



Seasonic Focus GX-750 ATX3 (ATX v3.1)

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Lab ID SS75002749

Certification ID 252749

Test Result Report ID: 25PS2749A

Certificate Issue Date: Feb 20, 2025

115V

230V

Scheme: ETA-EMI PSU



115V

230V

Scheme: LAMBDA PSU





PASS

Outside Validation Scope

General Information

Test Equipment

Electronic Loads	Chroma 63601-5 x2 Chroma 63600-2 Chroma 63640-80-80 x10 Chroma 63610-80-20
AC Sources	Chroma 6530, APM SP300VAC4000W-P, GW Instek ASR-3500
Power Analyzers	Rohde & Schwarz HMC8015 & NPA701
Oscilloscopes	Picoscope 4444, 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
EMI Analyzer	TekBox TBMR-110M-EU
Isolation Transformer	4kVA
UPS	FSP Champ Tower 3kVA, CyberPower OLS3000E 3kVA
Testing Methodology	Cybenetics PSU Test Protocol

DUT Information(Non-accredited measurements)

Product Identification Details	
Brand	Seasonic
Model	Focus GX-750 ATX3 (ATX v3.1)
OEM/ODM	Seasonic
Serial Number	-
Product Specifications	
Manufacturer-Provided Information	
V_{rms}	100-240
I_{rms}	5-10

□□□□ (Hz)	50-60
□□□□ (W)	750
Operating Temperature (Continuous Full Load) (°C)	
□□	ATX12V
□□□□	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
□□	135mm Fluid Dynamic Bearing Fan (HA13525H12F-Z)
□□□□	✓ (selectable)
Cybenetics Testing Information	
Lab ID	SS75002749
Date of receipt	Feb 11, 2025
Testing Date	Feb 19, 2025
Report Issued Date	Feb 20, 2025
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

□□□□ (Non-accredited measurements)

□□□□				
□□	□□□□	□□□□□	Gauge	In Cable Capacitors
ATX □□ 20+4 pin (610mm)	1	1	16-18AWG	□
4+4 pin EPS 12V □□ (750mm)	2	2	16AWG	□
6+2pin PCIe□□ (750mm)	2	2	16-18AWG	□
12+4 pin PCIe (700mm) (600W)	1	1	16-24AWG	□
SATA□□ (500mm+150mm+150mm+150mm)	2	8	18AWG	□
4-pin Molex (450mm+120mm+120mm)	1	3	18AWG	□

Protection Features(Manufacturer)

Over Power Protection	✓
Over Current (+12V) Protection	✓
Over Temperature Protection	✓
Short Circuit Protection	✓
Surge Protection	✓
Inrush Current Protection	✓
Fan Failure Protection	✗

□□□□

□		3.3V	5V	12V	5VSB	-12V
□□□	□□	20	20	62	3	0.3
	□	100		744	15	3.6
□□□□ (W)		750				

Parts Description

General Data	
Manufacturer (OEM)	Seasonic
PCB Type	Double Sided
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	1x NTC Thermistor MF72-5D20 (5 Ohm) & Relay
Bridge Rectifier(s)	2x GBU15JL (600V, 15A @ 120°C)
APFC MOSFETs	2x Alpha & Omega AOB190A60CL (600V, 12A, @ 100°C, Rds(on): 0.190hm)
APFC Boost Diode	1x Infineon IDK08G65C5 (650V, 8A, @ 145°C)
Bulk Cap(s)	1x Nichicon (400V, 560uF, 2,000h @ 105°C, GG)

Main Switchers	4x GreatPower GPT13N50X
APFC Controller	Champion CM6500UNX
Resonant Controller	Champion CU6901VPA
Topology	Primary side: APFC, Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	4x Nexperia PSMN1R0-40YLD (40V, 198A @ 100°C, Rds(on): 1.93mOhm)
5V & 3.3V	DC-DC Converters: 6x Nexperia PSMN4R0-30YLD (30V, 67A @ 100°C, Rds(on): 6.6mOhm) PWM Controller(s): ANPECAPW7159C
Filtering Capacitors	Electrolytic: 4x Nichicon (2-5,000h @ 105°C, HD), 1x Nippon Chemi-Con (1-5,000h @ 105°C, KZE), 4x Rubycon (3-6,000h @ 105°C, YXG) 2x Rubycon (6-10,000h @ 105°C, ZLH) Polymer: 17x Nippon Chemi-Con, 6x FPCAP
Supervisor IC	Weltrend WT7527RA (OVP, UVP, OCP, SCP, PG)
Fan Controller	Nuvoton M031FB0AE
Fan Model	Hong Hua HA13525H12F-Z (135mm, 12V, 0.50A, Fluid Dynamic Bearing Fan)
5VSB Circuit	
Low Side Rectifier	Dongke DK5V45R10S (45V, Rds(on): 10mOhm)
Standby PWM Controller	Excelliance MOS EM8569C

Test Results

Temperature & Compliance Info

□□□□ (°C /°F)	28-32 / 82.4-89.6
□□ ErP Lot3/6□□	✓
□□ (EU) No 617/2013□□	✓
ALPM (Alternative Low Power Mode) compatible	✓
ATX v3.1 PSU Power Excursion	✓

