



Enermax Revolution D.F.12 750W

Serial Number 2412120180002

Lab ID EM75002393

Certification ID 252393

Test Result Report ID: 24PS2393A

Certificate Issue Date: Mar 22, 2024

115V

230V

Scheme: ETA-EMI PSU

A grey shield-shaped badge with a lightning bolt icon at the top, "CYBENETICS" in the middle, and "PLATINUM" at the bottom.

A grey shield-shaped badge with a lightning bolt icon at the top, "CYBENETICS" in the middle, "PLATINUM" below it, and "230v" at the very bottom.

115V

230V

Scheme: LAMBDA PSU

An orange shield-shaped badge with a speaker icon at the top, "CYBENETICS" in the middle, "STANDARD+" below it, and "230v" at the very bottom.

An orange shield-shaped badge with a speaker icon at the top, "CYBENETICS" in the middle, "STANDARD+" below it, and "230v" at the very bottom.



Outside Validation Scope

A handwritten signature in blue ink, consisting of several loops and a long horizontal stroke.

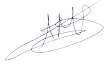
General Information

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	Enermax
Model	Revolution D.F.12 750W
OEM/ODM	RSY
Serial Number	2412120180002
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10

Rated Frequency (Hz)	50-60
Rated Power (W)	750
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	120mm Double Ball Bearing Fan (ZFB122512M)
Semi-Passive Operation	✓
Cybenetics Testing Information	
Lab ID	EM75002393
Date of receipt	Feb 27, 2024
Testing Date	Mar 21, 2024
Report Issued Date	Mar 22, 2024
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

Cables and Connectors(Non-accredited measurements)

Modular Cables				
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (600mm)	1	1	16-22AWG	No
4+4 pin EPS12V (700mm)	2	2	18AWG	No
6+2 pin PCIe (600mm)	3	3	18AWG	No
12+4 pin PCIe (600mm) (600W)	1	1	16-24AWG	No
SATA (450mm+150mm+150mm+150mm)	2	8	18AWG	No
4-pin Molex (450mm+150mm+150mm+150mm)	1	4	18AWG	No
AC Power Cord (1100mm) - C13 coupler	1	1	18AWG	-

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62.4	3	0.4
	Watts	100		748.8	15	4.8
Total Max. Power (W)		750W				

Test Results

Temperature & Compliance Info

Temperature Range (°C /°F)	28-32 / 82.4-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
ALPM (Alternative Low Power Mode) compatible	✓
ATX v3.1 PSU Power Excursion	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	89.298%
Average Noise Output (>1450 Load Combinations)	37.47dBA
Average PF (>1450 Load Combinations)	0.990
Efficiency With 10W (≤500W) or 2% (>500W) Load	71.684%
Standby Power Consumption	0.0653W
Non-Accredited	
12V Ripple (Full Load)	23.56mV
5V Ripple (Full Load)	15.79mV
3.3V Ripple (Full Load)	15.12mV
5VSB Ripple (Full Load)	25.42mV
12V Load Regulation	0.21%

5V Load Regulation	1.25%
3.3V Load Regulation	2.15%
5VSB Load Regulation	2.85%
Inrush Current	95.010A

230V

Accredited		
Average Efficiency (>1450 load combinations)	91.484%	
Average Noise Output (>1450 Load Combinations)	36.96dBA	
Average PF (>1450 Load Combinations)	0.948	
Efficiency With 10W (≤500W) or 2% (>500W) Load	70.954%	
Standby Power Consumption	0.1446W	
Non-Accredited		
12V Ripple (Full Load)	24.94mV	
5V Ripple (Full Load)	16.07mV	
3.3V Ripple (Full Load)	15.97mV	
5VSB Ripple (Full Load)	22.70mV	
12V Load Regulation	0.21%	
5V Load Regulation	1.25%	
3.3V Load Regulation	2.18%	
5VSB Load Regulation	2.89%	
Inrush Current	143.900A	
12V Transient Response (200%)	11.60V	
5V Transient Response (200%)	4.923V	
3.3V Transient Response (200%)	3.203V	
5VSB Transient Response (200%)	4.954V	
Hold-Up Time & PWR_OK Signal	22.90ms	
AC Loss to PWR_OK Hold Up Time	20.90ms	
PWR_OK Inactive to DC Loss Delay	2.00ms	
PSU Timings: T1 (20% / 100%)	108.0ms	116.0ms
PSU Timings: T3 (20% / 100%)	127.0ms	127.0ms
OPP (28.08°C / 43.44°C)	138.98%	119.10%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	22.9
AC Loss to PWR_OK Hold Up Time (ms)	20.9
PWR_OK Inactive to DC Loss Delay (ms)	2



Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.16 V	115.12 V	113.85 V	115.18 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:	1.415	1.415	1.340	1.416	1.490	PASS
Mains Voltage THD:	0.13 %	0.11 %	N/A	0.14 %	2.00 %	PASS
Real Power:	0.065 W	0.012 W	N/A	0.078 W	N/A	N/A
Apparent Power:	8.501 W	8.498 W	N/A	8.506 W	N/A	N/A
Power Factor:	0.009	N/A	N/A	N/A	N/A	N/A

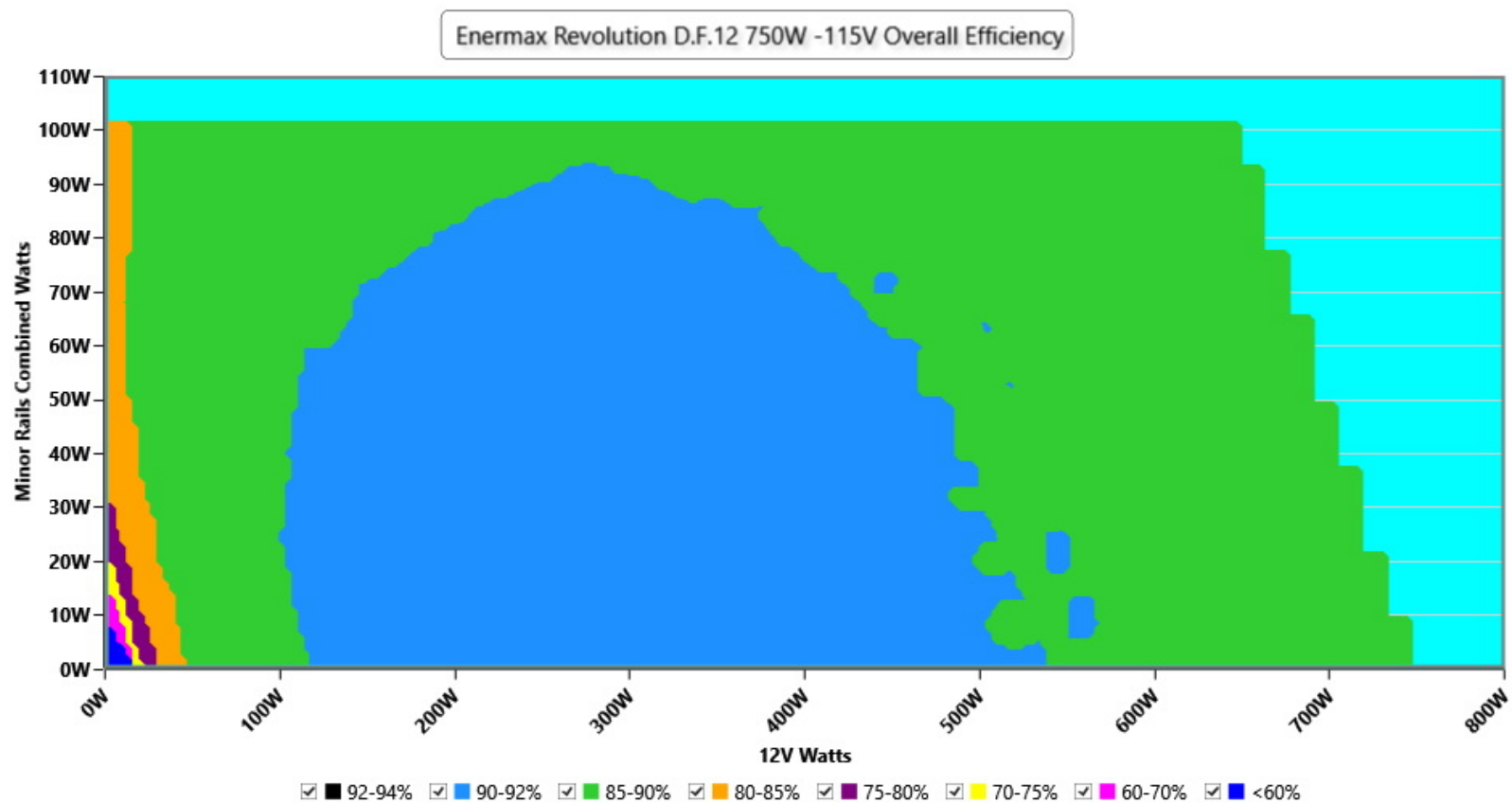
230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	230.38 V	230.37 V	227.70 V	230.41 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	50.00 Hz	49.50 Hz	50.00 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.415	1.415	1.340	1.416	1.490	PASS
Mains Voltage THD:	0.14 %	0.13 %	N/A	0.16 %	2.00 %	PASS
Real Power:	0.145 W	0.123 W	N/A	0.166 W	N/A	N/A
Apparent Power:	28.469 W	28.454 W	N/A	28.483 W	N/A	N/A

