be quiet!

be quiet! Power Zone 2 850W

Serial Number 007EUS4341000003

Lab ID BQ85002679

Certification ID 252679

Test Result Report ID: 24PS2679A

Certificate Issue Date: Dec 19, 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	be quiet!
Model	Power Zone 2 850W
OEM/ODM	FSP
Serial Number	007EUS4341000003
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	5-10

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	140mm Rifle Bearing Fan (Pure Wings 3, BQ PUW3-14025-HR)
Semi-Passive Operation	✓
Cybenetics Testing Information	
Lab ID	BQ85002679
Date of receipt	Dec 6, 2024
Testing Date	Dec 13, 2024
Report Issued Date	Dec 19, 2024
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 (590mm)	1	1	16-22AWG	No
4+4 pin EPS12V (700mm)	1	1	16AWG	No
8 pin EPS12V (700mm)	1	1	16AWG	No
2x 6+2 pin PCIe (600mm)	1	2	16-18AWG	No
6+2 pin PCIe (600mm)	1	1	16AWG	No
12+4 pin PCIe (600mm) (600W)	1	1	16-26AWG	No
SATA (550mm+150mm+150mm+155mm)	1	4	18AWG	No

SATA (500mm+150mm+150) / 4-pin Molex (+150mm)	1	3/1	18AWG	No
AC Power Cord (1350mm) - C13 coupler	1	1	18AWG	-

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	70.8	3	0.5
	Watts	120		850	15	6
Total Max. Power (W)		850				

Parts Description

General Data	
Manufacturer (OEM)	FSP
PCB Type	Single-Sided
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	1x NTC Thermistor SCK 202R0 (2 ohm) & Relay
Bridge Rectifier(s)	2x GBJ25V08 (800V, 25A @ 25°C)
APFC MOSFETs	2x Magnachip MMFT65R090RTH (650V, 22A @ 100°C, Rds(on): 0.090Ohm)

APFC Boost Diode	1x ROHM SCS308AM (650V, 8A @ 105°C)
Bulk Cap(s)	1x Elite (420V, 330uF, 2,000h @ 105°C, PL) 1x Elite (420V, 270uF, 3,000h @ 105°C, PK)
Main Switchers	2x Magnachip MMFT65R115RTH (650V, 19A @ 100°C, Rds(on): 0.115Ohm)
IC Driver	Novosense NSi6602
Resonant Controller	Champion CM6901X
APFC Controller	Champion CM6500UNX
Topology	Primary side: APFC, Half-Bridge & LLC Resonant converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	4x Toshiba TPHR8504PL (40V, 150A @ 25°C, Rds(on): 0.85mOhm)
5V & 3.3V	DC-DC Converters: 4x Magnachip MDU1513 (30V, 70.4A @ 70°C, Rds(on): 4.6mOhm) PWM Controller(s): UPI-semiuP3861P
Filtering Capacitors	Electrolytic: 5x Elite (3-5,000h @105°C, EJ) 5x Elite (2-5,000h @105°C, ED) 4x Elite (3-6,000h @105°C, EV) Polymer: 13x Apaq, 7x Elite (CS)
Supervisor IC	Weltrend WT7527RA (OCP, OVP, UVP, SCP,PG)
Fan Controller	Grenergy GR8031
Fan Model	Pure Wings 3, BQPUW3-14025-HR (140mm, 12V, 0.42A, Rifle Bearing Fan)
5VSB	
Rectifier	MPS MP9989 & 1x CET CEF03N8 (800V, 2A @ 100°C, Rds(on): 4.8Ohm)
Standby PWM Controller	MPS MP9989

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)	90.402%
Average Noise Output (>1450 Load Combinations)	19.84dBA
Average PF (>1450 Load Combinations)	0.984
Efficiency With 10W (≤500W) or 2% (>500W) Load	70.088%
Standby Power Consumption	0.0424W
Non-Accredited	
12V Ripple (Full Load)	49.84mV
5V Ripple (Full Load)	14.74mV
3.3V Ripple (Full Load)	17.66mV
5VSB Ripple (Full Load)	15.71mV
12V Load Regulation	0.72%
5V Load Regulation	0.95%
3.3V Load Regulation	1.45%
5VSB Load Regulation	2.83%
Inrush Current	81.930A

230V

Accredited	
Average Efficiency (>1450 load combinations)	92.438%
Average Noise Output (>1450 Load Combinations)	19.31dBA
Average PF (>1450 Load Combinations)	0.960
Efficiency With 10W (≤500W) or 2% (>500W) Load	69.282%
Standby Power Consumption	0.1028W

Non-Accredited		
12V Ripple (Full Load)		51.69mV
5V Ripple (Full Load)		16.29mV
3.3V Ripple (Full Load)		17.29mV
5VSB Ripple (Full Load)		15.69mV
12V Load Regulation		0.75%
5V Load Regulation		0.95%
3.3V Load Regulation		1.39%
5VSB Load Regulation		2.81%
Inrush Current		161.700A
12V Transient Response (200%)		11.55V
5V Transient Response (200%)		4.995V
3.3V Transient Response (200%)		3.206V
5VSB Transient Response (200%)		4.841V
Hold-Up Time & PWR_OK Signal		18.60ms
AC Loss to PWR_OK Hold Up Time		17.20ms
PWR_OK Inactive to DC Loss Delay		1.40ms
PSU Timings: T1 (20% / 100%)	69.0ms	69.0ms
PSU Timings: T3 (20% / 100%)	121.0ms	121.0ms
12V OCP (24.3°C / 40.0°C)	93.60A (132.20%), 12.165V	89.20A (125.99%), 12.165V
5V OCP (24.3°C / 40.0°C)	29.7A (148.50%), 5.06V	29.5A (147.50%), 5.056V
3.3V OCP (24.3°C / 40.0°C)	28.1A (140.50%), 3.312V	28.1A (140.50%), 3.314V
5VSB OCP (24.3°C / 40.0°C)	4.8A (160.00%), 4.898V	4.7A (156.67%), 4.898V
OPP (25.77°C / 41.46°C)	145.02%	135.61%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	18.6
AC Loss to PWR_OK Hold Up Time (ms)	17.2
PWR_OK Inactive to DC Loss Delay (ms)	1.4