Performance Summary

115V

Accredited	
□□□□ (>1450 load combinations)	89.065%
Average Noise Output (>1450 Load Combinations)	29.33dBA
PF□□□ (>1450 Load Combinations)	0.983
Efficiency With 10W ($\leq$ 500W) or 2% (>500W) Load	70.304%
□□□□□	0.0550W
Non-Accredited	
12V Ripple (Full Load)	23.25mV
5V Ripple (Full Load)	13.35mV
3.3V Ripple (Full Load)	11.85mV
5VSB Ripple (Full Load)	11.42mV
12V Load Regulation	1.50%
5V Load Regulation	0.28%
3.3V Load Regulation	0.51%
5VSB Load Regulation	3.92%
Inrush Current	31.730A

230V

Accredited	
□□□□ (>1450 load combinations)	91.064%
Average Noise Output (>1450 Load Combinations)	29.41dBA
PF□□□ (>1450 Load Combinations)	0.948
Efficiency With 10W ($\leq$ 500W) or 2% (>500W) Load	70.752%
□□□□□	0.1583W
Non-Accredited	
12V Ripple (Full Load)	23.96mV
5V Ripple (Full Load)	13.40mV
3.3V Ripple (Full Load)	11.60mV

5VSB Ripple (Full Load)	10.53mV	
12V Load Regulation	1.50%	
5V Load Regulation	0.30%	
3.3V Load Regulation	0.51%	
5VSB Load Regulation	3.90%	
Inrush Current	68.780A	
12V Transient Response (200%)	11.52V	
5V Transient Response (200%)	4.931V	
3.3V Transient Response (200%)	3.237V	
5VSB Transient Response (200%)	4.926V	
□□□□ & PG□□	20.70ms	
AC Loss to PWR_OK Hold Up Time	16.40ms	
PWR_OK Inactive to DC Loss Delay	4.30ms	
PSU Timings: T1 (20% / 100%)	66.0ms	71.0ms
PSU Timings: T3 (20% / 100%)	130.0ms	126.0ms
12V OCP (28.5°C / 43.5°C)	70.00A (112.90%), 12.067V	70.00A (112.90%), 12.081V
5V OCP (28.5°C / 43.5°C)	27.2A (136.00%), 4.998V	27.1A (135.50%), 5.001V
3.3V OCP (28.5°C / 43.5°C)	28.6A (143.00%), 3.304V	28.7A (143.50%), 3.306V
5VSB OCP (28.5°C / 43.5°C)	6.1A (203.33%), 4.762V	6.1A (203.33%), 4.755V
OPP (27.78°C / 42.47°C)	114.78%	114.78%

□□□□ & PG□□

Hold-Up Time (ms)	20.7
AC Loss to PWR_OK Hold Up Time (ms)	16.4
PWR_OK Inactive to DC Loss Delay (ms)	4.3



Tables

115V

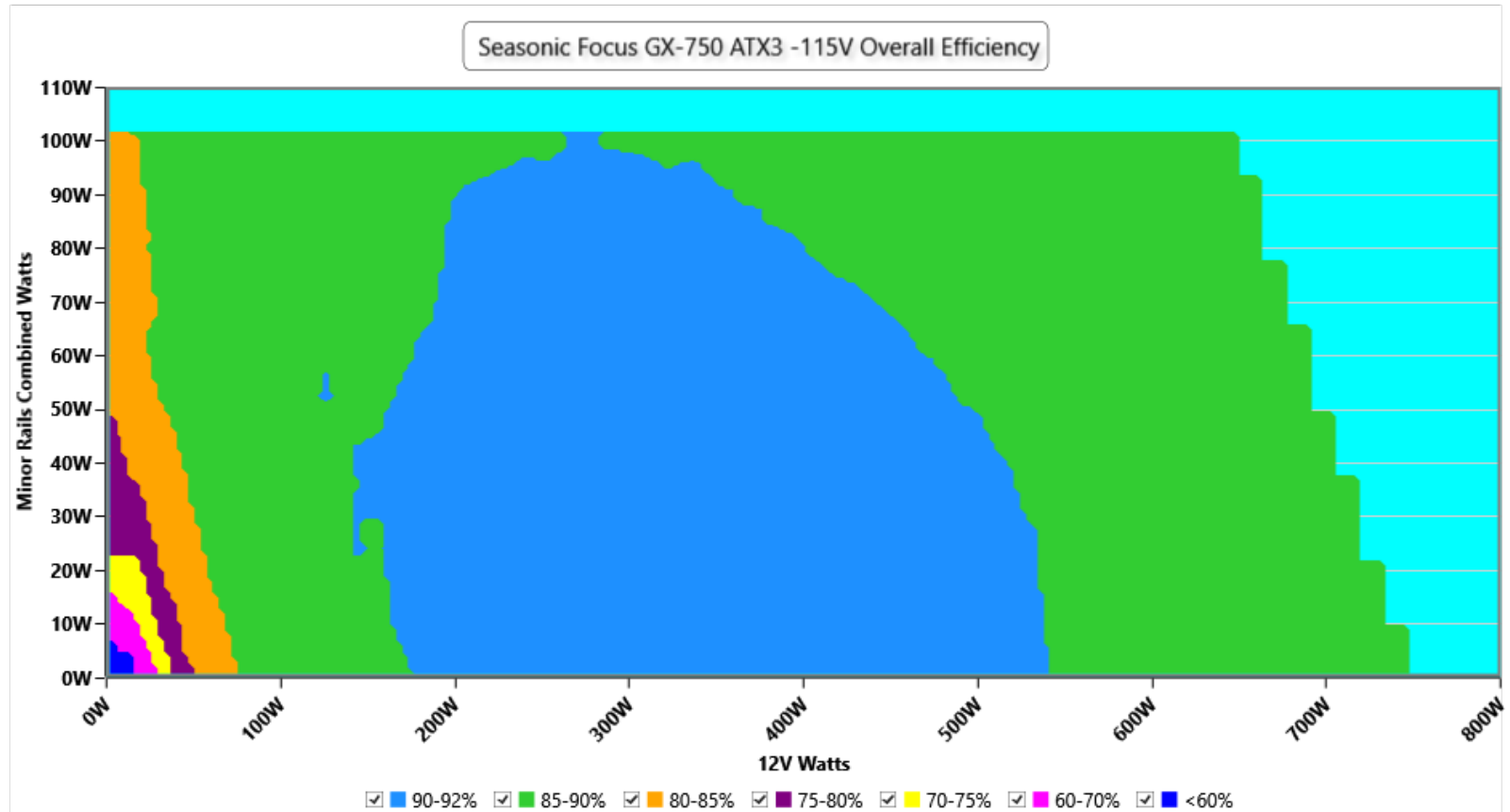
Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.04 V	115.01 V	113.85 V	115.09 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.99 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.418	1.490	PASS
Mains Voltage THD:	0.13 %	0.09 %	N/A	0.19 %	2.00 %	PASS
Real Power:	0.055 W	0.005 W	N/A	0.096 W	N/A	N/A
Apparent Power:	10.823 W	10.276 W	N/A	11.367 W	N/A	N/A
Power Factor:	0.007	N/A	N/A	N/A	N/A	N/A

