

Anex

Corsair SF450 Platinum

Lab ID#: 349

Receipt Date: -

Test Date: -

Report: 19PS349A

Report Date: Dec 4, 2018

DUT INFORMATION		DUT SPECIFICATIONS	
Brand	Corsair	Rated Voltage (Vrms)	100-240
Manufacturer (OEM)	Great Wall	Rated Current (Arms)	10-5
Series	SF Platinum	Rated Frequency (Hz)	47-63
Model Number	SF450 Platinum	Rated Power (W)	450
Serial Number		Type	SFX
DUT Notes	RPS0111	Cooling	92mm Rifle Bearing Fan (NR092L)
		Semi-Passive Operation	✓
		Cable Design	Fully Modular

POWER SPECIFICATIONS						
Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	15	20	37.5	2.5	0.3
	Watts	100		450	12.5	3.6
Total Max. Power (W)		450				

CABLES AND CONNECTORS				
Modular Cables				
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (300mm)	1	1	16-18AWG	No
4+4 pin EPS12V (400mm)	1	1	16AWG	No
6+2 pin PCIe (700mm)	2	2	16AWG	No
SATA (100mm+105mm+105mm+105mm)	1	4	18AWG	No
4 pin Molex (100mm+105mm+105mm)	1	3	18AWG	No
AC Power Cord (1400mm)	1	1	18AWG	-

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General Data	
Manufacturer (OEM)	Great Wall
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 3x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor & Relay
Bridge Rectifier(s)	1x GBU25KH (800V, 25A @ 125 °C)
APFC MOSFET	1x Infineon IPZ60R099C7 (650V, 14A @ 100°C, 0.0990hm)
APFC Boost Diode	1x Infineon IDH06G65C6 (600V, 6A @ 145°C)
Hold-up Cap(s)	1x Nippon Chemi-Con (420V, 420uF, 2000h @ 105 °C, KMW)
Main Switchers	2x STMicroelectronics STP24N60DM2 (650V, 14A @ 100°C, 0.20hm)
Driver IC	Silicon Labs Si8230BD
APFC Controller	Champion CM6502UHHX & CM03AX Green PFC controller
Resonant Controller	Champion CM6901X
Topology	Primary side: Half-Bridge & LLC Resonant Controller Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	2x Infineon BSC014N04LS (40V, 100A @ 100°C, 1.4mOhm)
5V & 3.3V	DC-DC Converters: 4x Nexperia PSMN2R0-30YL (30V, 100A @ 25°C, 2mOhm) PWM Controller: Anpec APW7159C
Filtering Capacitors	Electrolytics: 2x Nippon Chemi-Con (4-10,000h @ 105°C, KY), 1x Rubycon (3-6,000h @ 105°C, YXJ) Polymers: Nippon Chemi-Con
Supervisor IC	IN1S429I -SCG
Fan Control MCU	PIC16F1824
Fan Model	Corsair NR092L (92mm, 12V, 0.22A, 3950 RPM, rifle bearing)
5VSB Circuit	
Rectifier	1x CSD18534 FET (60V, 69A @ 25 °C, 7.8mOhm)
Standby PWM Controller	Infineon ICE5QR1680AG

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RESULTS	
Temperature Range (°C /°F)	30-32 / 86-89.6
Average Efficiency	91.135
Efficiency With 10W (≤500W) or 2% (>500W) Load -115V	0.000
Average Efficiency 5VSB	83.390
Standby Power Consumption (W) -115V	0.0426454
Standby Power Consumption (W) -230V	0.0662240
Average PF	0.985
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
Avg Noise Output	22.34
Efficiency Rating (ETA)	TITANIUM
Noise Rating (LAMBDA)	A

