Sharkoon Rebel P20 1000

Serial Number

Lab ID SK10002383

Certification ID 252383

Test Result Report ID: 24PS2383A

Certificate Issue Date: Mar 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	Sharkoon
Model	Rebel P20 1000
OEM/ODM	Andyson
Serial Number	
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240

Rated Current (Arms)	12-6
Rated Frequency (Hz)	50-60
Rated Power (W)	1000
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	120mm Fluid Dynamic Bearing Fan (HA1225M12F-Z)
Semi-Passive Operation	✓ (selectable)
Cybenetics Testing Information	
Lab ID	SK10002383
Date of receipt	Feb 12, 2024
Testing Date	Mar 8, 2024
Report Issued Date	Mar 14, 2024
DUT Notes	Applicable to both black and white color models.
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 (600mm)	1	1	18AWG	No
4+4 pin EPS12V (700mm)	2	2	18AWG	No
6+2 pin PCIe (550mm+150mm)	2	4	18AWG	No

12+4 pin PCIe (600mm) (600W)	1	1	16-26AWG	No
SATA (500mm+150mm+150mm)	1	3	18AWG	No
SATA (500mm+150mm+150mm+150mm)	2	8	18AWG	No
4-pin Molex Adapter (+150mm)	1	1	18AWG	No
AC Power Cord (1360mm) - C13 coupler	1	1	18AWG	-

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	83.3	3	0.3
	Watts	100		999.6	15	3.6
Total Max. Power (W)		1000				

Parts Description

General Data	
Manufacturer (OEM)	Andyson
PCB Type	Double-Sided
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor SCK205R0 (5 Ohm @ 25°C) & Relay
Bridge Rectifier(s)	2x GBJ2510 (700V, 25A @ 100°C)
APFC MOSFETs	2x Wayon WML53N60C4 (600V,26A @ 100°C, Rds(on): 0.07Ohm)
APFC Boost Diode	1x CREE C3D10060A (600V, 10A @ 152°C)
Bulk Cap(s)	2x Nippon Chemi-Con (420V, 560uF each or 1120uf combined, 2000h @ 105°C,KMR)
Main Switchers	4x Wayon WML28N65F2 (650V, 13A @ 100°C, Rds(on): 0.19Ohm)
APFC Controller	Champion CM6500UNX
Resonant Controller	Champion CU6901VPA
Topology	Primary side: APFC, Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	8x Infineon BSC014N04LS (40V, 125A @ 100°C, Rds(on): 1.4mOhm)
5V & 3.3V	DC-DC Converters: 6x Nexperia PSMN4R0-30YLD (30V, 95A @ 25°C, Rds(on): 4mOhm) PWM Controller(s): ANPEC APW7159C

Filtering Capacitors	Electrolytic: 7x Nippon Chemi-Con (2-5,000 @ 105°C, KZE), 1x Nippon Chemi-Con (10,000 @ 105°C, LE) 4x Rubycon (6-10000 @ 105°C, ZLH), 1x Teapo (3-5,000 @ 105°C, TX) Polymer: 26x Polycap, 5x FPCAP 1x Nichicon HE
Supervisor IC	Weltrend WT7527 (OCP, OTP, OVP, UVP, SCP, PG)
Fan Controller / Micro Controller	Weltrend WT51F104
Fan Model	Hong Hua HA1225H12F-Z (120mm, 12V, 0.58A, Fluid Dynamic Bearing)
5VSB Circuit	
Rectifier	PJ335M
Standby PWM Controller	Excelliance MOS EM8569C

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)	89.207%
Average Noise Output (>1450 Load Combinations)	24.61dBA
Average PF (>1450 Load Combinations)	0.981
Efficiency With 10W (≤500W) or 2% (>500W) Load	73.071%
Standby Power Consumption	0.0516W
Non-Accredited	

12V Ripple (Full Load)	20.25mV
5V Ripple (Full Load)	17.79mV
3.3V Ripple (Full Load)	19.99mV
5VSB Ripple (Full Load)	33.81mV
12V Load Regulation	0.89%
5V Load Regulation	0.78%
3.3V Load Regulation	1.03%
5VSB Load Regulation	5.96%
Inrush Current	33.250A

230V

Accredited	
Average Efficiency (>1450 load combinations)	91.263%
Average Noise Output (>1450 Load Combinations)	24.98dBA
Average PF (>1450 Load Combinations)	0.944
Efficiency With 10W (≤500W) or 2% (>500W) Load	72.555%
Standby Power Consumption	0.1441W
Non-Accredited	
12V Ripple (Full Load)	16.50mV
5V Ripple (Full Load)	13.77mV
3.3V Ripple (Full Load)	16.55mV
5VSB Ripple (Full Load)	27.33mV
12V Load Regulation	0.80%
5V Load Regulation	0.97%
3.3V Load Regulation	1.28%
5VSB Load Regulation	5.76%
Inrush Current	65.890A
12V Transient Response (200%)	11.55V
5V Transient Response (200%)	4.903V
3.3V Transient Response (200%)	3.220V
5VSB Transient Response (200%)	4.960V
Hold-Up Time & PWR_OK Signal	23.50ms

AC Loss to PWR_OK Hold Up Time		19.10ms
PWR_OK Inactive to DC Loss Delay		4.40ms
PSU Timings: T1 (20% / 100%)	87.0ms	87.0ms
PSU Timings: T3 (20% / 100%)	122.0ms	120.0ms
OPP (28.23°C / 41.80°C)	133.81%	118.31%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	23.5
AC Loss to PWR_OK Hold Up Time (ms)	19.1
PWR_OK Inactive to DC Loss Delay (ms)	4.4



Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.04 V	115.01 V	113.85 V	115.09 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.99 Hz	59.40 Hz	60.02 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.418	1.490	PASS
Mains Voltage THD:	0.13 %	0.09 %	N/A	0.19 %	2.00 %	PASS
Real Power:	0.052 W	0.011 W	N/A	0.081 W	N/A	N/A
Apparent Power:	7.849 W	7.672 W	N/A	8.048 W	N/A	N/A
Power Factor:	0.009	N/A	N/A	N/A	N/A	N/A

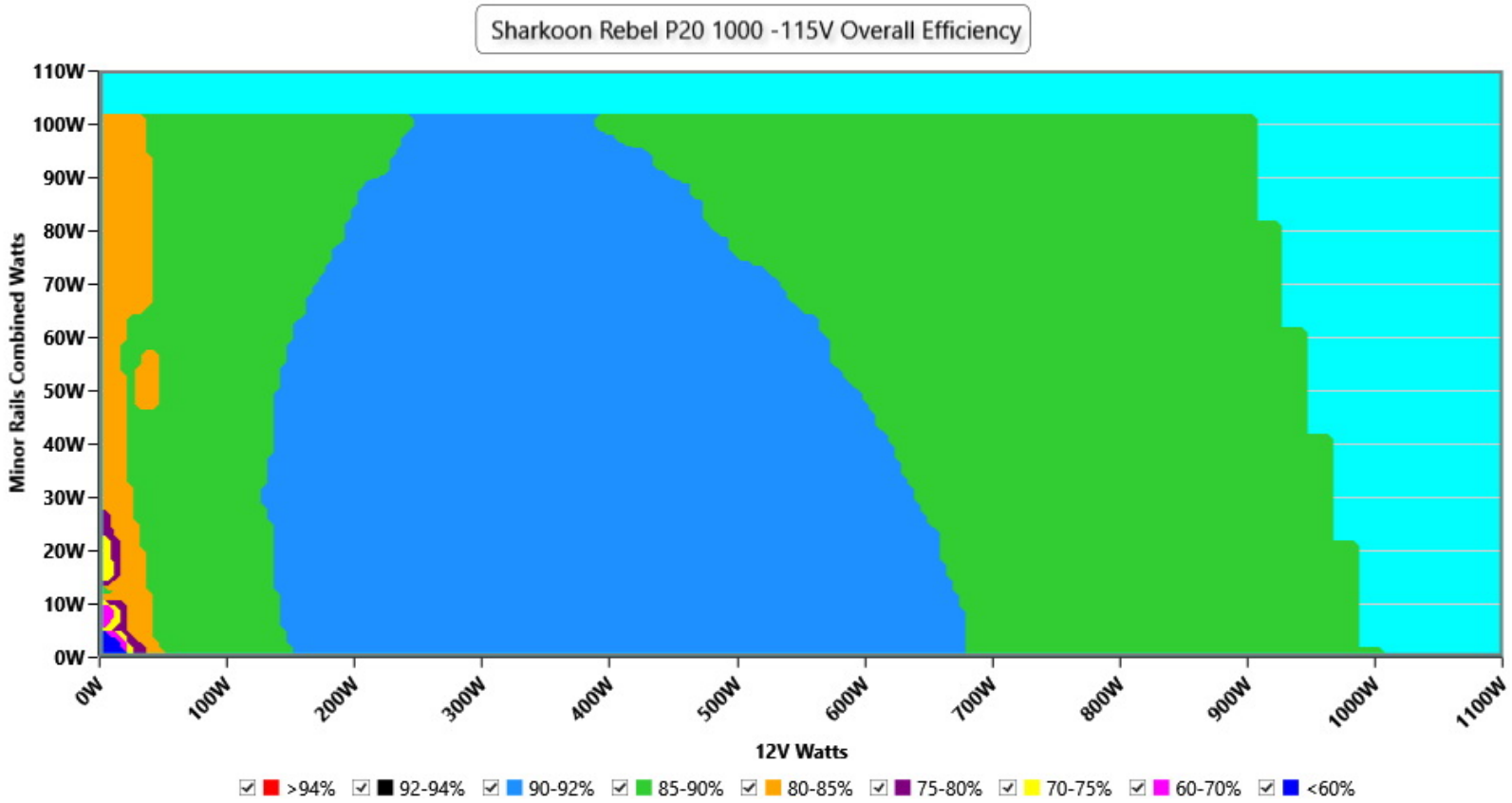
230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result

Mains Voltage RMS:	231.00 V	230.88 V	227.70 V	231.07 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	1.416	1.340	1.419	1.490	PASS
Mains Voltage THD:	0.17 %	0.14 %	N/A	0.27 %	2.00 %	PASS
Real Power:	0.144 W	0.125 W	N/A	0.215 W	N/A	N/A
Apparent Power:	25.970 W	25.680 W	N/A	26.301 W	N/A	N/A
Power Factor:	0.005	N/A	N/A	N/A	N/A	N/A

