



ABYSM GAMING Morpheo GX5 850W

Serial Number AB2823AB218501S500502

Lab ID AB85002457

Certification ID 252457

Test Result Report ID: 24PS2457A

Certificate Issue Date: May 28, 2024

115V



230V



Scheme: ETA-EMI PSU

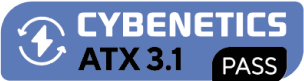
115V



230V



Scheme: LAMBDA PSU



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	ABYSM GAMING
Model	Morpheo GX5 850W
OEM/ODM	Helly Technology
Serial Number	AB2823AB218501S500502
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	12-6

Rated Frequency (Hz)	47-63
Rated Power (W)	850
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	120mm Fluid Dynamic Bearing Fan (HA1225M12F-Z)
Semi-Passive Operation	✓ (selectable)
Cybenetics Testing Information	
Lab ID	AB85002457
Date of receipt	May 8, 2024
Testing Date	May 28, 2024
Report Issued Date	May 28, 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	16-18AWG	No
4+4 pin EPS12V (650mm)	2	2	16AWG	No
6+2 pin PCIe (750mm)	3	3	16-18AWG	No
12+4 pin PCIe (715mm) (600W)	1	1	16-24AWG	No
SATA (450mm+145mm+145mm+145mm)	2	8	18AWG	No
SATA (450mm+145mm) / 4-pin Molex (+150mm+145mm)	1	2 / 2	18AWG	No
AC Power Cord (1360mm) - C13 coupler	1	1	18AWG	-

Protection Features(Manufacturer)

Under Voltage Protection	✓
Over Power Protection	✓
Over Current (+12V) Protection	✓
Over Temperature Protection	✓
Short Circuit Protection	✓
Surge Protection	✓
Inrush Current Protection	✓

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	70	2.5	0.3
	Watts	100		840	12.5	3.6
Total Max. Power (W)		850				

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)	88.936%

Average Noise Output (>1450 Load Combinations)	32.95dBA
Average PF (>1450 Load Combinations)	0.990
Efficiency With 10W ($\leq$ 500W) or 2% (>500W) Load	69.682%
Standby Power Consumption	0.0444W
Non-Accredited	
12V Ripple (Full Load)	23.22mV
5V Ripple (Full Load)	21.52mV
3.3V Ripple (Full Load)	24.78mV
5VSB Ripple (Full Load)	14.98mV
12V Load Regulation	0.47%
5V Load Regulation	0.71%
3.3V Load Regulation	1.03%
5VSB Load Regulation	3.12%
Inrush Current	27.240A

230V

Accredited	
Average Efficiency (>1450 load combinations)	91.415%
Average Noise Output (>1450 Load Combinations)	32.12dBA
Average PF (>1450 Load Combinations)	0.961
Efficiency With 10W ($\leq$ 500W) or 2% (>500W) Load	70.990%
Standby Power Consumption	0.0987W
Non-Accredited	
12V Ripple (Full Load)	23.11mV
5V Ripple (Full Load)	21.72mV
3.3V Ripple (Full Load)	24.01mV
5VSB Ripple (Full Load)	13.81mV
12V Load Regulation	0.48%
5V Load Regulation	0.71%
3.3V Load Regulation	1.03%
5VSB Load Regulation	3.10%
Inrush Current	59.260A

12V Transient Response (200%)	11.59V	
5V Transient Response (200%)	4.985V	
3.3V Transient Response (200%)	3.231V	
5VSB Transient Response (200%)	4.981V	
Hold-Up Time & PWR_OK Signal	20.90ms	
AC Loss to PWR_OK Hold Up Time	17.70ms	
PWR_OK Inactive to DC Loss Delay	3.20ms	
PSU Timings: T1 (20% / 100%)	60.0ms	59.0ms
PSU Timings: T3 (20% / 100%)	124.0ms	122.0ms
OPP (26.56°C / 42.71°C)	132.97%	122.13%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	20.9
AC Loss to PWR_OK Hold Up Time (ms)	17.7
PWR_OK Inactive to DC Loss Delay (ms)	3.2

Vampire Power

Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.85 V	114.79 V	113.85 V	114.88 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:	1.419	1.418	1.340	1.420	1.490	PASS
Mains Voltage THD:	0.14 %	0.12 %	N/A	0.18 %	2.00 %	PASS
Real Power:	0.044 W	0.011 W	N/A	0.068 W	N/A	N/A
Apparent Power:	7.804 W	7.786 W	N/A	7.823 W	N/A	N/A
Power Factor:	0.008	N/A	N/A	N/A	N/A	N/A

