

Anex

Seasonic Vertex GX-750

Lab ID#: SS75002120
 Receipt Date: Dec 12, 2022
 Test Date: Jan 25, 2023

Report: 23PS2120A
 Report Date: Jan 25, 2023

DUT INFORMATION	
Brand	Seasonic
Manufacturer (OEM)	Seasonic
Series	Vertex GX
Model Number	12751GXAFS
Serial Number	
DUT Notes	

DUT SPECIFICATIONS	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	50-60
Rated Power (W)	750
Type	ATX12V
Cooling	135mm Fluid Dynamic Bearing Fan (HA13525H12F-Z)
Semi-Passive Operation	✓ (selectable)
Cable Design	Fully Modular

TEST EQUIPMENT	
Electronic Loads	Chroma 63601-5 x2 Chroma 63600-2 63640-80-80 x10 63610-80-20
AC Sources	Chroma 6530, APM SP300VAC4000W-P
Power Analyzers	RS HMC8015, N4L PPA1530, N4L PPA5530
Oscilloscopes	Picoscope 4444, Rigol DS7014, Siglent SDS2104X PLUS
Sound Analyzer	Bruel & Kjaer 2270 G4
Microphone	Bruel & Kjaer Type 4955-A
Temperature Logger	Picoscope TC-08
Tachometer	UNI-T UT372
Multimeters	Keysight 34465A, Keithley 2015 - THD
UPS	FSP Champ Tower 3kVA, CyberPower OLS3000E 3kVA
Isolation Transformer	4kVA

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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
ALPM (Alternative Low Power Mode) compatible	✓
ATX v3.0 PSU Power Excursion	✓

115V

Average Efficiency	89.615%
Efficiency With 10W (≤500W) or 2% (>500W)	73.527
Average Efficiency 5VSB	80.937%
Standby Power Consumption (W)	0.0699000
Average PF	0.982
Avg Noise Output	22.80 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	A

230V

Average Efficiency	91.557%
Average Efficiency 5VSB	79.783%
Standby Power Consumption (W)	0.1491000
Average PF	0.945
Avg Noise Output	22.63 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	A

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62	3	0.3
	Watts	100		744	15	3.6
Total Max. Power (W)		750				

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

Hold-Up Time (ms)	22.6
AC Loss to PWR_OK Hold Up Time (ms)	17.8
PWR_OK Inactive to DC Loss Delay (ms)	4.8

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CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (620mm)	1	1	16-18AWG	No
4+4 pin EPS12V (710mm)	2	2	16AWG	No
6+2 pin PCIe (760mm)	2	2	16AWG	No
12+4 pin PCIe (760mm) (600W)	1	1	16-28AWG	No
SATA 3.3 (410mm+150mm)	1	2	18AWG	No
SATA (510mm+150mm+150mm+150mm)	3	12	18AWG	No
4-pin Molex (460mm+130mm+130mm)	1	3	18AWG	No
AC Power Cord (1390mm) - C13 coupler	1	1	18AWG	-

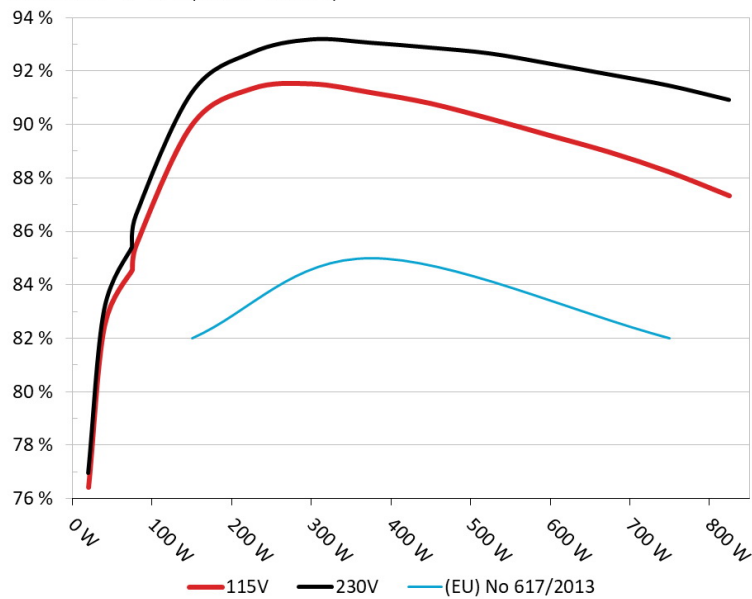
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Seasonic Vertex GX750

