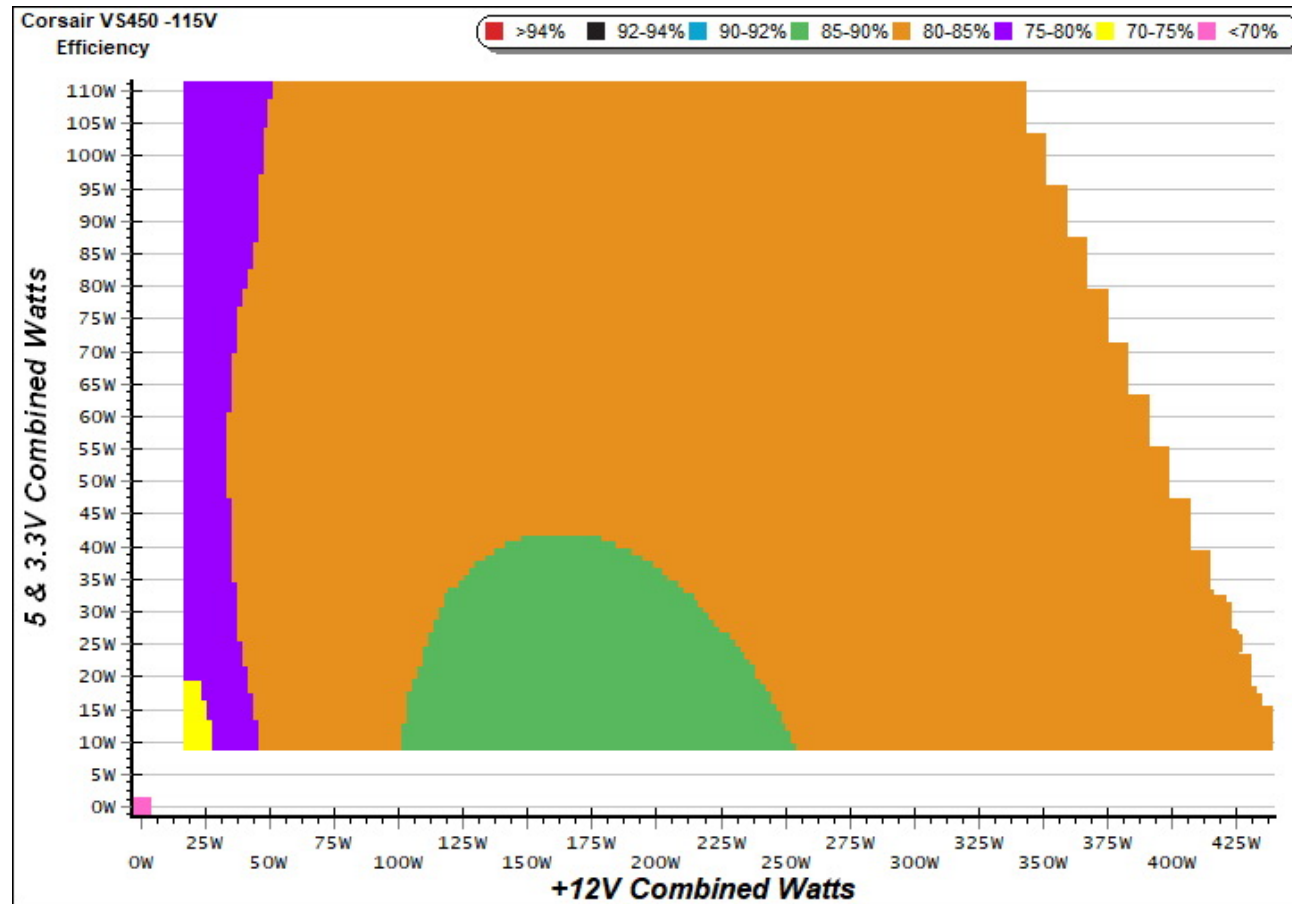
230V

Power - 18389842000052518275 - 10/12/2018 - 09:45