Vampire Power

Tables

115V

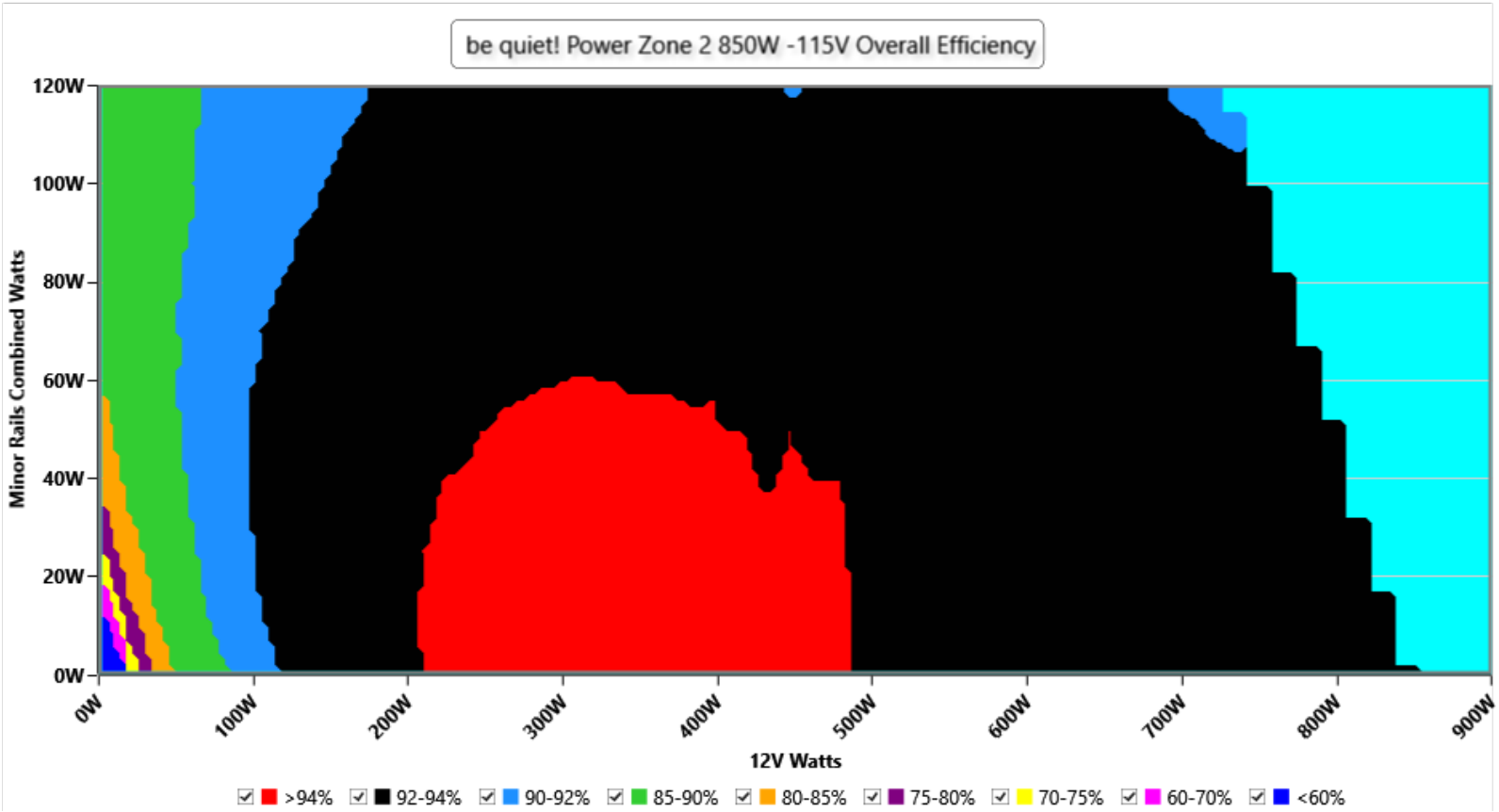
Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.03 V	115.01 V	113.85 V	115.08 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.99 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.418	1.490	PASS
Mains Voltage THD:	0.13 %	0.09 %	N/A	0.18 %	2.00 %	PASS
Real Power:	0.042 W	-0.009 W	N/A	0.088 W	N/A	N/A
Apparent Power:	8.531 W	8.359 W	N/A	8.717 W	N/A	N/A
Power Factor:	0.005	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 %	0.14 %	N/A	0.25 %	2.00 %	PASS
Real Power:	0.103 W	0.052 W	N/A	0.169 W	N/A	N/A
Apparent Power:	28.898 W	28.443 W	N/A	29.393 W	N/A	N/A
Power Factor:	0.003	N/A	N/A	N/A	N/A	N/A