230V

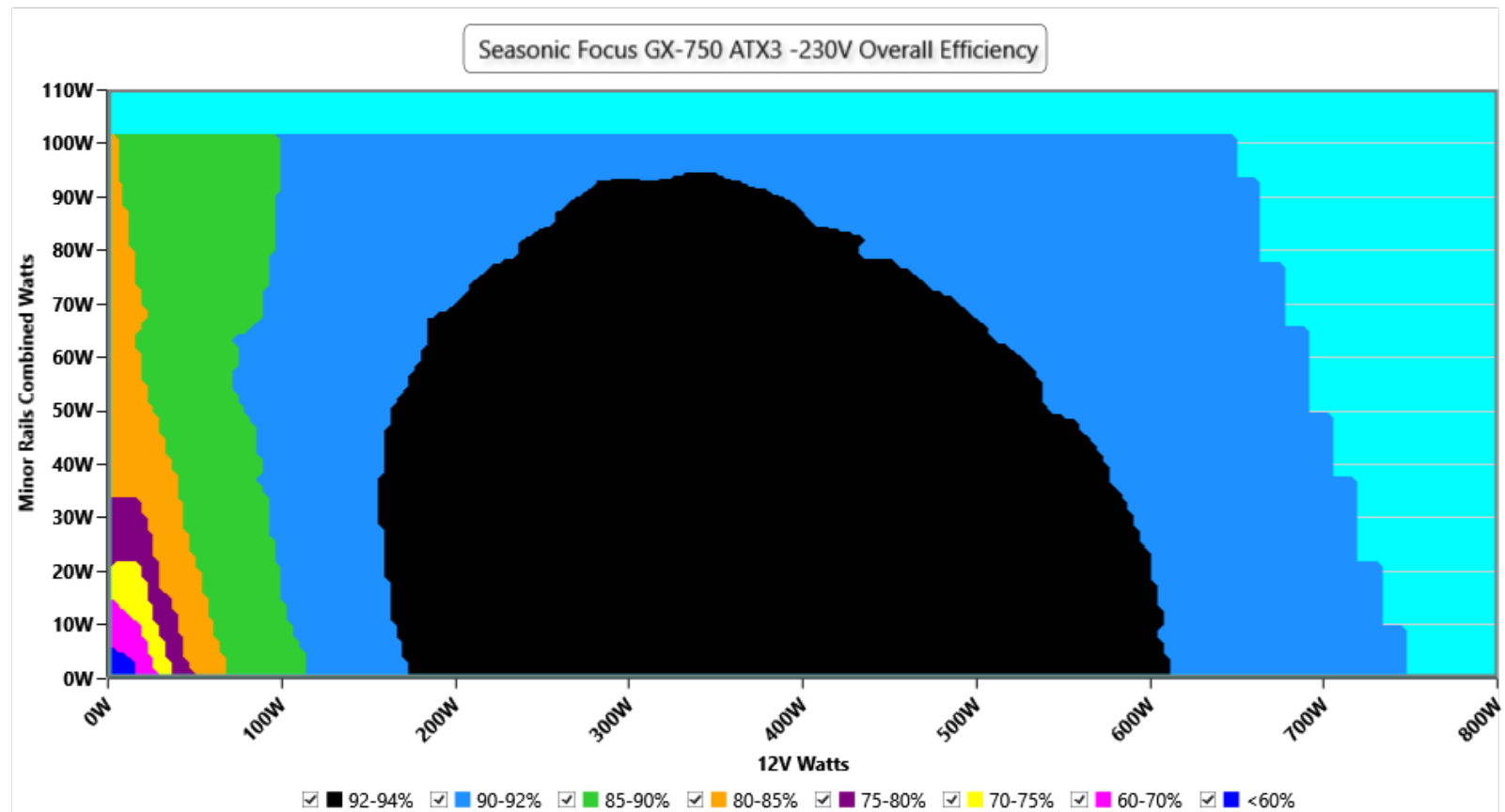
Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	231.00 V	230.90 V	227.70 V	231.06 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	49.99 Hz	49.50 Hz	50.01 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.417	1.416	1.340	1.419	1.490	PASS
Mains Voltage THD:	0.17 %	0.14 %	N/A	0.25 %	2.00 %	PASS
Real Power:	0.158 W	0.110 W	N/A	0.216 W	N/A	N/A
Apparent Power:	34.132 W	33.530 W	N/A	34.763 W	N/A	N/A
Power Factor:	0.005	N/A	N/A	N/A	N/A	N/A



