EFFICIENCY AND NOISE LEVEL CERTIFICATIONS

Anex

Corsair CX550F RGB

Lab ID#: CR55001674
Receipt Date: Jun 29, 2020
Test Date: Jul 7, 2020

Report: 20PS1674A
Report Date: Jul 7, 2020

DUT INFORMATION

Brand	Corsair
Manufacturer (OEM)	HEC
Series	CX-F
Model Number	RPS0133
Serial Number	
DUT Notes	CP-9020225

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	47-63
Rated Power (W)	550
Type	ATX12V
Cooling	120mm Rifle Bearing Fan (NR120L)
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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RESULTS

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

115V

Average Efficiency	87.144%
Efficiency With 10W (≤500W) or 2% (>500W)	61.692
Average Efficiency 5VSB	78.614%
Standby Power Consumption (W)	0.0555526
Average PF	0.985
Avg Noise Output	30.73 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	Standard++

230V

Average Efficiency	89.172%
Average Efficiency 5VSB	78.180%
Standby Power Consumption (W)	0.0887277
Average PF	0.948
Avg Noise Output	30.43 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	Standard++

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)	16.4
AC Loss to PWR_OK Hold Up Time (ms)	13.1
PWR_OK Inactive to DC Loss Delay (ms)	3.3

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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	18-20AWG	No
4+4 pin EPS12V (650mm)	1	1	18AWG	No
6+2 pin PCIe (600mm+150mm)	1	2	16-18AWG	No
SATA (450mm+115mm+115mm+115mm)	1	4	18AWG	No
SATA (500mm+100mm+100mm)	1	3	18AWG	No
4 pin Molex (450mm+100mm+100mm+100mm)	1	4	18AWG	No
iCUE RGB cable (500mm)	1	1	28AWG	No
Motherboard ARGB cable (300mm)	1	1	28AWG	No
AC Power Cord (1380mm) - C13 coupler	1	1	18AWG	-

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General Data	-
Manufacturer (OEM)	HEC
PCB Type	Single Sided
Primary Side	**-**
Transient Filter	4x Y caps, 2x X caps, 1x CM chokes, 1x DM chokes, 1x MOV, 1x Discharge IC (CAP200DG)
Inrush Protection	NTC Thermistor SCK-037
Bridge Rectifier(s)	1x GBU10K (800V, 10A @ 100°C)
APFC MOSFETs	2x Infineon IPA60R280P7S (650V, 8A @ 100°C, 0.28Ohm)
APFC Boost Diode	1x Cree C3D04060A (600V, 4A @ 160°C)
Hold-up Cap(s)	1x Hitachi (400V, 330uF, 2,000h @ 105°C, HU)
Main Switchers	2x Champion GPT18N50DG (500V, 18A , 0.27Ohm)
APFC Controller	Champion CM6500UNX & Champion CM03X
IC Driver	MPS MP6924A
Resonant Controller	MPS HR1001C
Topology	Primary side: APFC, Half-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	**-**
+12V MOSFETs	4x Nexperia PSMN8R3-40YS (40V, 50A @ 100°C, 16mOhm @ 175°C)
5V & 3.3V	DC-DC Converters: 8x Potens Semiconductor PDD3906 (30V, 51A @ 100°C, 6mOhm) PWM Controllers: ANPEC APW7073
Filtering Capacitors	Electrolytic: 12x Teapo (1-3,000h @ 105°C, SC) , 2x Nippon Chemi-Con (1-5,000h @ 105°C, KZE) Polymer: 16x Teapo
Supervisor IC	Weltrend WT7527 (OCP, OVP, UVP, SCP, PG)
Fan Model	Corsair NR120L (120mm, 12V, 0.22A, RGB, Rifle Bearing Fan)
5VSB Circuit	**-**
Rectifier	1x PS1060L SBR (60V, 10A)
Standby PWM Controller	Power Integrations TNY290PG
-12V	**-**
Rectifier	1x KEC KIA7912PI (-12V, 1A)

