

Anex

EVGA 750 BQ

Lab ID#: 163

Receipt Date: -

Test Date: -

Report:

Report Date: Aug 21, 2018

DUT INFORMATION		DUT SPECIFICATIONS	
Brand	EVGA	Rated Voltage (Vrms)	100-240
Manufacturer (OEM)	HEC	Rated Current (Arms)	10
Series	BQ	Rated Frequency (Hz)	50-60
Model Number	750 BQ	Rated Power (W)	750
Serial Number	17035600715800546	Type	ATX12V
DUT Notes		Cooling	140mm Teflon Nano-Steel Fan (RL4Z T1352512HH)
		Semi-Passive Operation	X
		Cable Design	Semi Modular

POWER SPECIFICATIONS						
Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	24	20	62	3	0.3
	Watts	150		744	15	3.6
Total Max. Power (W)		750				

CABLES AND CONNECTORS			
Captive Cables			
Description	Cable Count	Connector Count (Total)	Gauge
ATX connector 20+4 pin (570mm)	1	1	18-22AWG
4+4 pin EPS12V (620mm)	1	1	18AWG
6+2 pin PCIe (580mm+150mm)	1	2	18AWG
Modular Cables			
4+4 pin EPS12V (600mm)	1	1	18AWG
6+2 pin PCIe (550mm+150mm)	2	4	18AWG
SATA (510mm+150mm+150mm)	3	9	18AWG
4 pin Molex (550mm+150mm)	1	2	18AWG
4 pin Molex (550mm+150mm+150mm)+FDD (+150mm)	1	2 / 1	18-20AWG

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RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	84.666
Efficiency With 10W ($\leq 500W$) or 2% ($> 500W$) Load -115V	0.000
Average Efficiency 5VSB	78.685
Standby Power Consumption (W) -115V	0.0519013
Standby Power Consumption (W) -230V	0.1302860
Average PF	0.985
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
Avg Noise Output	43.06
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	Standard

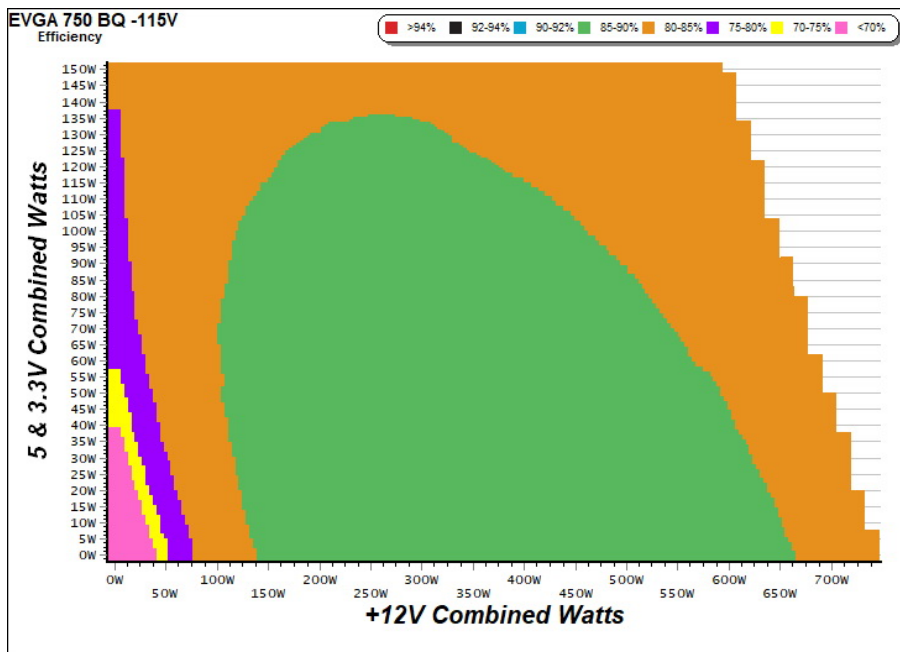
TEST EQUIPMENT		
Electronic Loads	Chroma 6314A x2 63123A x6 63102A 63101A	Chroma 63601-5 x2 Chroma 63600-2 63640-80-80 x10 63610-80-20
AC Sources	Chroma 6530, Chroma 61604	
Power Analyzers	N4L PPA1530, N4L PPA5530	
Oscilloscopes	Picoscope 4444 & 3424, Keysight DSOX3024A, Rigol DS2072A	
Voltmeter	Keithley 2015 THD 6.5 Digit	
Sound Analyzer	Bruel & Kjaer 2250-L G4	
Microphone	Bruel & Kjaer Type 4955-A, Bruel & Kjaer Type 4189	
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2	