Efficiency Graph

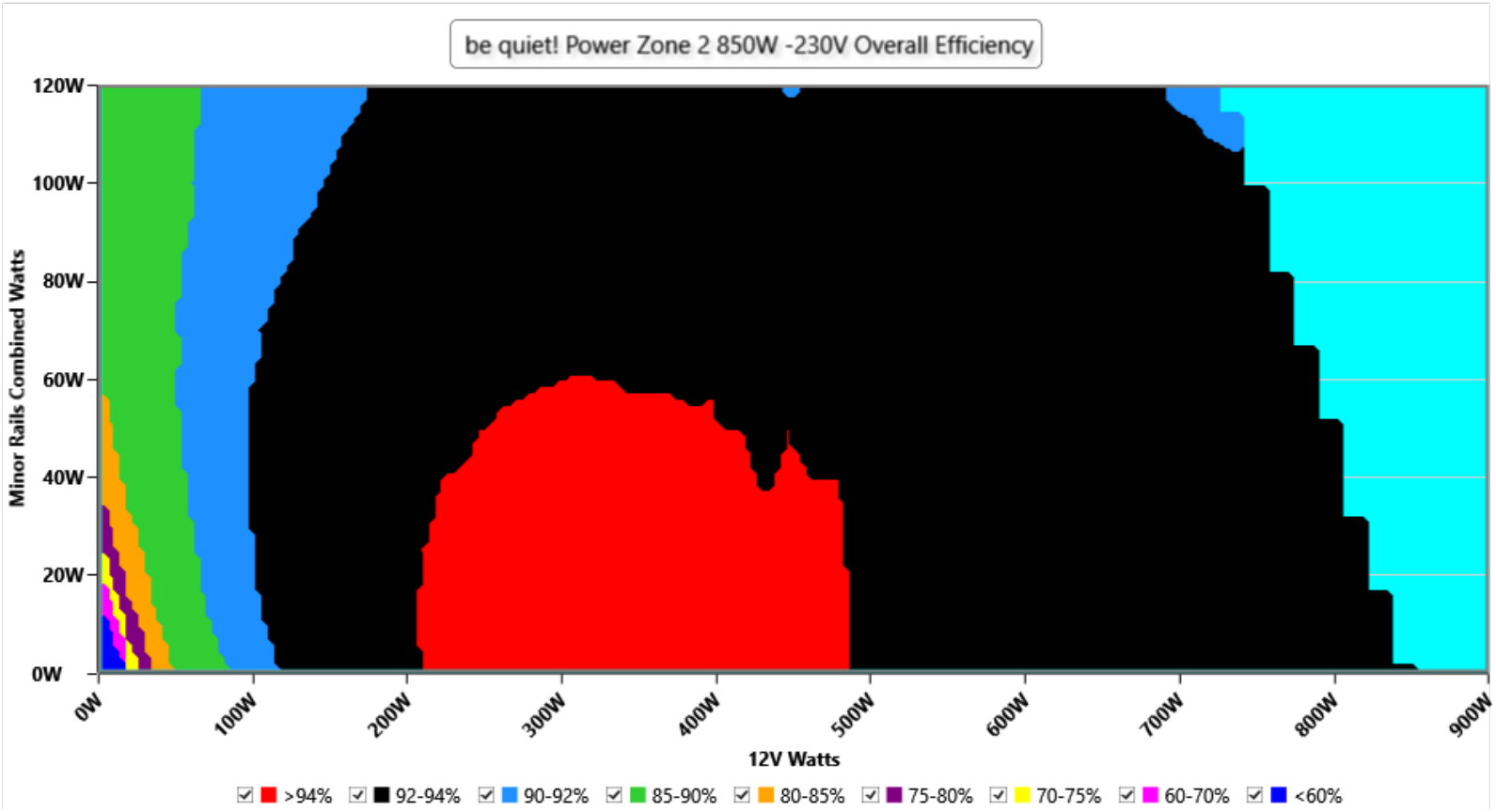
115V



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

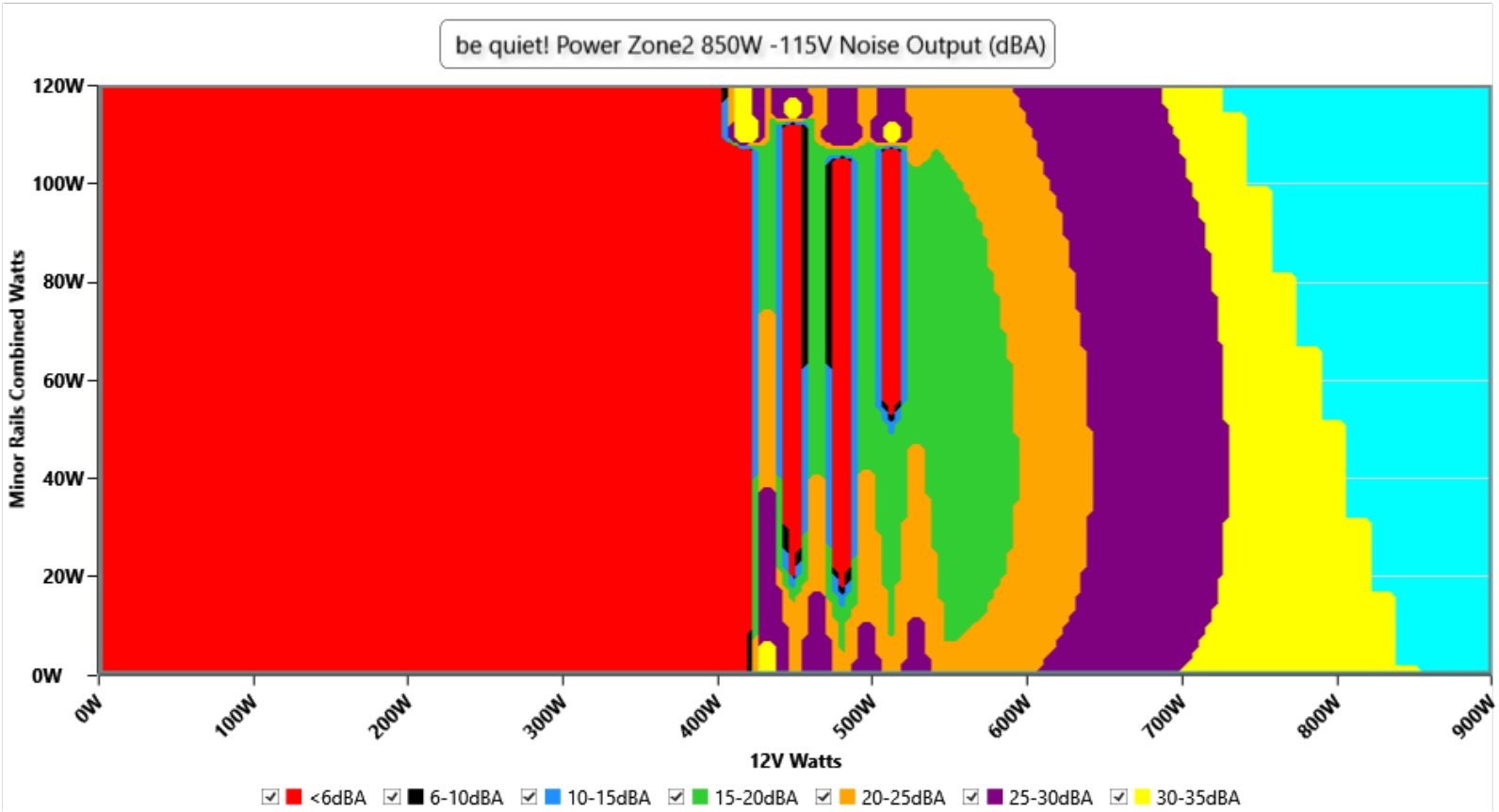


INFO

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

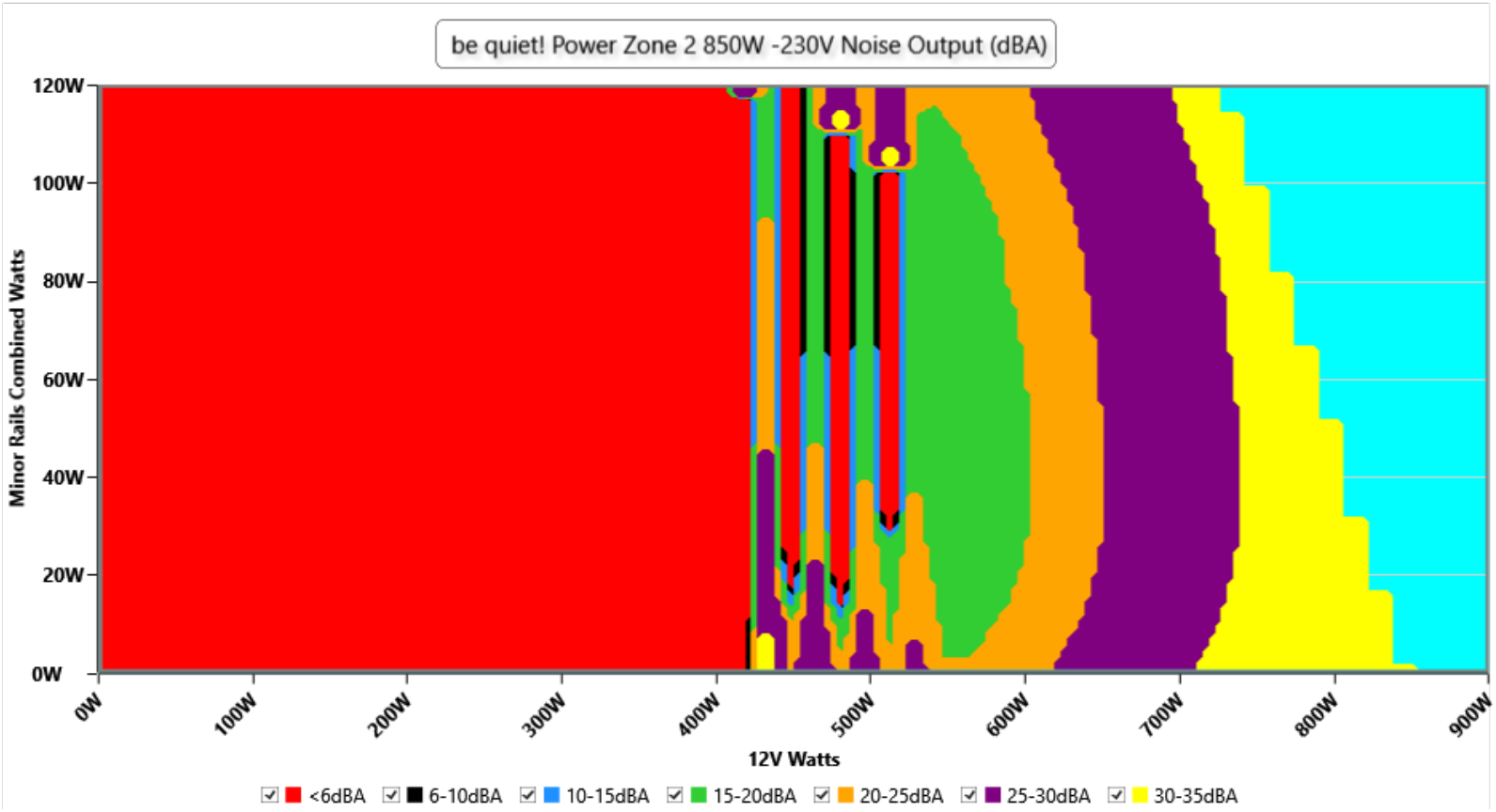
115V



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) · 36.0 °C	0 RPM · <6.0 dB(A) · 48.9 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 36.9 °C	0 RPM · <6.0 dB(A) · 49.3 °C	fan off in both
50%	0 RPM · <6.0 dB(A) · 39.7 °C	0 RPM · <6.0 dB(A) · 55.8 °C	fan off in both
100%	1230 RPM · 31.5 dB(A) · 29.8 °C	1497 RPM · 36.9 dB(A) · 45.1 °C	**+5.4 dB(A)**

230V

Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	0 RPM · <6.0 dB(A) · 36.6 °C	0 RPM · <6.0 dB(A) · 49.1 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 36.7 °C	0 RPM · <6.0 dB(A) · 50.4 °C	fan off in both
50%	0 RPM · <6.0 dB(A) · 37.9 °C	0 RPM · <6.0 dB(A) · 52.8 °C	fan off in both
100%	1143 RPM · 29.5 dB(A) · 30.0 °C	1491 RPM · 36.7 dB(A) · 45.1 °C	**+7.2 dB(A)**