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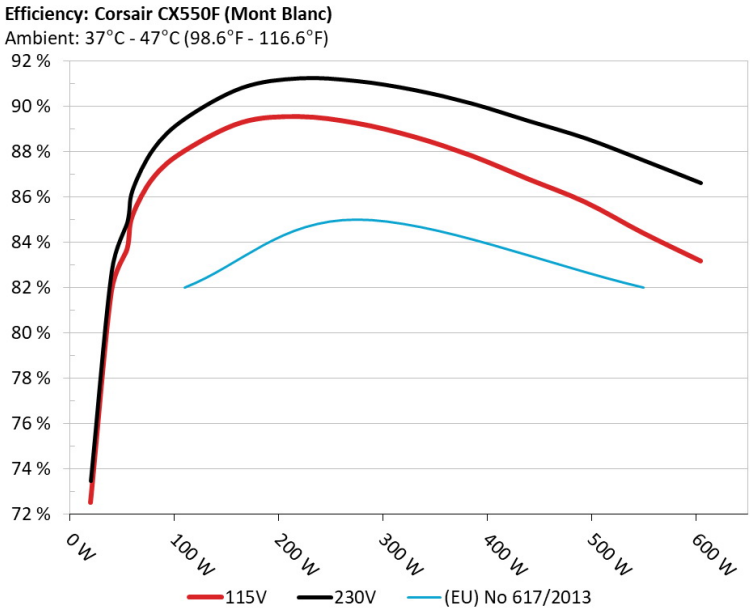
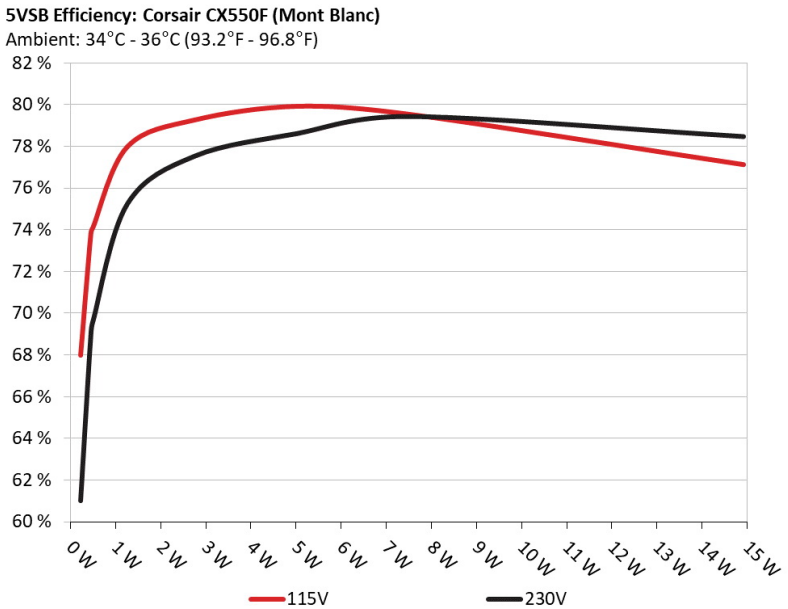
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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	0.227	67.964%	0.056
	5.048V	0.334		115.16V
2	0.090A	0.454	73.821%	0.098
	5.046V	0.615		115.16V
3	0.550A	2.768	79.267%	0.314
	5.034V	3.492		115.15V
4	1.000A	5.022	79.917%	0.376
	5.022V	6.284		115.16V
5	1.500A	7.514	79.530%	0.410
	5.010V	9.448		115.16V
6	2.999A	14.912	77.116%	0.456
	4.972V	19.337		115.16V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.227	61.022%	0.019
	5.048V	0.372		230.31V
2	0.090A	0.454	68.997%	0.033
	5.046V	0.658		230.31V
3	0.550A	2.768	77.535%	0.154
	5.034V	3.570		230.31V
4	1.000A	5.022	78.604%	0.229
	5.022V	6.389		230.31V
5	1.500A	7.515	79.423%	0.279
	5.010V	9.462		230.30V
6	2.999A	14.913	78.461%	0.351
	4.972V	19.007		230.31V

