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Corsair RM1000i

Lab ID#: 89
Receipt Date: -
Test Date: -

Report:
Report Date: Dec 4, 2018

DUT INFORMATION

Brand	Corsair
Manufacturer (OEM)	Channel Well Technology
Series	RMi
Model Number	RM1000i
Serial Number	16467141000020400275
DUT Notes	CP-9020084

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	13-6.5
Rated Frequency (Hz)	47-63
Rated Power (W)	1000
Type	ATX12V
Cooling	135mm Fluid Dynamic Bearing Fan (NR135P)
Semi-Passive Operation	✓
Cable Design	Fully Modular

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	25	25	83.3	3	0.8
	Watts	150		1000	15	9.6
Total Max. Power (W)		1000				

CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge
ATX connector 20+4 pin (600mm)	1	1	18-20AWG
4+4 pin EPS12V (650mm)	2	2	18AWG
6+2 pin PCIe (600mm+150mm)	4	8	18AWG
SATA (400mm+100mm+100mm+100mm)	2	8	18AWG
SATA (550mm+100mm+100mm+100mm)	1	4	18AWG
4 pin Molex (450mm+100mm+100mm+100mm)	3	11	18AWG
FDD Adapter (+100mm)	2	2	20AWG
C-Link USB Cable (800mm) / C-Link I2C Cable (800mm)	1 / 1	1 / 1	24-28 / 29AWG

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RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	88.632
Efficiency With 10W (≤500W) or 2% (>500W) Load -115V	0.000
Average Efficiency 5VSB	81.081
Standby Power Consumption (W) -115V	0.0428923
Standby Power Consumption (W) -230V	0.0761956
Average PF	0.995
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
Avg Noise Output	19.58
Efficiency Rating (ETA)	PLATINUM
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 4189	
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2	

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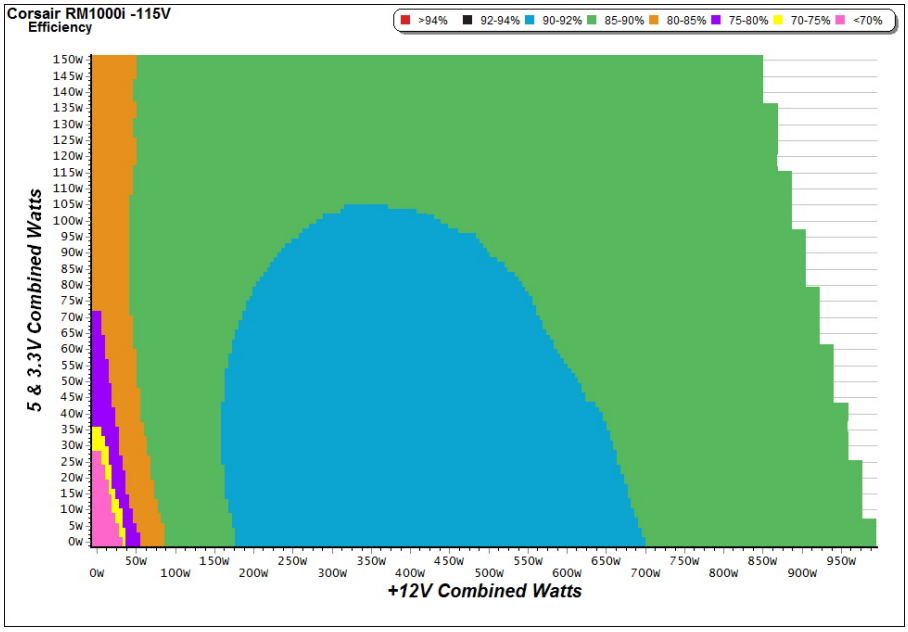
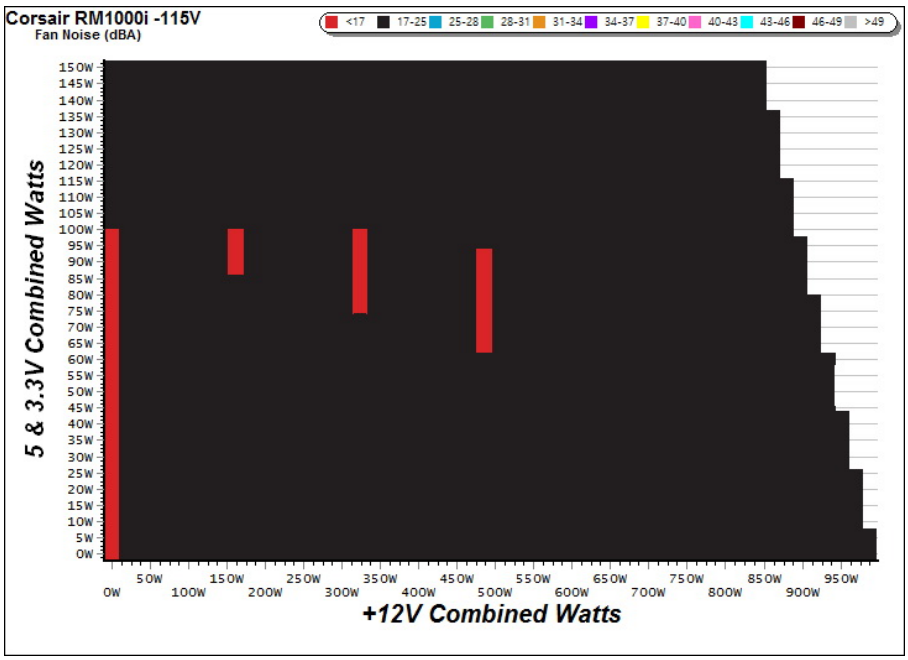
EFFICIENCY GRAPH