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



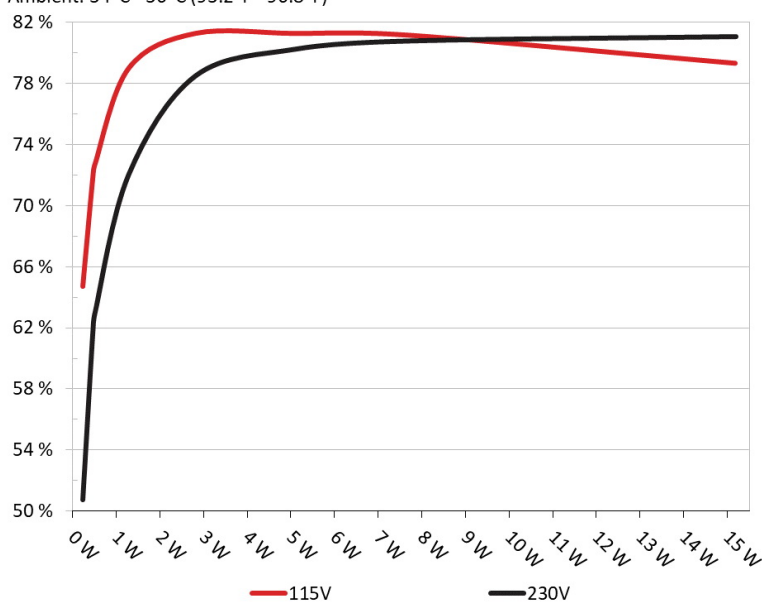
INFO

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: Seasonic Vertex GX750

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	0.045A	0.231W	65.228%	0.033
	5.126V	0.354W		114.94V
2	0.09A	0.461W	72.379%	0.059
	5.125V	0.637W		114.92V
3	0.55A	2.814W	81.743%	0.259
	5.115V	3.443W		114.92V
4	1A	5.106W	81.735%	0.365
	5.105V	6.247W		114.93V
5	1.5A	7.642W	81.634%	0.417
	5.094V	9.362W		114.93V
6	3A	15.183W	79.794%	0.497
	5.061V	19.028W		114.93V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231W	51.253%	0.012
	5.125V	0.451W		229.9V
2	0.09A	0.461W	62.255%	0.02
	5.124V	0.742W		229.89V
3	0.55A	2.813W	79.009%	0.095
	5.115V	3.56W		229.89V
4	1A	5.105W	80.756%	0.159
	5.105V	6.323W		229.89V
5	1.5A	7.642W	81.287%	0.208
	5.094V	9.402W		229.88V
6	3A	15.187W	81.575%	0.322
	5.062V	18.617W		229.88V

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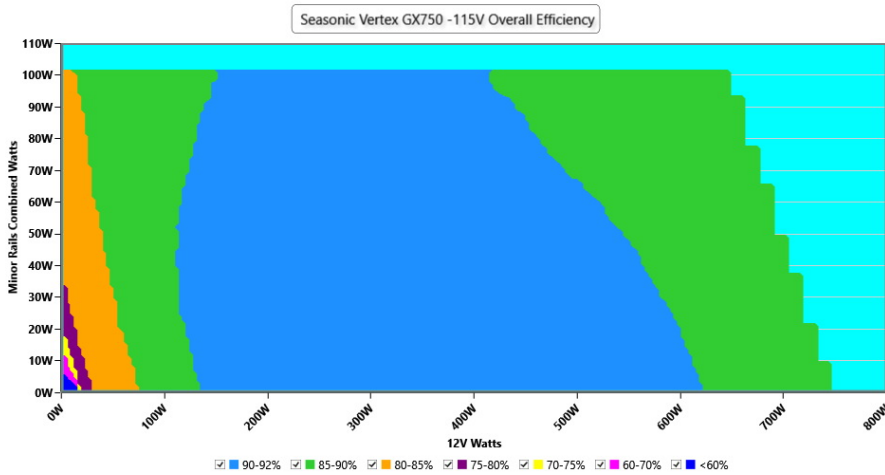
115V