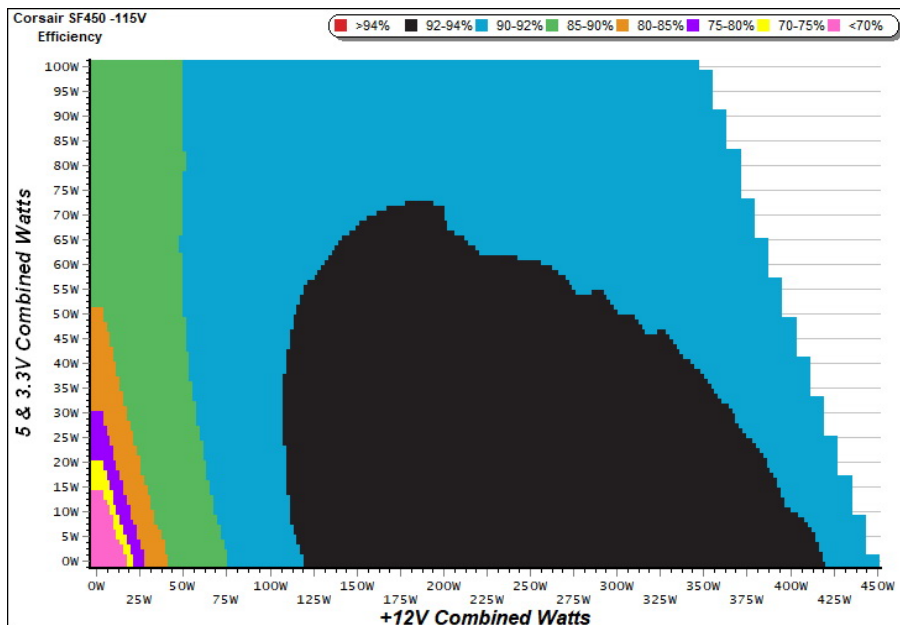
TEST EQUIPMENT		
Electronic Loads	Chroma 6314A x2 63123A x6 63102A 63101A	Chroma 63601-5 x2 Chroma 63600-2 63640-80-80 x10 63610-80-20
AC Sources	Chroma 6530, Chroma 61604	
Power Analyzers	N4L PPA1530, N4L PPA5530	
Oscilloscopes	Picoscope 4444 & 3424, Keysight DSOX3024A, Rigol DS2072A	
Voltmeter	Keithley 2015 THD 6.5 Digit	
Sound Analyzer	Bruel & Kjaer 2250-L G4	
Microphone	Bruel & Kjaer Type 4955-A, Bruel & Kjaer Type 4189	
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2	

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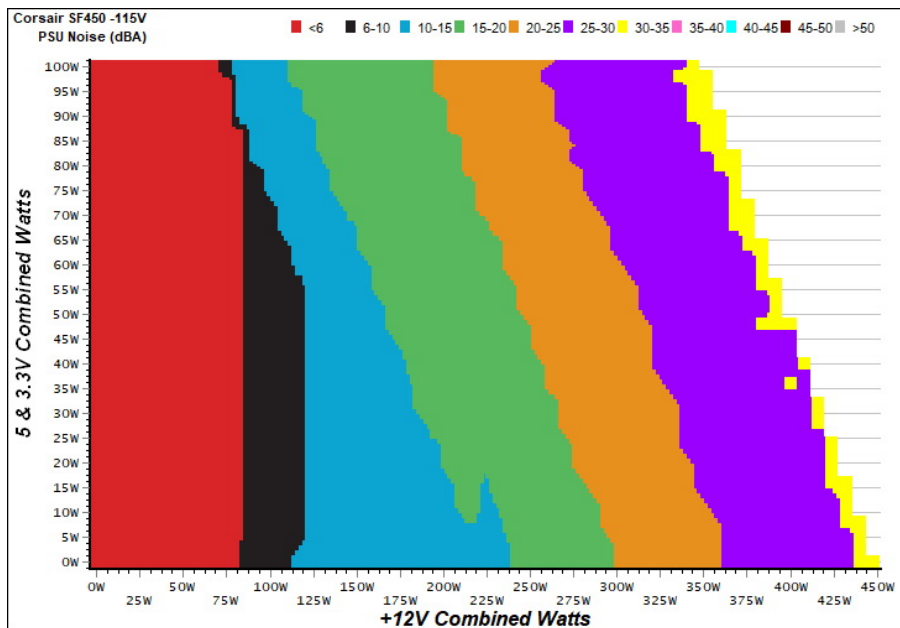
EFFICIENCY GRAPH



