CORSAIR

Corsair RM1200e (ATX v3.0)

Serial Number -

Lab ID CR12002183

Certification ID 252183

Test Result Report ID: 23PS2183A

Certificate Issue Date: May 25, 2023

Scheme: ETA-EMI PSU

115V 230V

115V 230V

Scheme: LAMBDA PSU

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	RM1200e (ATX v3.0)
OEM/ODM	HEC
Serial Number	-
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	15-7.5
Rated Frequency (Hz)	47-63

Rated Power (W)	1200
Operating Temperature (Continuous Full Load) (°C)	0 -50
Type	ATX12V
Cable Design	Fully Modular
Warranty	No info
Cybenetics Measurements	
Dimensions (W x H x D)	150mm x85mm x 140mm
Weight	-
Cooling	140mm Rifle Bearing Fan (HA1425H12SF-Z)
Semi-Passive Operation	✓
Cybenetics Testing Information	
Lab ID	CR12002183
Date of receipt	May 18, 2023
Testing Date	May 25, 2023
Report Issued Date	May 25, 2023
DUT Notes	CP-9020258
Engineer Name	Georgios Theodoros Sarimpalas
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 (600mm)	1	1	16-20AWG	No
4+4 pin EPS12V (650mm)	2	2	18AWG	No
6+2 pin PCIe (600mm+150mm)	2	4	16-18AWG	No
6+2 pin PCIe (600mm)	2	2	16AWG	No
12+2 pin PCIe (650mm) (600W)	1	1	16-24AWG	No
SATA (500mm+100mm+100mm)	1	3	18AWG	No
SATA (450mm+115mm+115mm+115mm)	1	4	18AWG	No

4-pin Molex (450mm+100mm+100mm)	1	3	18AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	16AWG	-

Protection Features(Manufacturer)

Over Power Protection	✓
Over Current (+12V) Protection	✓
Over Temperature Protection	✓
Short Circuit Protection	✗
Surge Protection	✓
Inrush Current Protection	✓
Fan Failure Protection	✗

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	100	3	0
	Watts	150		1200	15	0
Total Max. Power (W)		1200				

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	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	89.353%
Average Noise Output (>1450 Load Combinations)	23.31dBA
Average PF (>1450 Load Combinations)	0.985
Efficiency With 10W (≤500W) or 2% (>500W) Load	76.528%
Standby Power Consumption	0.0577W
Non-Accredited	
12V Ripple (Full Load)	22.56mV
5V Ripple (Full Load)	16.37mV
3.3V Ripple (Full Load)	19.16mV
5VSB Ripple (Full Load)	13.76mV
12V Load Regulation	0.94%
5V Load Regulation	0.32%
3.3V Load Regulation	0.57%
5VSB Load Regulation	1.76%
Inrush Current	60.440A

230V

Accredited	
Average Efficiency (>1450 load combinations)	91.324%
Average Noise Output (>1450 Load Combinations)	24.12dBA
Average PF (>1450 Load Combinations)	0.951
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
Standby Power Consumption	0.1003W
Non-Accredited	
12V Ripple (Full Load)	22.42mV
5V Ripple (Full Load)	16.83mV
3.3V Ripple (Full Load)	18.56mV

5VSB Ripple (Full Load)	17.72mV	
12V Load Regulation	0.93%	
5V Load Regulation	0.36%	
3.3V Load Regulation	0.61%	
5VSB Load Regulation	1.74%	
Inrush Current	64.200A	
Hold-Up Time & PWR_OK Signal	19.00ms	
AC Loss to PWR_OK Hold Up Time	18.00ms	
PWR_OK Inactive to DC Loss Delay	1.00ms	
PSU Timings: T1 (20% / 100%)	47.0ms	47.0ms
PSU Timings: T3 (20% / 100%)	120.0ms	120.0ms
12V OCP (24.9°C / 35.4°C)	124.19A (124.19%), 11.915V	124.40A (124.40%), 11.903V
5V OCP (24.9°C / 35.4°C)	27.66A (138.30%), 5.007V	27.26A (136.30%), 5.01V
3.3V OCP (24.9°C / 35.4°C)	30.30A (151.50%), 3.3V	28.80A (144.00%), 3.304V
5VSB OCP (24.9°C / 35.4°C)	4.8A (160.00%), 4.944V	4.9A (163.33%), 4.948V
OPP (25.81°C / 36.18°C)	121.76%	121.76%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	19
AC Loss to PWR_OK Hold Up Time (ms)	18
PWR_OK Inactive to DC Loss Delay (ms)	1

Stromverbrauch im Ruhezustand

Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.89 V	114.82 V	113.85 V	114.97 V	116.15 V	PASS

