

Anex

Corsair CX550M (2021)

Lab ID#: CR55001811
Receipt Date: Feb 19, 2021
Test Date: Mar 18, 2021

Report: 21PS1811A
Report Date: Mar 18, 2021

DUT INFORMATION		DUT SPECIFICATIONS	
Brand	Corsair	Rated Voltage (Vrms)	100-240
Manufacturer (OEM)	Channel Well Technology	Rated Current (Arms)	10-5
Series	CX-M	Rated Frequency (Hz)	47-63
Model Number		Rated Power (W)	550
Serial Number		Type	ATX12V
DUT Notes		Cooling	120mm Rifle Bearing Fan (HA1225H12F-Z)
		Semi-Passive Operation	X
		Cable Design	Semi 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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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

115V

Average Efficiency	85.905%
Efficiency With 10W (≤500W) or 2% (>500W)	63.562
Average Efficiency 5VSB	79.355%
Standby Power Consumption (W)	0.0492382
Average PF	0.982
Avg Noise Output	20.20 dB(A)
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	A

230V

Average Efficiency	88.106%
Average Efficiency 5VSB	78.904%
Standby Power Consumption (W)	0.0916057
Average PF	0.952
Avg Noise Output	22.44 dB(A)
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	A

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	45.8	3	0.3
	Watts	120		549.6	15	3.6
Total Max. Power (W)		550				

HOLD-UP TIME & POWER OK SIGNAL (230V)

Hold-Up Time (ms)	11.1
AC Loss to PWR_OK Hold Up Time (ms)	8.8
PWR_OK Inactive to DC Loss Delay (ms)	2.3

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CABLES AND CONNECTORS

Native Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Caps
ATX connector 20+4 pin (610mm)	1	1	18-22AWG	No
4+4 pin EPS12V (670mm)	1	1	18AWG	No

Modular Cables

6+2 pin PCIe (600mm+150mm)	1	2	16-18AWG	No
SATA (350mm+110mm+110mm+110mm)	1	4	18AWG	No
SATA (480mm+110mm)	1	2	18AWG	No
4-pin Molex (450mm+100mm+100mm) / FDD (+100mm)	1	3 / 1	18-22AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	18AWG	-

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General Data	-
Manufacturer (OEM)	CWT
PCB Type	Single Sided
Primary Side	-
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV, 1x CAP200DG (Discharge IC)
Inrush Protection	NTC Thermistor SCK - 2R58 (2.5Ohm)
Bridge Rectifier(s)	1x GBU1506 (600V, 15A @ 100°C)
APFC MOSFETs	2x Champion GP18S50 (500V, 18A, Rds(on): 0.19Ohm)
APFC Boost Diode	1x ON Semiconductor FFSP0665A (650V, 6A @ 153°C)
Bulk Cap(s)	1x Nippon Chemi-Con (400V, 330uF, 2,000h @ 105°C, KMR)
Main Switchers	2x Silan Microelectronics SVF18N50F (500V, 11A @ 100°C, Rds(on): 0.31Ohm)
PFC/PWM Combo Controller	Champion CM6800TX & Champion CM03X
Topology	Primary side: APFC, Double Forward Secondary side: Semi-Synchronous Rectification (12V) & DC-DC converters (5V & 3.3V)
Secondary Side	-
+12V	2x Advanced Power AP6N6R0 FET & 2x PFC PFR20L60CT (60V, 20A @ 100°C) SBR
5V & 3.3V MOSFETs	2x UBIQ QM3054M6 (30V, 61A @ 100°C, Rds(on): 4.8mOhm) & 2x UBIQ QN3107M6N (30V, 70A @ 100°C, Rds(on): 2.6mOhm) PWM Controller: ANPEC APW7159C
Filtering Capacitors	Electrolytic: 10x Elite (2-5,000h @ 105°C, ED), 3x Elite (4-10,000h @ 105°C, EY), 1x Elite (2-5,000h @ 105°C, EK), 1x Nippon Chemi-Con (4-10,000h @ 105°C, KY), 1x Nippon Chemi-Con (1-5,000h @ 105°C, KZE), 2x Elite (2,000h @ 105°C, PF) Polymer: 7x APAQ, 2x Elite
Driver IC	Sync Power SP6019
Supervisor IC	INI1S429I - DCG (OVP, UVP, OCP, PG, SCP)
Fan Model	Hong Hua HA1225H12F-Z (120mm, 12V, 0.58A, Rifle Bearing Fan)
5VSB Circuit	-
Standby PWM Controller	Power Integrations TNY290PG

