

Anex

Corsair AX1600i (#2)

Lab ID#: 260
 Receipt Date: Jan 24, 2018
 Test Date: Jan 30, 2018

Report:

Report Date: Feb 1, 2018

DUT INFORMATION

Brand	Corsair
Manufacturer (OEM)	Flextronics
Series	AXi
Model Number	
Serial Number	1742956000049040160
DUT Notes	Balanced Profile

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	18-9
Rated Frequency (Hz)	50-60
Rated Power (W)	1600
Type	ATX12V
Cooling	140mm Fluid Dynamic Bearing Fan (NR140P)
Semi-Passive Operation	✓ (selectable)
Cable Design	Fully Modular

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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Anex

Corsair AX1600i (#2)

RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

115V

Average Efficiency	92.288%
Efficiency With 10W (≤500W) or 2% (>500W)	0.000
Average Efficiency 5VSB	81.676%
Standby Power Consumption (W)	0.0481594
Average PF	0.992
Avg Noise Output	23.70 dB(A)
Efficiency Rating (ETA)	TITANIUM
Noise Rating (LAMBDA)	A

230V

Average Efficiency	94.209%
Average Efficiency 5VSB	81.291%
Standby Power Consumption (W)	0.0732974
Average PF	0.989
Avg Noise Output	23.41 dB(A)
Efficiency Rating (ETA)	TITANIUM
Noise Rating (LAMBDA)	A

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	30	30	133.3	3.5	0.8
	Watts	180		1600	17.5	9.6
Total Max. Power (W)		1600				

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

Hold-Up Time (ms)	25.30
AC Loss to PWR_OK Hold Up Time (ms)	23.20
PWR_OK Inactive to DC Loss Delay (ms)	2.10

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CABLES AND CONNECTORS

Modular Cables

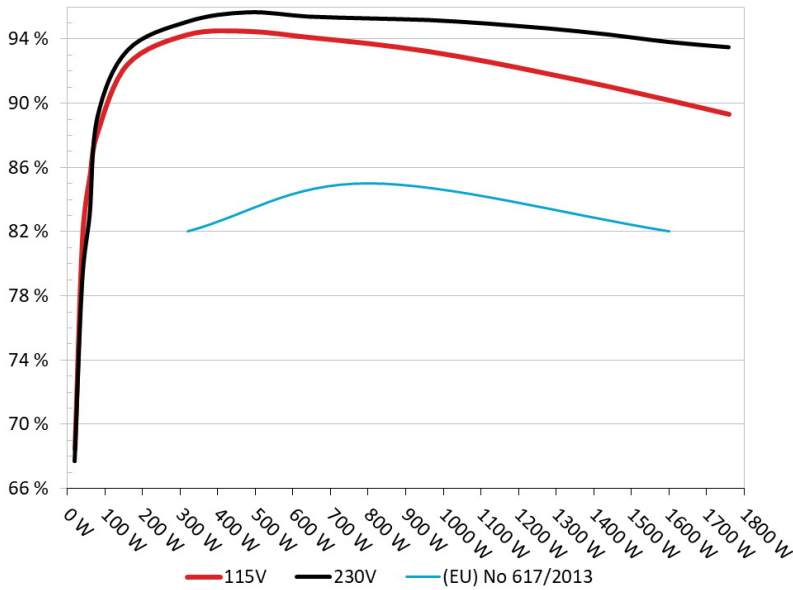
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (600mm)	1	1	16-22AWG	Yes
4+4 pin EPS12V (650mm)	2	2	16AWG	Yes
6+2 pin PCIe (650mm)	6	6	16-18AWG	Yes
6+2 pin PCIe (680mm+100mm)	2	4	16-18AWG	Yes
SATA (450mm+110mm+110mm+110mm)	3	12	18AWG	No
SATA (550mm+110mm)	2	4	18AWG	No
4 pin Molex (450mm+100mm+100mm)	3	9	18AWG	No
FDD Adapter (+105mm)	2	2	20AWG	No
USB Mini to Motherboard Header Cable (+800mm)	1	1	24-28AWG	No
AC Power Cord (1400mm) - C19 coupler	1	1	14AWG	No