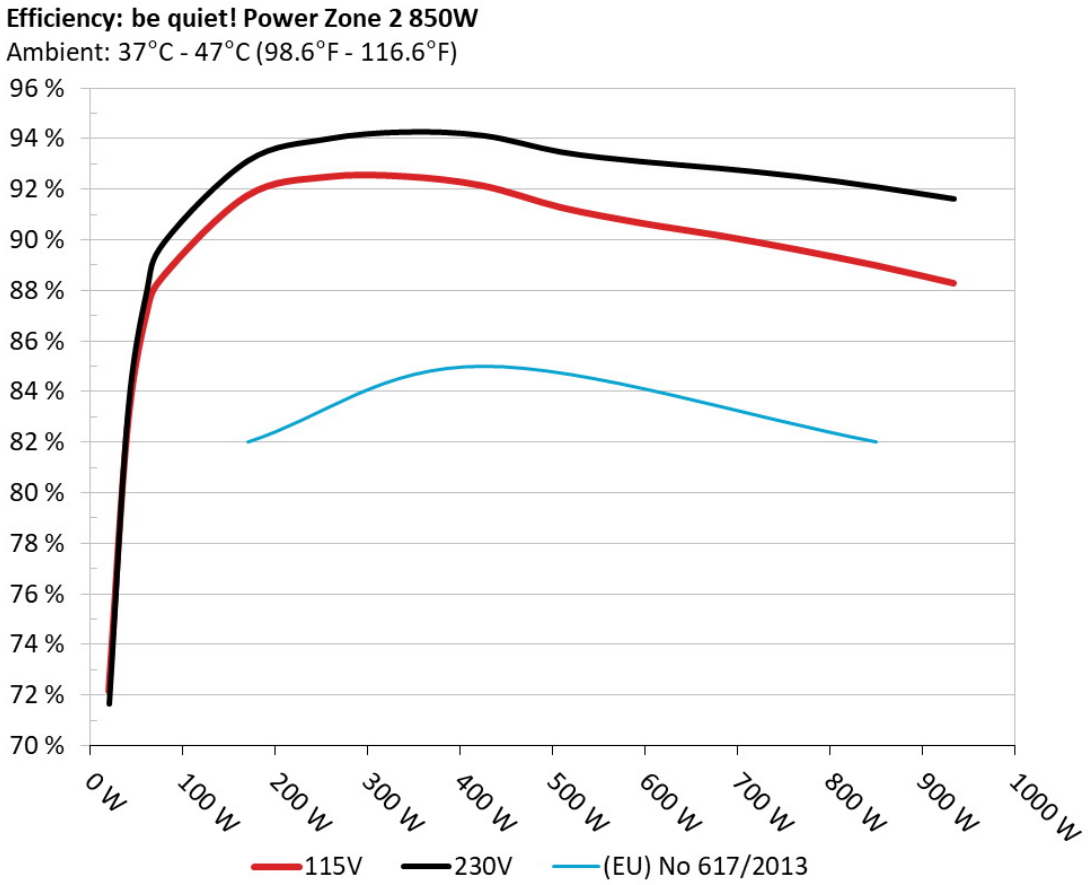
INFO

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

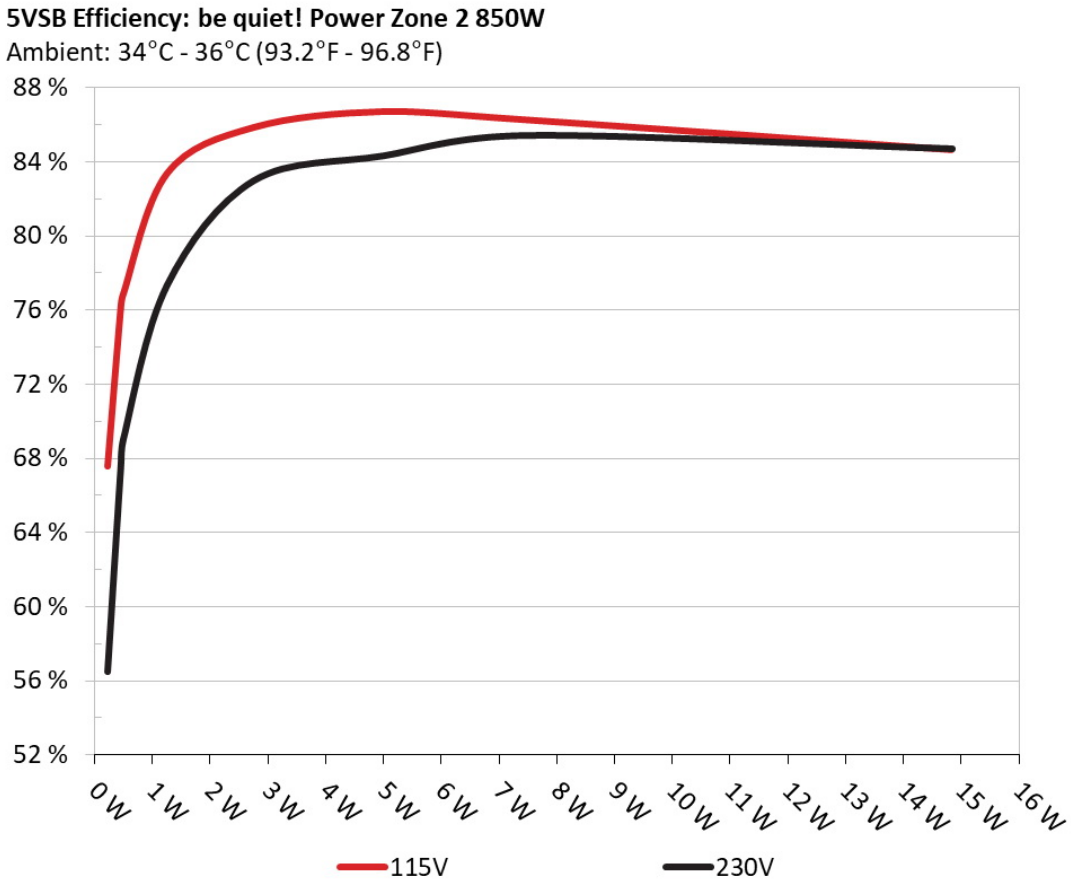
Efficiency under high ambient temperature



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**	0.226W	67.567%	0.039
	5.021V	0.334W		114.93V
2	**0.09A**	0.452W	76.08%	0.067
	5.02V	0.594W		114.93V
3	**0.55A**	2.754W	85.843%	0.264
	5.008V	3.208W		114.93V
4	**1A**	4.996W	86.698%	0.33
	4.996V	5.763W		114.91V
5	**1.5A**	7.476W	86.25%	0.377
	4.984V	8.668W		114.91V
6	**3A**	14.833W	84.64%	0.439
	4.945V	17.525W		114.9V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	**0.045A**	0.226W	56.473%	0.014
	5.022V	0.404W		229.89V
2	**0.09A**	0.452W	67.428%	0.023
	5.021V	0.673W		229.89V
3	**0.55A**	2.755W	82.982%	0.107
	5.009V	3.321W		229.89V
4	**1A**	4.997W	84.325%	0.175
	4.997V	5.926W		229.89V
5	**1.5A**	7.477W	85.425%	0.212
	4.984V	8.751W		229.89V
6	**3A**	14.839W	84.707%	0.31
	4.947V	17.518W		229.89V