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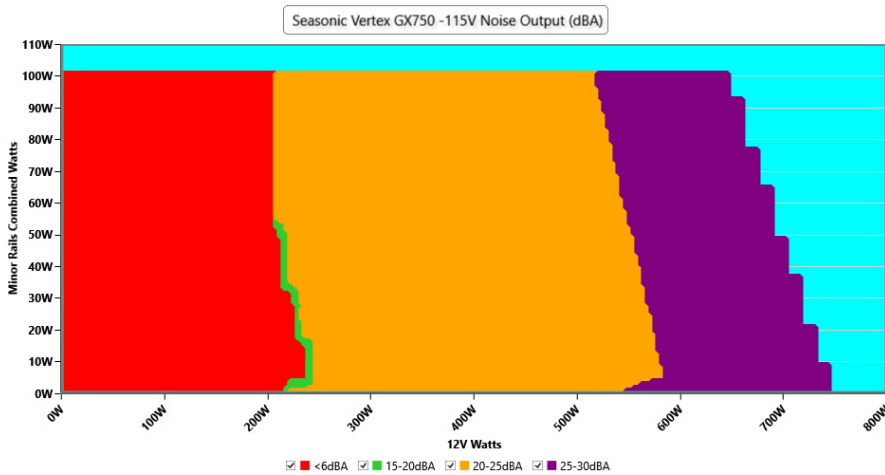
EFFICIENCY GRAPH 115V



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

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.93 V	114.89 V	113.85 V	114.96 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.98 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.417	1.490	PASS
Mains Voltage THD:	0.14 %	0.12 %	N/A	0.17 %	2.00 %	PASS
Real Power:	0.070 W	0.062 W	N/A	0.080 W	N/A	N/A
Apparent Power:	10.514 W	10.496 W	N/A	10.532 W	N/A	N/A
Power Factor:	0.007	N/A	N/A	N/A	N/A	N/A

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
10%	4.374A	1.98A	1.981A	0.981A	75.003	84.379%	0	<6.0	44.85°C	0.955
	12.208V	5.051V	3.331V	5.098V	88.893				40.46°C	114.92V
20%	9.759A	2.971A	2.974A	1.179A	149.946	89.978%	0	<6.0	45.69°C	0.975
	12.199V	5.049V	3.328V	5.088V	166.644				40.87°C	114.91V
30%	15.498A	3.467A	3.473A	1.378A	224.953	91.327%	0	<6.0	46.87°C	0.982
	12.188V	5.048V	3.326V	5.079V	246.316				41.52°C	114.88V
40%	21.239A	3.963A	3.972A	1.578A	300.045	91.508%	0	<6.0	47.68°C	0.987
	12.187V	5.046V	3.323V	5.07V	327.889				41.68°C	114.86V
50%	26.593A	4.957A	4.97A	1.779A	374.533	91.184%	749	20.2	42.24°C	0.988
	12.185V	5.044V	3.32V	5.06V	410.738				48.68°C	114.84V
60%	31.983A	5.951A	5.969A	1.98A	449.453	90.776%	745	20.0	42.99°C	0.988
	12.183V	5.041V	3.317V	5.05V	495.124				49.89°C	114.83V
70%	37.372A	6.947A	6.971A	2.183A	524.379	90.203%	813	22.6	43.35°C	0.989
	12.182V	5.039V	3.314V	5.04V	581.324				50.63°C	114.8V
80%	42.824A	7.944A	7.971A	2.286A	599.595	89.576%	948	27.8	43.68°C	0.991
	12.182V	5.037V	3.311V	5.032V	669.365				51.75°C	114.79V
90%	48.604A	8.441A	8.461A	2.388A	674.618	88.951%	1049	30.8	44.29°C	0.992
	12.183V	5.036V	3.309V	5.025V	758.424				53.32°C	114.76V
100%	54.184A	8.941A	8.982A	2.997A	749.852	88.208%	1129	32.7	45.16°C	0.993
	12.183V	5.034V	3.306V	5.006V	850.078				55.19°C	114.74V
110%	59.631A	9.939A	10.079A	3A	824.879	87.325%	1508	41.3	46.92°C	0.993
	12.185V	5.032V	3.303V	5V	944.57				57.85°C	114.72V
CL1	0.115A	11.944A	11.931A	0A	101.309	83.403%	728	19.4	44.54°C	0.968
	12.222V	5.042V	3.327V	5.106V	121.468				50.02°C	114.89V
CL2	0.114A	19.853A	0A	0A	101.416	82.499%	799	21.9	43.12°C	0.967
	12.223V	5.038V	3.333V	5.112V	122.93				50.2°C	114.9V
CL3	0.114A	0A	19.826A	0A	67.382	76.088%	798	21.8	41.65°C	0.956
	12.215V	5.056V	3.328V	5.107V	88.558				50.66°C	114.91V
CL4	61.545A	0A	0A	0A	749.621	89.007%	1115	32.4	47.34°C	0.992
	12.180V	5.047V	3.313V	5.079V	842.201				57.97°C	114.74V

