SAMA 先马

SAMA B650

Serial Number XMBB06525112000493

Lab ID SM65003187

Certification ID 263187

Test Result Report ID: 26PS3187A

Certificate Issue Date: Mar 11, 2026

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	SAMA
Model	B650
OEM/ODM	RSY
Serial Number	XMBB06525112000493
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240

Rated Current (Arms)	6-10
Rated Frequency (Hz)	50-60
Rated Power (W)	650
Operating Temperature (Continuous Full Load) (°C)	0 - 40
Type	ATX12V
Cable Design	Fixed cables
Warranty	3 years
Cybenetics Measurements	
Dimensions (W x H x D)	150 x 85 x 140mm
Weight	1.50 kg (3.31 lb)
Cooling	120mm Sleeve Bearing Fan (S1202512L)
Semi-Passive Operation	✗
Cybenetics Testing Information	
Lab ID	SM65003187
Date of receipt	Feb 2, 2026
Testing Date	Mar 7, 2026
Report Issued Date	Mar 11, 2026
Engineer Name	Ioannis Kalyviotis
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

Cables and Connectors
(Non-accredited measurements)

Captive Cables				
Description	**Cable Count**	**Connector Count (Total)**	**Gauge**	Cable Type
ATX connector 24 pin (560mm)	1	1	18-22AWG	Tinned Copper
4+4 pin EPS12V (700mm+150mm)	1	2	18AWG	Tinned Copper
6+2 pin PCIe (560mm+150mm)	1	2	18AWG	Tinned Copper
12+4 pin PCIe (600mm) (450W)	1	2	16-24AWG	Tinned Copper
SATA (500mm+150mm+150mm) / 4-pin Molex (+150mm)	2	6 / 2	18AWG	Tinned Copper

Captive Cables				
Modular Cables				
AC Power Cord (1350mm) - C13 coupler	1	1	18AWG	-

Protection Features

Under Voltage Protection	✓
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	15	15	54.1	2.5	0.4
	Watts	100		649.2	12.5	4.8
Total Max. Power (W)		650				

Parts Description

General Data	
Manufacturer (OEM)	RSY
PCB Type	Double-Sided
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor 2.5D-15 (2.5Ohm @ 25°C)
Bridge Rectifier	1x GBU1506 (600V, 10A @ 100°C)
APFC MOSFETs	2x Shenzhen SI Semiconductors SIF15N65G2HP (650V, 15A @ 100°C, Rds(on): 0.09Ohm)
APFC Boost Diode	LiteOn LTTH806RFW (650V, 8A @ 100°C)
Bulk Cap(s)	1x SC (420V, 270uF, @ 105°C, LT)

Main Switchers	2x Shenzhen SI Semiconductors SIF15N65G2HP (650V, 15A @ 100°C, Rds(on): 0.09Ohm)
APFC Controller	Texas Instruments UCC28180 & Sync Power SPN5003 (reducing no-load consumption)
Resonant Controller	Texas Instruments UCC25600
IC Driver	-
Topology	Primary side: APFC, Half-Bridge & LLC Resonant Converter Secondary side: [12V] Synchronous Rectification & [Minor Rails] DC-DC converters
Secondary Side	
+12V MOSFETs	4x AGMSemi AGM1405C1 (40V, 130A @ 100°C, Rds(on): 3.2mOhm)
5V & 3.3V	DC-DC Converters: 4x Leinuosemi LN035N030GP (30V, 91A @ 100°C, Rds(on): 4.0mOhm) PWM Controller(s): 2x Anpec APW7164
Filtering Capacitors	Electrolytic: 16x Suscon (3-6,000 @ 105°C) Polymer: 2x
Supervisor IC	Grenery GR8313 (OVP, UVP, OCP, PG)
Fan Controller / Micro Controller	BCD Semiconductor AS358M
Fan Model	Globe Fan S1202512L (120mm, 12V, 0.18A, Fluid Dynamic Bearing Fan)
5VSB Circuit	
Rectifier	Shenzhen SI Semiconductors SIF4N70F
Standby PWM Controller	583J25 IC