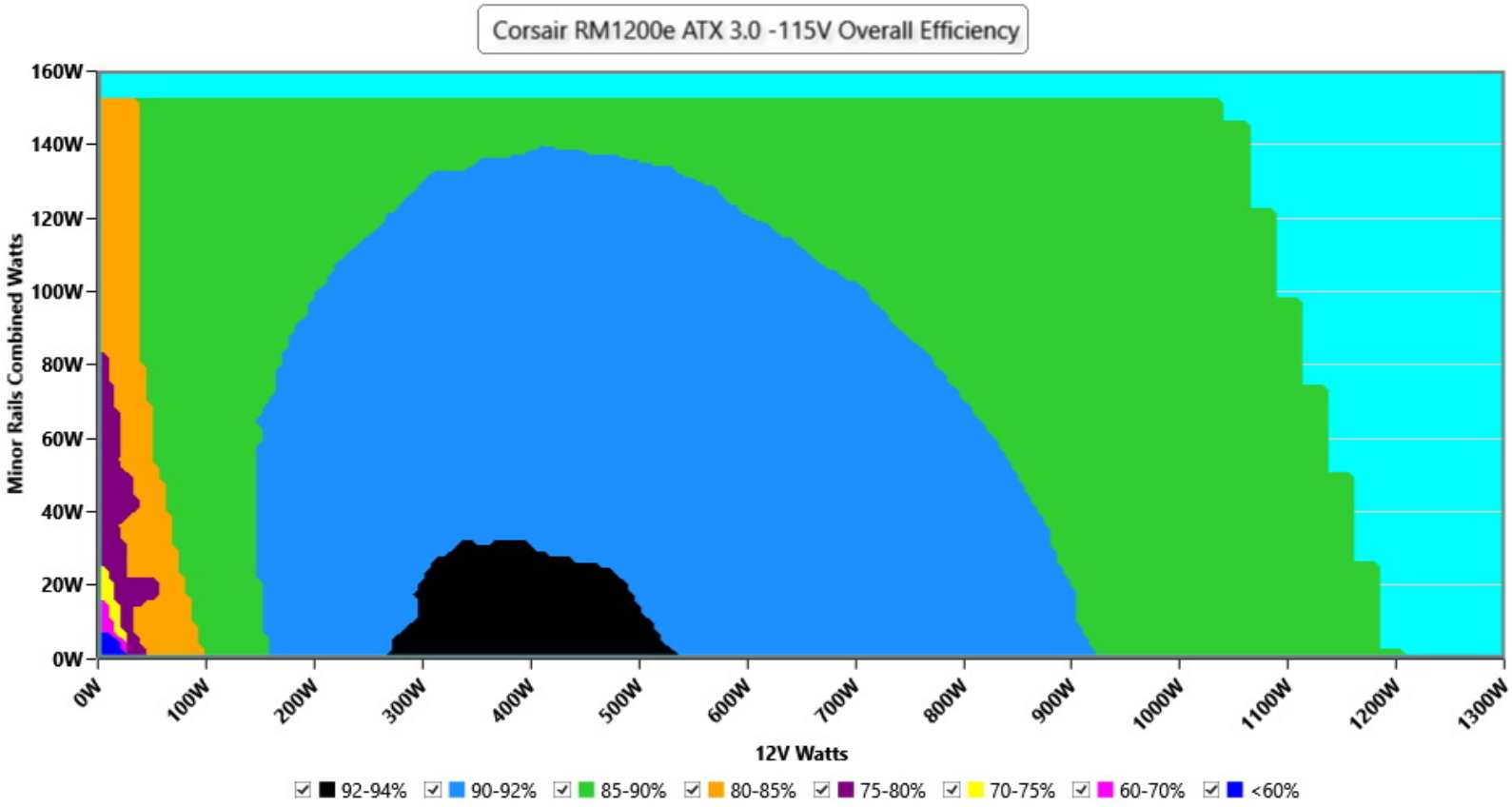
Mains Frequency:	60.00 Hz	59.98 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.419	1.417	1.340	1.421	1.490	PASS
Mains Voltage THD:	0.22 %	0.18 %	N/A	0.30 %	2.00 %	PASS
Real Power:	0.058 W	0.036 W	N/A	0.082 W	N/A	N/A
Apparent Power:	13.787 W	13.736 W	N/A	13.848 W	N/A	N/A
Power Factor:	0.004	N/A	N/A	N/A	N/A	N/A

230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	229.78 V	229.72 V	227.70 V	229.86 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:	1.417	1.415	1.340	1.418	1.490	PASS
Mains Voltage THD:	0.15 %	0.13 %	N/A	0.21 %	2.00 %	PASS
Real Power:	0.100 W	0.053 W	N/A	0.154 W	N/A	N/A
Apparent Power:	46.362 W	46.291 W	N/A	46.443 W	N/A	N/A
Power Factor:	0.002	N/A	N/A	N/A	N/A	N/A