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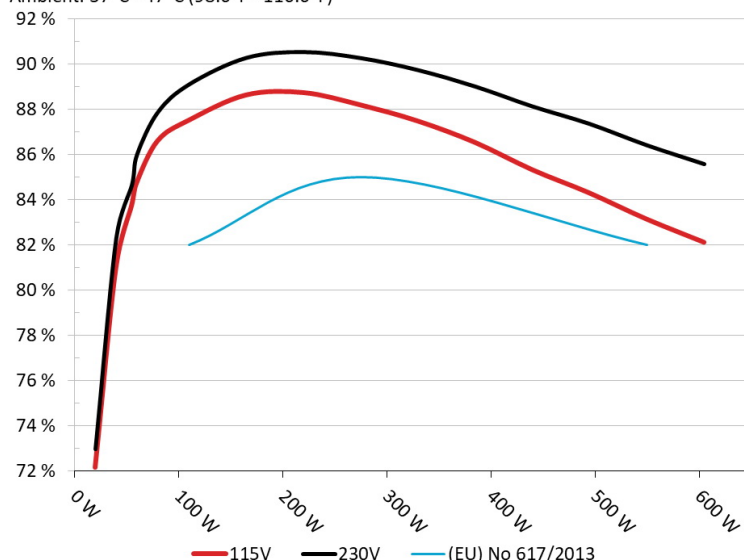
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Corsair CX550M

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



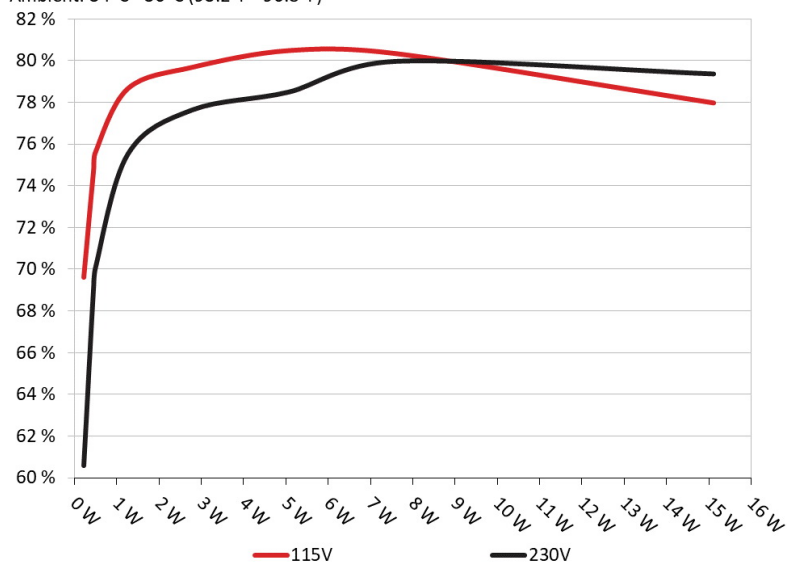
INFO

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 CX550M

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

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.229	69.605%	0.037
	5.096V	0.329		115.16V
2	0.090A	0.458	74.715%	0.067
	5.095V	0.613		115.15V
3	0.550A	2.797	79.687%	0.270
	5.087V	3.510		115.15V
4	1.000A	5.077	80.485%	0.348
	5.077V	6.308		115.15V
5	1.500A	7.601	80.340%	0.391
	5.068V	9.461		115.15V
6	2.999A	15.107	77.972%	0.449
	5.037V	19.375		115.15V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.229	60.582%	0.013
	5.096V	0.378		230.28V
2	0.090A	0.458	69.080%	0.022
	5.095V	0.663		230.28V
3	0.550A	2.797	77.651%	0.112
	5.086V	3.602		230.31V
4	1.000A	5.077	78.506%	0.180
	5.077V	6.467		230.28V
5	1.500A	7.601	79.977%	0.234
	5.068V	9.504		230.28V
6	2.999A	15.108	79.374%	0.323
	5.037V	19.034		230.28V

