



Corsair RM1000x

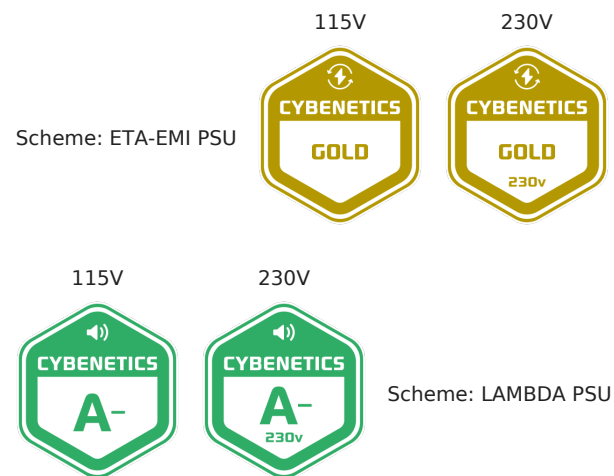
Serial Number 20277129000038990189

Lab ID CR10001798

Certification ID 251798

Test Result Report ID: 21PS1798A

Certificate Issue Date: Feb 26, 2021



A handwritten signature in blue ink, appearing to read "A. Bitziopoulos", is positioned above the name of the Certification Body General Manager.

Aristeidis Bitziopoulos, Certification Body General Manager

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	Corsair
Model	RM1000x
OEM/ODM	Channel Well Technology
Serial Number	20277129000038990189
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	12-6
Rated Frequency (Hz)	47-63

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	140mm Magnetic Levitation Fan (NR140ML)
Semi-Passive Operation	✓
Cybenetics Testing Information	
Lab ID	CR10001798
Date of receipt	Feb 10, 2021
Testing Date	Feb 26, 2021
Report Issued Date	Feb 26, 2021
DUT Notes	RPS0125
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 (610mm)	1	1	16-20AWG	Yes
4+4 pin EPS12V (650mm)	3	3	18AWG	Yes
6+2 pin PCIe (600mm+150mm)	3	6	16-18AWG	Yes
SATA (500mm+110mm+110mm+110mm)	2	8	18AWG	No
SATA (520mm+110mm+110mm)	2	6	18AWG	No
4-pin Molex (450mm+100mm+100mm+100mm)	2	8	18AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	16AWG	-

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	83.3	3	0.3
	Watts	150		999.6	15	3.6
Total Max. Power (W)		1000				

Parts Description

General Data	-
Manufacturer (OEM)	CWT
PCB Type	Double Sided
Primary Side	-
Transient Filter	6x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor SCK203R0 (3 Ohm) & Relay
Bridge Rectifier(s)	2x GBJ2006 (600V, 20A @ 110°C)
APFC MOSFETs	3x Vishay SiHF30N60E (650V, 18A @ 100°C, Rds(on): 0.125Ohm)
APFC Boost Diode	1x On Semiconductor FFSP1065A (650V, 10A @ 152°C)
Bulk Cap(s)	2x Nippon Chemi-Con (400V, 680uF & 470uF each or 1.150uF combined, 2,000h @ 105°C, KMW)
Main Switchers	2x Infineon IPW60R099ZH (650V, 24A @ 100°C, Rds(on): 0.099Ohm)
APFC Controller	Champion CM6500UNX & Champion CM03X
Resonant Controller	Champion CU6901VAC
Topology	Primary side: APFC, Half-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	-
+12V MOSFETs	8x Intenational Rectifier IRFH7004PbF (40V, 164A @ 100°C, Rds(on): 1.4mOhm)
5V & 3.3V	DC-DC Converters: 2x UBIQ QM3054M6 (30V, 61A @ 100°C, Rds(on): 4.8mOhm) & 2x UBIQ QN3107M6N (30V, 70A @ 100°C, Rds(on): 2.6mOhm) PWM Controllers: UPI Semi uP3861P
Filtering Capacitors	Electrolytic: 2x Nippon Chemi-Con (105°C, W), 4x Nippon Chemi-Con (1-5,000h @ 105°C, KZE), 9x Nippon Chemi-Con (4-10,000h @ 105°C, KY), 1x Rubycon (4-10,000h @ @ 105°C, YXJ) Polymer: 43x FPCAP
Change Over Switch	1x Sync Power SPN3006 MOSFET (30V, 57A @ 100°C, Rds(on): 5.5mOhm)
Supervisor IC	Weltrend WT7502R (OVP, UVP, SCP, PG)
Fan Controller	Microchip PIC16F1503

Fan Model	Corsair NR140ML (140mm, 12V, 0.27A, Magnetic Levitation Bearing Fan)
5VSB Circuit	-
Rectifier	1x PS1045L SBR (45V, 10A) & IPS ISD04N65A
Standby PWM Controller	On-Bright OB5282

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	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	88.456%
Average Noise Output (>1450 Load Combinations)	28.72dBA
Average PF (>1450 Load Combinations)	0.992
Efficiency With 10W ($\leq$ 500W) or 2% (>500W) Load	76.957%
Standby Power Consumption	0.0348W
Non-Accredited	
12V Ripple (Full Load)	11.04mV
5V Ripple (Full Load)	6.14mV
3.3V Ripple (Full Load)	11.71mV
5VSB Ripple (Full Load)	5.03mV
12V Load Regulation	0.97%
5V Load Regulation	0.36%
3.3V Load Regulation	1.12%
5VSB Load Regulation	2.46%