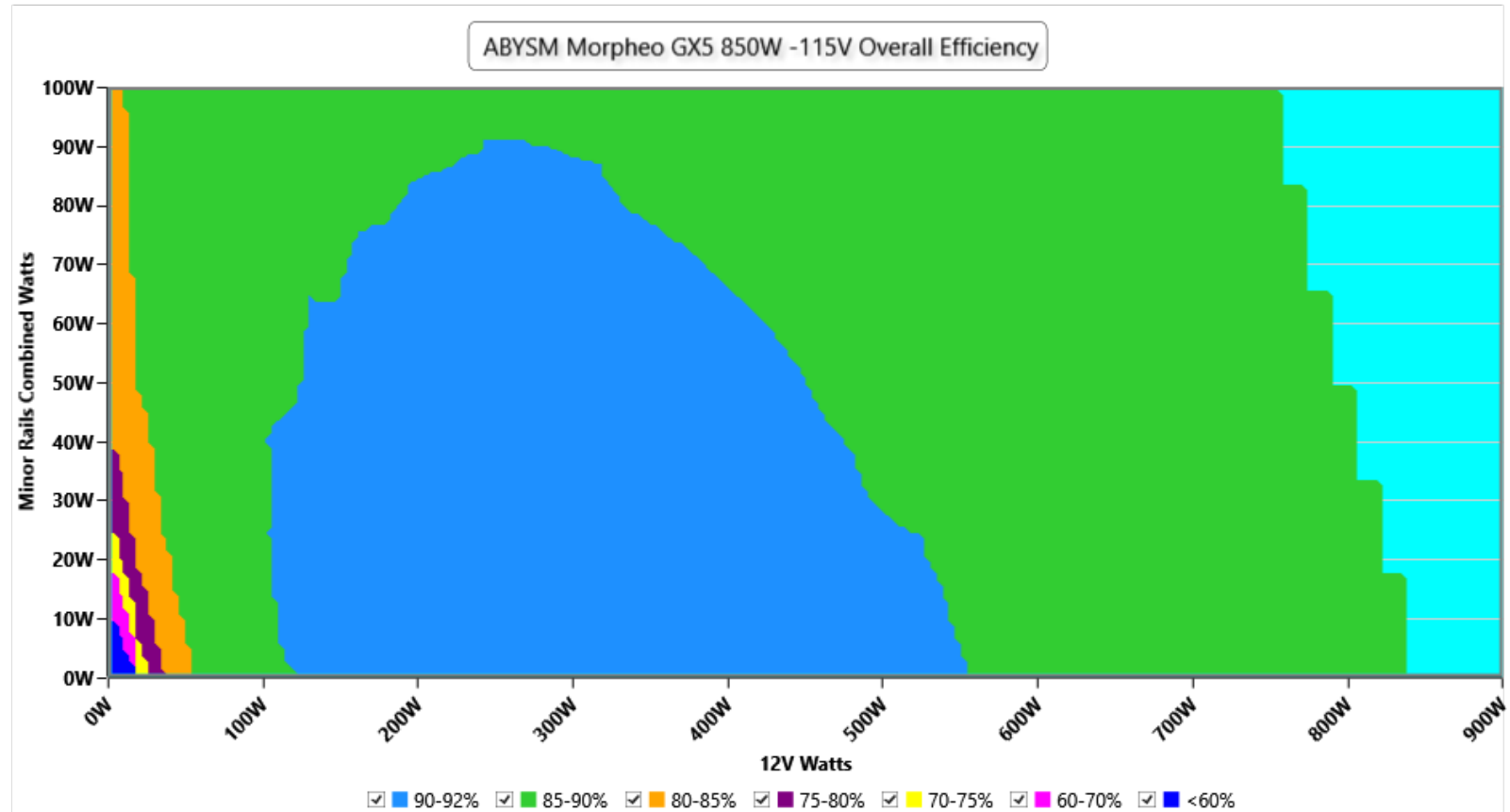
230V

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	229.86 V	229.79 V	227.70 V	229.90 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	49.99 Hz	49.50 Hz	50.00 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.418	1.417	1.340	1.419	1.490	PASS
Mains Voltage THD:	0.13 %	0.11 %	N/A	0.15 %	2.00 %	PASS
Real Power:	0.099 W	0.081 W	N/A	0.126 W	N/A	N/A
Apparent Power:	26.405 W	26.366 W	N/A	26.444 W	N/A	N/A
Power Factor:	0.004	N/A	N/A	N/A	N/A	N/A