115V



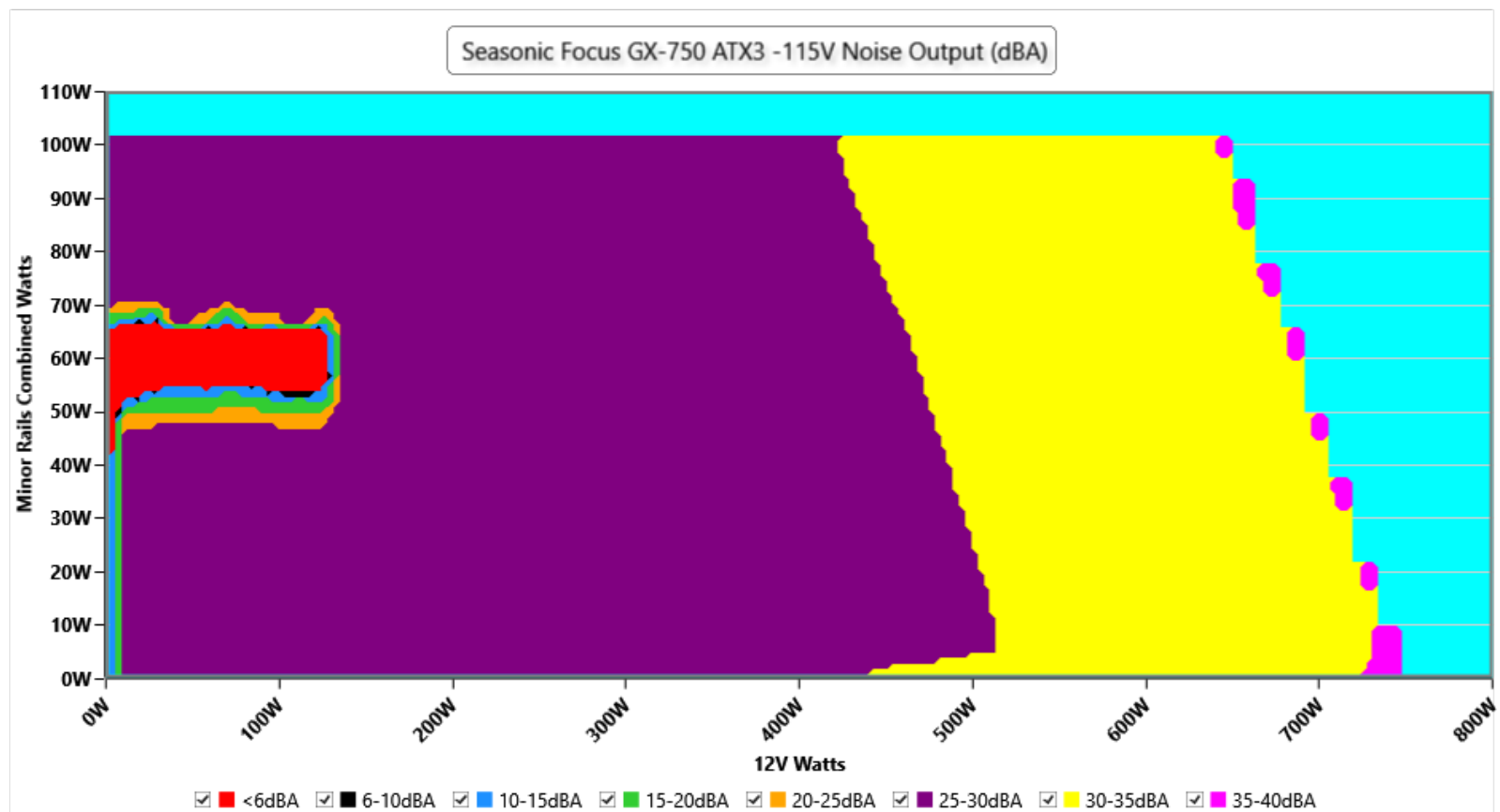
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