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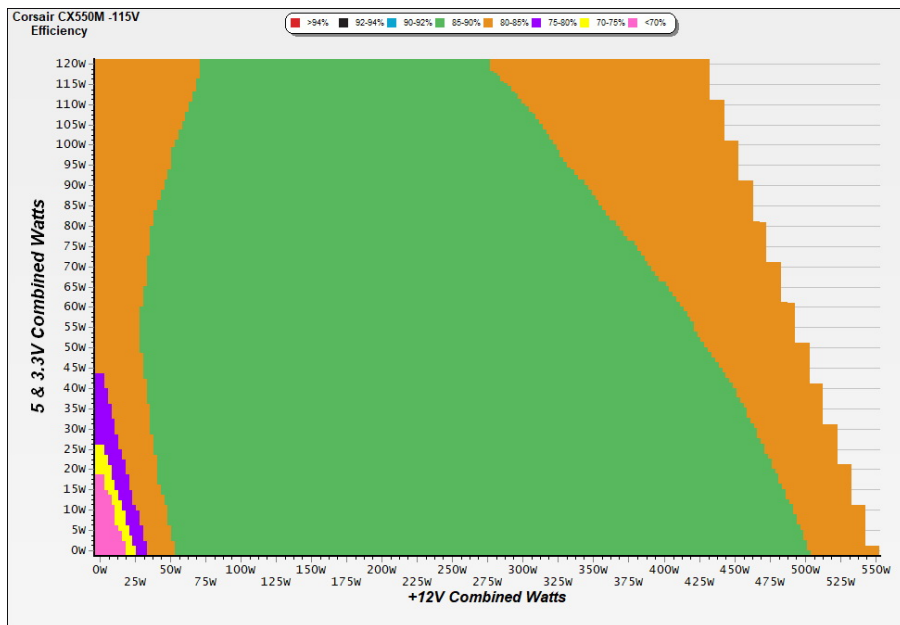
115V

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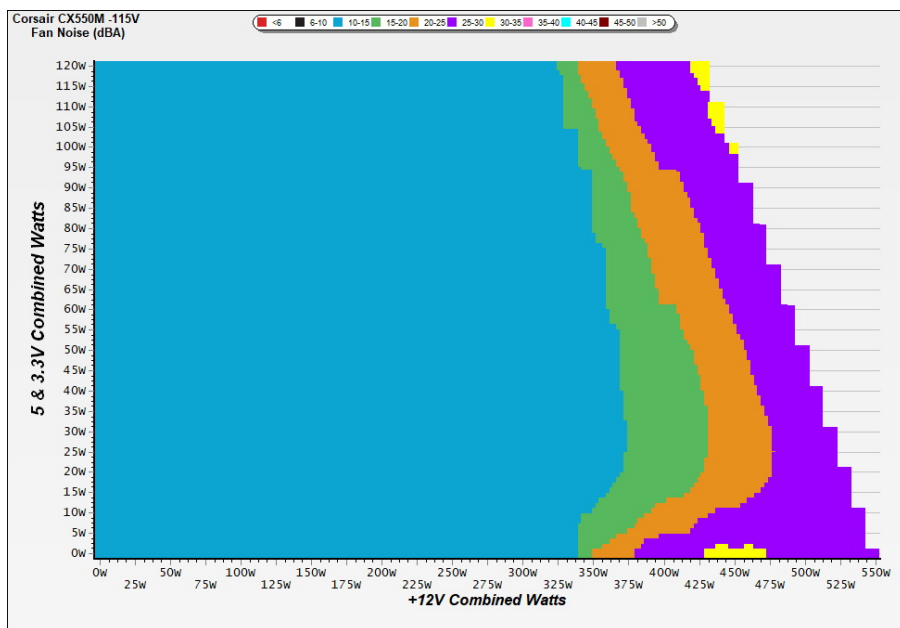
EFFICIENCY GRAPH 115V