Efficiency Graph

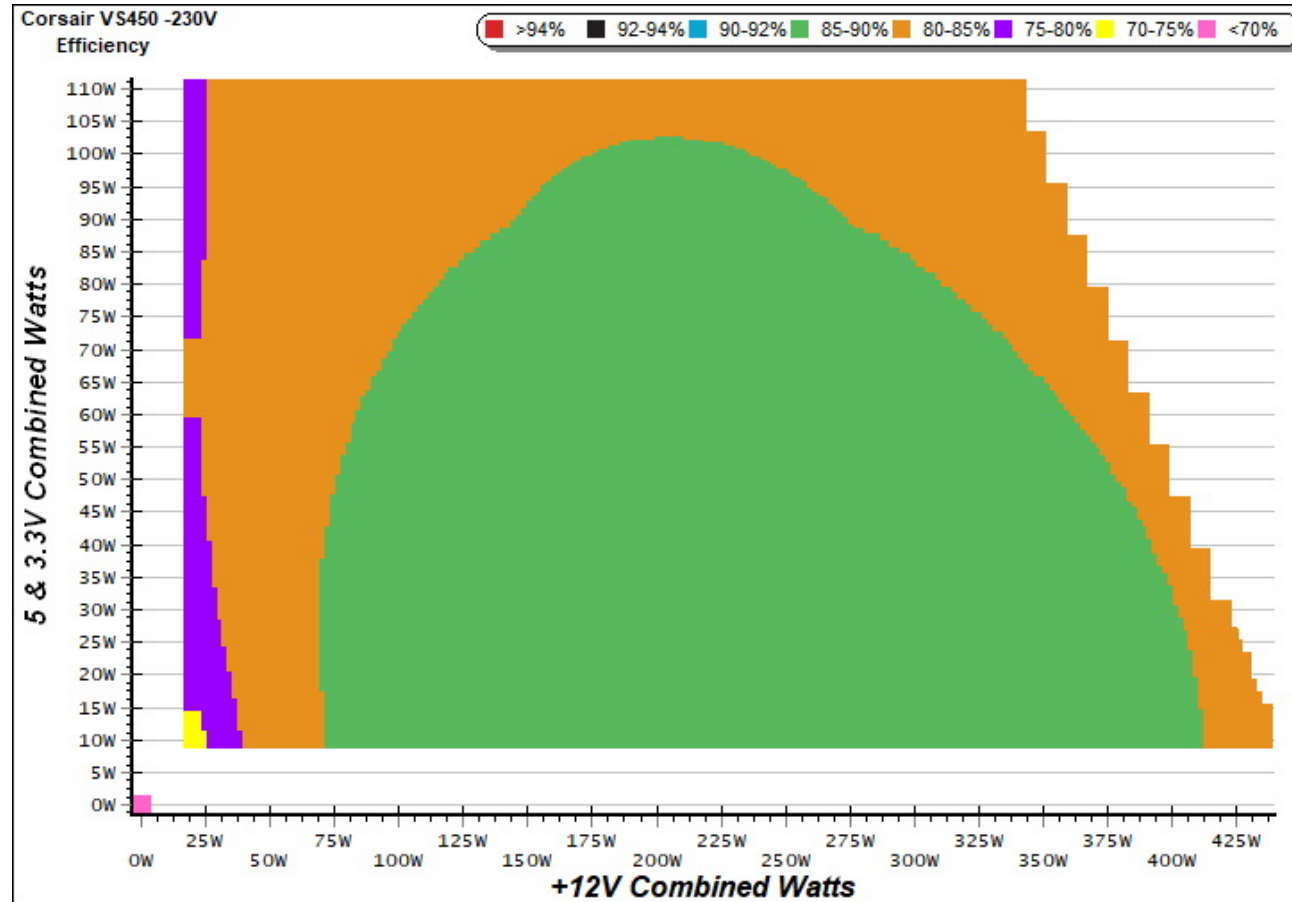
115V



INFO