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115V

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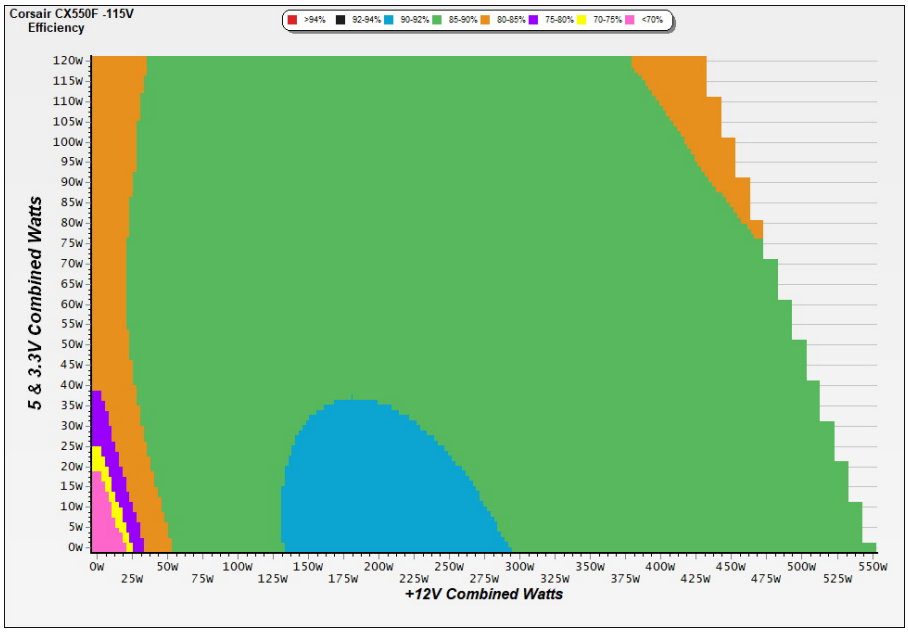
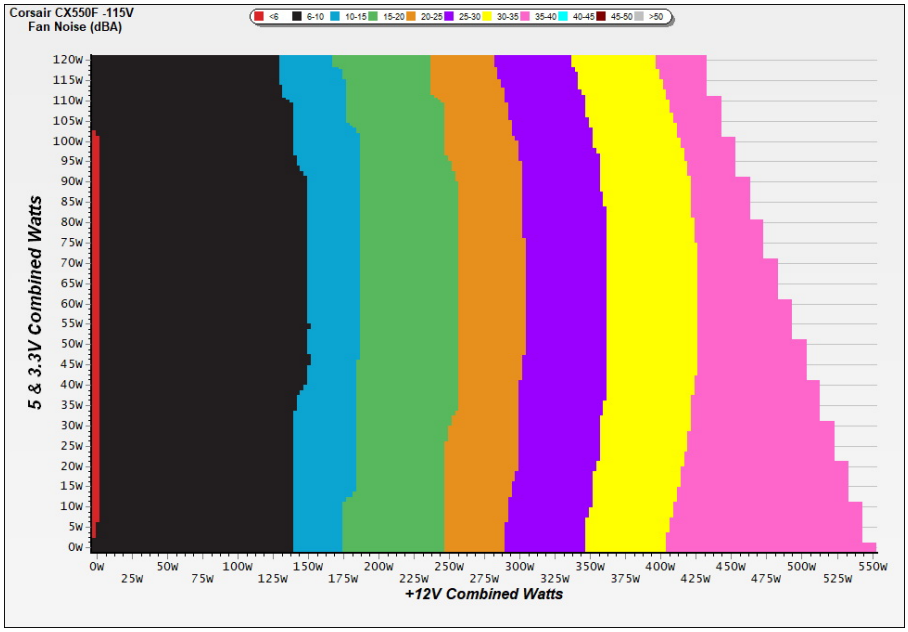
EFFICIENCY GRAPH 115V



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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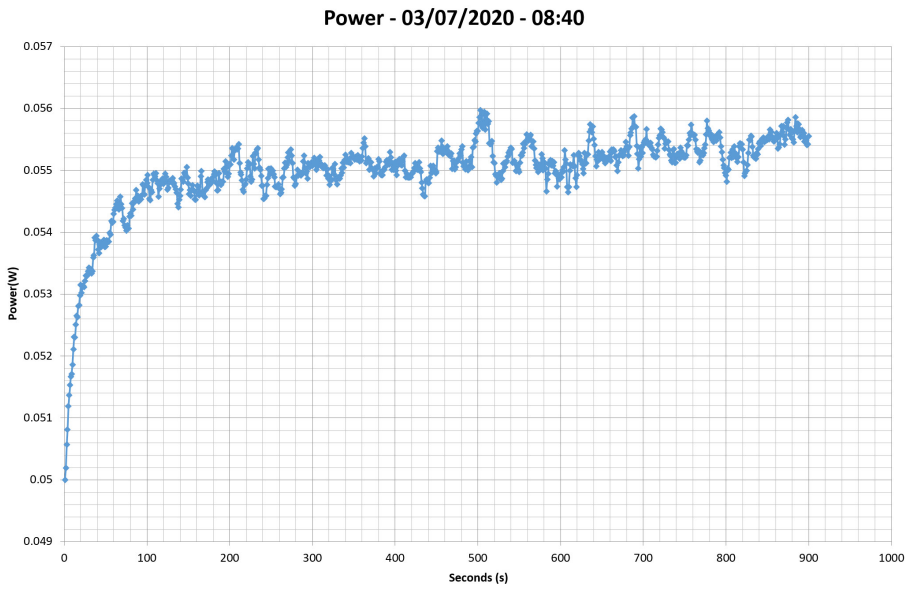
Corsair CX550F RGB

