Sharkoon Rebel P20 850

Serial Number

Lab ID SK85002388

Certification ID 252388

Test Result Report ID: 24PS2388A

Certificate Issue Date: Mar 15, 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 850
OEM/ODM	Andyson
Serial Number	
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240

Rated Current (Arms)	10-5
Rated Frequency (Hz)	50-60
Rated Power (W)	850
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	SK85002388
Date of receipt	Feb 12, 2024
Testing Date	Mar 13, 2024
Report Issued Date	Mar 15, 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 (1380mm) - C13 coupler	1	1	18AWG	-

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	70.8	3	0.3
	Watts	100		850	15	3.6
Total Max. Power (W)		850				

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 GBU1006 (420V, 15A @ 100°C)
APFC MOSFETs	2x Perfect PWE120N65SFMF (650V, 20A @ 100°C, Rds(on): 120mOhm)
APFC Boost Diode	1x WeEn BYC10-600P (600V, 20A @ 127°C)
Bulk Cap(s)	2x Nichicon (420V, 390uF each or 780uf combined, 2000h @ 105°C,GL)
Main Switchers	4x Chongqing Pingwei 18N50MF (500V, 18A @ 25°C, Rds(on): 0.3Ohm)
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	6x Allpower APG013N04G-AU (40V, 100A @ 100°C, Rds(on): 1.3mOhm)
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), 4x Rubycon (6-10000 @ 105°C, ZLH), 1x Nichicon (4-10,000 @ 105°C, HE), Polymer: 25x Polycap, 5x FPCAP, 1x Nippon Chemi-Con LE
Supervisor IC	Weltrend WT7527RA (OCP, OTP, OVP, UVP, SCP, PG)
Micro-Controller / Fan Controller	Weltrend WT51F104
Fan Model	Hong Hua HA1225M12F-Z (120mm, 12V, 0.45A, 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)	88.584%
Average Noise Output (>1450 Load Combinations)	20.72dBA
Average PF (>1450 Load Combinations)	0.980
Efficiency With 10W (≤500W) or 2% (>500W) Load	73.676%
Standby Power Consumption	0.0513W
Non-Accredited	
12V Ripple (Full Load)	21.22mV

5V Ripple (Full Load)	17.94mV
3.3V Ripple (Full Load)	19.05mV
5VSB Ripple (Full Load)	22.92mV
12V Load Regulation	0.93%
5V Load Regulation	0.38%
3.3V Load Regulation	0.93%
5VSB Load Regulation	3.73%
Inrush Current	33.750A

230V

Accredited	
Average Efficiency (>1450 load combinations)	90.800%
Average Noise Output (>1450 Load Combinations)	20.67dBA
Average PF (>1450 Load Combinations)	0.939
Efficiency With 10W (≤500W) or 2% (>500W) Load	72.339%
Standby Power Consumption	0.1390W
Non-Accredited	
12V Ripple (Full Load)	17.10mV
5V Ripple (Full Load)	13.80mV
3.3V Ripple (Full Load)	14.93mV
5VSB Ripple (Full Load)	18.67mV
12V Load Regulation	0.99%
5V Load Regulation	0.32%
3.3V Load Regulation	0.84%
5VSB Load Regulation	3.71%
Inrush Current	66.400A
12V Transient Response (200%)	11.45V
5V Transient Response (200%)	4.908V
3.3V Transient Response (200%)	3.175V
5VSB Transient Response (200%)	4.981V
Hold-Up Time & PWR_OK Signal	20.60ms
AC Loss to PWR_OK Hold Up Time	16.10ms

PWR_OK Inactive to DC Loss Delay		4.50ms
PSU Timings: T1 (20% / 100%)	88.0ms	87.0ms
PSU Timings: T3 (20% / 100%)	120.0ms	122.0ms
OPP (28.07°C / 40.99°C)	123.25%	124.43%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	20.6
AC Loss to PWR_OK Hold Up Time (ms)	16.1
PWR_OK Inactive to DC Loss Delay (ms)	4.5

Stromverbrauch im Ruhezustand

Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.04 V	115.00 V	113.85 V	115.08 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.95 Hz	59.40 Hz	60.01 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:	0.051 W	0.010 W	N/A	0.079 W	N/A	N/A
Apparent Power:	7.945 W	7.733 W	N/A	8.161 W	N/A	N/A
Power Factor:	0.009	N/A	N/A	N/A	N/A	N/A