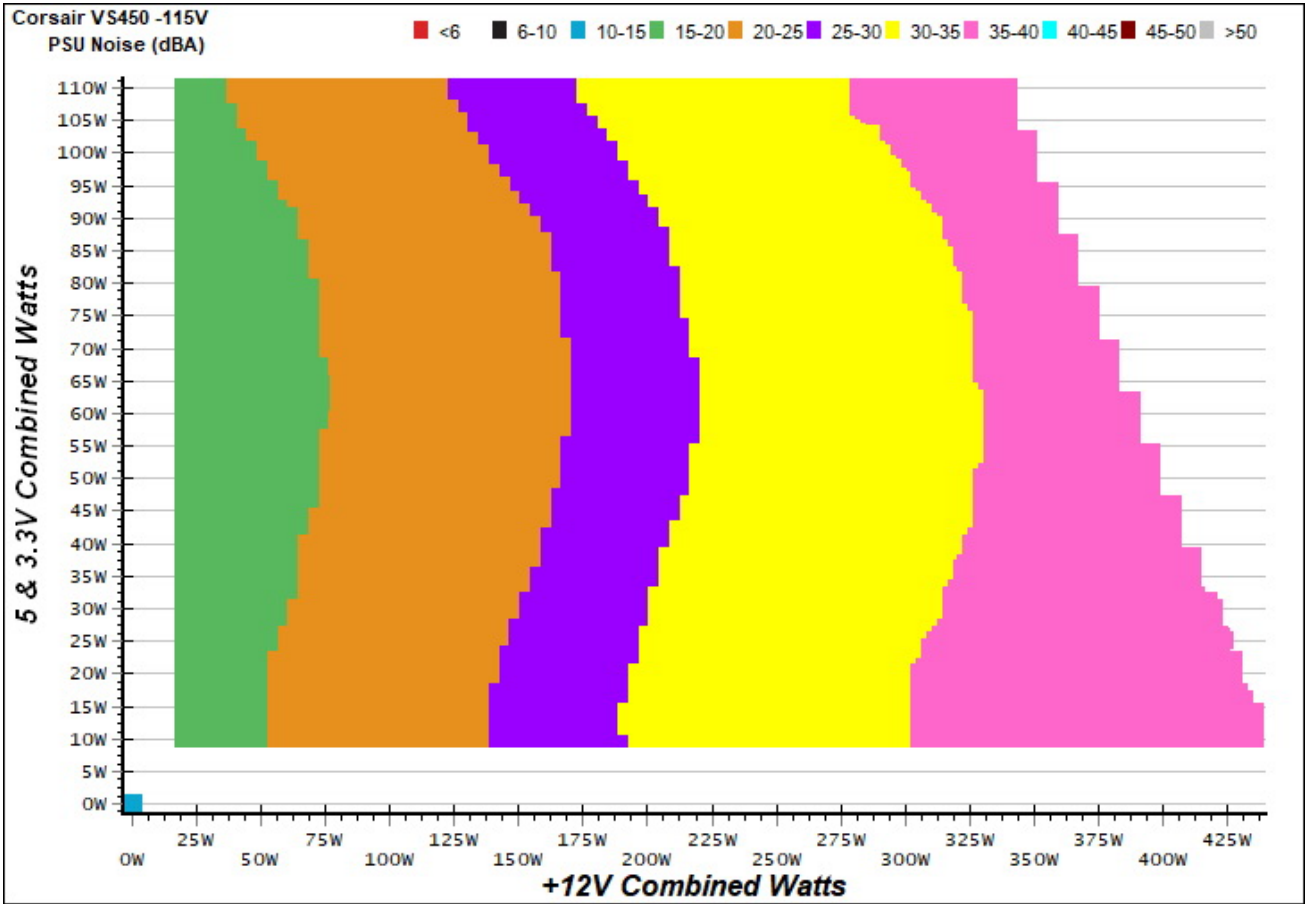
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations.

