



Cougar GLE 1000W

Serial Number ZBD08GL10000005

Lab ID CG10002585

Certification ID 252585

Test Result Report ID: 24PS2585A

Certificate Issue Date: Oct 4, 2024

Scheme: ETA-EMI PSU

115V



230V



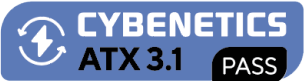
115V



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	Cougar
Model	GLE 1000W
OEM/ODM	CE-Link
Serial Number	ZBD08GL10000005
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	50-60

Rated Frequency (Hz)	15-7.5
Rated Power (W)	1000
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	135mm Hydraulic Dynamic Bearing Fan (DF1352512FDMN)
Semi-Passive Operation	X
Cybenetics Testing Information	
Lab ID	CG10002585
Date of receipt	Sep 16, 2024
Testing Date	Sep 30, 2024
Report Issued Date	Oct 4, 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 24 pin (590mm)	1	1	16-22AWG	No
4+4 pin EPS12V (650mm)	2	2	18AWG	No
6+2 pin PCIe (650mm+100mm)	3	6	16AWG	No
12+4 pin PCIe (650mm) (600W)	1	1	16-26AWG	No
SATA (510mm+150mm+150mm+150mm)	3	12	18AWG	No
4-pin Molex (500mm+150mm+150mm+150mm)	1	4	18AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	17AWG	-

Protection Features(Manufacturer)

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

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	83.3	3	0.3
	Watts	120		1000	15	3.6
Total Max. Power (W)		1000				

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)	89.128%

Average Noise Output (>1450 Load Combinations)	27.81dBA
Average PF (>1450 Load Combinations)	0.987
Efficiency With 10W ($\leq$ 500W) or 2% (>500W) Load	66.286%
Standby Power Consumption	0.0365W
Non-Accredited	
12V Ripple (Full Load)	25.84mV
5V Ripple (Full Load)	18.98mV
3.3V Ripple (Full Load)	15.37mV
5VSB Ripple (Full Load)	15.57mV
12V Load Regulation	1.37%
5V Load Regulation	0.26%
3.3V Load Regulation	0.48%
5VSB Load Regulation	1.54%
Inrush Current	36.960A

230V

Accredited	
Average Efficiency (>1450 load combinations)	91.249%
Average Noise Output (>1450 Load Combinations)	27.54dBA
Average PF (>1450 Load Combinations)	0.950
Efficiency With 10W ($\leq$ 500W) or 2% (>500W) Load	67.232%
Standby Power Consumption	0.0707W
Non-Accredited	
12V Ripple (Full Load)	25.05mV
5V Ripple (Full Load)	19.85mV
3.3V Ripple (Full Load)	14.69mV
5VSB Ripple (Full Load)	15.82mV
12V Load Regulation	1.33%
5V Load Regulation	0.32%
3.3V Load Regulation	0.51%
5VSB Load Regulation	1.62%
Inrush Current	67.520A

12V Transient Response (200%)	11.20V	
5V Transient Response (200%)	4.898V	
3.3V Transient Response (200%)	3.205V	
5VSB Transient Response (200%)	4.913V	
Hold-Up Time & PWR_OK Signal	19.00ms	
AC Loss to PWR_OK Hold Up Time	16.40ms	
PWR_OK Inactive to DC Loss Delay	2.60ms	
PSU Timings: T1 (20% / 100%)	105.0ms	86.0ms
PSU Timings: T3 (20% / 100%)	124.0ms	124.0ms
12V OCP (30.0°C / 42.6°C)	121.80A (146.22%), 11.880V	114.00A (136.85%), 11.935V
5V OCP (30.0°C / 42.6°C)	30A (150.00%), 4.954V	30.1A (150.50%), 4.967V
3.3V OCP (30.0°C / 42.6°C)	28A (140.00%), 3.302V	27.9A (139.50%), 3.306V
5VSB OCP (30.0°C / 42.6°C)	6.2A (206.67%), 4.892V	6.3A (210.00%), 4.886V
OPP (30.73°C / 42.85°C)	143.11%	131.31%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	19
AC Loss to PWR_OK Hold Up Time (ms)	16.4
PWR_OK Inactive to DC Loss Delay (ms)	2.6

Vampire Power

Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.08 V	115.04 V	113.85 V	115.12 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	1.419	1.490	PASS