Inrush Current	24.930A	
230V		
Accredited		
Average Efficiency (>1450 load combinations)	90.731%	
Average Noise Output (>1450 Load Combinations)	28.46dBA	
Average PF (>1450 Load Combinations)	0.969	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.0552W	
Non-Accredited		
12V Ripple (Full Load)	9.02mV	
5V Ripple (Full Load)	5.72mV	
3.3V Ripple (Full Load)	14.28mV	
5VSB Ripple (Full Load)	5.01mV	
12V Load Regulation	1.07%	
5V Load Regulation	0.36%	
3.3V Load Regulation	0.70%	
5VSB Load Regulation	2.44%	
Inrush Current	51.950A	
12V Transient Response (150%)	11.43V	
5V Transient Response (150%)	4.879V	
3.3V Transient Response (150%)	3.205V	
5VSB Transient Response (150%)	4.870V	
Hold-Up Time & PWR_OK Signal	23.60ms	
AC Loss to PWR_OK Hold Up Time	21.00ms	
PWR_OK Inactive to DC Loss Delay	2.60ms	
PSU Timings: T1 (20% / 100%)	50.0ms	50.0ms
PSU Timings: T3 (20% / 100%)	138.0ms	138.0ms
OPP (26.45°C / 43.18°C)	126.22%	126.63%

Hold-Up Time & PWR_OK Signal

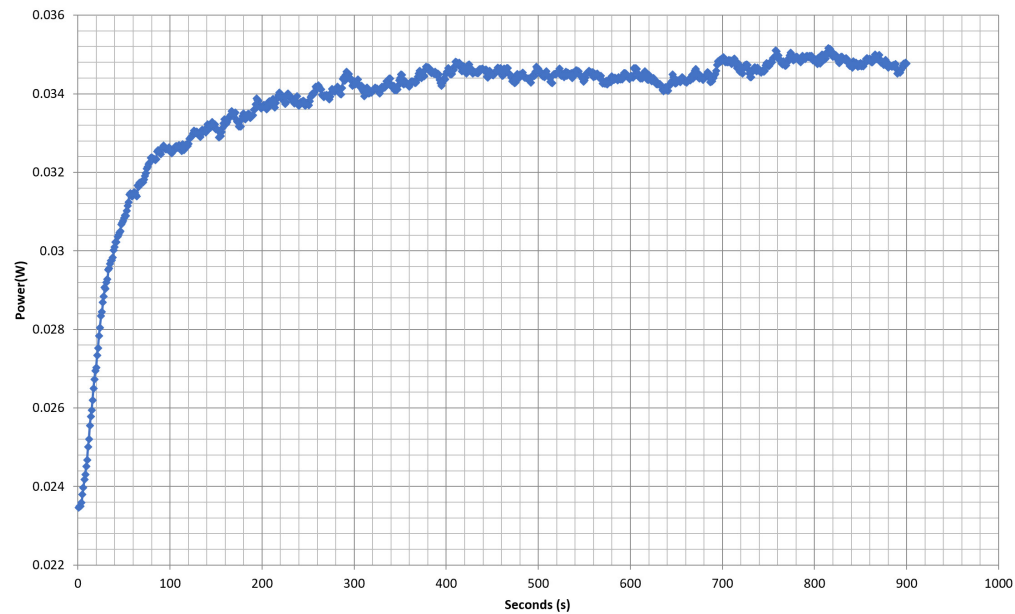
Hold-Up Time (ms)	23.6
AC Loss to PWR_OK Hold Up Time (ms)	21
PWR_OK Inactive to DC Loss Delay (ms)	2.6