230V



Noise Graph

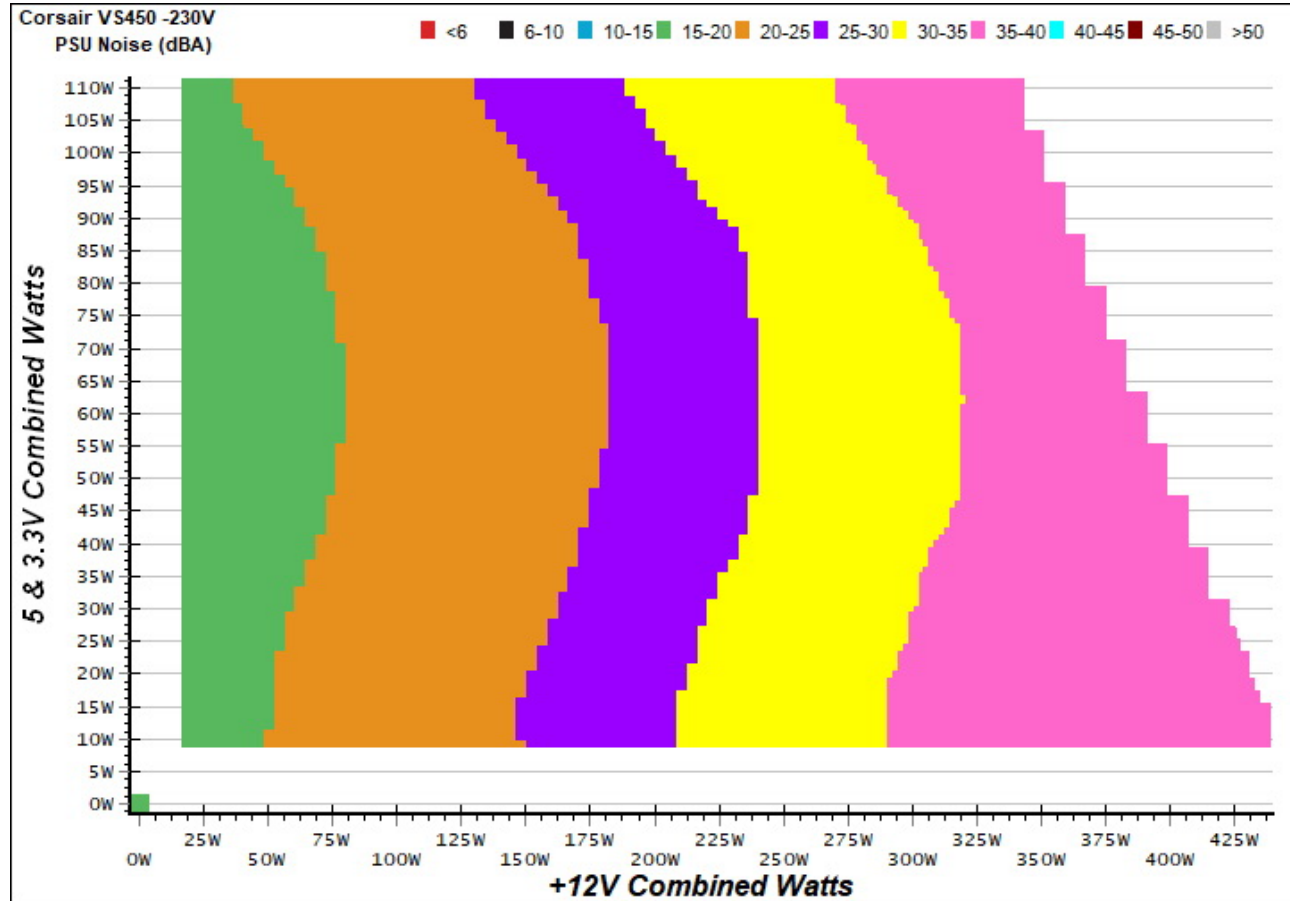
115V



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

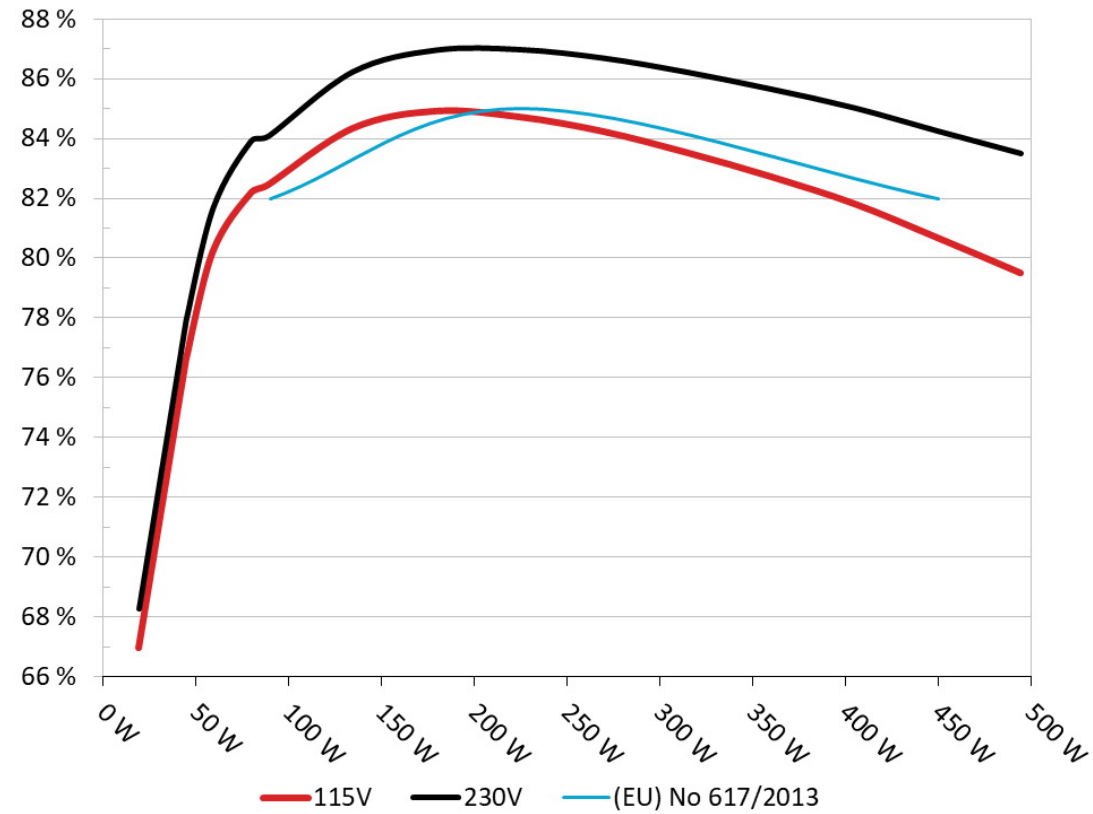
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

Indicative Performance

Efficiency under high ambient temperature

Efficiency: Corsair VS450

Ambient: 32°C - 40°C (89.6°F - 104°F)



