CORSAIR

Corsair SF600 Platinum

Serial Number 18434853000062930161

Lab ID 649

Certification ID 25649

Test Result Report ID: 19PS649A

Certificate Issue Date: May 3, 2019

Scheme: ETA-EMI PSU

115V 230V

Scheme: LAMBDA PSU

115V 230V

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	SF600 Platinum
OEM/ODM	Great Wall
Serial Number	18434853000062930161
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	47-63

Rated Power (W)	600
Operating Temperature (Continuous Full Load) (°C)	
Type	SFX
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	92mm Rifle Bearing Fan (NR092L)
Semi-Passive Operation	✓
Cybenetics Testing Information	
Lab ID	649
Date of receipt	Apr 19, 2019
Testing Date	Apr 29, 2019
Report Issued Date	May 3, 2019
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 (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+105mm105mm)	1	4	18AWG	No
4 pin Molex (100mm+105mm+105mm)	1	3	18AWG	No
AC Power Cord (1400mm)	1	1	18AWG	-

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	50	2.5	0.3
	Watts	120		600	12.5	3.6
Total Max. Power (W)		600				

Parts Description

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, 0.099Ohm)
APFC Boost Diode	1x Infineon IDH06G65C6 (600V, 6A @ 145°C)
Hold-up Cap(s)	1x Nippon Chemi-Con (420V, 470uF, 2000h @ 105 °C, KMZ)
Main Switchers	2x 60F2094
Driver IC	Silicon Labs Si8230BD
APFC Controller	Champion CM6502 & CM03X 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	4x Alpha & Omega AON6590 (40V, 100A @ 100°C, 1.55mOhm)
5V & 3.3V	DC-DC Converters: 4x Nexperia PSMN2R0-30YL (30V, 100A @ 25°C, 2mOhm) PWM Controller: Anpec APW7159C
Filtering Capacitors	Electrolytics: Nippon Chemi-Con (4-10,000h @ 105°C, KY), 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

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	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	90.041%
Average Noise Output (>1450 Load Combinations)	22.95dBA
Average PF (>1450 Load Combinations)	0.984
Efficiency With 10W (≤500W) or 2% (>500W) Load	61.014%
Standby Power Consumption	0.0487W
Non-Accredited	
12V Ripple (Full Load)	32.17mV
5V Ripple (Full Load)	10.16mV
3.3V Ripple (Full Load)	14.28mV
5VSB Ripple (Full Load)	16.50mV
12V Load Regulation	0.18%
5V Load Regulation	0.30%
3.3V Load Regulation	0.33%
5VSB Load Regulation	1.23%
Inrush Current	18.629A

230V		
Accredited		
Average Efficiency (>1450 load combinations)	91.676%	
Average Noise Output (>1450 Load Combinations)	22.85dBA	
Average PF (>1450 Load Combinations)	0.946	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.0761W	
Non-Accredited		
12V Ripple (Full Load)	32.99mV	
5V Ripple (Full Load)	9.71mV	
3.3V Ripple (Full Load)	15.46mV	
5VSB Ripple (Full Load)	16.74mV	
12V Load Regulation	0.26%	
5V Load Regulation	0.30%	
3.3V Load Regulation	0.36%	
5VSB Load Regulation	1.23%	
Inrush Current	43.549A	
Hold-Up Time & PWR_OK Signal	16.03ms	
AC Loss to PWR_OK Hold Up Time	14.85ms	
PWR_OK Inactive to DC Loss Delay	1.18ms	
OPP (0.00°C / 0.00°C)	-	-

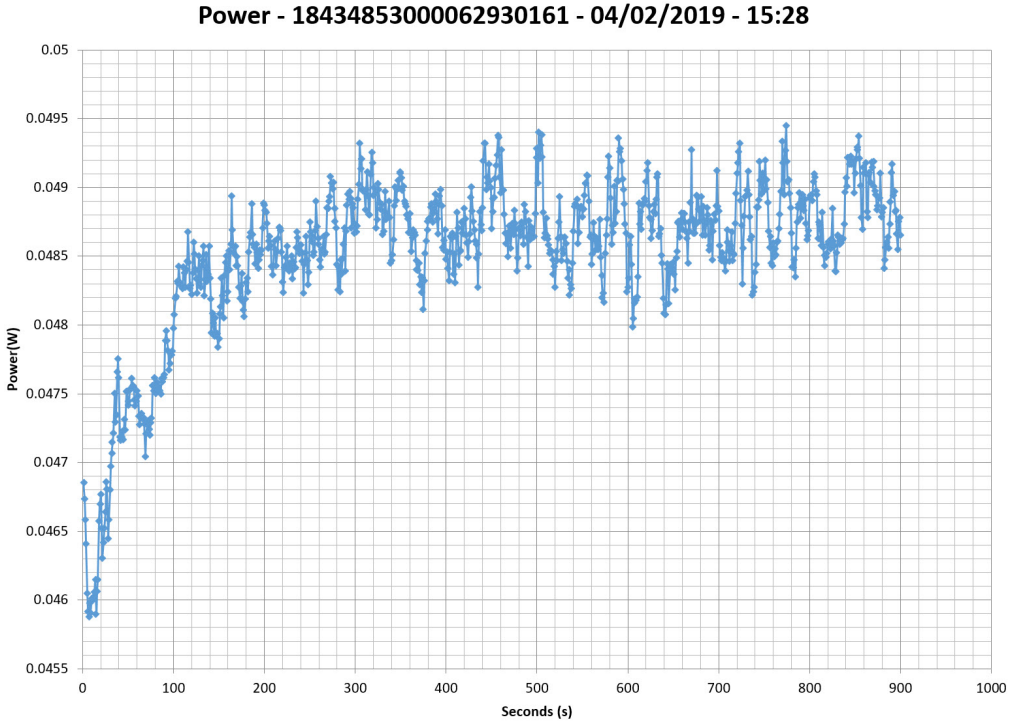
Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	16.03
AC Loss to PWR_OK Hold Up Time (ms)	14.85
PWR_OK Inactive to DC Loss Delay (ms)	1.18