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20-80W 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
20W	1.226A	0.495A	0.495A	0.195A	20.001	76.424%	0	<6.0	39.71°C	0.821
	12.106V	5.054V	3.334V	5.12V	26.171				36.58°C	114.92V
40W	2.700A	0.693A	0.693A	0.293A	40	82.46%	0	<6.0	40.59°C	0.91
	12.108V	5.053V	3.333V	5.116V	48.509				37.25°C	114.93V
60W	4.172A	0.89A	0.891A	0.391A	60	84.559%	0	<6.0	42.61°C	0.941
	12.112V	5.053V	3.332V	5.113V	70.957				38.87°C	114.93V
80W	5.598A	1.088A	1.09A	0.489A	79.953	85.491%	0	<6.0	43.1°C	0.956
	12.204V	5.052V	3.332V	5.109V	93.518				39.17°C	114.92V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	7.63mV	6.13mV	8.39mV	7.93mV	Pass
20% Load	24.48mV	5.67mV	7.11mV	6.45mV	Pass
30% Load	16.65mV	5.62mV	7.57mV	8.04mV	Pass
40% Load	13.74mV	6.33mV	7.46mV	9.52mV	Pass
50% Load	13.58mV	7.82mV	8.59mV	22.16mV	Pass
60% Load	12.82mV	7.97mV	7.87mV	22.57mV	Pass
70% Load	13.51mV	8.22mV	8.69mV	23.28mV	Pass
80% Load	14.33mV	9.30mV	10.23mV	24.62mV	Pass
90% Load	14.53mV	9.34mV	10.79mV	24.41mV	Pass
100% Load	22.37mV	10.48mV	11.43mV	26.82mV	Pass
110% Load	23.02mV	11.56mV	12.45mV	27.55mV	Pass
Crossload1	9.56mV	9.47mV	11.35mV	22.57mV	Pass
Crossload2	7.57mV	9.40mV	8.44mV	20.37mV	Pass
Crossload3	8.34mV	8.58mV	13.60mV	19.91mV	Pass
Crossload4	21.39mV	10.84mV	9.24mV	28.00mV	Pass

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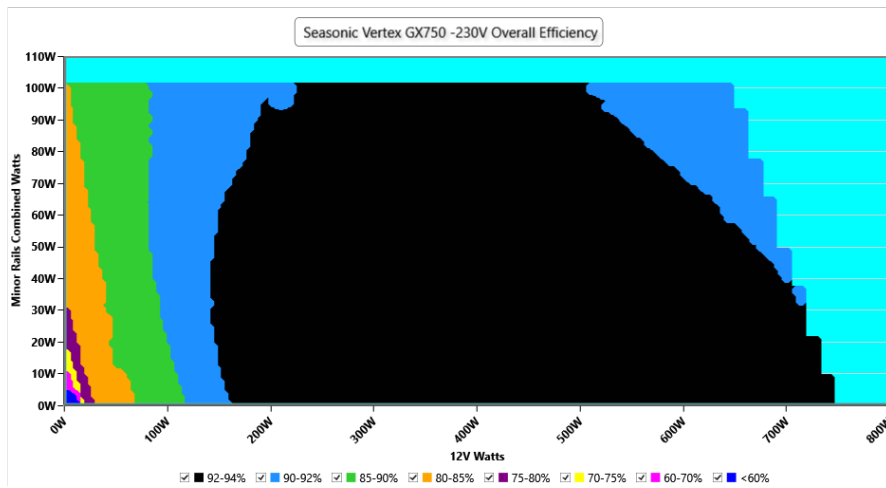
230V