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

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Corsair CX550F RGB

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	2.749A	1.979A	1.983A	0.997A	54.954	83.695%	612	10.7	40.39°C	0.976
	12.132V	5.053V	3.329V	5.016V	65.660				45.53°C	115.15V
2	6.535A	2.978A	2.981A	1.199A	110.012	88.042%	632	11.9	40.59°C	0.976
	12.106V	5.038V	3.320V	5.003V	124.954				46.49°C	115.15V
3	10.670A	3.482A	3.488A	1.403A	165.003	89.304%	674	16.0	41.53°C	0.979
	12.085V	5.027V	3.312V	4.990V	184.765				47.88°C	115.15V
4	14.821A	3.988A	3.993A	1.607A	220.001	89.561%	733	17.0	41.68°C	0.985
	12.064V	5.016V	3.305V	4.978V	245.644				48.64°C	115.15V
5	18.643A	5.001A	5.008A	1.813A	274.989	89.270%	810	22.2	42.25°C	0.989
	12.041V	5.000V	3.296V	4.963V	308.043				50.44°C	115.15V
6	22.480A	6.021A	6.026A	2.000A	329.879	88.670%	921	25.7	43.06°C	0.989
	12.018V	4.984V	3.287V	4.949V	372.030				52.24°C	115.15V
7	26.346A	7.048A	7.051A	2.229A	385.052	87.836%	1045	30.8	43.55°C	0.989
	11.992V	4.967V	3.277V	4.934V	438.378				53.65°C	115.15V
8	30.211A	8.003A	8.081A	2.439A	439.550	86.802%	1217	36.2	43.72°C	0.990
	11.967V	4.950V	3.267V	4.920V	506.382				54.85°C	115.14V
9	34.497A	8.608A	8.589A	2.443A	494.460	85.775%	1413	39.5	44.58°C	0.991
	11.942V	4.937V	3.260V	4.912V	576.461				56.34°C	115.14V
10	38.603A	9.137A	9.133A	3.069A	549.683	84.415%	1667	43.9	45.88°C	0.992
	11.916V	4.925V	3.251V	4.887V	651.170				58.08°C	115.15V
11	43.332A	9.150A	9.150A	3.073A	604.871	83.177%	1896	46.8	46.62°C	0.993
	11.889V	4.919V	3.245V	4.880V	727.213				59.28°C	115.14V
CL1	0.100A	14.001A	13.999A	0.000A	116.082	83.017%	1027	29.9	42.34°C	0.973
	12.114V	4.923V	3.282V	4.999V	139.829				50.02°C	115.17V
CL2	45.830A	1.000A	1.001A	1.000A	558.730	84.924%	1680	44.6	45.15°C	0.992
	11.902V	5.011V	3.281V	4.965V	657.918				58.61°C	115.14V

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Corsair CX550F RGB

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	1.221A	0.494A	0.494A	0.198A	19.982	72.501%	546	6.5	0.927
	12.146V	5.071V	3.337V	5.044V	27.561				115.15V
2	2.445A	0.987A	0.990A	0.397A	39.972	81.829%	567	8.0	0.968
	12.137V	5.064V	3.334V	5.036V	48.848				115.15V
3	3.674A	1.482A	1.486A	0.597A	60.003	85.157%	588	8.9	0.980
	12.128V	5.058V	3.330V	5.027V	70.462				115.15V
4	4.898A	1.980A	1.986A	0.797A	79.955	86.854%	610	10.4	0.981
	12.117V	5.051V	3.326V	5.019V	92.057				115.15V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	14.10mV	8.00mV	7.50mV	11.20mV	Pass
20% Load	13.70mV	7.40mV	10.40mV	9.10mV	Pass
30% Load	13.50mV	8.10mV	8.50mV	10.90mV	Pass
40% Load	14.40mV	8.20mV	9.00mV	10.40mV	Pass
50% Load	18.30mV	8.80mV	9.40mV	12.20mV	Pass
60% Load	18.40mV	9.50mV	10.40mV	13.90mV	Pass
70% Load	22.80mV	9.20mV	12.40mV	13.70mV	Pass
80% Load	24.30mV	10.40mV	14.20mV	16.80mV	Pass
90% Load	29.70mV	11.00mV	14.20mV	17.40mV	Pass
100% Load	45.80mV	14.00mV	16.80mV	21.10mV	Pass
110% Load	52.30mV	14.40mV	17.10mV	21.70mV	Pass
Crossload1	19.00mV	10.90mV	17.50mV	7.40mV	Pass
Crossload2	44.20mV	11.70mV	12.70mV	15.70mV	Pass