Graphs

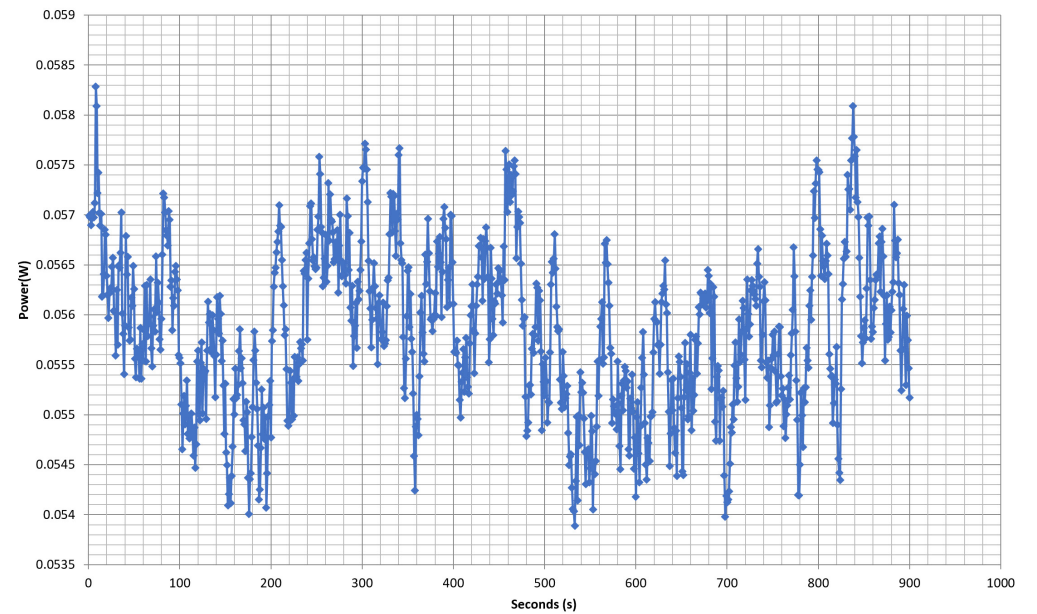
115V

Power - 20277129000038990189 - 23/02/2021 - 10:48



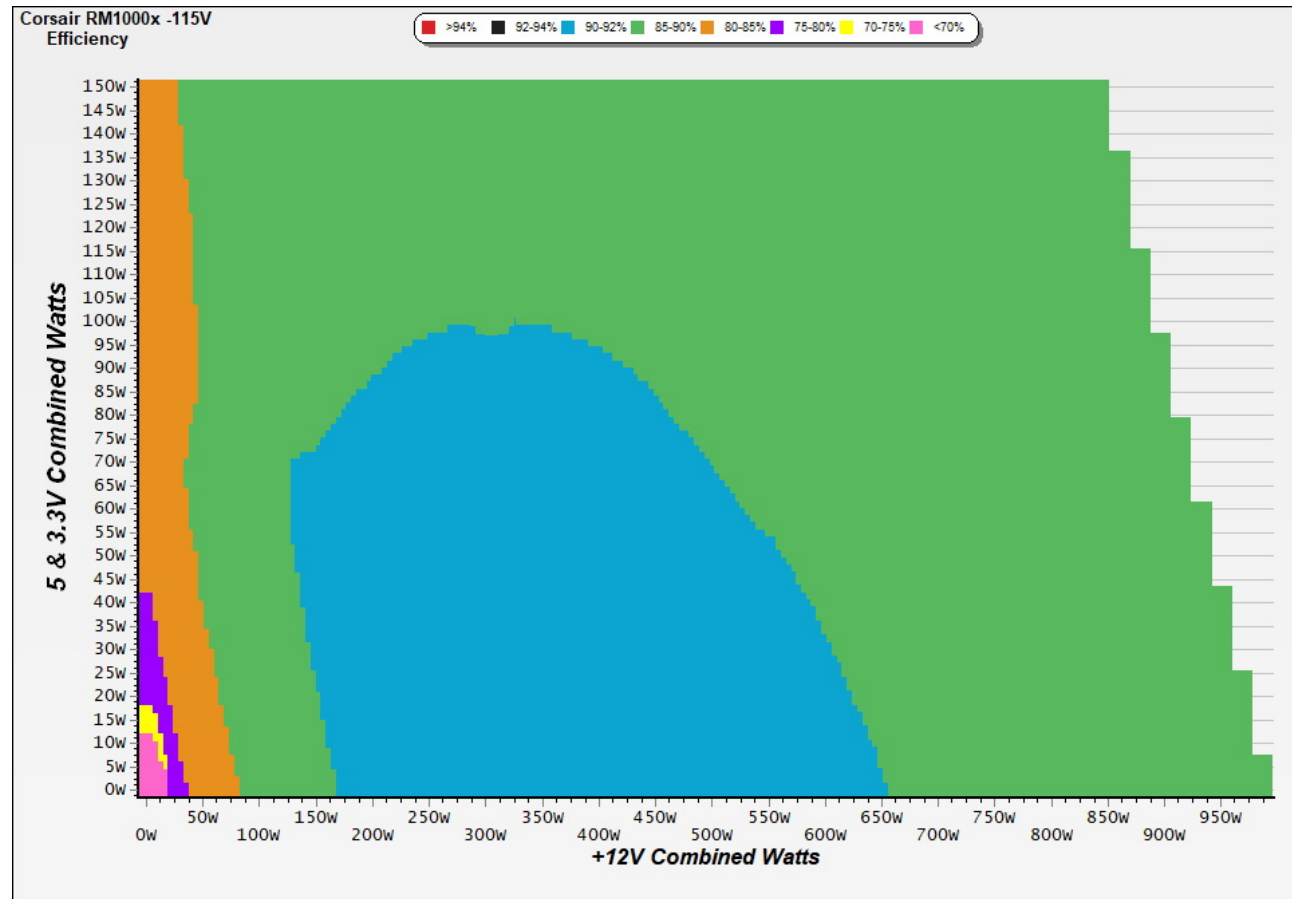
230V

Power - 20277129000038990189 - 23/02/2021 - 10:48



Efficiency Graph

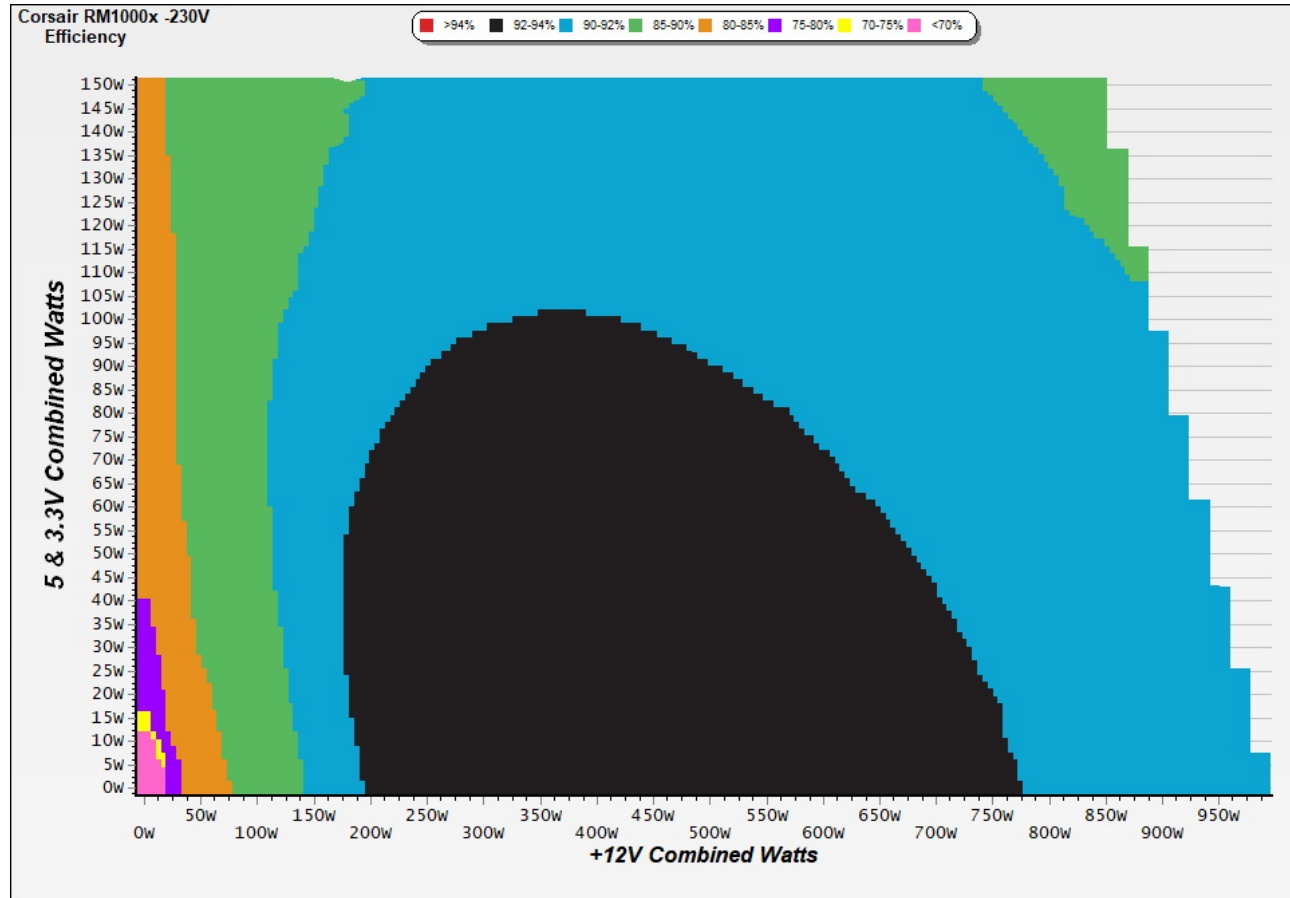
115V



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

230V

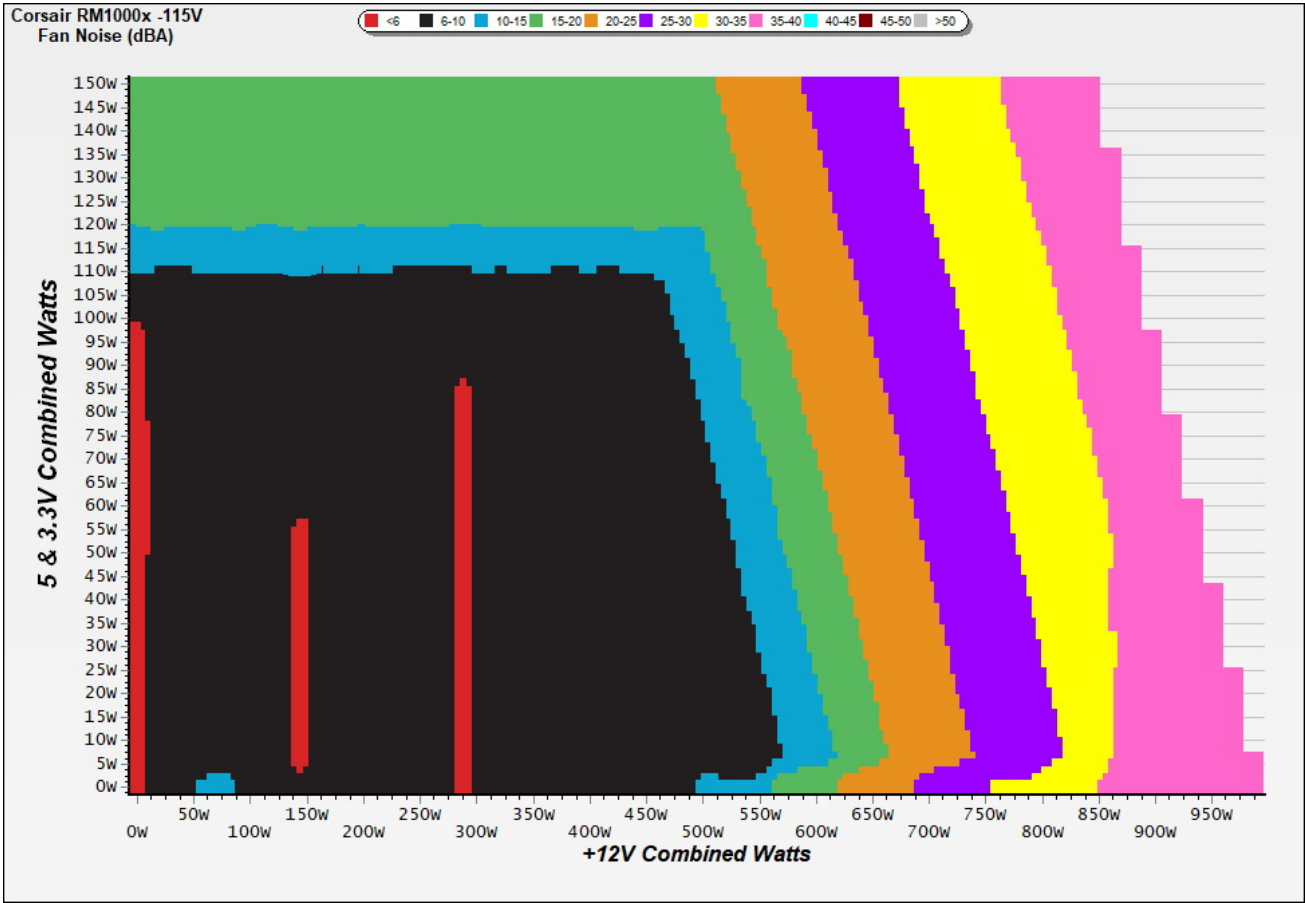


INFO