Protection Features

OCP (Normal @ 24.3°C)	12V: 93.60A (132.20%), 12.165V 5V: 29.7A (148.50%), 5.06V 3.3V: 28.1A (140.50%), 3.312V 5VSB: 4.8A (160.00%), 4.898V
OCP (Hot @ 40.0°C)	12V: 89.20A (125.99%), 12.165V 5V: 29.5A (147.50%), 5.056V 3.3V: 28.1A (140.50%), 3.314V 5VSB: 4.7A (156.67%), 4.898V
OPP (Normal @ 25.8°C)	1232.66W (145.02%)
OPP (Hot @ 41.5°C)	1152.66W (135.61%)
OTP	✓ (142°C @ Secondary Side)
SCP	12V to Earth: ✓ 5V to Earth: ✓ 3.3V to Earth: ✓ 5VSB to Earth: ✓ -12V to Earth: ✓
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%	**5.182A**	**1.964A**	**1.971A**	**1.002A**	85.005	88.678%	0	<6.0	48.93°C	0.957
	12.237V	5.092V	3.348V	4.993V	95.858				40.05°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
20%	**11.370A**	**2.949A**	**2.962A**	**1.205A**	169.947	91.755%	0	<6.0	49.28°C	0.972
	12.229V	5.087V	3.343V	4.981V	185.218				40.53°C	114.86V
30%	**17.913A**	**3.443A**	**3.46A**	**1.409A**	254.957	92.49%	0	<6.0	52.15°C	0.978
	12.220V	5.083V	3.339V	4.969V	275.659				41.46°C	114.84V
40%	**24.474A**	**3.938A**	**3.959A**	**1.614A**	340.05	92.515%	0	<6.0	52.95°C	0.983
	12.211V	5.078V	3.334V	4.958V	367.564				41.74°C	114.8V
50%	**30.684A**	**4.928A**	**4.957A**	**1.82A**	424.875	92.142%	0	<6.0	55.84°C	0.987
	12.201V	5.073V	3.329V	4.946V	461.112				42.33°C	114.78V
60%	**36.877A**	**5.921A**	**5.959A**	**2A**	509.273	91.287%	0	<6.0	57.43°C	0.99
	12.191V	5.068V	3.323V	4.936V	557.884				42.66°C	114.74V
70%	**43.138A**	**6.913A**	**6.962A**	**2.234A**	594.704	90.676%	1035	26.7	43.05°C	0.992
	12.184V	5.063V	3.319V	4.923V	655.857				47.84°C	114.71V
80%	**49.412A**	**7.906A**	**7.967A**	**2.341A**	679.526	90.183%	1180	30.6	43.73°C	0.993
	12.176V	5.058V	3.314V	4.913V	753.5				48.49°C	114.67V
90%	**56.091A**	**8.407A**	**8.461A**	**2.447A**	764.954	89.617%	1344	33.9	44.72°C	0.993
	12.167V	5.054V	3.309V	4.904V	853.588				48.71°C	114.65V
100%	**62.516A**	**8.91A**	**8.988A**	**3.073A**	849.763	88.994%	1497	36.9	45.1°C	0.994
	12.158V	5.05V	3.304V	4.881V	954.861				49.79°C	114.61V
110%	**68.820A**	**9.911A**	**10.085A**	**3.078A**	934.33	88.29%	1643	39.3	46.53°C	0.994
	12.149V	5.044V	3.302V	4.874V	1058.255				50.99°C	114.57V
CL1	**0.115A**	**14.255A**	**14.367A**	**0A**	121.294	85.775%	0	<6.0	46.72°C	0.97
	12.227V	5.064V	3.32V	5.007V	141.41				40.17°C	114.87V
CL2	**0.113A**	**19.728A**	**0A**	**0A**	101.343	84.309%	0	<6.0	48.17°C	0.967
	12.233V	5.067V	3.334V	5.014V	120.208				40.89°C	114.87V