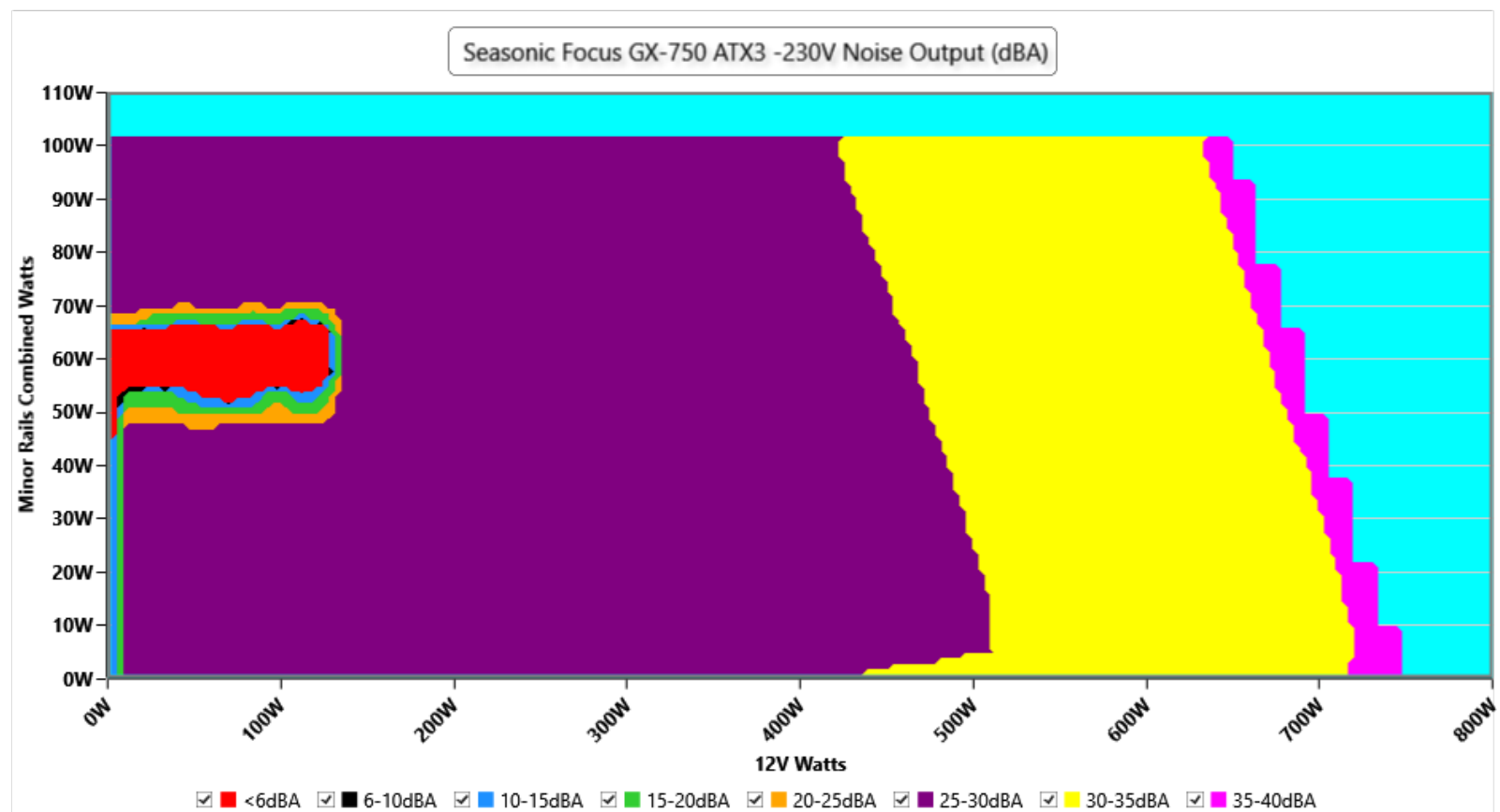
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



115V



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



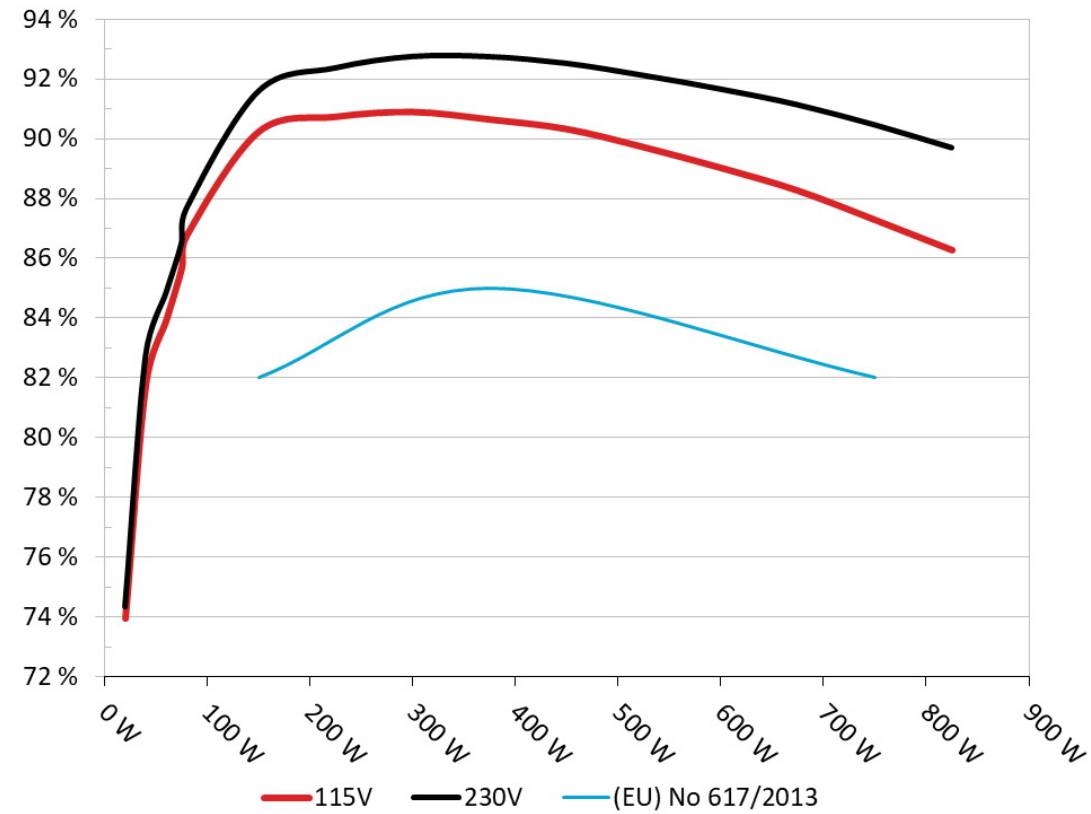
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance



Efficiency: Seasonic Focus GX-750 ATX3

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

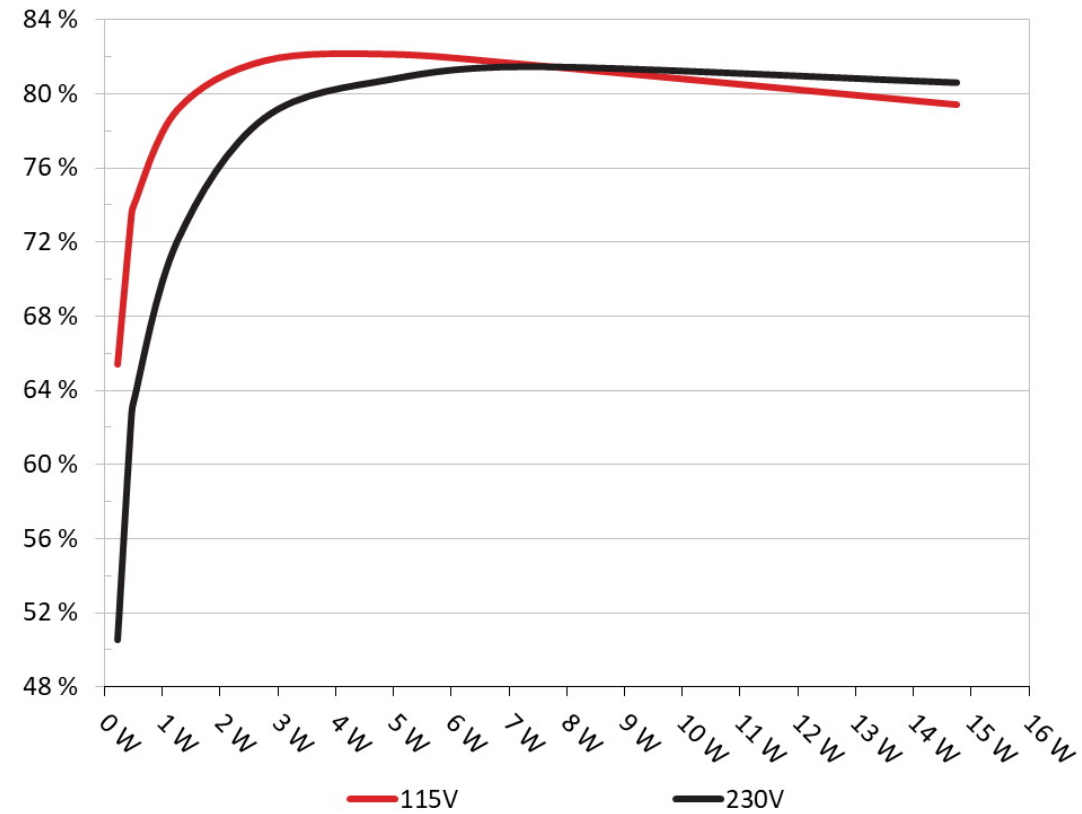


The PSU's efficiency under high ambient temperatures with 115V and 230V input. For this graph the results of the 10-110% load regulation table are used

5Vsb

5VSB Efficiency: Seasonic Focus GX-750 ATX3

Ambient: 34°C - 36°C (93.2°F - 96.8°F)



This graph depicts the efficiency levels of the 5VSB rail with 115V and 230V input

5Vsb (ErP Lot3/6 & CEC)

115V

#	5VSB	DC/AC (%)		PF/AC
1	0.045A	0.227W	65.381%	0.036
	5.051V	0.347W		114.99V
2	0.09A	0.455W	73.084%	0.064
	5.049V	0.623W		114.98V
3	0.55A	2.766W	81.758%	0.269
	5.028V	3.383W		114.97V
4	1A	5.009W	82.108%	0.368
	5.008V	6.1W		114.97V
5	1.5A	7.479W	81.508%	0.421
	4.985V	9.176W		114.97V
6	3A	14.741W	79.396%	0.494
	4.913V	18.566W		114.96V

230V

#	5VSB	DC/AC (%)		PF/AC
1	0.045A	0.227W	50.528%	0.014
	5.051V	0.45W		230.13V
2	0.09A	0.455W	62.107%	0.023
	5.049V	0.733W		230.16V
3	0.55A	2.766W	78.701%	0.105
	5.028V	3.514W		230.13V
4	1A	5.009W	80.824%	0.172
	5.008V	6.198W		230.13V
5	1.5A	7.48W	81.474%	0.231
	4.986V	9.183W		230.13V
6	3A	14.751W	80.617%	0.338
	4.917V	18.298W		230.12V