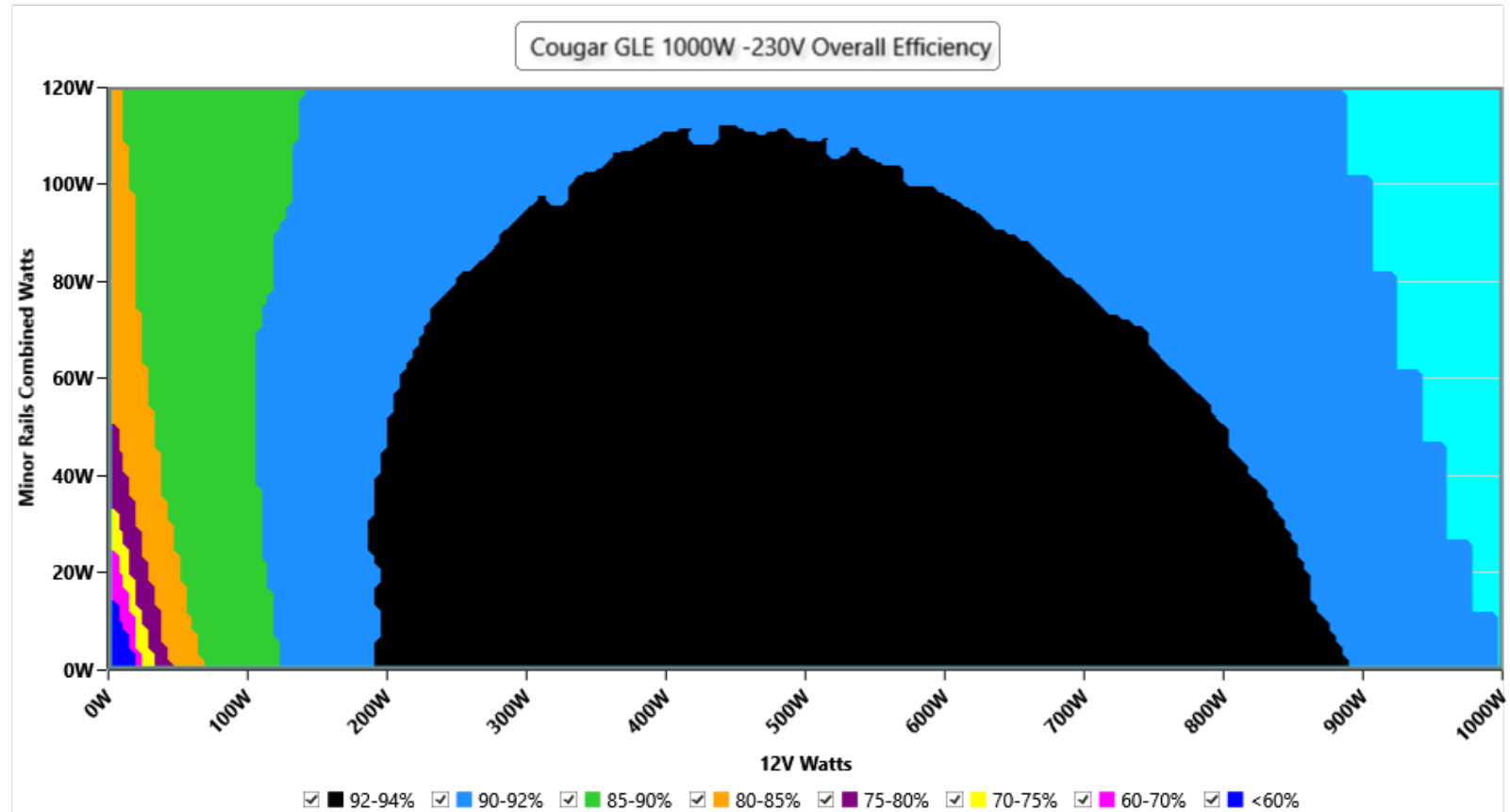
Mains Voltage THD:	0.13 %	0.08 %	N/A	0.21 %	2.00 %	PASS
Real Power:	0.037 W	-0.009 W	N/A	0.075 W	N/A	N/A
Apparent Power:	8.508 W	8.061 W	N/A	8.949 W	N/A	N/A
Power Factor:	0.007	N/A	N/A	N/A	N/A	N/A

230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	231.01 V	230.93 V	227.70 V	231.08 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	0.26 %	2.00 %	PASS
Real Power:	0.071 W	0.031 W	N/A	0.124 W	N/A	N/A
Apparent Power:	26.847 W	26.269 W	N/A	27.400 W	N/A	N/A
Power Factor:	0.003	N/A	N/A	N/A	N/A	N/A