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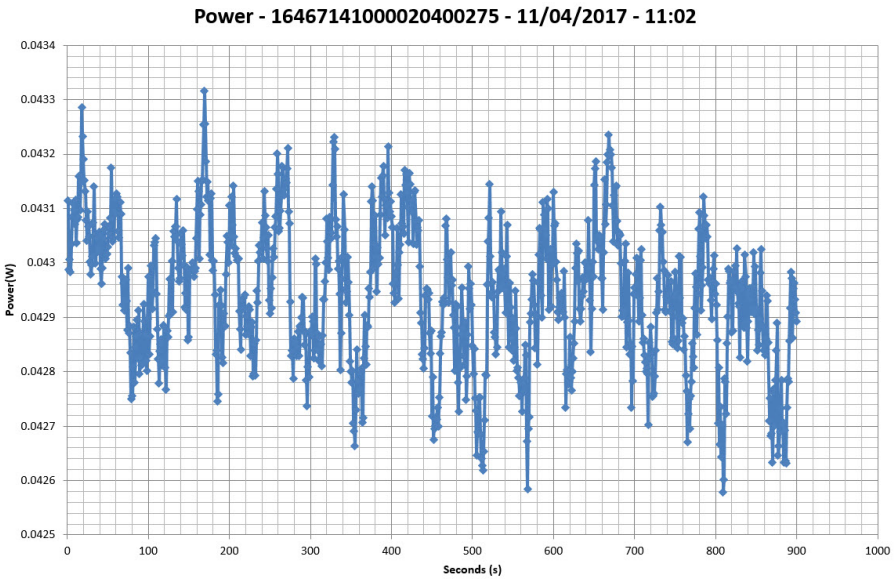
5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.211	70.333%	0.030
	5.062V	0.300		115.09V
2	0.087A	0.440	76.256%	0.056
	5.062V	0.577		115.54V
3	0.532A	2.686	81.443%	0.246
	5.053V	3.298		115.09V
4	3.001A	15.013	80.520%	0.450
	5.002V	18.645		115.07V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.211	61.516%	0.010
	5.063V	0.343		230.09V
2	0.087A	0.441	70.223%	0.019
	5.062V	0.628		230.19V
3	0.532A	2.687	79.122%	0.096
	5.053V	3.396		230.20V
4	3.001A	15.012	80.506%	0.317
	5.002V	18.647		230.17V