Protection Features

OCP (Normal @ 28.5°C)	12V: 70.00A (112.90%), 12.067V 5V: 27.2A (136.00%), 4.998V 3.3V: 28.6A (143.00%), 3.304V 5VSB: 6.1A (203.33%), 4.762V
OCP (Hot @ 43.5°C)	12V: 70.00A (112.90%), 12.081V 5V: 27.1A (135.50%), 5.001V 3.3V: 28.7A (143.50%), 3.306V 5VSB: 6.1A (203.33%), 4.755V
OPP (Normal @ 27.8°C)	860.88W (114.78%)
OPP (Hot @ 42.5°C)	860.83W (114.78%)
OTP	✓ (130°C @ Heat Sink)
SCP	12V to Earth: ✓ 5V to Earth: ✓ 3.3V to Earth: ✓ 5VSB to Earth: ✓ -12V to Earth: ✓
PWR_OK	Proper Operation
NLO	✓
Fan Failure Protection	✗
SIP	Surge: MOV Inrush: NTC & Bypass Relay

Supplementary Tests (For Reference)

10-110%□□□□

115V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
10%	4.416A	1.996A	1.991A	1A	75.012	85.707%	0	<6.0	47.57°C	0.967
	12.094V	5.012V	3.316V	5V	87.521				40.21°C	114.94V

20%	9.864A	2.994A	2.987A	1.204A	149.978	90.246%	0	<6.0	48.47°C	0.979
	12.071V	5.011V	3.315V	4.985V	166.188				40.92°C	114.91V
30%	15.660A	3.495A	3.487A	1.409A	224.985	90.742%	964	27.8	41.07°C	0.983
	12.064V	5.009V	3.312V	4.971V	247.936				48.04°C	114.89V
40%	21.460A	3.996A	3.988A	1.615A	300.075	90.901%	959	27.6	41.75°C	0.985
	12.062V	5.007V	3.31V	4.956V	330.11				48.89°C	114.87V
50%	26.876A	4.996A	4.988A	1.822A	374.73	90.651%	952	27.3	42.15°C	0.984
	12.063V	5.005V	3.308V	4.941V	413.37				50.31°C	114.84V
60%	32.313A	5.997A	5.988A	2.001A	449.502	90.333%	944	27	42.76°C	0.986
	12.064V	5.004V	3.307V	4.927V	497.606				53.29°C	114.81V
70%	37.747A	6.998A	6.989A	2.241A	524.55	89.725%	1018	30	43.23°C	0.987
	12.066V	5.003V	3.305V	4.909V	584.624				55.33°C	114.78V
80%	43.245A	7.999A	7.991A	2.348A	599.756	89.033%	1097	31.7	43.7°C	0.988
	12.067V	5.002V	3.304V	4.898V	673.64				56.7°C	114.76V
90%	49.072A	8.5A	8.478A	2.456A	674.785	88.272%	1171	33.8	44.56°C	0.99
	12.069V	5.001V	3.302V	4.888V	764.442				59.63°C	114.75V
100%	54.698A	9.001A	8.997A	3.093A	749.996	87.291%	1550	42.1	45.87°C	0.991
	12.071V	5V	3.301V	4.851V	859.188				60.46°C	114.71V
110%	60.201A	10.003A	10.092A	3.096A	825.03	86.282%	1998	49.6	46.33°C	0.992
	12.071V	4.999V	3.299V	4.845V	956.21				59.77°C	114.69V
CL1	0.116A	12.026A	11.989A	0A	101.309	84.067%	970	28.1	41.17°C	0.975
	12.098V	5.006V	3.311V	5.037V	120.508				50.55°C	114.95V
CL2	0.116A	19.981A	0A	0A	101.4	82.83%	968	28	41.4°C	0.975
	12.096V	5.005V	3.32V	5.041V	122.418				48.54°C	114.95V
CL3	0.115A	0A	19.948A	0A	67.393	76.554%	971	28.2	40.64°C	0.968
	12.094V	5.015V	3.308V	5.039V	88.037				47.03°C	114.97V
CL4	62.134A	0A	0A	0A	749.772	88.095%	1504	41.1	45.28°C	0.99
	12.067V	5.009V	3.308V	5.007V	851.1				59.7°C	114.72V