Power Factor:	0.005	N/A	N/A	N/A	N/A	N/A
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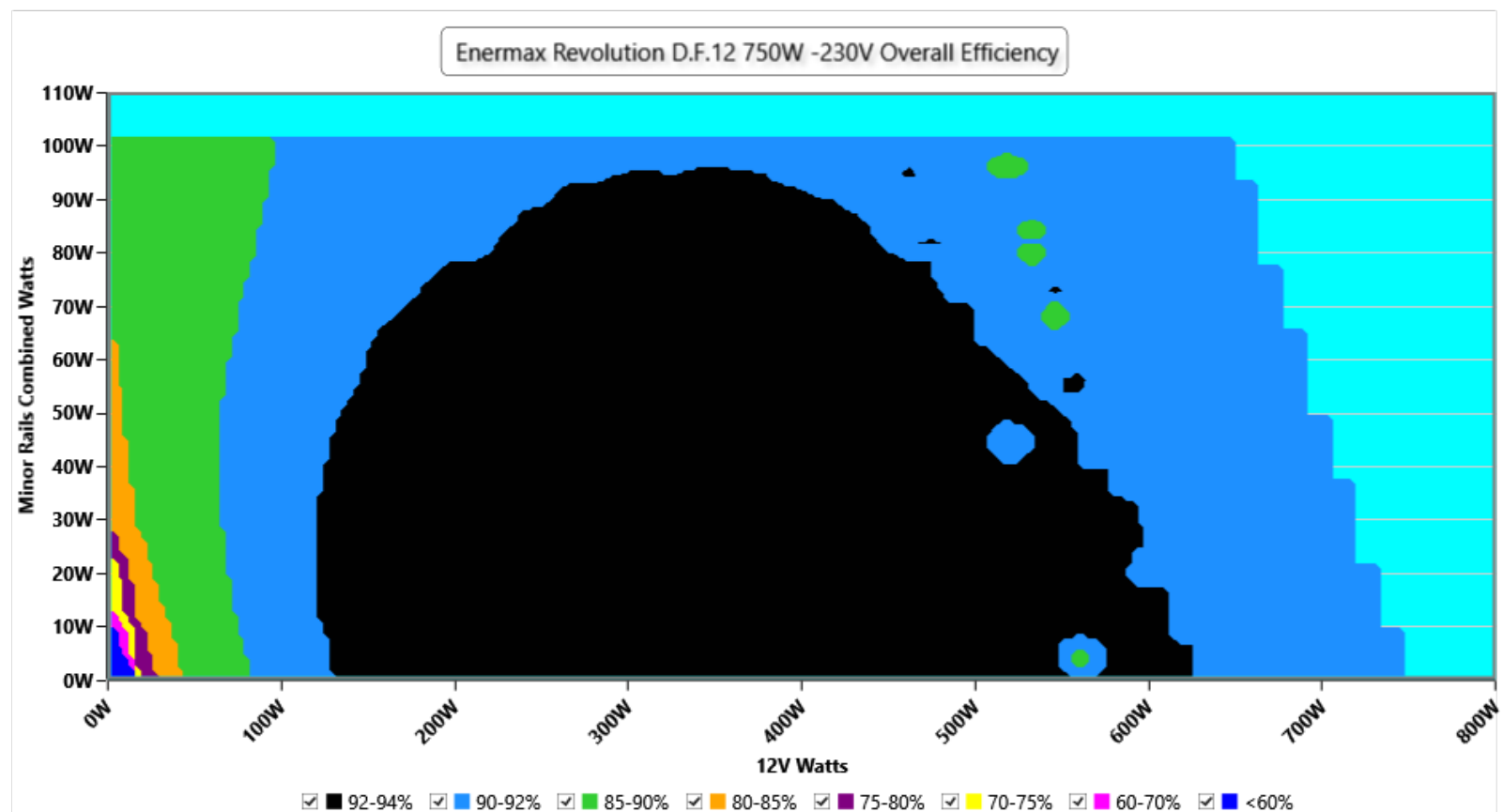
Efficiency Graph