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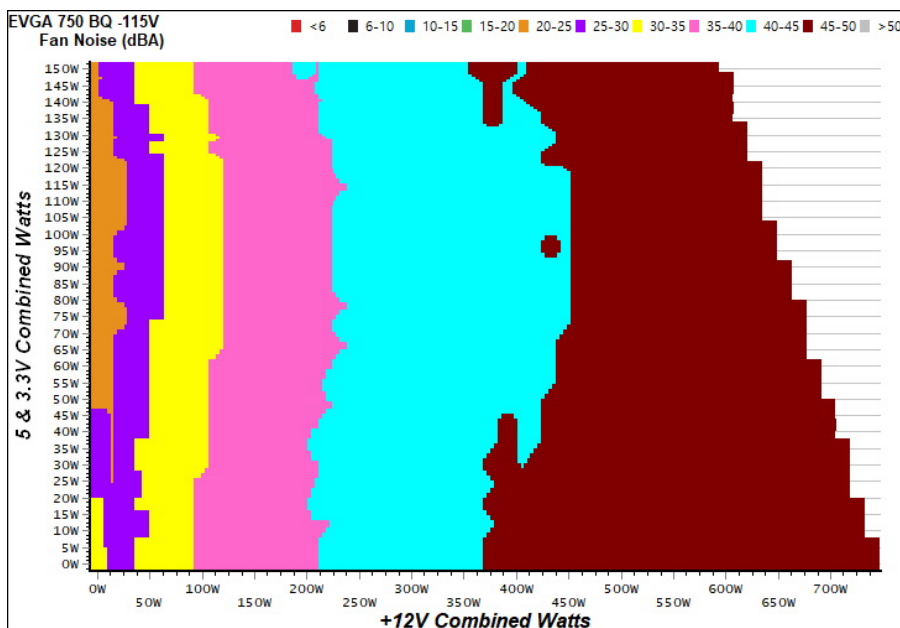
EFFICIENCY GRAPH



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)

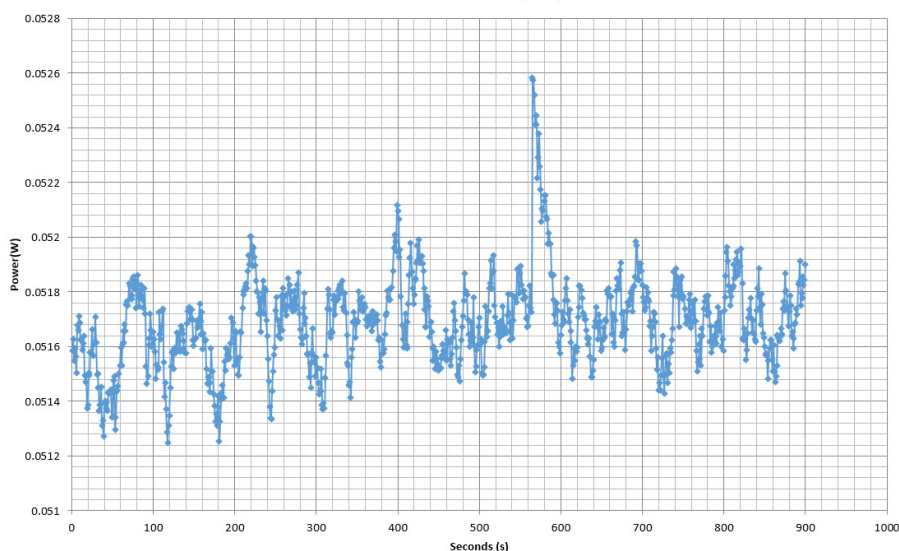
Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.214	70.164%	0.043
	5.105V	0.305		115.14V
2	0.088A	0.447	76.150%	0.081
	5.104V	0.587		115.14V
3	0.542A	2.763	79.671%	0.290
	5.094V	3.468		115.13V
4	1.002A	5.097	79.865%	0.352
	5.085V	6.382		115.14V
5	1.502A	7.619	78.312%	0.385
	5.074V	9.729		115.14V
6	3.001A	15.136	75.714%	0.432
	5.043V	19.991		115.13V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.214	56.021%	0.016
	5.105V	0.382		230.38V
2	0.087A	0.446	66.172%	0.029
	5.104V	0.674		230.38V
3	0.543A	2.764	76.227%	0.138
	5.094V	3.626		230.36V
4	1.002A	5.095	78.481%	0.211
	5.084V	6.492		230.36V
5	1.502A	7.614	78.333%	0.262
	5.070V	9.720		230.37V
6	3.001A	15.130	78.394%	0.335
	5.041V	19.300		230.37V