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 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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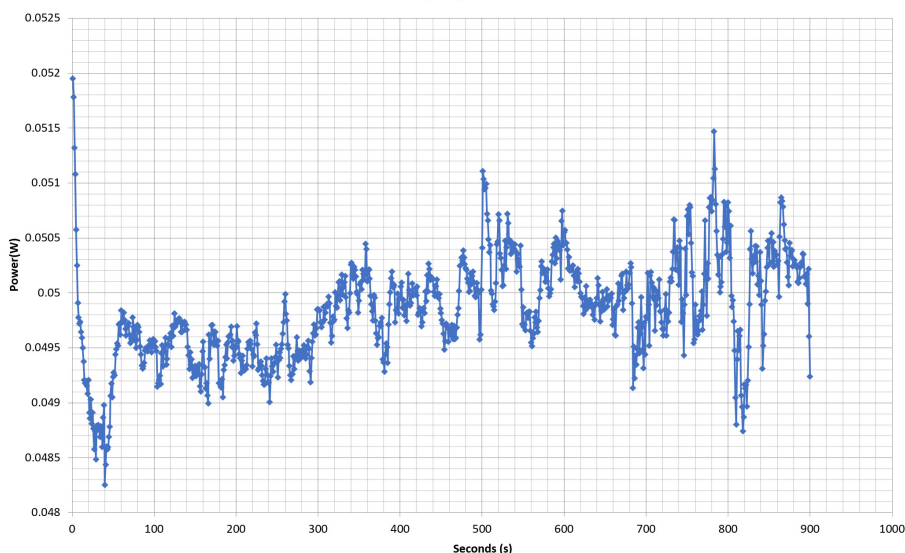
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VAMPIRE POWER -115V

Power - 11/03/2021 - 11:46



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

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Corsair CX550M (2021)

10-110% 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	2.734A	1.998A	1.986A	0.987A	54.945	83.749%	708	13.8	40.73°C	0.948
	12.195V	5.004V	3.327V	5.064V	65.607				44.70°C	115.11V
2	6.494A	2.999A	2.977A	1.188A	109.992	87.532%	712	14.0	41.03°C	0.972
	12.180V	5.002V	3.323V	5.052V	125.659				45.40°C	115.11V
3	10.599A	3.501A	3.476A	1.389A	164.983	88.651%	713	14.0	41.17°C	0.979
	12.165V	5.000V	3.320V	5.040V	186.104				46.37°C	115.11V
4	14.713A	4.002A	3.979A	1.591A	219.977	88.756%	717	14.2	41.68°C	0.985
	12.151V	4.998V	3.317V	5.027V	247.846				47.53°C	115.11V
5	18.497A	5.005A	4.978A	1.795A	274.963	88.207%	721	14.4	42.49°C	0.987
	12.135V	4.996V	3.314V	5.014V	311.724				48.85°C	115.12V
6	22.290A	6.007A	5.979A	2.000A	329.955	87.494%	725	14.6	42.38°C	0.988
	12.120V	4.995V	3.311V	4.999V	377.119				49.61°C	115.12V
7	26.100A	7.010A	6.988A	2.206A	385.033	86.542%	791	17.5	42.71°C	0.989
	12.104V	4.995V	3.307V	4.984V	444.910				50.86°C	115.12V
8	29.905A	8.003A	7.990A	2.414A	439.830	85.334%	1256	29.7	43.48°C	0.990
	12.088V	4.992V	3.303V	4.969V	515.422				52.52°C	115.13V
9	34.126A	8.517A	8.483A	2.419A	494.417	84.312%	1558	37.0	44.53°C	0.991
	12.071V	4.989V	3.300V	4.960V	586.412				54.23°C	115.13V
10	38.155A	9.024A	9.005A	3.037A	549.613	83.149%	1875	43.1	45.95°C	0.992
	12.054V	4.987V	3.297V	4.939V	660.999				56.12°C	115.13V
11	42.794A	9.026A	9.013A	3.042A	604.829	82.121%	2225	45.9	46.55°C	0.993
	12.038V	4.984V	3.294V	4.931V	736.507				57.35°C	115.12V
CL1	0.116A	14.000A	13.997A	0.000A	117.909	82.145%	744	15.3	42.74°C	0.975
	12.170V	5.010V	3.312V	5.046V	143.538				48.81°C	115.16V
CL2	45.819A	1.002A	1.000A	1.000A	565.920	83.746%	1865	43.4	45.24°C	0.993
	12.061V	4.988V	3.305V	4.994V	675.760				55.55°C	115.13V

