

## Anex

Corsair CX750F RGB

Lab ID#: CR75001676  
 Receipt Date: Jun 29, 2020  
 Test Date: Jul 6, 2020

Report: 20PS1676A  
 Report Date: Jul 6, 2020

DUT INFORMATION	
Brand	Corsair
Manufacturer (OEM)	HEC
Series	CX-F RGB
Model Number	RPS0135
Serial Number	
DUT Notes	CP-9020218

DUT SPECIFICATIONS	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	47-63
Rated Power (W)	750
Type	ATX12V
Cooling	120mm Rifle Bearing Fan (NR120L)
Semi-Passive Operation	x
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	✓

### 115V

Average Efficiency	86.997%
Efficiency With 10W (≤500W) or 2% (>500W)	63.631
Average Efficiency 5VSB	78.391%
Standby Power Consumption (W)	0.0571607
Average PF	0.984
Avg Noise Output	34.58 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	Standard++

### 230V

Average Efficiency	89.117%
Average Efficiency 5VSB	78.326%
Standby Power Consumption (W)	0.0933157
Average PF	0.945
Avg Noise Output	34.36 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	Standard++

### POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62.5	3	0.3
	Watts	130		750	15	3.6
Total Max. Power (W)		750				

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

Hold-Up Time (ms)	14.8
AC Loss to PWR_OK Hold Up Time (ms)	13.2
PWR_OK Inactive to DC Loss Delay (ms)	1.6

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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)	2	2	18AWG	No
6+2 pin PCIe (600mm+150mm)	2	4	16-18AWG	No
SATA (450mm+115mm+115mm+115mm)	2	8	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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<b>General Data</b>	-
Manufacturer (OEM)	HEC
PCB Type	Single Sided
<b>Primary Side</b>	-
Transient Filter	4x Y caps, 3x X caps, 1x CM chokes, 1x DM chokes, 1x MOV, 1x Discharge IC (CAP200DG)
Inrush Protection	NTC Thermistor SCK-2R58
Bridge Rectifier(s)	2x GBU15K (800V, 15A @ 100°C)
APFC MOSFETs	2x Infineon IPA60R120P7 (650V, 16A @ 100°C, 0.120hm)
APFC Boost Diode	1x Infineon IDH06G65C6 (650V, 6A @ 145°C)
Hold-up Cap(s)	1x Hitachi (400V, 470uF, 2,000h @ 105°C, HU)
Main Switchers	2x Alpha & Omega AOTF22N50 (600V, 15A @ 100°C, 0.260hm)
IC Driver	MPS MP6924A
APFC Controller	Champion CM6500UNX & Champion CM03X
Resonant Controller	MPS HR1001C
Topology	Primary side: APFC, Half-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
<b>Secondary Side</b>	-
+12V MOSFETs	4x Nexperia PSMN2R6-40YS (40V, 100A @ 100°C, 5.3mOhm @ 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: 18x Teapo
Supervisor IC	Weltrend WT7527 (OCP, OVP, UVP, SCP, PG)
Fan Model	Corsair NR120L (120mm, 12V, 0.22A, RGB, Rifle Bearing Fan)
<b>5VSB Circuit</b>	-
Rectifier	1x PS1060L SBR (60V, 10A)
Standby PWM Controller	Power Integrations TNY290PG
<b>-12V</b>	-
Rectifier	1x KEC KIA7912PI (-12V, 1A)