CL3	**0.113A**	**0A**	**19.876A**	**0A**	67.397	78.999%	0	<6.0	47.36°C	0.955
	12.232V	5.072V	3.321V	5.014V	85.312				40.68°C	114.89V
CL4	**69.842A**	**0A**	**0A**	**0A**	849.521	89.535%	1509	37.2	45.09°C	0.994
	12.164V	5.067V	3.326V	4.971V	948.817				49.27°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%	**5.180A**	**1.964A**	**1.972A**	**1.002A**	85.001	89.891%	0	<6.0	49.08°C	0.877
	12.239V	5.092V	3.347V	4.992V	94.557				40.03°C	229.87V
20%	**11.369A**	**2.949A**	**2.962A**	**1.205A**	169.939	93.114%	0	<6.0	50.4°C	0.937
	12.230V	5.087V	3.342V	4.981V	182.508				40.53°C	229.86V
30%	**17.913A**	**3.443A**	**3.46A**	**1.409A**	254.95	93.974%	0	<6.0	50.67°C	0.958
	12.221V	5.083V	3.338V	4.969V	271.299				41.07°C	229.84V
40%	**24.472A**	**3.939A**	**3.96A**	**1.614A**	340.044	94.254%	0	<6.0	52.47°C	0.968
	12.212V	5.078V	3.334V	4.958V	360.774				41.78°C	229.83V
50%	**30.682A**	**4.928A**	**4.959A**	**1.82A**	424.87	94.113%	0	<6.0	52.76°C	0.971
	12.202V	5.073V	3.328V	4.946V	451.449				42.07°C	229.82V
60%	**36.876A**	**5.921A**	**5.961A**	**2A**	509.27	93.46%	0	<6.0	53.03°C	0.977
	12.192V	5.067V	3.322V	4.936V	544.908				42.52°C	229.8V
70%	**43.139A**	**6.914A**	**6.964A**	**2.234A**	594.71	93.09%	1039	26.7	43.41°C	0.98
	12.184V	5.063V	3.318V	4.923V	638.861				52.51°C	229.79V
80%	**49.414A**	**7.907A**	**7.971A**	**2.341A**	679.536	92.822%	1177	30.4	43.93°C	0.981
	12.175V	5.058V	3.312V	4.913V	732.088				52.31°C	229.77V
90%	**56.094A**	**8.408A**	**8.465A**	**2.447A**	764.967	92.503%	1334	33.8	44.13°C	0.983
	12.167V	5.054V	3.308V	4.904V	826.969				52.41°C	229.76V
100%	**62.520A**	**8.911A**	**8.983A**	**3.074A**	849.779	92.087%	1491	36.7	45.13°C	0.984
	12.157V	5.049V	3.306V	4.881V	922.802				53.6°C	229.74V
110%	**68.826A**	**9.912A**	**10.09A**	**3.078A**	934.363	91.611%	1639	39.3	46.25°C	0.985
	12.148V	5.044V	3.3V	4.874V	1019.919				55.07°C	229.73V
CL1	**0.115A**	**14.255A**	**14.366A**	**0A**	121.297	86.771%	0	<6.0	45.33°C	0.921
	12.227V	5.064V	3.321V	5.007V	139.789				40.16°C	229.86V
CL2	**0.114A**	**19.73A**	**0A**	**0A**	101.361	85.246%	0	<6.0	46.01°C	0.906
	12.233V	5.067V	3.334V	5.014V	118.903				40.75°C	229.87V
CL3	**0.113A**	**0A**	**19.874A**	**0A**	67.401	80.294%	0	<6.0	45.57°C	0.86
	12.231V	5.073V	3.321V	5.013V	83.942				40.28°C	229.87V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL4	**69.849A**	**0A**	**0A**	**0A**	849.55	92.581%	1501	37	45°C	0.984
	12.163V	5.067V	3.326V	4.971V	917.627				53.83°C	229.74V

