

Anex

BoostBoxx PB850P

Lab ID#: BB85002351
Receipt Date: Jan 25, 2024
Test Date: Feb 9, 2024

Report: 24PS2351A
Report Date: Feb 12, 2024

DUT INFORMATION	
Brand	BoostBoxx
Manufacturer (OEM)	Great Wall
Series	PB-P
Model Number	
Serial Number	2N124125979
DUT Notes	

DUT SPECIFICATIONS	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	47-63
Rated Power (W)	850
Type	ATX12V
Cooling	140mm Fluid Dynamic Bearing Fan (HA1425M12B-Z)
Semi-Passive Operation	✓
Cable Design	Fully Modular

TEST EQUIPMENT	
Electronic Loads	Chroma 63601-5 x2 Chroma 63600-2 63640-80-80 x10 63610-80-20
AC Sources	Chroma 6530, APM SP300VAC4000W-P
Power Analyzers	RS HMC8015, N4L PPA1530, N4L PPA5530
Oscilloscopes	Picoscope 4444, Rigol DS7014, 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, Keithley 2015 - THD
UPS	FSP Champ Tower 3kVA, CyberPower OLS3000E 3kVA
Isolation Transformer	4kVA

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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	✓
ATX v3.1 PSU Power Excursion	✓

230V

Average Efficiency	91.633%
Average Efficiency 5VSB	78.592%
Standby Power Consumption (W)	0.1587000
Average PF	0.945
Avg Noise Output	22.51 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	A

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	25	25	70.8	3	0.8
	Watts	130		849.6	15	9.6
Total Max. Power (W)		850				

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

Hold-Up Time (ms)	20.5
AC Loss to PWR_OK Hold Up Time (ms)	17.6
PWR_OK Inactive to DC Loss Delay (ms)	2.9

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CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (590mm)	1	1	18-20AWG	No
4+4 pin EPS12V (700mm)	2	2	18AWG	No
6+2 pin PCIe (700mm+150mm)	2	4	18AWG	No
12+4 pin PCIe (700mm) (600W)	1	1	16-24AWG	No
SATA (1000mm+120mm+120mm)	1	3	18AWG	No
SATA (1000mm) / 4-pin Molex (+150mm+150mm)	1	1 / 2	18AWG	No
SATA (900mm) / 4-pin Molex (+150mm) / FDD (+150mm)	1	1 / 1 / 1	18-22AWG	No
AC Power Cord (1670mm) - C13 coupler	1	1	18AWG	-

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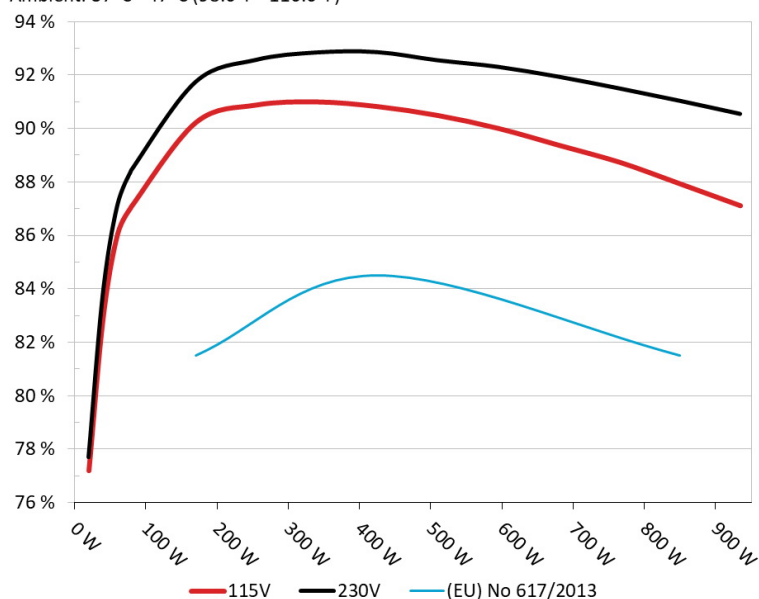
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: BoostBoxx PB850P

Ambient: 37°C - 47°C (98.6°F - 116.6°F)



