EFFICIENCY AND NOISE REPORT IN ACCORDANCE WITH
CYBENETICS ETA AND CYBENETICS LAMBDA PROCEDURE

SeaSonic Core GX-500

Lab ID#: SS50001839
Receipt Date: Feb 27, 2021
Test Date: May 5, 2021

Report: 21PS1839A
Report Date: May 10, 2021

DUT INFORMATION

Brand	SeaSonic
Manufacturer (OEM)	Seasonic
Series	Core GX
Model Number	SSR-500LX
Serial Number	R2010RA199410278
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	7-3.5
Rated Frequency (Hz)	50-60
Rated Power (W)	500
Type	ATX12V
Cooling	120mm Sleeve Bearing Fan (S1202512L)
Semi-Passive Operation	✗
Cable Design	Fully Modular

TEST EQUIPMENT

Electronic Loads	Chroma 63601-5 x4 Chroma 63600-2 x2 63640-80-80 x20 63610-80-20 x2
AC Sources	Chroma 6530, Keysight AC6804B
Power Analyzers	N4L PPA1530 x2
Sound Analyzer	Bruel & Kjaer 2270 G4
Microphone	Bruel & Kjaer Type 4955-A
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2
Tachometer	UNI-T UT372 x2
Digital Multimeter	Keysight U1273AX, Fluke 289, Keithley 2015 - THD
UPS	CyberPower OLS3000E 3kVA x2
Transformer	3kVA x2

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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6 (+-2°C / +- 3.6°F)
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

115V

Average Efficiency	88.208%
Efficiency With 10W (≤500W) or 2% (>500W)	62.313
Average Efficiency 5VSB	76.540%
Standby Power Consumption (W)	0.0430974
Average PF	0.976
Avg Noise Output	26.57 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	A-

230V

Average Efficiency	90.055%
Average Efficiency 5VSB	76.062%
Standby Power Consumption (W)	0.0665246
Average PF	0.913
Avg Noise Output	24.35 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	A

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	41	3	0.3
	Watts	100		492	15	3.6
Total Max. Power (W)		500				

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CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (610mm)	1	1	18-22AWG	No
4+4 pin EPS12V (650mm)	1	1	18AWG	No
6+2 pin PCIe (680mm+90mm)	1	2	18AWG	No
SATA (450mm+120mm+120mm+120mm)	1	4	18AWG	No
SATA (300mm+150mm)	1	2	18AWG	No
4-pin Molex (460mm+130mm+130mm)	1	3	18AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	18AWG	-