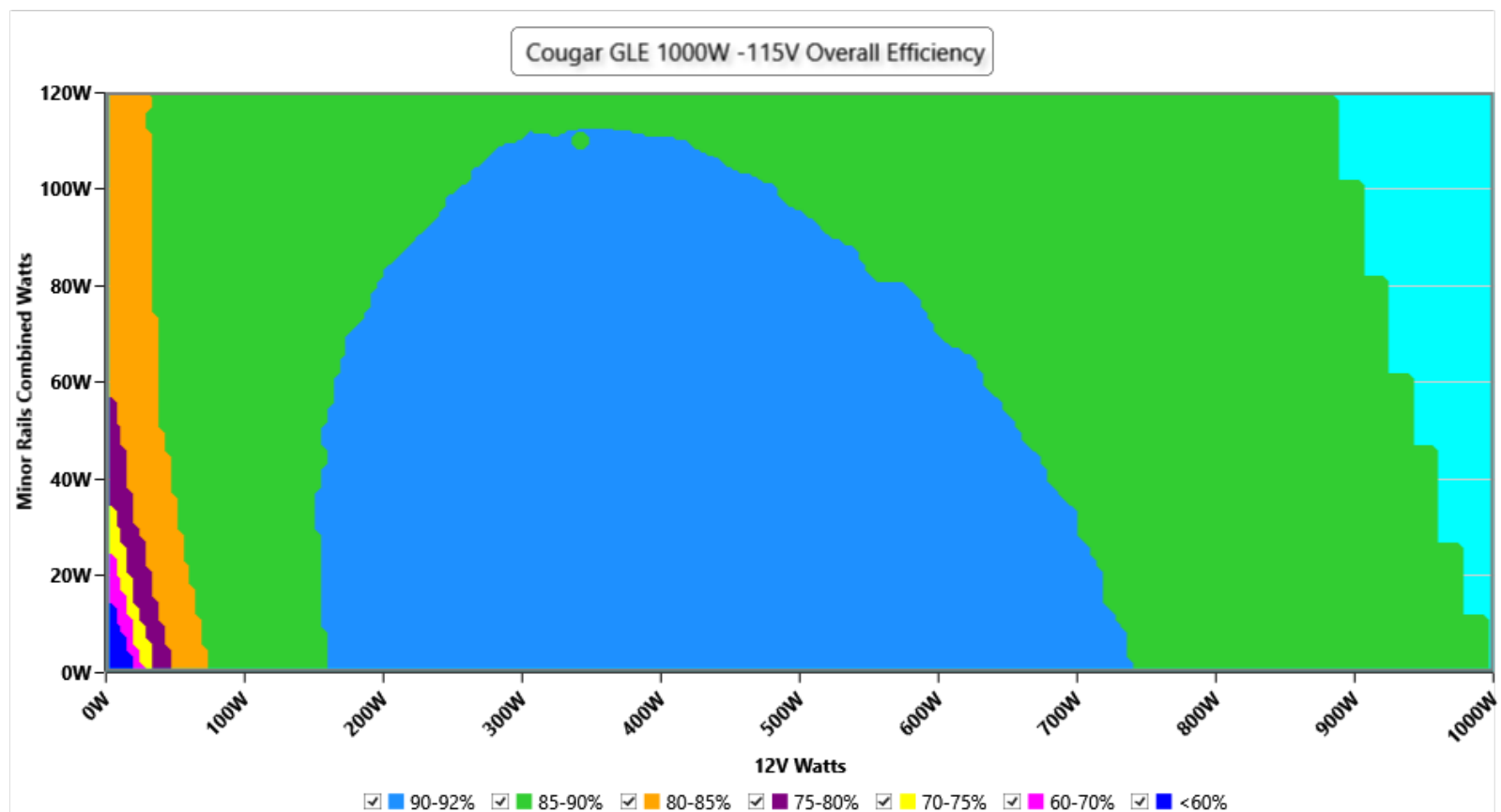
Efficiency Graph

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

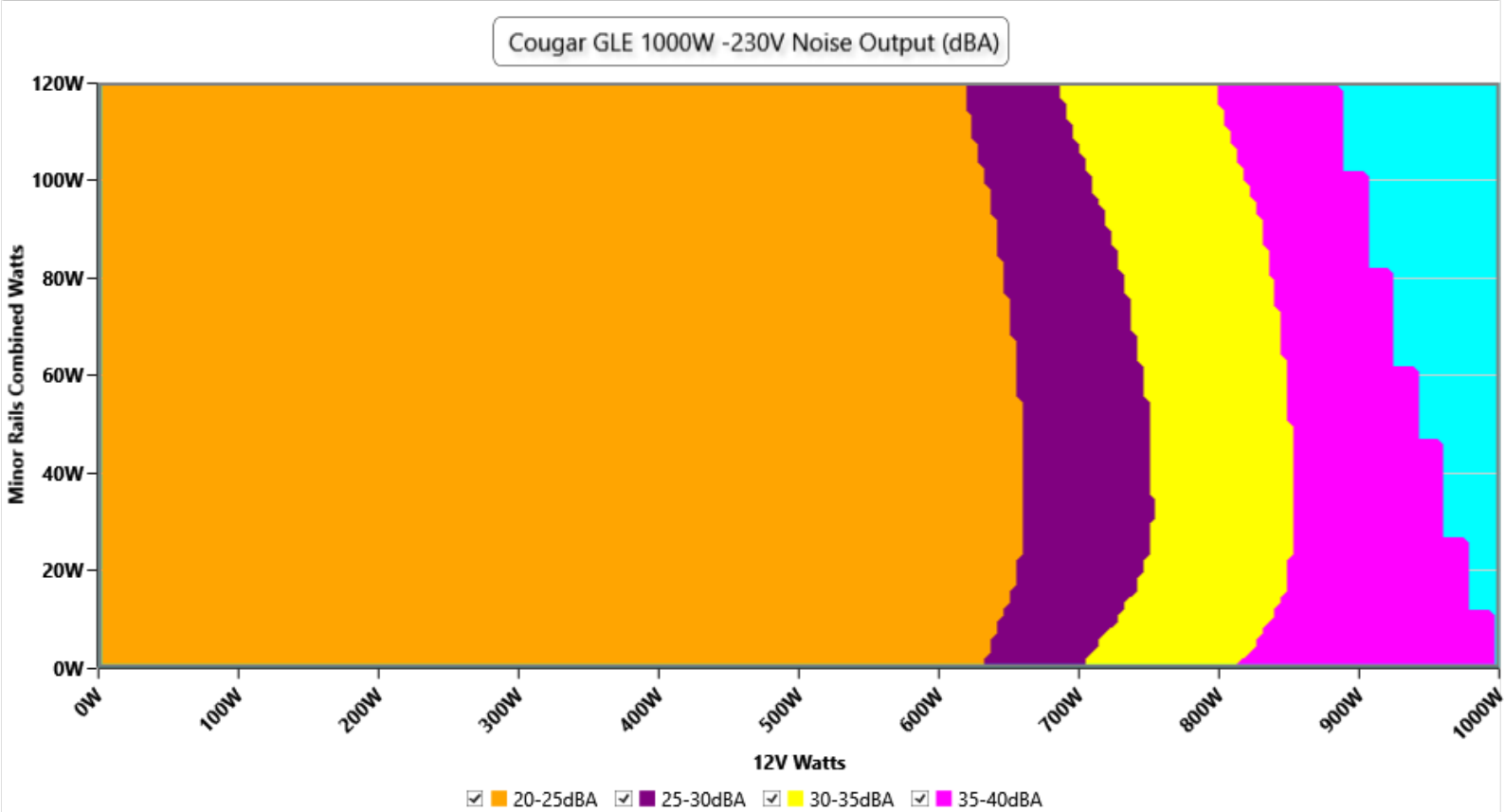


INFO

