Corsair SF750 Platinum (ATX v3.1)

Serial Number A7PCD4026018NT

Lab ID CR75002352

Certification ID 252352

Test Result Report ID: 24PS2352A

Certificate Issue Date: Feb 14, 2024

Scheme: ETA-EMI PSU

115V

230V

Scheme: LAMBDA PSU

115V

230V

Outside Validation Scope

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	SF750 Platinum (ATX v3.1)
OEM/ODM	Great Wall
Serial Number	A7PCD4026018NT
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5

Rated Frequency (Hz)	47-63
Rated Power (W)	750
Operating Temperature (Continuous Full Load) (°C)	
Type	SFX
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	92mm Fluid Dynamic Bearing Fan (NR092P)
Semi-Passive Operation	✓
Cybenetics Testing Information	
Lab ID	CR75002352
Date of receipt	Feb 6, 2024
Testing Date	Feb 12, 2024
Report Issued Date	Feb 14, 2024
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	16-20AWG	No
4+4 pin EPS12V (410mm)	2	2	16AWG	No
6+2 pin PCIe (410mm)	2	2	16AWG	No
12+2 pin PCIe (400mm) (600W)	1	1	16-24AWG	No
SATA (110mm+115mm+115mm+115mm)	2	8	18AWG	No
4-pin Molex (110mm+115mm+115mm)	1	3	18AWG	No

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62.5	3	0
	Watts	130		750	15	0
Total Max. Power (W)		750				

Parts Description

General Data	
Manufacturer (OEM)	Great Wall
PCB Type	Double Sided
Primary Side	
Transient Filter	2x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	1x NTC Thermistor SCK-056 (5 Ohm) & Relay
Bridge Rectifier(s)	2x Diodes GBU25KH (800V, 25A @ 175°C)
APFC MOSFETs	1x Infineon IPW60R060C7 (650V, 22A @ 100°C, Rds(on): 0.060Ohm) 1x Champion CM03X (reduce the no-load consumption)
APFC Boost Diode	1x Cree C3D08060A (600V, 8A @ 150°C)
Bulk Cap(s)	1x Rubycon (420V, 470uF, 3,000h @ 105°C, MXK)
Main Switchers	2x Rohm R6035VNX3 (600V, 35A @ 25°C, Rds(on): 0.119Ohm)
Driver IC	1x NOVOSENSE NSi6602BD
APFC Controller	Champion CM6502UHHX
Resonant Controller	Champion CM6901X
Topology	Primary side: APFC, Half-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	4x Infineon BSC014N04LS6 (40V, 125A @ 100°C, Rds(on): 1.4mOhm)
5V & 3.3V	DC-DC Converters: 4x Advanced Power AP4024GEMT (30V, 60A, Rds(on): 4.5mOhm) PWM Controller(s): ANPEC APW7159C
Filtering Capacitors	Electrolytic: 2x Rubycon (3-6,000h @ 105°C, YXG), Polymer: 39x FPCAP
Supervisor IC	IN1S429I-SCG (OCP,OVP, UVP, SCP, PG)
Fan Controller	Microchip PIC16F1824

Fan Model	Corsair NR092P (92mm, 12V, 0.22A, Fluid Dynamic Bearing Fan)
5VSB Circuit	
Rectifier(s)	1x Infineon ICE5QR1680AG (800V, 5.8A, Rds(on): 1.75Ohm)
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	✓
ALPM (Alternative Low Power Mode) compatible	✓
ATX v3.1 PSU Power Excursion	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	90.860%
Average Noise Output (>1450 Load Combinations)	27.54dBA
Average PF (>1450 Load Combinations)	0.988
Efficiency With 10W (≤500W) or 2% (>500W) Load	76.418%
Standby Power Consumption	0.0465W
Non-Accredited	
12V Ripple (Full Load)	35.01mV
5V Ripple (Full Load)	16.29mV
3.3V Ripple (Full Load)	15.86mV
5VSB Ripple (Full Load)	21.41mV
12V Load Regulation	0.08%
5V Load Regulation	0.26%
3.3V Load Regulation	0.45%

5VSB Load Regulation	1.58%
Inrush Current	32.710A

230V

Accredited		
Average Efficiency (>1450 load combinations)		92.589%
Average Noise Output (>1450 Load Combinations)		26.17dBA
Average PF (>1450 Load Combinations)		0.951
Efficiency With 10W (≤500W) or 2% (>500W) Load		74.453%
Standby Power Consumption		0.1108W
Non-Accredited		
12V Ripple (Full Load)		35.67mV
5V Ripple (Full Load)		16.86mV
3.3V Ripple (Full Load)		15.65mV
5VSB Ripple (Full Load)		20.07mV
12V Load Regulation		0.16%
5V Load Regulation		0.26%
3.3V Load Regulation		0.42%
5VSB Load Regulation		1.56%
Inrush Current		68.640A
12V Transient Response (200%)		11.71V
5V Transient Response (200%)		4.920V
3.3V Transient Response (200%)		3.242V
5VSB Transient Response (200%)		4.957V
Hold-Up Time & PWR_OK Signal		16.70ms
AC Loss to PWR_OK Hold Up Time		14.00ms
PWR_OK Inactive to DC Loss Delay		2.70ms
PSU Timings: T1 (20% / 100%)	50.0ms	48.0ms
PSU Timings: T3 (20% / 100%)	128.0ms	129.0ms
OPP (27.83°C / 42.00°C)	127.15%	128.81%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	16.7
AC Loss to PWR_OK Hold Up Time (ms)	14
PWR_OK Inactive to DC Loss Delay (ms)	2.7