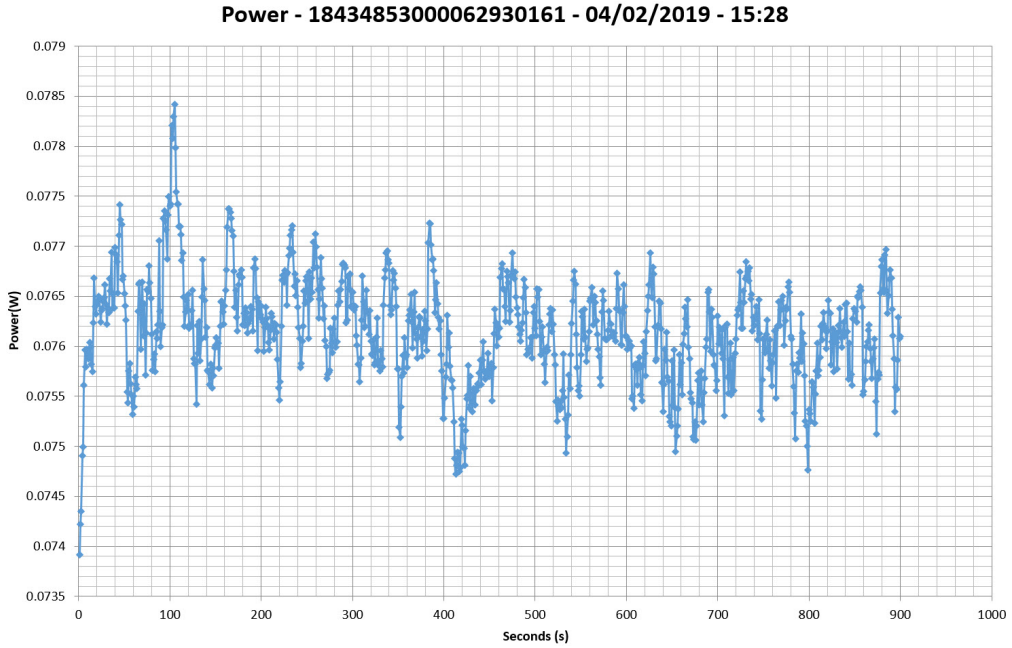
Stromverbrauch im Ruhezustand

Graphs

115V

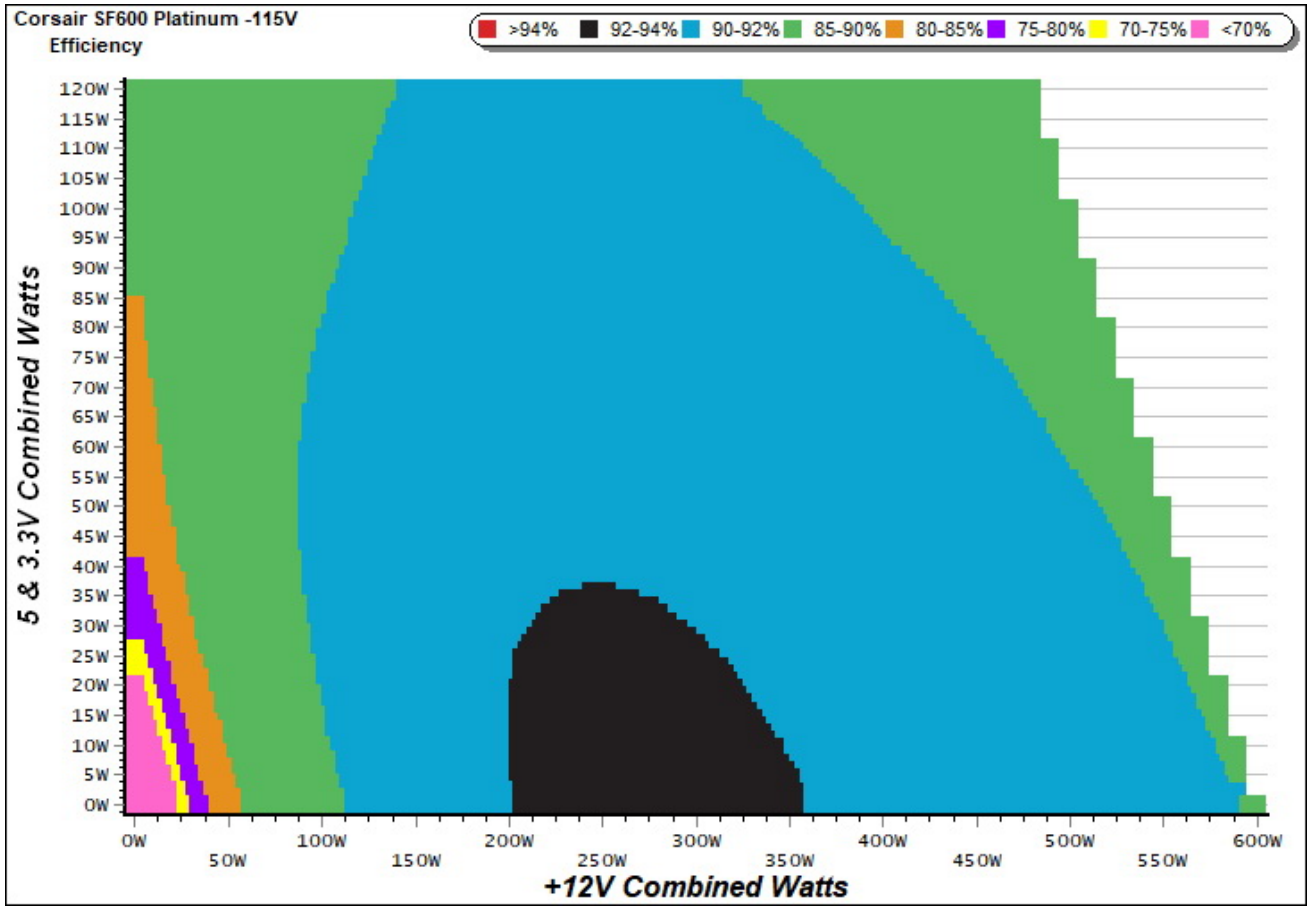


230V



Efficiency Graph

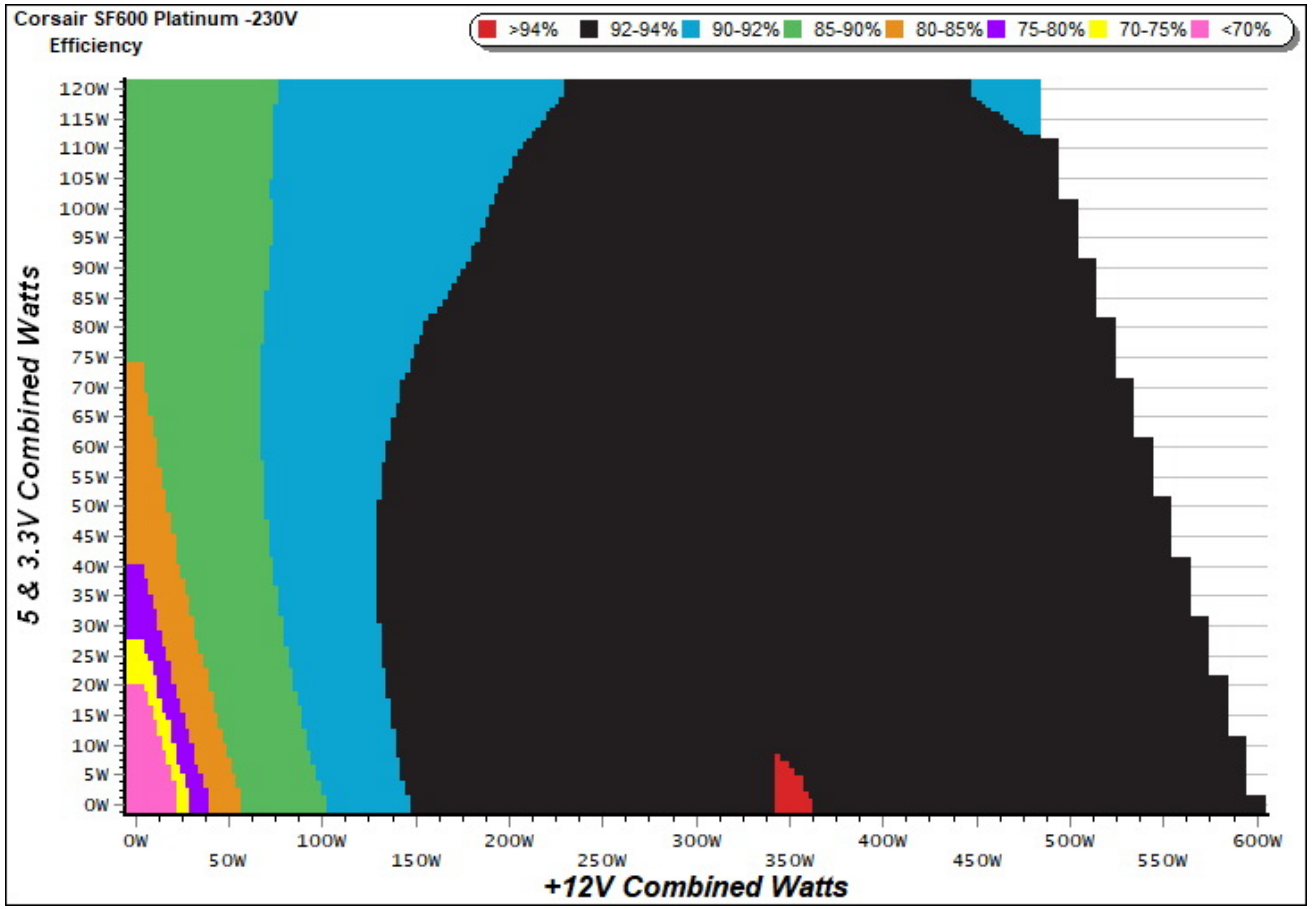
115V



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

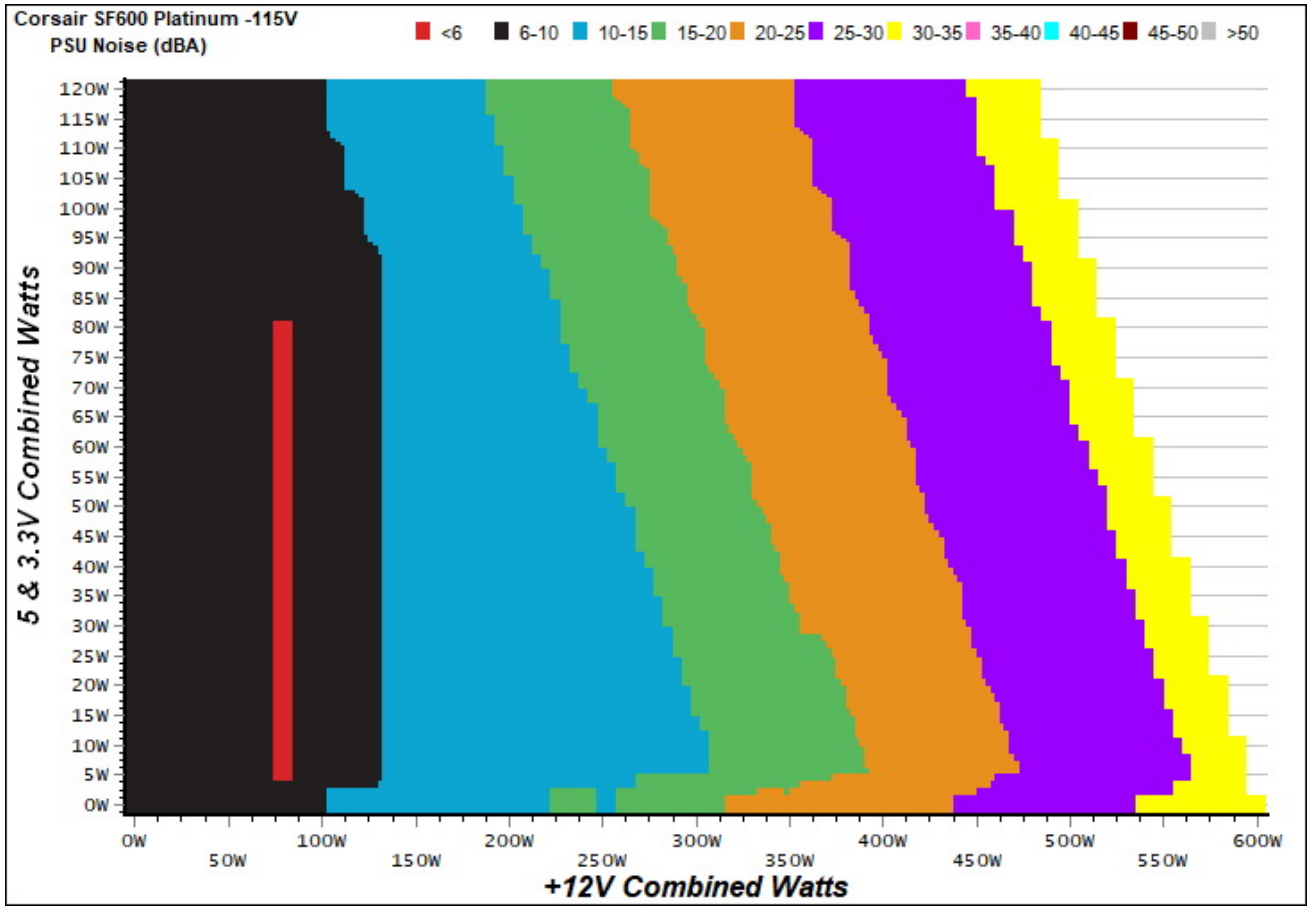