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

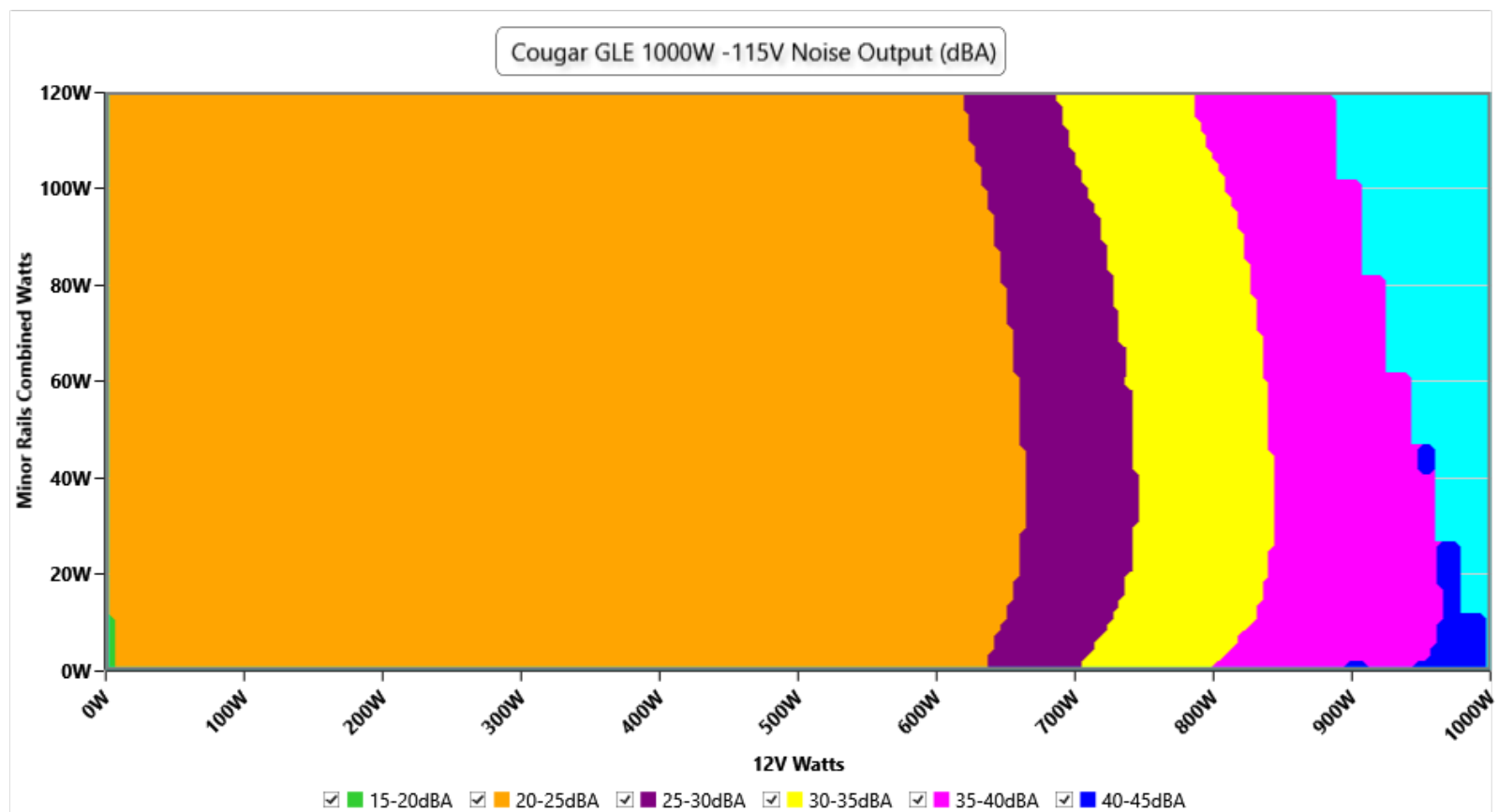
Noise Graph

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



INFO

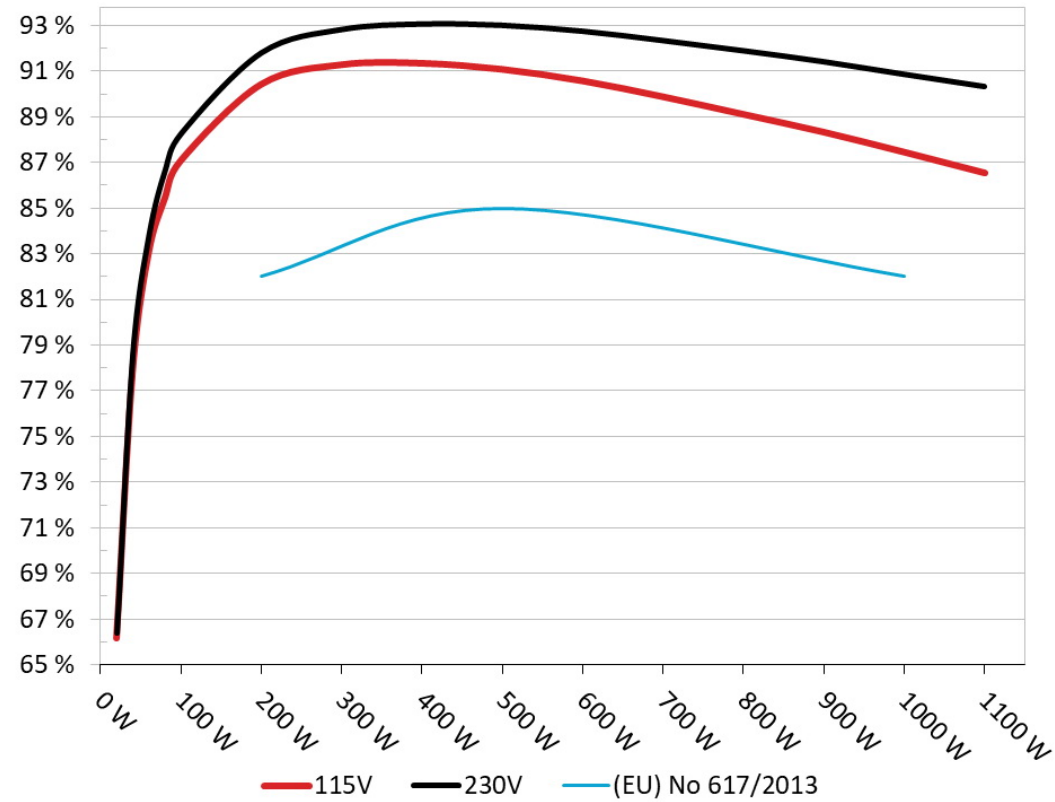
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance

Efficiency under high ambient temperature

Efficiency: Cougar GLE 1000W

Ambient: 36°C - 47°C (96.8°F - 116.6°F)