Vampire Power

Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.91 V	114.83 V	113.85 V	115.00 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.98 Hz	59.40 Hz	60.03 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.421	1.419	1.340	1.423	1.490	PASS
Mains Voltage THD:	0.29 %	0.22 %	N/A	0.39 %	2.00 %	PASS
Real Power:	0.047 W	0.011 W	N/A	0.070 W	N/A	N/A
Apparent Power:	10.435 W	10.413 W	N/A	10.460 W	N/A	N/A
Power Factor:	0.006	N/A	N/A	N/A	N/A	N/A

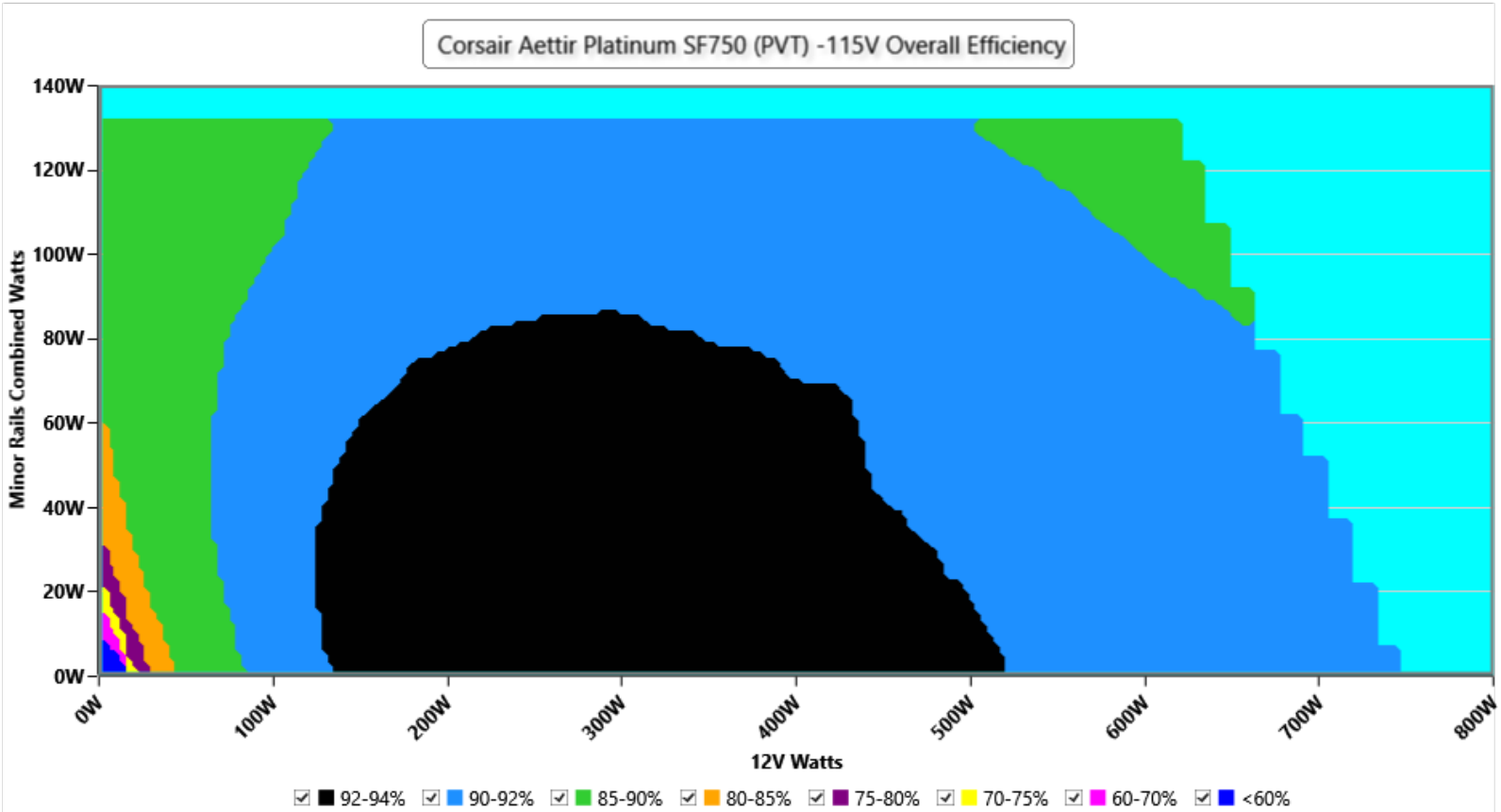
230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	229.91 V	229.80 V	227.70 V	230.03 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	49.99 Hz	49.50 Hz	50.01 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.418	1.416	1.340	1.420	1.490	PASS
Mains Voltage THD:	0.20 %	0.15 %	N/A	0.28 %	2.00 %	PASS
Real Power:	0.111 W	0.088 W	N/A	0.141 W	N/A	N/A
Apparent Power:	35.480 W	35.412 W	N/A	35.564 W	N/A	N/A