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



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

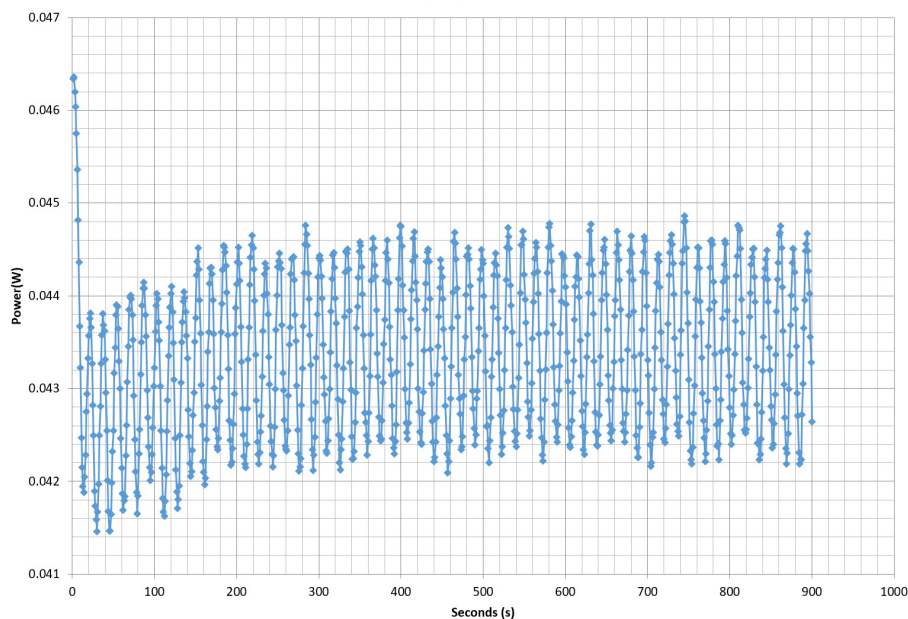
Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.227	66.374%	0.043
	5.042V	0.342		115.39V
2	0.090A	0.454	72.524%	0.078
	5.041V	0.626		115.38V
3	0.550A	2.771	85.630%	0.290
	5.036V	3.236		115.39V
4	1.000A	5.032	85.564%	0.378
	5.031V	5.881		115.38V
5	1.500A	7.540	84.567%	0.426
	5.026V	8.916		115.37V
6	2.500A	12.539	84.495%	0.471
	5.015V	14.840		115.37V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.227	59.580%	0.015
	5.042V	0.381		230.81V
2	0.090A	0.454	66.084%	0.027
	5.042V	0.687		230.81V
3	0.550A	2.770	83.283%	0.122
	5.037V	3.326		230.81V
4	1.000A	5.032	85.086%	0.196
	5.032V	5.914		230.81V
5	1.500A	7.540	85.006%	0.257
	5.026V	8.870		230.80V
6	2.500A	12.539	85.068%	0.331
	5.016V	14.740		230.80V

VAMPIRE POWER -115V

Power - 10/04/2018 - 08:44



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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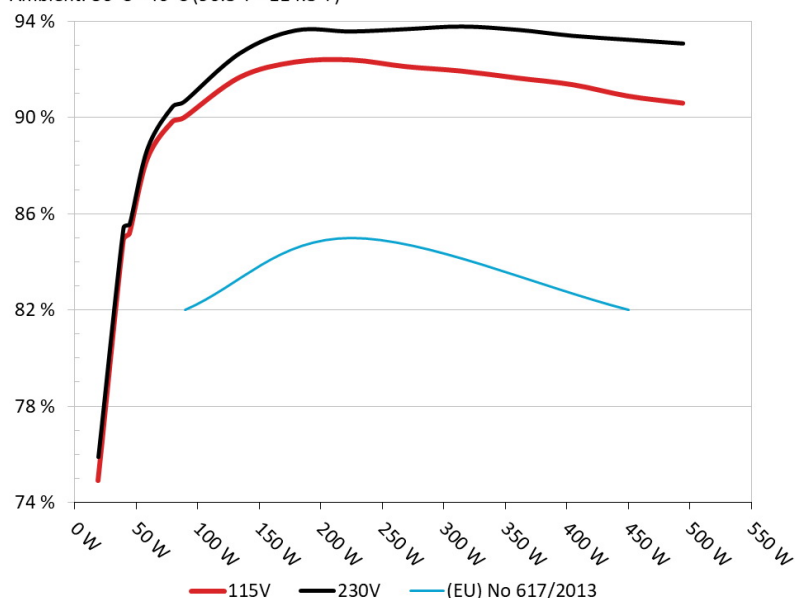
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Corsair SF450 Platinum

