EFFICIENCY AND NOISE REPORT IN ACCORDANCE WITH
CYBENETICS ETA AND CYBENETICS LAMBDA PROCEDURE

Corsair RM1000x (2021)

Lab ID#: CR10001798
Receipt Date: Feb 10, 2021
Test Date: Feb 26, 2021

Report: 21PS1798A
Report Date: Feb 26, 2021

DUT INFORMATION

Brand	Corsair
Manufacturer (OEM)	Channel Well Technology
Series	RMx
Model Number	
Serial Number	20277129000038990189
DUT Notes	RPS0125

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	12-6
Rated Frequency (Hz)	47-63
Rated Power (W)	1000
Type	ATX12V
Cooling	140mm Magnetic Levitation Fan (NR140ML)
Semi-Passive Operation	✓
Cable Design	Fully Modular

TEST EQUIPMENT

Electronic Loads	Chroma 63601-5 x4 Chroma 63600-2 x2 63640-80-80 x20 63610-80-20 x2
AC Sources	Chroma 6530, Keysight AC6804B
Power Analyzers	N4L PPA1530 x2
Sound Analyzer	Bruel & Kjaer 2270 G4
Microphone	Bruel & Kjaer Type 4955-A
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2
Tachometer	UNI-T UT372 x2
Digital Multimeter	Keysight U1273AX, Fluke 289, Keithley 2015 - THD
UPS	CyberPower OLS3000E 3kVA x2
Transformer	3kVA x2

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Corsair RM1000x (2021)

RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6 (+-2°C / +- 3.6°F)
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
ALPM (Alternative Low Power Mode) compatible	✓

115V

Average Efficiency	88.456%
Efficiency With 10W (≤500W) or 2% (>500W)	76.957
Average Efficiency 5VSB	78.078%
Standby Power Consumption (W)	0.0347679
Average PF	0.992
Avg Noise Output	28.72 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	A-

230V

Average Efficiency	90.731%
Average Efficiency 5VSB	77.706%
Standby Power Consumption (W)	0.0551728
Average PF	0.969
Avg Noise Output	28.46 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	A-

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				

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CABLES AND CONNECTORS

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	-

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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

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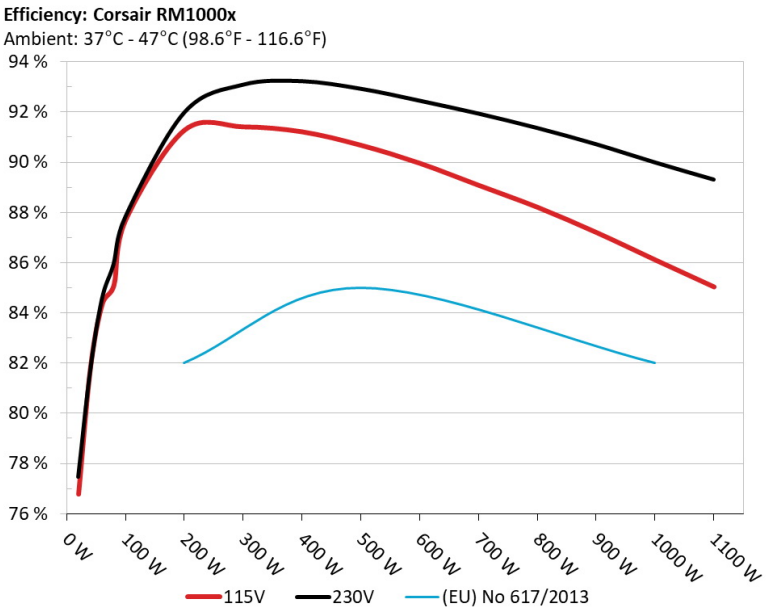
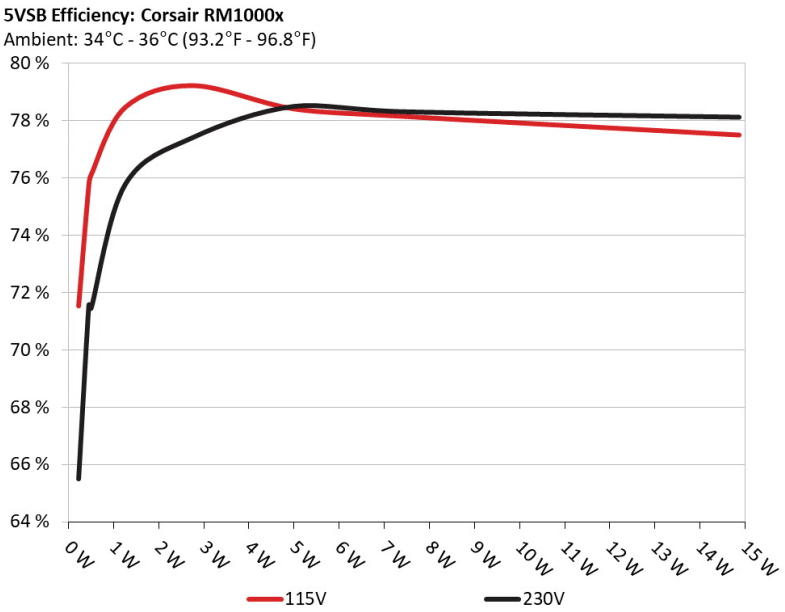
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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