INFO

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

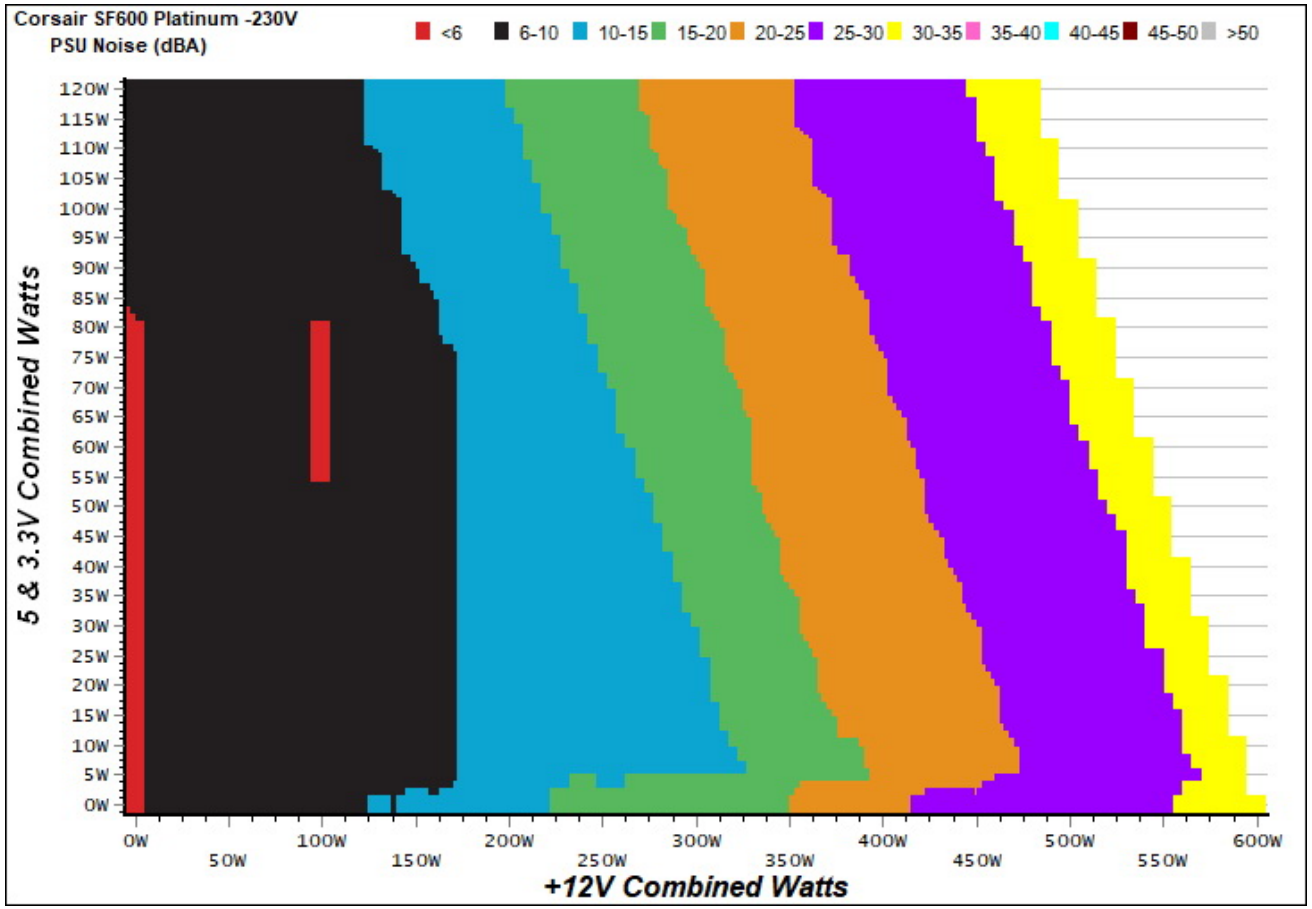
115V



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

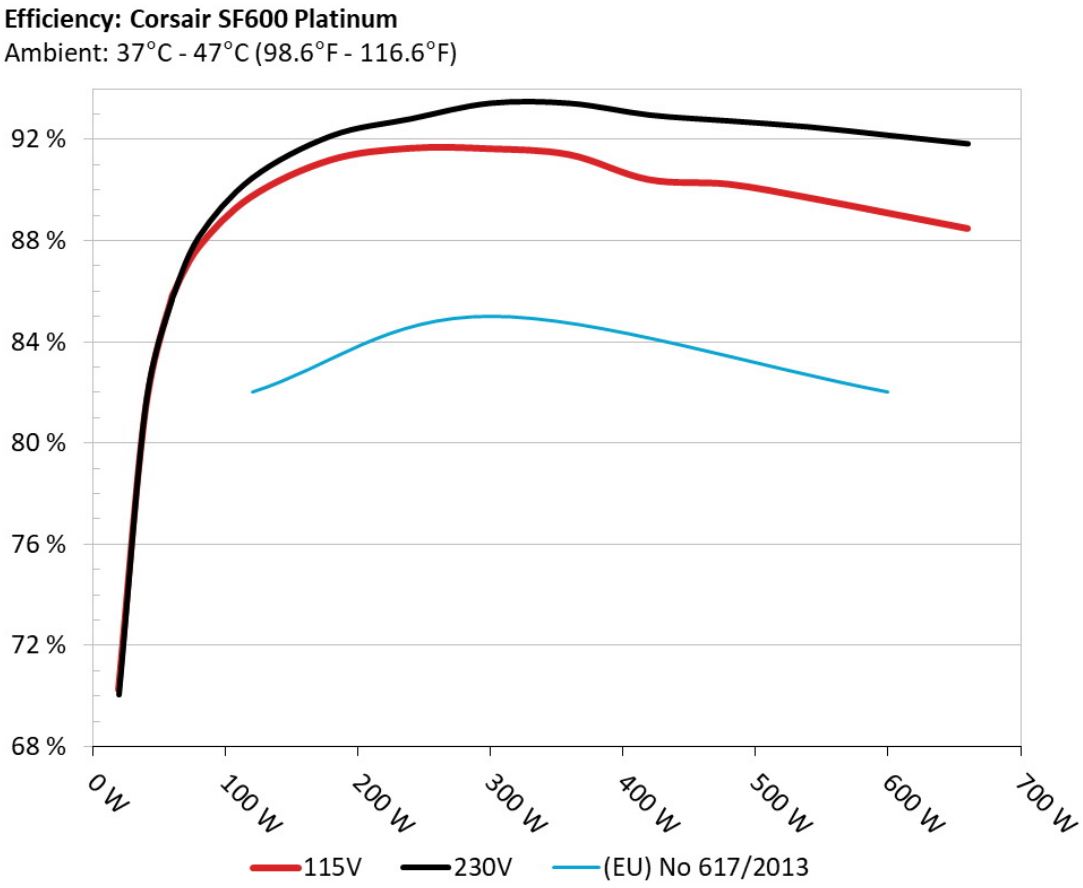


INFO

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