Ambient: 36°C - 46°C (96.8°F - 114.8°F)



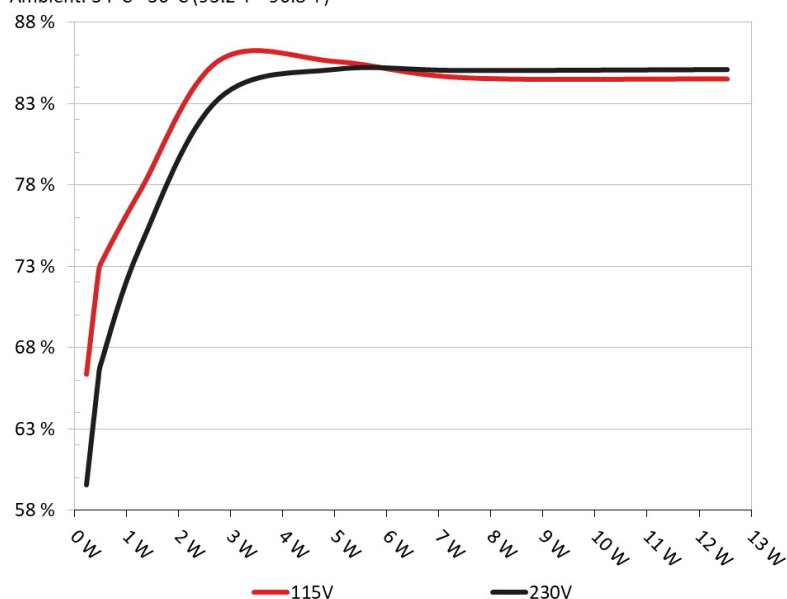
INFO

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 SF450 Platinum

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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10-110% LOAD TESTS

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	1.920A	1.976A	1.970A	0.995A	44.731	85.171%	0	<6.0	45.66°C	0.965
	12.060V	5.050V	3.347V	5.028V	52.519				38.37°C	115.30V
2	4.837A	2.969A	2.956A	1.194A	89.221	90.006%	0	<6.0	46.35°C	0.980
	12.060V	5.050V	3.347V	5.024V	99.128				38.96°C	115.25V
3	8.153A	3.465A	3.433A	1.395A	134.321	91.677%	0	<6.0	47.28°C	0.979
	12.061V	5.050V	3.346V	5.019V	146.515				39.54°C	115.20V
4	11.471A	3.960A	3.945A	1.595A	179.545	92.315%	0	<6.0	48.47°C	0.983
	12.061V	5.049V	3.346V	5.015V	194.492				40.43°C	115.14V
5	14.464A	4.953A	4.933A	1.796A	224.847	92.401%	1367	15.0	41.44°C	0.986
	12.054V	5.048V	3.344V	5.011V	243.338				49.73°C	115.08V
6	17.384A	5.942A	5.922A	1.998A	269.353	92.123%	1466	17.0	41.67°C	0.989
	12.055V	5.047V	3.343V	5.006V	292.384				50.30°C	115.01V
7	20.368A	6.934A	6.909A	2.200A	314.654	91.937%	1678	21.0	42.40°C	0.991
	12.056V	5.047V	3.343V	5.002V	342.250				51.23°C	115.05V
8	23.357A	7.925A	7.900A	2.402A	359.970	91.649%	1897	24.6	43.76°C	0.993
	12.055V	5.047V	3.342V	4.997V	392.770				53.01°C	114.99V
9	26.746A	8.422A	8.381A	2.403A	404.898	91.372%	2066	27.0	44.25°C	0.994
	12.054V	5.046V	3.341V	4.995V	443.132				53.94°C	114.92V
10	30.064A	8.919A	8.891A	2.504A	449.602	90.900%	2254	30.1	44.90°C	0.995
	12.054V	5.046V	3.341V	4.992V	494.609				55.14°C	114.85V
11	33.785A	8.918A	8.891A	2.505A	494.407	90.605%	2382	32.0	45.83°C	0.995
	12.053V	5.046V	3.340V	4.990V	545.674				56.43°C	114.89V
CL1	0.130A	12.001A	12.001A	0.000A	102.377	87.906%	706	6.4	41.50°C	0.979
	12.068V	5.051V	3.349V	5.031V	116.462				50.62°C	115.23V
CL2	37.503A	1.001A	1.000A	1.000A	465.315	91.516%	2317	30.5	43.75°C	0.995
	12.050V	5.046V	3.340V	5.013V	508.450				53.19°C	114.84V