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20-80W LOAD TESTS 115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.215A	0.499A	0.493A	0.197A	19.973	72.139%	699	13.4	0.876
	12.204V	5.008V	3.332V	5.088V	27.687				115.10V
2	2.432A	0.999A	0.991A	0.393A	39.963	81.016%	700	13.5	0.928
	12.199V	5.005V	3.329V	5.081V	49.327				115.10V
3	3.654A	1.499A	1.486A	0.591A	59.995	84.779%	702	13.6	0.947
	12.193V	5.003V	3.327V	5.073V	70.766				115.10V
4	4.870A	1.998A	1.984A	0.789A	79.947	86.620%	706	13.8	0.960
	12.188V	5.003V	3.326V	5.066V	92.296				115.11V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.90mV	10.80mV	12.30mV	11.30mV	Pass
20% Load	7.10mV	9.70mV	12.10mV	12.10mV	Pass
30% Load	7.30mV	7.90mV	8.60mV	17.40mV	Pass
40% Load	8.40mV	6.40mV	7.50mV	14.20mV	Pass
50% Load	9.80mV	6.40mV	6.90mV	15.40mV	Pass
60% Load	12.20mV	6.60mV	7.90mV	17.10mV	Pass
70% Load	12.70mV	7.50mV	8.60mV	17.50mV	Pass
80% Load	15.20mV	8.30mV	12.40mV	27.60mV	Pass
90% Load	17.80mV	8.80mV	12.40mV	29.60mV	Pass
100% Load	28.30mV	9.80mV	14.40mV	25.00mV	Pass
110% Load	32.90mV	10.60mV	15.50mV	25.70mV	Pass
Crossload1	11.90mV	11.90mV	14.90mV	14.00mV	Pass
Crossload2	30.20mV	8.20mV	12.70mV	19.20mV	Pass

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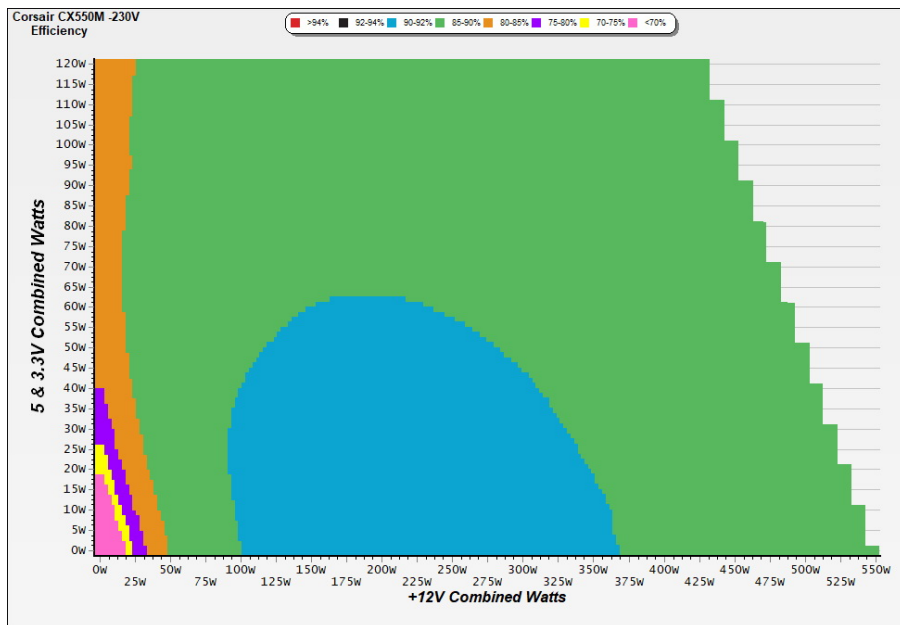
230V