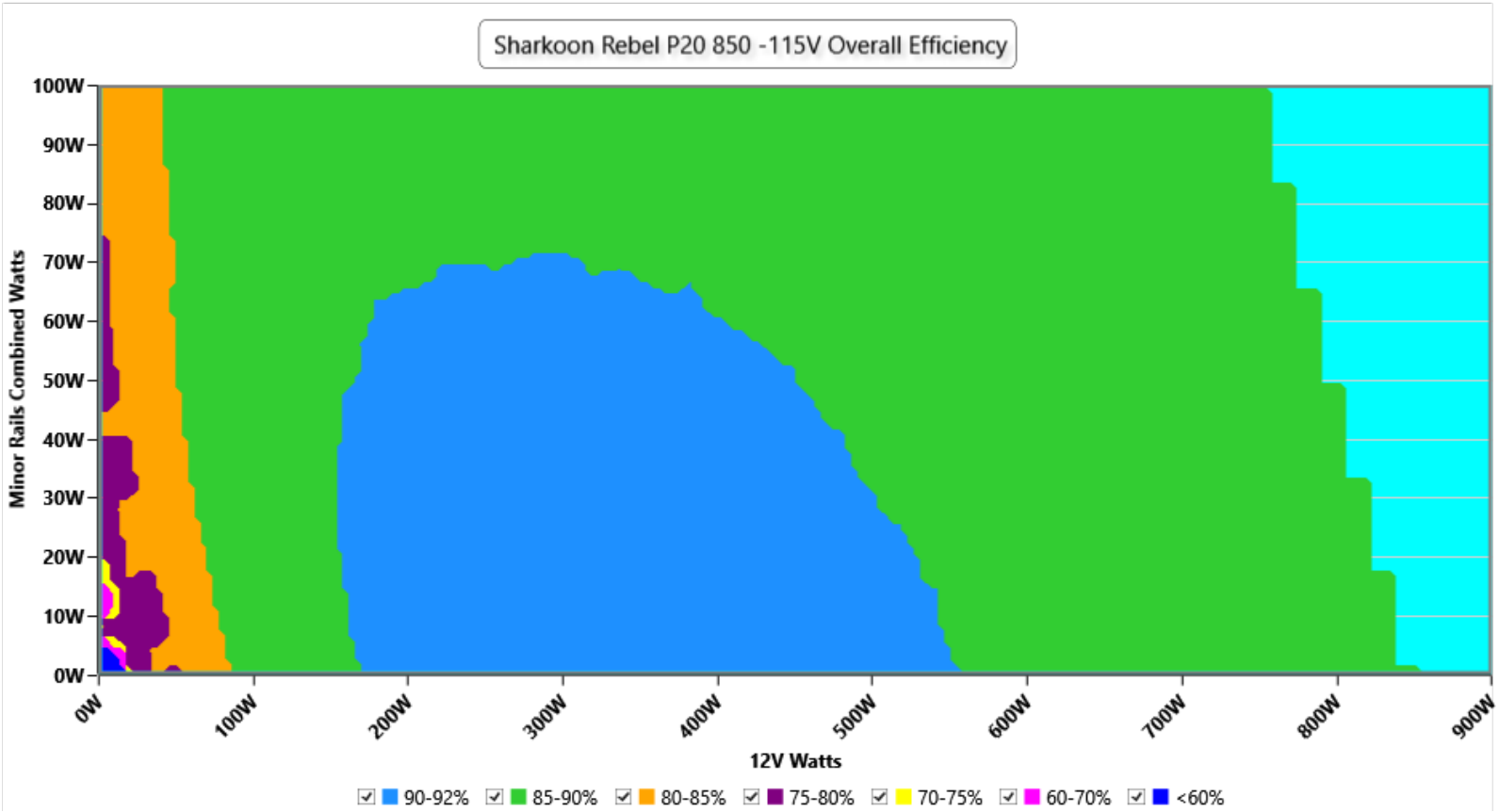
230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	231.00 V	230.89 V	227.70 V	231.05 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 %	0.15 %	N/A	0.26 %	2.00 %	PASS
Real Power:	0.139 W	0.121 W	N/A	0.171 W	N/A	N/A
Apparent Power:	26.043 W	25.749 W	N/A	26.348 W	N/A	N/A
Power Factor:	0.005	N/A	N/A	N/A	N/A	N/A