Efficiency Graph

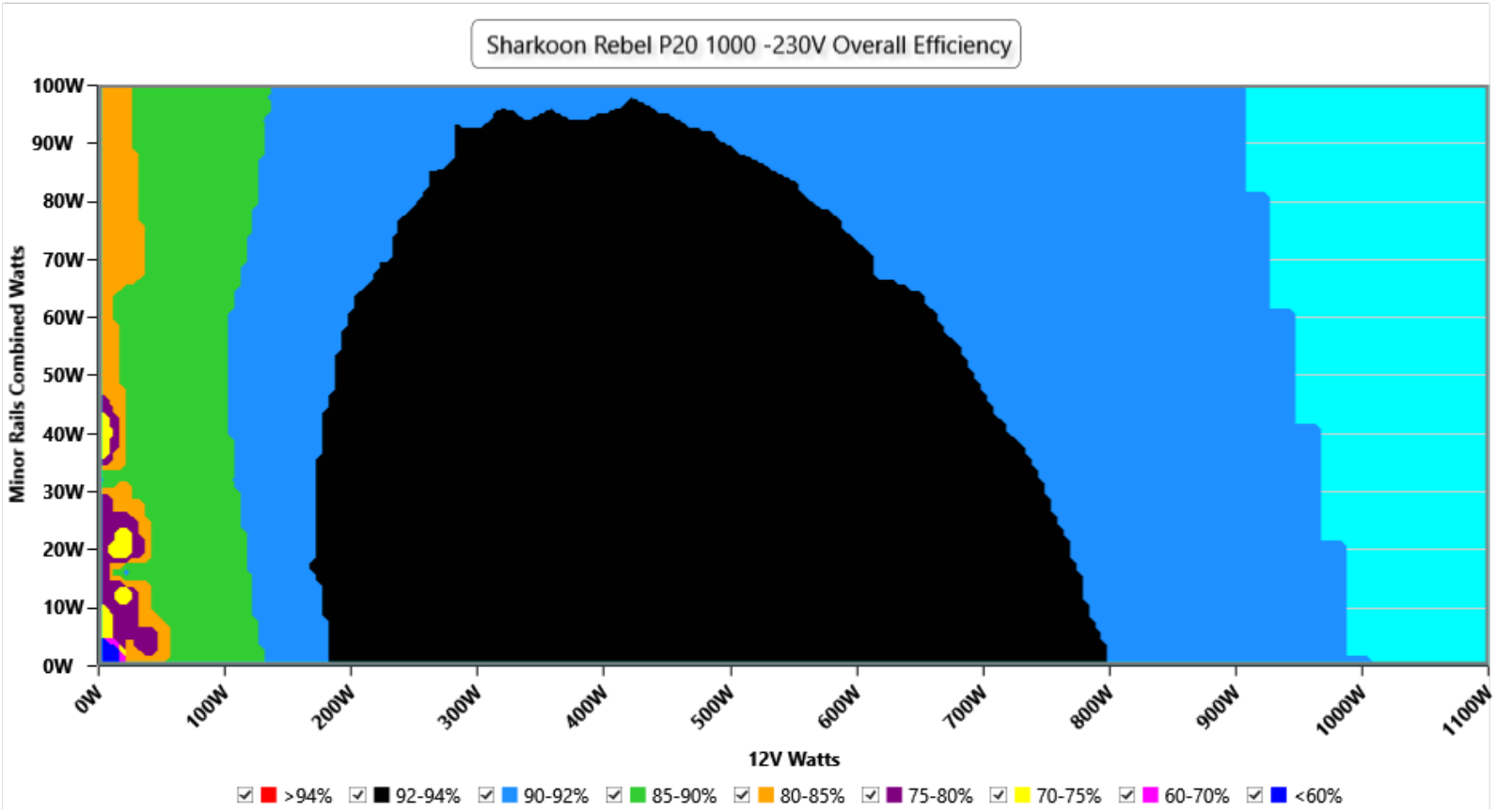
115V



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

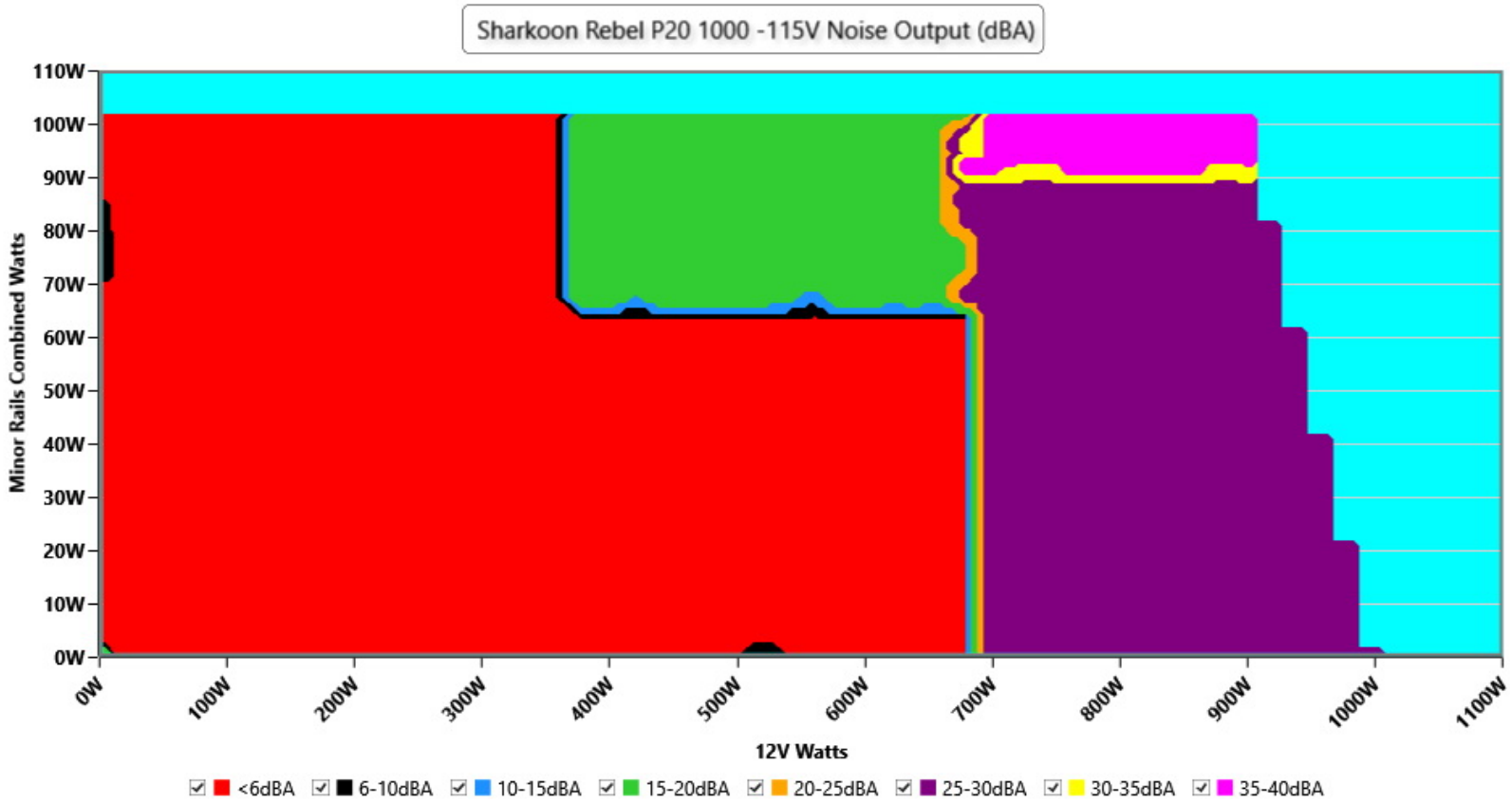


INFO

