Anex

Corsair RM750e

Lab ID#: CR75002015
Receipt Date: Apr 30, 2022
Test Date: May 11, 2022

Report: 22PS2015A
Report Date: May 12, 2022

DUT INFORMATION

Brand	Corsair
Manufacturer (OEM)	HEC
Series	RMe
Model Number	RPS0147
Serial Number	
DUT Notes	CP-9020248

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 (HA1225H12F-Z)
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	89.352%
Efficiency With 10W (≤500W) or 2% (>500W)	74.071
Average Efficiency 5VSB	78.530%
Standby Power Consumption (W)	0.0574000
Average PF	0.983
Avg Noise Output	35.12 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	Standard+

230V

Average Efficiency	91.329%
Average Efficiency 5VSB	77.765%
Standby Power Consumption (W)	0.0982000
Average PF	0.947
Avg Noise Output	33.95 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	Standard++

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62.5	3	0.3
	Watts	110		750	15	3.6
Total Max. Power (W)		750				

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

Hold-Up Time (ms)	17.7
AC Loss to PWR_OK Hold Up Time (ms)	15
PWR_OK Inactive to DC Loss Delay (ms)	2.7

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CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (600mm)	1	1	18-20AWG	No
4+4 pin EPS12V (650mm)	2	2	18AWG	No
6+2 pin PCIe (600mm+150mm)	1	2	16-18AWG	No
6+2 pin PCIe (600mm)	1	1	16AWG	No
SATA (500mm+100mm+100mm)	1	3	18AWG	No
SATA (450mm+115mm+115mm+115mm)	1	4	18AWG	No
4 pin Molex (450mm+100mm+100mm+100mm)	1	4	18AWG	No
AC Power Cord (1370mm) - C13 coupler	1	1	18AWG	-

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General Data	-
Manufacturer (OEM)	HEC
PCB Type	Double Sided
Primary Side	**-**
Transient Filter	4x Y caps, 3x X caps, 2x CM chokes, 1x MOV, 1x Power Integrations CAP200DG (Discharge IC)
Inrush Protection	NTC Thermistor SCK-037 (3 Ohm) & Relay
Bridge Rectifier(s)	2x GBU10K (800V, 10A @ 100°C)
APFC MOSFETs	2x Infineon IPA60R120P7 (600V, 16A @ 100°C, Rds(on): 0.12Ohm)
APFC Boost Diode	1x Infineon IDH06G65C6 (650V, 6A @ 145°C)
Bulk Cap(s)	1x Teapo (400V, 470uF, 2,000h @ 105°C, LG)
Main Switchers	2x Infineon IPA60R120P7 (600V, 16A @ 100°C, Rds(on): 0.12Ohm)
APFC Controller	Champion CM6500UN & CM03AX
Resonant Controller	Champion CM6901T6X
Topology	Primary side: APFC, Half-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	**-**
+12V MOSFETs	no info
5V & 3.3V	DC-DC Converters: 8x Potens Semiconductor PDD3906 (30V, 51A @ 100°C, Rds(on): 6mOhm) PWM Controller(s): 2x APEC APW7073
Filtering Capacitors	Electrolytic: 10x Teapo (1-3,000h @ 105°C, SC), 1x Nippon Chemi-Con (1-5,000h @ 105°C, KZE), 1x Elite (105°C, EM) Polymer: 4x Teapo, 11x no info
Supervisor IC	Weltrend WT7527RT (OCP, OVP, UVP, SCP, PG)
Fan Model	Hong Hua HA1225H12F-Z (120mm, 12V, 0.58A, Rifle Bearing Fan)
5VSB Circuit	**-**
Rectifier	1x PS1060L SBR (60V, 10A)
Standby PWM Controller	Power Integrations TNY290PG