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

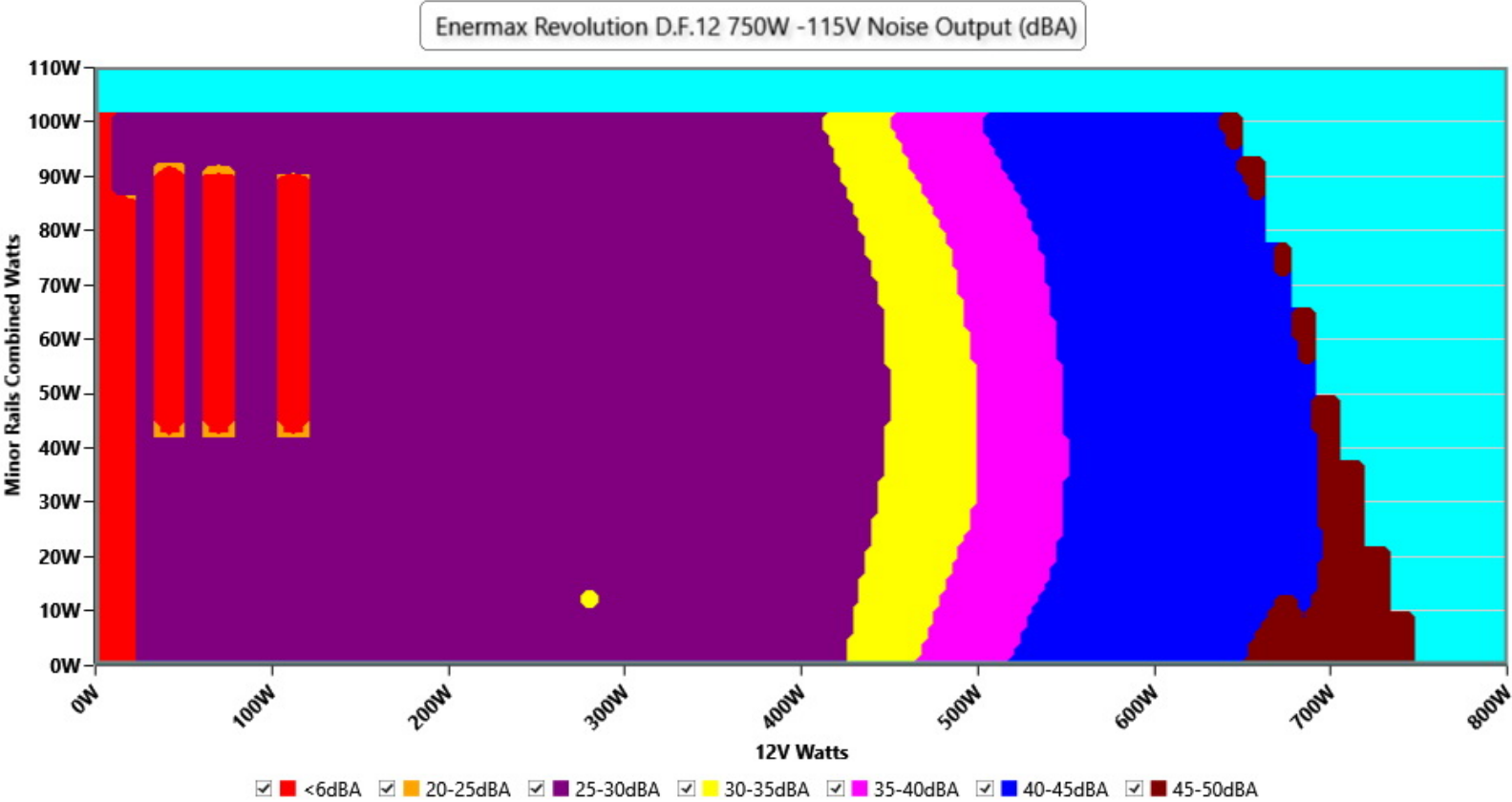


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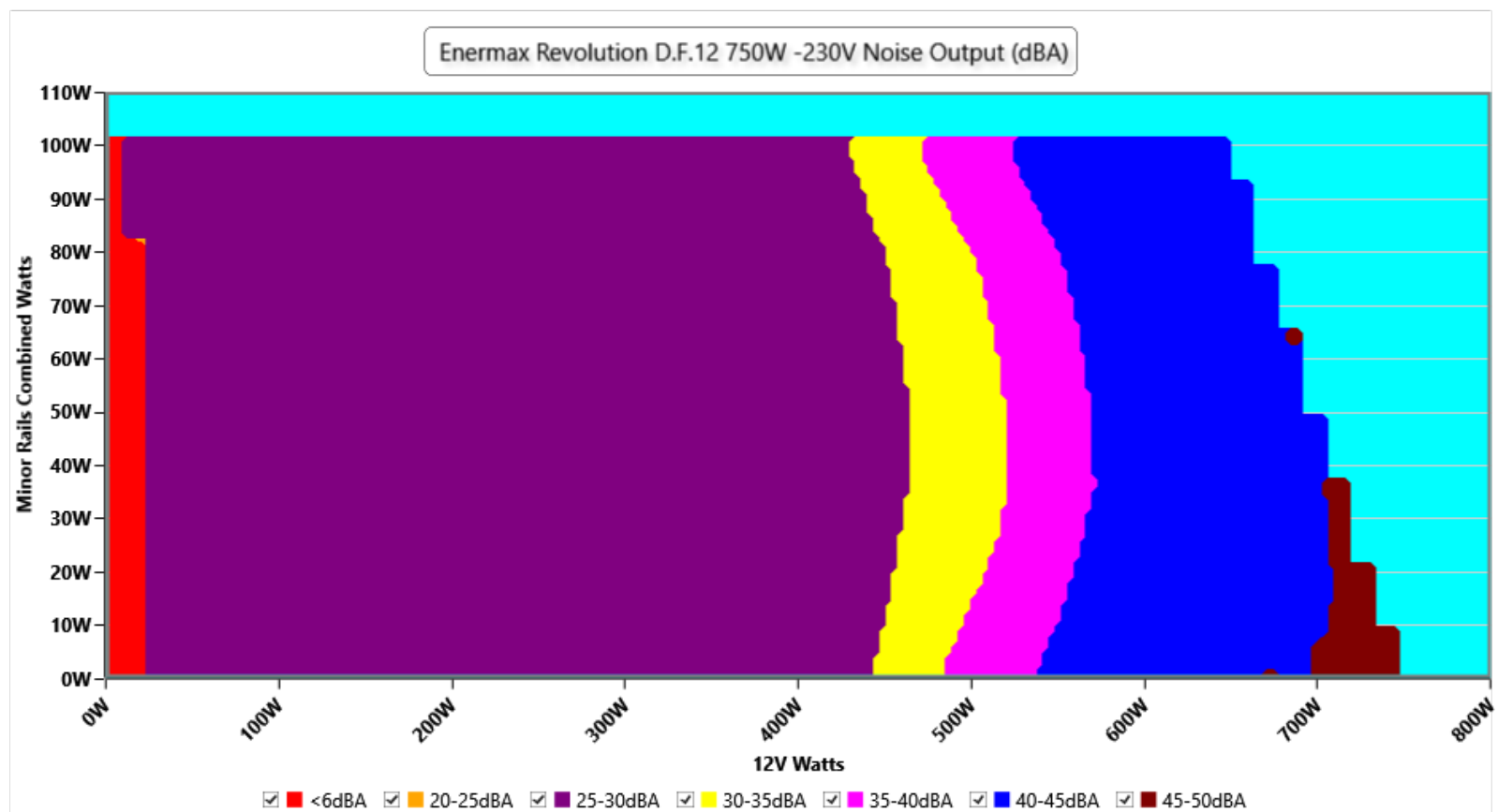
Noise Graph