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)	85.760%
Average Noise Output (>1450 Load Combinations)	33.52dBA
Average PF (>1450 Load Combinations)	0.988
Efficiency With 10W (≤500W) or 2% (>500W) Load	61.380%
Standby Power Consumption	0.0615W
Non-Accredited	
12V Ripple (Full Load)	55.35mV
5V Ripple (Full Load)	31.68mV
3.3V Ripple (Full Load)	40.97mV
5VSB Ripple (Full Load)	31.66mV
12V Load Regulation	0.79%
5V Load Regulation	2.20%
3.3V Load Regulation	3.23%
5VSB Load Regulation	3.16%
Inrush Current	67.400A

230V

Accredited	
Average Efficiency (>1450 load combinations)	88.117%
Average Noise Output (>1450 Load Combinations)	33.26dBA
Average PF (>1450 Load Combinations)	0.949
Efficiency With 10W (≤500W) or 2% (>500W) Load	62.136%
Standby Power Consumption	0.1777W
Non-Accredited	
12V Ripple (Full Load)	54.02mV
5V Ripple (Full Load)	31.47mV
3.3V Ripple (Full Load)	42.00mV

5VSB Ripple (Full Load)		31.36mV
12V Load Regulation		0.82%
5V Load Regulation		2.34%
3.3V Load Regulation		3.41%
5VSB Load Regulation		3.28%
Inrush Current		133.010A
12V Transient Response (200%)		11.28V
5V Transient Response (200%)		4.892V
3.3V Transient Response (200%)		3.166V
5VSB Transient Response (200%)		5.031V
Hold-Up Time & PWR_OK Signal		14.90ms
AC Loss to PWR_OK Hold Up Time		13.80ms
PWR_OK Inactive to DC Loss Delay		1.10ms
PSU Timings: T1 (20% / 100%)	92.0ms	92.0ms
PSU Timings: T3 (20% / 100%)	116.0ms	115.0ms
12V OCP (29.3°C / 43.2°C)	76.20A (140.85%), 12.028V	67.80A (125.32%), 12.034V
5V OCP (29.3°C / 43.2°C)	25.1A (167.33%), 4.937V	24.7A (164.67%), 4.949V
3.3V OCP (29.3°C / 43.2°C)	26.4A (176.00%), 3.297V	25.2A (168.00%), 3.3V
5VSB OCP (29.3°C / 43.2°C)	3.9A (156.00%), 5.013V *High Ripple (74.53mV)	3.9A (156.00%), 5.024V
OPP (29.63°C / 43.05°C)	134.99%	121.68%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	14.9
AC Loss to PWR_OK Hold Up Time (ms)	13.8
PWR_OK Inactive to DC Loss Delay (ms)	1.1