INFO

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

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5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

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

5VSB EFFICIENCY -230V (ERP LOT 3/6 & CEC)

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

115V

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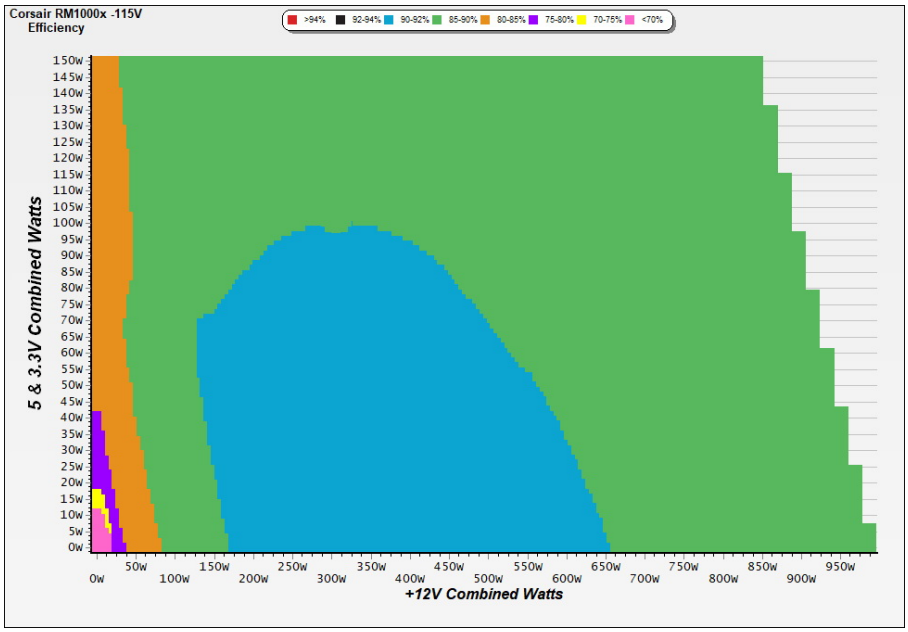
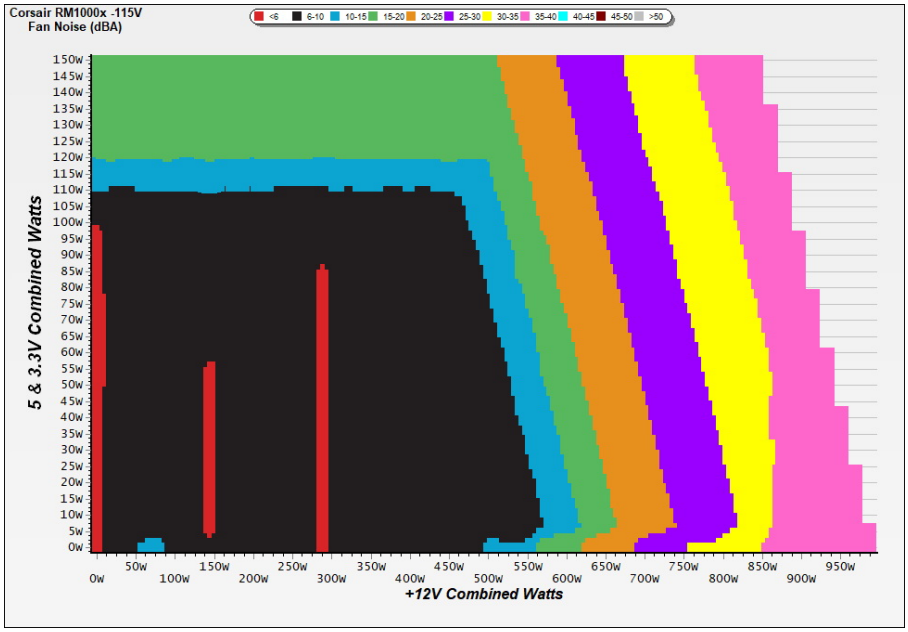
EFFICIENCY GRAPH 115V