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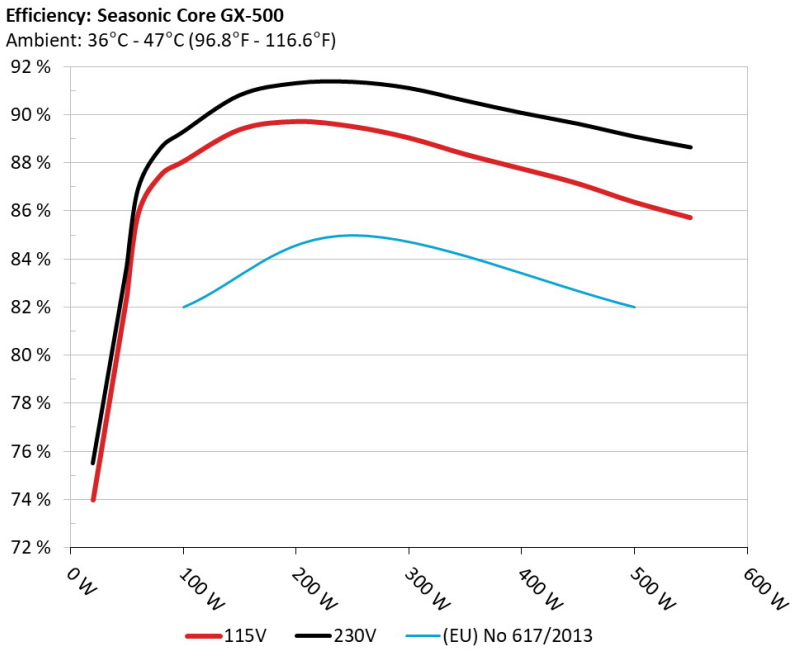
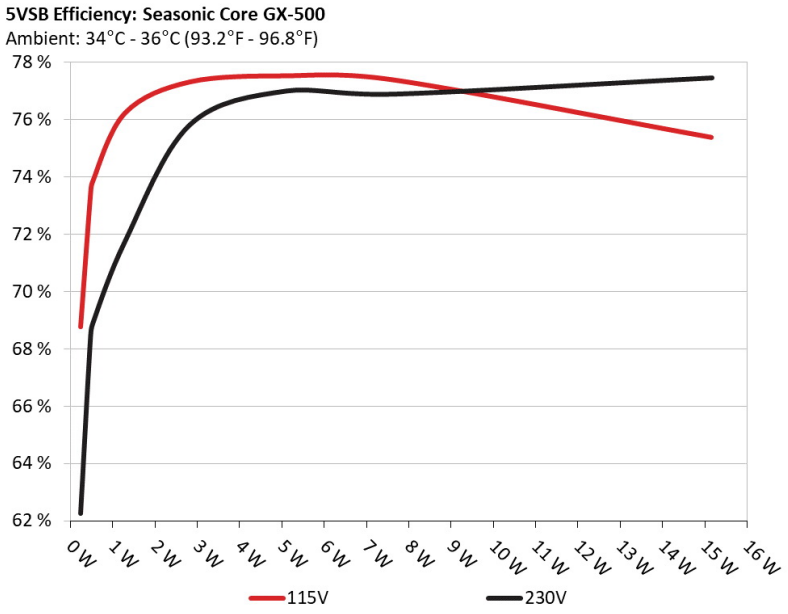
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231	68.750%	0.058
	5.132V	0.336		115.16V
2	0.090A	0.462	73.333%	0.104
	5.131V	0.630		115.16V
3	0.550A	2.817	77.305%	0.343
	5.120V	3.644		115.16V
4	1.000A	5.110	77.518%	0.412
	5.109V	6.592		115.16V
5	1.500A	7.646	77.373%	0.446
	5.096V	9.882		115.16V
6	3.001A	15.152	75.368%	0.501
	5.050V	20.104		115.14V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231	62.264%	0.020
	5.132V	0.371		230.35V
2	0.090A	0.462	68.343%	0.035
	5.131V	0.676		230.36V
3	0.550A	2.816	75.801%	0.167
	5.119V	3.715		230.35V
4	1.000A	5.110	76.981%	0.249
	5.108V	6.638		230.34V
5	1.500A	7.644	76.870%	0.304
	5.095V	9.944		230.34V
6	3.000A	15.179	77.436%	0.380
	5.059V	19.602		230.35V

