

## Anex

## Corsair Vengeance 650M (2018) (Sample #2)

Lab ID#: 421

Receipt Date: -

Test Date: -

Report:

Report Date: Jun 28, 2018

DUT INFORMATION	
Brand	Corsair
Manufacturer (OEM)	HEC
Series	Vengeance
Model Number	Vengeance 650M (2018) (Sample #2)
Serial Number	
DUT Notes	CP-9020175

DUT SPECIFICATIONS	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	47-63
Rated Power (W)	650
Type	ATX12V
Cooling	120mm Rifle Bearing Fan (NR120L)
Semi-Passive Operation	✓
Cable Design	Semi Modular

POWER SPECIFICATIONS						
Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	25	20	54	3	0.3
	Watts	100		648	15	3.6
Total Max. Power (W)		650				

CABLES AND CONNECTORS				
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)	1	2	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	-

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RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	87.973
Efficiency With 10W (≤500W) or 2% (>500W) Load -115V	61.084
Average Efficiency 5VSB	78.926
Standby Power Consumption (W) -115V	0.0503558
Standby Power Consumption (W) -230V	0.0918830
Average PF	0.984
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
Avg Noise Output	17.78
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	A+

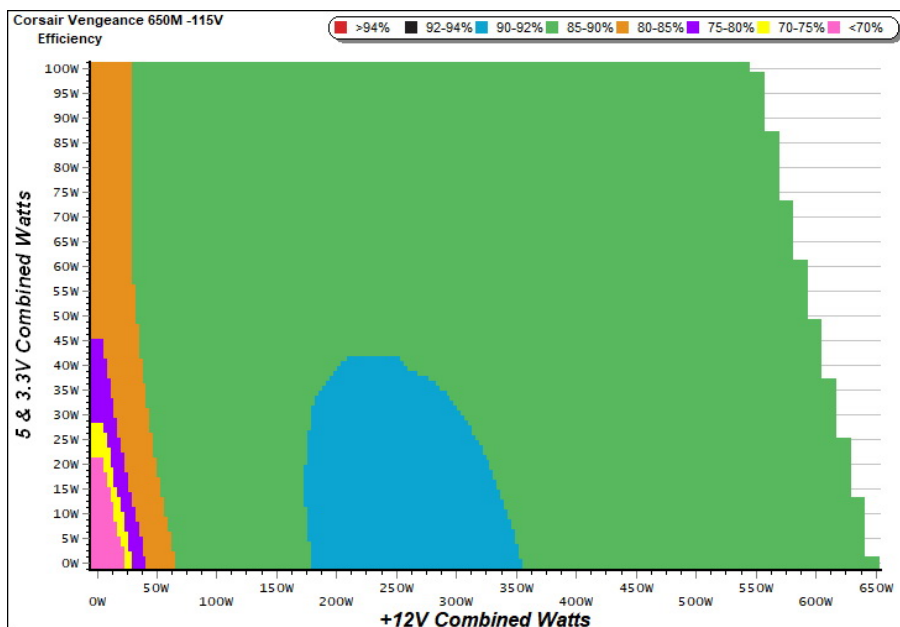
TEST EQUIPMENT		
Electronic Loads	Chroma 6314A x2 63123A x6 63102A 63101A	Chroma 63601-5 x2 Chroma 63600-2 63640-80-80 x10 63610-80-20
AC Sources	Chroma 6530, Chroma 61604	
Power Analyzers	N4L PPA1530, N4L PPA5530	
Oscilloscopes	Picoscope 4444 & 3424, Keysight DSOX3024A, Rigol DS2072A	
Voltmeter	Keithley 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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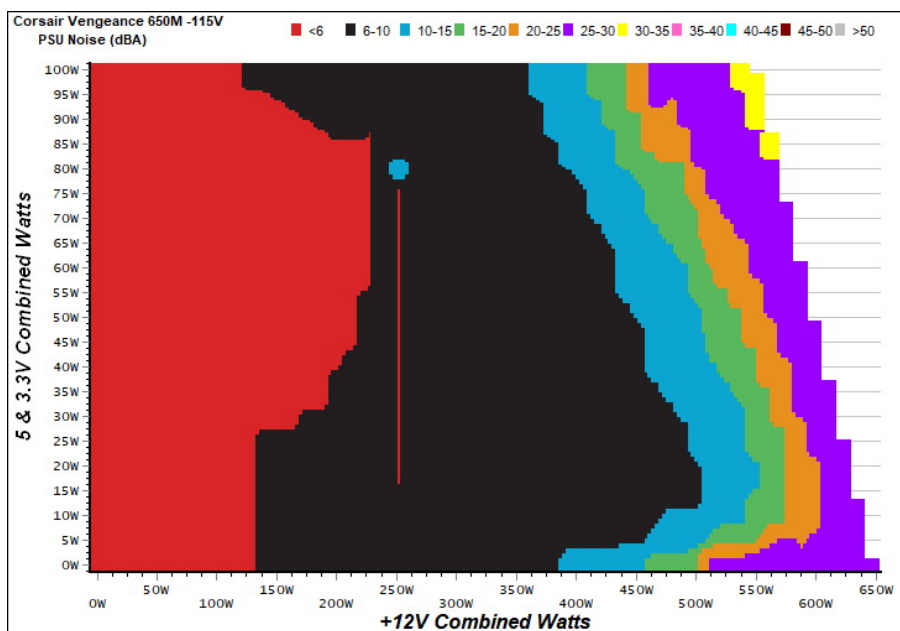
### EFFICIENCY GRAPH