Power Factor:	0.003	N/A	N/A	N/A	N/A	N/A

Efficiency Graph

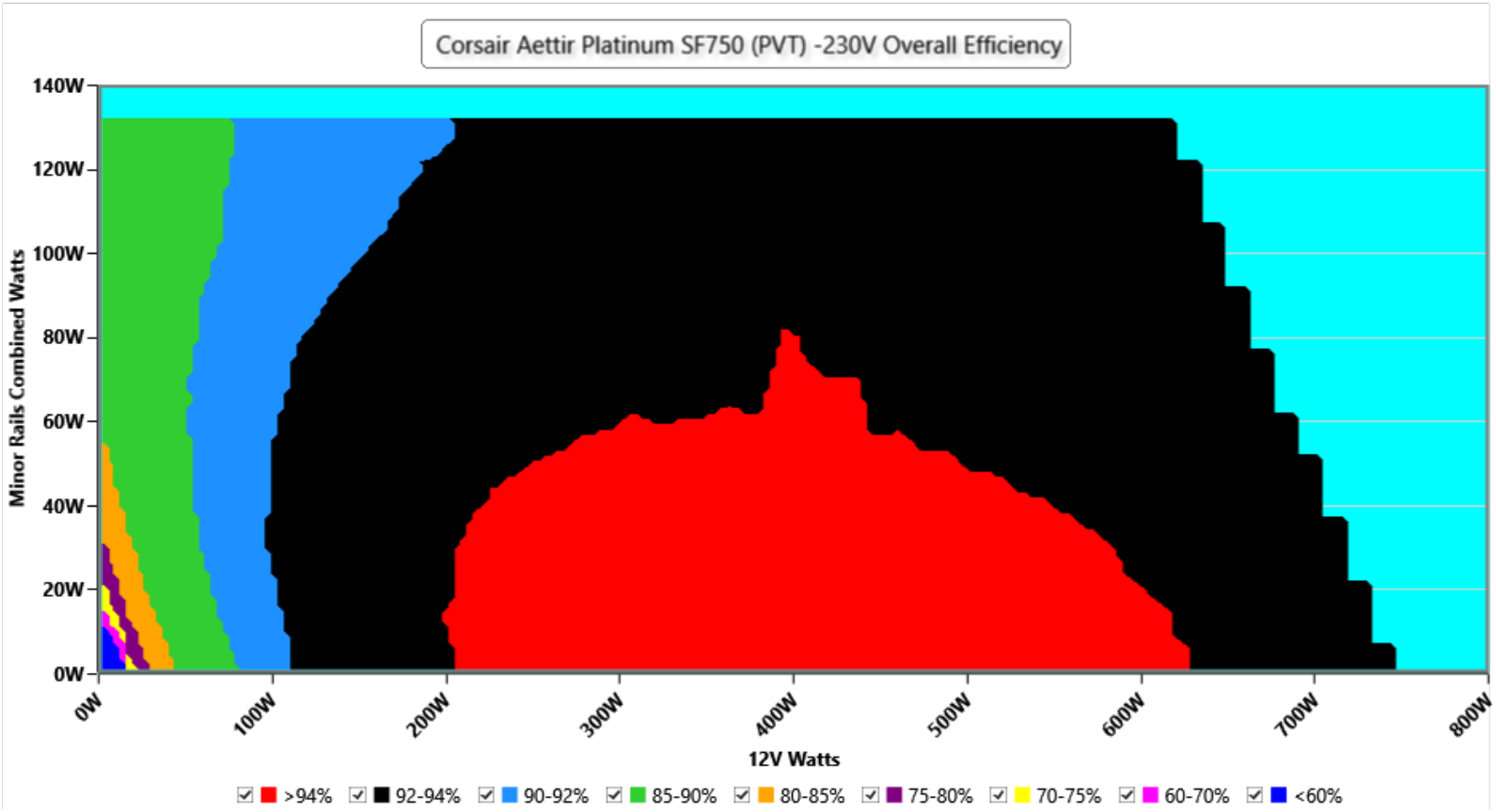
115V



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

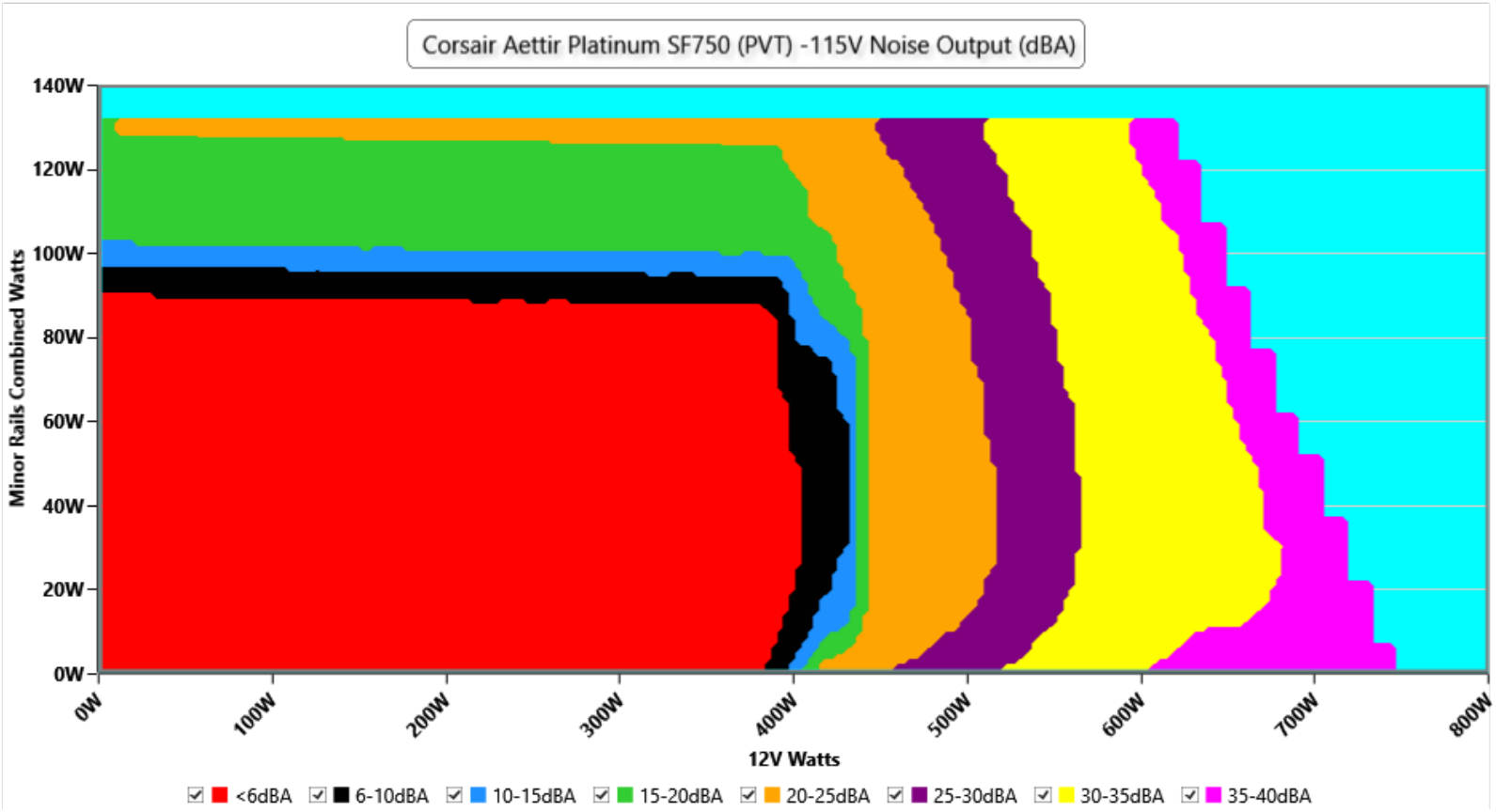


INFO

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

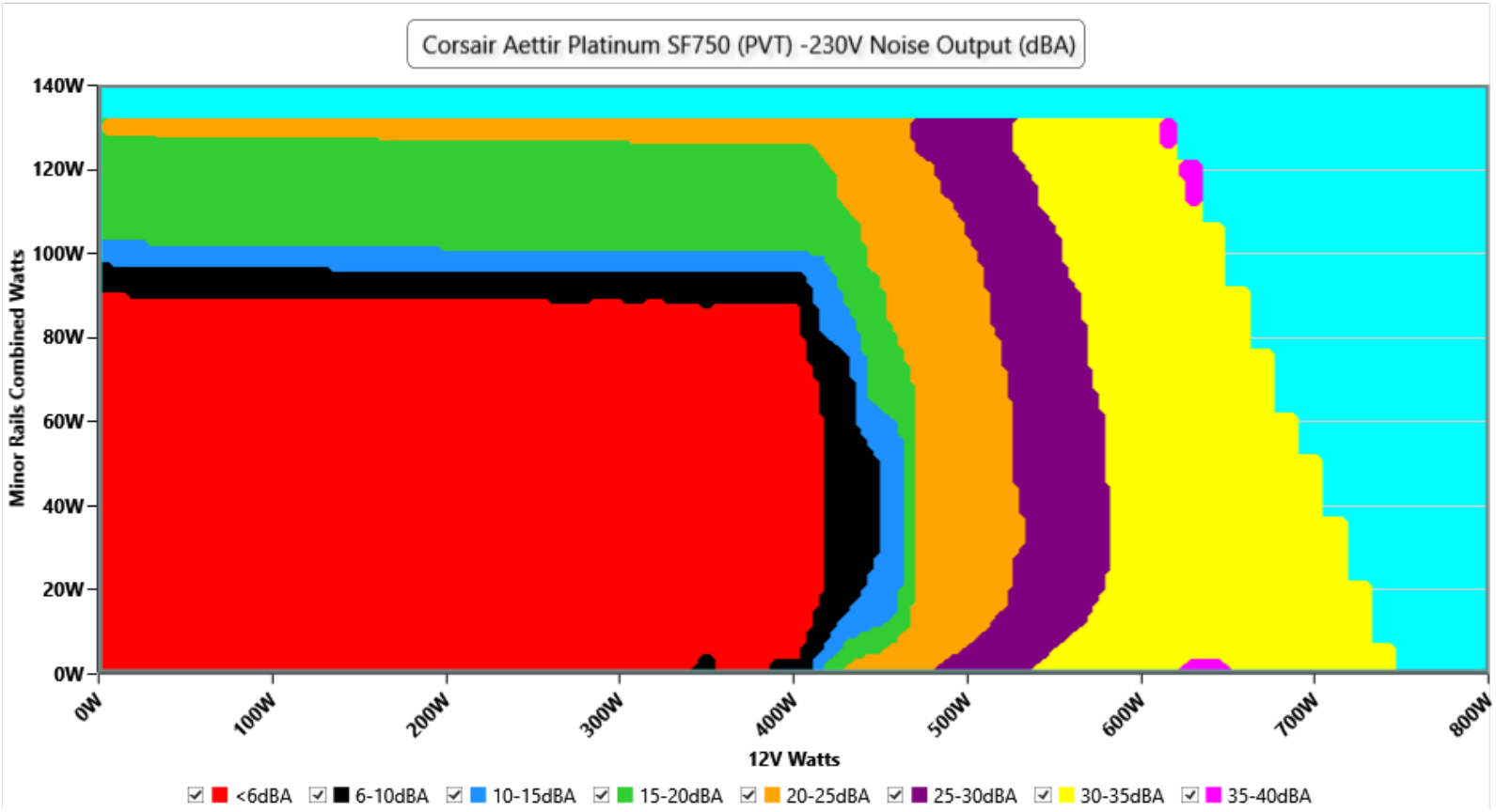
115V



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

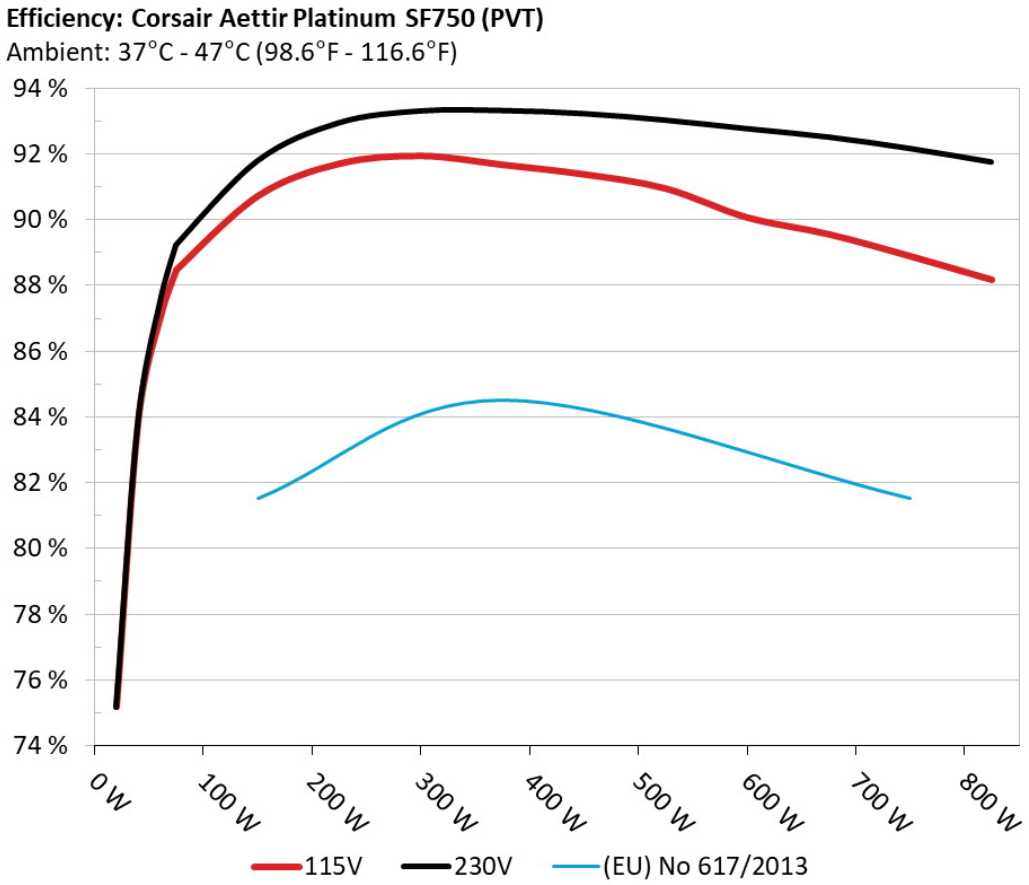


INFO

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

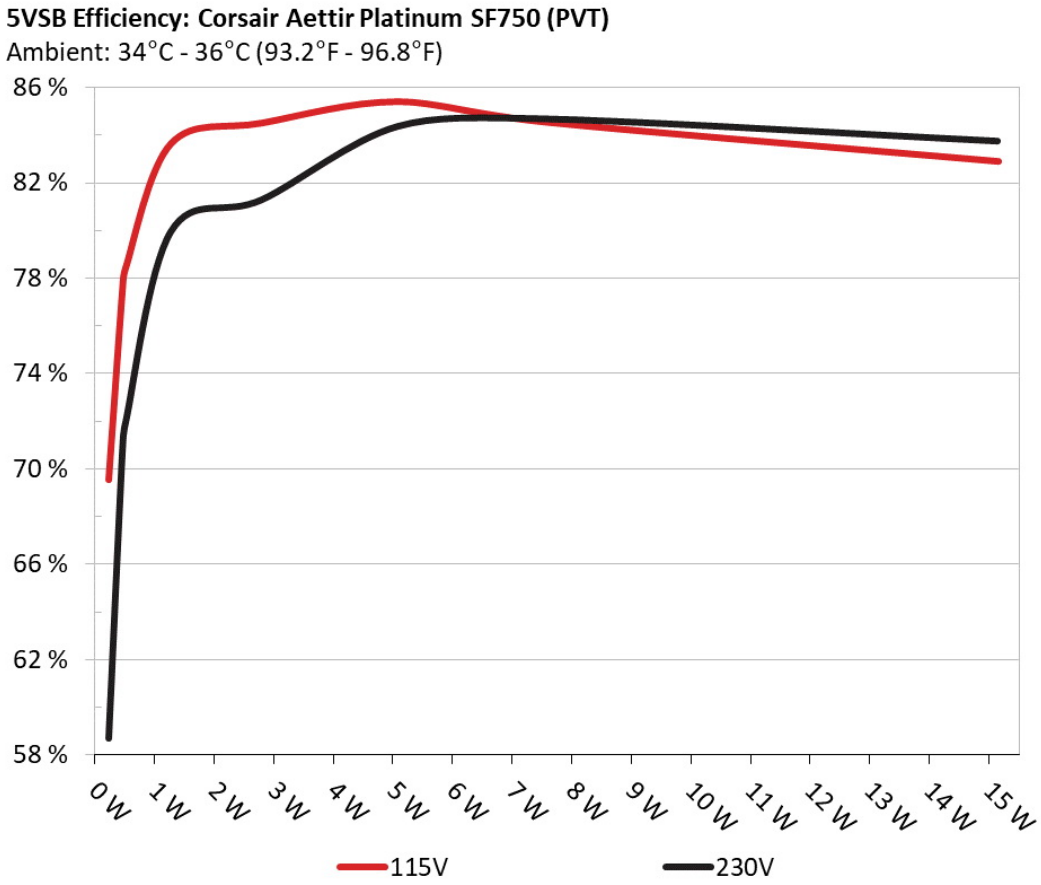
Efficiency under high ambient temperature



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	0.229W	70.053%	0.031
	5.097V	0.327W		114.91V
2	0.09A	0.459W	78.042%	0.056
	5.096V	0.588W		114.91V
3	0.55A	2.798W	85.021%	0.25
	5.087V	3.291W		114.91V
4	1A	5.081W	85.919%	0.35
	5.081V	5.913W		114.9V