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

NOISE GRAPH 115V



INFO

The PSU's noise in its entire operational range and under 30-32 °C (+-2 °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

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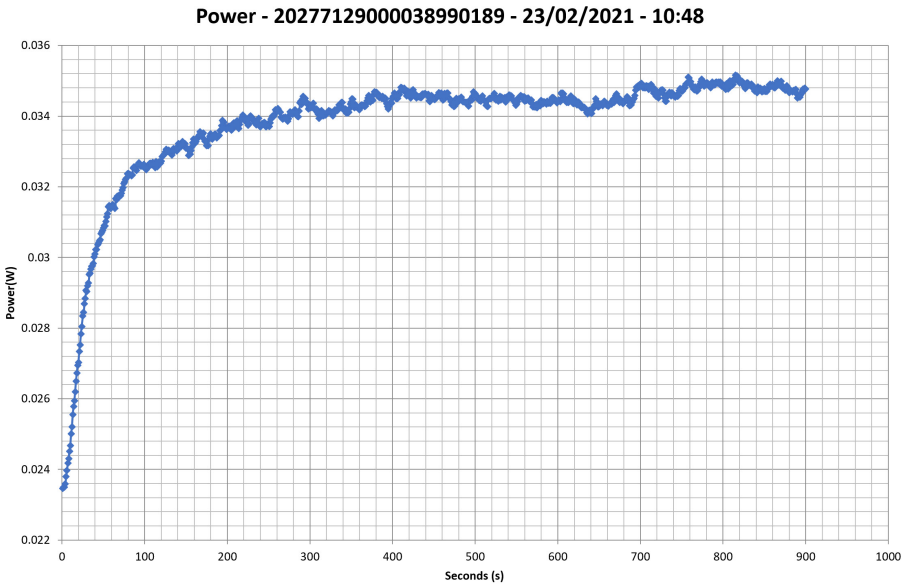
VAMPIRE POWER -115V



INFO

This graph is generated by the PPA Standby Power Analysis software which takes full control of the power analyzer during the whole procedure. This application features all of the EN50564 & IEC62301 test limits for standby power software testing

COMMISSION REGULATION (EU) NO 617/2013 TESTING 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
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
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