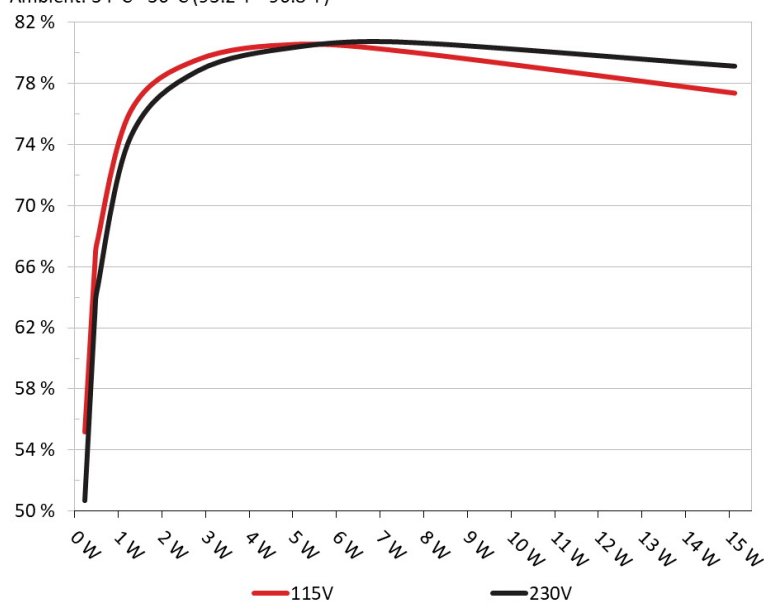
INFO

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

5VSB Efficiency: BoostBoxx PB850P

Ambient: 34°C - 36°C (93.2°F - 96.8°F)



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	0.231W	54.681%	0.046
	5.127V	0.421W		115.16V
2	0.09A	0.461W	65.703%	0.076
	5.125V	0.702W		115.17V
3	0.55A	2.812W	79.065%	0.282
	5.112V	3.557W		115.17V
4	1A	5.1W	80.075%	0.368
	5.098V	6.368W		115.16V
5	1.5A	7.626W	79.579%	0.419
	5.083V	9.583W		115.16V
6	3A	15.121W	76.875%	0.486
	5.04V	19.67W		115.15V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231W	50.202%	0.015
	5.126V	0.46W		230.39V
2	0.09A	0.461W	62.433%	0.024
	5.124V	0.739W		230.39V
3	0.55A	2.812W	78.325%	0.112
	5.111V	3.589W		230.39V
4	1A	5.099W	79.905%	0.182
	5.098V	6.381W		230.39V
5	1.5A	7.626W	80.205%	0.242
	5.083V	9.51W		230.39V
6	3A	15.122W	78.645%	0.344
	5.04V	19.228W		230.39V

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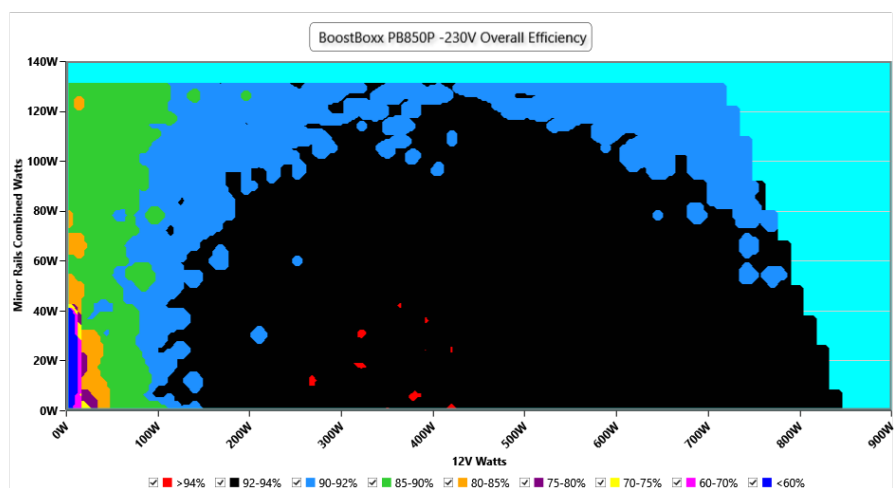
230V