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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Corsair AX1600i
Ambient: 37°C - 48°C (98.6°F - 118.4°F)

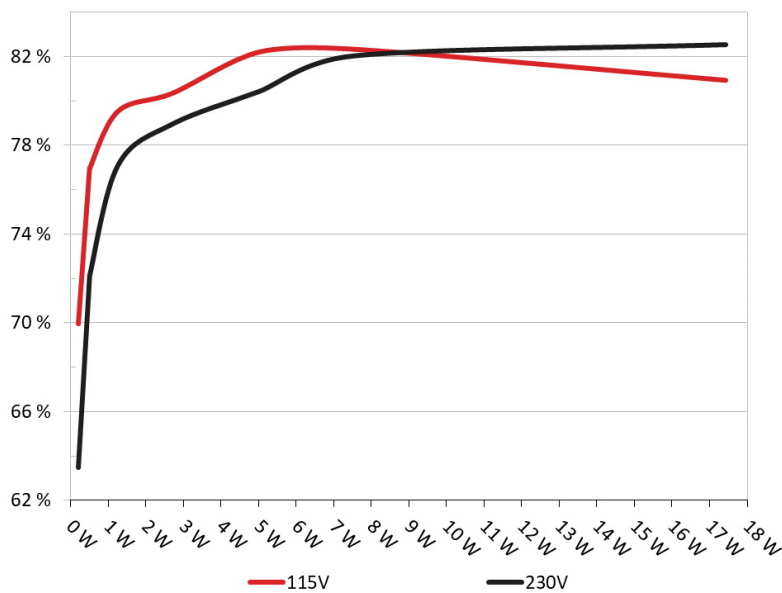


INFO

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 AX1600i
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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5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.212	69.967%	0.018
	5.029V	0.303		115.03V
2	0.088A	0.441	76.963%	0.034
	5.029V	0.573		115.03V
3	0.543A	2.724	80.354%	0.187
	5.021V	3.390		115.03V
4	1.002A	5.026	82.205%	0.299
	5.014V	6.114		115.03V
5	1.502A	7.521	82.332%	0.384
	5.007V	9.135		115.03V
6	3.502A	17.431	80.931%	0.533
	4.978V	21.538		115.02V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.212	63.473%	0.006
	5.030V	0.334		230.14V
2	0.087A	0.440	72.131%	0.011
	5.029V	0.610		230.14V
3	0.542A	2.724	78.979%	0.061
	5.022V	3.449		230.13V
4	1.002A	5.027	80.445%	0.109
	5.015V	6.249		230.13V
5	1.502A	7.522	82.046%	0.154
	5.008V	9.168		230.13V
6	3.502A	17.433	82.554%	0.298
	4.978V	21.117		230.13V

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Corsair AX1600i (#2)

