Anex

Corsair VS450

Lab ID#: 562
Receipt Date: -
Test Date: -

Report:
Report Date: Dec 14, 2018

DUT INFORMATION

Brand	Corsair
Manufacturer (OEM)	HEC
Series	VS
Model Number	VS450
Serial Number	18389842000052518275
DUT Notes	CP-9020170

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	47-63
Rated Power (W)	450
Type	ATX12V
Cooling	120mm Sleeve Bearing Fan (D12SH-12)
Semi-Passive Operation	✗
Cable Design	Fixed cables

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				

CABLES AND CONNECTORS

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	-

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RESULTS	
Temperature Range (°C /°F)	28-30 / 82.4-86
Average Efficiency	82.734
Efficiency With 10W (≤500W) or 2% (>500W) Load -115V	55.611
Average Efficiency 5VSB	79.832
Standby Power Consumption (W) -115V	0.0452360
Standby Power Consumption (W) -230V	0.1032820
Average PF	0.991
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✗
Avg Noise Output	31.85
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	Standard++

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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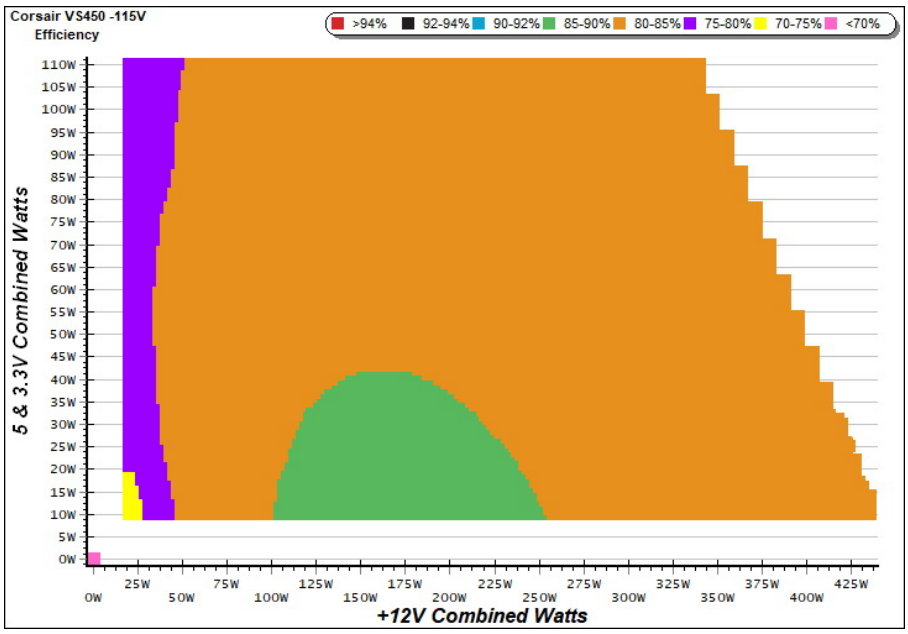
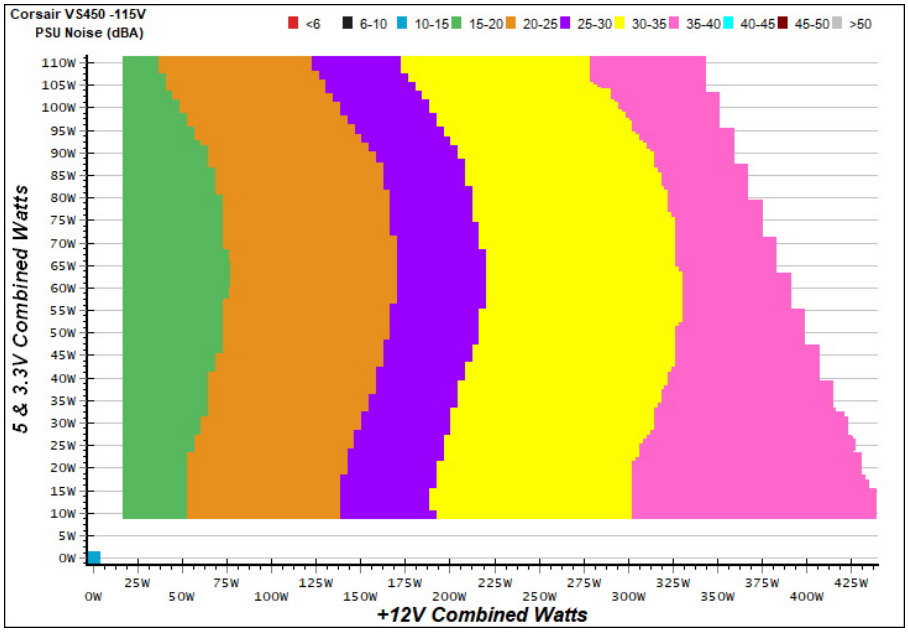
EFFICIENCY GRAPH