Efficiency Graph

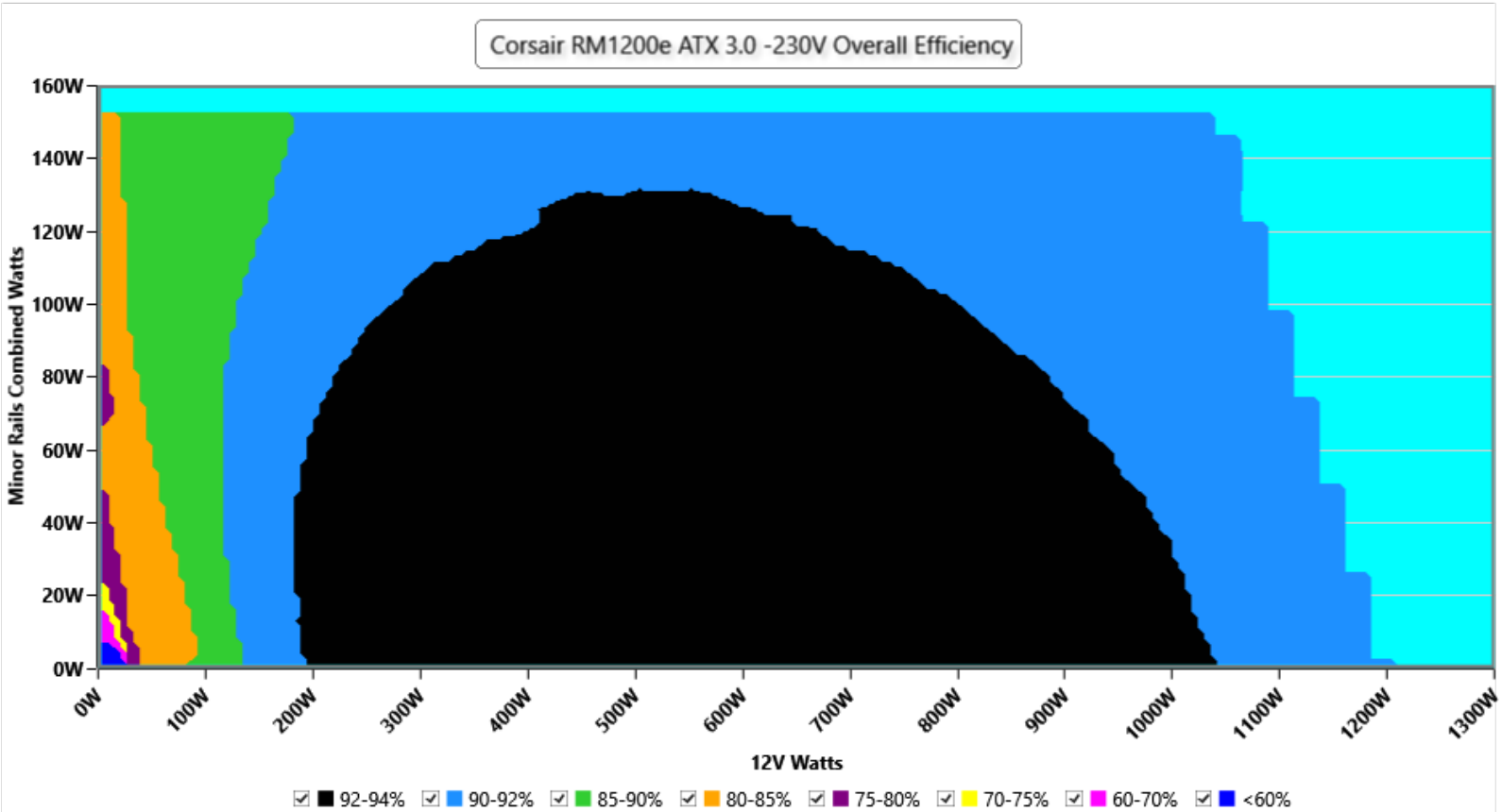
115V



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