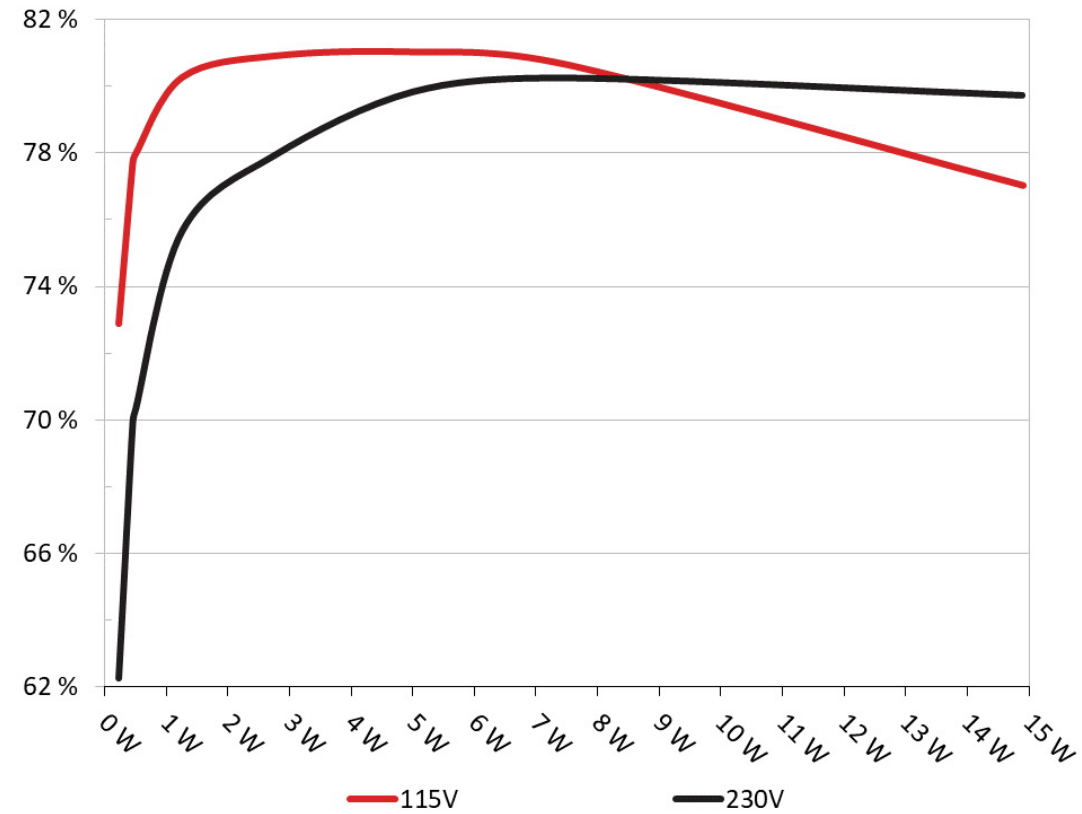
INFO

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

5VSB Efficiency: Corsair VS450

Ambient: 34°C - 36°C (93.2°F - 96.8°F)



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	0.226	72.903%	0.046
	5.029V	0.310		115.03V
2	0.090A	0.453	77.702%	0.085
	5.029V	0.583		115.03V
3	0.550A	2.761	80.897%	0.299
	5.020V	3.413		115.03V
4	1.000A	5.010	81.016%	0.366
	5.010V	6.184		115.03V
5	1.500A	7.499	80.634%	0.402
	5.000V	9.300		115.03V
6	3.000A	14.900	77.030%	0.450
	4.967V	19.343		115.03V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.226	62.259%	0.017
	5.029V	0.363		230.18V
2	0.090A	0.453	69.907%	0.030
	5.029V	0.648		230.18V
3	0.550A	2.761	77.950%	0.144
	5.020V	3.542		230.18V
4	1.000A	5.010	79.853%	0.216
	5.010V	6.274		230.18V
5	1.500A	7.499	80.263%	0.268
	4.999V	9.343		230.17V
6	3.000A	14.893	79.744%	0.342
	4.965V	18.676		230.18V

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	1.902A	1.992A	1.954A	1.001A	44.725	76.102%	715	16.8	35.35°C	0.970
	12.163V	5.018V	3.375V	4.995V	58.770				42.16°C	115.04V
2	4.809A	2.992A	2.939A	1.205A	89.220	82.473%	744	17.7	35.91°C	0.987
	12.131V	5.009V	3.366V	4.981V	108.181				43.27°C	115.04V
3	8.127A	3.488A	3.422A	1.409A	134.362	84.351%	852	20.8	36.06°C	0.992
	12.104V	5.017V	3.359V	4.968V	159.290				44.86°C	115.04V
4	11.448A	3.979A	3.937A	1.614A	179.590	84.938%	943	23.5	36.71°C	0.988
	12.089V	5.027V	3.351V	4.957V	211.437				46.49°C	115.04V
5	14.435A	4.979A	4.936A	1.821A	224.896	84.740%	1124	28.2	37.16°C	0.989
	12.082V	5.020V	3.342V	4.943V	265.394				47.69°C	115.04V
6	17.364A	5.987A	5.939A	2.029A	269.426	84.257%	1280	32.1	37.51°C	0.991
	12.072V	5.013V	3.333V	4.929V	319.766				48.91°C	115.04V
7	20.368A	6.993A	6.947A	2.239A	314.725	83.547%	1470	35.0	38.80°C	0.993
	12.059V	5.006V	3.325V	4.914V	376.703				51.11°C	115.04V
8	23.377A	8.006A	7.962A	2.451A	360.035	82.741%	1605	37.5	38.90°C	0.994
	12.047V	4.997V	3.316V	4.898V	435.136				52.34°C	115.04V
9	26.835A	8.499A	8.464A	2.455A	404.937	81.834%	1782	40.2	39.38°C	0.994
	12.015V	5.002V	3.308V	4.889V	494.829				54.21°C	115.04V
10	30.025A	8.996A	9.002A	3.084A	449.767	80.695%	1897	42.6	39.74°C	0.995
	11.992V	5.003V	3.299V	4.865V	557.369				55.95°C	115.03V
11	33.885A	8.972A	9.022A	3.089A	494.565	79.514%	1990	42.8	40.14°C	0.996
	11.948V	5.016V	3.292V	4.857V	621.987				58.30°C	115.03V
CL1	0.130A	13.000A	13.000A	0.000A	103.069	75.799%	1375	33.6	37.76°C	0.987
	12.644V	4.461V	3.341V	4.969V	135.976				48.08°C	115.05V