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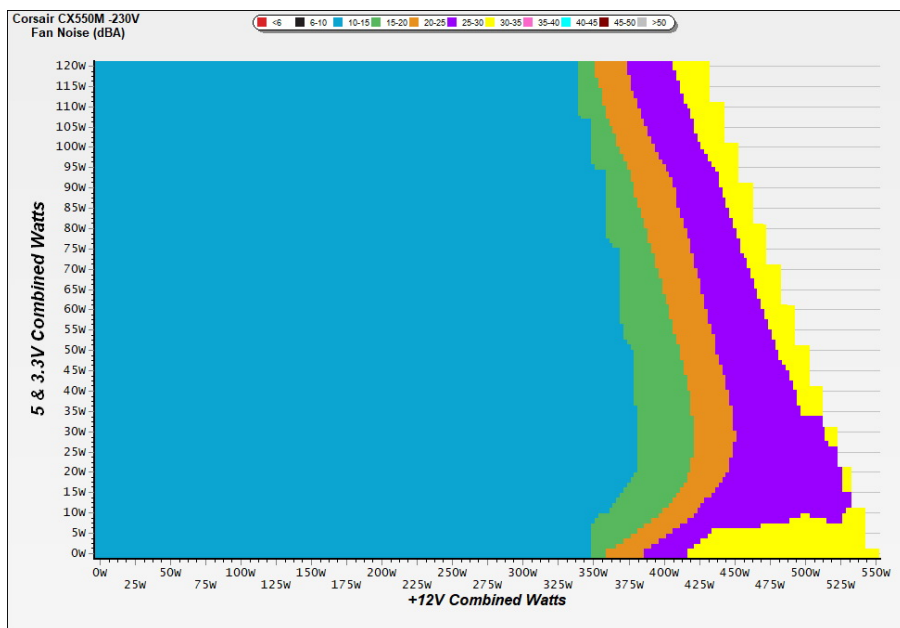
EFFICIENCY GRAPH 230V



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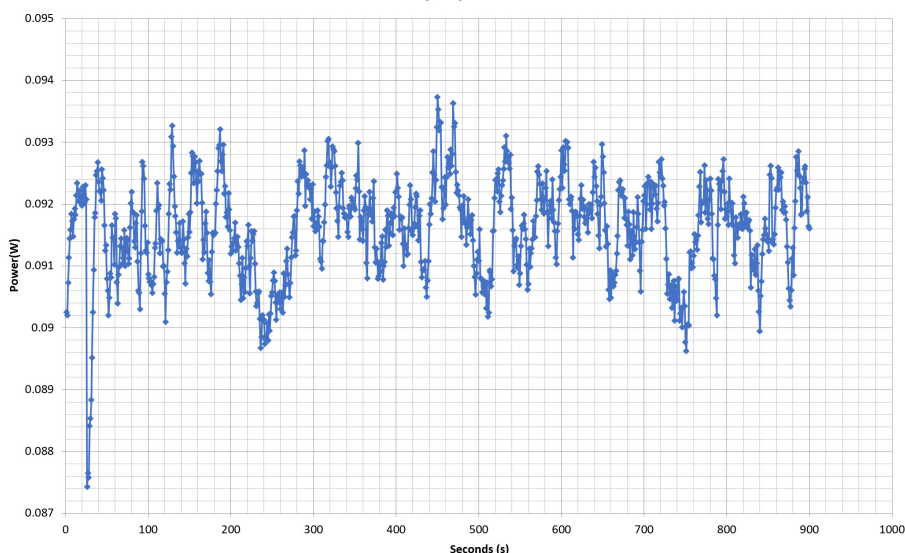
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10-110% LOAD TESTS 230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	2.734A	1.998A	1.986A	0.987A	54.946	84.659%	711	14.0	40.87°C	0.819
	12.195V	5.004V	3.327V	5.065V	64.903				44.27°C	230.23V
2	6.493A	3.001A	2.978A	1.187A	109.991	89.117%	715	14.1	40.92°C	0.910
	12.180V	5.002V	3.324V	5.052V	123.423				44.81°C	230.23V
3	10.598A	3.500A	3.476A	1.389A	164.979	90.293%	718	14.3	41.02°C	0.941
	12.166V	5.000V	3.321V	5.040V	182.715				46.00°C	230.22V
4	14.712A	4.000A	3.977A	1.591A	219.972	90.550%	722	14.4	41.66°C	0.957
	12.152V	4.999V	3.318V	5.028V	242.930				47.56°C	230.23V
5	18.493A	5.004A	4.978A	1.795A	274.958	90.279%	727	14.6	42.73°C	0.966
	12.137V	4.997V	3.315V	5.015V	304.564				48.98°C	230.23V
6	22.286A	6.005A	5.980A	2.000A	329.942	89.747%	733	14.9	42.77°C	0.973
	12.121V	4.997V	3.312V	5.000V	367.634				50.31°C	230.24V
7	26.096A	7.007A	6.983A	2.205A	385.011	89.019%	923	20.5	43.82°C	0.976
	12.106V	4.995V	3.308V	4.986V	432.505				52.06°C	230.24V
8	29.899A	8.002A	7.987A	2.413A	439.789	88.142%	1226	28.4	43.95°C	0.979
	12.089V	4.993V	3.304V	4.972V	498.954				52.87°C	230.24V
9	34.117A	8.515A	8.478A	2.417A	494.365	87.373%	1574	37.7	44.47°C	0.980
	12.073V	4.990V	3.301V	4.963V	565.810				53.75°C	230.24V
10	38.146A	9.022A	9.003A	3.035A	549.571	86.424%	1957	44.0	45.29°C	0.982
	12.056V	4.987V	3.298V	4.942V	635.900				55.58°C	230.24V
11	42.784A	9.027A	9.011A	3.040A	604.807	85.588%	2241	45.6	46.79°C	0.983
	12.040V	4.985V	3.295V	4.933V	706.649				57.54°C	230.24V
CL1	0.115A	13.999A	13.997A	0.001A	117.911	83.517%	748	15.5	42.90°C	0.924
	12.171V	5.011V	3.312V	5.047V	141.182				48.71°C	230.25V
CL2	45.821A	0.999A	0.999A	1.000A	565.929	87.077%	1974	43.6	45.02°C	0.983
	12.061V	4.988V	3.306V	4.996V	649.917				55.54°C	230.25V