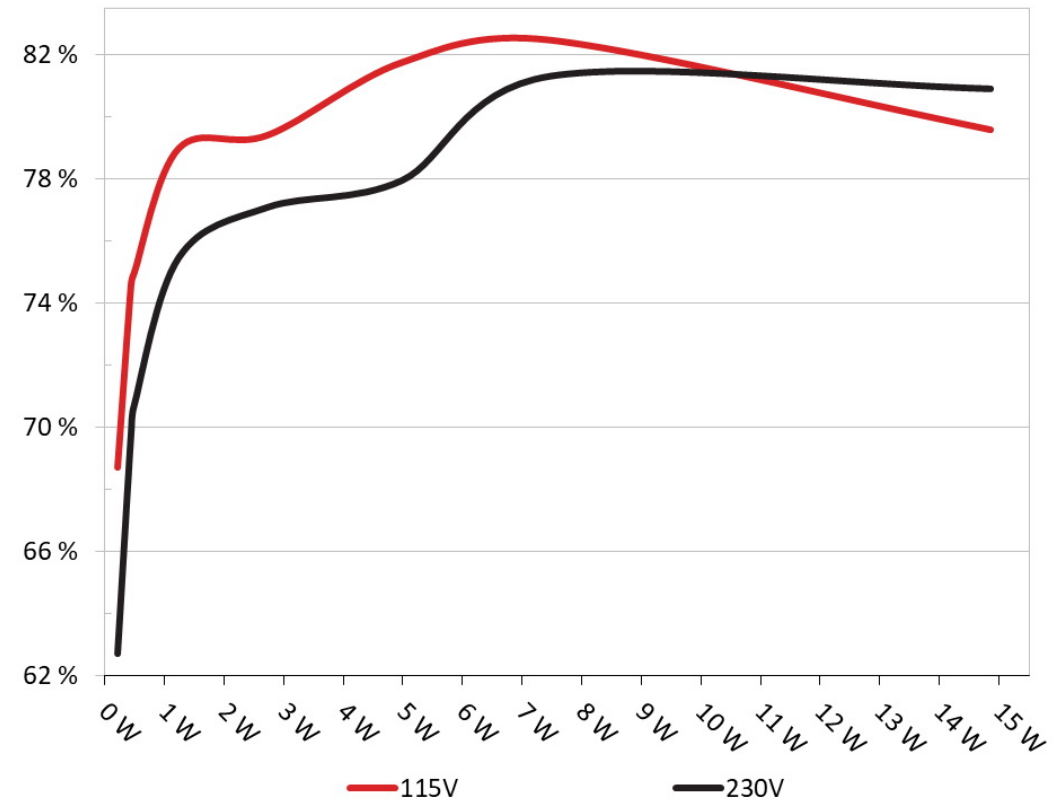
INFO

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: Cougar GLE 1000W

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	0.226W	68.723%	0.041
	5.011V	0.329W		114.92V
2	0.09A	0.451W	74.613%	0.074
	5.011V	0.605W		114.92V
3	0.55A	2.751W	79.433%	0.297
	5.001V	3.464W		114.92V
4	1A	4.993W	81.772%	0.37
	4.993V	6.106W		114.91V
5	1.5A	7.475W	82.492%	0.419
	4.983V	9.061W		114.92V
6	3A	14.861W	79.602%	0.481
	4.954V	18.669W		114.91V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.226W	62.737%	0.013
	5.011V	0.362W		229.89V
2	0.09A	0.451W	69.809%	0.024
	5.011V	0.646W		229.89V
3	0.55A	2.751W	77.104%	0.122
	5.001V	3.567W		229.89V
4	1A	4.993W	77.961%	0.198
	4.993V	6.403W		229.89V
5	1.5A	7.475W	81.315%	0.238
	4.983V	9.193W		229.89V
6	3A	14.859W	80.908%	0.343
	4.953V	18.365W		229.89V

Protection Features

OCP (Normal @ 30.0°C)	12V: 121.80A (146.22%), 11.880V 5V: 30A (150.00%), 4.954V 3.3V: 28A (140.00%), 3.302V 5VSB: 6.2A (206.67%), 4.892V
OCP (Hot @ 42.6°C)	12V: 114.00A (136.85%), 11.935V 5V: 30.1A (150.50%), 4.967V 3.3V: 27.9A (139.50%), 3.306V 5VSB: 6.3A (210.00%), 4.886V
OPP (Normal @ 30.7°C)	1431.11W (143.11%)
OPP (Hot @ 42.9°C)	1313.12W (131.31%)
OTP	✗ (Didn't shut down)
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)