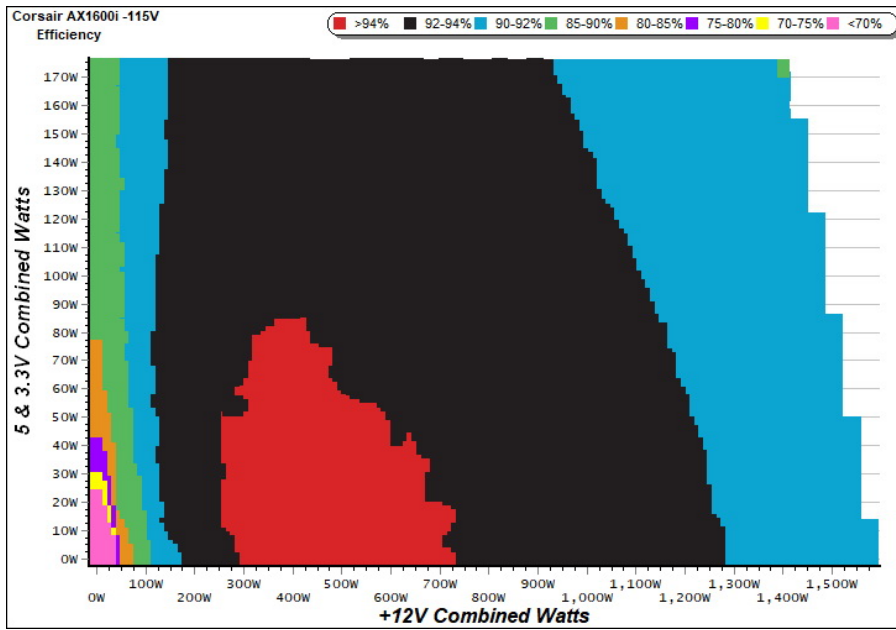
115V

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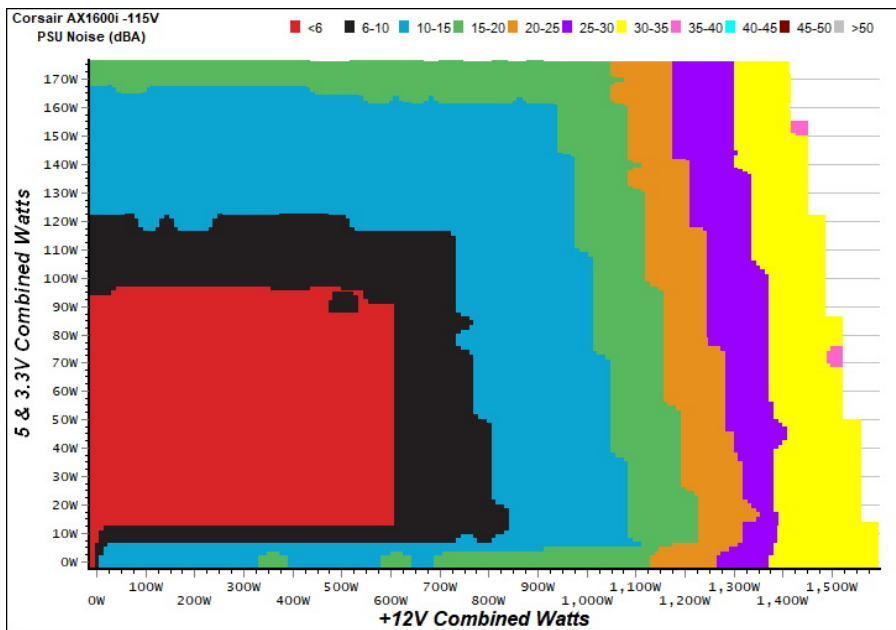
EFFICIENCY GRAPH 115V



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

NOISE GRAPH 115V



INFO

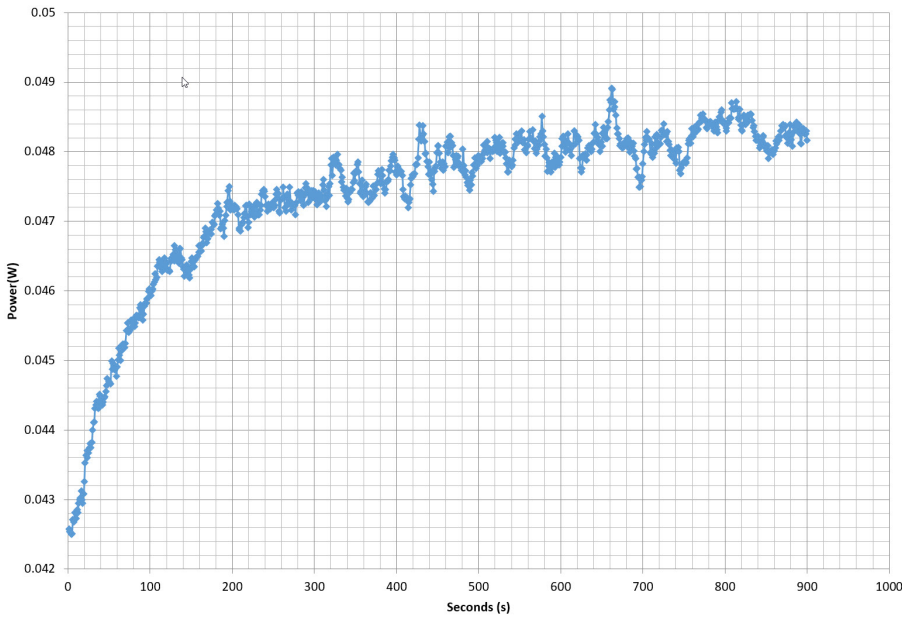
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