Efficiency Graph

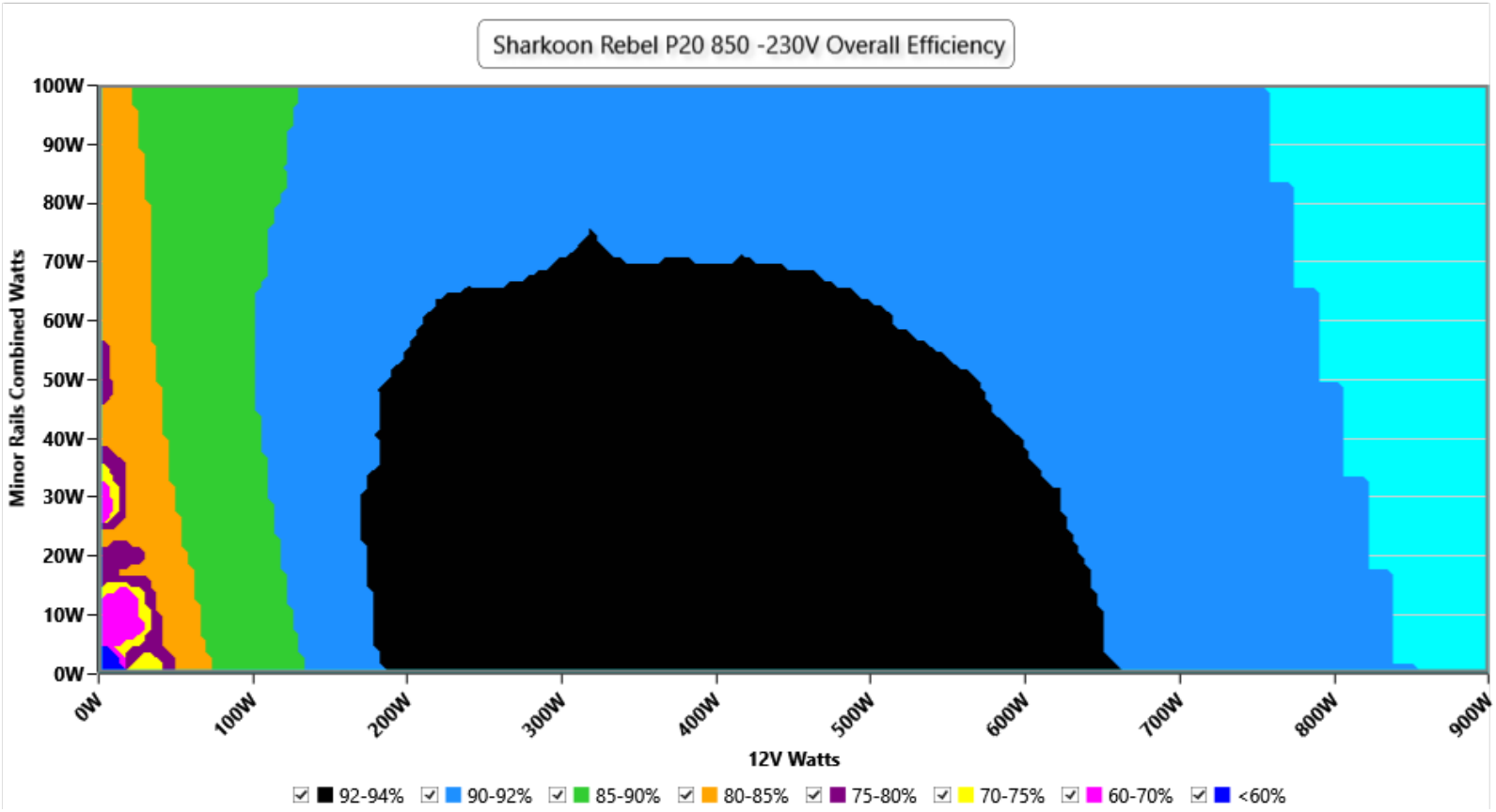
115V



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

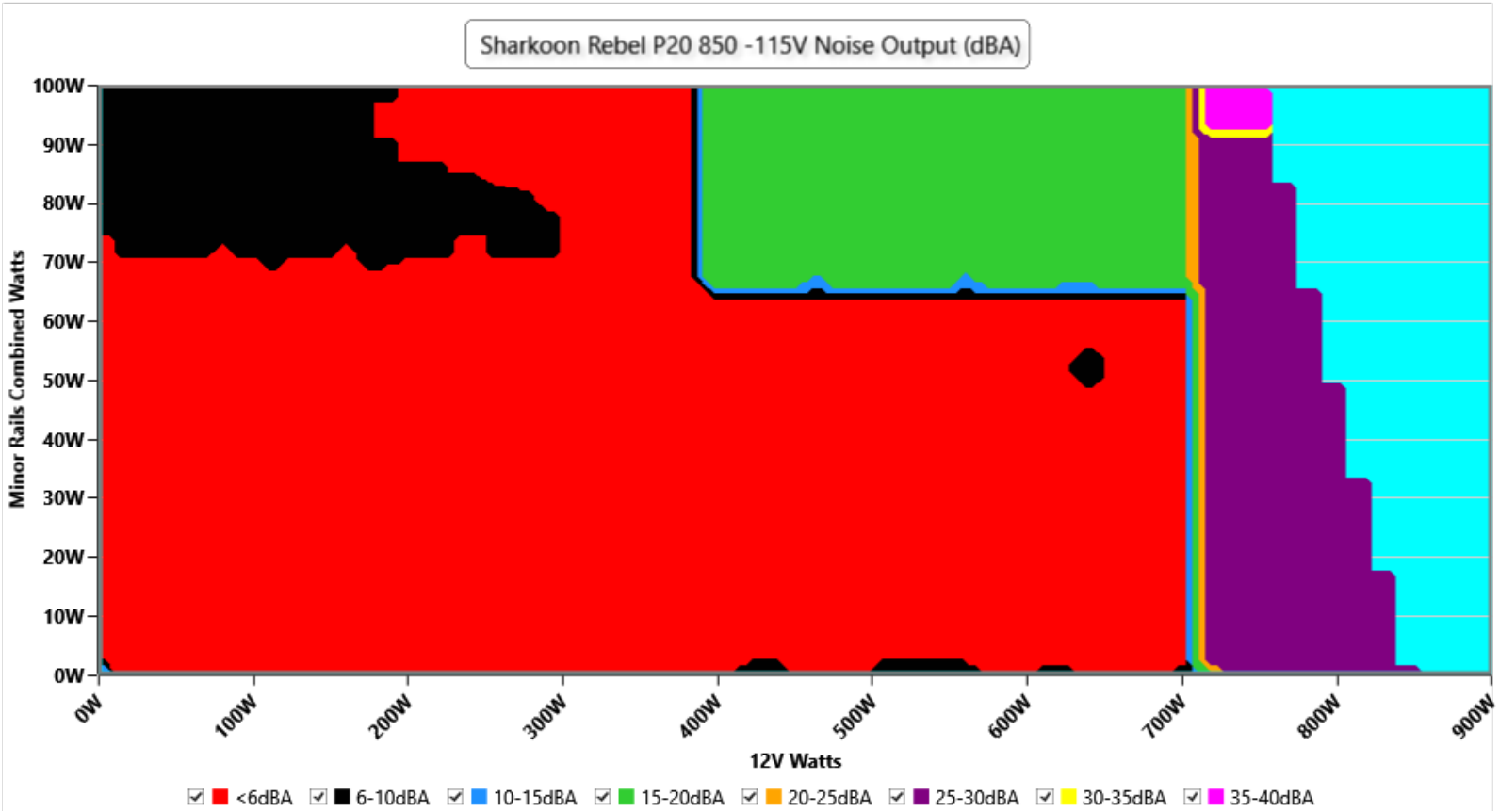


INFO

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

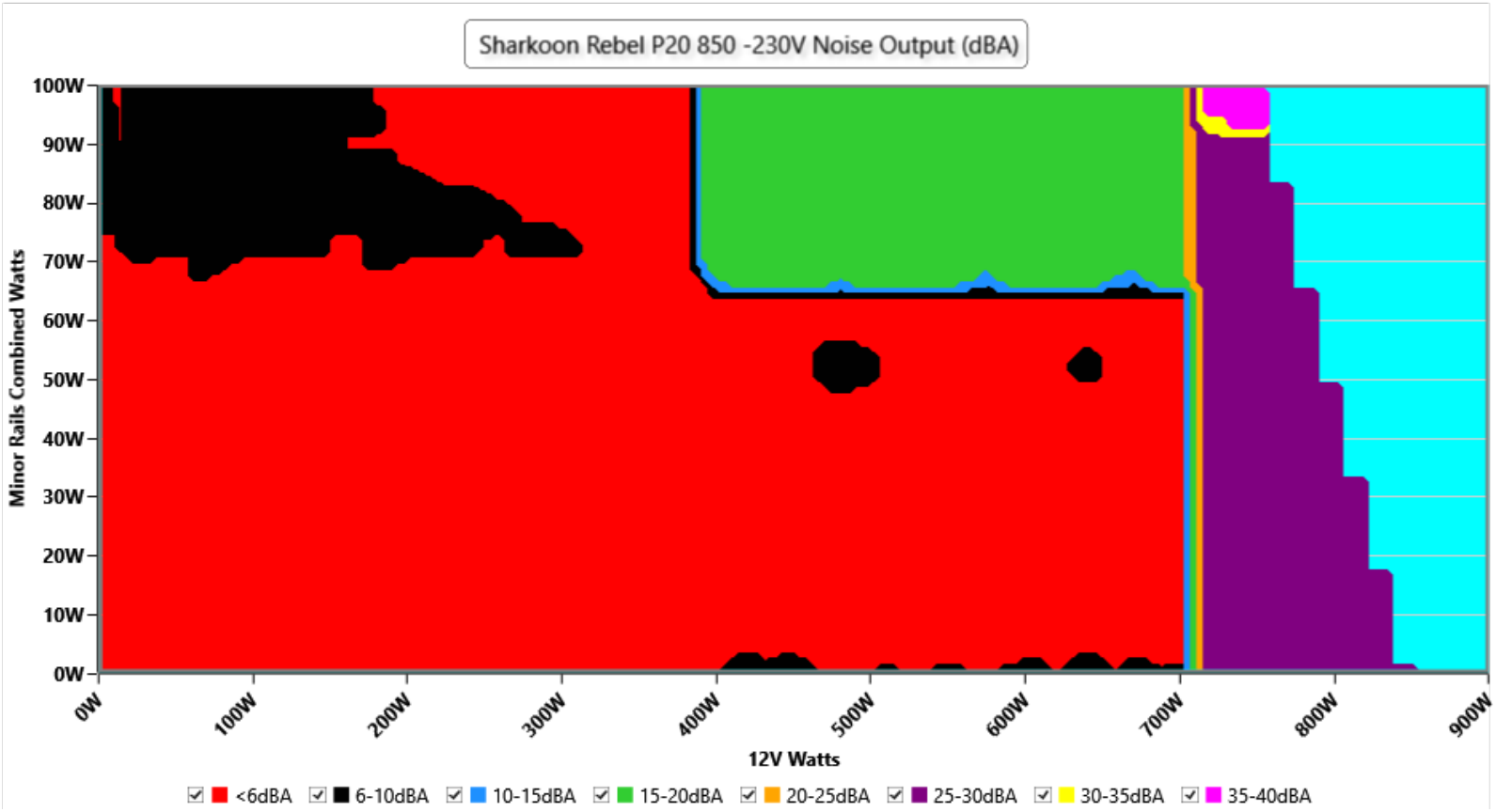
115V



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

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) · 44.2 °C	0 RPM · <6.0 dB(A) · 44.2 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 45.0 °C	0 RPM · <6.0 dB(A) · 45.0 °C	fan off in both
50%	0 RPM · <6.0 dB(A) · 47.9 °C	0 RPM · <6.0 dB(A) · 47.9 °C	fan off in both
100%	1536 RPM · 36.3 dB(A) · 45.0 °C	1536 RPM · 36.3 dB(A) · 45.0 °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) · 44.3 °C	0 RPM · <6.0 dB(A) · 44.3 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 44.8 °C	0 RPM · <6.0 dB(A) · 44.8 °C	fan off in both
50%	0 RPM · <6.0 dB(A) · 47.8 °C	0 RPM · <6.0 dB(A) · 47.8 °C	fan off in both
100%	1536 RPM · 36.3 dB(A) · 45.6 °C	1536 RPM · 36.3 dB(A) · 45.6 °C	**+0.0 dB(A)**