230V

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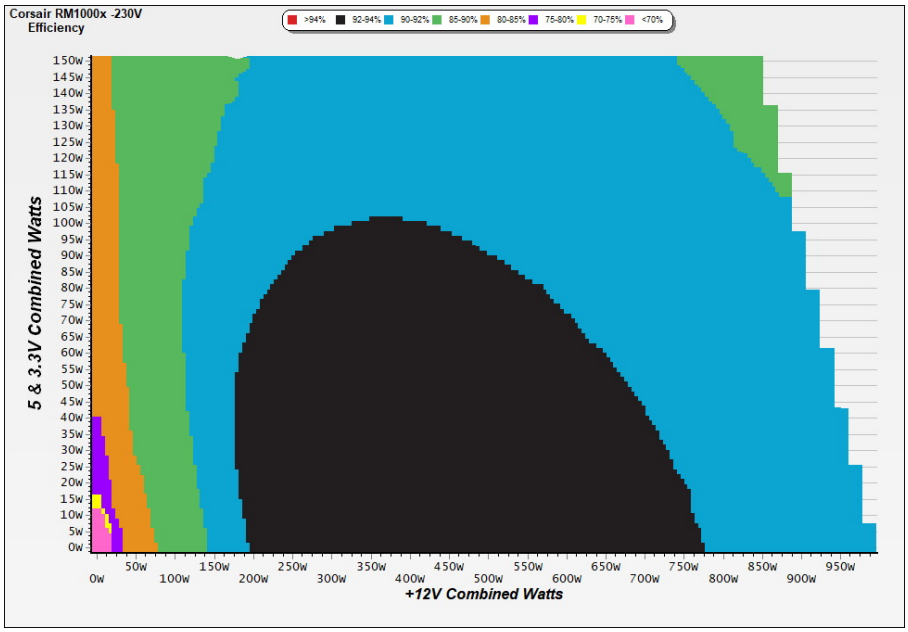
EFFICIENCY GRAPH 230V



INFO

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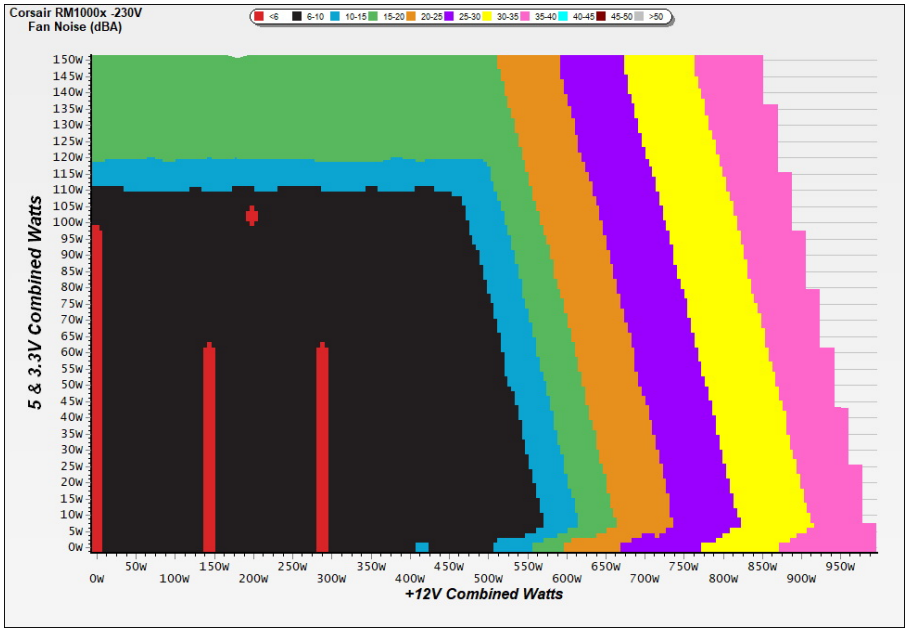
NOISE GRAPH 230V



