Anex

Corsair CX750M

Lab ID#: 111
Receipt Date: -
Test Date: -

Report: 19PS111A
Report Date: May 18, 2018

DUT INFORMATION

Brand	Corsair
Manufacturer (OEM)	Channel Well Technology
Series	CXM
Model Number	CX750M
Serial Number	16337119000020192829
DUT Notes	CP-9020061

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	12-6
Rated Frequency (Hz)	47-63
Rated Power (W)	750
Type	ATX12V
Cooling	140mm Sleeve Bearing Fan (D14SH-12)
Semi-Passive Operation	✗
Cable Design	Semi Modular

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	25	25	62	3	0.8
	Watts	130		744	15	9.6
Total Max. Power (W)		750				

CABLES AND CONNECTORS

Native Cables			
Description	Cable Count	Connector Count (Total)	Gauge
ATX connector 20+4 pin (580mm)	1	1	16-22AWG
4+4 pin EPS12V (600mm)	1	1	18AWG
Modular Cables			
6+2 pin PCIe (600mm+150mm)	2	4	16-18AWG
SATA (450mm+115mm+115mm+115mm)	2	8	18AWG
4 pin Molex (450mm+100mm+100mm) / FDD (+100mm)	2	6 / 2	18-22AWG

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Anex

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General Data	
Manufacturer (OEM)	CWT
Platform Model	-
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor & Diode
Bridge Rectifier(s)	2x GBU1006 (600V, 10A @ 100°C)
APFC MOSFETS	2x InfineonÂ IPW50R280CE (550V, 11.4A @ 100°C, 0.28Ohm)
APFC Boost Diode	1x Power Integrations QH08TZ600 (600V, 8A @ 150°C)
Hold-up Cap(s)	1x Nichicon (400V, 390uF, 2000h @ 105°C, GG)
Main Switchers	2x Vishay SiHG20N50C (560V, 11A @ 100°C, 0.27Ohm)
Combo APFC/PWM Controller	Champion CM6800TX & CM03X Green PFC controller
Topology	Primary side: Double-Forward Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	4x APECÂ AP9990GH-HF (60V, 100A @ 25°C, 6mOhm)
5V & 3.3V	DC-DC Converters: 6x APEC AP72T03GP (30V, 47A @ 100°C, 9.5 mOhm) PWM Controller: APW7159C
Filtering Capacitors	Electrolytics: Nippon Chemi-Con (1-5,000 @ 105°C, KZE), Suscon (2-5,000h @ 105°C, MF), 1x TAICON (105°C) Polymers: APAQ, EneSol
Supervisor IC	WeltrendWT7502 (OVP, UVP, SCP, PG)
Fan Model	Yate Loon D14SH-12 (140mm, 12V, 0.70A, 2100RPM, 140CFM, 48.5 dBA, Sleeve Bearing)
5VSB Circuit	
Rectifier	1x MBR2045CT SBR (45V, 20A) & CEF04N7G (700V, 4A, 3.3Ohm)
Standby PWM Controller	On-Bright OB5269CP
-12V Circuit	
Rectifier	UTC 2SB834L

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Anex

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RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	85.067
Efficiency With 10W (≤500W) or 2% (>500W) Load -115V	0.000
Average Efficiency 5VSB	80.072
Standby Power Consumption (W) -115V	0.0512045
Standby Power Consumption (W) -230V	0.0657095
Average PF	0.989
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
Avg Noise Output	33.69
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	Standard++

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 4189	
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2	