#### 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)

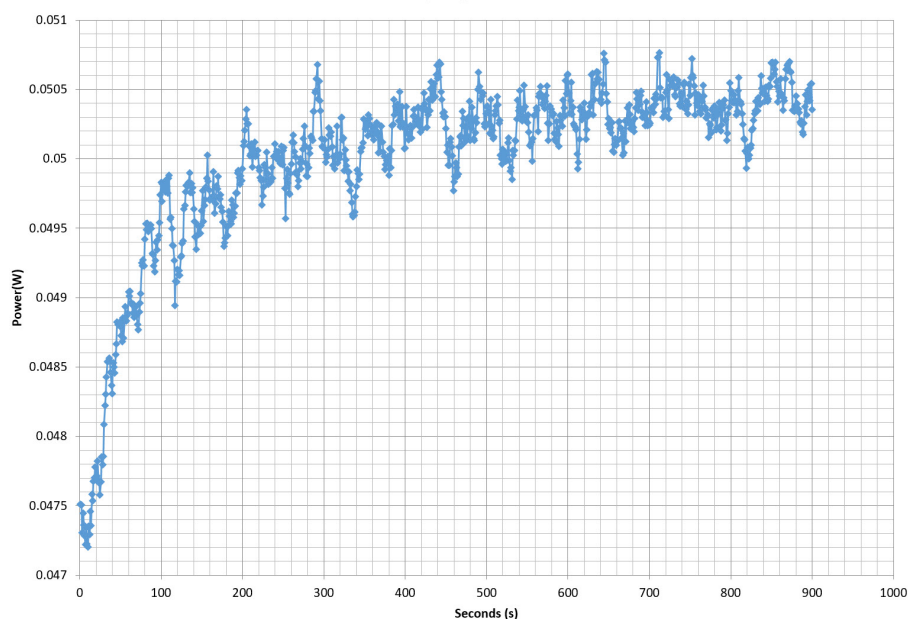
Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.226	69.538%	0.040
	5.029V	0.325		115.10V
2	0.090A	0.452	75.083%	0.072
	5.028V	0.602		115.10V
3	0.550A	2.761	80.566%	0.289
	5.019V	3.427		115.10V
4	1.000A	5.011	80.653%	0.375
	5.010V	6.213		115.11V
5	1.500A	7.501	80.491%	0.421
	5.000V	9.319		115.10V
6	3.000A	14.912	77.140%	0.483
	4.970V	19.331		115.09V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.226	61.081%	0.014
	5.029V	0.370		230.24V
2	0.090A	0.452	69.325%	0.024
	5.027V	0.652		230.24V
3	0.550A	2.760	77.834%	0.122
	5.018V	3.546		230.26V
4	1.000A	5.010	79.035%	0.194
	5.009V	6.339		230.26V
5	1.500A	7.501	79.959%	0.253
	5.000V	9.381		230.26V
6	3.000A	14.911	78.154%	0.350
	4.970V	19.079		230.24V