Vampire Power

Tables

115V

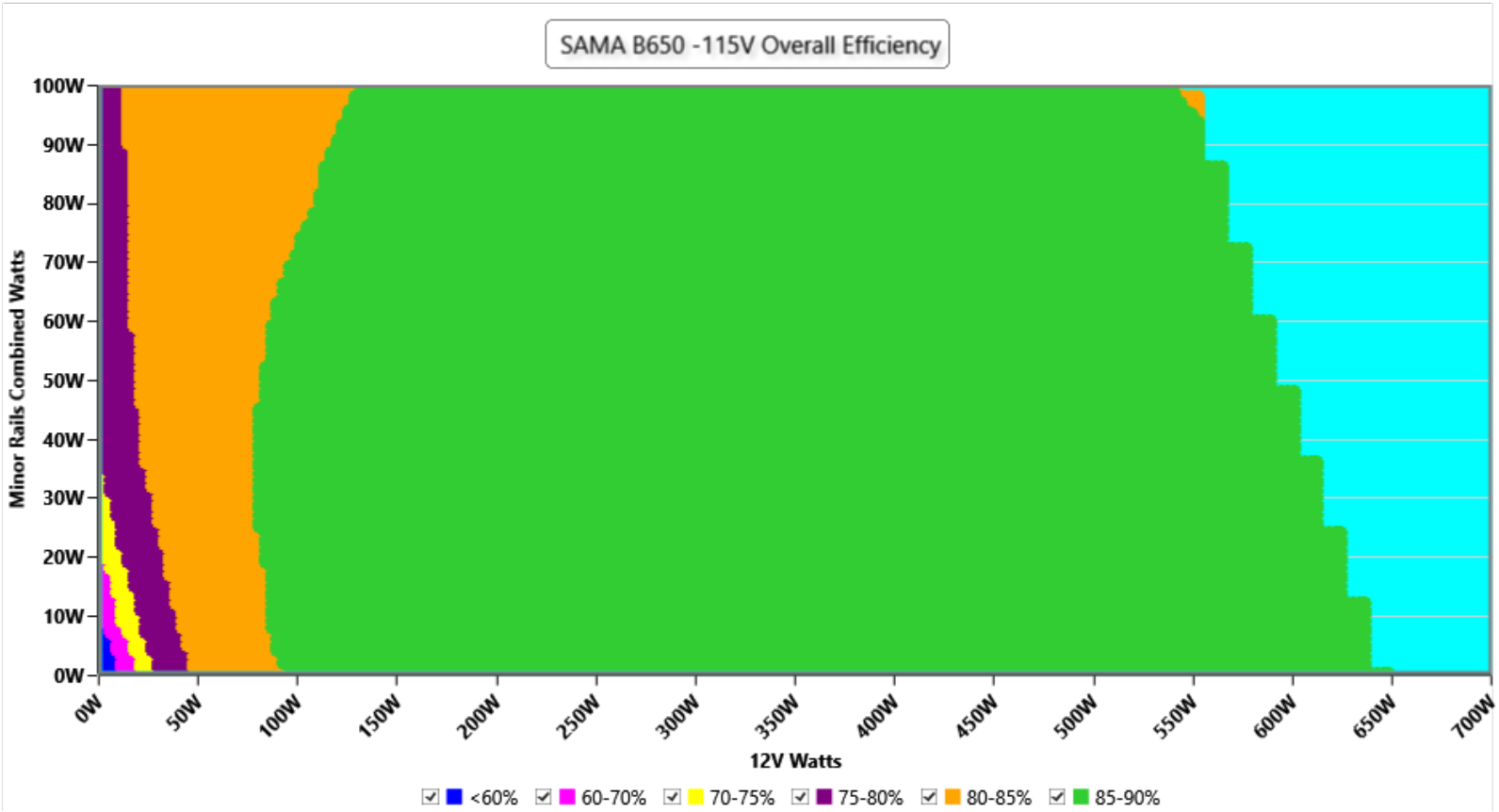
Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.06 V	115.04 V	113.85 V	115.08 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.99 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.417	1.490	PASS
Mains Voltage THD:	0.13 %	0.11 %	N/A	0.15 %	2.00 %	PASS
Real Power:	0.061 W	0.023 W	N/A	0.094 W	N/A	N/A
Apparent Power:	7.865 W	7.843 W	N/A	7.887 W	N/A	N/A
Power Factor:	0.008	N/A	N/A	N/A	N/A	N/A

230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	230.13 V	230.11 V	227.70 V	230.15 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:	0.178 W	0.140 W	N/A	0.228 W	N/A	N/A
Apparent Power:	25.493 W	25.454 W	N/A	25.538 W	N/A	N/A
Power Factor:	0.007	N/A	N/A	N/A	N/A	N/A