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



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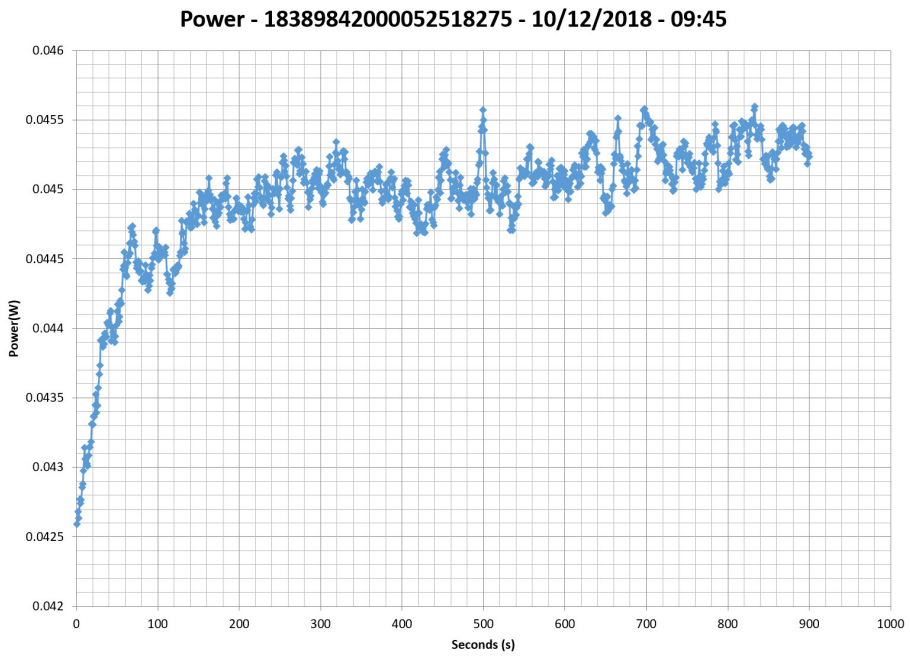
5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

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

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

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

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

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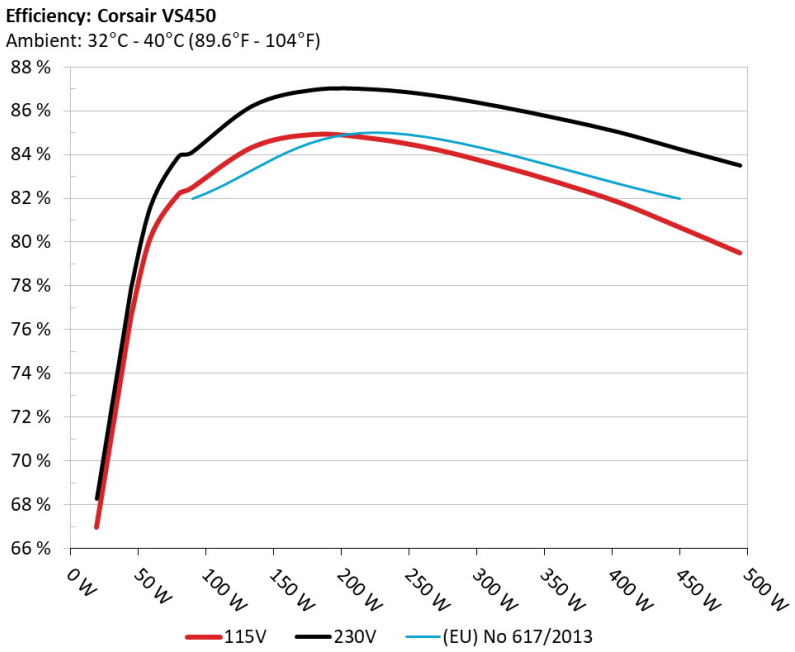
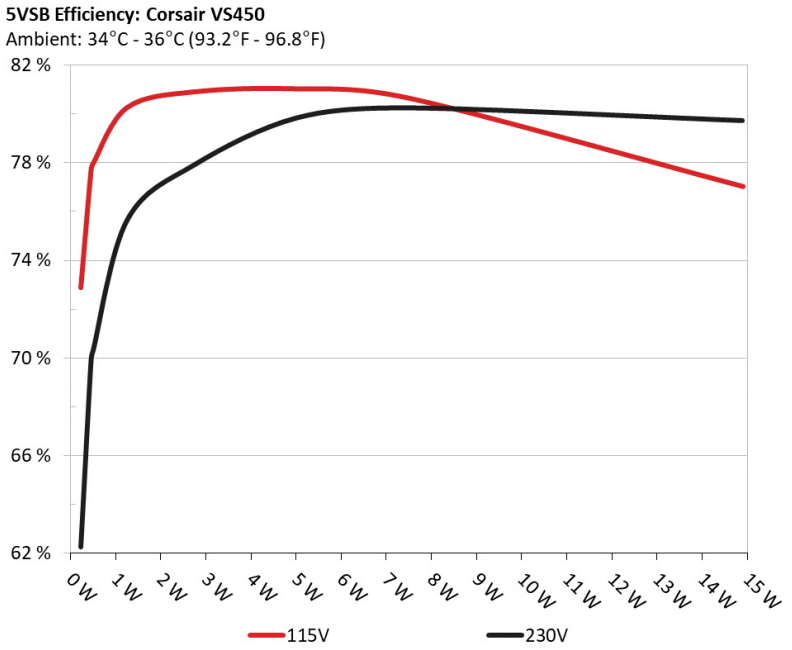
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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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10-110% LOAD TESTS

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

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20-80W LOAD TESTS

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

RIPPLE MEASUREMENTS

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

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HOLD-UP TIME & POWER OK SIGNAL (230V)	
Hold-Up Time (ms)	19.60
AC Loss to PWR_OK Hold Up Time (ms)	15.40
PWR_OK Inactive to DC Loss Delay (ms)	4.20

Top side

Power specifications label

CERTIFICATIONS

CYBENETICS SILVER

CYBENETICS STANDARD++