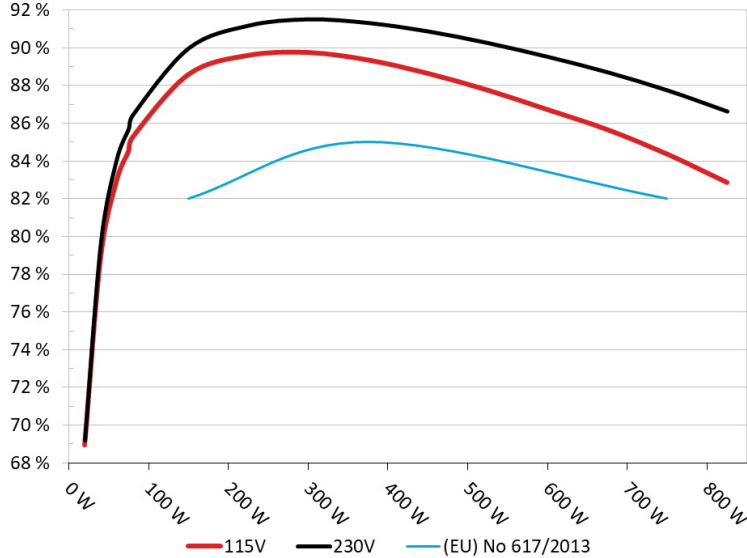
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### EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

**Efficiency: Corsair CX750F (Mont Blanc)**  
Ambient: 37°C - 47°C (98.6°F - 116.6°F)

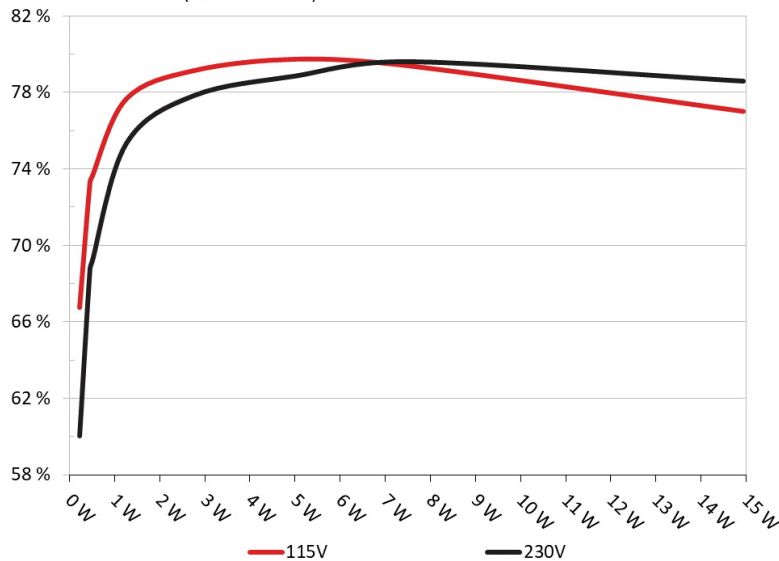


#### INFO

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 CX750F (Mont Blanc)**  
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	0.227	66.765%	0.040
	5.052V	0.340		115.12V
2	0.090A	0.455	73.269%	0.072
	5.050V	0.621		115.12V
3	0.550A	2.771	79.149%	0.282
	5.037V	3.501		115.12V
4	1.000A	5.026	79.740%	0.362
	5.025V	6.303		115.12V
5	1.500A	7.520	79.392%	0.406
	5.013V	9.472		115.12V
6	3.001A	14.931	77.012%	0.463
	4.975V	19.388		115.12V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.227	60.053%	0.013
	5.052V	0.378		230.27V
2	0.090A	0.455	68.731%	0.023
	5.049V	0.662		230.26V
3	0.550A	2.771	77.859%	0.116
	5.037V	3.559		230.27V
4	1.000A	5.027	78.880%	0.187
	5.026V	6.373		230.27V
5	1.500A	7.522	79.623%	0.242
	5.014V	9.447		230.27V
6	3.001A	14.932	78.606%	0.333
	4.976V	18.996		230.27V