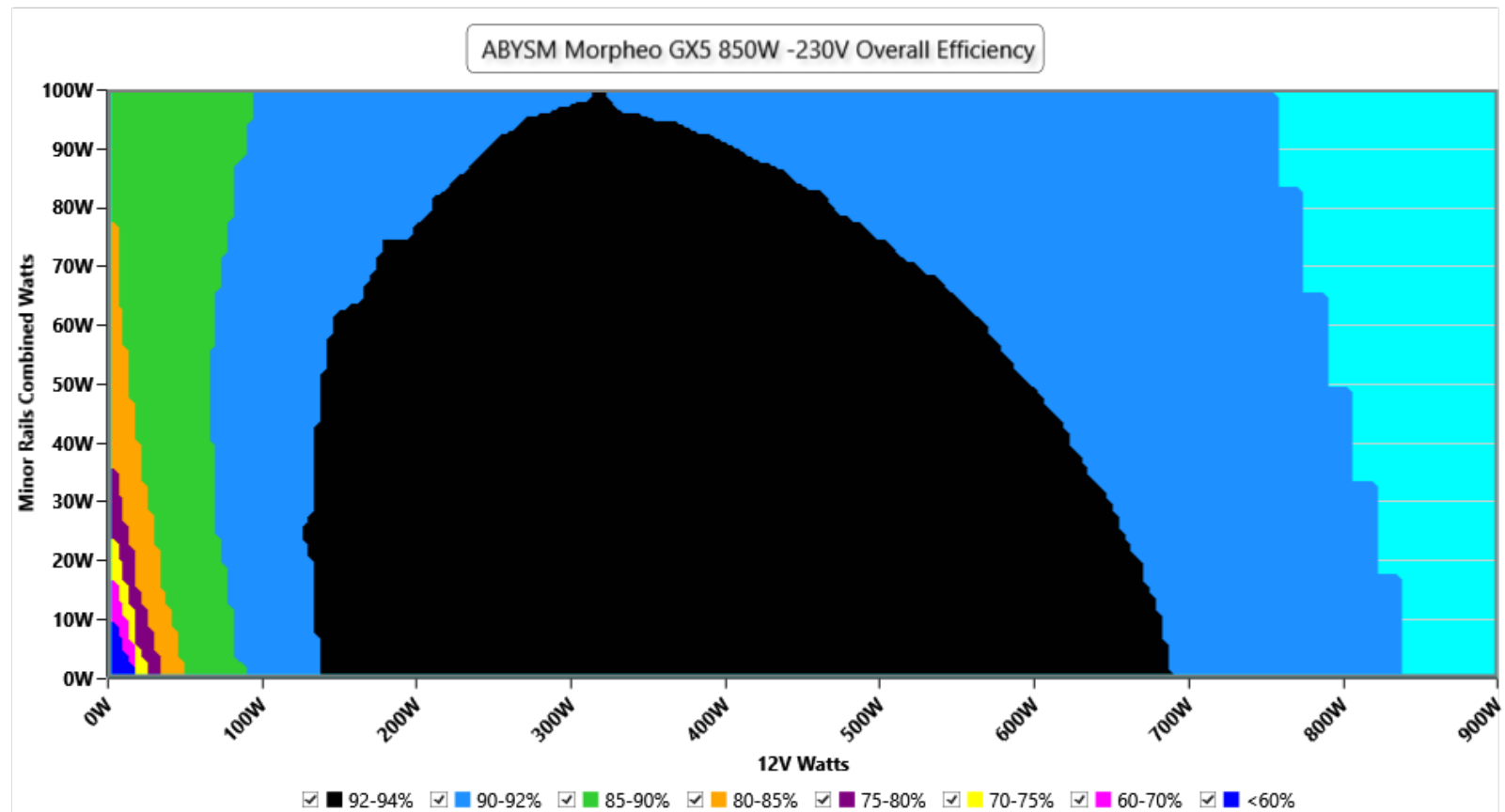
Efficiency Graph

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