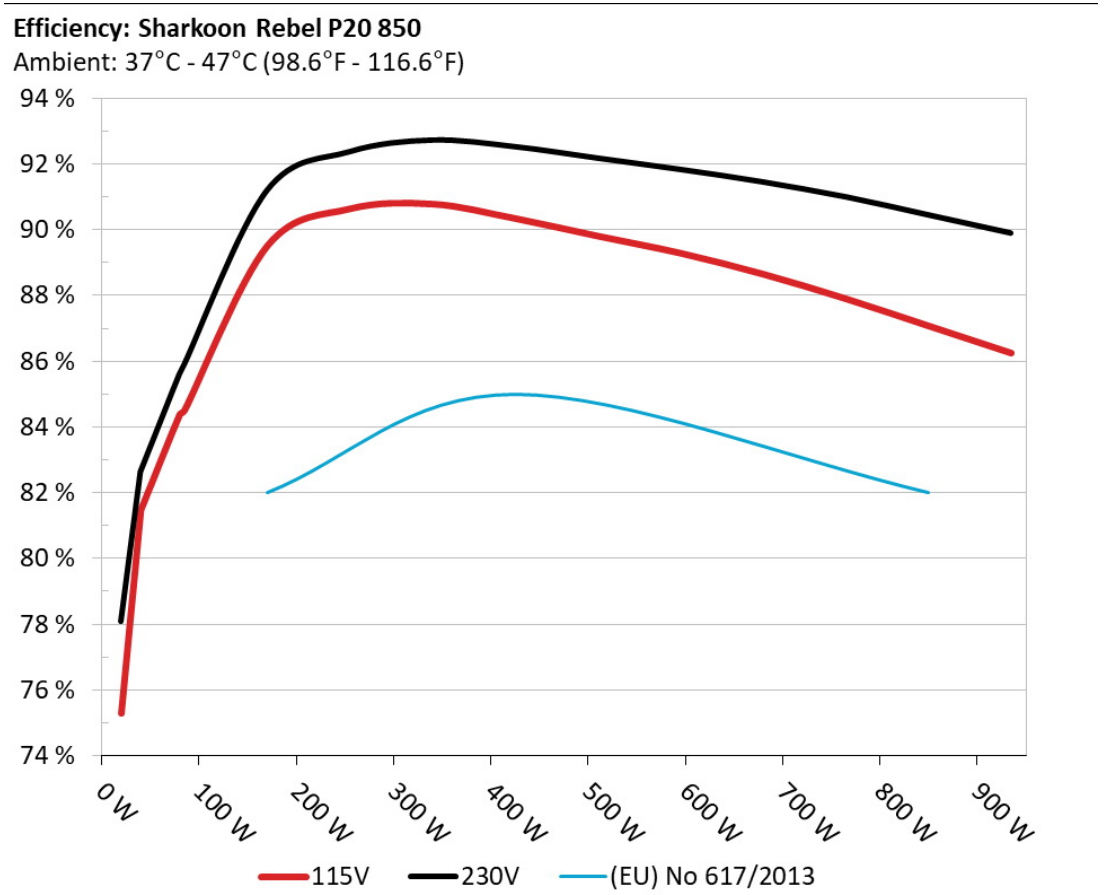
INFO

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

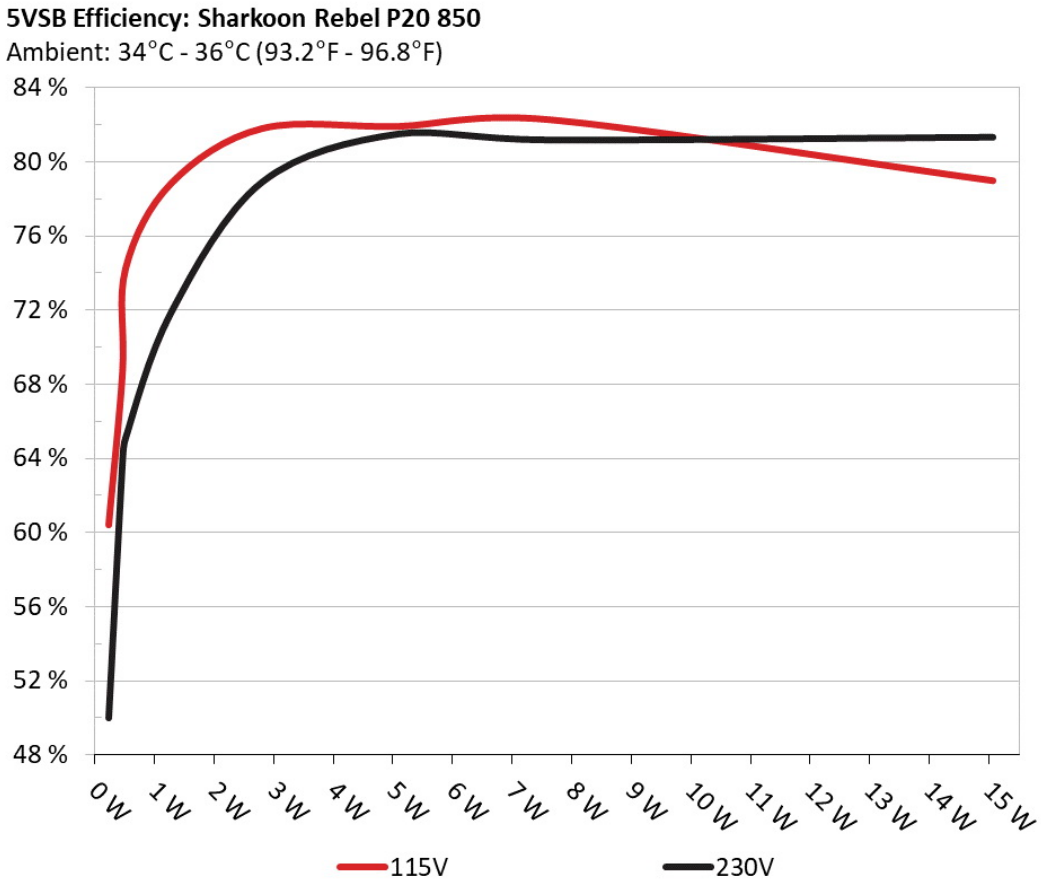
Efficiency under high ambient temperature



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	0.231W	60.873%	0.047
	5.126V	0.38W		114.94V
2	0.09A	0.461W	69.103%	0.081
	5.124V	0.667W		114.94V
3	0.55A	2.81W	82.311%	0.301
	5.108V	3.414W		114.92V
4	1A	5.092W	82.417%	0.393
	5.092V	6.178W		114.92V
5	1.5A	7.611W	82.782%	0.432
	5.074V	9.195W		114.92V
6	3A	15.057W	79.484%	0.498
	5.019V	18.943W		114.92V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231W	50.487%	0.017
	5.126V	0.458W		229.9V
2	0.09A	0.461W	64.254%	0.026
	5.124V	0.718W		229.9V
3	0.55A	2.809W	79.398%	0.122
	5.109V	3.538W		229.89V
4	1A	5.093W	81.987%	0.195
	5.093V	6.212W		229.88V
5	1.5A	7.614W	81.662%	0.26
	5.076V	9.324W		229.89V
6	3A	15.07W	81.807%	0.35
	5.024V	18.421W		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%	5.216A	1.994A	1.973A	0.983A	84.997	84.516%	0	<6.0	44.2°C	0.963
	12.154V	5.015V	3.344V	5.088V	100.569				40.19°C	114.88V
20%	11.442A	2.991A	2.963A	1.183A	169.927	89.506%	0	<6.0	44.99°C	0.982
	12.150V	5.014V	3.341V	5.073V	189.848				40.72°C	114.86V
30%	18.051A	3.49A	3.459A	1.384A	254.931	90.634%	0	<6.0	46.15°C	0.98