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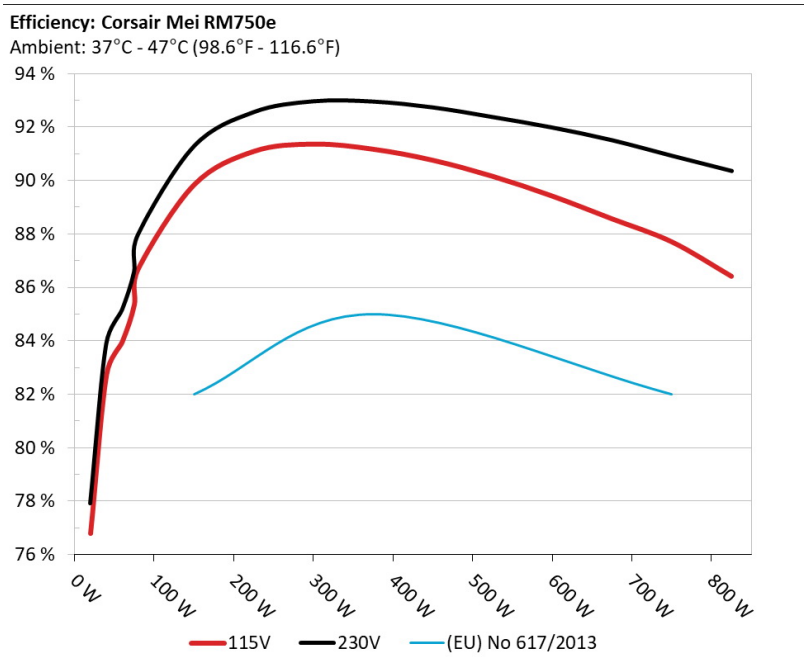
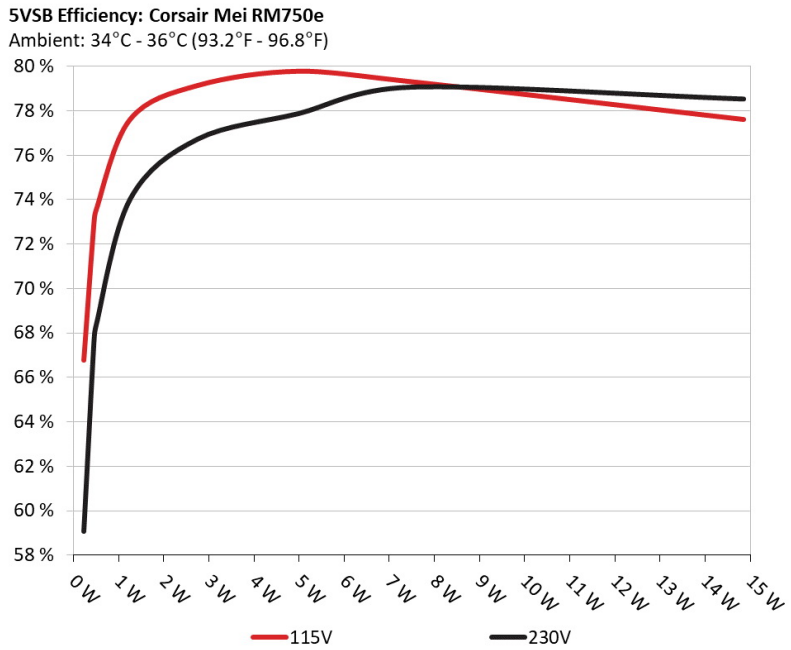
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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	0.226W	66.792%	0.04
	5.013V	0.338W		115.16V
2	0.09A	0.451W	72.966%	0.073
	5.011V	0.618W		115.16V
3	0.55A	2.751W	79.123%	0.285
	5V	3.475W		115.15V
4	1A	4.993W	79.764%	0.36
	4.991V	6.26W		115.16V
5	1.5A	7.474W	79.295%	0.404
	4.982V	9.423W		115.15V
6	3A	14.854W	77.599%	0.462
	4.951V	19.141W		115.15V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.226W	59.089%	0.014
	5.012V	0.383W		230.38V
2	0.09A	0.451W	67.636%	0.024
	5.013V	0.667W		230.38V
3	0.55A	2.75W	76.718%	0.12
	4.999V	3.584W		230.38V
4	1A	4.992W	77.869%	0.192
	4.99V	6.413W		230.38V
5	1.5A	7.473W	79.053%	0.246
	4.981V	9.456W		230.38V
6	3A	14.855W	78.521%	0.338
	4.951V	18.926W		230.38V