VAMPIRE POWER -115V

Power - 1703560715800546 - 19/08/2017 - 10:12



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

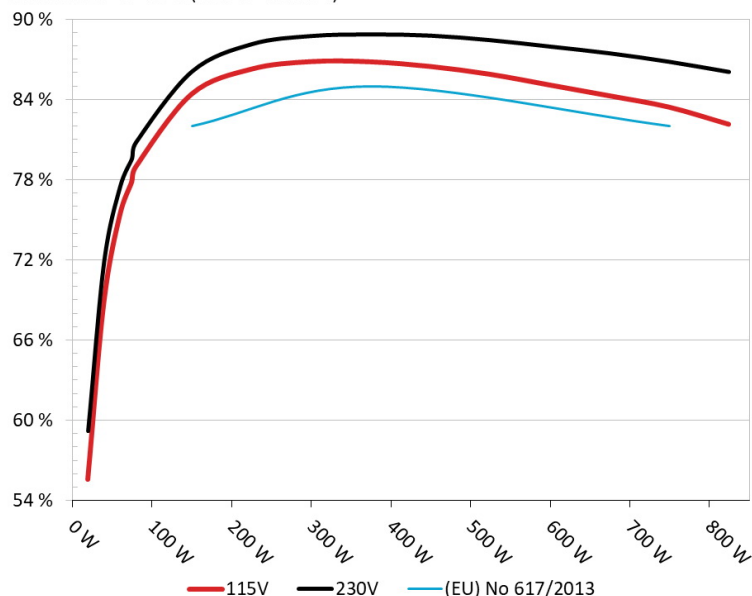
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: EVGA 750 BQ