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



INFO

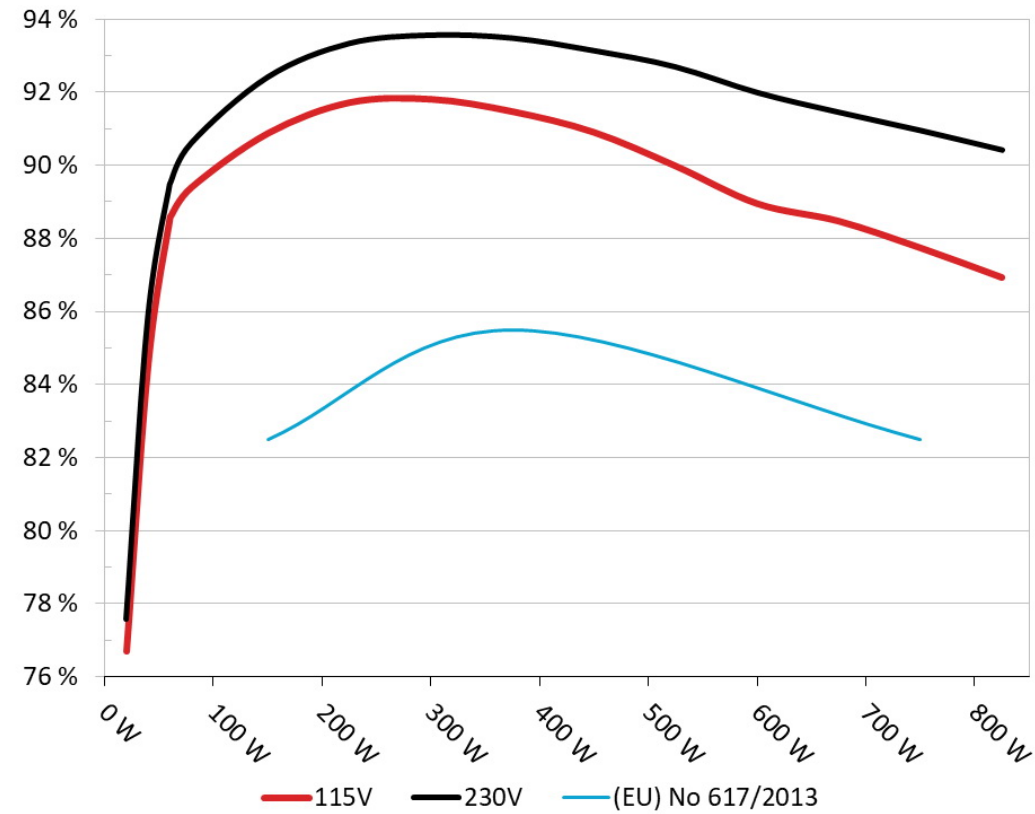
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance

Efficiency under high ambient temperature

Efficiency: Enermax Revolution D.F.12 750W

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



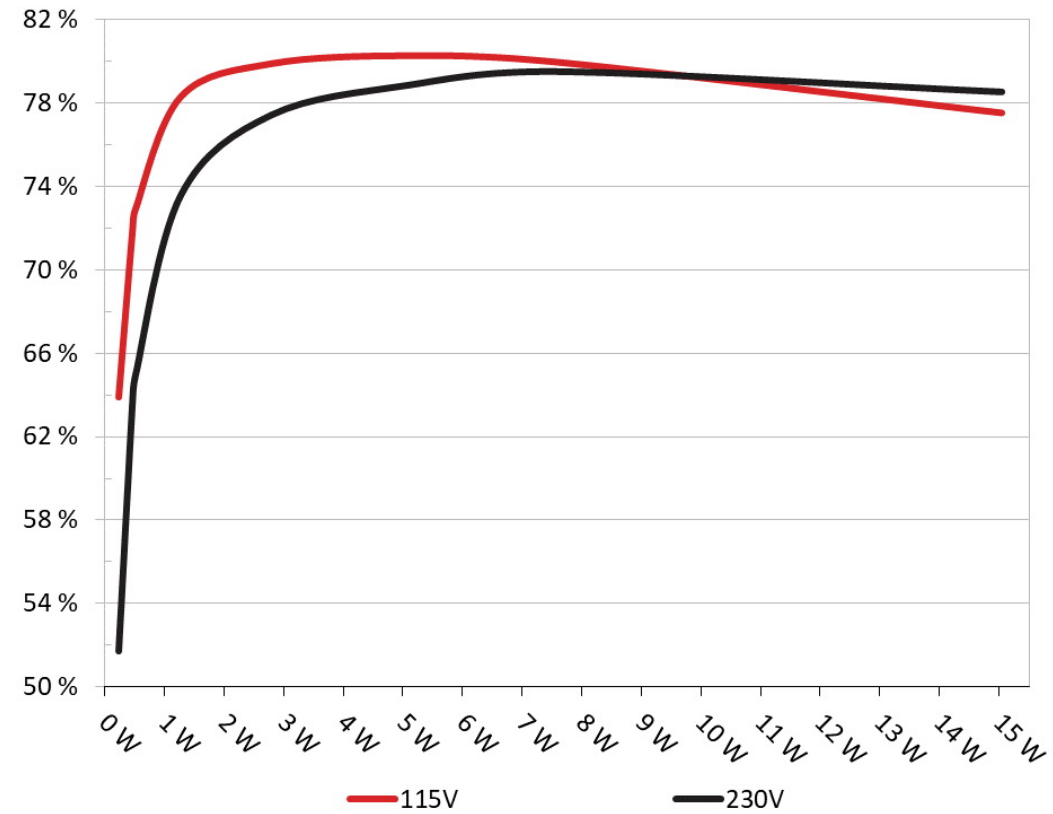
INFO

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: Enermax Revolution D.F.12 750W

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

5VSB Efficiency (ERP LOT 3/6 & CEC)

115V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.229W	64.404%	0.041
	5.096V	0.356W		115.15V
2	0.09A	0.459W	72.363%	0.073
	5.095V	0.634W		115.14V
3	0.55A	2.796W	80.378%	0.283
	5.082V	3.479W		115.15V
4	1A	5.072W	80.76%	0.36
	5.07V	6.28W		115.15V
5	1.5A	7.588W	80.449%	0.404
	5.058V	9.433W		115.14V
6	3A	15.053W	78.019%	0.462
	5.017V	19.296W		115.14V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.23W	52.199%	0.015
	5.101V	0.441W		230.37V
2	0.09A	0.459W	64.051%	0.025
	5.098V	0.717W		230.37V
3	0.55A	2.796W	77.907%	0.118
	5.083V	3.588W		230.38V
4	1A	5.072W	79.324%	0.188
	5.071V	6.395W		230.38V
5	1.5A	7.589W	79.984%	0.242
	5.058V	9.488W		230.38V
6	3A	15.054W	79.011%	0.334
	5.017V	19.054W		230.38V

Supplementary Tests (For Reference)