5	1.5A	7.612W	85.045%	0.401
	5.074V	8.951W		114.91V
6	3A	15.153W	83.409%	0.479
	5.051V	18.168W		114.9V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.229W	59.17%	0.011
	5.097V	0.388W		229.9V
2	0.09A	0.459W	71.302%	0.018
	5.096V	0.646W		229.88V
3	0.55A	2.797W	81.796%	0.093
	5.086V	3.42W		229.88V
4	1A	5.08W	84.879%	0.154
	5.08V	5.984W		229.88V
5	1.5A	7.61W	85.189%	0.204
	5.073V	8.933W		229.88V
6	3A	15.142W	84.26%	0.313
	5.048V	17.97W		229.88V

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
10%	4.404A	1.999A	1.981A	0.986A	74.995	88.103%	0	<6.0	44.23°C	0.874
	12.125V	5.002V	3.331V	5.07V	85.122				40.01°C	114.89V
20%	9.817A	3A	2.973A	1.185A	149.928	91.199%	0	<6.0	45.22°C	0.944
	12.124V	5V	3.33V	5.064V	164.396				40.67°C	114.87V
30%	15.578A	3.5A	3.47A	1.384A	224.926	92.184%	0	<6.0	46.09°C	0.963
	12.124V	5V	3.329V	5.057V	243.998				41°C	114.84V
40%	21.346A	4A	3.966A	1.584A	300.012	92.419%	0	<6.0	47.41°C	0.975
	12.125V	5V	3.328V	5.05V	324.622				41.85°C	114.82V
50%	26.717A	5.002A	4.96A	1.785A	374.433	92.151%	963	9.4	42.26°C	0.982
	12.125V	4.998V	3.327V	5.042V	406.327				48.28°C	114.79V
60%	32.135A	6.005A	5.956A	1.986A	449.361	91.86%	1299	18.6	42.58°C	0.986
	12.122V	4.997V	3.325V	5.036V	489.181				49.09°C	114.77V
70%	37.556A	7.008A	6.953A	2.187A	524.286	91.431%	1664	27.1	42.99°C	0.989
	12.120V	4.995V	3.323V	5.029V	573.424				50.06°C	114.74V
80%	43.037A	8.01A	7.95A	2.289A	599.486	90.549%	2407	37.2	43.88°C	0.99
	12.119V	4.993V	3.321V	5.024V	662.06				51.89°C	114.71V
90%	48.856A	8.512A	8.435A	2.391A	674.511	90.04%	2775	40.6	44.57°C	0.992
	12.118V	4.992V	3.32V	5.019V	749.124				53.66°C	114.68V
100%	54.479A	9.016A	8.95A	2.997A	749.738	89.37%	3104	43.2	45.87°C	0.993
	12.116V	4.991V	3.318V	5.006V	838.919				55.95°C	114.66V
110%	59.970A	10.021A	10.041A	2.999A	824.763	88.652%	3453	45.6	46.79°C	0.993
	12.114V	4.988V	3.316V	5.002V	930.343				57.72°C	114.63V
CL1	0.115A	15.697A	15.564A	0A	131.296	85.097%	1518	24.0	40.83°C	0.939
	12.140V	4.988V	3.316V	5.078V	154.288				46.34°C	114.86V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL2	0.114A	20.026A	0A	0A	101.342	84.132%	2318	36.3	40.31°C	0.911
	12.136V	4.991V	3.329V	5.082V	120.456				47.37°C	114.88V
CL3	0.114A	0A	19.898A	0A	67.398	79.3%	2045	33.0	41.64°C	0.873
	12.133V	4.999V	3.318V	5.083V	84.991				50.72°C	114.9V
CL4	61.889A	0A	0A	0A	749.576	90.145%	2713	40.2	46.27°C	0.992
	12.111V	5.002V	3.331V	5.055V	831.532				57.25°C	114.65V