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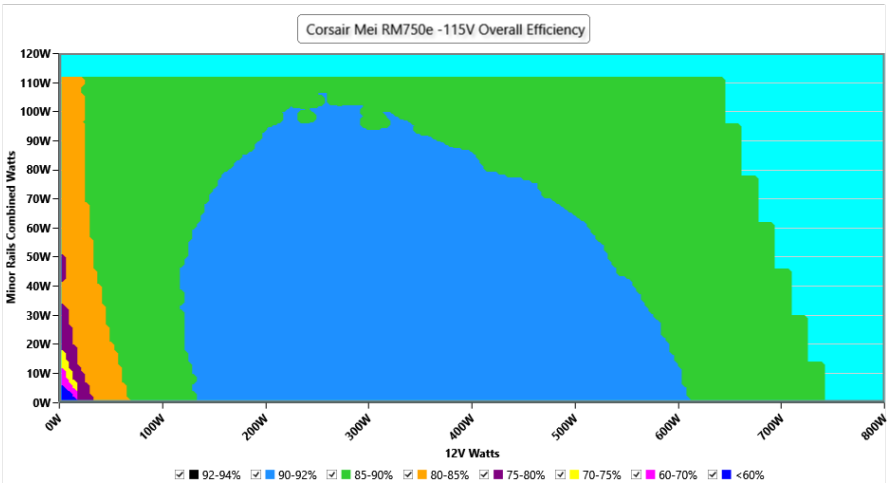
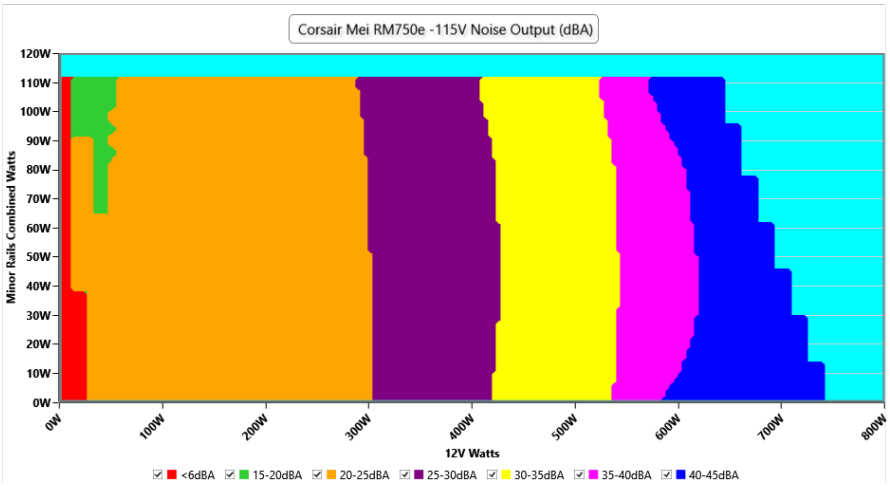
EFFICIENCY GRAPH 115V



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

Anex

Corsair RM750e

VAMPIRE POWER -115V

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.17 V	115.15 V	113.85 V	115.18 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	60.00 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.415	1.415	1.340	1.416	1.490	PASS
Mains Voltage THD:	0.13 %	0.11 %	N/A	0.15 %	2.00 %	PASS
Real Power:	0.057 W	0.051 W	N/A	0.063 W	N/A	N/A
Apparent Power:	8.312 W	8.308 W	N/A	8.316 W	N/A	N/A
Power Factor:	0.007	N/A	N/A	N/A	N/A	N/A