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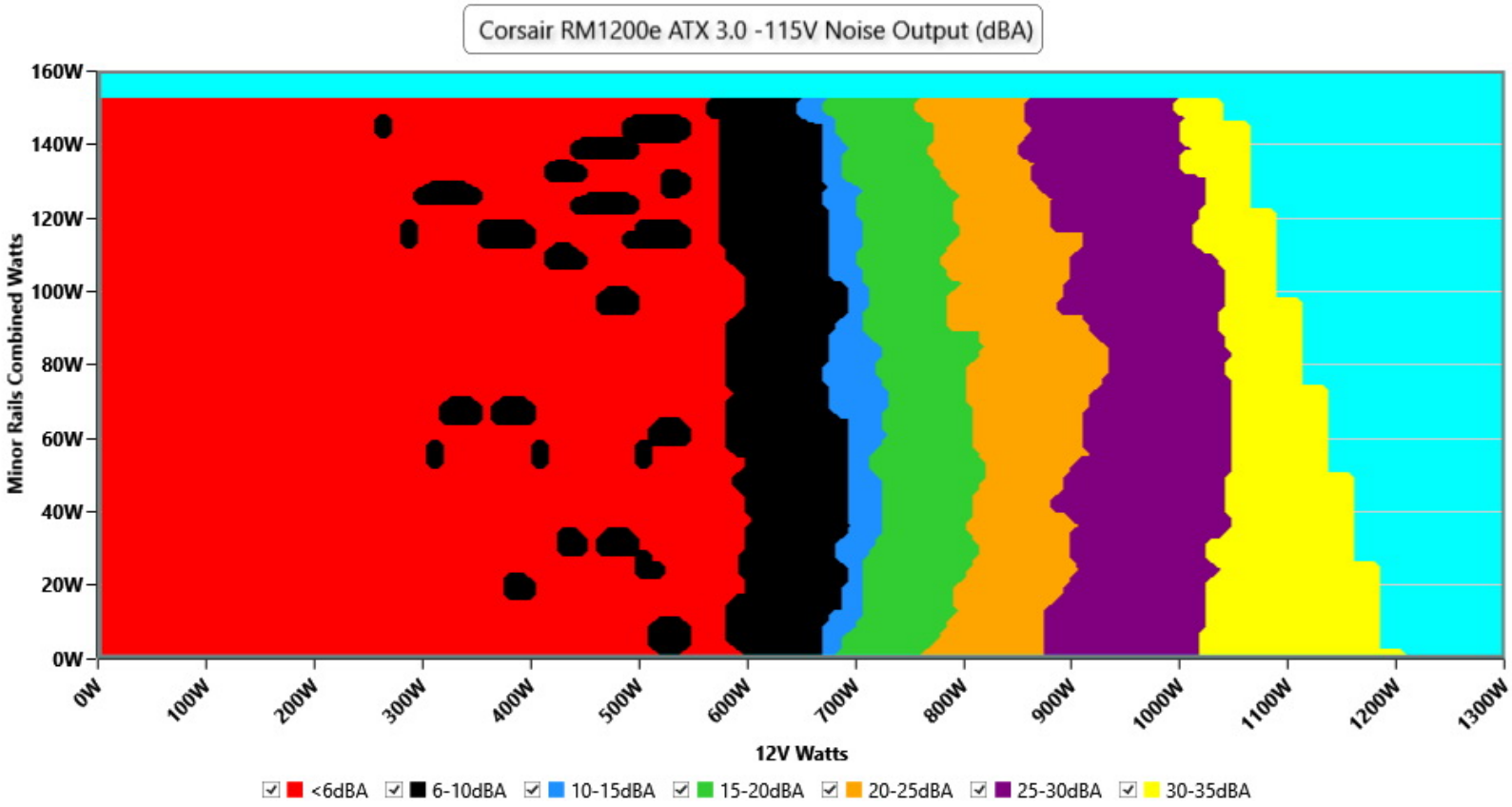
Noise Graph