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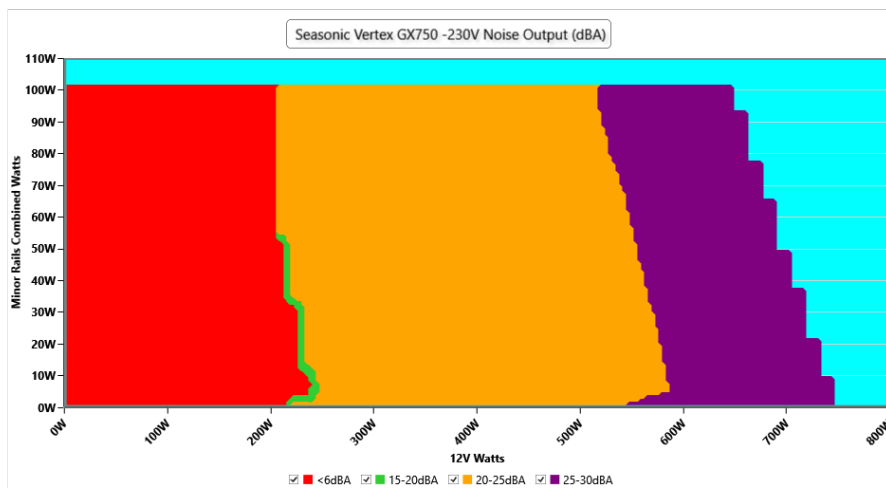
EFFICIENCY GRAPH 230V



INFO

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NOISE GRAPH 230V



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 -230V

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	229.88 V	229.84 V	227.70 V	229.93 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	50.00 Hz	49.50 Hz	50.01 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.416	1.490	PASS
Mains Voltage THD:	0.13 %	0.11 %	N/A	0.16 %	2.00 %	PASS
Real Power:	0.149 W	0.126 W	N/A	0.178 W	N/A	N/A
Apparent Power:	36.073 W	36.043 W	N/A	36.104 W	N/A	N/A
Power Factor:	0.004	N/A	N/A	N/A	N/A	N/A

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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
10%	4.374A	1.98A	1.981A	0.981A	75.003	85.451%	0	<6.0	44.45°C	0.797
	12.209V	5.051V	3.331V	5.098V	87.776				40.02°C	229.88V
20%	9.759A	2.971A	2.975A	1.179A	149.95	91.189%	0	<6.0	45.61°C	0.903
	12.198V	5.049V	3.328V	5.088V	164.443				40.71°C	229.88V
30%	15.499A	3.467A	3.473A	1.378A	224.958	92.681%	0	<6.0	46.49°C	0.941
	12.188V	5.048V	3.326V	5.079V	242.725				41.19°C	229.87V
40%	21.239A	3.963A	3.972A	1.578A	300.054	93.182%	0	<6.0	47.36°C	0.959
	12.187V	5.046V	3.323V	5.07V	322.01				41.73°C	229.86V
50%	26.596A	4.957A	4.971A	1.779A	374.531	93.056%	749	20.2	42.32°C	0.968
	12.184V	5.043V	3.32V	5.06V	402.479				48.34°C	229.85V
60%	31.986A	5.952A	5.97A	1.98A	449.448	92.875%	745	20.0	42.65°C	0.974
	12.181V	5.041V	3.317V	5.051V	483.927				49.27°C	229.84V
70%	37.377A	6.947A	6.972A	2.182A	524.361	92.657%	804	22.1	43.27°C	0.978
	12.180V	5.039V	3.314V	5.041V	565.918				50.35°C	229.83V
80%	42.826A	7.944A	7.972A	2.285A	599.578	92.275%	940	27.5	43.56°C	0.981
	12.181V	5.037V	3.311V	5.033V	649.769				51.65°C	229.82V
90%	48.608A	8.441A	8.461A	2.388A	674.604	91.87%	1027	30.0	44.1°C	0.983
	12.181V	5.035V	3.309V	5.026V	734.302				53.12°C	229.82V
100%	54.193A	8.941A	8.983A	2.996A	749.823	91.452%	1127	32.6	45.02°C	0.984
	12.181V	5.034V	3.306V	5.007V	819.913				55.11°C	229.8V
110%	59.635A	9.938A	10.079A	3A	824.843	90.922%	1418	41.4	46.94°C	0.985
	12.183V	5.032V	3.303V	5.001V	907.199				57.88°C	229.79V
CL1	0.114A	11.942A	11.93A	0A	101.295	84.731%	643	<6.0	40.63°C	0.858
	12.215V	5.042V	3.327V	5.107V	119.55				46.16°C	229.88V
CL2	0.114A	19.85A	0A	0A	101.404	83.546%	800	21.9	41.8°C	0.861
	12.220V	5.038V	3.333V	5.112V	121.376				48.86°C	229.88V
CL3	0.115A	0A	19.831A	0A	67.386	76.843%	799	21.9	42.91°C	0.797
	12.217V	5.055V	3.328V	5.107V	87.695				52.02°C	229.88V
CL4	61.531A	0A	0A	0A	749.766	91.999%	1153	33.2	45.05°C	0.984
	12.185V	5.047V	3.313V	5.079V	814.978				55.96°C	229.81V