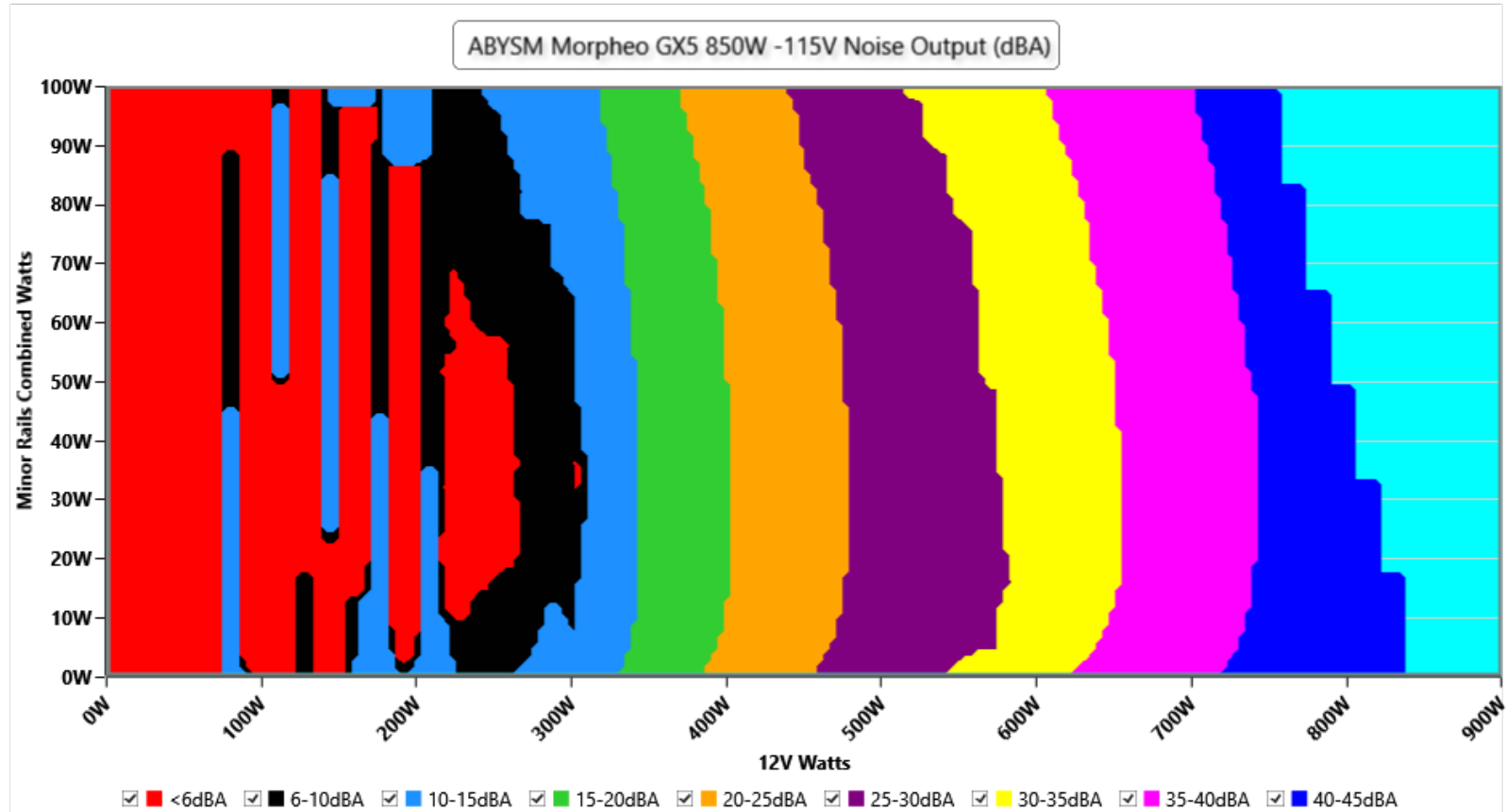


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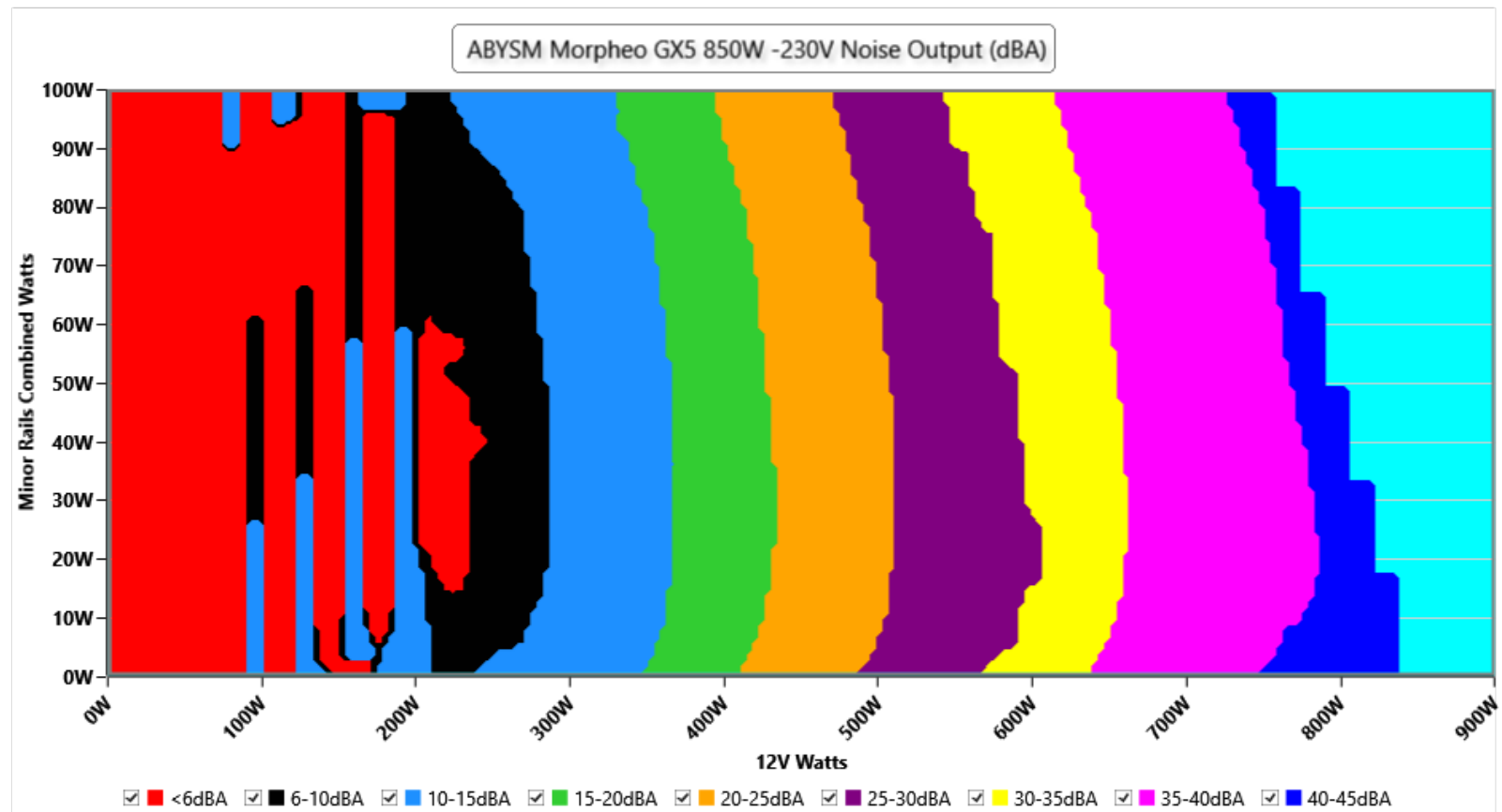
Noise Graph