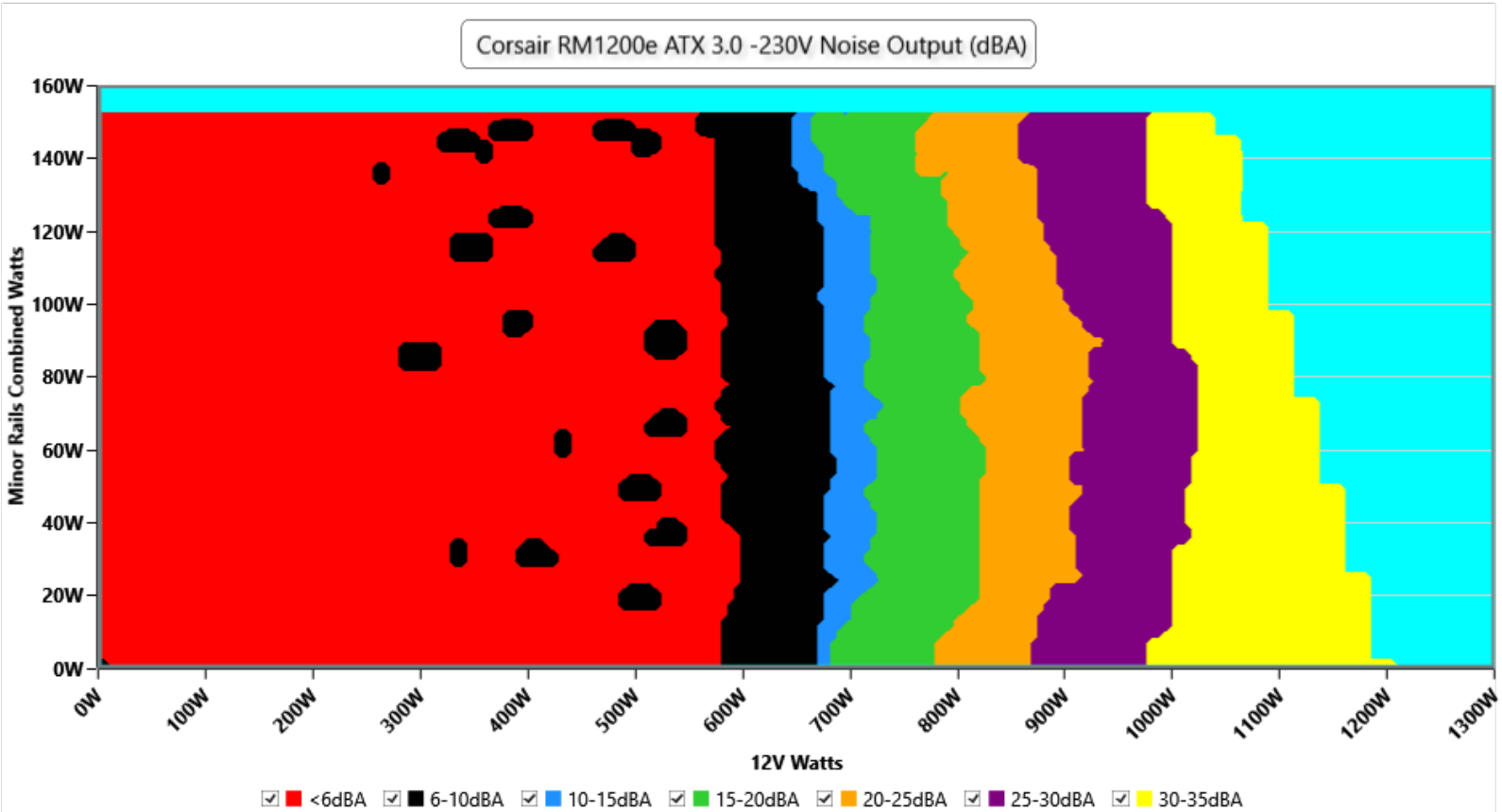
115V



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

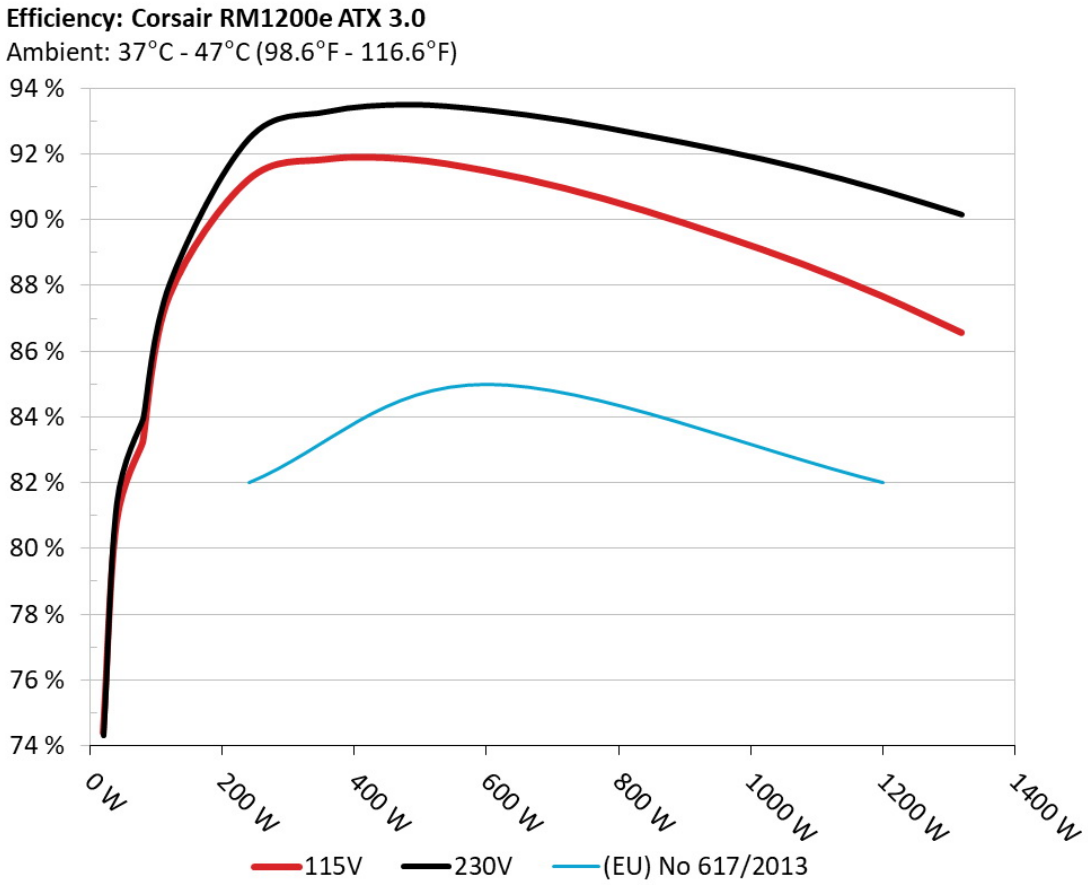


INFO

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

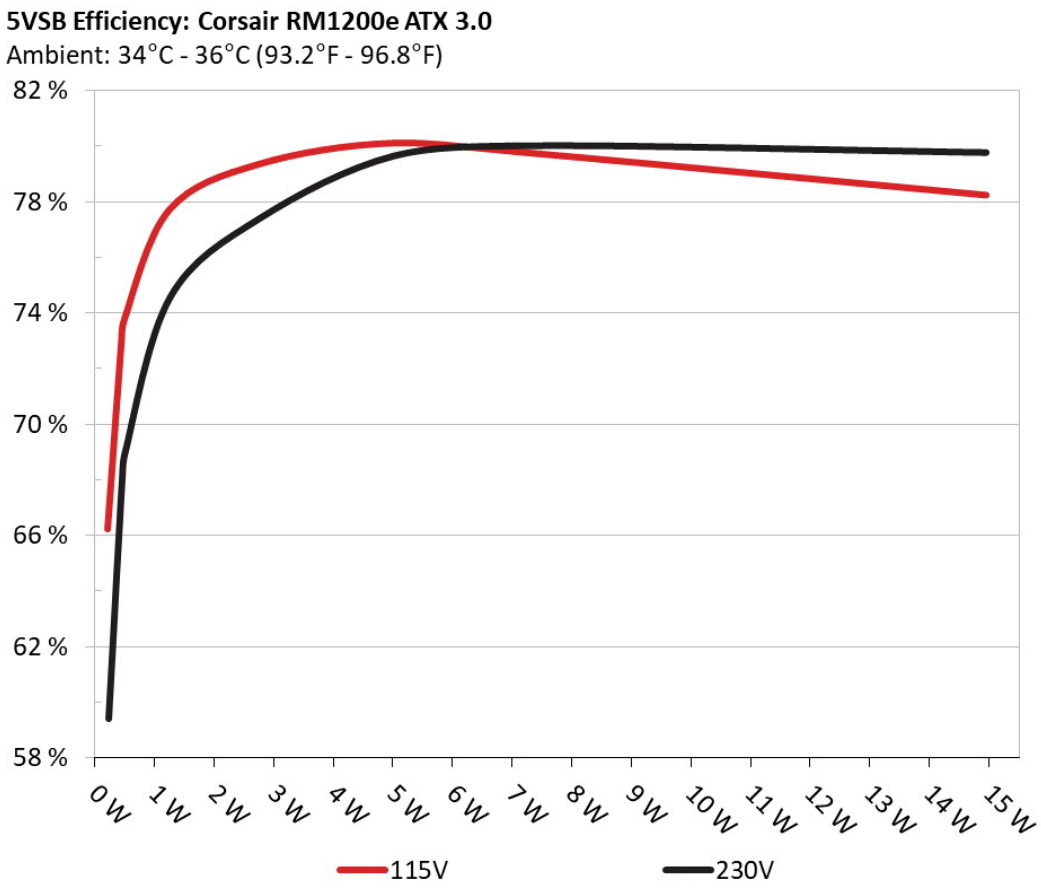
Efficiency under high ambient temperature



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	0.226W	65.714%	0.025
	5.028V	0.344W		114.91V
2	0.09A	0.452W	72.307%	0.045
	5.027V	0.625W		114.9V
3	0.55A	2.761W	78.838%	0.223
	5.02V	3.502W		114.89V
4	1A	5.013W	79.595%	0.334
	5.013V	6.298W		114.9V
5	1.5A	7.508W	79.197%	0.405
	5.005V	9.48W		114.89V
6	3A	14.942W	77.723%	0.5
	4.981V	19.225W		114.89V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.227W	58.924%	0.008
	5.032V	0.386W		229.79V