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230V

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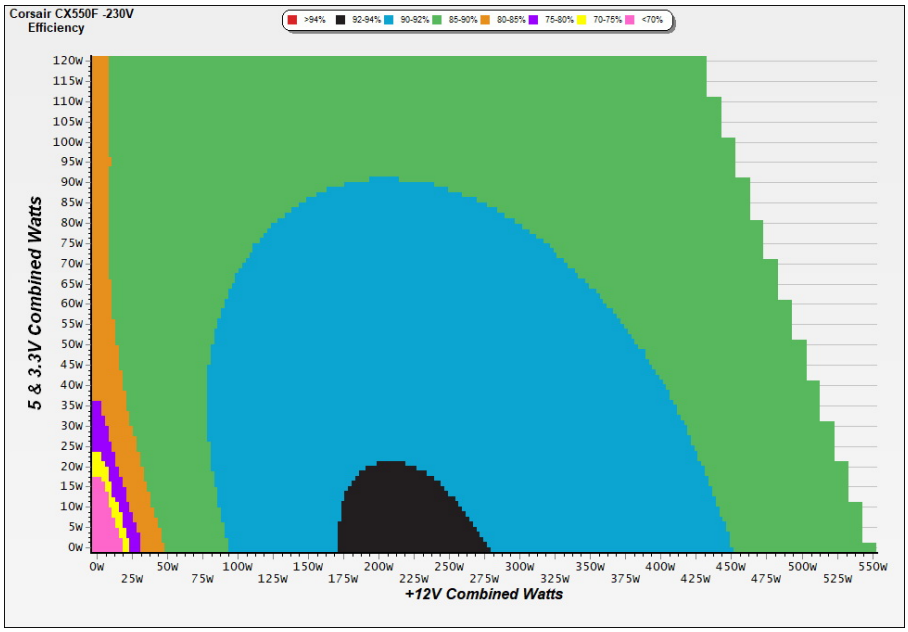
EFFICIENCY GRAPH 230V



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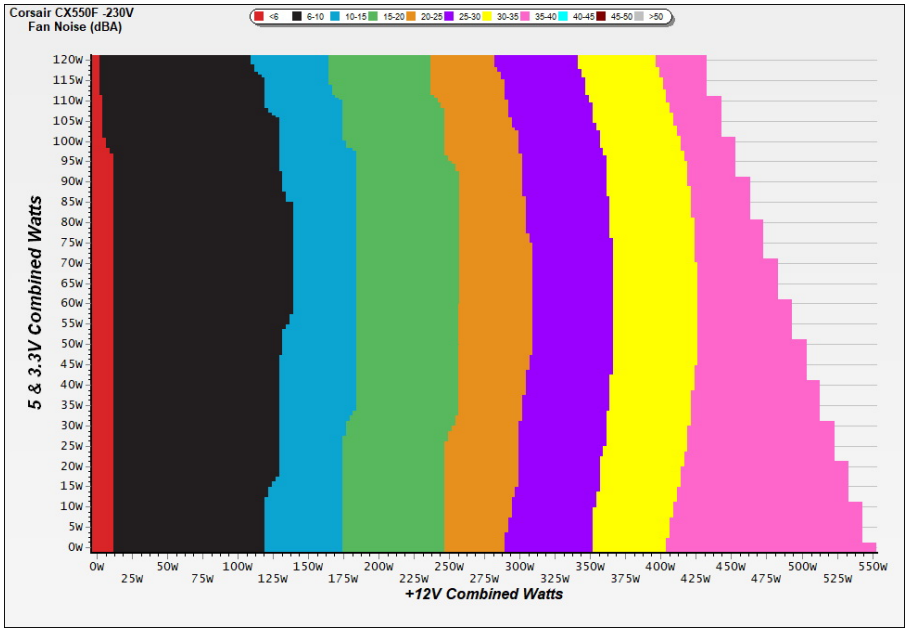
NOISE GRAPH 230V