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

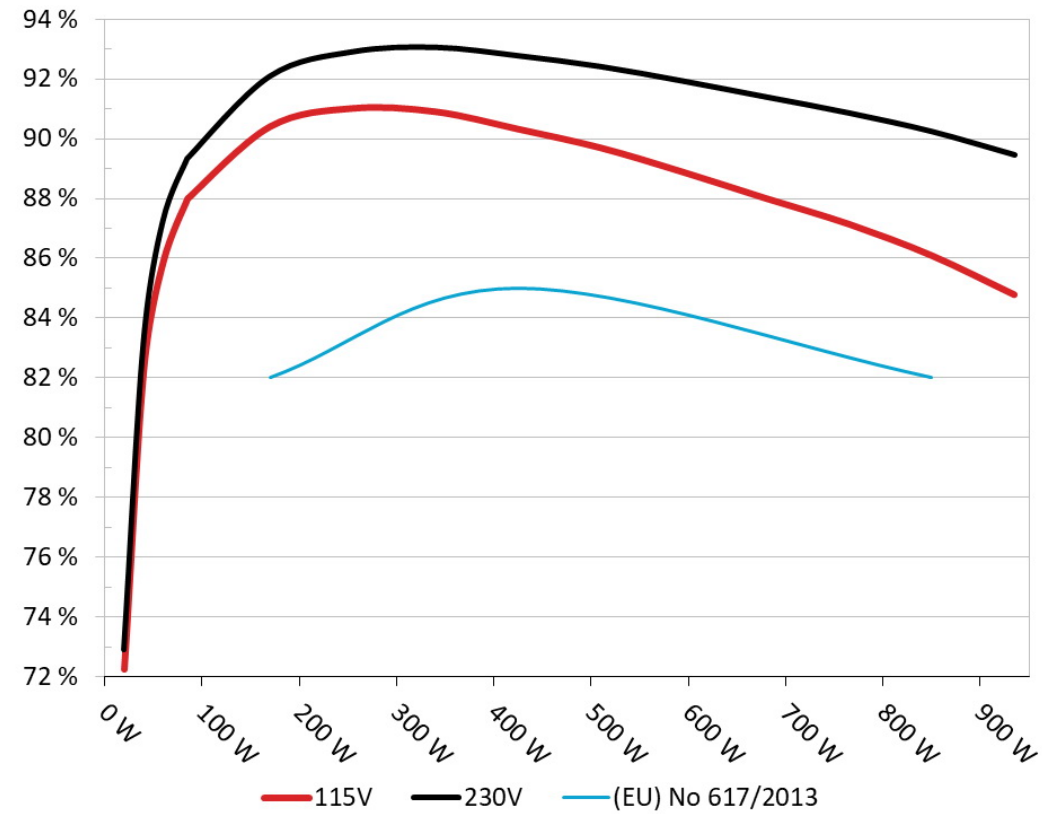
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance

Efficiency under high ambient temperature

Efficiency: ABYSM GAMING Morpheo GX5 850W

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



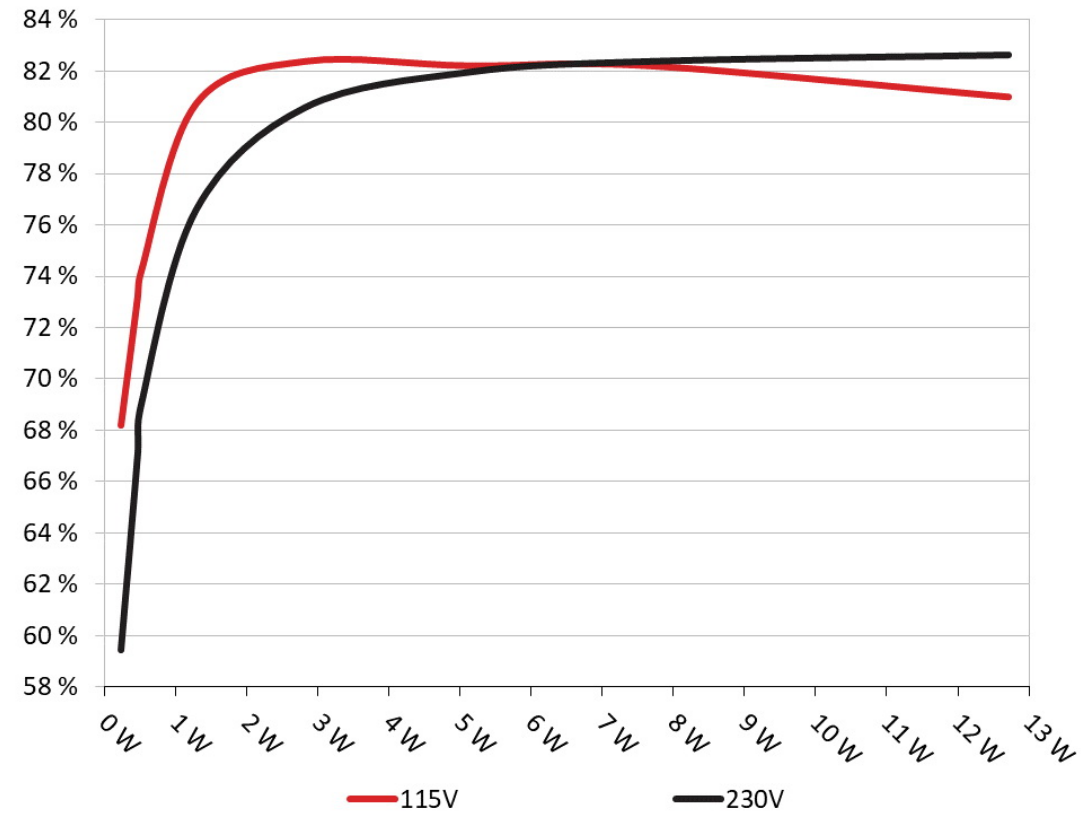
INFO

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: ABYSM GAMING Morpheo GX5 850W

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	0.232W	68.188%	0.043
	5.162V	0.34W		114.85V
2	0.09A	0.465W	73.143%	0.079
	5.16V	0.635W		114.86V
3	0.55A	2.83W	82.378%	0.314
	5.146V	3.435W		114.87V
4	1A	5.133W	82.201%	0.417
	5.132V	6.244W		114.86V
5	1.5A	7.677W	82.199%	0.463
	5.118V	9.34W		114.87V
6	2.5A	12.719W	80.99%	0.518
	5.087V	15.705W		114.87V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.232W	59.443%	0.015
	5.162V	0.391W		229.94V
2	0.09A	0.465W	67%	0.026
	5.16V	0.694W		229.94V
3	0.55A	2.83W	80.599%	0.124
	5.145V	3.511W		229.93V
4	1A	5.133W	81.965%	0.203
	5.132V	6.262W		229.94V
5	1.5A	7.677W	82.383%	0.27
	5.117V	9.319W		229.94V
6	2.5A	12.721W	82.636%	0.34
	5.088V	15.394W		229.94V

Protection Features

Protection Features	
OCP (Cold @ 25°C)	12V: 91.2A (130.29%), 12.155V 5V: 28.9A (144.5%), 5.032V 3.3V: 29.8A (149%), 3.328V 5VSB: 4.1A (164%), 5.037V
OCP (Hot @ 44°C)	12V: 88.4A (126.29%), 12.182V 5V: 28.3A (141.5%), 5.031V 3.3V: 28.7A (143.5%), 3.328V 5VSB: 4.1A (164%), 5.035V
OPP (Cold @ 27°C)	1130.27W (132.97%)
OPP (Hot @ 43°C)	1038.08W (122.13%)
OTP	✓ (130°C @ secondary side)
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 Thermistor & Bypass relay