2	0.09A	0.453W	67.565%	0.014
	5.03V	0.672W		229.79V
3	0.55A	2.761W	76.892%	0.076
	5.02V	3.591W		229.79V
4	1A	5.013W	79.136%	0.129
	5.013V	6.336W		229.79V
5	1.5A	7.509W	79.501%	0.183
	5.006V	9.445W		229.79V
6	3A	14.947W	79.257%	0.3
	4.983V	18.861W		229.79V

Protection Features

OCP (Normal @ 24.9°C)	12V: 124.19A (124.19%), 11.915V 5V: 27.66A (138.30%), 5.007V 3.3V: 30.30A (151.50%), 3.3V 5VSB: 4.8A (160.00%), 4.944V
OCP (Hot @ 35.4°C)	12V: 124.40A (124.40%), 11.903V 5V: 27.26A (136.30%), 5.01V 3.3V: 28.80A (144.00%), 3.304V 5VSB: 4.9A (163.33%), 4.948V
OPP (Normal @ 25.8°C)	1461.08W (121.76%)
OPP (Hot @ 36.2°C)	1461.10W (121.76%)
OTP	✗ (---)
SCP	
PWR_OK	Proper Operation
NLO	✓
Fan Failure Protection	✗
SIP	Surge: MOV Inrush: NTC & Bypass Relay