Typical 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%	4.404A	1.99A	1.99A	0.986A	75.006	88.074%	0	<6.0	44.36°C	0.974
	12.126V	5.027V	3.316V	5.07V	85.161				40.33°C	115.16V
20%	9.822A	2.988A	2.992A	1.186A	149.964	90.366%	0	<6.0	44.95°C	0.985
	12.122V	5.021V	3.309V	5.059V	165.952				40.65°C	115.14V
30%	15.591A	3.49A	3.498A	1.387A	224.973	91.207%	911	27	41.26°C	0.991
	12.117V	5.015V	3.303V	5.047V	246.66				45.98°C	115.13V
40%	21.368A	3.993A	4.005A	1.589A	300.063	91.298%	912	27	41.96°C	0.993
	12.114V	5.01V	3.296V	5.035V	328.664				47.01°C	115.11V
50%	26.763A	4.999A	5.017A	1.792A	374.687	90.961%	913	27	42.13°C	0.994
	12.112V	5.003V	3.289V	5.023V	411.926				47.59°C	115.08V
60%	32.187A	6.006A	6.034A	1.996A	449.602	90.397%	1121	33.1	42.63°C	0.995
	12.110V	4.997V	3.282V	5.011V	497.366				48.7°C	115.06V
70%	37.610A	7.016A	7.056A	2.201A	524.526	89.478%	1489	40.2	43.25°C	0.995
	12.109V	4.99V	3.274V	4.998V	586.222				50.29°C	115.04V
80%	43.103A	8.027A	8.081A	2.306A	599.735	88.446%	1839	44.3	43.77°C	0.996
	12.106V	4.984V	3.267V	4.988V	678.088				51.83°C	115.02V
90%	48.935A	8.538A	8.587A	2.411A	674.784	87.967%	2064	46.9	44.43°C	0.996
	12.103V	4.978V	3.26V	4.979V	767.087				53.45°C	114.99V
100%	54.566A	9.052A	9.129A	3.028A	750.005	87.236%	2157	47.5	45.47°C	0.996
	12.101V	4.972V	3.253V	4.954V	859.74				55.49°C	114.97V
110%	60.071A	10.07A	10.259A	3.032A	825.036	86.425%	2158	47.5	46.78°C	0.995
	12.098V	4.965V	3.246V	4.947V	954.657				57.7°C	114.97V
CL1	0.116A	12.023A	12.043A	0A	101.311	83.68%	916	27.1	40.19°C	0.977
	12.124V	5.007V	3.296V	5.089V	121.072				45.69°C	115.16V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL2	0.115A	19.987A	0A	0A	101.403	82.019%	926	27.5	40.2°C	0.977
	12.125V	5.003V	3.311V	5.095V	123.634				47.69°C	115.16V
CL3	0.115A	0A	18.825A	0A	63.395	77.449%	906	26.9	40.38°C	0.97
	12.122V	5.023V	3.294V	5.088V	81.875				49.46°C	115.16V
CL4	61.985A	0A	0A	0A	749.787	88.283%	2172	47.6	45.75°C	0.996
	12.096V	4.992V	3.274V	5.052V	849.3				56.69°C	114.97V

The results above are not used in the certification process

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%	4.405A	1.99A	1.991A	0.987A	75.012	88.985%	0	<6.0	44.46°C	0.796
	12.125V	5.027V	3.316V	5.069V	84.297				40.41°C	230.44V
20%	9.824A	2.989A	2.993A	1.187A	149.988	91.925%	911	27	40.74°C	0.918
	12.120V	5.02V	3.308V	5.057V	163.165				45.07°C	230.43V
30%	15.597A	3.491A	3.498A	1.388A	224.999	92.849%	911	27	41.38°C	0.954
	12.114V	5.015V	3.302V	5.045V	242.327				46.16°C	230.42V
40%	21.374A	3.994A	4.006A	1.59A	300.094	93.077%	911	27	41.78°C	0.969
	12.112V	5.009V	3.296V	5.033V	322.417				46.79°C	230.41V
50%	26.775A	4.999A	5.019A	1.793A	374.764	92.995%	913	27	42.24°C	0.972
	12.110V	5.002V	3.288V	5.02V	402.993				47.69°C	230.4V
60%	32.196A	6.008A	6.037A	1.997A	449.67	92.652%	1095	32.4	42.74°C	0.972
	12.109V	4.995V	3.281V	5.008V	485.334				48.78°C	230.39V
70%	37.623A	7.018A	7.059A	2.202A	524.587	92.208%	1389	38.5	43.32°C	0.973
	12.106V	4.989V	3.273V	4.995V	568.92				50.35°C	230.38V
80%	43.118A	8.03A	8.084A	2.307A	599.793	91.503%	1729	43.1	43.89°C	0.974
	12.104V	4.982V	3.266V	4.985V	655.49				51.96°C	230.37V
90%	48.947A	8.542A	8.591A	2.412A	674.843	90.961%	2041	46.5	44.72°C	0.975
	12.102V	4.976V	3.259V	4.976V	741.902				54.01°C	230.36V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	54.578A	9.056A	9.132A	3.03A	750.059	90.464%	2157	47.5	45.33°C	0.976
	12.099V	4.97V	3.252V	4.951V	829.119				55.37°C	230.35V
110%	60.081A	10.075A	10.264A	3.035A	825.078	89.929%	2156	47.5	46.57°C	0.975
	12.096V	4.963V	3.244V	4.944V	917.473				57.55°C	230.34V
CL1	0.116A	12.027A	12.046A	0A	101.312	85.177%	917	27.1	41.5°C	0.866
	12.123V	5.006V	3.296V	5.087V	118.944				46.98°C	230.43V
CL2	0.115A	19.478A	0A	0A	98.856	83.532%	926	27.5	41.55°C	0.863
	12.126V	5.004V	3.312V	5.093V	118.339				48.57°C	230.38V
CL3	0.115A	0A	19.973A	0A	67.11	78.044%	905	26.9	40.77°C	0.799
	12.122V	5.022V	3.29V	5.087V	86.011				49.78°C	230.39V
CL4	61.982A	0A	0A	0A	749.732	91.499%	2162	47.5	45.77°C	0.976
	12.096V	4.992V	3.273V	5.05V	819.393				56.75°C	230.31V