INFO

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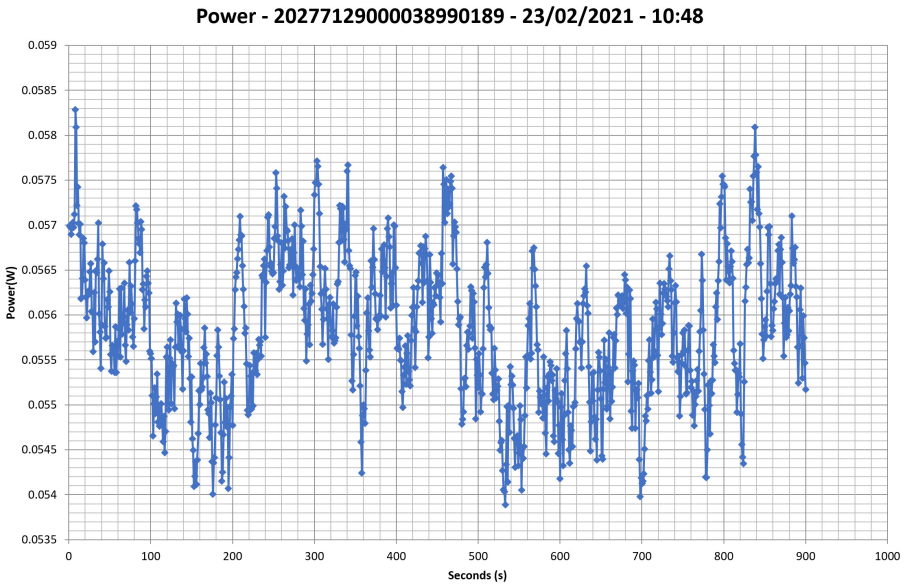
VAMPIRE POWER -230V



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COMMISSION REGULATION (EU) NO 617/2013 TESTING 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
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
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

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EFFICIENCY AND NOISE REPORT IN ACCORDANCE WITH
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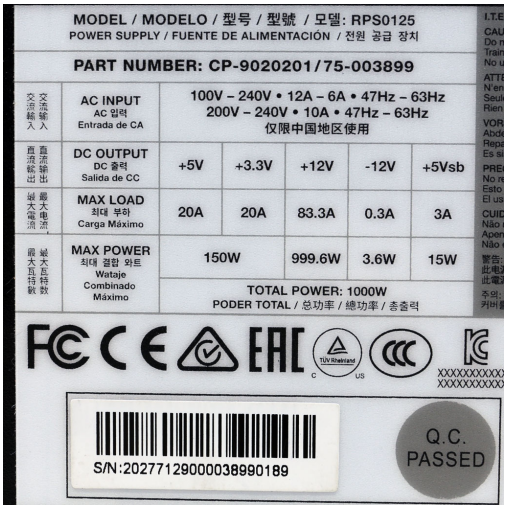
Corsair RM1000x (2021)

Top side


MODEL / MODELO / 型号 / 型號 / 모델: RPS0125
POWER SUPPLY / FUENTE DE ALIMENTACIÓN / 전원 공급 장치

PART NUMBER: CP-9020201/75-003899

交流输入	AC INPUT AC 입력 Entrada de CA	100V – 240V • 12A – 6A • 47Hz – 63Hz 200V – 240V • 10A • 47Hz – 63Hz 仅限中国地区使用				
直流输出	DC OUTPUT DC 출력 Salida de CC	+5V	+3.3V	+12V	-12V	+5Vsb
最大电流	MAX LOAD 최대 부하 Carga Máximo	20A	20A	83.3A	0.3A	3A
最大瓦特数	MAX POWER 최대 결합 와트 Wataje Combinado Máximo	150W		999.6W	3.6W	15W
		TOTAL POWER: 1000W PODER TOTAL / 总功率 / 總功率 / 총출력				

S/N:20277129000038990189

Q.C. PASSED

Power specifications label

CERTIFICATIONS 115V

CYBENETICS GOLD

CYBENETICS A-

CERTIFICATIONS 230V

CYBENETICS GOLD 230v

CYBENETICS A- 230v

Aristeidis Bitziopoulos
Lab Director