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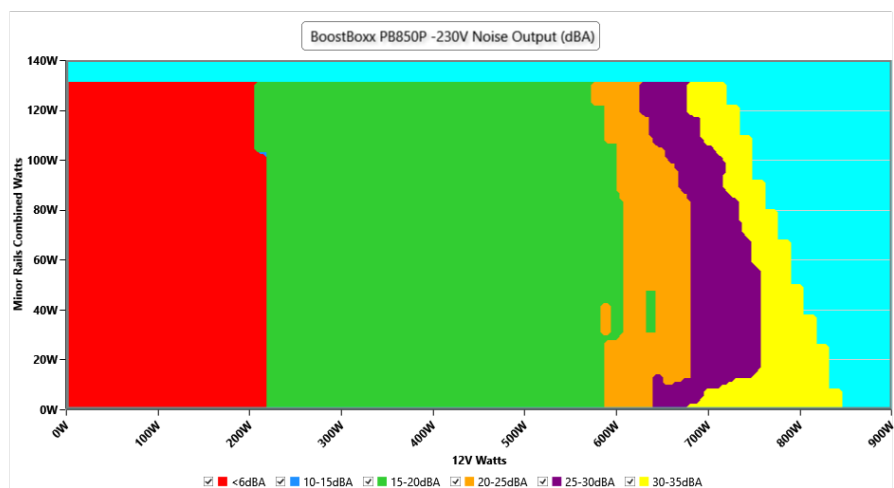
EFFICIENCY GRAPH 230V



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 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

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VAMPIRE POWER -230V

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	230.38 V	230.35 V	227.70 V	230.40 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:	0.159 W	0.135 W	N/A	0.195 W	N/A	N/A
Apparent Power:	30.291 W	30.274 W	N/A	30.303 W	N/A	N/A
Power Factor:	0.005	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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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%	5.230A	1.998A	1.99A	0.983A	85.003	88.929%	0	<6.0	44.57°C	0.8
	12.124V	5.007V	3.316V	5.09V	95.628				40.33°C	230.37V
20%	11.477A	2.998A	2.988A	1.182A	169.96	92.218%	0	<6.0	45.27°C	0.869
	12.116V	5.005V	3.313V	5.078V	184.299				40.71°C	230.36V
30%	18.081A	3.498A	3.489A	1.382A	254.971	93.046%	0	<6.0	46.42°C	0.908
	12.108V	5.003V	3.311V	5.066V	274.029				41.35°C	230.36V
40%	24.705A	4A	3.99A	1.583A	340.064	93.324%	839	20.4	41.95°C	0.946
	12.097V	5.002V	3.309V	5.055V	364.379				47.49°C	230.35V
50%	30.978A	5.005A	4.995A	1.785A	425.07	93.336%	779	18.2	42.13°C	0.974
	12.091V	4.996V	3.304V	5.042V	455.548				48.19°C	230.34V
60%	37.242A	6.009A	6A	1.989A	509.594	93.033%	779	18.2	42.81°C	0.985
	12.077V	4.994V	3.301V	5.03V	547.686				49.32°C	230.33V
70%	43.556A	7.015A	7.007A	2.193A	594.935	92.785%	946	24.0	43.22°C	0.989
	12.072V	4.991V	3.297V	5.017V	641.244				50.25°C	230.32V
80%	49.884A	8.02A	8.014A	2.297A	679.771	92.417%	1202	31.5	43.77°C	0.991
	12.065V	4.988V	3.294V	5.007V	735.569				51.84°C	230.31V
90%	56.620A	8.525A	8.507A	2.402A	765.233	91.979%	1432	36.6	44.85°C	0.992
	12.058V	4.986V	3.291V	4.998V	831.83				54.01°C	230.3V
100%	63.120A	9.03A	9.032A	3.017A	850.049	91.518%	1645	40.8	46°C	0.993
	12.046V	4.984V	3.288V	4.972V	928.827				56.03°C	230.29V
110%	69.464A	10.039A	10.138A	3.022A	934.646	91.029%	1875	44.5	46.98°C	0.994
	12.041V	4.981V	3.285V	4.964V	1027.026				57.92°C	230.28V
CL1	0.116A	15.71A	15.633A	0A	131.31	85.979%	777	18.2	40.22°C	0.851
	12.095V	4.984V	3.301V	5.106V	152.738				45.68°C	230.38V
CL2	0.116A	25.132A	0A	0A	126.403	83.933%	777	18.2	41.34°C	0.849
	12.114V	4.974V	3.318V	5.112V	150.673				48.38°C	230.38V
CL3	0.116A	0A	25.059A	0A	83.916	79.659%	776	18.1	40.36°C	0.813
	12.112V	5.007V	3.292V	5.106V	105.375				49.37°C	230.39V
CL4	70.461A	0A	0A	0.002A	849.757	92.368%	1562	39.2	45.38°C	0.993
	12.060V	4.998V	3.299V	5.073V	920.029				56.33°C	230.3V