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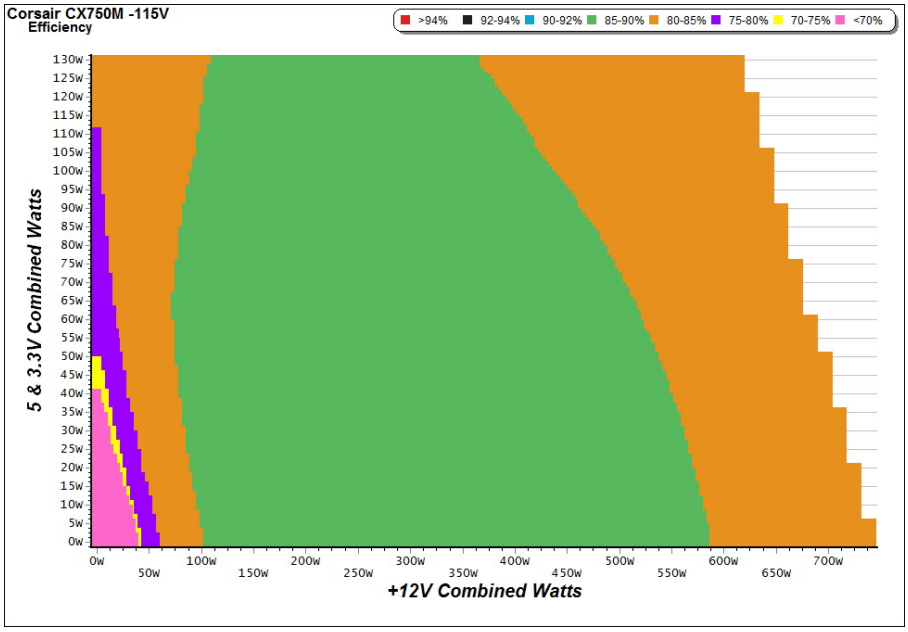
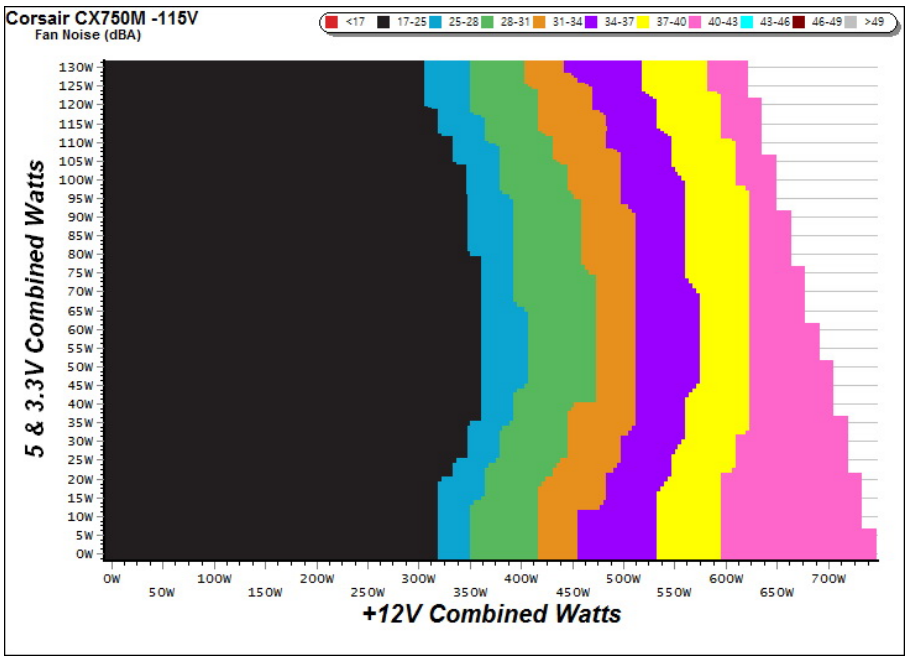
EFFICIENCY GRAPH



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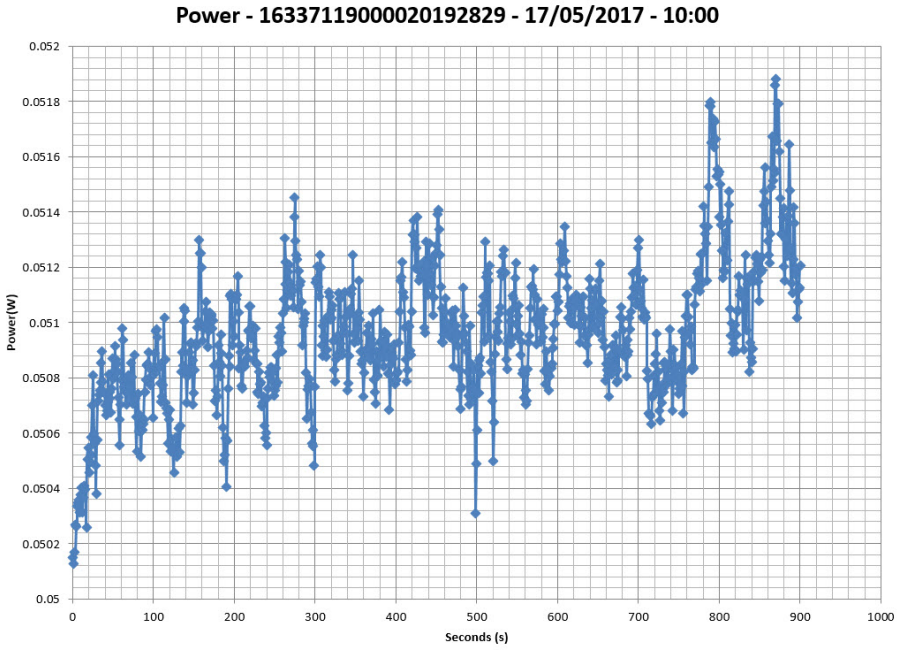
5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.041A	0.210	67.961%	0.031
	5.077V	0.309		115.11V
2	0.087A	0.442	74.915%	0.058
	5.076V	0.590		115.12V
3	0.532A	2.693	80.701%	0.246
	5.066V	3.337		115.10V
4	1.002A	5.063	80.775%	0.332
	5.054V	6.268		115.11V
5	1.502A	7.571	80.585%	0.378
	5.042V	9.395		115.10V
6	3.001A	15.021	79.012%	0.437
	5.005V	19.011		115.10V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.211	63.174%	0.010
	5.077V	0.334		230.27V
2	0.087A	0.442	70.947%	0.019
	5.076V	0.623		230.28V
3	0.532A	2.693	78.789%	0.097
	5.065V	3.418		230.28V
4	1.002A	5.063	79.783%	0.164
	5.053V	6.346		230.28V
5	1.501A	7.569	79.766%	0.218
	5.041V	9.489		230.27V
6	3.001A	15.013	78.664%	0.312
	5.002V	19.085		230.27V