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



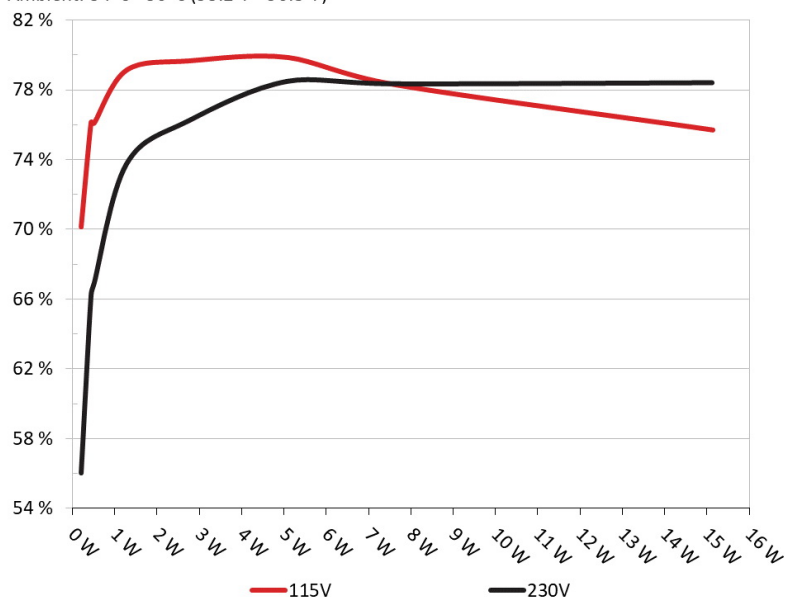
INFO

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: EVGA 750 BQ

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)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	4.361A	1.984A	1.947A	0.986A	74.789	77.842%	1505	41.1	38.02°C	0.966
	12.199V	5.039V	3.385V	5.072V	96.078				41.52°C	115.17V
2	9.761A	2.981A	2.929A	1.186A	149.750	84.404%	1616	43.2	38.31°C	0.980
	12.179V	5.024V	3.379V	5.057V	177.421				42.28°C	115.20V
3	15.523A	3.497A	3.438A	1.385A	224.896	86.285%	1664	43.8	38.80°C	0.979
	12.162V	5.013V	3.371V	5.043V	260.642				43.24°C	115.18V
4	21.293A	3.998A	3.922A	1.591A	299.748	86.850%	1744	45.4	39.13°C	0.977
	12.143V	5.002V	3.363V	5.028V	345.132				44.26°C	115.19V
5	26.748A	5.012A	4.914A	1.790A	374.699	86.836%	1758	45.8	39.78°C	0.983
	12.122V	4.986V	3.356V	5.016V	431.500				45.97°C	115.21V
6	32.213A	6.039A	5.906A	2.000A	449.631	86.486%	1765	45.8	40.72°C	0.987
	12.102V	4.970V	3.349V	4.998V	519.891				48.37°C	115.44V
7	37.706A	7.063A	6.908A	2.205A	524.552	85.904%	1765	45.8	41.66°C	0.992
	12.080V	4.955V	3.341V	4.983V	610.628				50.60°C	115.35V
8	43.224A	8.101A	7.914A	2.415A	599.552	85.099%	1765	45.8	43.07°C	0.995
	12.057V	4.940V	3.334V	4.967V	704.535				53.83°C	115.18V
9	49.186A	8.630A	8.445A	2.420A	674.611	84.288%	1765	45.8	44.28°C	0.996
	12.036V	4.928V	3.326V	4.955V	800.360				57.16°C	115.16V
10	54.908A	9.162A	8.952A	3.040A	749.414	83.444%	1765	45.8	45.09°C	0.996
	12.015V	4.914V	3.316V	4.930V	898.101				59.85°C	115.16V
11	61.251A	9.178A	8.978A	3.048A	824.287	82.159%	1765	45.8	46.62°C	0.997
	11.993V	4.905V	3.308V	4.917V	1003.283				63.02°C	115.18V
CL1	0.096A	18.031A	18.000A	0.004A	150.055	78.870%	1765	45.8	43.77°C	0.980
	12.153V	4.922V	3.340V	5.048V	190.255				53.94°C	115.17V
CL2	61.936A	1.004A	1.001A	1.002A	758.140	83.566%	1768	45.8	45.64°C	0.996
	12.026V	4.966V	3.306V	4.993V	907.240				59.08°C	115.18V

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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	1.193A	0.492A	0.469A	0.196A	19.652	55.556%	13.65	39.0	0.942
	12.217V	5.057V	3.390V	5.096V	35.373				115.17V
2	2.415A	0.985A	0.970A	0.391A	39.735	68.779%	1392	39.1	0.954
	12.209V	5.050V	3.388V	5.090V	57.772				115.17V
3	3.640A	1.478A	1.474A	0.590A	59.866	75.360%	1465	40.4	0.965
	12.203V	5.045V	3.387V	5.082V	79.440				115.17V
4	4.852A	1.985A	1.948A	0.786A	79.769	78.957%	1475	40.6	0.968
	12.198V	5.039V	3.385V	5.073V	101.028				115.18V

RIPPLE MEASUREMENTS

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	11.0 mV	56.0 mV	37.2 mV	10.6 mV	Fail
20% Load	10.6 mV	49.4 mV	30.4 mV	9.9 mV	Pass
30% Load	11.0 mV	52.2 mV	34.6 mV	11.2 mV	Fail
40% Load	14.0 mV	50.1 mV	27.4 mV	14.9 mV	Fail
50% Load	12.2 mV	13.2 mV	25.1 mV	16.2 mV	Pass
60% Load	14.4 mV	32.7 mV	29.6 mV	19.2 mV	Pass
70% Load	16.7 mV	25.9 mV	32.7 mV	19.5 mV	Pass
80% Load	19.1 mV	27.7 mV	42.4 mV	20.8 mV	Pass
90% Load	23.2 mV	27.9 mV	47.6 mV	24.1 mV	Pass
100% Load	28.4 mV	31.4 mV	46.3 mV	29.3 mV	Pass
110% Load	31.9 mV	30.7 mV	56.2 mV	28.8 mV	Fail
Crossload 1	16.0 mV	21.9 mV	56.7 mV	16.8 mV	Fail
Crossload 2	26.9 mV	44.1 mV	38.2 mV	20.9 mV	Pass

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EVGA 750 BQ

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

Hold-Up Time (ms)	15.40
AC Loss to PWR_OK Hold Up Time (ms)	13.36
PWR_OK Inactive to DC Loss Delay (ms)	2.04



Top side



+40°C ambient @ full load					
AC Input		100-240 VAC, 10A, 60/50 Hz			
DC Output	+5V	+3.3V	+12V	-12V	+5Vsb
Max Output, A	20A	24A	62A	0.3A	3A
Combined, W	150W		744W	3.6W	15W
Output Power, P _{cont}	750W @ +40°C				

Power specifications label

CERTIFICATIONS



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