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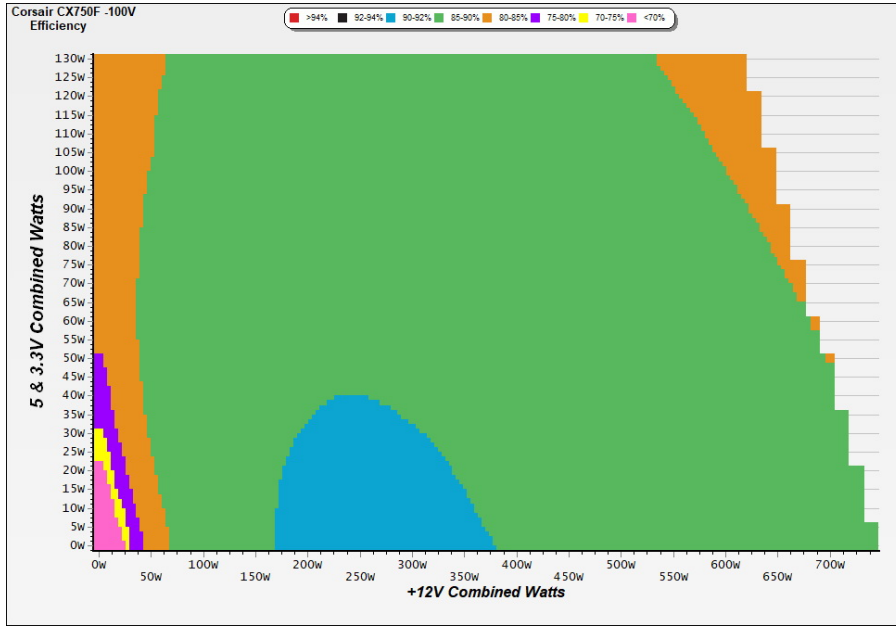
# 115V

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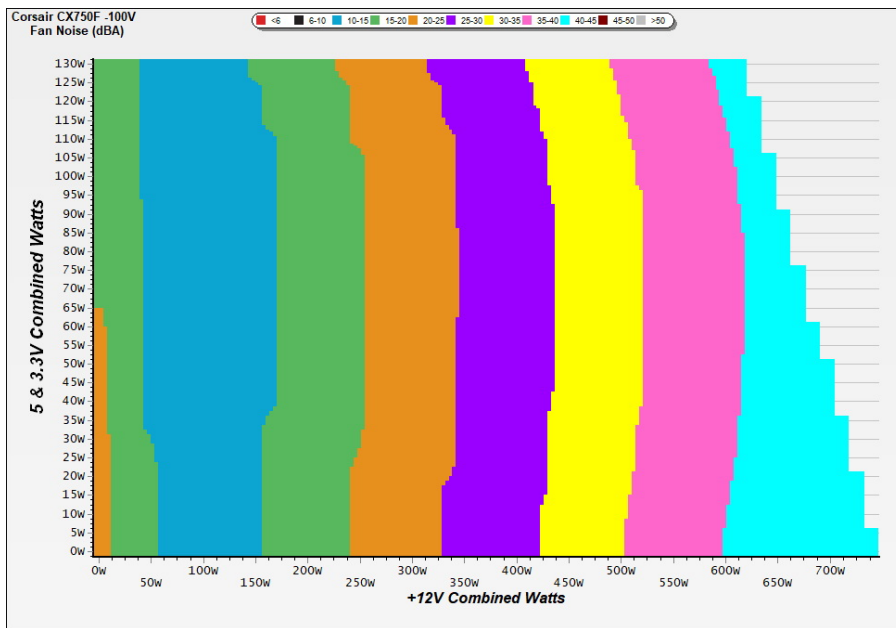
### EFFICIENCY GRAPH 115V