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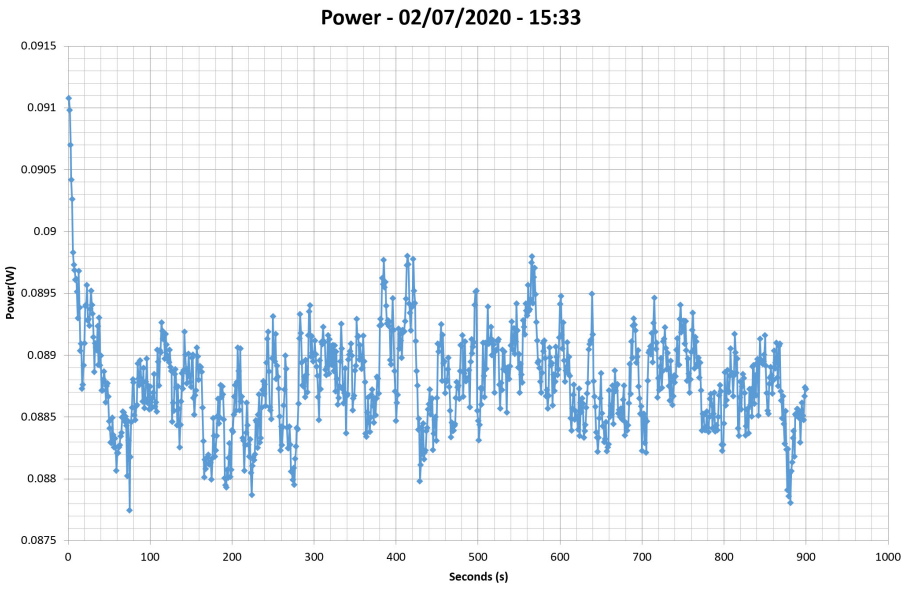
Corsair CX550F RGB

VAMPIRE POWER -230V



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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	2.749A	1.980A	1.983A	0.997A	54.955	84.894%	615	11.0	40.00°C	0.834
	12.133V	5.052V	3.328V	5.015V	64.734				44.28°C	230.31V
2	6.535A	2.978A	2.983A	1.200A	110.018	89.459%	650	12.6	40.95°C	0.901
	12.107V	5.036V	3.319V	5.001V	122.981				45.97°C	230.31V
3	10.670A	3.483A	3.488A	1.403A	165.010	90.834%	690	15.4	41.49°C	0.934
	12.086V	5.025V	3.312V	4.988V	181.662				47.31°C	230.31V
4	14.820A	3.988A	3.996A	1.608A	220.007	91.251%	730	16.9	41.50°C	0.956
	12.065V	5.015V	3.304V	4.976V	241.101				48.55°C	230.31V
5	18.642A	5.003A	5.008A	1.814A	274.998	91.130%	807	22.0	42.39°C	0.965
	12.042V	4.999V	3.295V	4.961V	301.765				50.44°C	230.31V
6	22.481A	6.023A	6.028A	2.000A	329.886	90.736%	919	25.6	42.57°C	0.966
	12.018V	4.982V	3.286V	4.947V	363.565				51.76°C	230.31V
7	26.346A	7.051A	7.054A	2.230A	385.063	90.139%	1044	30.8	43.79°C	0.968
	11.992V	4.966V	3.276V	4.932V	427.187				53.73°C	230.31V
8	30.217A	8.000A	8.082A	2.440A	439.572	89.369%	1210	35.2	43.93°C	0.970
	11.966V	4.950V	3.266V	4.918V	491.861				54.00°C	230.32V
9	34.505A	8.609A	8.593A	2.444A	494.485	88.598%	1411	39.5	44.35°C	0.971
	11.940V	4.937V	3.258V	4.909V	558.119				55.32°C	230.32V
10	38.613A	9.140A	9.137A	3.071A	549.699	87.629%	1626	43.4	45.49°C	0.973
	11.913V	4.924V	3.250V	4.885V	627.306				57.29°C	230.32V
11	43.345A	9.152A	9.155A	3.075A	604.898	86.628%	1879	46.2	46.54°C	0.975
	11.886V	4.917V	3.244V	4.878V	698.272				59.31°C	230.33V
CL1	0.100A	14.001A	13.999A	0.000A	116.068	84.519%	1009	29.2	42.87°C	0.899
	12.112V	4.922V	3.282V	4.997V	137.327				51.08°C	230.33V
CL2	45.829A	1.000A	0.999A	1.000A	558.614	88.227%	1624	43.4	45.43°C	0.974
	11.900V	5.010V	3.280V	4.963V	633.156				57.51°C	230.33V