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Noise Graph

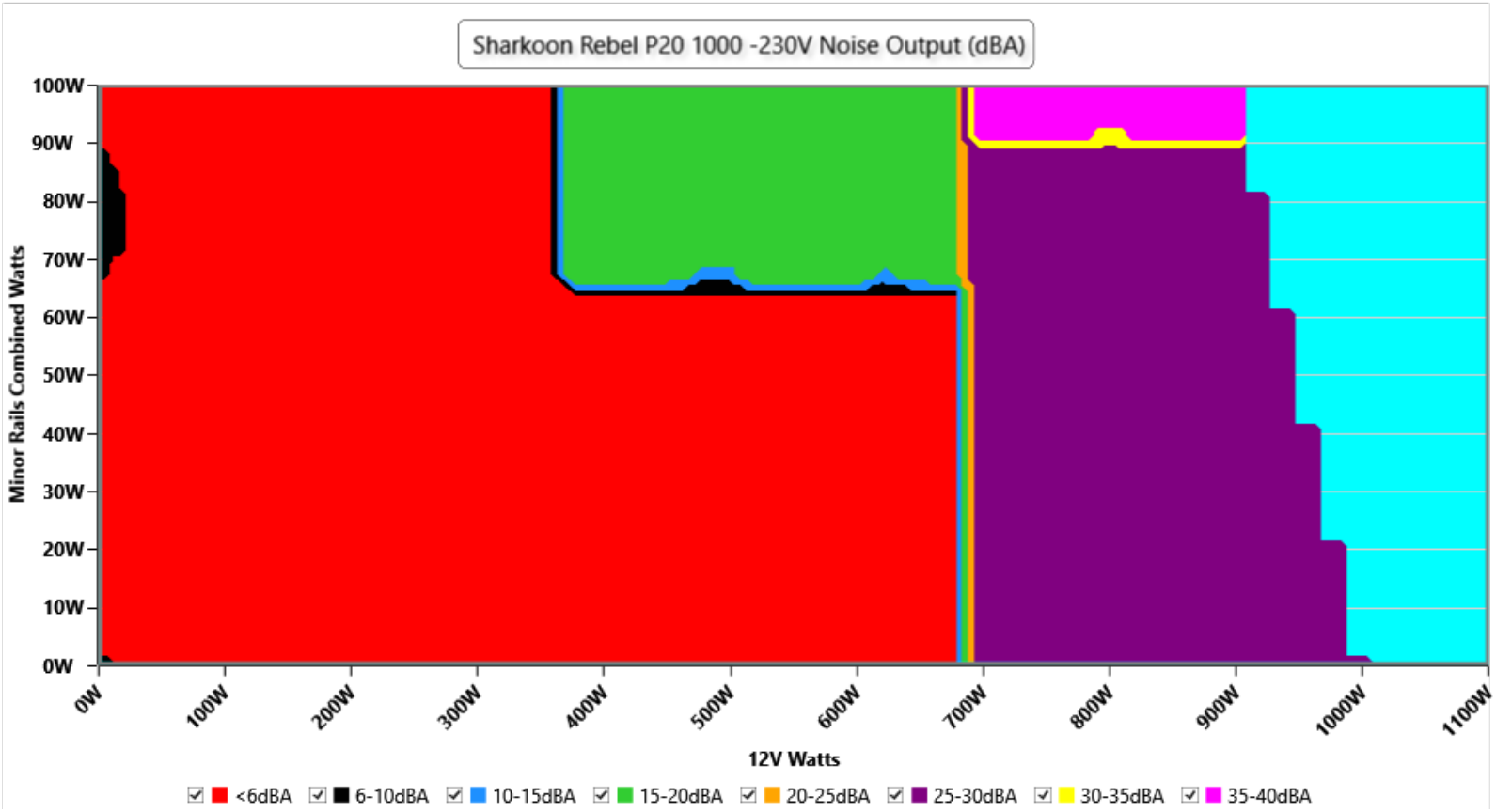
115V



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

Noise under high ambient temperature (indicative)