#### 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

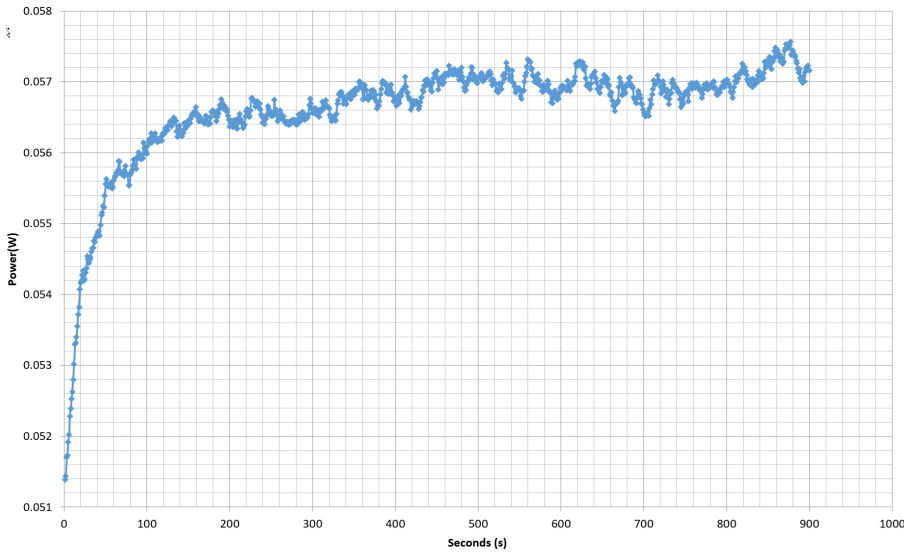
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**VAMPIRE POWER -115V**

Power - 01/07/2020 - 11:11



**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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### 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	4.385A	1.985A	1.977A	0.996A	74.969	84.504%	697	15.8	40.38°C	0.980
	12.171V	5.038V	3.337V	5.021V	88.716				45.20°C	115.12V
2	9.808A	2.987A	2.976A	1.198A	150.045	88.569%	718	16.5	40.69°C	0.980
	12.148V	5.021V	3.327V	5.008V	169.411				46.44°C	115.12V
3	15.590A	3.494A	3.481A	1.402A	225.054	89.582%	758	19.1	41.52°C	0.979
	12.123V	5.009V	3.319V	4.995V	251.228				48.36°C	115.12V
4	21.398A	4.000A	3.988A	1.606A	300.070	89.734%	836	23.2	41.64°C	0.984
	12.098V	4.998V	3.311V	4.982V	334.400				49.15°C	115.12V
5	26.847A	5.020A	4.997A	1.812A	374.653	89.340%	930	26.4	42.36°C	0.987
	12.074V	4.981V	3.301V	4.968V	419.357				50.57°C	115.12V
6	32.345A	6.047A	6.017A	2.000A	449.511	88.634%	1075	30.8	42.76°C	0.986
	12.051V	4.963V	3.291V	4.954V	507.157				51.88°C	115.11V
7	37.898A	7.079A	7.041A	2.228A	524.918	87.743%	1244	36.9	43.49°C	0.988
	12.027V	4.946V	3.281V	4.939V	598.246				53.37°C	115.11V
8	43.480A	8.003A	8.071A	2.438A	599.655	86.715%	1450	39.7	43.64°C	0.989
	12.001V	4.929V	3.271V	4.924V	691.523				54.37°C	115.11V
9	49.452A	8.650A	8.582A	2.442A	674.760	85.655%	1665	43.8	44.24°C	0.991
	11.976V	4.915V	3.263V	4.916V	787.762				55.87°C	115.11V
10	55.251A	9.185A	9.130A	3.068A	749.990	84.354%	1861	45.8	45.69°C	0.992
	11.950V	4.902V	3.254V	4.891V	889.094				58.26°C	115.11V
11	61.694A	9.198A	9.149A	3.072A	825.186	82.850%	2116	48.7	46.59°C	0.993
	11.921V	4.895V	3.247V	4.883V	995.998				60.42°C	115.14V
CL1	0.102A	16.004A	15.999A	0.000A	131.849	81.416%	1181	35.4	42.93°C	0.968
	12.162V	4.877V	3.285V	5.006V	161.945				51.24°C	115.13V
CL2	62.522A	1.000A	0.999A	1.000A	759.880	84.829%	1832	45.5	46.09°C	0.992
	11.942V	4.994V	3.285V	4.967V	895.780				58.31°C	115.10V