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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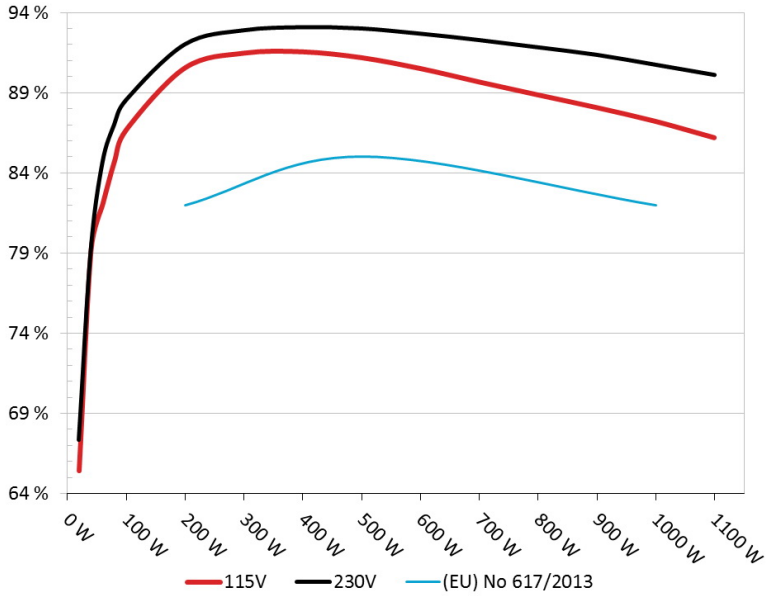
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Corsair RM1000i
Ambient: 36°C - 47°C (96.8°F - 116.6°F)