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

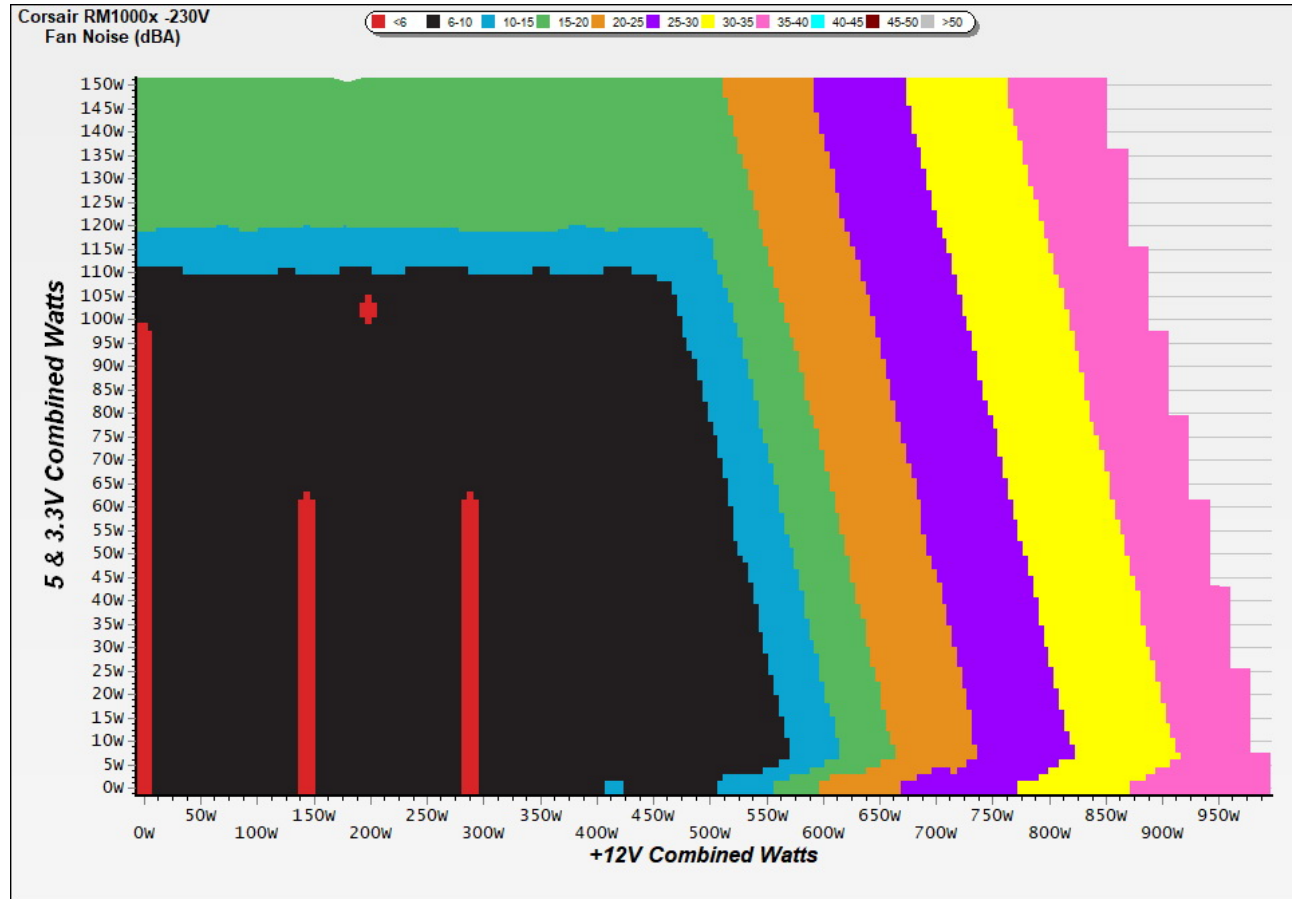
115V



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

230V



INFO

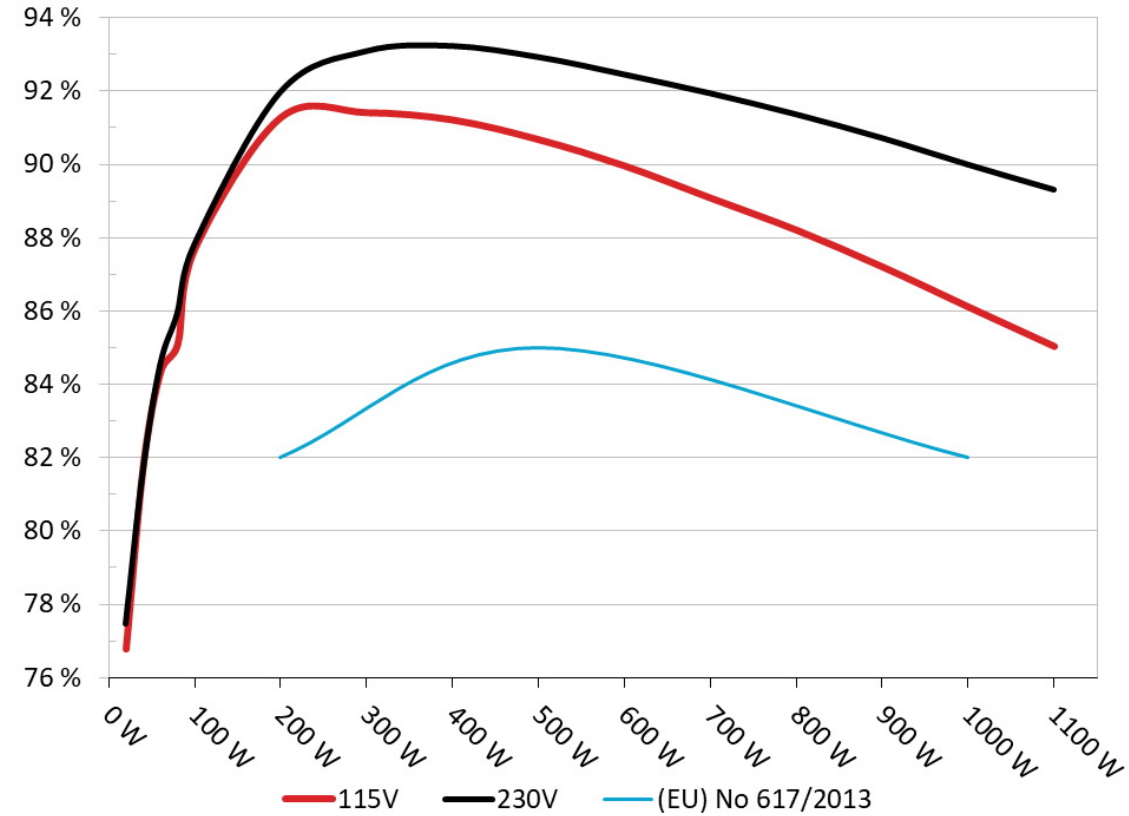
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance

Efficiency under high ambient temperature

Efficiency: Corsair RM1000x

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



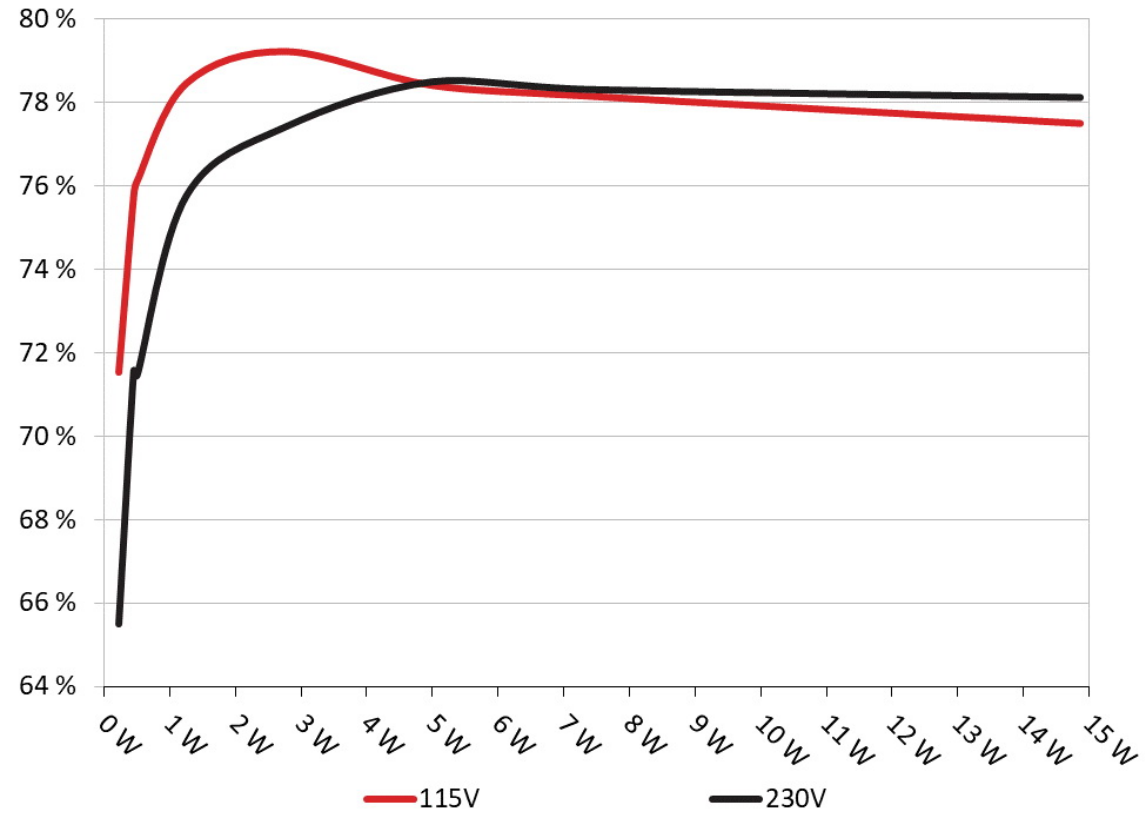
INFO

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: Corsair RM1000x

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	0.226	71.519%	0.031
	5.030V	0.316		115.09V
2	0.090A	0.453	75.753%	0.058
	5.029V	0.598		115.10V
3	0.550A	2.759	79.213%	0.256
	5.017V	3.483		115.09V
4	1.000A	5.005	78.399%	0.347
	5.005V	6.384		115.09V
5	1.500A	7.489	78.132%	0.399
	4.993V	9.585		115.09V
6	3.000A	14.864	77.489%	0.466
	4.955V	19.182		115.09V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.226	65.507%	0.010
	5.029V	0.345		230.22V
2	0.090A	0.453	71.564%	0.019
	5.028V	0.633		230.22V
3	0.550A	2.760	77.398%	0.098
	5.017V	3.566		230.22V
4	1.000A	5.007	78.480%	0.163
	5.007V	6.380		230.23V
5	1.500A	7.490	78.290%	0.220
	4.993V	9.567		230.22V
6	3.000A	14.866	78.102%	0.321
	4.955V	19.034		230.22V