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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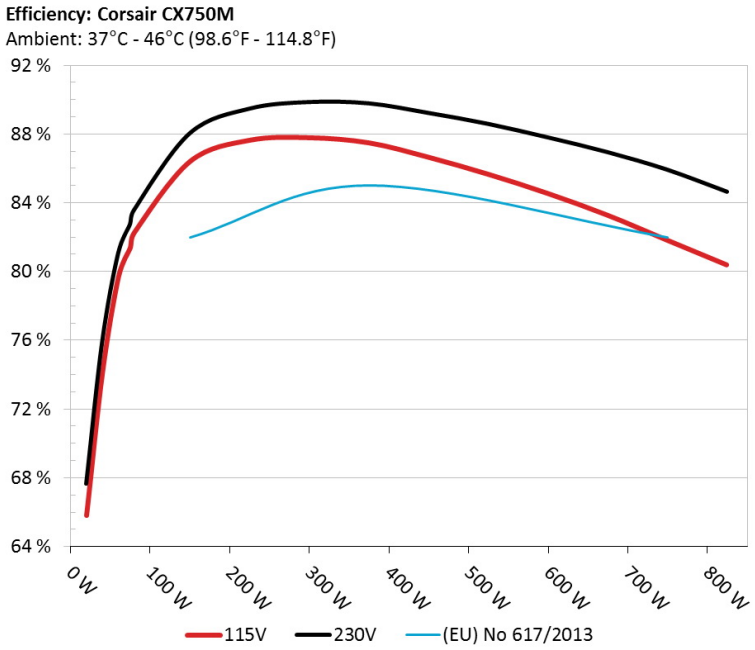
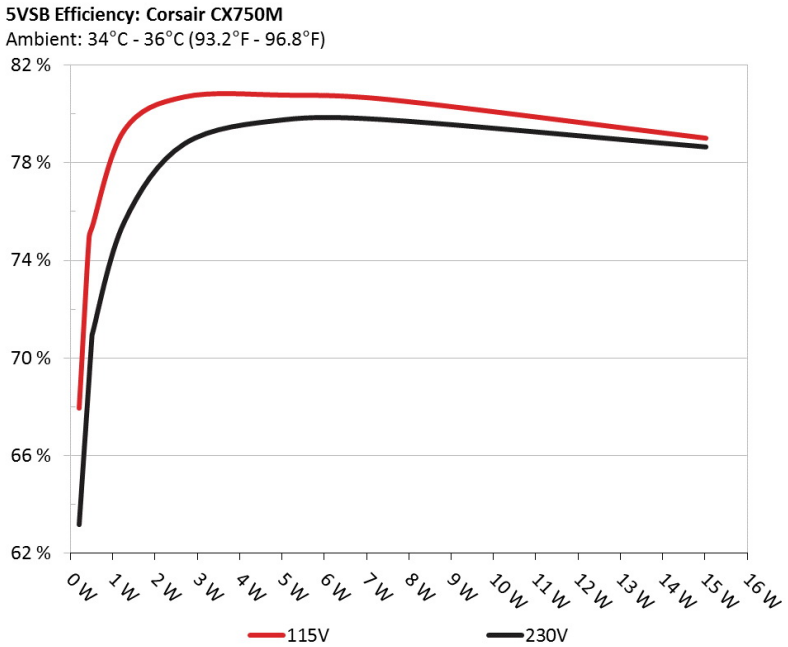
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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)	Fan Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	4.394A	1.974A	1.998A	0.992A	74.815	81.407%	775	22.0	38.15°C	0.971
	12.111V	5.074V	3.296V	5.038V	91.902				43.38°C	115.09V
2	9.834A	2.959A	3.010A	1.191A	149.764	86.399%	775	22.0	38.56°C	0.977
	12.091V	5.064V	3.288V	5.021V	173.340				44.26°C	115.09V
3	15.639A	3.464A	3.532A	1.396A	224.902	87.637%	775	22.0	39.70°C	0.986
	12.073V	5.057V	3.282V	5.002V	256.630				46.47°C	115.09V
4	21.454A	3.963A	4.026A	1.602A	299.766	87.782%	895	24.3	40.39°C	0.990
	12.053V	5.049V	3.275V	4.985V	341.488				48.20°C	115.09V
5	26.948A	4.969A	5.047A	1.812A	374.789	87.485%	1045	27.1	41.18°C	0.993
	12.033V	5.038V	3.267V	4.967V	428.404				49.72°C	115.09V
6	32.456A	5.965A	6.072A	2.020A	449.669	86.647%	1285	32.8	42.10°C	0.995
	12.013V	5.028V	3.259V	4.947V	518.966				51.42°C	115.09V
7	37.987A	6.981A	7.099A	2.231A	524.641	85.659%	1505	36.0	42.99°C	0.996
	11.992V	5.017V	3.251V	4.930V	612.477				53.11°C	115.09V
8	43.542A	7.992A	8.138A	2.440A	599.595	84.541%	1700	40.2	43.76°C	0.996
	11.970V	5.007V	3.244V	4.910V	709.233				54.90°C	115.09V
9	49.549A	8.505A	8.679A	2.451A	674.657	83.278%	1855	42.4	44.74°C	0.997
	11.949V	4.998V	3.236V	4.897V	810.129				57.09°C	115.10V
10	55.319A	9.029A	9.197A	3.079A	749.576	81.826%	2035	45.0	46.02°C	0.997
	11.928V	4.988V	3.230V	4.868V	916.057				59.70°C	115.10V
11	61.710A	9.038A	9.211A	3.086A	824.438	80.391%	2110	45.6	46.47°C	0.997
	11.906V	4.983V	3.224V	4.856V	1025.540				60.56°C	115.11V
CL1	0.099A	16.027A	16.004A	0.002A	133.195	80.788%	785	22.5	44.04°C	0.977
	12.096V	4.993V	3.247V	5.037V	164.869				53.76°C	115.11V
CL2	62.446A	1.003A	1.001A	1.002A	757.854	82.185%	2050	45.4	46.50°C	0.997
	11.924V	5.031V	3.256V	4.932V	922.135				59.59°C	115.10V