Efficiency Graph

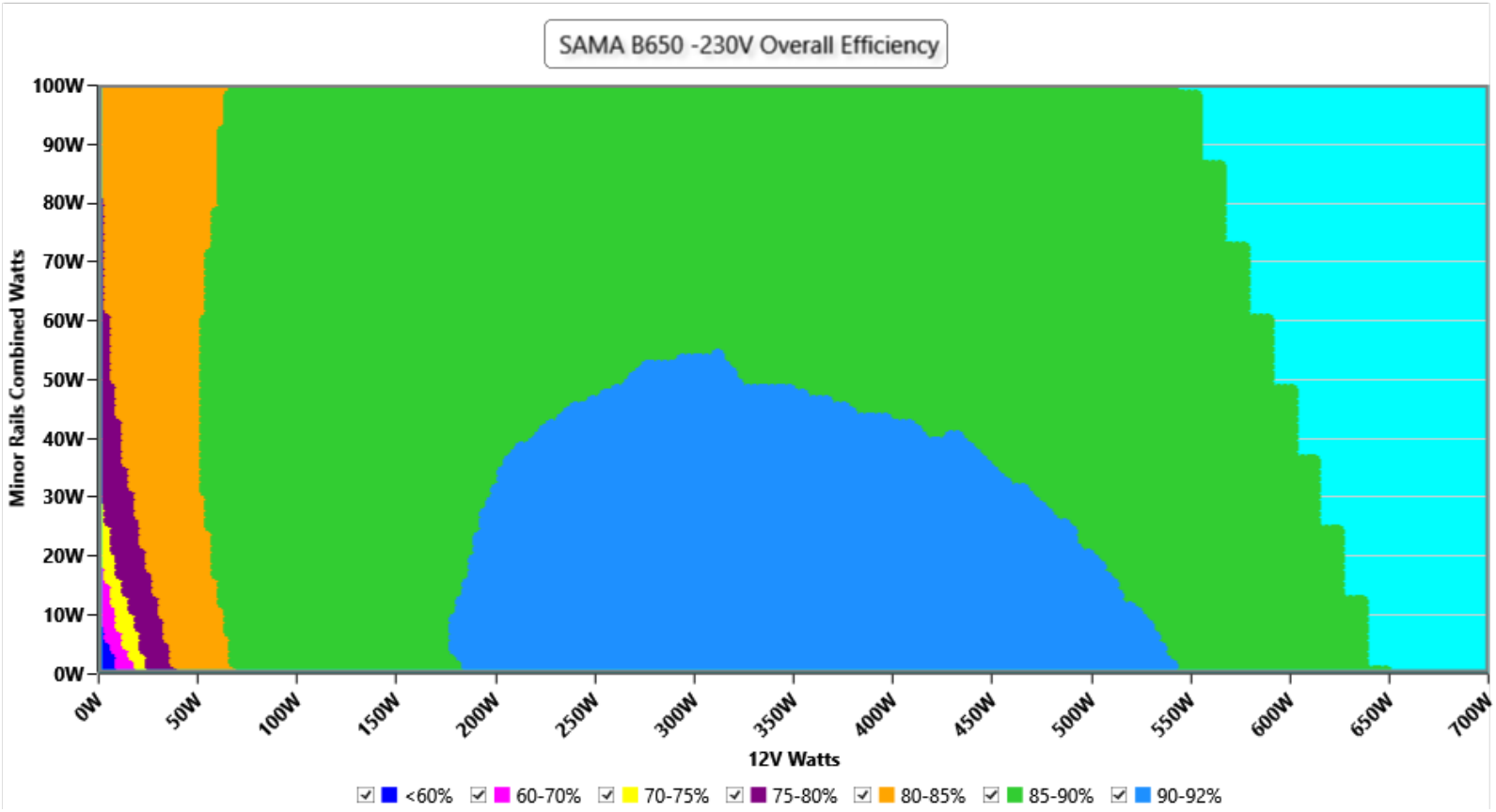
115V



INFO

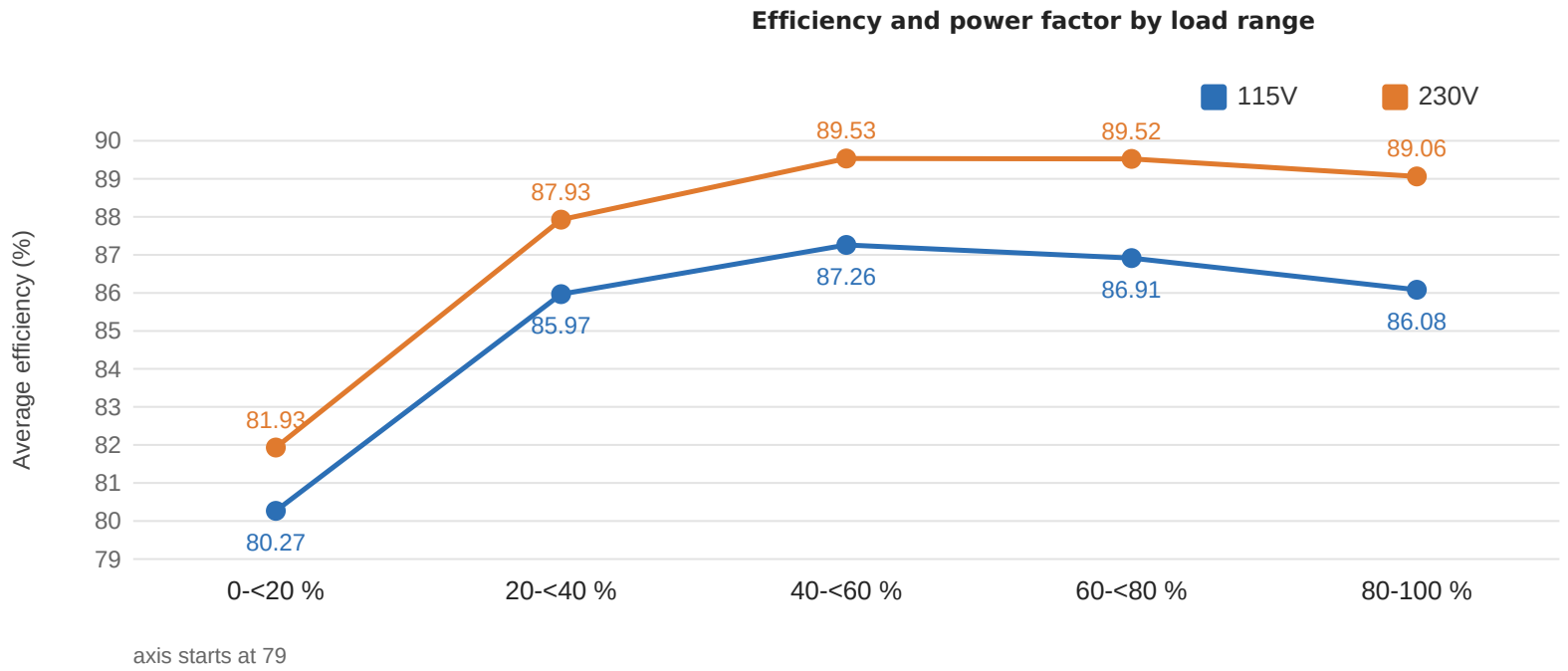
This graph depicts the PSU`s efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations

230V

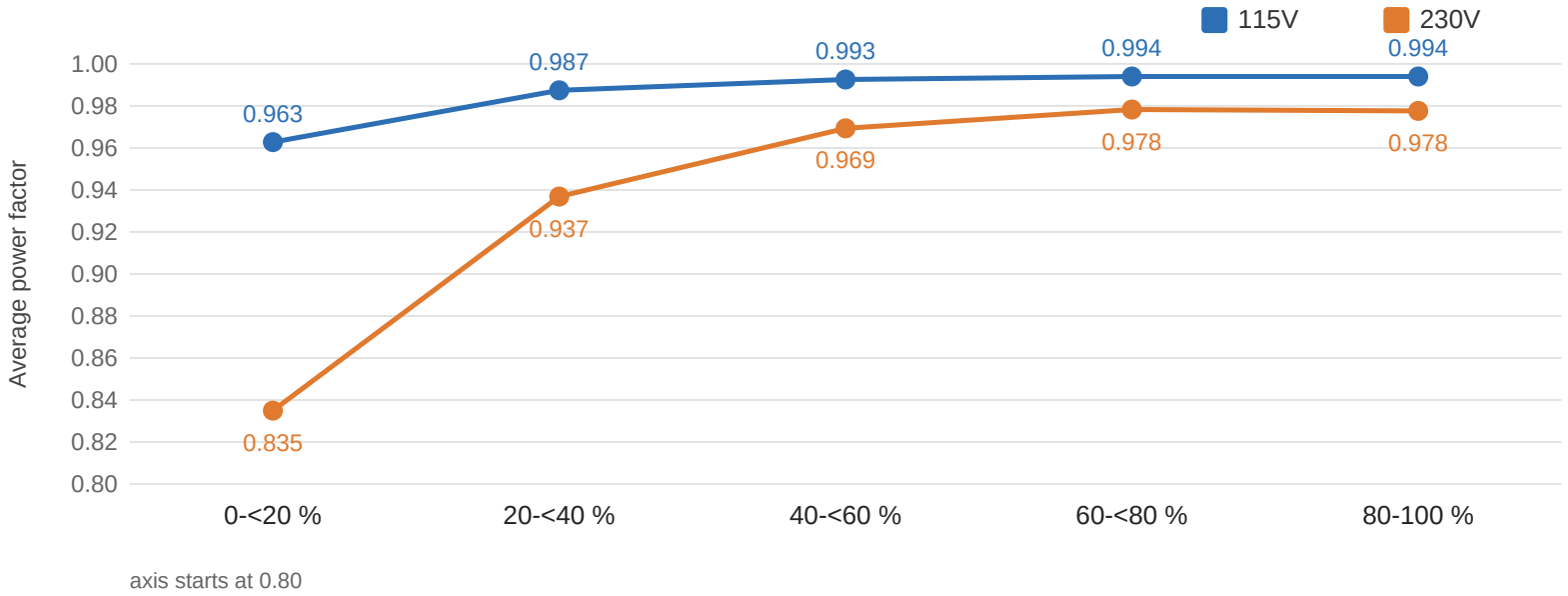


INFO

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



axis starts at 79



axis starts at 0.80

Load range	Points	Efficiency 115V	Efficiency 230V	PF 115V	PF 230V
0-<20 %	195 / 195	80.27%	81.93%	0.963	0.835
20-<40 %	340 / 340	85.97%	87.93%	0.987	0.937
40-<60 %	332 / 332	87.26%	89.53%	0.993	0.969
60-<80 %	339 / 339	86.91%	89.52%	0.994	0.978
80-100 %	343 / 343	86.08%	89.06%	0.994	0.978
70-100 % (High-Load)	517 / 517	86.31%	89.20%	0.994	0.978
All (published average)	1549 / 1549	85.76%	88.12%	0.988	0.949