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 RM750e

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
10%	4.372A	1.998A	1.989A	1.002A	75.002	85.349%	903	21.7	40.52°C	0.975
	12.216V	5.006V	3.319V	4.992V	87.878				45.22°C	115.13V
20%	9.765A	2.999A	2.986A	1.204A	149.952	89.835%	926	22.3	40.78°C	0.982
	12.191V	5.002V	3.316V	4.984V	166.922				45.83°C	115.11V
30%	15.505A	3.501A	3.486A	1.407A	224.958	91.087%	970	23.5	41.12°C	0.978
	12.183V	5V	3.313V	4.977V	246.976				46.87°C	115.09V
40%	21.258A	4.003A	3.987A	1.61A	300.042	91.362%	1044	25.5	41.49°C	0.98
	12.176V	4.997V	3.311V	4.97V	328.406				47.56°C	115.06V
50%	26.634A	5.008A	4.988A	1.814A	374.602	91.171%	1156	28.6	42.64°C	0.983
	12.168V	4.993V	3.308V	4.962V	410.875				49.18°C	115.05V
60%	32.047A	6.013A	5.99A	2A	449.422	90.758%	1260	31.5	42.84°C	0.986
	12.160V	4.99V	3.306V	4.955V	495.184				49.94°C	115.02V
70%	37.470A	7.022A	6.995A	2.224A	524.437	90.16%	1348	33.1	43.72°C	0.988
	12.152V	4.986V	3.303V	4.947V	581.667				51.29°C	115V
80%	42.964A	8.002A	8A	2.328A	599.516	89.42%	1494	36.3	44.08°C	0.989
	12.143V	4.982V	3.3V	4.94V	670.455				52.25°C	114.98V
90%	48.799A	8.538A	8.49A	2.432A	674.697	88.565%	2054	44.6	44.78°C	0.99
	12.136V	4.978V	3.297V	4.935V	761.806				53.83°C	114.96V
100%	54.445A	9.047A	9.013A	3.051A	749.923	87.703%	2373	48.3	45.61°C	0.991
	12.126V	4.974V	3.295V	4.918V	855.065				55.66°C	114.93V
110%	59.968A	10.06A	10.115A	3.053A	824.96	86.413%	2432	48.7	46.93°C	0.988
	12.117V	4.97V	3.292V	4.914V	954.655				57.85°C	114.93V
CL1	0.115A	13.229A	13.23A	0A	111.3	83.558%	1322	32.8	42.58°C	0.983
	12.199V	5.004V	3.303V	5.003V	133.207				49.12°C	115.11V
CL2	0.114A	19.946A	0A	0A	101.395	82.353%	1176	29.2	43.43°C	0.984
	12.203V	5.013V	3.307V	5.015V	123.119				51.28°C	115.12V
CL3	0.114A	0A	19.948A	0A	67.388	76.61%	1125	27.8	44.76°C	0.975
	12.217V	5.009V	3.308V	5V	87.966				53.87°C	115.12V
CL4	61.787A	0A	0A	0A	749.671	88.737%	2021	44.2	45.61°C	0.991
	12.133V	4.984V	3.307V	4.992V	844.823				55.51°C	114.94V