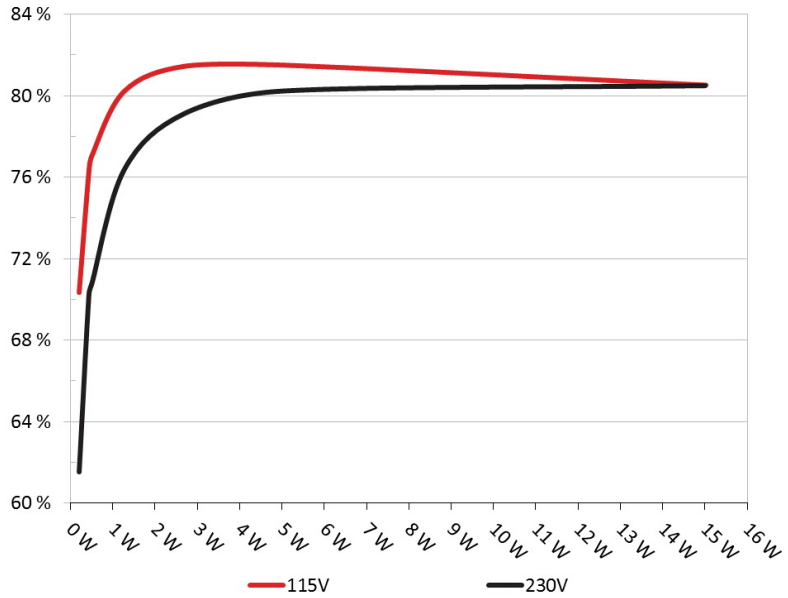


INFO

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 RM1000i
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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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	6.486A	1.985A	1.979A	0.996A	99.827	86.681%	0	0	44.95°C	0.980
	12.062V	5.039V	3.330V	5.021V	115.166				38.42°C	115.11V
2	14.012A	2.970A	2.973A	1.196A	199.653	90.539%	0	0	44.97°C	0.994
	12.047V	5.036V	3.327V	5.018V	220.515				38.96°C	115.10V
3	21.929A	3.477A	3.486A	1.395A	299.892	91.456%	0	0	44.60°C	0.996
	12.030V	5.035V	3.324V	5.013V	327.910				39.65°C	115.10V
4	29.843A	3.974A	3.969A	1.596A	399.723	91.537%	0	0	46.93°C	0.998
	12.014V	5.034V	3.323V	5.009V	436.679				40.66°C	115.10V
5	37.450A	4.969A	4.962A	1.794A	499.693	91.174%	0	0	47.99°C	0.998
	11.995V	5.033V	3.323V	5.007V	548.063				41.80°C	115.10V
6	45.070A	5.964A	5.963A	1.996A	599.624	90.498%	601	17.4	43.66°C	0.998
	11.978V	5.030V	3.319V	5.002V	662.584				57.99°C	115.10V
7	52.698A	6.970A	6.965A	2.200A	699.598	89.659%	767	19.2	44.09°C	0.998
	11.964V	5.026V	3.316V	4.996V	780.288				57.94°C	115.09V
8	60.351A	7.962A	7.963A	2.401A	799.451	88.854%	855	21.3	44.76°C	0.998
	11.948V	5.024V	3.314V	4.993V	899.737				58.89°C	115.10V
9	68.463A	8.470A	8.482A	2.402A	899.509	88.063%	938	22.2	45.42°C	0.998
	11.932V	5.021V	3.312V	4.991V	1021.441				59.48°C	115.09V
10	76.345A	8.970A	8.969A	3.011A	999.270	87.208%	996	22.8	45.77°C	0.998
	11.914V	5.019V	3.310V	4.978V	1145.852				58.88°C	115.08V
11	84.851A	8.975A	8.974A	3.011A	1099.263	86.188%	1230	28.9	46.61°C	0.998
	11.898V	5.017V	3.309V	4.976V	1275.426				60.35°C	115.08V
CL1	0.101A	18.027A	18.003A	0.004A	151.627	82.581%	847	20.4	44.97°C	0.991
	12.037V	5.030V	3.317V	5.074V	183.610				54.12°C	115.12V
CL2	83.247A	1.003A	1.002A	1.002A	1005.614	87.531%	1126	26.5	46.43°C	0.998
	11.919V	5.028V	3.321V	5.012V	1148.872				59.71°C	115.09V

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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	1.208A	0.491A	0.478A	0.196A	19.651	65.431%	0	0	0.851
	12.083V	5.040V	3.332V	5.036V	30.033				115.12V
2	2.445A	0.990A	0.989A	0.396A	39.806	79.158%	0	0	0.930
	12.079V	5.038V	3.330V	5.031V	50.287				115.12V
3	3.682A	1.476A	1.499A	0.596A	59.878	82.066%	0	0	0.957
	12.072V	5.038V	3.329V	5.029V	72.963				115.11V
4	4.908A	1.985A	1.977A	0.797A	79.812	84.721%	0	0	0.972
	12.067V	5.038V	3.329V	5.026V	94.206				115.11V

RIPPLE MEASUREMENTS

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	5.0 mV	11.8 mV	3.9 mV	4.5 mV	Pass
20% Load	6.1 mV	12.2 mV	5.6 mV	4.8 mV	Pass
30% Load	6.8 mV	12.4 mV	5.4 mV	5.4 mV	Pass
40% Load	7.4 mV	12.4 mV	6.2 mV	5.7 mV	Pass
50% Load	8.3 mV	13.0 mV	7.1 mV	6.5 mV	Pass
60% Load	9.7 mV	13.7 mV	8.7 mV	7.7 mV	Pass
70% Load	10.0 mV	14.1 mV	9.0 mV	8.5 mV	Pass
80% Load	11.5 mV	15.0 mV	10.1 mV	10.1 mV	Pass
90% Load	13.1 mV	17.2 mV	11.1 mV	12.3 mV	Pass
100% Load	15.6 mV	19.9 mV	13.1 mV	16.5 mV	Pass
107% Load	18.0 mV	17.1 mV	14.2 mV	13.3 mV	Pass
Crossload 1	8.3 mV	14.7 mV	6.4 mV	8.7 mV	Pass
Crossload 2	15.2 mV	17.1 mV	13.0 mV	11.6 mV	Pass

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HOLD-UP TIME & POWER OK SIGNAL (230V)	
Hold-Up Time (ms)	27.4
AC Loss to PWR_OK Hold Up Time (ms)	19.9
PWR_OK Inactive to DC Loss Delay (ms)	7.5

Top side

Power specifications label

CERTIFICATIONS

CYBENETICS PLATINUM

CYBENETICS A+