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20-80W LOAD TESTS

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	Fan Noise (dB[A])	PF/AC Volts
1	1.206A	0.491A	0.483A	0.195A	19.707	65.813%	785	22.5	0.887
	12.126V	5.088V	3.306V	5.067V	29.944				115.10V
2	2.439A	0.979A	0.998A	0.396A	39.834	74.159%	785	22.5	0.927
	12.120V	5.081V	3.302V	5.059V	53.714				115.08V
3	3.669A	1.466A	1.515A	0.591A	59.876	79.691%	785	22.5	0.957
	12.115V	5.078V	3.298V	5.050V	75.135				115.08V
4	4.890A	1.974A	1.999A	0.790A	79.804	82.268%	775	22.0	0.973
	12.110V	5.074V	3.295V	5.042V	97.005				115.09V

RIPPLE MEASUREMENTS

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	5.4 mV	8.6 mV	8.5 mV	7.5 mV	Pass
20% Load	6.8 mV	9.0 mV	9.2 mV	9.0 mV	Pass
30% Load	8.3 mV	9.8 mV	10.0 mV	8.6 mV	Pass
40% Load	10.2 mV	10.9 mV	11.1 mV	12.2 mV	Pass
50% Load	11.5 mV	11.8 mV	11.4 mV	11.4 mV	Pass
60% Load	13.5 mV	12.8 mV	13.0 mV	12.4 mV	Pass
70% Load	15.7 mV	13.0 mV	13.8 mV	14.1 mV	Pass
80% Load	21.2 mV	13.6 mV	16.6 mV	15.4 mV	Pass
90% Load	26.0 mV	14.0 mV	15.6 mV	17.4 mV	Pass
100% Load	30.5 mV	18.2 mV	19.0 mV	20.2 mV	Pass
110% Load	34.2 mV	17.8 mV	20.1 mV	22.0 mV	Pass
Crossload 1	14.4 mV	18.4 mV	16.3 mV	12.8 mV	Pass
Crossload 2	28.6 mV	13.7 mV	16.2 mV	19.4 mV	Pass

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HOLD-UP TIME & POWER OK SIGNAL (230V)	
Hold-Up Time (ms)	8.44
AC Loss to PWR_OK Hold Up Time (ms)	5.40
PWR_OK Inactive to DC Loss Delay (ms)	3.04

Top side

Power specifications label

CERTIFICATIONS

CYBENETICS GOLD

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