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%	8.172A	1.99A	1.987A	0.996A	119.972	87.683%	0	<6.0	44.48°C	0.969
	12.036V	5.023V	3.321V	5.018V	136.829				40.2°C	114.86V
20%	17.375A	2.987A	2.982A	1.199A	239.919	91.223%	0	<6.0	45.3°C	0.971
	12.029V	5.021V	3.319V	5.004V	263.002				40.58°C	114.82V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
30%	26.878A	3.485A	3.481A	1.4A	359.071	91.847%	0	<6.0	46.18°C	0.98
	12.018V	5.021V	3.318V	4.999V	390.947				41.07°C	114.79V
40%	36.511A	3.984A	3.979A	1.602A	479.461	91.852%	299	<6.0	41.61°C	0.986
	12.004V	5.02V	3.317V	4.993V	521.988				47.26°C	114.74V
50%	45.762A	4.983A	4.978A	1.805A	599.231	91.495%	441	7.5	42.02°C	0.99
	11.991V	5.017V	3.314V	4.986V	654.933				48.06°C	114.7V
60%	55.095A	5.982A	5.978A	2A	719.729	90.959%	563	16.6	42.78°C	0.992
	11.979V	5.015V	3.312V	4.979V	791.269				49.39°C	114.65V
70%	64.379A	6.981A	6.979A	2.213A	839.517	90.284%	791	27.2	43.13°C	0.993
	11.966V	5.014V	3.31V	4.971V	929.865				50.17°C	114.6V
80%	73.750A	7.982A	7.98A	2.315A	959.511	89.504%	995	34.3	43.48°C	0.994
	11.954V	5.012V	3.308V	4.966V	1072.028				51.54°C	114.56V
90%	83.478A	8.482A	8.468A	2.419A	1079.321	88.655%	1200	39.4	44.46°C	0.995
	11.941V	5.01V	3.307V	4.961V	1217.446				53.47°C	114.5V
100%	93.035A	8.983A	8.987A	3.033A	1199.343	87.685%	1378	42.5	45.14°C	0.995
	11.927V	5.009V	3.305V	4.946V	1367.791				55.19°C	114.45V
110%	102.551A	9.986A	10.083A	3.035A	1319.961	86.57%	1668	47.0	46.52°C	0.995
	11.913V	5.007V	3.303V	4.943V	1524.736				57.43°C	114.39V
CL1	0.117A	18.031A	18.046A	0A	151.296	82.674%	475	9.4	40.71°C	0.972
	12.024V	5.007V	3.303V	5.032V	183.006				46.17°C	114.83V
CL2	0.115A	19.913A	0A	0A	101.349	79.42%	467	8.9	40.41°C	0.965
	12.028V	5.02V	3.321V	5.034V	127.615				47.43°C	114.85V
CL3	0.115A	0A	19.93A	0A	67.395	76.384%	369	<6.0	40.38°C	0.951
	12.027V	5.022V	3.312V	5.033V	88.241				49.44°C	114.87V
CL4	100.564A	0A	0A	0A	1199.995	88.192%	1375	42.5	45.02°C	0.995
	11.933V	5.02V	3.317V	4.999V	1360.669				56.01°C	114.46V

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%	8.179A	1.99A	1.987A	0.998A	119.994	88.043%	0	<6.0	44.45°C	0.849
	12.030V	5.024V	3.322V	5.012V	136.292				40.22°C	229.77V
20%	17.385A	2.987A	2.982A	1.199A	239.951	92.463%	0	<6.0	45.54°C	0.925
	12.025V	5.023V	3.32V	5.006V	259.508				40.85°C	229.75V
30%	26.897A	3.485A	3.48A	1.4A	359.17	93.285%	0	<6.0	46.26°C	0.949
	12.013V	5.022V	3.319V	5V	385.029				41.16°C	229.73V
40%	36.529A	3.985A	3.98A	1.602A	479.542	93.499%	368	<6.0	41.66°C	0.96
	12.000V	5.02V	3.317V	4.993V	512.881				47.28°C	229.71V
50%	45.783A	4.983A	4.978A	1.805A	599.301	93.334%	468	8.9	42.2°C	0.966
	11.987V	5.018V	3.315V	4.986V	642.103				48.24°C	229.69V
60%	55.118A	5.982A	5.978A	2A	719.789	93.009%	599	18.7	42.67°C	0.972
	11.975V	5.016V	3.313V	4.979V	773.889				49.24°C	229.67V
70%	64.409A	6.982A	6.979A	2.213A	839.585	92.57%	789	27.1	43.05°C	0.976
	11.962V	5.014V	3.311V	4.972V	906.979				50.09°C	229.65V
80%	73.779A	7.982A	7.98A	2.315A	959.552	92.093%	979	33.7	43.57°C	0.978
	11.950V	5.012V	3.308V	4.967V	1041.932				51.79°C	229.62V
90%	83.506A	8.482A	8.468A	2.419A	1079.375	91.548%	1150	38.2	44.31°C	0.98
	11.938V	5.01V	3.307V	4.961V	1179.024				53.38°C	229.6V
100%	93.062A	8.984A	8.987A	3.033A	1199.388	90.893%	1370	42.4	45.09°C	0.982
	11.924V	5.009V	3.305V	4.947V	1319.562				55.13°C	229.57V
110%	102.578A	9.986A	10.083A	3.035A	1320.002	90.151%	1656	46.8	46.84°C	0.984
	11.910V	5.007V	3.303V	4.943V	1464.2				57.74°C	229.55V
CL1	0.117A	18.032A	18.046A	0A	151.305	83.685%	454	8.0	40.44°C	0.891
	12.022V	5.007V	3.303V	5.032V	180.804				45.92°C	229.76V
CL2	0.116A	19.913A	0A	0A	101.358	80.069%	452	7.8	40.12°C	0.837
	12.025V	5.02V	3.32V	5.034V	126.585				47.14°C	229.77V
CL3	0.115A	0A	19.929A	0A	67.402	76.773%	347	<6.0	40.28°C	0.759
	12.024V	5.022V	3.312V	5.034V	87.792				49.36°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
CL4	100.567A	0A	0A	0A	1199.978	91.535%	1242	40.7	45.05°C	0.982
	11.932V	5.022V	3.318V	5V	1310.956				55.98°C	229.58V