115V

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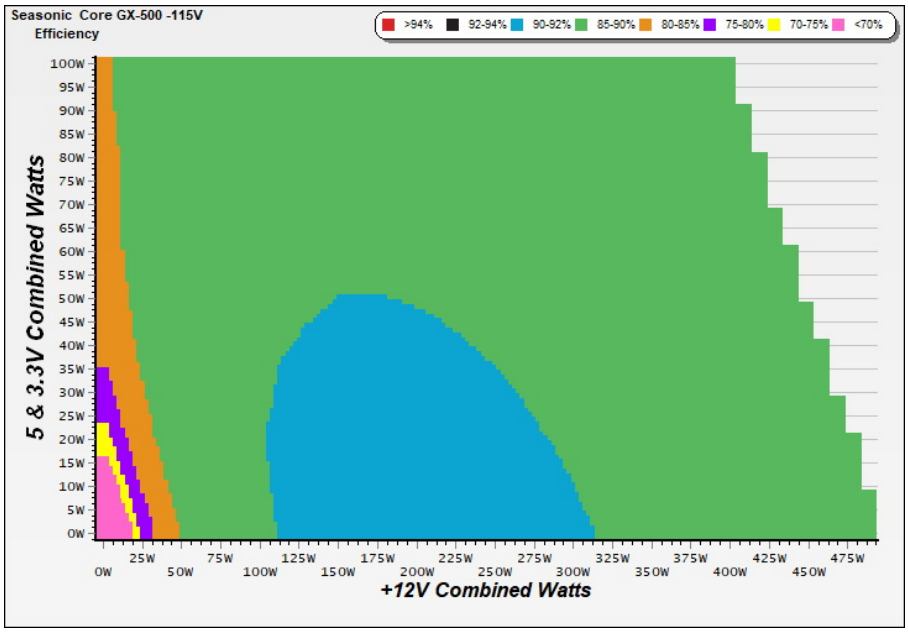
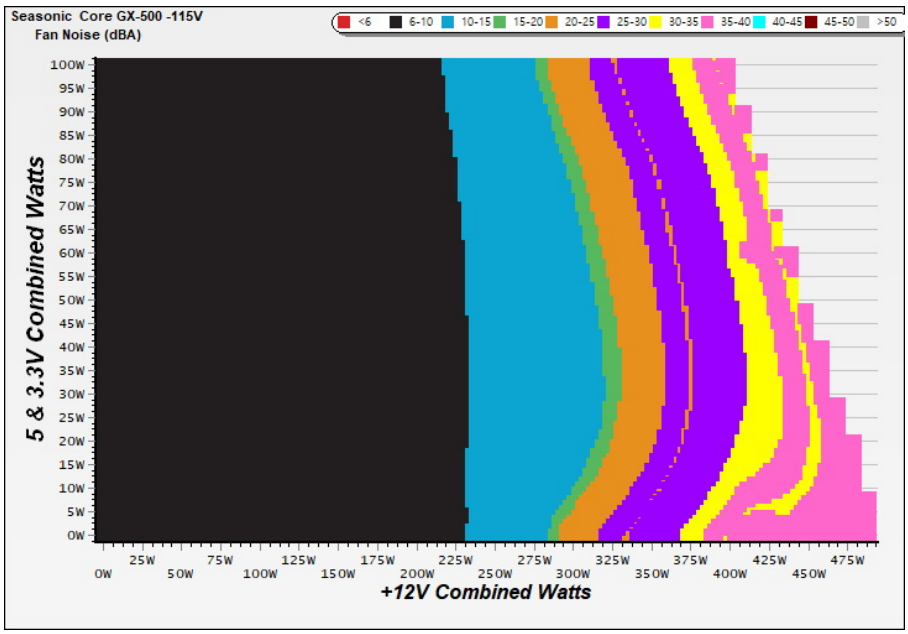
EFFICIENCY GRAPH 115V



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

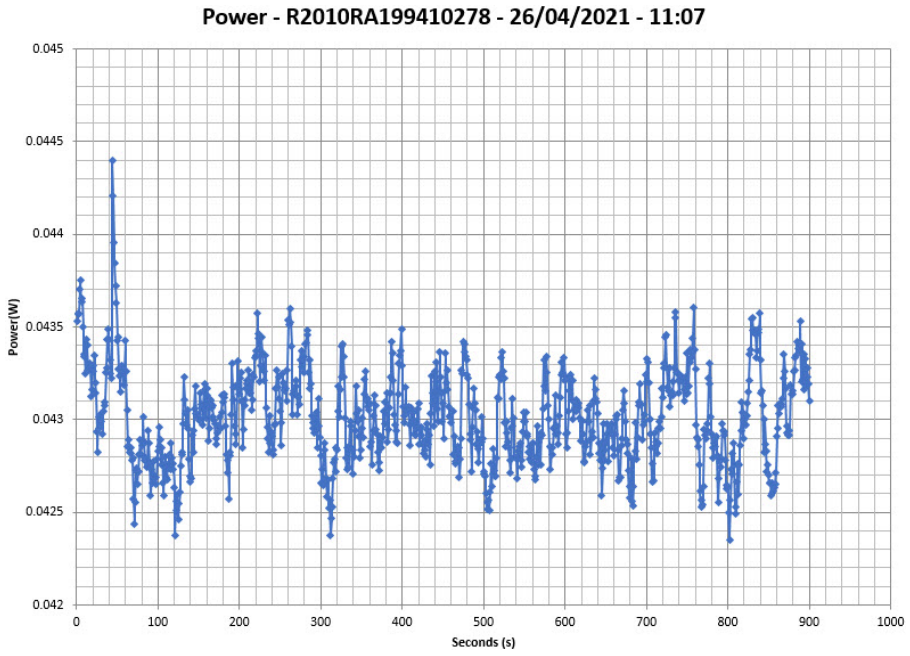
NOISE GRAPH 115V



INFO

The PSU's noise in its entire operational range and under 30-32 °C (+-2 °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