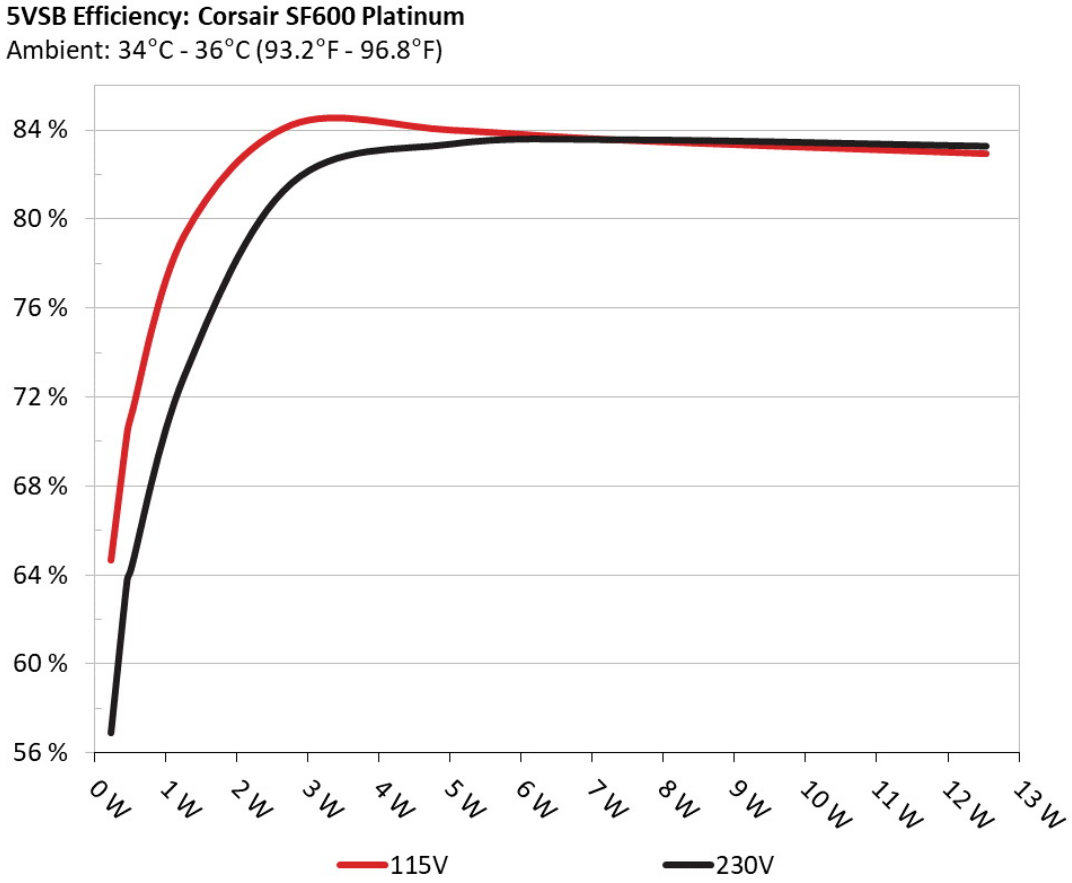
Efficiency under high ambient temperature



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.

5VSB Efficiency (ERP LOT 3/6 & CEC)

115V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.227	64.672%	0.051
	5.039V	0.351		115.12V
2	0.090A	0.454	70.388%	0.091
	5.039V	0.645		115.12V
3	0.550A	2.769	84.241%	0.306
	5.034V	3.287		115.11V
4	1.000A	5.030	84.001%	0.385
	5.029V	5.988		115.11V
5	1.500A	7.537	83.540%	0.427
	5.024V	9.022		115.11V
6	2.500A	12.534	82.946%	0.466
	5.013V	15.111		115.11V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.227	56.892%	0.018
	5.039V	0.399		230.28V
2	0.090A	0.454	63.764%	0.031
	5.039V	0.712		230.28V
3	0.550A	2.769	81.609%	0.135
	5.034V	3.393		230.27V
4	1.000A	5.030	83.361%	0.211
	5.029V	6.034		230.27V
5	1.500A	7.537	83.549%	0.270
	5.024V	9.021		230.27V
6	2.500A	12.534	83.260%	0.339
	5.013V	15.054		230.27V