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Corsair RM750e

20-80W 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	1.216A	0.499A	0.497A	0.2A	19.997	76.781%	0	<6.0	39.89°C	0.883
	12.204V	5.008V	3.321V	5.01V	26.046				36.77°C	115.14V
40W	2.678A	0.699A	0.696A	0.3A	39.997	82.725%	0	<6.0	40.8°C	0.953
	12.205V	5.009V	3.321V	5.008V	48.352				37.3°C	115.13V
60W	4.136A	0.899A	0.894A	0.4A	59.997	83.967%	888	21.1	37.63°C	0.974
	12.215V	5.007V	3.32V	5.006V	71.458				41.43°C	115.13V
80W	5.596A	1.099A	1.093A	0.5A	79.951	86.694%	890	21.2	39.54°C	0.978
	12.207V	5.006V	3.319V	5.003V	92.222				43.69°C	115.12V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	21.09mV	9.67mV	8.55mV	11.06mV	Pass
20% Load	15.19mV	9.72mV	8.65mV	11.37mV	Pass
30% Load	13.86mV	9.77mV	9.82mV	13.92mV	Pass
40% Load	15.22mV	10.94mV	9.42mV	12.59mV	Pass
50% Load	18.54mV	12.22mV	10.18mV	14.28mV	Pass
60% Load	18.80mV	11.86mV	12.18mV	15.04mV	Pass
70% Load	20.23mV	13.14mV	12.02mV	15.45mV	Pass
80% Load	19.61mV	13.30mV	16.12mV	16.47mV	Pass
90% Load	30.39mV	19.07mV	25.08mV	32.88mV	Pass
100% Load	32.00mV	18.07mV	21.53mV	27.93mV	Pass
110% Load	36.01mV	22.29mV	28.01mV	32.20mV	Pass
Crossload1	24.29mV	12.79mV	22.70mV	16.17mV	Pass
Crossload2	17.84mV	11.10mV	12.80mV	12.54mV	Pass
Crossload3	20.79mV	10.74mV	22.67mV	12.59mV	Pass
Crossload4	27.94mV	14.47mV	11.74mV	13.97mV	Pass

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230V

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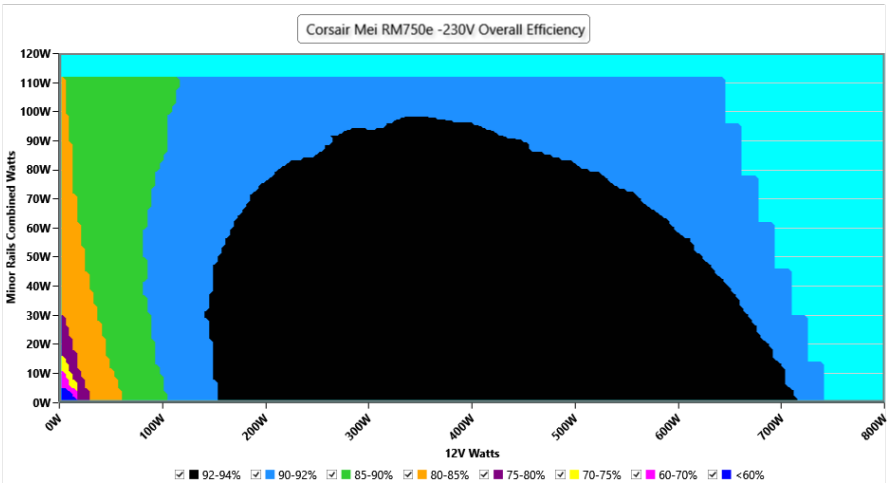
EFFICIENCY GRAPH 230V



INFO

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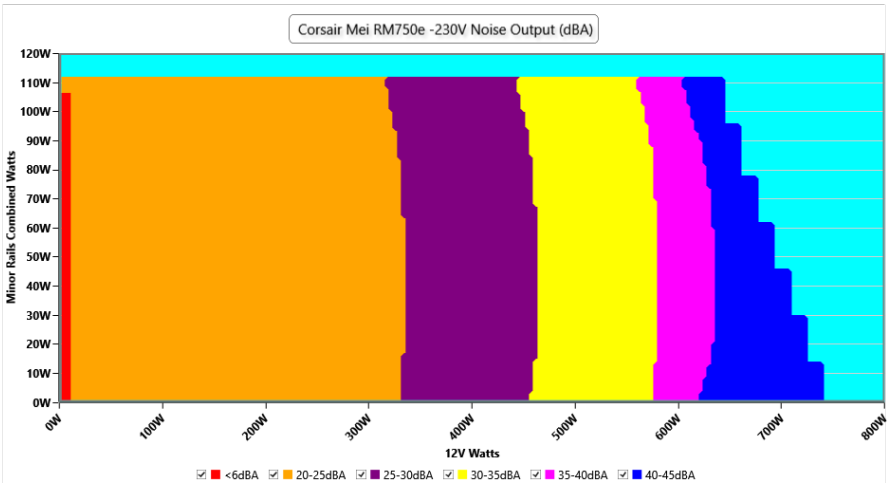
NOISE GRAPH 230V