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	**1.214A**	**0.49A**	**0.492A**	**0.199A**	20.008	72.158%	0	<6.0	44.95°C	0.911
	12.246V	5.098V	3.352V	5.019V	27.729				36.78°C	114.9V
40W	**2.670A**	**0.687A**	**0.689A**	**0.299A**	40.004	82.514%	0	<6.0	45.54°C	0.928
	12.243V	5.096V	3.351V	5.015V	48.482				37.35°C	114.9V
60W	**4.128A**	**0.883A**	**0.887A**	**0.399A**	60.002	86.978%	0	<6.0	46.29°C	0.948
	12.241V	5.095V	3.35V	5.011V	68.985				38.04°C	114.88V
80W	**5.582A**	**1.08A**	**1.084A**	**0.499A**	79.949	88.612%	0	<6.0	48.81°C	0.956
	12.239V	5.094V	3.349V	5.007V	90.223				39.38°C	114.89V

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	**1.212A**	**0.49A**	**0.492A**	**0.199A**	19.994	71.651%	0	<6.0	44.64°C	0.557
	12.248V	5.097V	3.352V	5.018V	27.908				36.9°C	229.89V
40W	**2.669A**	**0.687A**	**0.689A**	**0.299A**	39.994	83.105%	0	<6.0	45.84°C	0.739
	12.246V	5.096V	3.351V	5.014V	48.125				37.08°C	229.88V
60W	**4.126A**	**0.883A**	**0.887A**	**0.399A**	59.995	87.859%	0	<6.0	46.99°C	0.82
	12.243V	5.095V	3.349V	5.01V	68.285				38.05°C	229.88V
80W	**5.580A**	**1.08A**	**1.084A**	**0.499A**	79.939	89.922%	0	<6.0	48.04°C	0.867
	12.241V	5.094V	3.348V	5.006V	88.897				39.09°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	19.03mV	12.46mV	12.84mV	11.87mV	Pass
20% Load	25.36mV	13.44mV	13.25mV	13.20mV	Pass
30% Load	27.66mV	12.37mV	12.63mV	11.66mV	Pass
40% Load	29.45mV	12.77mV	13.15mV	11.87mV	Pass
50% Load	30.12mV	13.79mV	15.14mV	13.04mV	Pass
60% Load	32.37mV	12.77mV	14.17mV	12.12mV	Pass
70% Load	32.11mV	12.92mV	14.89mV	13.14mV	Pass
80% Load	34.82mV	13.74mV	15.86mV	14.01mV	Pass
90% Load	33.90mV	14.41mV	15.24mV	13.45mV	Pass
100% Load	49.84mV	14.74mV	17.66mV	15.71mV	Pass
110% Load	52.41mV	17.17mV	19.79mV	17.81mV	Pass
Crossload1	36.36mV	15.90mV	20.57mV	14.42mV	Pass
Crossload2	21.78mV	16.61mV	16.06mV	13.35mV	Pass
Crossload3	20.47mV	12.72mV	19.79mV	13.14mV	Pass
Crossload4	49.33mV	13.78mV	14.09mV	15.06mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	19.73mV	13.49mV	12.94mV	11.76mV	Pass
20% Load	28.43mV	12.67mV	12.89mV	11.56mV	Pass
30% Load	30.48mV	13.39mV	13.10mV	12.48mV	Pass
40% Load	32.06mV	13.18mV	13.35mV	12.28mV	Pass
50% Load	34.32mV	13.54mV	13.71mV	12.53mV	Pass
60% Load	35.33mV	13.33mV	13.91mV	13.15mV	Pass

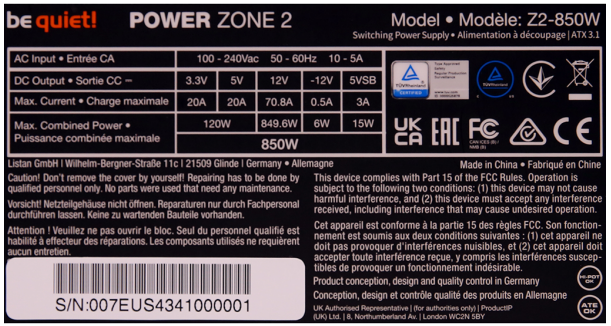
Test	12V	5V	3.3V	5VSB	Pass/Fail
70% Load	34.72mV	13.13mV	14.48mV	13.61mV	Pass
80% Load	36.31mV	15.68mV	15.96mV	14.07mV	Pass
90% Load	37.13mV	14.30mV	15.14mV	14.47mV	Pass
100% Load	51.69mV	16.29mV	17.29mV	15.69mV	Pass
110% Load	55.30mV	15.38mV	18.01mV	15.84mV	Pass
Crossload1	37.79mV	15.97mV	19.11mV	13.94mV	Pass
Crossload2	25.31mV	17.06mV	15.04mV	12.79mV	Pass
Crossload3	19.54mV	13.49mV	20.87mV	12.69mV	Pass
Crossload4	50.89mV	13.85mV	13.46mV	13.67mV	Pass

The results above are not used in the certification process

be quiet! Power Zone 2 850W



Top side



Power specifications label

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

Cybenetics runs voluntary certification programs for power supplies - ETA for efficiency, LAMBDA for noise and SAFE for safety and correct operation - and for cooling products, with DELTA for chassis soundproofing and PHI for fan airflow and static pressure. THETA rates cooler performance on AMD AM5 and Intel LGA1851 outside ISO 17065 and accreditation scope

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