Anex

Corsair CX550F RGB

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	1.221A	0.494A	0.494A	0.198A	19.985	73.469%	586	8.8	0.602
	12.148V	5.071V	3.337V	5.043V	27.202				230.31V
2	2.445A	0.987A	0.989A	0.397A	39.974	82.726%	586	8.8	0.773
	12.139V	5.064V	3.333V	5.035V	48.321				230.30V
3	3.673A	1.484A	1.486A	0.597A	60.005	86.318%	587	8.9	0.846
	12.130V	5.057V	3.329V	5.026V	69.516				230.30V
4	4.897A	1.981A	1.987A	0.797A	79.956	88.123%	608	10.3	0.881
	12.119V	5.050V	3.325V	5.017V	90.732				230.31V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	16.00mV	7.30mV	7.80mV	11.60mV	Pass
20% Load	15.50mV	7.60mV	10.20mV	9.40mV	Pass
30% Load	15.50mV	7.80mV	8.70mV	11.60mV	Pass
40% Load	16.80mV	8.60mV	9.10mV	10.40mV	Pass
50% Load	18.60mV	8.40mV	9.50mV	12.10mV	Pass
60% Load	20.10mV	8.80mV	10.80mV	13.10mV	Pass
70% Load	21.30mV	9.10mV	11.70mV	13.70mV	Pass
80% Load	23.40mV	9.90mV	14.20mV	16.80mV	Pass
90% Load	29.00mV	10.70mV	14.50mV	17.40mV	Pass
100% Load	49.80mV	13.40mV	16.20mV	21.90mV	Pass
110% Load	54.80mV	13.30mV	16.60mV	22.10mV	Pass
Crossload1	20.30mV	11.10mV	17.70mV	7.50mV	Pass
Crossload2	47.70mV	12.00mV	12.90mV	15.30mV	Pass

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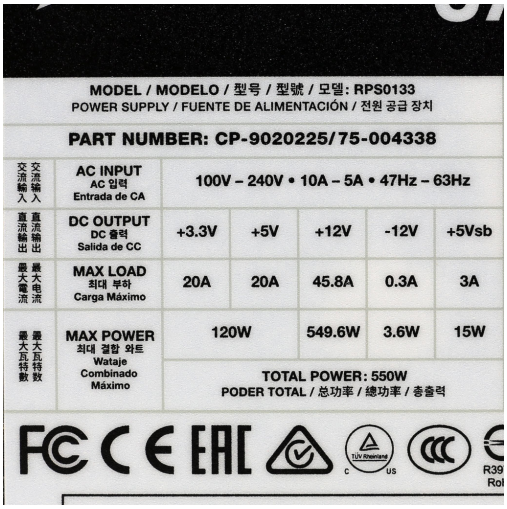
Anex

Corsair CX550F RGB

Top side


MODEL / MODELO / 型号 / 型號 / 모델: RPS0133
POWER SUPPLY / FUENTE DE ALIMENTACIÓN / 전원 공급 장치

PART NUMBER: CP-9020225/75-004338

交流輸入	AC INPUT AC 입력 Entrada de CA	100V – 240V • 10A – 5A • 47Hz – 63Hz				
直流輸出	DC OUTPUT DC 출력 Salida de CC	+3.3V	+5V	+12V	-12V	+5Vsb
最大電流	MAX LOAD 최대 부하 Carga Máximo	20A	20A	45.8A	0.3A	3A
最大瓦特數	MAX POWER 최대 결합 와트 Wataje Combinado Máximo	120W		549.6W	3.6W	15W
		TOTAL POWER: 550W PODER TOTAL / 总功率 / 總功率 / 총출력				

Power specifications label

CERTIFICATIONS 115V

CERTIFICATIONS 230V

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