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
10%	4.400A	1.998A	1.981A	0.986A	74.997	88.972%	0	<6.0	44.27°C	0.734
	12.135V	5.003V	3.332V	5.07V	84.285				40.01°C	229.86V
20%	9.811A	2.999A	2.973A	1.185A	149.929	92.288%	0	<6.0	45.38°C	0.853
	12.131V	5.002V	3.33V	5.064V	162.458				40.72°C	229.86V
30%	15.572A	3.499A	3.469A	1.384A	224.93	93.446%	0	<6.0	46.54°C	0.903
	12.129V	5.001V	3.33V	5.057V	240.706				41.37°C	229.85V
40%	21.339A	4A	3.966A	1.584A	300.012	93.806%	801	<6.0	41.53°C	0.929
	12.128V	5V	3.329V	5.05V	319.821				47.07°C	229.84V
50%	26.711A	5.002A	4.96A	1.785A	374.386	93.818%	1083	12.8	42.14°C	0.944
	12.126V	4.998V	3.327V	5.043V	399.056				48.22°C	229.83V
60%	32.130A	6.004A	5.956A	1.985A	449.318	93.726%	1436	22.3	42.91°C	0.955
	12.123V	4.997V	3.325V	5.037V	479.395				49.45°C	229.81V
70%	37.549A	7.008A	6.952A	2.187A	524.249	93.528%	1835	30.0	43.06°C	0.962
	12.121V	4.995V	3.323V	5.03V	560.526				50.16°C	229.8V
80%	43.032A	8.01A	7.949A	2.288A	599.442	93.269%	2244	35.4	43.98°C	0.967
	12.120V	4.993V	3.321V	5.025V	642.699				52.06°C	229.79V
90%	48.852A	8.512A	8.434A	2.39A	674.459	93.014%	2646	39.6	44.57°C	0.972
	12.118V	4.992V	3.32V	5.021V	725.117				53.58°C	229.78V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	54.471A	9.015A	8.949A	2.995A	749.647	92.666%	2886	41.6	46.42°C	0.976
	12.116V	4.991V	3.319V	5.007V	808.952				56.43°C	229.76V
110%	59.962A	10.021A	10.04A	2.998A	824.702	92.254%	3339	44.9	46.59°C	0.978
	12.114V	4.988V	3.316V	5.004V	893.949				57.52°C	229.75V
CL1	0.114A	15.695A	15.561A	0A	131.289	86.025%	1515	23.7	43.17°C	0.844
	12.144V	4.988V	3.316V	5.079V	152.616				48.67°C	229.86V
CL2	0.114A	20.025A	0A	0A	101.336	84.891%	2307	36.2	40.33°C	0.802
	12.141V	4.991V	3.329V	5.083V	119.374				47.41°C	229.87V
CL3	0.114A	0A	19.897A	0A	67.393	80.055%	2038	33.0	40.67°C	0.733
	12.138V	4.999V	3.318V	5.084V	84.183				49.77°C	229.88V
CL4	61.892A	0A	0A	0A	749.52	93.388%	2496	37.9	44.75°C	0.975
	12.110V	5.002V	3.33V	5.056V	802.586				55.69°C	229.77V

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])	Temps (In/Out)	PF/AC Volts
20W	1.224A	0.5A	0.495A	0.197A	19.99	75.667%	0	<6.0	39.83°C	0.726
	12.118V	5.003V	3.333V	5.085V	26.428				36.75°C	114.92V
40W	2.696A	0.7A	0.693A	0.295A	39.991	84.402%	0	<6.0	40.57°C	0.807
	12.119V	5.003V	3.333V	5.083V	47.38				37.3°C	114.91V
60W	4.168A	0.899A	0.891A	0.394A	59.992	87.49%	0	<6.0	41.79°C	0.851
	12.122V	5.004V	3.333V	5.08V	68.578				38.01°C	114.88V
80W	5.634A	1.099A	1.089A	0.492A	79.933	88.958%	0	<6.0	43.3°C	0.879
	12.123V	5.004V	3.333V	5.077V	89.853				39.32°C	114.89V