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20-80W 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
20W	1.226A	0.495A	0.495A	0.195A	20	76.971%	0	<6.0	39.62°C	0.454
	12.109V	5.054V	3.334V	5.119V	25.988				36.53°C	229.89V
40W	2.700A	0.693A	0.693A	0.293A	40	83.073%	0	<6.0	40.37°C	0.638
	12.110V	5.053V	3.333V	5.116V	48.152				37.03°C	229.88V
60W	4.172A	0.89A	0.891A	0.391A	60	85.417%	0	<6.0	41.59°C	0.744
	12.114V	5.053V	3.332V	5.112V	70.243				38.11°C	229.88V
80W	5.598A	1.088A	1.09A	0.489A	79.954	86.608%	0	<6.0	42.89°C	0.807
	12.206V	5.052V	3.331V	5.109V	92.319				39.09°C	229.88V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	7.73mV	6.38mV	8.69mV	8.04mV	Pass
20% Load	27.60mV	5.62mV	7.31mV	6.55mV	Pass
30% Load	18.19mV	5.57mV	7.21mV	8.19mV	Pass
40% Load	15.02mV	6.02mV	7.36mV	9.16mV	Pass
50% Load	13.64mV	8.38mV	8.03mV	21.96mV	Pass
60% Load	13.84mV	8.58mV	7.72mV	22.88mV	Pass
70% Load	13.43mV	8.63mV	9.36mV	23.54mV	Pass
80% Load	13.48mV	9.04mV	10.12mV	24.05mV	Pass
90% Load	14.28mV	9.70mV	12.22mV	24.87mV	Pass
100% Load	23.11mV	11.02mV	10.45mV	27.88mV	Pass
110% Load	24.44mV	12.79mV	12.66mV	30.47mV	Pass
Crossload1	8.90mV	7.08mV	9.83mV	9.92mV	Pass
Crossload2	7.57mV	9.70mV	8.49mV	21.55mV	Pass
Crossload3	9.01mV	8.27mV	14.32mV	20.73mV	Pass
Crossload4	23.72mV	11.54mV	9.07mV	29.36mV	Pass

All data and graphs included in this test report can be used by any individual on the following conditions:

- > It should be mentioned that the test results are provided by Cybenetics
- > The link to the original test results document should be provided in any case

Anex

Seasonic Vertex GX-750

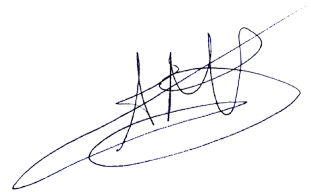


Top side



Power specifications label

CERTIFICATIONS 115V

Aristeidis Bitziopoulos
Lab Director

CERTIFICATIONS 230V



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