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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	1.219A	0.494A	0.492A	0.198A	20.002	68.944%	718	16.5	0.910
	12.188V	5.058V	3.347V	5.050V	29.012				115.13V
2	2.437A	0.990A	0.988A	0.397A	39.990	78.890%	697	15.8	0.955
	12.181V	5.051V	3.343V	5.042V	50.691				115.13V
3	3.661A	1.487A	1.481A	0.596A	60.019	82.955%	678	16.2	0.972
	12.175V	5.044V	3.340V	5.034V	72.351				115.12V
4	4.879A	1.986A	1.977A	0.796A	79.969	85.238%	677	16.2	0.979
	12.168V	5.038V	3.336V	5.026V	93.819				115.12V

### RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	12.60mV	8.20mV	10.30mV	9.60mV	Pass
20% Load	10.40mV	8.10mV	14.30mV	8.30mV	Pass
30% Load	11.30mV	9.00mV	11.60mV	10.90mV	Pass
40% Load	17.50mV	8.90mV	11.20mV	10.30mV	Pass
50% Load	20.70mV	10.00mV	13.10mV	11.80mV	Pass
60% Load	24.40mV	10.10mV	13.80mV	13.30mV	Pass
70% Load	26.80mV	11.30mV	13.60mV	15.30mV	Pass
80% Load	28.50mV	13.40mV	17.30mV	16.70mV	Pass
90% Load	36.30mV	23.20mV	36.40mV	17.40mV	Pass
100% Load	53.80mV	27.40mV	40.30mV	21.90mV	Pass
110% Load	58.40mV	27.90mV	42.70mV	22.80mV	Pass
Crossload1	16.20mV	11.90mV	16.90mV	5.70mV	Pass
Crossload2	55.70mV	26.60mV	36.70mV	16.50mV	Pass

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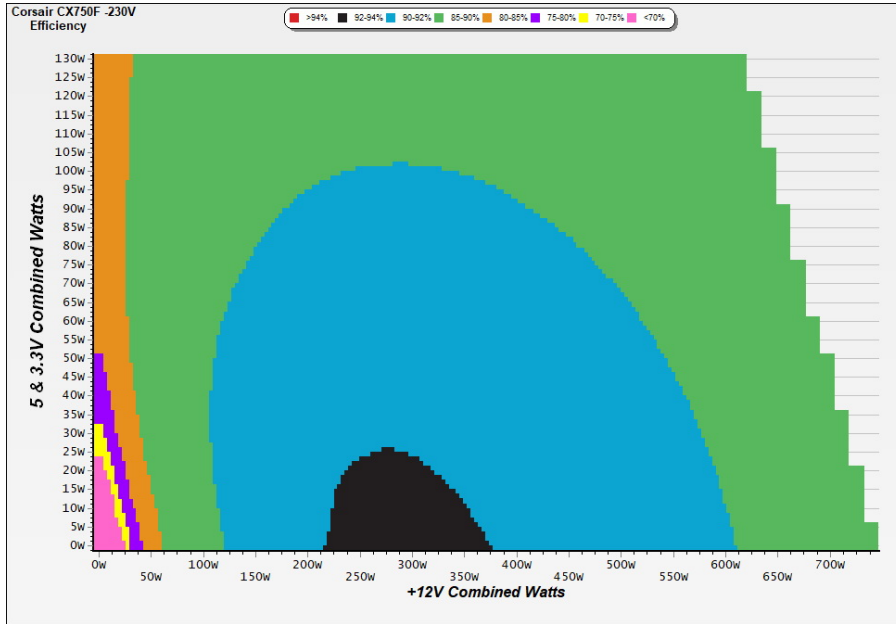
# 230V