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20-80W LOAD TESTS 230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.215A	0.499A	0.494A	0.197A	19.975	72.971%	700	13.5	0.594
	12.204V	5.008V	3.332V	5.088V	27.374				230.22V
2	2.432A	0.999A	0.990A	0.393A	39.963	82.323%	705	13.7	0.755
	12.199V	5.006V	3.330V	5.081V	48.544				230.21V
3	3.653A	1.499A	1.488A	0.591A	59.996	86.023%	707	13.8	0.832
	12.194V	5.004V	3.328V	5.073V	69.744				230.22V
4	4.870A	1.999A	1.983A	0.789A	79.948	87.888%	709	13.9	0.873
	12.188V	5.003V	3.326V	5.066V	90.966				230.22V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	7.30mV	11.10mV	12.70mV	10.90mV	Pass
20% Load	7.60mV	9.70mV	10.80mV	11.60mV	Pass
30% Load	7.70mV	7.90mV	8.60mV	16.00mV	Pass
40% Load	7.80mV	6.00mV	7.40mV	13.50mV	Pass
50% Load	9.10mV	6.30mV	7.60mV	14.60mV	Pass
60% Load	11.00mV	6.40mV	8.50mV	16.70mV	Pass
70% Load	12.90mV	7.30mV	9.20mV	18.60mV	Pass
80% Load	14.90mV	8.40mV	13.30mV	28.30mV	Pass
90% Load	16.60mV	9.10mV	12.90mV	30.30mV	Pass
100% Load	28.20mV	9.40mV	15.10mV	25.00mV	Pass
110% Load	32.00mV	10.60mV	15.60mV	25.40mV	Pass
Crossload1	11.70mV	11.20mV	15.50mV	13.40mV	Pass
Crossload2	28.70mV	8.10mV	11.90mV	19.60mV	Pass

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Anex

Corsair CX550M (2021)



Top side

MODEL / MODELO / 型号 / 型號 / 모델: RPS0137					
POWER SUPPLY / FUENTE DE ALIMENTACIÓN / 전원 공급 장치					
PART NUMBER: CP-9020220 / 75-004123					
交流輸入 교류輸入	AC INPUT AC 입력 Entrada de CA	100V - 240V • 10A - 5A • 47Hz - 63Hz			
直流輸出 직류輸出	DC OUTPUT DC 출력 Salida de CC	+3.3V	+5V	+12V	-12V +5Vsb
最大電流 最大電流	MAX LOAD 최대 부하 Carga Máximo	20A	20A	45.8A	0.3A 3A
最大瓦特數 最大瓦特數	MAX POWER 최대 결합 유효 Wattage Combinado Máximo	120W	549.6W	3.6W	15W
TOTAL POWER: 550W PODER TOTAL / 总功率 / 總功率					
<div><div><div>FC</div><div>CE</div><div></div><div>EAC</div><div></div><div></div></div><div>CUS</div></div>					

Power specifications label

CERTIFICATIONS 115V



CERTIFICATIONS 230V



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