115V

Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	0 RPM · <6.0 dB(A) · 44.6 °C	0 RPM · <6.0 dB(A) · 44.6 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 45.2 °C	0 RPM · <6.0 dB(A) · 45.2 °C	fan off in both
50%	897 RPM · 19.6 dB(A) · 42.2 °C	897 RPM · 19.6 dB(A) · 42.2 °C	**+0.0 dB(A)**
100%	1524 RPM · 36.1 dB(A) · 46.0 °C	1524 RPM · 36.1 dB(A) · 46.0 °C	**+0.0 dB(A)**

230V

Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	0 RPM · <6.0 dB(A) · 44.5 °C	0 RPM · <6.0 dB(A) · 44.5 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 45.2 °C	0 RPM · <6.0 dB(A) · 45.2 °C	fan off in both
50%	900 RPM · 19.6 dB(A) · 42.4 °C	900 RPM · 19.6 dB(A) · 42.4 °C	**+0.0 dB(A)**
100%	1528 RPM · 36.2 dB(A) · 45.4 °C	1528 RPM · 36.2 dB(A) · 45.4 °C	**+0.0 dB(A)**

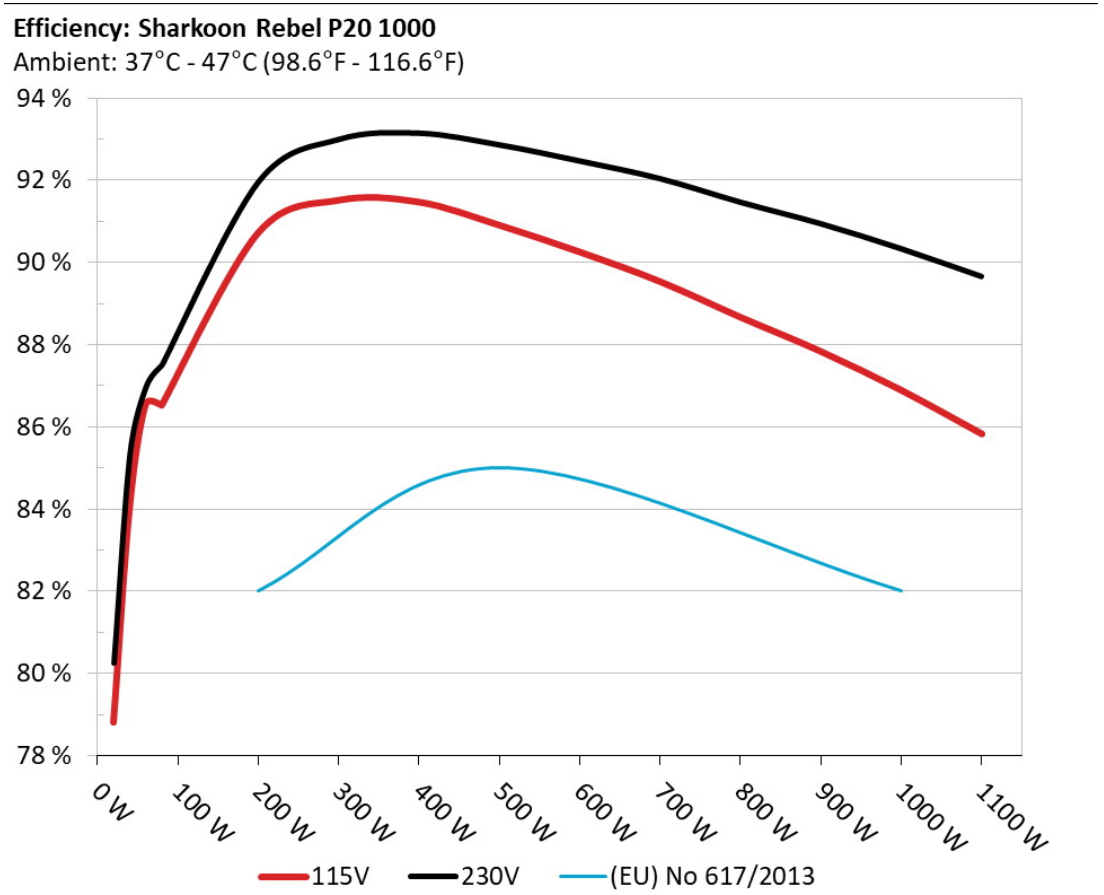
INFO

Fan speed, noise and the measured intake temperature at 10, 20, 50 and 100 % load, from the two load regulation tests: at normal ambient (about 30-32 °C) and at high ambient (about 40-47 °C). These are stabilized readings at fixed loads, not averages over the certification sweep, so they are indicative of how the fan behaves when it is hot. "<6.0" is the floor of our sound meter: the fan is stopped or too quiet to measure (the fan speed column says which); with the fan stopped, the intake sensor can read higher than the chamber air.

Informational. Not part of the ETA or LAMBDA rating.