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
	5.184A	1.97A	1.971A	0.976A	85.002	87.407%	706	12.7	40.01°C	0.974
	12.229V	5.078V	3.348V	5.126V	97.252				44.23°C	114.84V
	11.376A	2.957A	2.961A	1.174A	169.941	90.415%	745	14.6	40.59°C	0.981
	12.221V	5.074V	3.344V	5.111V	187.958				45.09°C	114.82V
	17.920A	3.451A	3.457A	1.374A	254.947	91.022%	832	18.2	41.08°C	0.986
	12.216V	5.071V	3.341V	5.097V	280.096				46.13°C	114.79V
	24.476A	3.947A	3.955A	1.574A	340.039	90.911%	955	22.3	41.67°C	0.991
	12.209V	5.068V	3.338V	5.082V	374.035				47.24°C	114.75V
	30.681A	4.937A	4.949A	1.776A	424.895	90.33%	1096	26.8	42.12°C	0.994
	12.203V	5.065V	3.334V	5.068V	470.384				48.13°C	114.73V
	36.868A	5.93A	5.946A	1.979A	509.421	89.706%	1401	33.7	42.62°C	0.995
	12.195V	5.06V	3.33V	5.052V	567.874				49.21°C	114.7V
	43.122A	6.923A	6.944A	2.184A	594.723	88.89%	1591	37.3	43.36°C	0.996
	12.189V	5.057V	3.327V	5.037V	669.057				50.44°C	114.67V
	49.386A	7.917A	7.944A	2.289A	679.548	88.014%	1814	40.7	43.53°C	0.997
	12.183V	5.052V	3.323V	5.024V	772.089				51.6°C	114.63V
	56.048A	8.417A	8.433A	2.394A	764.974	87.152%	1872	41.5	44.37°C	0.997
	12.177V	5.049V	3.32V	5.012V	877.75				53.45°C	114.6V
	62.645A	8.917A	8.954A	2.5A	849.692	86.108%	1870	41.4	45.98°C	0.997
	12.171V	5.047V	3.317V	5V	986.78				56.15°C	114.57V
	68.986A	9.915A	10.049A	2.505A	935.074	84.792%	1870	41.4	46.6°C	0.998
	12.166V	5.043V	3.313V	4.99V	1102.79				57.5°C	114.52V
	0.115A	11.903A	11.894A	0A	101.302	83.578%	1018	24.2	40.77°C	0.985
	12.232V	5.058V	3.338V	5.14V	121.206				50.59°C	114.84V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
	0.114A	19.812A	0A	0A	101.386	82.196%	902	20.4	40.72°C	0.985
	12.232V	5.047V	3.349V	5.146V	123.346				48.16°C	114.84V
	0.113A	0A	19.796A	0A	67.386	77.697%	855	19.0	40.67°C	0.975
	12.228V	5.081V	3.334V	5.143V	86.728				48.74°C	114.85V
	69.773A	0A	0A	0A	849.563	86.96%	1869	41.4	45.85°C	0.997
	12.176V	5.066V	3.328V	5.091V	976.967				54.61°C	114.57V

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
	5.185A	1.97A	1.972A	0.976A	85.004	88.788%	698	12.3	40.24°C	0.877
	12.229V	5.077V	3.347V	5.125V	95.74				44.47°C	229.93V
	11.377A	2.957A	2.961A	1.174A	169.94	92.081%	751	14.8	40.69°C	0.943
	12.222V	5.074V	3.344V	5.11V	184.557				45.22°C	229.91V
	17.919A	3.452A	3.457A	1.374A	254.947	92.898%	841	18.7	41.42°C	0.962
	12.216V	5.071V	3.341V	5.096V	274.436				46.49°C	229.9V
	24.475A	3.947A	3.955A	1.574A	340.034	93.046%	958	22.4	41.73°C	0.97
	12.209V	5.068V	3.338V	5.082V	365.446				47.32°C	229.89V
	30.679A	4.937A	4.949A	1.776A	424.872	92.766%	1093	26.6	42.49°C	0.976
	12.202V	5.064V	3.334V	5.067V	458.006				48.57°C	229.87V
	36.865A	5.93A	5.946A	1.98A	509.389	92.404%	1402	33.7	42.8°C	0.979
	12.195V	5.06V	3.33V	5.052V	551.265				49.31°C	229.86V
	43.120A	6.924A	6.945A	2.184A	594.686	91.915%	1578	37.1	43.05°C	0.983
	12.188V	5.056V	3.327V	5.037V	646.998				50.1°C	229.85V
	49.385A	7.917A	7.944A	2.289A	679.512	91.387%	1802	40.5	43.88°C	0.984
	12.182V	5.052V	3.323V	5.024V	743.551				51.92°C	229.84V
	56.046A	8.417A	8.434A	2.394A	764.938	90.851%	1859	41.2	44.77°C	0.985
	12.176V	5.049V	3.32V	5.012V	841.97				53.85°C	229.83V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
	62.647A	8.918A	8.954A	2.5A	849.655	90.234%	1860	41.2	45.75°C	0.987
	12.171V	5.046V	3.317V	5V	941.611				55.78°C	229.81V
	68.994A	9.916A	10.049A	2.505A	935.034	89.451%	1864	41.3	46.53°C	0.988
	12.165V	5.042V	3.313V	4.99V	1045.312				57.42°C	229.8V
	0.115A	11.904A	11.894A	0A	101.296	85.046%	1010	24.0	41.3°C	0.906
	12.232V	5.057V	3.338V	5.14V	119.107				48.38°C	229.93V
	0.113A	19.815A	0A	0A	101.382	83.563%	895	20.2	40.41°C	0.908
	12.232V	5.046V	3.349V	5.146V	121.324				49.33°C	229.93V
	0.113A	0A	19.795A	0A	67.383	78.786%	849	19.0	40.68°C	0.859
	12.227V	5.08V	3.334V	5.143V	85.526				47.6°C	229.93V
	69.775A	0A	0A	0A	849.52	90.944%	1863	41.3	45.98°C	0.986
	12.176V	5.066V	3.328V	5.092V	934.12				55.35°C	229.81V