### VAMPIRE POWER -115V

Power - 25/06/2018 - 15:15



#### 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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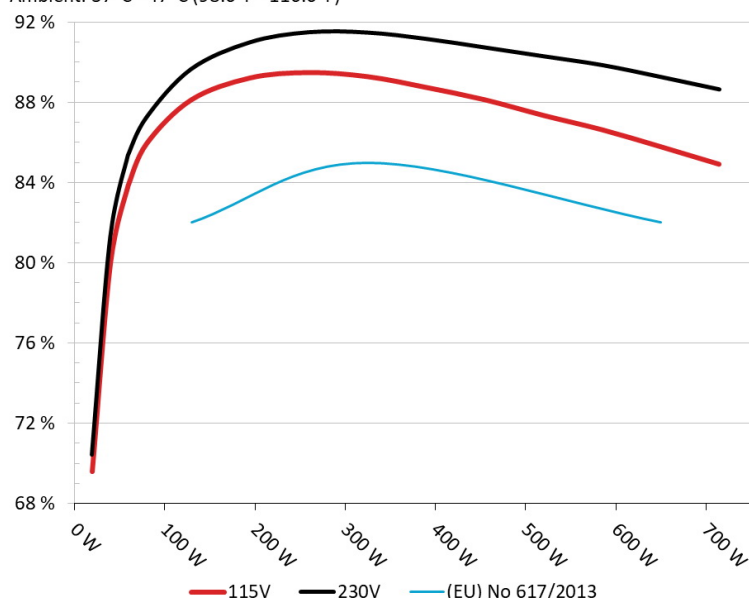
## Anex

## Corsair Vengeance 650M (2018) (Sample #2)

### EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

#### Efficiency: Corsair Vengeance 650M

Ambient: 37°C - 47°C (98.6°F - 116.6°F)



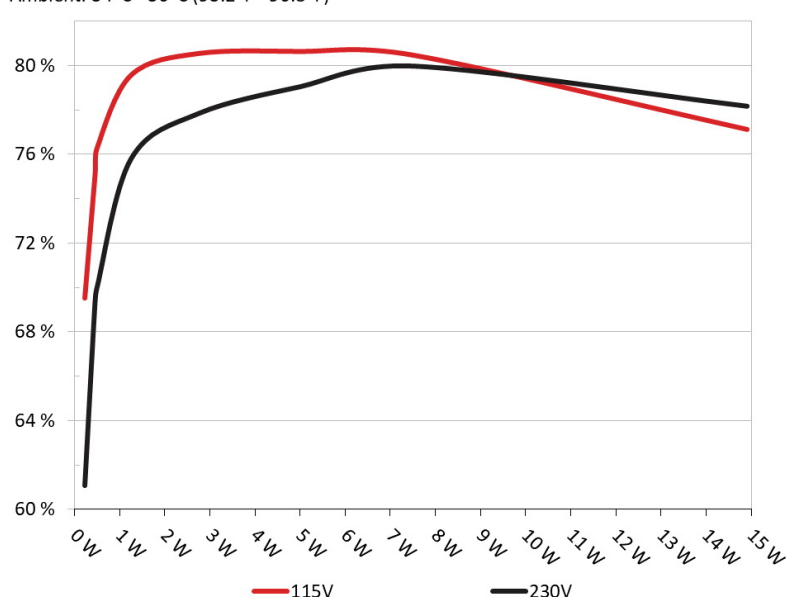
#### INFO

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 Vengeance 650M

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

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## Corsair Vengeance 650M (2018) (Sample #2)

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	3.549A	2.004A	1.980A	0.999A	64.767	83.853%	0	<6.0	45.23°C	0.971
	12.166V	4.988V	3.329V	5.008V	77.239				39.22°C	115.11V
2	8.094A	3.011A	2.974A	1.200A	129.287	88.113%	0	<6.0	46.23°C	0.976
	12.156V	4.983V	3.326V	5.001V	146.728				39.44°C	115.10V
3	13.041A	3.517A	3.457A	1.402A	194.397	89.204%	436	7.6	40.71°C	0.978
	12.146V	4.978V	3.324V	4.994V	217.923				48.05°C	115.10V
4	17.997A	4.024A	3.972A	1.605A	259.613	89.474%	436	7.6	40.82°C	0.983
	12.136V	4.972V	3.321V	4.986V	290.155				49.23°C	115.10V
5	22.633A	5.036A	4.970A	1.808A	324.922	89.269%	436	7.6	41.60°C	0.987
	12.125V	4.965V	3.318V	4.979V	363.980				50.89°C	115.10V
6	27.211A	6.050A	5.973A	2.012A	389.439	88.738%	608	8.9	42.64°C	0.989
	12.114V	4.959V	3.315V	4.971V	438.863				52.36°C	115.10V
7	31.863A	7.070A	6.975A	2.217A	454.752	88.119%	1006	19.8	43.38°C	0.990
	12.103V	4.952V	3.312V	4.963V	516.065				53.54°C	115.11V
8	36.523A	8.092A	7.980A	2.422A	520.077	87.338%	1431	31.4	44.12°C	0.991
	12.093V	4.944V	3.308V	4.955V	595.473				54.70°C	115.16V
9	41.585A	8.608A	8.471A	2.424A	584.978	86.624%	1785	37.1	45.08°C	0.992
	12.083V	4.937V	3.306V	4.952V	675.304				56.26°C	115.10V
10	46.398A	9.127A	8.994A	3.039A	649.821	85.780%	1790	37.2	46.71°C	0.993
	12.072V	4.931V	3.302V	4.936V	757.546				58.45°C	115.10V
11	51.815A	9.136A	8.997A	3.041A	714.646	84.910%	1790	37.2	47.15°C	0.993
	12.061V	4.927V	3.300V	4.933V	841.654				59.71°C	115.09V
CL1	0.138A	12.000A	11.998A	0.000A	101.114	82.959%	435	7.6	43.96°C	0.984
	12.152V	4.970V	3.317V	5.015V	121.884				54.14°C	115.10V
CL2	54.005A	1.002A	0.998A	1.000A	665.364	86.336%	1793	37.2	46.76°C	0.993
	12.075V	4.951V	3.314V	4.986V	770.670				58.54°C	115.09V