	12.126V	5.014V	3.339V	5.057V	281.273				41.41°C	114.82V
40%	24.649A	3.99A	3.955A	1.587A	340.015	90.779%	0	<6.0	47°C	0.98
	12.123V	5.012V	3.337V	5.042V	374.549				41.97°C	114.8V
50%	30.861A	4.989A	4.948A	1.791A	424.803	90.338%	0	<6.0	47.89°C	0.984
	12.128V	5.011V	3.335V	5.026V	470.239				42.4°C	114.77V
60%	37.096A	5.993A	5.948A	1.996A	509.349	89.807%	917	20	42.52°C	0.986
	12.118V	5.006V	3.329V	5.01V	567.157				48.53°C	114.73V
70%	43.390A	6.997A	6.948A	2.203A	594.657	89.286%	915	20	43.05°C	0.987
	12.112V	5.003V	3.325V	4.994V	666.013				50.13°C	114.7V
80%	49.659A	7.996A	7.946A	2.309A	679.488	88.649%	910	19.8	43.88°C	0.988
	12.115V	5.001V	3.322V	4.981V	766.493				51.89°C	114.67V
90%	56.292A	8.496A	8.433A	2.415A	764.912	87.897%	903	19.7	44.52°C	0.989
	12.123V	5.001V	3.32V	4.969V	870.238				53.56°C	114.64V
100%	62.719A	9A	8.953A	3.038A	849.722	87.073%	1536	36.3	45.03°C	0.99
	12.118V	4.999V	3.317V	4.938V	975.876				55.08°C	114.61V
110%	68.989A	10.003A	10.048A	3.044A	934.304	86.251%	1536	36.3	46.65°C	0.99
	12.119V	4.997V	3.314V	4.928V	1083.249				57.59°C	114.56V
CL1	0.114A	12A	11.925A	0A	101.291	81.469%	921	20.1	41.33°C	0.971
	12.198V	5.016V	3.329V	5.111V	124.335				46.79°C	114.87V