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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	1.224A	0.499A	0.497A	0.195A	20.001	78.208%	0	<6.0	39.79°C	0.499
	12.133V	5.008V	3.319V	5.119V	25.596				36.67°C	230.37V
40W	2.694A	0.699A	0.696A	0.293A	40	84.285%	0	<6.0	40.83°C	0.671
	12.130V	5.009V	3.319V	5.114V	47.476				37.58°C	230.37V
60W	4.166A	0.899A	0.895A	0.391A	59.999	87.57%	0	<6.0	42.15°C	0.747
	12.128V	5.009V	3.318V	5.11V	68.536				38.66°C	230.37V
80W	5.634A	1.098A	1.094A	0.49A	79.955	89.187%	0	<6.0	43.19°C	0.79
	12.126V	5.008V	3.317V	5.106V	89.669				39.35°C	230.37V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	21.32mV	8.37mV	6.36mV	9.83mV	Pass
20% Load	9.36mV	7.50mV	5.24mV	14.32mV	Pass
30% Load	10.94mV	8.37mV	5.75mV	13.96mV	Pass
40% Load	14.45mV	8.47mV	5.75mV	14.87mV	Pass
50% Load	13.43mV	8.62mV	5.85mV	12.63mV	Pass
60% Load	17.66mV	9.74mV	6.81mV	16.05mV	Pass
70% Load	20.20mV	10.35mV	7.43mV	18.29mV	Pass
80% Load	22.59mV	11.43mV	12.05mV	19.05mV	Pass
90% Load	24.32mV	11.37mV	11.39mV	19.57mV	Pass
100% Load	31.26mV	15.07mV	13.86mV	26.23mV	Pass
110% Load	36.80mV	14.83mV	15.09mV	28.74mV	Pass
Crossload1	11.31mV	13.68mV	16.02mV	9.66mV	Pass
Crossload2	10.18mV	16.17mV	6.46mV	8.87mV	Pass
Crossload3	23.96mV	14.49mV	21.41mV	10.09mV	Pass
Crossload4	31.45mV	12.61mV	8.31mV	17.74mV	Pass

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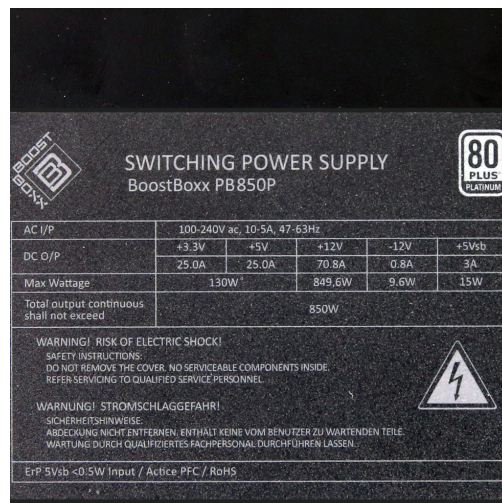
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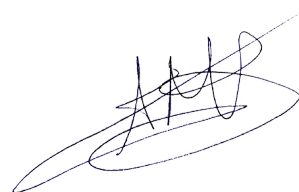
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Top side



Power specifications label



Aristeidis Bitziopoulos
Lab Director

CERTIFICATIONS 230V



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