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	1.214A	0.492A	0.492A	0.194A	19.997	72.262%	0	<6.0	39.69°C	0.894
	12.227V	5.083V	3.351V	5.156V	27.673				36.55°C	114.87V
40W	2.674A	0.689A	0.689A	0.291A	39.997	82.274%	0	<6.0	40.45°C	0.946
	12.228V	5.082V	3.351V	5.151V	48.616				37.12°C	114.86V
60W	4.132A	0.886A	0.886A	0.389A	59.997	85.88%	0	<6.0	41.81°C	0.966
	12.227V	5.082V	3.35V	5.147V	69.859				38.21°C	114.85V
80W	5.586A	1.083A	1.083A	0.486A	79.941	88.001%	0	<6.0	43.18°C	0.974
	12.228V	5.081V	3.35V	5.142V	90.839				39.22°C	114.85V

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	1.214A	0.492A	0.492A	0.194A	19.996	72.918%	0	<6.0	39.86°C	0.57
	12.228V	5.082V	3.351V	5.155V	27.422				36.79°C	229.94V
40W	2.673A	0.689A	0.689A	0.291A	39.998	83.161%	0	<6.0	41.08°C	0.736
	12.228V	5.082V	3.351V	5.151V	48.097				37.88°C	229.94V
60W	4.132A	0.886A	0.886A	0.389A	60	87.234%	0	<6.0	42.01°C	0.818
	12.229V	5.081V	3.35V	5.146V	68.779				38.51°C	229.94V
80W	5.587A	1.083A	1.084A	0.486A	79.946	89.328%	0	<6.0	43.24°C	0.866
	12.228V	5.08V	3.35V	5.141V	89.497				39.45°C	229.92V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	11.76mV	11.80mV	12.93mV	9.14mV	Pass
20% Load	11.19mV	13.24mV	14.12mV	8.98mV	Pass
30% Load	12.17mV	13.19mV	15.20mV	9.45mV	Pass
40% Load	12.01mV	14.43mV	15.98mV	9.70mV	Pass
50% Load	12.63mV	15.40mV	17.06mV	10.22mV	Pass
60% Load	13.40mV	16.64mV	17.94mV	10.53mV	Pass
70% Load	13.87mV	17.52mV	19.03mV	11.77mV	Pass
80% Load	14.23mV	18.45mV	20.27mV	12.08mV	Pass
90% Load	15.11mV	19.42mV	21.56mV	12.34mV	Pass
100% Load	23.22mV	21.52mV	24.78mV	14.98mV	Pass
110% Load	23.58mV	21.32mV	25.71mV	15.86mV	Pass
Crossload1	16.40mV	15.23mV	16.82mV	23.98mV	Pass
Crossload2	11.86mV	16.54mV	14.84mV	21.63mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	10.93mV	12.98mV	15.10mV	21.94mV	Pass
Crossload4	23.31mV	18.80mV	23.47mV	28.90mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	10.98mV	11.95mV	12.56mV	8.73mV	Pass
20% Load	11.24mV	12.05mV	13.91mV	8.67mV	Pass
30% Load	11.76mV	13.65mV	15.15mV	8.93mV	Pass
40% Load	12.06mV	15.76mV	16.50mV	10.07mV	Pass
50% Load	12.78mV	14.94mV	16.55mV	10.38mV	Pass
60% Load	13.30mV	16.33mV	17.69mV	11.36mV	Pass
70% Load	13.51mV	17.62mV	19.08mV	11.87mV	Pass
80% Load	14.54mV	17.88mV	21.10mV	11.92mV	Pass
90% Load	14.95mV	20.86mV	22.70mV	12.85mV	Pass
100% Load	23.11mV	21.72mV	24.01mV	13.81mV	Pass
110% Load	25.46mV	21.97mV	24.66mV	14.33mV	Pass
Crossload1	16.19mV	14.75mV	16.23mV	23.44mV	Pass
Crossload2	11.40mV	16.49mV	14.33mV	23.18mV	Pass
Crossload3	10.83mV	12.52mV	15.25mV	21.58mV	Pass
Crossload4	22.96mV	19.89mV	23.10mV	27.55mV	Pass

The results above are not used in the certification process

ABYSM GAMING Morpheo GX5 850W



Top side

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

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

ABYSM
G A M I N G

MORPHEO GX5
ATX 3.1 80 PLUS

FULL RANGE AC INPUT: 100-240V AC 47HZ - 63HZ 12A - 6A MAX

OUTPUT VOLTAGE	+3.3 V	+5 V	+12 V	-12 V	+5 Vsb
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RATED CURRENT	20 A	20 A	70 A	0.3 A	2.5 A
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COMBINED POWER	100 W		840 W	3.6 W	12.5 W
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TOTAL POWER

850W

CAUTION!

HAZARDOUS AREA.

Do not remove this cover.

Trained service personnel

only. No user serviceable

components inside!

PRECAUCIÓN

ZONA PELIGROSA

No retire esta cubierta. Sólo personal

de servicio cualificado. No hay

componentes reparables por el

usuario en el interior.

P/N.: AB218501 BLACK

Power specifications label

Cybenetics runs voluntary certification programs for power supplies - ETA for efficiency, LAMBDA for noise and SAFE for safety and correct operation - and for cooling products, with DELTA for chassis soundproofing and PHI for fan airflow and static pressure. THETA rates cooler performance on AMD AM5 and Intel LGA1851 outside ISO 17065 and accreditation scope

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