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

COMMISSION REGULATION (EU) NO 617/2013 TESTING 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	2.358A	1.990A	1.992A	0.982A	50.005	83.498%	626	9.3	40.02°C	0.923
	12.042V	5.026V	3.314V	5.095V	59.888				44.28°C	115.21V
2	5.742A	2.990A	2.995A	1.181A	100.033	88.049%	631	9.6	40.61°C	0.972
	12.041V	5.019V	3.306V	5.080V	113.610				45.07°C	115.17V
5	16.568A	5.009A	5.029A	1.787A	250.065	89.497%	654	10.9	42.41°C	0.985
	12.045V	4.993V	3.282V	5.037V	279.413				47.99°C	115.12V
10	34.063A	9.096A	9.176A	3.026A	499.853	86.359%	1956	42.5	45.50°C	0.985
	12.041V	4.948V	3.236V	4.957V	578.805				55.87°C	115.09V

230V

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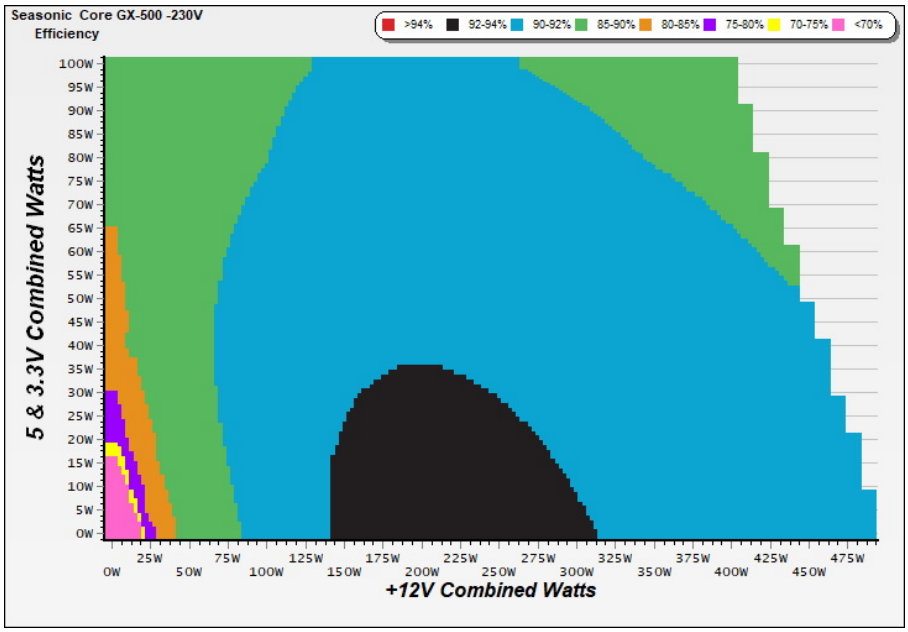
EFFICIENCY GRAPH 230V



INFO

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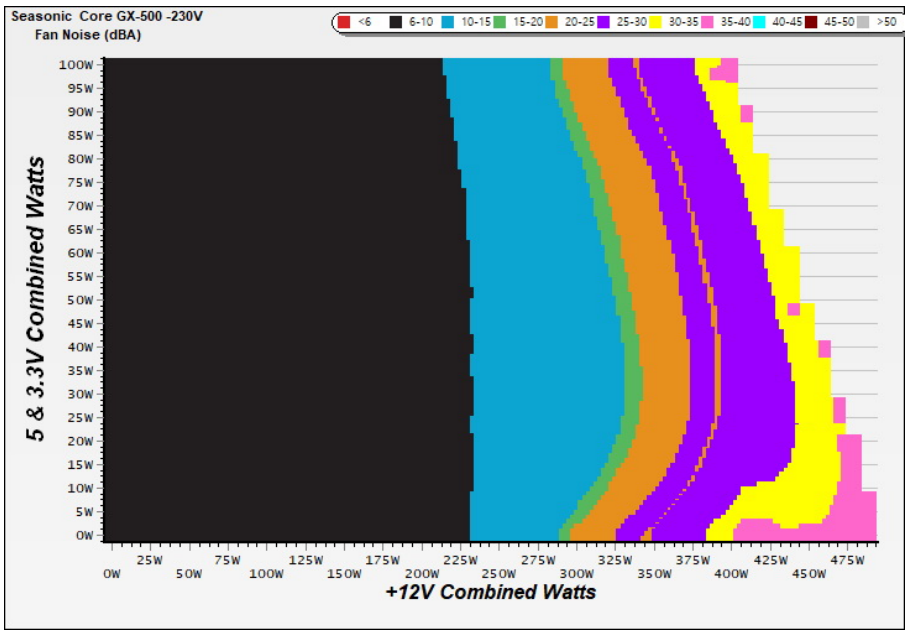
NOISE GRAPH 230V