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VAMPIRE POWER -115V

Power - 1742956000049040160 - 29/12/2017 - 09:58



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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10-110% 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	11.496A	2.003A	1.994A	1.004A	159.852	92.428%	0	<6.0	44.55°C	0.958
	12.028V	4.990V	3.304V	4.975V	172.947				37.86°C	115.04V
2	24.022A	3.000A	2.997A	1.206A	319.769	94.265%	0	<6.0	45.06°C	0.989
	12.027V	4.988V	3.302V	4.972V	339.222				38.14°C	115.06V
3	36.896A	3.507A	3.512A	1.406A	479.772	94.474%	0	<6.0	45.56°C	0.995
	12.026V	4.986V	3.300V	4.968V	507.834				38.54°C	115.06V
4	49.764A	4.013A	3.999A	1.611A	639.603	94.101%	0	<6.0	46.54°C	0.997
	12.025V	4.984V	3.299V	4.964V	679.699				39.21°C	115.07V
5	62.293A	5.011A	5.001A	1.811A	799.395	93.716%	561	8.5	39.84°C	0.998
	12.023V	4.983V	3.298V	4.960V	852.999				47.45°C	115.06V
6	74.835A	6.024A	6.008A	2.016A	959.371	93.220%	654	13.3	40.95°C	0.998
	12.021V	4.980V	3.294V	4.955V	1029.143				48.74°C	115.07V
7	87.372A	7.026A	7.012A	2.220A	1119.272	92.570%	720	14.1	42.12°C	0.998
	12.020V	4.978V	3.294V	4.950V	1209.115				50.11°C	115.06V
8	99.920A	8.042A	8.019A	2.425A	1279.331	91.819%	1128	31.1	43.91°C	0.998
	12.019V	4.975V	3.291V	4.946V	1393.312				52.20°C	115.07V
9	112.905A	8.545A	8.542A	2.425A	1439.369	91.034%	1497	37.8	44.98°C	0.998
	12.017V	4.974V	3.289V	4.945V	1581.140				53.48°C	115.06V
10	125.427A	9.061A	9.037A	3.551A	1599.243	90.185%	1913	45.8	46.48°C	0.998
	12.015V	4.971V	3.287V	4.926V	1773.297				55.33°C	115.07V
11	138.752A	9.064A	9.041A	3.553A	1759.191	89.311%	1925	45.4	47.91°C	0.996
	12.014V	4.969V	3.284V	4.924V	1969.742				56.97°C	115.06V
CL1	0.098A	22.031A	19.997A	0.005A	177.831	88.553%	856	21.5	44.32°C	0.970
	12.024V	5.001V	3.323V	5.024V	200.819				47.38°C	115.09V
CL2	133.267A	1.000A	1.003A	1.002A	1614.701	90.327%	1624	40.1	45.69°C	0.998
	12.017V	4.972V	3.282V	4.958V	1787.626				50.07°C	115.08V

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Anex

Corsair AX1600i (#2)