The results above are not used in the certification process

230V

項目	12V	5V	3.3V	5VSB	DC/AC (V)	項目	回転数 (RPM)	騒音レベル (dB[A])	温度 (室温 / 室温)	PF/AC 項目
10%	4.416A	1.995A	1.99A	1A	75.003	86.52%	0	<6.0	46.51°C	0.833
	12.095V	5.013V	3.317V	5.001V	86.687				40.35°C	230.12V
20%	9.862A	2.994A	2.987A	1.204A	149.948	91.604%	0	<6.0	48.16°C	0.917
	12.071V	5.011V	3.315V	4.986V	163.693				40.76°C	230.11V
30%	15.656A	3.494A	3.487A	1.408A	224.951	92.385%	966	27.9	41.2°C	0.946
	12.065V	5.01V	3.313V	4.971V	243.492				47.38°C	230.08V
40%	21.454A	3.995A	3.987A	1.614A	300.04	92.767%	960	27.7	41.68°C	0.959
	12.065V	5.008V	3.311V	4.957V	323.433				47.72°C	230.06V
50%	26.867A	4.995A	4.987A	1.822A	374.634	92.761%	953	27.3	42.42°C	0.966
	12.064V	5.006V	3.309V	4.942V	403.876				49.1°C	230.05V
60%	32.306A	5.996A	5.988A	2.001A	449.43	92.538%	946	27.1	42.91°C	0.971
	12.065V	5.005V	3.307V	4.928V	485.671				50.74°C	230.04V
70%	37.742A	6.997A	6.989A	2.241A	524.5	92.135%	1020	30	43.06°C	0.974
	12.066V	5.004V	3.306V	4.91V	569.274				51.8°C	230.04V
80%	43.243A	7.997A	7.991A	2.348A	599.724	91.676%	1099	31.7	43.87°C	0.977
	12.067V	5.002V	3.304V	4.899V	654.179				53.41°C	230.03V
90%	49.070A	8.499A	8.478A	2.455A	674.765	91.151%	1172	33.8	44.3°C	0.979
	12.069V	5.002V	3.302V	4.888V	740.278				55.03°C	230.02V
100%	54.702A	9A	8.998A	3.092A	749.994	90.477%	1561	42.4	45.85°C	0.981
	12.070V	5V	3.301V	4.852V	828.936				55.82°C	230.01V
110%	60.202A	10.002A	10.094A	3.096A	825.039	89.713%	1998	49.6	46.67°C	0.982
	12.071V	4.999V	3.299V	4.846V	919.643				55.69°C	229.99V
CL1	0.116A	12.027A	11.992A	0A	101.313	85.071%	971	28.2	41.97°C	0.883
	12.098V	5.006V	3.311V	5.037V	119.093				49.07°C	230.1V
CL2	0.116A	19.981A	0A	0A	101.401	83.827%	969	28	41.52°C	0.884
	12.096V	5.005V	3.32V	5.04V	120.966				48.06°C	230.1V
CL3	0.116A	0A	19.952A	0A	67.397	77.298%	972	28.2	40.62°C	0.836
	12.095V	5.016V	3.308V	5.039V	87.191				46.57°C	230.1V

CL4	62.148A	0A	0A	0A	749.8	91.155%	1410	39.1	45.2°C	0.98
	12.064V	5.009V	3.308V	5.007V	822.557				53.95°C	229.99V

The results above are not used in the certification process

20-80□□□□

115V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□ (RPM)	□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
20W	1.246A	0.499A	0.497A	0.198A	20.011	73.96%	0	<6.0	42.22°C	0.881
	11.926V	5.014V	3.318V	5.041V	27.056				36.64°C	114.96V
40W	2.744A	0.698A	0.696A	0.298A	40.008	81.828%	0	<6.0	43.6°C	0.942
	11.916V	5.014V	3.318V	5.036V	48.89				37.78°C	114.95V
60W	4.179A	0.898A	0.895A	0.398A	60.007	83.958%	0	<6.0	44.77°C	0.96
	12.092V	5.013V	3.317V	5.03V	71.474				38.59°C	114.95V
80W	5.652A	1.098A	1.095A	0.498A	79.976	86.787%	0	<6.0	46.48°C	0.969
	12.093V	5.013V	3.317V	5.024V	92.152				39.63°C	114.94V

The results above are not used in the certification process

230V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□ (RPM)	□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
20W	1.245A	0.499A	0.497A	0.198A	19.999	74.345%	0	<6.0	44.36°C	0.519
	11.928V	5.015V	3.318V	5.041V	26.902				36.99°C	230.14V
40W	2.744A	0.698A	0.696A	0.298A	39.998	82.743%	0	<6.0	44.65°C	0.694
	11.916V	5.014V	3.318V	5.036V	48.34				37.77°C	230.14V
60W	4.179A	0.898A	0.895A	0.398A	59.997	84.858%	0	<6.0	44.27°C	0.79
	12.091V	5.014V	3.318V	5.03V	70.707				38.26°C	230.13V
80W	5.650A	1.097A	1.094A	0.498A	79.947	87.689%	0	<6.0	45.2°C	0.841
	12.092V	5.014V	3.317V	5.024V	91.171				39.04°C	230.13V

The results above are not used in the certification process

**115V**

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	20.81mV	8.26mV	5.75mV	7.95mV	Pass
20% Load	23.42mV	10.41mV	7.73mV	6.52mV	Pass
30% Load	15.99mV	8.47mV	5.24mV	6.93mV	Pass
40% Load	12.47mV	13.98mV	11.34mV	7.03mV	Pass
50% Load	11.80mV	8.16mV	5.44mV	6.73mV	Pass
60% Load	13.53mV	9.49mV	5.54mV	8.30mV	Pass
70% Load	15.01mV	9.39mV	6.00mV	8.56mV	Pass
80% Load	14.91mV	10.00mV	9.56mV	9.32mV	Pass
90% Load	15.67mV	11.94mV	11.24mV	10.75mV	Pass
100% Load	23.25mV	13.35mV	11.85mV	11.42mV	Pass
110% Load	24.74mV	14.53mV	11.88mV	11.12mV	Pass
Crossload1	10.78mV	10.54mV	11.72mV	9.65mV	Pass
Crossload2	17.45mV	10.76mV	7.27mV	8.46mV	Pass
Crossload3	18.67mV	9.03mV	12.61mV	9.07mV	Pass
Crossload4	22.72mV	9.77mV	7.29mV	10.22mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	20.61mV	9.54mV	6.66mV	8.46mV	Pass
20% Load	27.54mV	10.86mV	7.83mV	7.49mV	Pass
30% Load	16.65mV	9.08mV	5.34mV	7.34mV	Pass
40% Load	12.63mV	13.72mV	10.89mV	7.28mV	Pass
50% Load	12.52mV	9.44mV	6.20mV	7.59mV	Pass
60% Load	13.38mV	10.00mV	5.90mV	8.51mV	Pass