Indicative Performance

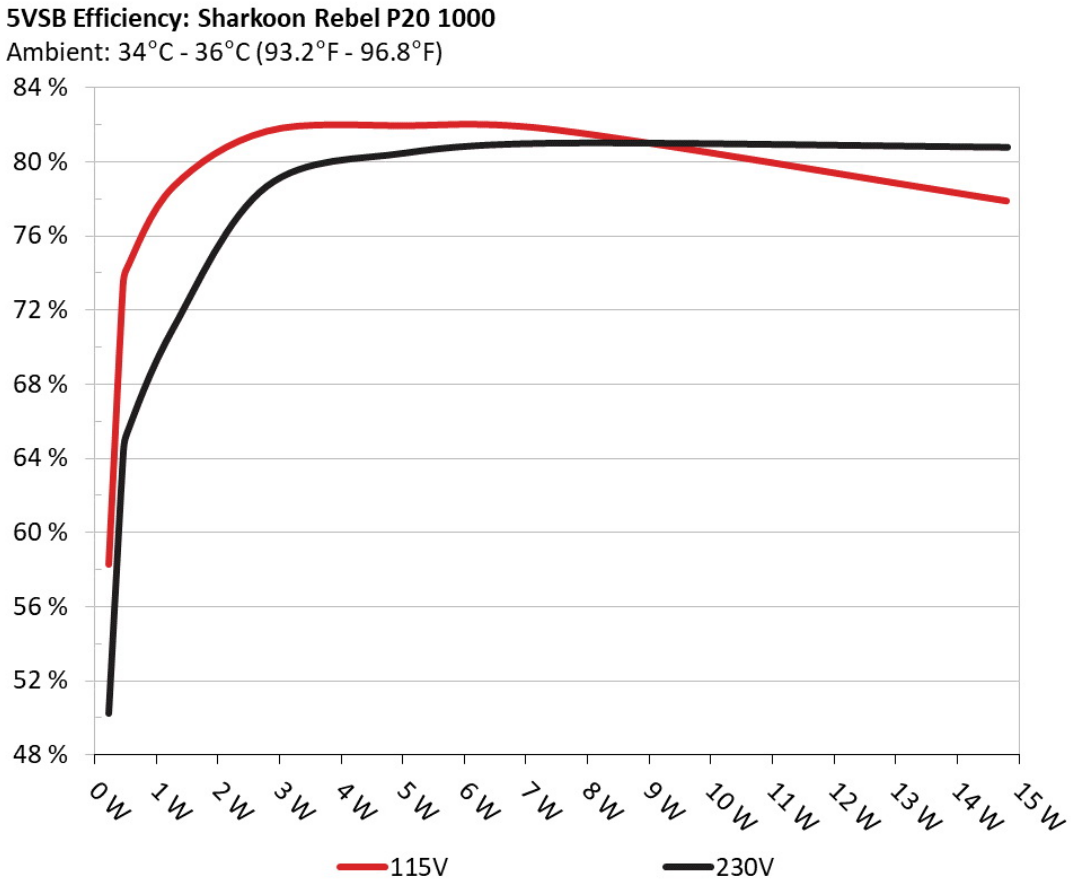
Efficiency under high ambient temperature



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	0.23W	58.789%	0.049
	5.115V	0.391W		114.93V
2	0.09A	0.46W	73.826%	0.077
	5.112V	0.623W		114.93V
3	0.55A	2.796W	82.131%	0.3
	5.084V	3.404W		114.93V
4	1A	5.055W	82.429%	0.39
	5.055V	6.133W		114.92V
5	1.5A	7.534W	82.183%	0.43
	5.022V	9.168W		114.92V
6	3A	14.799W	78.373%	0.493
	4.933V	18.883W		114.91V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.23W	50.748%	0.017
	5.116V	0.456W		229.88V
2	0.09A	0.46W	64.47%	0.027
	5.113V	0.717W		229.89V
3	0.55A	2.797W	79.183%	0.124
	5.086V	3.532W		229.88V
4	1A	5.061W	80.983%	0.199
	5.061V	6.242W		229.88V
5	1.5A	7.548W	81.51%	0.259
	5.031V	9.26W		229.88V
6	3A	14.822W	81.284%	0.351
	4.941V	18.235W		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%	6.457A	1.998A	1.989A	0.99A	99.988	86.534%	0	<6.0	44.58°C	0.961
	12.140V	5.004V	3.319V	5.051V	115.546				40.48°C	114.89V
20%	13.923A	2.999A	2.986A	1.194A	199.936	90.726%	0	<6.0	45.19°C	0.981
	12.140V	5.001V	3.316V	5.027V	220.376				40.84°C	114.86V
30%	21.772A	3.5A	3.485A	1.399A	299.993	91.519%	0	<6.0	46.27°C	0.985
	12.123V	5V	3.314V	5.003V	327.793				41.49°C	114.82V
40%	29.567A	4.003A	3.986A	1.607A	399.539	91.476%	0	<6.0	46.7°C	0.987
	12.119V	4.997V	3.312V	4.98V	436.772				41.67°C	114.78V
50%	37.038A	5.008A	4.989A	1.816A	499.267	90.915%	897	19.6	42.24°C	0.986
	12.116V	4.992V	3.308V	4.955V	549.162				47.72°C	114.74V
60%	44.589A	6.018A	5.996A	2A	599.67	90.262%	895	19.5	42.71°C	0.987
	12.111V	4.986V	3.303V	4.932V	664.371				48.73°C	114.71V
70%	52.059A	7.028A	7.003A	2.243A	699.542	89.542%	890	19.4	43.7°C	0.988
	12.110V	4.981V	3.299V	4.904V	781.248				50.76°C	114.68V
80%	59.611A	8.037A	8.013A	2.354A	799.562	88.675%	1526	36.1	43.87°C	0.989
	12.106V	4.976V	3.295V	4.885V	901.673				51.89°C	114.63V
90%	67.491A	8.545A	8.507A	2.466A	899.371	87.844%	1526	36.1	44.01°C	0.99
	12.104V	4.973V	3.291V	4.865V	1023.835				53.09°C	114.59V
100%	75.138A	9.053A	9.033A	3.114A	999.376	86.901%	1524	36.1	45.99°C	0.991
	12.107V	4.97V	3.288V	4.818V	1150.018				56.04°C	114.54V
110%	82.691A	10.067A	10.141A	3.121A	1099.997	85.835%	1523	36.1	46.58°C	0.991
	12.114V	4.966V	3.284V	4.807V	1281.526				57.49°C	114.5V
CL1	0.115A	12.066A	12.007A	0A	101.304	82.057%	903	19.7	40.71°C	0.965
	12.205V	4.989V	3.307V	5.09V	123.455				46.19°C	114.88V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL2	0.115A	20.058A	0A	0A	101.342	80.211%	1541	36.4	41.16°C	0.966
	12.176V	4.983V	3.313V	5.095V	126.342				48.22°C	114.87V
CL3	0.115A	0A	19.981A	0A	67.401	77.018%	1547	36.6	40.01°C	0.945
	12.066V	5.002V	3.304V	5.095V	87.562				49.1°C	114.88V
CL4	82.782A	0A	0A	0.001A	999.964	87.805%	1525	36.1	46.35°C	0.99
	12.080V	4.99V	3.302V	5.005V	1138.866				57.32°C	114.55V