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	19.874A	0A	0A	101.337	79.865%	1545	36.5	39.61°C	0.973
	12.167V	5.029V	3.336V	5.114V	126.886				46.71°C	114.88V
CL3	0.114A	0A	19.842A	0A	67.394	74.296%	1545	36.5	41.99°C	0.959
	12.155V	5.007V	3.327V	5.114V	90.709				51.05°C	114.88V
CL4	70.268A	0A	0A	0A	849.494	87.973%	1535	36.3	46.72°C	0.989
	12.090V	5.003V	3.333V	5.055V	965.631				57.69°C	114.61V

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%	5.217A	1.994A	1.974A	0.983A	85.001	85.892%	0	<6.0	44.29°C	0.796
	12.153V	5.016V	3.344V	5.088V	98.961				40.25°C	229.87V
20%	11.445A	2.991A	2.963A	1.183A	169.936	91.177%	0	<6.0	44.84°C	0.907
	12.148V	5.015V	3.341V	5.072V	186.378				40.52°C	229.86V
30%	18.055A	3.49A	3.459A	1.384A	254.944	92.359%	0	<6.0	46.2°C	0.942
	12.123V	5.014V	3.339V	5.057V	276.035				41.38°C	229.85V
40%	24.654A	3.99A	3.956A	1.587A	340.027	92.712%	0	<6.0	46.89°C	0.956
	12.121V	5.013V	3.337V	5.042V	366.759				41.87°C	229.83V
50%	30.878A	4.988A	4.949A	1.791A	424.816	92.512%	0	<6.0	47.8°C	0.964
	12.122V	5.012V	3.334V	5.026V	459.204				42.28°C	229.82V
60%	37.111A	5.992A	5.949A	1.996A	509.357	92.166%	917	20	42.95°C	0.968
	12.114V	5.007V	3.328V	5.01V	552.65				49.03°C	229.8V
70%	43.393A	6.995A	6.948A	2.203A	594.677	91.821%	914	20	43.26°C	0.971
	12.112V	5.004V	3.325V	4.993V	647.65				50.36°C	229.79V
80%	49.661A	7.993A	7.947A	2.309A	679.501	91.441%	910	19.8	43.79°C	0.973
	12.114V	5.003V	3.322V	4.981V	743.097				52.01°C	229.77V
90%	56.305A	8.494A	8.434A	2.415A	764.932	90.986%	905	19.7	44.17°C	0.975
	12.121V	5.003V	3.32V	4.969V	840.713				53.27°C	229.76V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	62.727A	8.997A	8.955A	3.038A	849.744	90.439%	1536	36.3	45.55°C	0.976
	12.117V	5V	3.317V	4.938V	939.569				55.57°C	229.74V
110%	69.003A	10A	10.051A	3.043A	934.312	89.89%	1535	36.3	46.85°C	0.978
	12.116V	4.999V	3.313V	4.929V	1039.392				57.8°C	229.73V
CL1	0.115A	11.995A	11.929A	0A	101.293	82.923%	922	20.1	41.8°C	0.842
	12.193V	5.018V	3.329V	5.111V	122.15				47.29°C	229.87V
CL2	0.114A	19.895A	0A	0A	101.341	81.1%	1545	36.5	40.03°C	0.846
	12.167V	5.024V	3.336V	5.114V	124.959				47.06°C	229.87V
CL3	0.114A	0A	19.844A	0A	67.395	75.26%	1544	36.5	40.55°C	0.77
	12.154V	5.007V	3.327V	5.113V	89.548				49.59°C	229.88V
CL4	70.299A	0A	0A	0A	849.503	91.167%	1534	36.3	44.59°C	0.976
	12.085V	5.002V	3.332V	5.055V	931.812				55.57°C	229.75V

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	1.232A	0.498A	0.493A	0.195A	19.994	75.304%	0	<6.0	39.67°C	0.759
	12.042V	5.018V	3.348V	5.122V	26.555				36.58°C	114.91V
40W	2.714A	0.697A	0.69A	0.293A	39.994	81.675%	0	<6.0	40.74°C	0.9
	12.046V	5.018V	3.347V	5.117V	48.967				37.52°C	114.9V
60W	4.160A	0.897A	0.887A	0.391A	59.993	81.48%	0	<6.0	42.15°C	0.944
	12.146V	5.018V	3.347V	5.112V	73.629				38.37°C	114.89V
80W	5.622A	1.096A	1.085A	0.489A	79.934	84.379%	0	<6.0	43.51°C	0.961
	12.150V	5.017V	3.345V	5.107V	94.732				39.55°C	114.88V