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
1	6.472A	1.989A	2.009A	1.000A	99.990	87.692%	0	<6.0	45.96°C	0.981
	12.112V	5.028V	3.286V	4.998V	114.024				40.64°C	115.10V
2	14.000A	2.985A	3.012A	1.202A	200.024	91.274%	0	<6.0	46.80°C	0.995
	12.082V	5.026V	3.279V	4.990V	219.147				40.72°C	115.09V
3	21.877A	3.482A	3.515A	1.405A	300.012	91.404%	0	<6.0	47.83°C	0.990
	12.066V	5.025V	3.285V	4.983V	328.227				41.23°C	115.09V
4	29.745A	3.982A	4.024A	1.608A	399.637	91.208%	0	<6.0	49.65°C	0.993
	12.050V	5.023V	3.282V	4.976V	438.161				41.80°C	115.08V
5	37.332A	4.978A	5.032A	1.811A	499.796	90.671%	493	10.9	42.36°C	0.995
	12.035V	5.023V	3.279V	4.970V	551.221				50.71°C	115.08V
6	44.939A	5.976A	6.040A	2.000A	599.847	89.952%	677	19.5	42.90°C	0.996
	12.019V	5.021V	3.277V	4.963V	666.850				51.89°C	115.08V
7	52.516A	6.974A	7.054A	2.220A	699.664	89.077%	964	30.2	43.54°C	0.997
	12.007V	5.020V	3.274V	4.955V	785.457				53.29°C	115.07V
8	60.143A	7.973A	8.065A	2.426A	800.196	88.196%	1132	35.0	43.92°C	0.997
	12.002V	5.019V	3.266V	4.948V	907.290				54.76°C	115.06V
9	68.099A	8.474A	8.555A	2.427A	899.486	87.202%	1378	40.4	44.73°C	0.998
	11.997V	5.016V	3.272V	4.946V	1031.494				56.19°C	115.06V
10	75.893A	8.975A	9.048A	3.047A	999.915	86.104%	1590	43.9	45.32°C	0.998
	11.994V	5.015V	3.254V	4.924V	1161.286				57.67°C	115.05V
11	84.255A	8.980A	9.094A	3.049A	1099.940	85.027%	1780	46.7	47.29°C	0.998
	11.990V	5.013V	3.266V	4.921V	1293.638				61.21°C	115.05V
CL1	0.133A	18.005A	17.965A	0.000A	150.733	82.516%	670	19.0	42.46°C	0.992
	12.048V	5.014V	3.276V	5.048V	182.672				50.52°C	115.12V

CL2	83.338A	1.000A	1.001A	1.000A	1013.154	86.641%	1503	42.5	45.37°C	0.998
	11.998V	5.015V	3.270V	4.977V	1169.367				57.54°C	115.06V

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
1	6.472A	1.988A	2.006A	1.000A	100.008	87.823%	0	<6.0	45.43°C	0.862
	12.116V	5.028V	3.290V	4.998V	113.875				39.83°C	230.24V
2	13.996A	2.985A	3.012A	1.202A	200.044	91.987%	0	<6.0	46.78°C	0.951
	12.085V	5.026V	3.287V	4.991V	217.469				40.34°C	230.24V
3	21.881A	3.483A	3.516A	1.405A	300.023	93.100%	0	<6.0	49.02°C	0.973
	12.064V	5.024V	3.285V	4.983V	322.259				41.58°C	230.23V
4	29.750A	3.982A	4.023A	1.608A	399.668	93.241%	0	<6.0	49.81°C	0.983
	12.049V	5.023V	3.283V	4.976V	428.640				41.64°C	230.23V
5	37.342A	4.978A	5.030A	1.811A	499.808	92.940%	471	10.6	42.07°C	0.986
	12.032V	5.023V	3.281V	4.970V	537.774				50.72°C	230.23V
6	44.956A	5.976A	6.039A	2.000A	599.881	92.464%	673	19.0	42.25°C	0.989
	12.015V	5.021V	3.279V	4.963V	648.771				51.73°C	230.23V
7	52.546A	6.975A	7.051A	2.220A	699.725	91.951%	850	26.4	42.61°C	0.991
	12.001V	5.020V	3.277V	4.955V	760.977				52.84°C	230.24V
8	60.178A	7.975A	8.061A	2.426A	800.266	91.372%	1135	35.2	43.57°C	0.993
	11.995V	5.019V	3.275V	4.948V	875.832				54.52°C	230.24V
9	68.138A	8.477A	8.556A	2.427A	899.565	90.731%	1338	39.6	44.01°C	0.993
	11.991V	5.016V	3.272V	4.947V	991.469				55.88°C	230.24V
10	75.931A	8.978A	9.083A	3.048A	999.995	90.001%	1574	43.3	45.48°C	0.993
	11.988V	5.015V	3.270V	4.924V	1111.090				58.29°C	230.25V
11	84.303A	8.983A	9.090A	3.049A	1100.011	89.317%	1782	46.9	46.60°C	0.993
	11.984V	5.012V	3.267V	4.921V	1231.580				60.26°C	230.25V
CL1	0.117A	18.007A	17.998A	0.000A	150.767	83.376%	756	22.8	42.19°C	0.935
	12.049V	5.014V	3.282V	5.049V	180.828				50.28°C	230.26V