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VAMPIRE POWER -230V

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	230.38 V	230.37 V	227.70 V	230.41 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	50.00 Hz	49.50 Hz	50.00 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.415	1.415	1.340	1.416	1.490	PASS
Mains Voltage THD:	0.14 %	0.13 %	N/A	0.16 %	2.00 %	PASS
Real Power:	0.098 W	0.081 W	N/A	0.121 W	N/A	N/A
Apparent Power:	27.826 W	27.813 W	N/A	27.839 W	N/A	N/A
Power Factor:	0.003	N/A	N/A	N/A	N/A	N/A

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
10%	4.371A	1.998A	1.989A	1.002A	75.004	86.589%	948	22.9	41.06°C	0.846
	12.217V	5.006V	3.318V	4.993V	86.615				46.12°C	230.38V
20%	9.766A	2.999A	2.986A	1.204A	149.96	91.281%	944	22.8	41.3°C	0.924
	12.191V	5.003V	3.315V	4.985V	164.284				46.84°C	230.37V
30%	15.505A	3.501A	3.486A	1.407A	224.964	92.565%	1007	24.5	41.62°C	0.946
	12.183V	5V	3.313V	4.978V	243.036				47.63°C	230.37V
40%	21.260A	4.004A	3.987A	1.61A	300.055	92.973%	1054	25.8	42.22°C	0.955
	12.175V	4.996V	3.311V	4.97V	322.747				48.69°C	230.36V
50%	26.642A	5.01A	4.988A	1.814A	374.667	92.963%	1149	28.4	42.61°C	0.961
	12.167V	4.992V	3.308V	4.962V	403.01				49.63°C	230.35V
60%	32.058A	6.015A	5.992A	2.001A	449.509	92.745%	1255	31.3	43.05°C	0.966
	12.159V	4.989V	3.305V	4.954V	484.668				50.48°C	230.34V
70%	37.483A	7.022A	6.997A	2.224A	524.547	92.386%	1359	33.3	43.22°C	0.968
	12.150V	4.986V	3.302V	4.946V	567.772				51.26°C	230.33V
80%	42.979A	8.003A	8.002A	2.328A	599.607	91.991%	1534	36.6	44.26°C	0.971
	12.141V	4.982V	3.299V	4.94V	651.81				52.81°C	230.32V
90%	48.815A	8.539A	8.492A	2.433A	674.804	91.516%	2004	44.0	45.59°C	0.973
	12.133V	4.978V	3.297V	4.933V	737.357				54.66°C	230.32V
100%	54.462A	9.05A	9.016A	3.051A	750.047	90.933%	2361	48.3	46.11°C	0.974
	12.125V	4.973V	3.294V	4.917V	824.839				56.13°C	230.31V
110%	59.988A	10.064A	10.119A	3.054A	825.103	90.364%	2433	48.7	46.6°C	0.976
	12.116V	4.969V	3.291V	4.912V	913.092				57.51°C	230.3V
CL1	0.115A	13.234A	13.234A	0A	111.314	84.964%	1334	32.9	42.23°C	0.907
	12.198V	5.003V	3.302V	5.003V	131.009				49.36°C	230.39V
CL2	0.115A	19.949A	0A	0A	101.4	83.582%	1181	29.4	43.61°C	0.898
	12.202V	5.013V	3.307V	5.015V	121.323				51.61°C	230.39V
CL3	0.114A	0A	19.952A	0A	67.397	77.789%	1130	27.9	44.05°C	0.846
	12.216V	5.008V	3.308V	4.999V	86.646				53.09°C	230.39V
CL4	61.803A	0A	0A	0A	749.833	91.871%	2097	45.2	45.27°C	0.974
	12.132V	4.982V	3.307V	4.991V	816.175				55.24°C	230.31V