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
20W	1.226A	0.5A	0.495A	0.197A	19.995	75.675%	0	<6.0	40.01°C	0.432
	12.116V	5.003V	3.333V	5.085V	26.423				36.89°C	229.89V
40W	2.697A	0.7A	0.693A	0.295A	39.995	84.331%	0	<6.0	40.61°C	0.594
	12.119V	5.003V	3.333V	5.082V	47.425				37.31°C	229.88V
60W	4.166A	0.899A	0.891A	0.394A	59.994	87.955%	0	<6.0	41.89°C	0.684
	12.129V	5.004V	3.333V	5.08V	68.211				38.35°C	229.88V
80W	5.632A	1.099A	1.089A	0.492A	79.936	89.734%	0	<6.0	42.87°C	0.745
	12.130V	5.004V	3.333V	5.078V	89.082				39°C	229.87V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	13.97mV	14.46mV	12.64mV	16.37mV	Pass
20% Load	14.63mV	13.64mV	11.82mV	15.91mV	Pass
30% Load	17.40mV	14.76mV	12.74mV	15.70mV	Pass
40% Load	18.31mV	14.81mV	13.20mV	16.06mV	Pass
50% Load	20.72mV	14.41mV	12.48mV	16.27mV	Pass
60% Load	22.97mV	14.31mV	13.35mV	15.50mV	Pass
70% Load	27.63mV	15.79mV	14.84mV	17.03mV	Pass
80% Load	25.73mV	15.69mV	14.63mV	25.17mV	Pass
90% Load	27.12mV	15.63mV	14.94mV	16.62mV	Pass
100% Load	35.01mV	16.29mV	15.86mV	21.41mV	Pass
110% Load	37.90mV	17.22mV	16.62mV	21.53mV	Pass
Crossload1	22.00mV	18.25mV	15.16mV	35.27mV	Pass
Crossload2	18.67mV	18.75mV	13.61mV	33.66mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	17.19mV	14.76mV	14.68mV	32.53mV	Pass
Crossload4	35.48mV	15.99mV	14.95mV	36.08mV	Pass

The results above are not used in the certification process

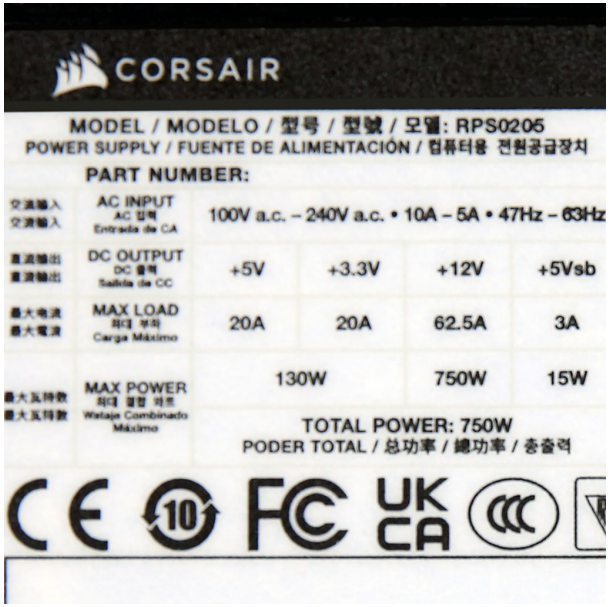
230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	13.86mV	12.52mV	11.41mV	14.12mV	Pass
20% Load	19.12mV	13.84mV	12.18mV	16.27mV	Pass
30% Load	16.58mV	14.51mV	12.53mV	16.21mV	Pass
40% Load	16.99mV	15.23mV	14.22mV	16.52mV	Pass
50% Load	18.88mV	14.97mV	13.66mV	17.80mV	Pass
60% Load	20.31mV	13.79mV	12.84mV	16.16mV	Pass
70% Load	22.77mV	15.07mV	13.92mV	16.93mV	Pass
80% Load	25.38mV	14.81mV	14.43mV	16.06mV	Pass
90% Load	27.93mV	15.78mV	14.88mV	18.21mV	Pass
100% Load	35.67mV	16.86mV	15.65mV	20.07mV	Pass
110% Load	37.83mV	16.40mV	15.73mV	20.17mV	Pass
Crossload1	28.50mV	17.42mV	15.05mV	35.07mV	Pass
Crossload2	22.31mV	19.06mV	13.45mV	31.61mV	Pass
Crossload3	18.31mV	13.49mV	13.45mV	29.31mV	Pass
Crossload4	35.50mV	15.29mV	14.50mV	34.03mV	Pass

The results above are not used in the certification process

Corsair SF750 Platinum (ATX v3.1)

Top side



Power specifications label

All data and graphs included in this test report can be used by any individual on the following conditions:
› It should be mentioned that the test results are provided by Cybenetics
› The link to the original test results document should be provided in any case

Cybenetics runs voluntary certification programs for power supplies - ETA for efficiency, LAMBDA for noise and SAFE for safety and correct operation - and for cooling products, with DELTA for chassis soundproofing and PHI for fan airflow and static pressure. THETA rates cooler performance on AMD AM5 and Intel LGA1851 outside ISO 17065 and accreditation scope

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

www.cybenetics.com - info@cybenetics.com