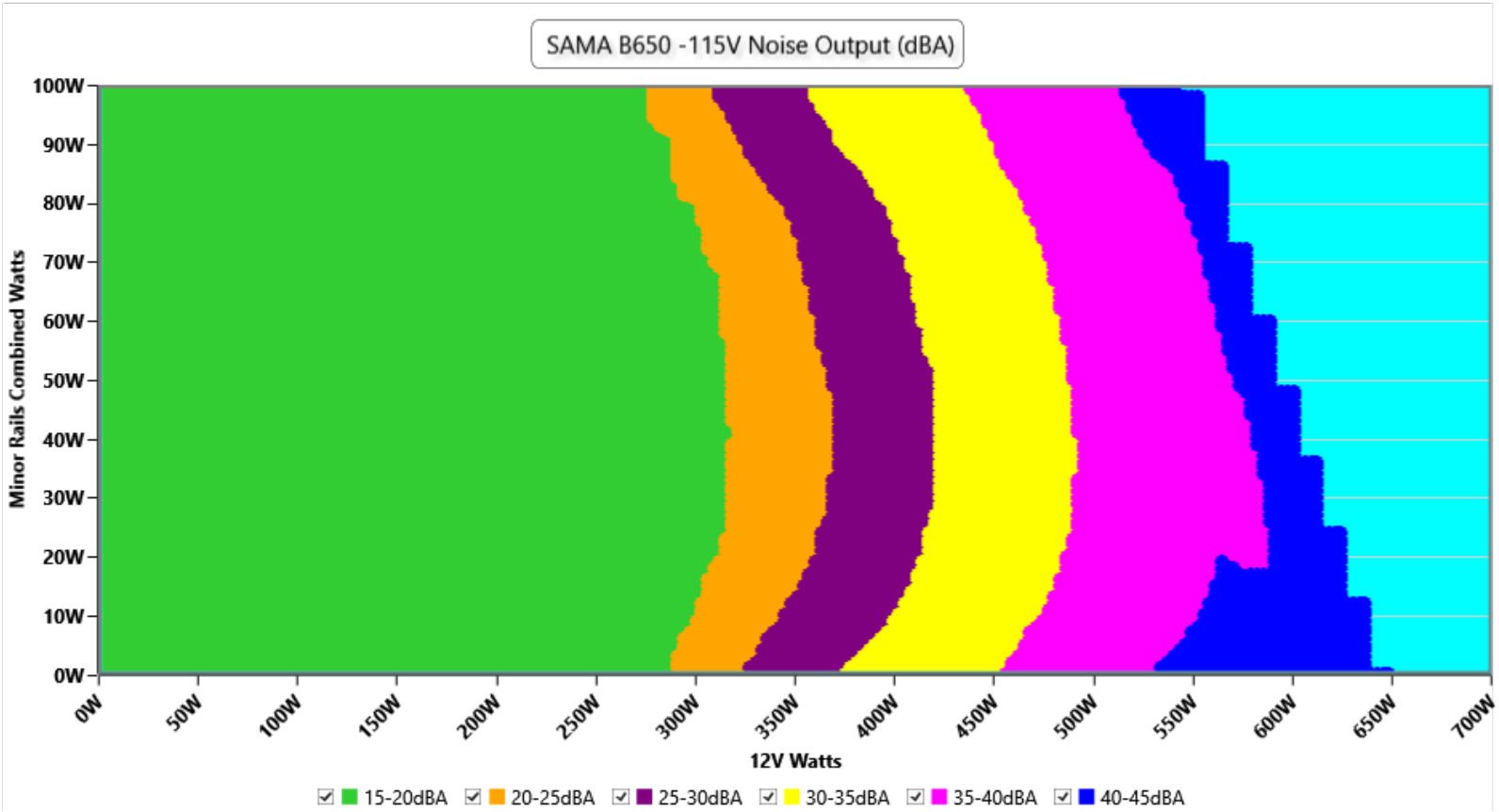
INFO

The average efficiency and power factor in five ranges of load. Calculated from the 1549 (115V) and 1549 (230V) load combinations of the certification sweep, the same data that ETA and LAMBDA use (test 0 excluded). Load is the total DC output as a share of the rated 650 W. These are plain averages of the valid readings, as for the ETA rating, so the ranges combined give back the published averages.

Informational. Not part of the ETA or LAMBDA rating.