Anex

Corsair RM750e

20-80W 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
20W	1.216A	0.499A	0.497A	0.2A	20.001	77.922%	0	<6.0	39.91°C	0.526
	12.208V	5.011V	3.321V	5.011V	25.666				36.78°C	230.38V
40W	2.678A	0.698A	0.696A	0.3A	40	83.876%	0	<6.0	40.57°C	0.706
	12.208V	5.012V	3.321V	5.009V	47.692				37.09°C	230.38V
60W	4.136A	0.899A	0.895A	0.4A	60	85.171%	890	21.2	38.8°C	0.805
	12.216V	5.006V	3.32V	5.006V	70.453				42.62°C	230.38V
80W	5.596A	1.099A	1.094A	0.5A	79.959	87.985%	900	21.6	40.63°C	0.854
	12.208V	5.006V	3.319V	5.003V	90.883				44.82°C	230.37V

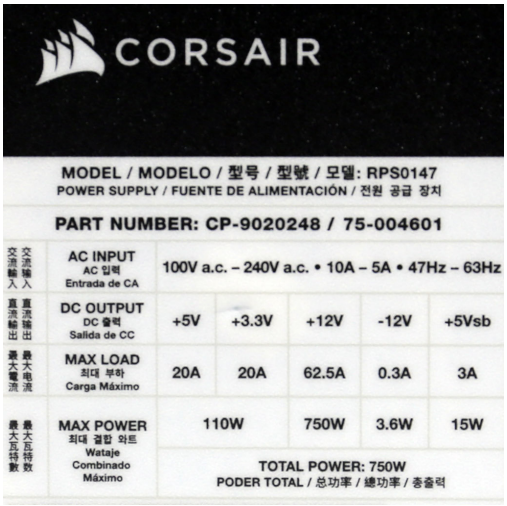
RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	21.45mV	10.17mV	8.55mV	10.86mV	Pass
20% Load	15.95mV	9.20mV	8.60mV	11.47mV	Pass
30% Load	13.60mV	9.72mV	8.70mV	13.36mV	Pass
40% Load	13.79mV	10.53mV	8.91mV	12.70mV	Pass
50% Load	14.91mV	11.51mV	10.34mV	13.97mV	Pass
60% Load	15.17mV	11.55mV	10.85mV	14.43mV	Pass
70% Load	17.16mV	11.51mV	11.77mV	15.70mV	Pass
80% Load	17.57mV	12.63mV	15.66mV	16.37mV	Pass
90% Load	18.23mV	13.09mV	16.17mV	16.21mV	Pass
100% Load	30.05mV	14.83mV	19.34mV	23.14mV	Pass
110% Load	30.77mV	16.47mV	20.74mV	24.06mV	Pass
Crossload1	23.53mV	11.64mV	23.11mV	16.48mV	Pass
Crossload2	17.74mV	10.84mV	12.49mV	12.13mV	Pass
Crossload3	22.10mV	10.18mV	22.06mV	12.13mV	Pass
Crossload4	27.65mV	13.91mV	10.66mV	12.49mV	Pass

Anex

Corsair RM750e

Top side



Power specifications label

CERTIFICATIONS 115V

CYBENETICS PLATINUM

CYBENETICS STANDARD+

CERTIFICATIONS 230V

CYBENETICS PLATINUM 230v

CYBENETICS STANDARD++ 230v