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	3.178A	1.979A	1.971A	0.996A	60.062	85.403%	0	<6.0	44.86°C	0.974
	12.105V	5.048V	3.348V	5.023V	70.328				40.17°C	115.14V
2	7.342A	2.973A	2.956A	1.196A	119.754	89.730%	0	<6.0	46.14°C	0.965
	12.103V	5.046V	3.346V	5.017V	133.461				41.15°C	115.13V
3	11.863A	3.469A	3.435A	1.397A	179.562	91.180%	0	<6.0	47.14°C	0.976
	12.102V	5.045V	3.346V	5.012V	196.931				41.69°C	115.10V
4	16.394A	3.966A	3.946A	1.598A	239.584	91.643%	0	<6.0	48.06°C	0.984
	12.101V	5.043V	3.345V	5.006V	261.431				41.94°C	115.09V
5	20.598A	4.959A	4.934A	1.800A	299.671	91.625%	1379	15.4	42.00°C	0.988
	12.097V	5.042V	3.343V	5.000V	327.061				49.16°C	115.09V
6	24.804A	5.952A	5.922A	2.003A	359.772	91.389%	1525	18.8	42.47°C	0.991
	12.094V	5.040V	3.342V	4.994V	393.669				50.39°C	115.09V
7	28.978A	6.947A	6.913A	2.206A	419.506	90.404%	1703	21.7	43.35°C	0.946
	12.092V	5.039V	3.341V	4.987V	464.033				51.75°C	115.10V
8	33.219A	7.942A	7.904A	2.409A	480.012	90.222%	2049	26.7	43.64°C	0.994
	12.090V	5.037V	3.339V	4.981V	532.035				52.71°C	115.09V
9	37.797A	8.441A	8.388A	2.411A	539.354	89.696%	2620	34.2	44.30°C	0.994
	12.087V	5.035V	3.338V	4.978V	601.311				54.19°C	115.09V
10	42.445A	8.941A	8.899A	2.514A	600.070	89.083%	3116	38.2	45.52°C	0.995
	12.083V	5.034V	3.337V	4.973V	673.608				55.87°C	115.09V
11	47.425A	8.944A	8.903A	2.515A	660.099	88.472%	3593	41.9	46.64°C	0.995
	12.080V	5.032V	3.336V	4.970V	746.109				57.99°C	115.09V
CL1	0.138A	14.002A	13.999A	0.000A	119.095	85.777%	993	8.2	42.01°C	0.966
	12.104V	5.046V	3.341V	5.018V	138.842				49.26°C	115.11V

CL2	50.003A	1.002A	0.999A	1.000A	617.566	89.547%	3166	38.5	45.72°C	0.995
	12.083V	5.034V	3.341V	4.998V	689.657				55.97°C	115.10V

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	3.172A	1.982A	1.969A	0.996A	60.032	85.422%	0	<6.0	44.27°C	0.792
	12.116V	5.048V	3.348V	5.023V	70.277				39.91°C	230.32V
2	7.337A	2.974A	2.957A	1.196A	119.754	90.483%	0	<6.0	45.49°C	0.901
	12.110V	5.046V	3.347V	5.017V	132.350				40.61°C	230.32V
3	11.866A	3.470A	3.434A	1.397A	179.644	92.164%	0	<6.0	46.81°C	0.940
	12.106V	5.044V	3.346V	5.011V	194.918				41.45°C	230.32V
4	16.400A	3.964A	3.946A	1.599A	239.678	92.838%	0	<6.0	47.78°C	0.952
	12.103V	5.042V	3.345V	5.005V	258.168				41.96°C	230.32V
5	20.606A	4.960A	4.935A	1.800A	299.750	93.457%	1377	15.3	42.15°C	0.960
	12.096V	5.041V	3.343V	5.000V	320.735				48.54°C	230.31V
6	24.812A	5.954A	5.925A	2.003A	359.828	93.452%	1526	18.8	42.60°C	0.968
	12.092V	5.039V	3.341V	4.994V	385.042				49.39°C	230.30V
7	28.983A	6.949A	6.914A	2.206A	419.539	92.991%	1708	21.8	43.22°C	0.972
	12.091V	5.038V	3.340V	4.988V	451.159				50.29°C	230.31V
8	33.223A	7.943A	7.905A	2.409A	480.028	92.756%	1924	25.1	43.51°C	0.975
	12.089V	5.036V	3.339V	4.981V	517.519				51.61°C	230.30V
9	37.796A	8.443A	8.387A	2.411A	539.349	92.523%	2463	32.4	44.24°C	0.978
	12.087V	5.035V	3.338V	4.978V	582.933				53.03°C	230.29V
10	42.441A	8.942A	8.898A	2.514A	600.057	92.188%	3025	37.6	45.69°C	0.980
	12.084V	5.033V	3.337V	4.973V	650.905				55.37°C	230.29V
11	47.419A	8.945A	8.904A	2.515A	660.084	91.853%	3529	41.7	46.78°C	0.982
	12.081V	5.032V	3.336V	4.970V	718.627				57.58°C	230.28V
CL1	0.135A	14.001A	13.999A	0.000A	119.055	86.584%	1133	10.4	41.99°C	0.907
	12.109V	5.046V	3.341V	5.018V	137.502				48.04°C	230.29V