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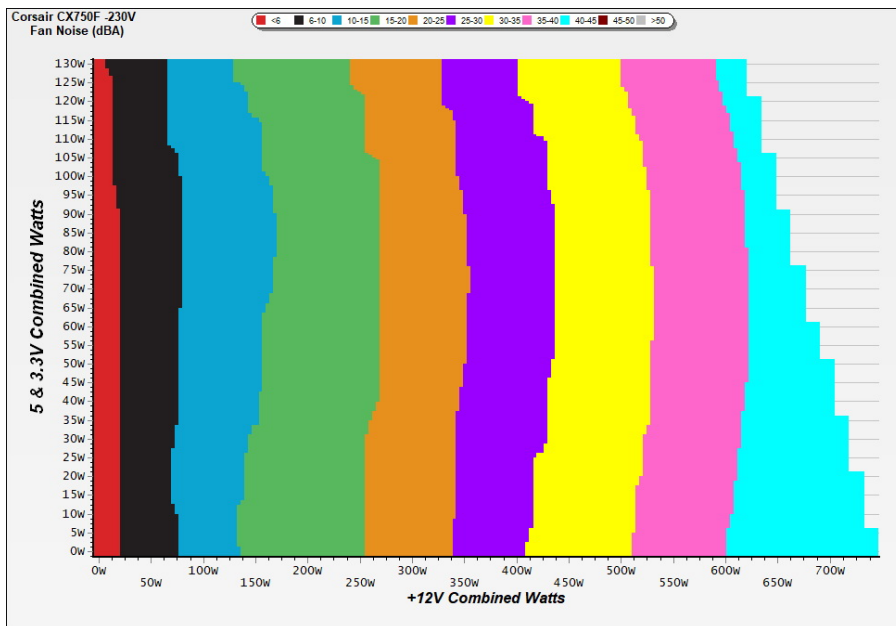
### EFFICIENCY GRAPH 230V



#### 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 230V



#### INFO

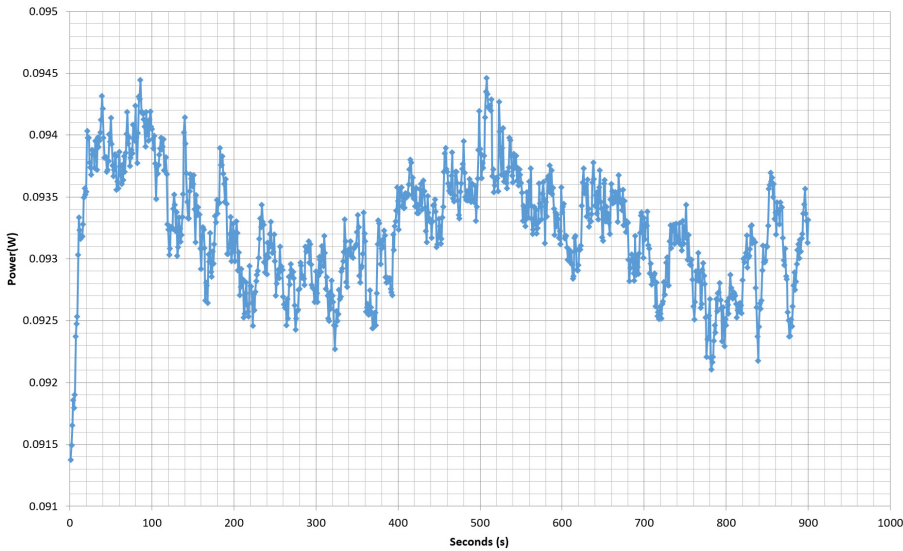
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### 10-110% LOAD TESTS 230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	4.386A	1.985A	1.978A	0.996A	74.972	85.734%	664	15.0	40.01°C	0.848
	12.168V	5.039V	3.337V	5.021V	87.447				44.32°C	230.27V
2	9.809A	2.986A	2.977A	1.198A	150.052	89.998%	698	15.8	40.48°C	0.919
	12.147V	5.023V	3.327V	5.008V	166.729				45.70°C	230.27V
3	15.588A	3.492A	3.481A	1.402A	225.063	91.198%	758	19.1	41.30°C	0.935
	12.125V	5.011V	3.320V	4.995V	246.784				47.48°C	230.27V
4	21.393A	4.000A	3.987A	1.606A	300.083	91.531%	816	22.1	41.60°C	0.957
	12.101V	5.000V	3.312V	4.982V	327.848				48.65°C	230.26V
5	26.844A	5.019A	4.997A	1.812A	374.702	91.341%	911	25.4	42.29°C	0.964
	12.077V	4.982V	3.302V	4.968V	410.221				51.24°C	230.25V
6	32.344A	6.044A	6.013A	2.000A	449.560	90.897%	1045	30.8	42.47°C	0.965
	12.053V	4.965V	3.293V	4.954V	494.584				52.00°C	230.26V
7	37.902A	7.078A	7.039A	2.228A	524.974	90.276%	1211	35.2	43.09°C	0.966
	12.027V	4.947V	3.283V	4.939V	581.524				53.27°C	230.26V
8	43.482A	8.004A	8.071A	2.438A	599.710	89.548%	1441	39.5	43.78°C	0.967
	12.001V	4.930V	3.273V	4.925V	669.705				54.81°C	230.27V
9	49.460A	8.648A	8.577A	2.442A	674.808	88.728%	1664	43.8	44.95°C	0.968
	11.975V	4.917V	3.264V	4.917V	760.538				56.58°C	230.27V
10	55.263A	9.182A	9.126A	3.067A	750.008	87.768%	1905	47.6	45.63°C	0.971
	11.948V	4.903V	3.255V	4.891V	854.537				57.64°C	230.27V
11	61.709A	9.195A	9.147A	3.072A	825.251	86.645%	2117	48.7	46.57°C	0.973
	11.919V	4.897V	3.248V	4.884V	952.449				59.42°C	230.27V
CL1	0.102A	16.005A	15.999A	0.000A	131.853	82.727%	1181	35.4	42.46°C	0.878
	12.162V	4.877V	3.285V	5.006V	159.383				51.55°C	230.27V
CL2	62.527A	1.001A	1.000A	1.000A	759.752	88.255%	1866	45.8	45.31°C	0.971
	11.942V	4.996V	3.286V	4.968V	860.859				57.97°C	230.27V