CL2	35.998A	1.000A	1.000A	1.000A	435.565	81.387%	1707	39.5	39.45°C	0.995
	11.723V	5.298V	3.322V	4.940V	535.177				55.57°C	115.04V

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	1.906A	1.993A	1.954A	1.001A	44.766	77.610%	711	16.8	35.09°C	0.818
	12.160V	5.016V	3.374V	4.994V	57.681				41.82°C	230.19V
2	4.811A	2.995A	2.938A	1.205A	89.232	84.076%	734	17.3	35.94°C	0.914
	12.128V	5.007V	3.365V	4.980V	106.133				43.22°C	230.18V
3	8.129A	3.488A	3.421A	1.410A	134.353	86.217%	821	20.3	36.24°C	0.949
	12.101V	5.015V	3.358V	4.967V	155.832				44.37°C	230.19V
4	11.448A	3.980A	3.936A	1.615A	179.562	86.949%	961	23.7	36.61°C	0.963
	12.087V	5.025V	3.350V	4.956V	206.513				45.84°C	230.18V
5	14.433A	4.981A	4.936A	1.821A	224.843	86.967%	1104	28.0	36.93°C	0.971
	12.080V	5.019V	3.341V	4.943V	258.537				47.04°C	230.19V
6	17.364A	5.987A	5.939A	2.030A	269.370	86.684%	1251	31.1	37.30°C	0.976
	12.069V	5.012V	3.333V	4.928V	310.750				48.25°C	230.19V
7	20.368A	6.998A	6.948A	2.240A	314.668	86.212%	1426	34.0	37.81°C	0.980
	12.056V	5.003V	3.324V	4.913V	364.995				49.63°C	230.18V
8	23.371A	8.012A	7.962A	2.450A	359.959	85.645%	1587	37.4	38.01°C	0.982
	12.047V	4.994V	3.315V	4.899V	420.294				50.33°C	230.16V
9	26.837A	8.501A	8.467A	2.456A	404.895	85.018%	1790	40.2	38.39°C	0.984
	12.013V	5.000V	3.306V	4.888V	476.249				52.76°C	230.16V
10	30.031A	9.001A	9.004A	3.085A	449.754	84.244%	1917	42.6	39.14°C	0.986
	11.989V	5.001V	3.298V	4.863V	533.872				54.73°C	230.17V
11	33.893A	8.978A	9.024A	3.091A	494.573	83.496%	1988	42.8	40.22°C	0.987
	11.945V	5.014V	3.291V	4.855V	592.332				56.77°C	230.17V
CL1	0.132A	13.002A	12.998A	0.000A	103.045	77.375%	1387	33.7	36.88°C	0.937
	12.645V	4.457V	3.341V	4.968V	133.176				47.72°C	230.18V

CL2	35.998A	1.002A	0.999A	1.000A	435.353	84.650%	1772	40.1	39.12°C	0.985
	11.717V	5.299V	3.321V	4.937V	514.299				54.60°C	230.17V

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	1.172A	0.489A	0.472A	0.199A	19.347	66.952%	677	15.5	0.922
	12.175V	5.078V	3.382V	5.021V	28.897				115.04V
2	2.431A	0.988A	0.972A	0.399A	39.765	76.585%	683	15.9	0.967
	12.130V	5.053V	3.378V	5.013V	51.923				115.04V
3	3.623A	1.486A	1.450A	0.600A	59.306	80.235%	693	16.2	0.977
	12.122V	5.043V	3.374V	5.004V	73.915				115.04V
4	4.883A	1.985A	1.955A	0.801A	79.744	82.189%	719	16.8	0.982
	12.115V	5.036V	3.370V	4.995V	97.025				115.04V