CL2	83.353A	1.000A	1.001A	1.000A	1012.750	90.449%	1506	42.6	46.00°C	0.993
	11.991V	5.014V	3.271V	4.976V	1119.695				59.01°C	230.25V

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])	PF/AC Volts
1	1.233A	0.495A	0.499A	0.198A	19.985	76.768%	0	<6.0	0.763
	12.037V	5.055V	3.291V	5.048V	26.033				115.06V
2	2.477A	0.993A	0.978A	0.398A	39.967	81.762%	0	<6.0	0.904
	12.040V	5.033V	3.291V	5.021V	48.882				115.10V
3	3.700A	1.491A	1.503A	0.599A	60.004	84.330%	0	<6.0	0.957
	12.042V	5.030V	3.291V	5.012V	71.154				115.09V
4	4.931A	1.990A	2.001A	0.799A	79.955	85.089%	0	<6.0	0.972
	12.044V	5.028V	3.279V	5.005V	93.966				115.09V

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])	PF/AC Volts
1	1.233A	0.495A	0.500A	0.198A	19.993	77.459%	0	<6.0	0.400
	12.036V	5.053V	3.304V	5.047V	25.811				230.24V
2	2.466A	0.993A	1.001A	0.398A	39.983	81.635%	0	<6.0	0.601
	12.039V	5.034V	3.294V	5.021V	48.978				230.24V
3	3.701A	1.491A	1.502A	0.599A	60.013	84.528%	0	<6.0	0.727
	12.041V	5.031V	3.292V	5.013V	70.998				230.23V
4	4.929A	1.988A	2.006A	0.799A	79.964	85.936%	0	<6.0	0.813
	12.044V	5.029V	3.291V	5.006V	93.051				230.24V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.50mV	5.30mV	14.60mV	3.60mV	Pass
20% Load	7.80mV	5.40mV	14.20mV	4.30mV	Pass
30% Load	7.60mV	5.30mV	15.70mV	3.80mV	Pass
40% Load	7.40mV	5.50mV	13.70mV	3.90mV	Pass
50% Load	7.60mV	6.10mV	15.00mV	4.10mV	Pass
60% Load	7.20mV	5.70mV	13.30mV	4.30mV	Pass
70% Load	7.60mV	6.00mV	14.90mV	4.50mV	Pass
80% Load	7.60mV	6.00mV	29.90mV	4.90mV	Pass
90% Load	7.50mV	5.40mV	12.30mV	4.10mV	Pass
100% Load	11.00mV	6.10mV	11.70mV	5.00mV	Pass
110% Load	10.60mV	5.70mV	11.80mV	4.90mV	Pass
Crossload1	6.30mV	5.40mV	11.60mV	3.70mV	Pass
Crossload2	10.30mV	5.60mV	12.80mV	4.90mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	5.60mV	4.50mV	11.50mV	3.70mV	Pass
20% Load	6.90mV	4.40mV	10.60mV	3.40mV	Pass
30% Load	6.10mV	5.00mV	12.80mV	3.50mV	Pass
40% Load	6.00mV	5.00mV	11.80mV	4.00mV	Pass
50% Load	5.80mV	5.00mV	11.30mV	3.80mV	Pass
60% Load	6.10mV	5.00mV	11.50mV	3.70mV	Pass
70% Load	6.50mV	5.50mV	11.30mV	4.20mV	Pass
80% Load	6.20mV	5.50mV	11.60mV	4.30mV	Pass

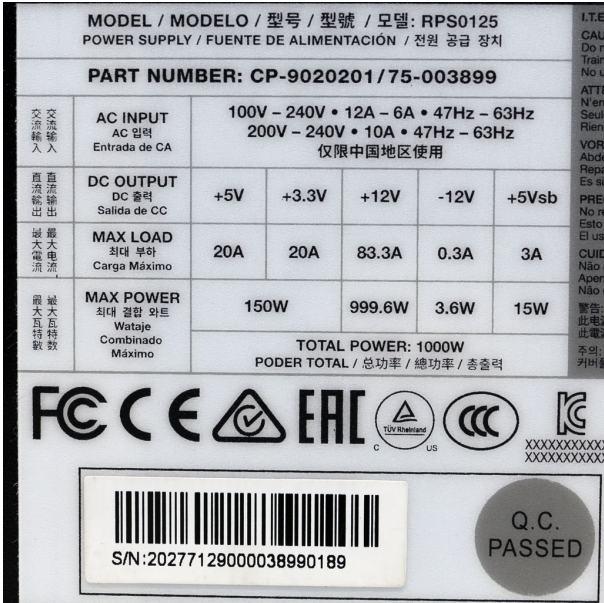
Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	6.50mV	5.50mV	21.60mV	4.90mV	Pass
100% Load	9.00mV	5.70mV	14.30mV	5.00mV	Pass
110% Load	9.40mV	5.90mV	23.20mV	4.90mV	Pass
Crossload1	6.00mV	5.30mV	14.20mV	3.60mV	Pass
Crossload2	8.90mV	5.30mV	15.70mV	4.60mV	Pass

The results above are not used in the certification process

Corsair RM1000x



Top side



Power specifications label

Cybenetics [REDACTED] ETA[REDACTED] LAMBDA[REDACTED] SAFE[REDACTED] DELTA[REDACTED] PHI[REDACTED]

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

www.cybenetics.com - info@cybenetics.com