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%	6.441A	1.997A	1.986A	0.989A	100.004	87.503%	0	<6.0	44.48°C	0.813
	12.173V	5.008V	3.323V	5.055V	114.287				40.47°C	229.87V
20%	13.895A	2.997A	2.983A	1.193A	199.958	91.956%	0	<6.0	45.21°C	0.918
	12.167V	5.005V	3.319V	5.032V	217.455				40.94°C	229.86V
30%	21.740A	3.499A	3.483A	1.398A	300.015	92.987%	0	<6.0	46.17°C	0.95
	12.142V	5.002V	3.316V	5.009V	322.642				41.32°C	229.84V
40%	29.531A	4.001A	3.985A	1.605A	399.592	93.138%	0	<6.0	46.85°C	0.963
	12.136V	4.999V	3.313V	4.986V	429.032				41.78°C	229.82V
50%	37.014A	5.009A	4.99A	1.814A	499.322	92.856%	900	19.6	42.38°C	0.97
	12.125V	4.992V	3.307V	4.962V	537.743				47.89°C	229.8V
60%	44.589A	6.02A	6A	2A	599.731	92.462%	898	19.6	42.9°C	0.974
	12.111V	4.984V	3.3V	4.939V	648.622				49.01°C	229.79V
70%	52.068A	7.031A	7.009A	2.239A	699.569	92.034%	892	19.4	43.44°C	0.977
	12.108V	4.979V	3.297V	4.913V	760.118				50.47°C	229.77V
80%	59.631A	8.041A	8.021A	2.35A	799.589	91.462%	1531	36.2	43.51°C	0.979
	12.103V	4.974V	3.291V	4.894V	874.237				51.59°C	229.75V
90%	67.520A	8.549A	8.516A	2.461A	899.378	90.94%	1531	36.2	44.83°C	0.98
	12.099V	4.97V	3.288V	4.876V	988.979				53.92°C	229.73V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	75.177A	9.058A	9.042A	3.107A	999.382	90.332%	1528	36.2	45.44°C	0.981
	12.101V	4.967V	3.285V	4.829V	1106.341				55.52°C	229.71V
110%	82.740A	10.071A	10.15A	3.116A	1100.002	89.654%	1526	36.1	46.57°C	0.982
	12.107V	4.964V	3.281V	4.815V	1226.943				57.55°C	229.69V
CL1	0.115A	12.066A	12.009A	0A	101.303	82.711%	901	19.6	45.66°C	0.83
	12.203V	4.989V	3.306V	5.09V	122.475				51.09°C	229.87V
CL2	0.114A	20.057A	0A	0A	101.343	80.853%	1542	36.4	40.97°C	0.833
	12.176V	4.983V	3.313V	5.095V	125.34				47.99°C	229.87V
CL3	0.115A	0A	19.985A	0A	67.399	77.388%	1549	36.6	39.96°C	0.739
	12.071V	5.001V	3.303V	5.095V	87.092				48.98°C	229.88V
CL4	82.827A	0A	0A	0.001A	999.944	91.039%	1525	36.1	44.92°C	0.981
	12.073V	4.989V	3.301V	5.005V	1098.365				55.89°C	229.72V

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	1.234A	0.499A	0.497A	0.196A	19.992	78.82%	0	<6.0	39.61°C	0.684
	12.034V	5.009V	3.322V	5.105V	25.364				36.55°C	114.93V
40W	2.716A	0.699A	0.695A	0.294A	39.993	84.063%	0	<6.0	40.5°C	0.863
	12.038V	5.009V	3.322V	5.097V	47.575				37.16°C	114.91V
60W	4.196A	0.898A	0.894A	0.393A	59.993	86.565%	0	<6.0	42.69°C	0.924
	12.043V	5.008V	3.321V	5.09V	69.304				38.96°C	114.91V
80W	5.670A	1.098A	1.093A	0.492A	79.936	88.106%	0	<6.0	43.15°C	0.948
	12.047V	5.007V	3.32V	5.082V	90.727				39.2°C	114.9V