The results above are not used in the certification process

Light 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	1.225A	0.497A	0.496A	0.196A	20.006	76.204%	0	<6.0	39.57°C	0.842
	12.126V	5.034V	3.323V	5.095V	26.255				36.56°C	115.17V
40W	2.696A	0.696A	0.695A	0.295A	40.004	84.101%	0	<6.0	41.21°C	0.923
	12.126V	5.032V	3.321V	5.091V	47.566				37.86°C	115.17V
60W	4.168A	0.895A	0.895A	0.393A	60.002	86.922%	0	<6.0	41.92°C	0.959
	12.125V	5.03V	3.319V	5.088V	69.029				38.12°C	115.16V
80W	5.636A	1.094A	1.094A	0.492A	79.964	88.895%	0	<6.0	43.28°C	0.972
	12.124V	5.029V	3.318V	5.084V	89.952				39.3°C	115.16V

The results above are not used in the certification process

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	0.497A	0.497A	0.196A	20.012	77.077%	0	<6.0	40.01°C	0.537
	12.124V	5.032V	3.323V	5.094V	25.962				36.94°C	230.43V
40W	2.697A	0.696A	0.696A	0.295A	40.01	85.356%	0	<6.0	41.25°C	0.682
	12.124V	5.031V	3.321V	5.09V	46.873				37.9°C	230.43V
60W	4.168A	0.895A	0.895A	0.393A	60.009	88.138%	0	<6.0	42.24°C	0.75
	12.123V	5.029V	3.319V	5.086V	68.085				38.77°C	230.44V
80W	5.638A	1.095A	1.095A	0.492A	79.986	90.125%	0	<6.0	43.15°C	0.804
	12.123V	5.028V	3.317V	5.082V	88.75				39.3°C	230.44V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.77mV	7.65mV	4.99mV	7.13mV	Pass
20% Load	8.50mV	8.21mV	6.10mV	9.07mV	Pass
30% Load	9.41mV	8.72mV	6.41mV	11.21mV	Pass
40% Load	10.48mV	9.23mV	6.87mV	11.21mV	Pass
50% Load	12.31mV	9.80mV	7.53mV	11.92mV	Pass
60% Load	15.16mV	11.07mV	8.65mV	13.86mV	Pass
70% Load	14.60mV	12.14mV	9.41mV	15.49mV	Pass
80% Load	15.92mV	13.21mV	13.07mV	17.63mV	Pass
90% Load	16.23mV	13.67mV	14.44mV	18.49mV	Pass
100% Load	23.56mV	15.79mV	15.12mV	25.42mV	Pass
110% Load	25.17mV	16.93mV	16.36mV	22.77mV	Pass
Crossload1	15.32mV	15.09mV	13.87mV	21.38mV	Pass
Crossload2	10.84mV	17.65mV	6.81mV	19.92mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	13.69mV	10.87mV	15.82mV	18.13mV	Pass
Crossload4	19.83mV	10.90mV	10.32mV	20.03mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.51mV	7.40mV	4.93mV	8.76mV	Pass
20% Load	8.55mV	8.42mV	6.00mV	8.81mV	Pass
30% Load	9.21mV	8.47mV	6.25mV	9.12mV	Pass
40% Load	10.63mV	9.34mV	6.76mV	10.95mV	Pass
50% Load	12.01mV	10.05mV	7.48mV	10.90mV	Pass
60% Load	13.38mV	10.51mV	8.65mV	12.68mV	Pass
70% Load	14.60mV	11.58mV	9.05mV	12.89mV	Pass
80% Load	15.78mV	13.06mV	12.31mV	14.37mV	Pass
90% Load	16.84mV	13.77mV	13.73mV	18.14mV	Pass
100% Load	24.94mV	16.07mV	15.97mV	22.70mV	Pass
110% Load	27.15mV	17.61mV	16.19mV	26.95mV	Pass
Crossload1	15.97mV	16.40mV	13.18mV	20.64mV	Pass
Crossload2	11.76mV	18.01mV	6.76mV	20.33mV	Pass
Crossload3	13.74mV	11.32mV	15.51mV	17.63mV	Pass
Crossload4	20.81mV	11.34mV	10.74mV	19.48mV	Pass

The results above are not used in the certification process

Enermax Revolution D.F.12 750W



Top side



Power specifications label

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