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%	6.477A	1.989A	1.986A	0.999A	100.012	87.079%	931	22.4	40.21°C	0.974
	12.106V	5.027V	3.323V	5.006V	114.853				42.67°C	114.88V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
20%	13.985A	2.985A	2.981A	1.2A	199.969	90.413%	935	22.4	40.71°C	0.98
	12.089V	5.026V	3.322V	5.002V	221.172				44.51°C	114.84V
30%	21.865A	3.483A	3.479A	1.401A	300.022	91.272%	940	22.6	41.05°C	0.982
	12.073V	5.025V	3.321V	4.996V	328.71				46.4°C	114.82V
40%	29.727A	3.981A	3.977A	1.604A	399.612	91.334%	948	22.8	41.51°C	0.987
	12.057V	5.025V	3.32V	4.99V	437.531				48.72°C	114.78V
50%	37.278A	4.977A	4.973A	1.806A	499.319	91.071%	962	23.2	42.11°C	0.991
	12.040V	5.024V	3.318V	4.985V	548.274				50.8°C	114.74V
60%	44.918A	5.974A	5.971A	2A	599.801	90.563%	1184	29.5	42.59°C	0.993
	12.023V	5.023V	3.317V	4.981V	662.306				52.74°C	114.7V
70%	52.516A	6.972A	6.97A	2.211A	699.559	89.867%	1477	35.6	43.03°C	0.994
	12.005V	5.021V	3.315V	4.976V	778.433				53.66°C	114.67V
80%	60.207A	7.969A	7.969A	2.312A	799.583	89.102%	1759	40.7	43.62°C	0.284
	11.986V	5.019V	3.313V	4.974V	897.7				54.91°C	114.86V
90%	68.253A	8.468A	8.455A	2.414A	899.351	88.321%	2054	45.1	44.68°C	0.996
	11.969V	5.018V	3.312V	4.971V	1018.273				56.19°C	114.59V
100%	76.125A	8.968A	8.972A	3.03A	999.35	87.447%	2299	48.1	45.87°C	0.996
	11.950V	5.017V	3.311V	4.951V	1142.815				57.87°C	114.56V
110%	83.954A	9.966A	10.064A	3.028A	1099.983	86.534%	2308	48.1	47°C	0.996
	11.931V	5.016V	3.309V	4.953V	1271.165				61.16°C	114.51V
CL1	0.116A	14.389A	14.415A	0A	121.3	82.583%	961	23.2	41.03°C	0.98
	12.100V	5.017V	3.309V	5.092V	146.887				50.02°C	114.87V
CL2	0.116A	19.917A	0A	0A	101.35	81.762%	948	22.8	40.08°C	0.974
	12.110V	5.018V	3.322V	5.115V	123.96				47.66°C	114.88V
CL3	0.114A	0A	19.936A	0A	67.401	75.852%	942	22.7	40.62°C	0.963
	12.108V	5.029V	3.311V	5.038V	88.859				46.39°C	114.89V
CL4	83.606A	0A	0A	0A	999.95	88.188%	2252	47.2	45.92°C	0.996
	11.960V	5.03V	3.324V	5.011V	1133.897				57.12°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
10%	6.477A	1.989A	1.986A	0.999A	100.013	88.252%	933	22.5	40.42°C	0.843
	12.107V	5.027V	3.323V	5.006V	113.328				42.68°C	229.87V
20%	13.982A	2.985A	2.981A	1.2A	199.965	91.79%	936	22.4	40.61°C	0.927
	12.091V	5.026V	3.322V	5.001V	217.85				43.81°C	229.85V
30%	21.860A	3.483A	3.478A	1.402A	300.017	92.808%	942	22.7	41.3°C	0.95
	12.075V	5.025V	3.321V	4.995V	323.266				45.47°C	229.83V
40%	29.719A	3.981A	3.976A	1.604A	399.608	93.046%	949	22.9	41.81°C	0.961
	12.060V	5.025V	3.32V	4.989V	429.47				46.74°C	229.82V
50%	37.265A	4.977A	4.973A	1.806A	499.319	92.993%	963	23.2	42.13°C	0.967
	12.044V	5.023V	3.318V	4.984V	536.944				48.15°C	229.8V
60%	44.900A	5.974A	5.971A	2A	599.798	92.731%	1187	29.4	42.58°C	0.972
	12.027V	5.022V	3.316V	4.979V	646.817				49.4°C	229.78V
70%	52.494A	6.973A	6.97A	2.212A	699.559	92.323%	1457	35.3	43°C	0.975
	12.010V	5.02V	3.315V	4.974V	757.732				49.57°C	229.77V
80%	60.182A	7.97A	7.97A	2.313A	799.573	91.878%	1715	40	43.61°C	0.978
	11.992V	5.018V	3.312V	4.972V	870.251				50.06°C	229.75V
90%	68.226A	8.47A	8.456A	2.416A	899.344	91.4%	2008	44.2	44.62°C	0.98
	11.973V	5.017V	3.311V	4.968V	983.966				50.97°C	229.73V
100%	76.099A	8.971A	8.973A	3.032A	999.363	90.85%	2289	47.8	45.39°C	0.981
	11.954V	5.015V	3.31V	4.948V	1100.012				51.77°C	229.71V
110%	83.923A	9.97A	10.066A	3.03A	1099.983	90.31%	2301	48.1	46.4°C	0.983
	11.936V	5.014V	3.308V	4.95V	1218.011				53.29°C	229.69V
CL1	0.116A	14.393A	14.417A	0A	121.299	84.111%	954	23	40.46°C	0.885
	12.099V	5.016V	3.309V	5.089V	144.216				47.01°C	229.86V
CL2	0.116A	19.919A	0A	0A	101.348	83.085%	945	22.7	40.63°C	0.858
	12.108V	5.018V	3.321V	5.112V	121.978				45.8°C	229.87V
CL3	0.114A	0A	19.937A	0A	67.401	77.133%	939	22.6	40.27°C	0.796
	12.108V	5.029V	3.311V	5.038V	87.384				44.92°C	229.87V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL4	83.581A	0A	0A	0A	999.95	91.475%	2224	46.7	45.84°C	0.981
	11.964V	5.03V	3.324V	5.011V	1093.15				51.91°C	229.72V