20-80W LOAD TESTS 115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.214A	0.500A	0.482A	0.202A	19.696	68.463%	0	<6.0	0.883
	12.028V	4.990V	3.302V	4.986V	28.769				115.04V
2	2.457A	0.996A	0.997A	0.401A	39.814	81.695%	0	<6.0	0.952
	12.028V	4.990V	3.303V	4.983V	48.735				115.05V
3	3.697A	1.497A	1.509A	0.601A	59.917	85.519%	0	<6.0	0.932
	12.028V	4.990V	3.304V	4.982V	70.063				115.04V
4	4.927A	2.003A	1.994A	0.801A	79.837	88.182%	0	<6.0	0.928
	12.028V	4.990V	3.305V	4.980V	90.537				115.03V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	5.6 mV	4.3 mV	5.9 mV	3.0 mV	Pass
20% Load	6.6 mV	4.2 mV	6.2 mV	2.7 mV	Pass
30% Load	8.0 mV	4.4 mV	6.7 mV	2.9 mV	Pass
40% Load	8.3 mV	4.3 mV	7.1 mV	2.9 mV	Pass
50% Load	9.4 mV	4.5 mV	6.1 mV	3.1 mV	Pass
60% Load	9.0 mV	4.6 mV	6.1 mV	3.1 mV	Pass
70% Load	8.5 mV	4.7 mV	6.7 mV	3.2 mV	Pass
80% Load	8.9 mV	5.4 mV	7.5 mV	3.5 mV	Pass
90% Load	8.9 mV	5.0 mV	6.1 mV	3.3 mV	Pass
100% Load	9.9 mV	5.6 mV	6.6 mV	3.2 mV	Pass
110% Load	10.4 mV	5.6 mV	8.3 mV	3.4 mV	Pass
Crossload 1	5.7 mV	6.1 mV	6.2 mV	2.9 mV	Pass
Crossload 2	9.4 mV	4.6 mV	5.9 mV	2.8 mV	Pass

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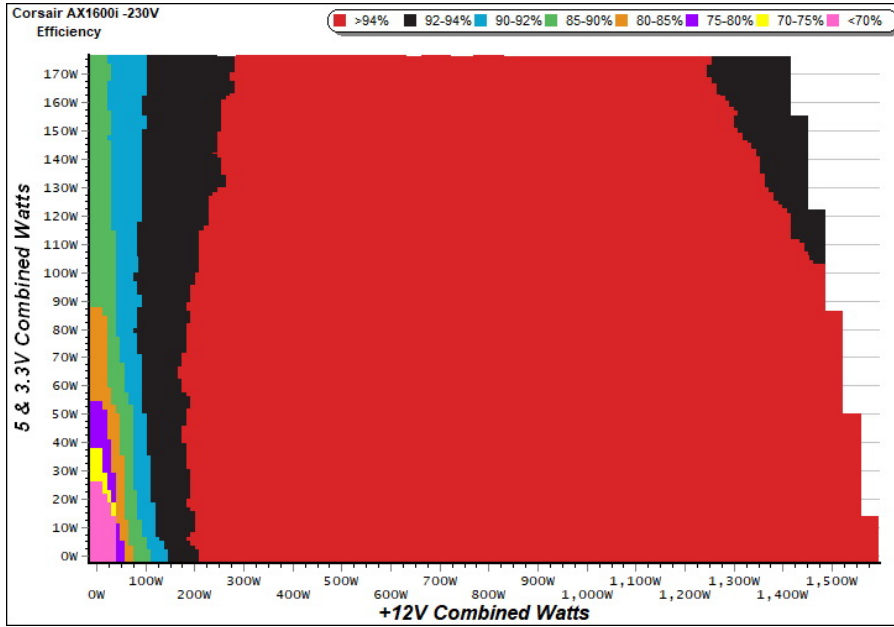
230V