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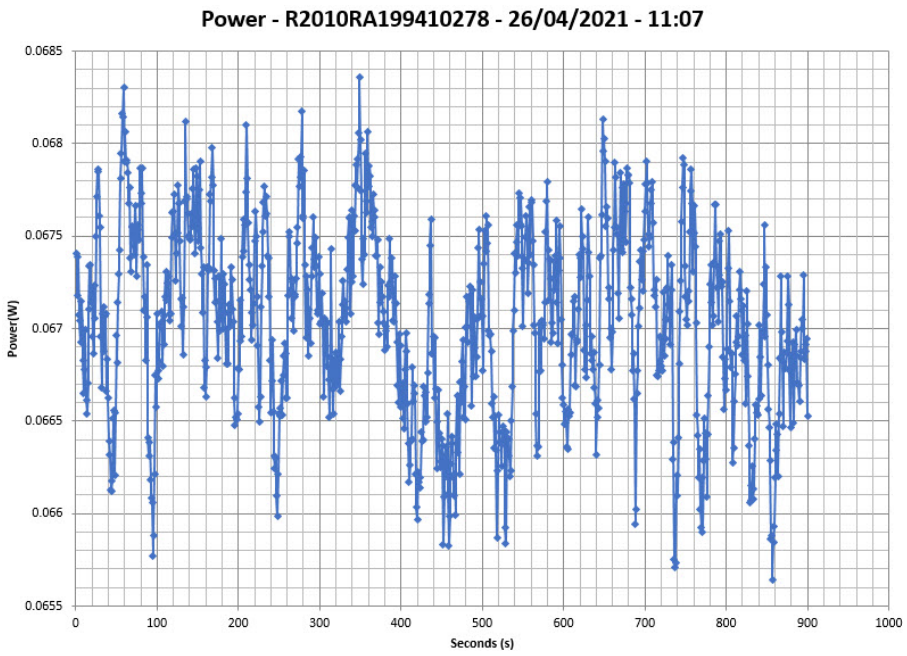
VAMPIRE POWER -230V



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COMMISSION REGULATION (EU) NO 617/2013 TESTING 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	2.358A	1.988A	1.990A	0.981A	50.002	84.379%	623	9.1	40.02°C	0.652
	12.041V	5.030V	3.316V	5.097V	59.259				43.74°C	230.41V
2	5.742A	2.987A	2.993A	1.181A	100.027	89.282%	628	9.4	41.13°C	0.827
	12.040V	5.023V	3.308V	5.082V	112.035				44.98°C	230.41V
5	16.567A	5.002A	5.022A	1.785A	250.050	91.355%	652	10.7	42.64°C	0.946
	12.046V	5.000V	3.286V	5.043V	273.713				47.70°C	230.37V
10	34.081A	9.110A	9.195A	3.029A	499.917	89.088%	1958	42.5	46.30°C	0.970
	12.036V	4.940V	3.230V	4.953V	561.149				56.82°C	230.37V

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SeaSonic Core GX-500

Top side

Power specifications label

CERTIFICATIONS 115V

CYBENETICS GOLD

CYBENETICS A-

CERTIFICATIONS 230V

CYBENETICS GOLD 230v

CYBENETICS A 230v

Aris Mpitsiopoulos
Lab Director