CL2	50.005A	1.002A	0.997A	1.000A	617.634	92.676%	3053	37.7	45.87°C	0.981
	12.084V	5.034V	3.341V	4.998V	666.444				55.91°C	230.28V

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	1.197A	0.497A	0.476A	0.199A	19.595	70.248%	0	<6.0	0.869
	12.105V	5.049V	3.349V	5.035V	27.894				115.13V
2	2.450A	0.992A	0.983A	0.398A	39.960	81.334%	0	<6.0	0.927
	12.105V	5.049V	3.348V	5.032V	49.131				115.13V
3	3.640A	1.488A	1.462A	0.597A	59.466	85.801%	0	<6.0	0.974
	12.104V	5.048V	3.348V	5.028V	69.307				115.13V
4	4.901A	1.982A	1.969A	0.796A	79.914	87.726%	0	<6.0	0.966
	12.104V	5.047V	3.347V	5.024V	91.095				115.13V

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	1.197A	0.496A	0.478A	0.199A	19.598	70.058%	0	<6.0	0.541
	12.107V	5.049V	3.349V	5.035V	27.974				230.32V
2	2.447A	0.991A	0.984A	0.398A	39.948	81.593%	0	<6.0	0.691
	12.116V	5.048V	3.349V	5.032V	48.960				230.32V
3	3.638A	1.486A	1.462A	0.597A	59.469	85.785%	0	<6.0	0.788
	12.114V	5.048V	3.348V	5.028V	69.323				230.32V
4	4.891A	1.981A	1.971A	0.796A	79.841	88.170%	0	<6.0	0.852
	12.113V	5.047V	3.348V	5.024V	90.553				230.32V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.6 mV	6.3 mV	10.1 mV	10.4 mV	Pass
20% Load	9.2 mV	6.8 mV	11.0 mV	11.0 mV	Pass
30% Load	11.9 mV	6.9 mV	10.8 mV	10.9 mV	Pass
40% Load	14.7 mV	6.7 mV	10.5 mV	10.8 mV	Pass
50% Load	19.0 mV	7.6 mV	11.1 mV	10.8 mV	Pass
60% Load	22.4 mV	7.9 mV	11.5 mV	12.3 mV	Pass
70% Load	248.3 mV	10.5 mV	14.6 mV	25.2 mV	Fail
80% Load	22.5 mV	8.9 mV	13.0 mV	13.6 mV	Pass
90% Load	25.7 mV	9.3 mV	12.8 mV	15.0 mV	Pass
100% Load	32.2 mV	10.2 mV	14.3 mV	16.5 mV	Pass
110% Load	35.1 mV	9.9 mV	14.5 mV	17.5 mV	Pass
Crossload 1	15.9 mV	9.3 mV	16.4 mV	8.1 mV	Pass
Crossload 2	30.9 mV	8.6 mV	12.1 mV	18.4 mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	10.3 mV	6.3 mV	10.4 mV	9.8 mV	Pass
20% Load	12.2 mV	7.6 mV	11.1 mV	10.9 mV	Pass
30% Load	11.5 mV	7.0 mV	11.3 mV	10.8 mV	Pass
40% Load	12.2 mV	7.0 mV	11.2 mV	11.4 mV	Pass
50% Load	18.4 mV	7.5 mV	11.6 mV	12.5 mV	Pass
60% Load	23.4 mV	8.1 mV	12.1 mV	13.1 mV	Pass
70% Load	19.8 mV	8.9 mV	12.9 mV	12.9 mV	Pass
80% Load	22.7 mV	9.4 mV	14.2 mV	13.9 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	25.7 mV	9.3 mV	13.9 mV	15.0 mV	Pass
100% Load	33.0 mV	9.7 mV	15.5 mV	16.7 mV	Pass
110% Load	36.4 mV	10.5 mV	15.8 mV	17.5 mV	Pass
Crossload 1	19.9 mV	10.1 mV	15.0 mV	8.6 mV	Pass
Crossload 2	32.8 mV	8.7 mV	13.6 mV	18.3 mV	Pass

The results above are not used in the certification process

Corsair SF600 Platinum

Top side

CORSAIR SF600

MODEL / 型号 / 型號 / 모델 : RPS0112
POWER SUPPLY / 电源 / 電源 / 전원 공급 장치
PART NUMBER: CP-9020182 / 75-003563

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 최대 부하	20A	20A	50A	0.3A	2.5A
最大瓦特数 最大瓦特數	MAX POWER 최대 결합 와트	120W		600W	3.6W	12.5W
		TOTAL POWER / 总功率 / 總功率 / 총출력 : 600W				

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R39708
RoHS
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Power specifications table

Cybenetics bietet freiwillige Zertifizierungsprogramme für Netzteile – ETA für Effizienz, LAMBDA für Lautstärke und SAFE für Sicherheit und korrekten Betrieb – sowie für Kühlprodukte mit DELTA für die Schalldämmung von Gehäusen und PHI für Luftstrom und statischen Druck von Lüftern

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