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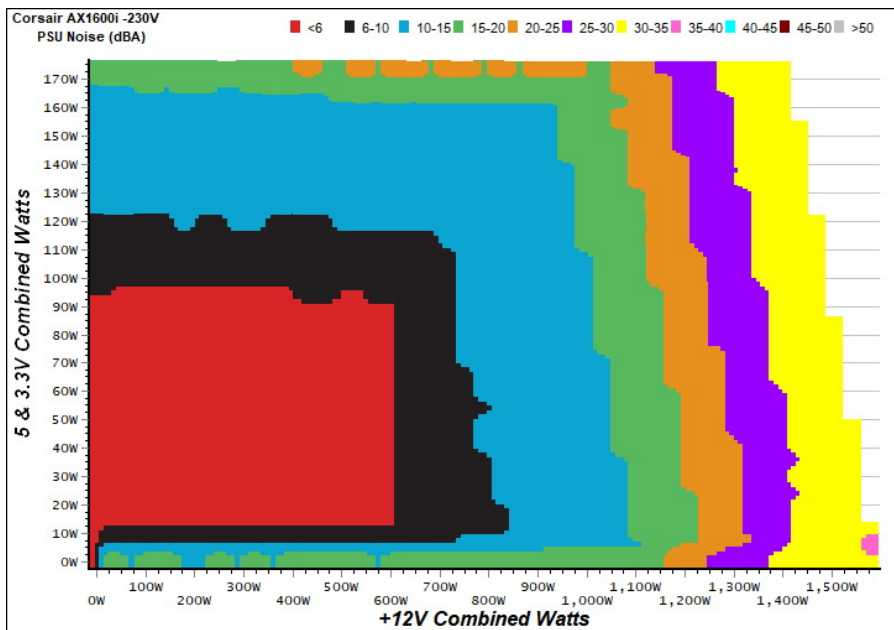
EFFICIENCY GRAPH 230V



INFO

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NOISE GRAPH 230V



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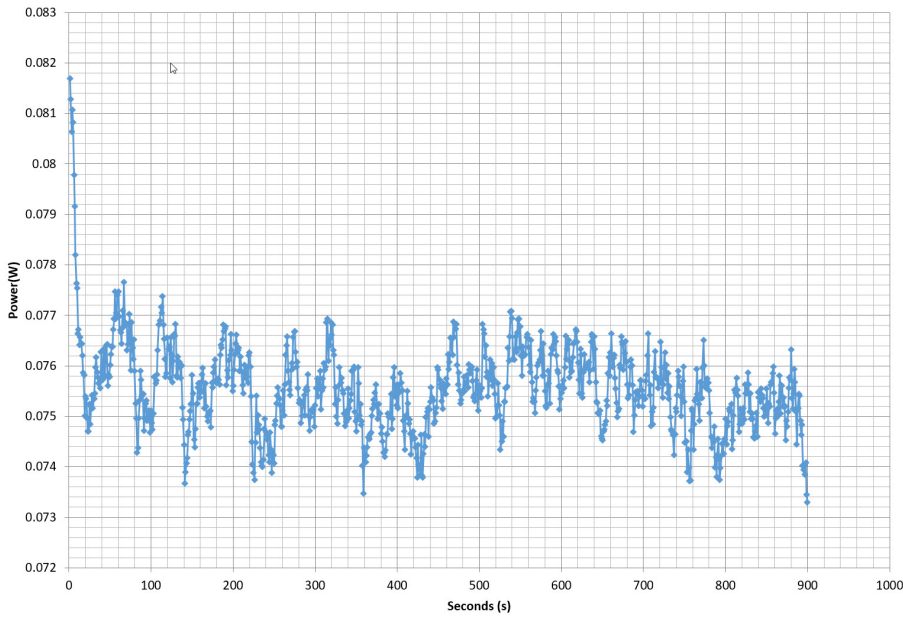
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VAMPIRE POWER -230V