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	1.182A	0.492A	0.472A	0.199A	19.479	68.271%	667	15.2	0.637
	12.171V	5.077V	3.382V	5.019V	28.532				230.20V
2	2.440A	0.989A	0.977A	0.399A	39.883	77.913%	674	15.5	0.796
	12.126V	5.052V	3.377V	5.012V	51.189				230.18V
3	3.632A	1.484A	1.451A	0.600A	59.390	81.684%	684	16.0	0.862
	12.118V	5.042V	3.373V	5.002V	72.707				230.19V
4	4.890A	1.986A	1.955A	0.801A	79.808	83.909%	708	16.8	0.904
	12.111V	5.035V	3.369V	4.993V	95.113				230.19V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	12.2 mV	6.5 mV	8.7 mV	12.3 mV	Pass
20% Load	13.4 mV	7.5 mV	9.6 mV	16.4 mV	Pass
30% Load	15.4 mV	8.9 mV	10.3 mV	15.1 mV	Pass
40% Load	19.0 mV	10.0 mV	11.0 mV	17.6 mV	Pass
50% Load	23.1 mV	11.8 mV	12.5 mV	18.7 mV	Pass
60% Load	34.7 mV	15.9 mV	14.4 mV	19.4 mV	Pass
70% Load	35.6 mV	15.3 mV	15.4 mV	19.7 mV	Pass
80% Load	38.3 mV	16.1 mV	18.7 mV	22.2 mV	Pass
90% Load	46.3 mV	18.2 mV	20.3 mV	22.1 mV	Pass
100% Load	53.2 mV	19.9 mV	21.6 mV	25.5 mV	Pass
110% Load	58.7 mV	21.0 mV	23.2 mV	26.1 mV	Pass
Crossload 1	21.6 mV	37.6 mV	17.5 mV	14.2 mV	Pass
Crossload 2	60.7 mV	18.3 mV	19.0 mV	21.7 mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	12.4 mV	5.9 mV	8.6 mV	11.4 mV	Pass
20% Load	13.9 mV	7.5 mV	9.4 mV	14.3 mV	Pass
30% Load	17.3 mV	8.7 mV	9.8 mV	13.8 mV	Pass
40% Load	20.1 mV	10.2 mV	10.8 mV	15.5 mV	Pass
50% Load	22.7 mV	10.6 mV	12.2 mV	17.3 mV	Pass
60% Load	30.2 mV	14.3 mV	13.7 mV	16.9 mV	Pass
70% Load	35.5 mV	15.5 mV	15.0 mV	17.8 mV	Pass
80% Load	38.3 mV	15.8 mV	18.1 mV	19.0 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	43.9 mV	17.6 mV	19.8 mV	22.7 mV	Pass
100% Load	66.7 mV	27.0 mV	21.4 mV	31.0 mV	Pass
110% Load	76.9 mV	29.8 mV	23.1 mV	33.7 mV	Pass
Crossload 1	22.1 mV	55.7 mV	17.9 mV	13.1 mV	Fail
Crossload 2	74.1 mV	26.2 mV	18.8 mV	20.6 mV	Pass

The results above are not used in the certification process

Corsair VS450



Top side

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 LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

MODEL / MODELO / 型号 / 모델 / 型號: RP50100						
POWER SUPPLY / FUENTE DE ALIMENTACIÓN / FONTE DE ALIMENTAÇÃO / 전원 공급 장치						
PART NUMBER : CP-9020170 / 75-003435						
交流 流入	AC INPUT ENTRADA DE CA / ENTRADA CA / AC 입력		100V - 240V • 10A - 5A • 47Hz - 63Hz			
直流 輸出	DC OUTPUT SALIDA DE CC / SAÍDA CC / DC 출력		+5V	+3.3V	+12V	-12V +5Vsb
最大 電流	MAX LOAD CARGA MÁXIMA / CARGA MÁX / 최대 부하		20A	20A	36A	0.3A 3A
最大 電功率	MAXIMUM COMBINED WATTAGE VATAJE COMBINADO MÁXIMO POTÊNCIA MÁXIMA COMBINADA 최대 결합 와트		110W		432W	3.6W 15W
			TOTAL POWER: 450W 总功率 / 總功率 / 총출력			





R39708
RoHS



S/N: 18389842000052518275

Power specifications label

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

www.cybenetics.com - info@cybenetics.com