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	1.230A	0.499A	0.496A	0.196A	20.009	80.247%	0	<6.0	39.99°C	0.408
	12.077V	5.015V	3.327V	5.107V	24.934				36.98°C	229.89V
40W	2.708A	0.698A	0.694A	0.294A	40.005	85.34%	0	<6.0	40.69°C	0.566
	12.076V	5.014V	3.326V	5.099V	46.877				37.42°C	229.88V
60W	4.184A	0.898A	0.893A	0.393A	60.003	86.967%	0	<6.0	41.78°C	0.668
	12.077V	5.013V	3.325V	5.091V	68.995				38.25°C	229.88V
80W	5.614A	1.097A	1.092A	0.492A	79.954	85.373%	0	<6.0	42.98°C	0.761
	12.171V	5.011V	3.324V	5.084V	93.656				39.12°C	229.88V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	14.99mV	15.58mV	15.60mV	20.26mV	Pass
20% Load	13.50mV	13.69mV	14.27mV	20.82mV	Pass
30% Load	14.48mV	14.31mV	14.32mV	21.18mV	Pass
40% Load	15.50mV	17.32mV	16.32mV	22.66mV	Pass
50% Load	15.45mV	14.76mV	17.14mV	24.55mV	Pass
60% Load	15.14mV	15.63mV	16.68mV	25.93mV	Pass
70% Load	15.96mV	16.25mV	16.83mV	25.73mV	Pass
80% Load	16.32mV	16.55mV	18.16mV	29.46mV	Pass
90% Load	15.81mV	16.50mV	18.57mV	29.05mV	Pass
100% Load	20.25mV	17.79mV	19.99mV	33.81mV	Pass
110% Load	20.81mV	17.64mV	21.40mV	34.37mV	Pass
Crossload1	15.78mV	15.06mV	16.54mV	18.10mV	Pass
Crossload2	16.37mV	19.21mV	15.24mV	16.93mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	24.51mV	11.03mV	14.12mV	13.71mV	Pass
Crossload4	19.02mV	17.55mV	18.65mV	26.19mV	Pass

The results above are not used in the certification process

230V

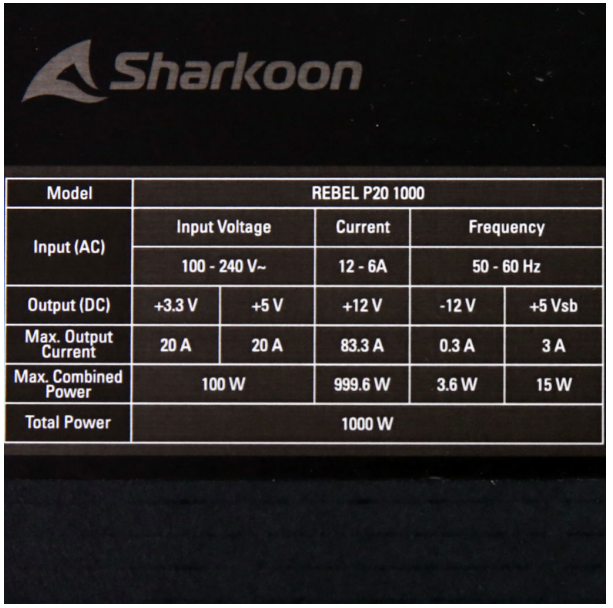
Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	10.90mV	11.14mV	10.79mV	17.59mV	Pass
20% Load	11.21mV	10.37mV	10.74mV	17.80mV	Pass
30% Load	11.15mV	10.88mV	11.05mV	17.95mV	Pass
40% Load	11.30mV	14.10mV	12.89mV	18.67mV	Pass
50% Load	12.48mV	11.60mV	12.33mV	20.15mV	Pass
60% Load	11.46mV	11.65mV	13.40mV	20.76mV	Pass
70% Load	11.87mV	11.80mV	12.74mV	22.92mV	Pass
80% Load	11.56mV	12.26mV	14.12mV	23.99mV	Pass
90% Load	12.28mV	12.67mV	15.81mV	24.30mV	Pass
100% Load	16.50mV	13.77mV	16.55mV	27.33mV	Pass
110% Load	16.80mV	14.44mV	16.35mV	28.38mV	Pass
Crossload1	13.21mV	12.15mV	13.74mV	15.42mV	Pass
Crossload2	12.63mV	15.84mV	10.64mV	13.86mV	Pass
Crossload3	23.48mV	11.39mV	14.68mV	14.01mV	Pass
Crossload4	16.41mV	13.12mV	14.90mV	22.07mV	Pass

The results above are not used in the certification process

Sharkoon Rebel P20 1000



Top side



Model	REBEL P20 1000				
Input (AC)	Input Voltage		Current	Frequency	
	100 - 240 V~		12 - 6A	50 - 60 Hz	
Output (DC)	+3.3 V	+5 V	+12 V	-12 V	+5 Vsb
Max. Output Current	20 A	20 A	83.3 A	0.3 A	3 A
Max. Combined Power	100 W		999.6 W	3.6 W	15 W
Total Power	1000 W				

Power specifications label