Power - 1742956000049040160 - 29/12/2017 - 09:58



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10-110% LOAD TESTS 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	11.493A	2.005A	1.994A	1.001A	159.841	93.313%	0	<6.0	47.44°C	0.962
	12.029V	4.994V	3.307V	4.980V	171.295				38.28°C	230.23V
2	24.018A	3.002A	2.993A	1.206A	319.762	95.111%	0	<6.0	48.27°C	0.985
	12.028V	4.991V	3.305V	4.975V	336.198				38.61°C	230.24V
3	36.890A	3.508A	3.509A	1.405A	479.750	95.693%	0	<6.0	48.54°C	0.994
	12.027V	4.989V	3.303V	4.970V	501.345				38.76°C	230.23V
4	49.763A	4.012A	3.997A	1.611A	639.554	95.429%	478	8.1	39.93°C	0.993
	12.024V	4.988V	3.300V	4.967V	670.189				44.01°C	230.23V
5	62.293A	5.011A	5.000A	1.811A	799.335	95.314%	577	10.8	40.09°C	0.997
	12.022V	4.984V	3.298V	4.961V	838.635				44.24°C	230.25V
6	74.836A	6.025A	6.008A	2.016A	959.327	95.211%	654	13.3	40.43°C	0.998
	12.020V	4.981V	3.295V	4.956V	1007.585				44.73°C	230.24V
7	87.364A	7.027A	7.011A	2.220A	1119.093	94.987%	724	14.1	41.16°C	0.997
	12.019V	4.978V	3.294V	4.950V	1178.158				45.17°C	230.27V
8	99.919A	8.041A	8.021A	2.425A	1279.232	94.686%	1081	29.1	42.91°C	0.998
	12.018V	4.976V	3.291V	4.947V	1351.031				46.41°C	230.26V
9	112.907A	8.546A	8.540A	2.426A	1439.274	94.307%	1497	37.8	44.21°C	0.998
	12.016V	4.973V	3.289V	4.945V	1526.161				47.55°C	230.26V
10	125.417A	9.063A	9.034A	3.551A	1599.111	93.842%	1884	45.8	45.93°C	0.999
	12.015V	4.970V	3.287V	4.925V	1704.054				49.01°C	230.26V
11	138.738A	9.065A	9.044A	3.553A	1759.026	93.514%	1925	45.4	47.08°C	0.999
	12.014V	4.968V	3.284V	4.923V	1881.023				50.39°C	230.27V
CL1	0.097A	22.032A	19.998A	0.004A	177.843	89.433%	847	21.5	45.19°C	0.967
	12.024V	5.001V	3.324V	5.025V	198.856				48.27°C	230.29V
CL2	133.251A	1.003A	1.003A	1.002A	1614.523	94.052%	1767	42.5	45.37°C	0.999
	12.017V	4.972V	3.282V	4.957V	1716.632				48.44°C	230.29V

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20-80W LOAD TESTS 230V

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1	1.213A	0.501A	0.482A	0.201A	19.694	67.696%	0	<6.0	0.567
	12.030V	4.998V	3.307V	4.992V	29.092				230.24V
2	2.453A	1.002A	0.996A	0.402A	39.817	78.936%	0	<6.0	0.754
	12.030V	4.997V	3.308V	4.988V	50.442				230.25V
3	3.694A	1.497A	1.509A	0.601A	59.907	83.116%	0	<6.0	0.857
	12.030V	4.996V	3.308V	4.986V	72.076				230.24V
4	4.924A	2.006A	1.993A	0.801A	79.838	89.109%	0	<6.0	0.900
	12.029V	4.996V	3.308V	4.984V	89.596				230.23V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	5.7 mV	3.9 mV	5.6 mV	2.7 mV	Pass
20% Load	6.8 mV	4.0 mV	5.5 mV	2.7 mV	Pass
30% Load	7.6 mV	4.1 mV	5.6 mV	2.8 mV	Pass
40% Load	8.7 mV	4.2 mV	5.4 mV	2.9 mV	Pass
50% Load	9.6 mV	4.3 mV	5.9 mV	3.0 mV	Pass
60% Load	8.8 mV	4.5 mV	5.8 mV	3.0 mV	Pass
70% Load	8.4 mV	5.1 mV	6.3 mV	3.3 mV	Pass
80% Load	9.0 mV	5.0 mV	6.7 mV	3.3 mV	Pass
90% Load	9.2 mV	4.6 mV	5.4 mV	3.0 mV	Pass
100% Load	9.7 mV	5.2 mV	5.7 mV	3.3 mV	Pass
110% Load	10.4 mV	5.4 mV	7.2 mV	3.2 mV	Pass
Crossload 1	5.4 mV	6.2 mV	5.3 mV	2.7 mV	Pass
Crossload 2	9.6 mV	4.5 mV	5.3 mV	2.7 mV	Pass

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Corsair AX1600i (#2)



CERTIFICATIONS 115V




Aristeidis Bitziopoulos
Lab Director

CERTIFICATIONS 230V



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