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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	1.219A	0.494A	0.493A	0.198A	19.998	69.200%	591	9.1	0.536
	12.181V	5.058V	3.346V	5.049V	28.899				230.26V
2	2.438A	0.990A	0.987A	0.397A	39.989	79.683%	613	10.8	0.716
	12.177V	5.052V	3.343V	5.041V	50.185				230.26V
3	3.662A	1.486A	1.483A	0.596A	60.020	84.125%	634	12.1	0.809
	12.171V	5.045V	3.340V	5.033V	71.346				230.27V
4	4.880A	1.985A	1.977A	0.796A	79.971	86.453%	656	12.6	0.855
	12.166V	5.039V	3.337V	5.026V	92.502				230.27V

### RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	14.60mV	7.90mV	10.90mV	9.10mV	Pass
20% Load	11.40mV	7.90mV	14.30mV	8.20mV	Pass
30% Load	12.20mV	8.50mV	11.40mV	10.40mV	Pass
40% Load	15.90mV	9.00mV	11.40mV	9.50mV	Pass
50% Load	18.20mV	9.60mV	13.30mV	11.50mV	Pass
60% Load	19.50mV	10.40mV	13.80mV	13.40mV	Pass
70% Load	21.20mV	10.80mV	15.80mV	15.90mV	Pass
80% Load	25.80mV	12.10mV	18.30mV	17.40mV	Pass
90% Load	32.10mV	12.90mV	18.20mV	18.70mV	Pass
100% Load	48.60mV	15.20mV	19.70mV	22.40mV	Pass
110% Load	56.80mV	15.90mV	20.90mV	24.30mV	Pass
Crossload1	18.80mV	11.10mV	17.80mV	5.80mV	Pass
Crossload2	46.90mV	13.90mV	17.90mV	18.90mV	Pass

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