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	1.234A	0.498A	0.493A	0.195A	19.995	78.09%	0	<6.0	39.62°C	0.442
	12.033V	5.015V	3.345V	5.121V	25.612				36.58°C	229.9V
40W	2.716A	0.698A	0.691A	0.293A	39.996	82.685%	0	<6.0	40.75°C	0.584
	12.036V	5.015V	3.345V	5.116V	48.373				37.5°C	229.89V
60W	4.163A	0.897A	0.888A	0.391A	59.996	82.633%	0	<6.0	41.69°C	0.709
	12.137V	5.016V	3.345V	5.111V	72.606				38.2°C	229.88V
80W	5.626A	1.096A	1.085A	0.49A	79.94	85.593%	0	<6.0	43.9°C	0.78
	12.144V	5.016V	3.344V	5.106V	93.396				40.01°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	14.22mV	14.10mV	13.05mV	17.39mV	Pass
20% Load	17.14mV	14.05mV	13.97mV	17.29mV	Pass
30% Load	15.30mV	14.46mV	14.12mV	17.95mV	Pass
40% Load	15.09mV	15.17mV	14.84mV	17.80mV	Pass
50% Load	15.09mV	15.33mV	14.68mV	17.95mV	Pass
60% Load	14.94mV	15.12mV	15.45mV	19.03mV	Pass
70% Load	15.45mV	15.94mV	16.73mV	19.18mV	Pass
80% Load	15.81mV	16.76mV	16.57mV	19.39mV	Pass
90% Load	16.98mV	18.29mV	18.62mV	21.43mV	Pass
100% Load	21.22mV	17.94mV	19.05mV	22.92mV	Pass
110% Load	22.36mV	18.29mV	20.27mV	23.21mV	Pass
Crossload1	14.72mV	15.92mV	16.17mV	16.20mV	Pass
Crossload2	14.48mV	20.54mV	14.43mV	15.70mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	14.53mV	15.02mV	16.57mV	14.07mV	Pass
Crossload4	21.24mV	18.44mV	19.01mV	18.74mV	Pass

The results above are not used in the certification process

230V

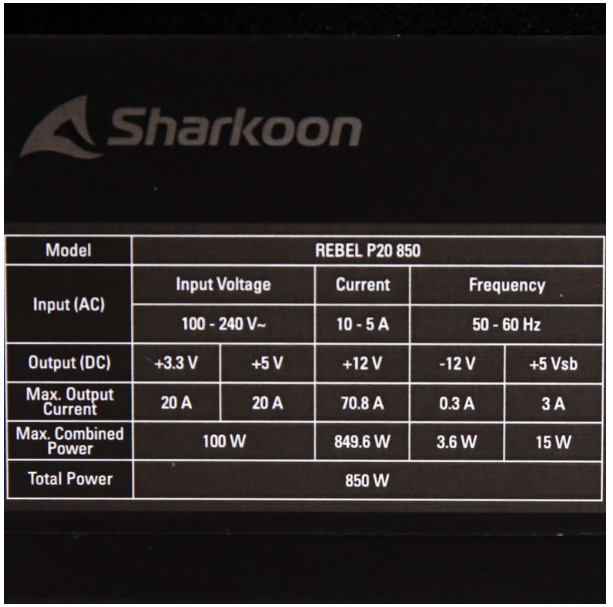
Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	11.51mV	11.04mV	9.92mV	13.56mV	Pass
20% Load	12.64mV	11.29mV	10.43mV	14.42mV	Pass
30% Load	12.13mV	11.85mV	11.15mV	14.68mV	Pass
40% Load	11.36mV	12.36mV	11.56mV	14.63mV	Pass
50% Load	11.82mV	11.29mV	11.10mV	15.45mV	Pass
60% Load	11.36mV	11.55mV	12.07mV	15.50mV	Pass
70% Load	11.00mV	11.44mV	11.36mV	16.11mV	Pass
80% Load	12.13mV	12.98mV	13.25mV	15.96mV	Pass
90% Load	12.33mV	13.33mV	13.66mV	15.91mV	Pass
100% Load	17.10mV	13.80mV	14.93mV	18.67mV	Pass
110% Load	17.58mV	13.96mV	15.85mV	17.75mV	Pass
Crossload1	10.96mV	12.58mV	12.52mV	12.07mV	Pass
Crossload2	12.07mV	16.71mV	11.00mV	11.61mV	Pass
Crossload3	12.38mV	11.85mV	13.61mV	10.74mV	Pass
Crossload4	16.84mV	12.58mV	13.50mV	14.03mV	Pass

The results above are not used in the certification process

Sharkoon Rebel P20 850



Top side



Model	REBEL P20 850				
Input (AC)	Input Voltage		Current	Frequency	
	100 - 240 V~		10 - 5 A	50 - 60 Hz	
Output (DC)	+3.3 V	+5 V	+12 V	-12 V	+5 Vsb
Max. Output Current	20 A	20 A	70.8 A	0.3 A	3 A
Max. Combined Power	100 W		849.6 W	3.6 W	15 W
Total Power	850 W				

Power specifications label

Cybenetics bietet freiwillige Zertifizierungsprogramme für Netzteile – ETA für Effizienz, LAMBDA für Lautstärke und SAFE für Sicherheit und korrekten Betrieb – sowie für Kühlprodukte mit DELTA für die Schalldämmung von Gehäusen und PHI für Luftstrom und statischen Druck von Lüftern

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

www.cybenetics.com - info@cybenetics.com