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20-80W LOAD TESTS

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.184A	0.493A	0.477A	0.199A	19.359	74.919%	0	<6.0	0.910
	12.053V	5.049V	3.347V	5.039V	25.840				115.34V
2	2.451A	0.990A	0.984A	0.397A	39.835	84.920%	0	<6.0	0.959
	12.054V	5.049V	3.347V	5.035V	46.909				115.32V
3	3.644A	1.484A	1.461A	0.596A	59.310	88.289%	0	<6.0	0.973
	12.055V	5.049V	3.347V	5.032V	67.177				115.29V
4	4.905A	1.979A	1.971A	0.795A	79.731	89.832%	0	<6.0	0.982
	12.058V	5.050V	3.346V	5.029V	88.756				115.26V

RIPPLE MEASUREMENTS

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.8 mV	7.5 mV	4.9 mV	5.9 mV	Pass
20% Load	8.3 mV	7.9 mV	5.5 mV	6.9 mV	Pass
30% Load	10.6 mV	8.0 mV	5.6 mV	7.0 mV	Pass
40% Load	13.0 mV	8.1 mV	6.0 mV	7.2 mV	Pass
50% Load	16.8 mV	8.3 mV	6.3 mV	8.2 mV	Pass
60% Load	16.3 mV	9.8 mV	8.0 mV	7.8 mV	Pass
70% Load	18.0 mV	10.5 mV	7.7 mV	8.7 mV	Pass
80% Load	19.2 mV	10.7 mV	8.7 mV	10.9 mV	Pass
90% Load	19.9 mV	13.7 mV	10.9 mV	13.1 mV	Pass
100% Load	22.9 mV	14.3 mV	15.6 mV	14.2 mV	Pass
110% Load	24.5 mV	15.8 mV	17.9 mV	15.2 mV	Pass
Crossload 1	10.5 mV	11.6 mV	9.6 mV	16.4 mV	Pass
Crossload 2	23.2 mV	12.0 mV	16.7 mV	13.5 mV	Pass

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

Hold-Up Time (ms)	18.20
AC Loss to PWR_OK Hold Up Time (ms)	14.80
PWR_OK Inactive to DC Loss Delay (ms)	3.40



Top side


**CORSAIR**

SF450

MODEL / 型号 / 型號 / 모델 : RP50111
POWER SUPPLY / 电源 / 電源 / 전원 공급 장치

PART NUMBER: CP-9020181 / 75-003455

交流输入 交流輸入	AC INPUT AC 입력	100V - 240V • 10A • 5A • 47Hz - 63Hz				
直流输出 直流輸出	DC OUTPUT DC 출력	+3.3V	+5V	+12V	-12V	+5Vsb
最大电流 最大電流	MAX LOAD 最大負荷	15A	20A	37.5A	0.3A	2.5A
最大瓦特数 最大瓦特數	MAX POWER 最大功率	100W	450W	3.6W	12.5W	
TOTAL POWER / 总功率 / 總功率 / 총출력 : 450W						


R39708
RoHS

Hi-P

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Power specifications table

CERTIFICATIONS



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