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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	1.187A	0.501A	0.477A	0.199A	19.540	69.602%	0	<6.0	0.869
	12.173V	4.994V	3.332V	5.027V	28.074				115.13V
2	2.434A	1.002A	0.988A	0.398A	39.914	80.025%	0	<6.0	0.947
	12.171V	4.991V	3.331V	5.022V	49.877				115.13V
3	3.614A	1.504A	1.472A	0.598A	59.379	83.851%	0	<6.0	0.971
	12.168V	4.989V	3.329V	5.017V	70.815				115.11V
4	4.866A	2.007A	1.979A	0.798A	79.790	85.931%	0	<6.0	0.979
	12.165V	4.987V	3.328V	5.012V	92.854				115.11V

### RIPPLE MEASUREMENTS

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	16.1 mV	12.5 mV	22.6 mV	6.5 mV	Pass
20% Load	8.7 mV	15.2 mV	21.4 mV	8.3 mV	Pass
30% Load	8.2 mV	19.3 mV	26.5 mV	9.9 mV	Pass
40% Load	11.2 mV	30.1 mV	22.9 mV	12.9 mV	Pass
50% Load	11.7 mV	34.5 mV	24.8 mV	17.4 mV	Pass
60% Load	11.6 mV	39.8 mV	26.3 mV	15.5 mV	Pass
70% Load	11.5 mV	17.3 mV	29.0 mV	18.4 mV	Pass
80% Load	13.0 mV	13.9 mV	22.7 mV	20.4 mV	Pass
90% Load	13.9 mV	15.9 mV	23.0 mV	21.3 mV	Pass
100% Load	19.1 mV	17.6 mV	29.9 mV	29.7 mV	Pass
110% Load	25.1 mV	28.3 mV	47.1 mV	43.3 mV	Pass
Crossload 1	12.7 mV	13.7 mV	24.3 mV	9.3 mV	Pass
Crossload 2	20.5 mV	15.5 mV	28.8 mV	21.4 mV	Pass

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

Hold-Up Time (ms)	16.7
AC Loss to PWR_OK Hold Up Time (ms)	12.0
PWR_OK Inactive to DC Loss Delay (ms)	4.7



Top side

CORSAIR						
MODEL / MODELO / 型号 / 型號 / 모델 : RPS0105						
POWER SUPPLY / FUENTE DE ALIMENTACIÓN / 전원 공급 장치						
PART NUMBER: CP-9020175/75-003440						
交流輸入 교류입력	AC INPUT AC 입력 Entrada de CA  100V ~ 240V • 10A • 5A • 47Hz ~ 63Hz					
直流輸出 직류출력	DC OUTPUT DC 출력 Salida de CC	+5V	+3.3V	+12V	-12V	+5Vsb
最大電流 最大電流	MAX LOAD 최대 부하 Carga Máximo	20A	25A	54A	0.3A	3A
最大輸出 最大輸出 最大電流 最大電流	MAX POWER 최대 결합 안트 Wataje Combinado Máximo	100W		648W	3.6W	15W
		TOTAL POWER: 650W PODER TOTAL / 总功率 / 總功率 / 총출력				
<div><div></div><div>XXXXXX XXXXXX</div></div>						

Power specifications label

## CERTIFICATIONS



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