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	1.227A	0.497A	0.496A	0.199A	20.009	66.169%	923	21.8	36.3°C	0.845
	12.110V	5.03V	3.327V	5.027V	30.239				39.66°C	114.9V
40W	2.699A	0.696A	0.695A	0.299A	40.004	77.894%	924	21.9	37.58°C	0.926
	12.114V	5.028V	3.325V	5.023V	51.354				40.01°C	114.9V
60W	4.172A	0.895A	0.893A	0.398A	60.002	83.079%	926	22	38.01°C	0.954
	12.114V	5.027V	3.324V	5.019V	72.221				40.38°C	114.89V
80W	5.642A	1.094A	1.092A	0.498A	79.956	85.411%	928	22.1	39.03°C	0.964
	12.110V	5.027V	3.324V	5.017V	93.611				41.26°C	114.89V

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	0.496A	0.199A	20.003	66.367%	923	21.8	36.04°C	0.514
	12.109V	5.031V	3.327V	5.028V	30.141				39.31°C	229.88V
40W	2.699A	0.696A	0.695A	0.299A	40.003	78.687%	924	21.9	37.24°C	0.652
	12.113V	5.029V	3.326V	5.023V	50.838				39.4°C	229.88V
60W	4.172A	0.895A	0.893A	0.398A	60.003	83.803%	926	22	38.06°C	0.745
	12.113V	5.028V	3.325V	5.019V	71.601				39.88°C	229.88V
80W	5.642A	1.094A	1.092A	0.498A	79.958	86.639%	928	22.1	38.28°C	0.805
	12.110V	5.027V	3.324V	5.017V	92.289				40.75°C	229.88V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	18.6 mV	14.9 mV	11.8 mV	11.9 mV	Pass
20% Load	18.8 mV	15.5 mV	12.2 mV	12.1 mV	Pass
30% Load	16.3 mV	15.7 mV	13.1 mV	12.3 mV	Pass
40% Load	15.3 mV	16.1 mV	14.0 mV	12.8 mV	Pass
50% Load	14.7 mV	15.5 mV	13.0 mV	12.8 mV	Pass
60% Load	14.7 mV	16.5 mV	12.6 mV	13.0 mV	Pass
70% Load	15.5 mV	16.8 mV	13.3 mV	14.2 mV	Pass
80% Load	16.5 mV	12.1 mV	10.4 mV	9.7 mV	Pass
90% Load	17.0 mV	18.6 mV	15.4 mV	15.1 mV	Pass
100% Load	25.8 mV	19.0 mV	15.4 mV	15.6 mV	Pass
110% Load	25.1 mV	20.5 mV	15.4 mV	16.5 mV	Pass
Crossload 1	28.7 mV	18.5 mV	15.8 mV	13.4 mV	Pass
Crossload 2	18.4 mV	22.3 mV	13.3 mV	13.3 mV	Pass
Crossload 3	17.6 mV	16.6 mV	16.8 mV	12.4 mV	Pass
Crossload 4	25.1 mV	16.7 mV	14.1 mV	14.7 mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	18.9 mV	15.6 mV	12.9 mV	12.1 mV	Pass
20% Load	20.2 mV	15.9 mV	13.4 mV	12.6 mV	Pass
30% Load	17.5 mV	16.3 mV	16.1 mV	13.2 mV	Pass
40% Load	16.3 mV	16.0 mV	14.6 mV	14.2 mV	Pass
50% Load	15.5 mV	17.3 mV	14.1 mV	13.2 mV	Pass
60% Load	14.7 mV	16.7 mV	14.5 mV	13.3 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
70% Load	15.1 mV	16.9 mV	12.8 mV	14.3 mV	Pass
80% Load	15.5 mV	18.2 mV	14.4 mV	13.7 mV	Pass
90% Load	16.1 mV	19.6 mV	15.1 mV	14.6 mV	Pass
100% Load	25.1 mV	19.9 mV	14.7 mV	15.8 mV	Pass
110% Load	26.7 mV	21.0 mV	16.3 mV	16.6 mV	Pass
Crossload 1	29.4 mV	20.7 mV	15.9 mV	12.9 mV	Pass
Crossload 2	19.9 mV	23.5 mV	13.3 mV	13.3 mV	Pass
Crossload 3	17.5 mV	15.3 mV	16.2 mV	11.9 mV	Pass
Crossload 4	24.9 mV	15.7 mV	13.9 mV	15.2 mV	Pass

The results above are not used in the certification process

Cougar GLE 1000W



Top side



Power specifications label

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 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

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

www.cybenetics.com - info@cybenetics.com