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
20W	1.232A	0.497A	0.496A	0.199A	19.99	74.397%	0	<6.0	0.817
	12.039V	5.025V	3.324V	5.033V	26.867				114.9V
40W	2.714A	0.697A	0.695A	0.298A	39.989	80.777%	0	<6.0	0.918
	12.038V	5.024V	3.322V	5.031V	49.505				114.88V
60W	4.198A	0.895A	0.894A	0.398A	59.987	83.235%	0	<6.0	0.935
	12.036V	5.024V	3.322V	5.025V	72.073				114.88V
80W	5.673A	1.094A	1.092A	0.497A	79.924	81.725%	0	<6.0	0.952
	12.039V	5.024V	3.322V	5.028V	97.799				114.87V

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
20W	1.234A	0.497A	0.496A	0.199A	19.997	74.296%	0	<6.0	0.4
	12.034V	5.027V	3.325V	5.033V	26.917				229.79V
40W	2.716A	0.696A	0.695A	0.298A	39.997	81.376%	0	<6.0	0.586
	12.033V	5.025V	3.324V	5.025V	49.15				229.78V
60W	4.200A	0.895A	0.894A	0.398A	59.996	83.945%	0	<6.0	0.7
	12.032V	5.025V	3.323V	5.024V	71.474				229.78V
80W	5.677A	1.094A	1.092A	0.498A	79.943	83.172%	0	<6.0	0.783
	12.034V	5.025V	3.323V	5.021V	96.162				229.78V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	31.60mV	8.17mV	10.69mV	6.96mV	Pass
20% Load	13.20mV	8.89mV	11.20mV	8.54mV	Pass
30% Load	11.97mV	9.04mV	12.07mV	8.13mV	Pass
40% Load	11.87mV	10.83mV	13.35mV	9.26mV	Pass
50% Load	12.79mV	11.34mV	13.81mV	11.36mV	Pass
60% Load	13.15mV	11.95mV	14.63mV	9.41mV	Pass
70% Load	13.81mV	12.36mV	15.30mV	9.72mV	Pass
80% Load	14.58mV	13.08mV	16.27mV	10.54mV	Pass
90% Load	15.96mV	15.38mV	17.50mV	11.61mV	Pass
100% Load	22.56mV	16.37mV	19.16mV	13.76mV	Pass
110% Load	24.23mV	16.90mV	20.50mV	16.46mV	Pass
Crossload1	22.80mV	12.50mV	15.65mV	7.05mV	Pass
Crossload2	18.47mV	15.43mV	13.04mV	7.98mV	Pass
Crossload3	66.25mV	9.66mV	15.70mV	9.31mV	Pass
Crossload4	21.69mV	15.21mV	17.68mV	10.57mV	Pass

The results above are not used in the certification process

230V

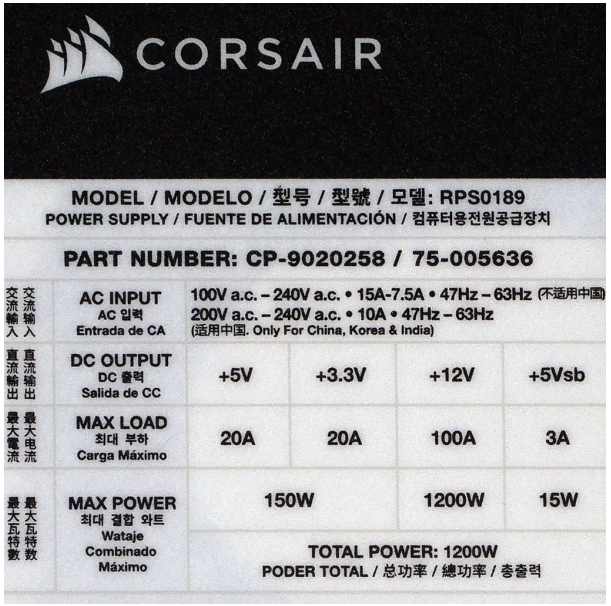
Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	36.51mV	22.48mV	17.70mV	11.61mV	Pass
20% Load	12.98mV	7.82mV	11.10mV	8.49mV	Pass
30% Load	11.66mV	8.63mV	12.48mV	7.57mV	Pass
40% Load	12.49mV	10.68mV	15.14mV	9.87mV	Pass
50% Load	12.79mV	9.81mV	14.99mV	9.46mV	Pass
60% Load	13.25mV	10.42mV	14.22mV	8.59mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
70% Load	12.38mV	10.78mV	14.07mV	8.80mV	Pass
80% Load	14.79mV	12.72mV	17.04mV	10.33mV	Pass
90% Load	15.14mV	14.26mV	17.70mV	11.10mV	Pass
100% Load	22.42mV	16.83mV	18.56mV	17.72mV	Pass
110% Load	23.24mV	18.22mV	19.46mV	17.04mV	Pass
Crossload1	21.69mV	12.80mV	14.21mV	6.89mV	Pass
Crossload2	16.73mV	14.82mV	12.53mV	7.21mV	Pass
Crossload3	66.30mV	8.99mV	15.55mV	9.82mV	Pass
Crossload4	22.45mV	13.76mV	16.08mV	10.83mV	Pass

The results above are not used in the certification process

Corsair RM1200e (ATX v3.0)

Top side



Power specifications label

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