Noise Graph

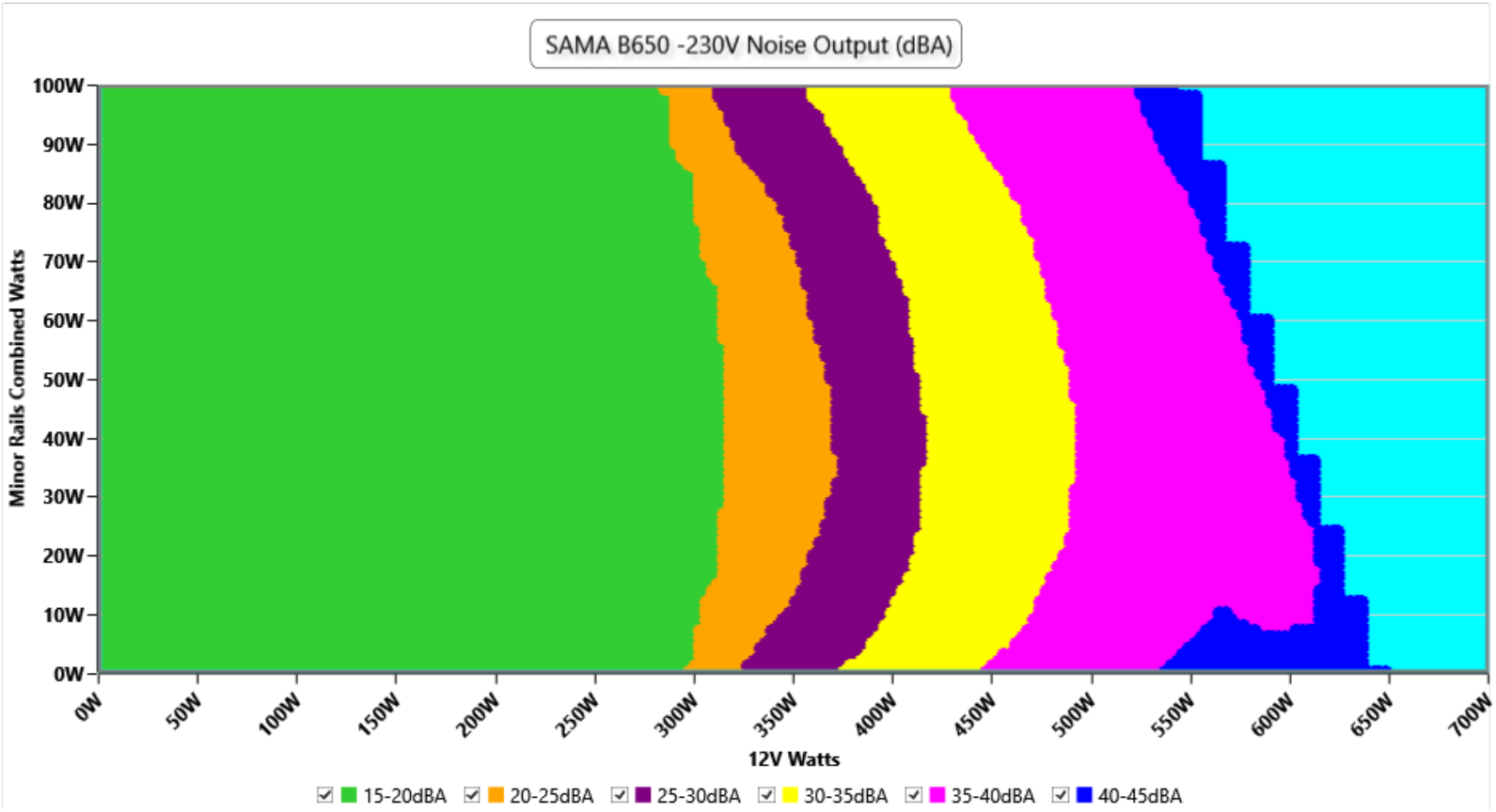
115V



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

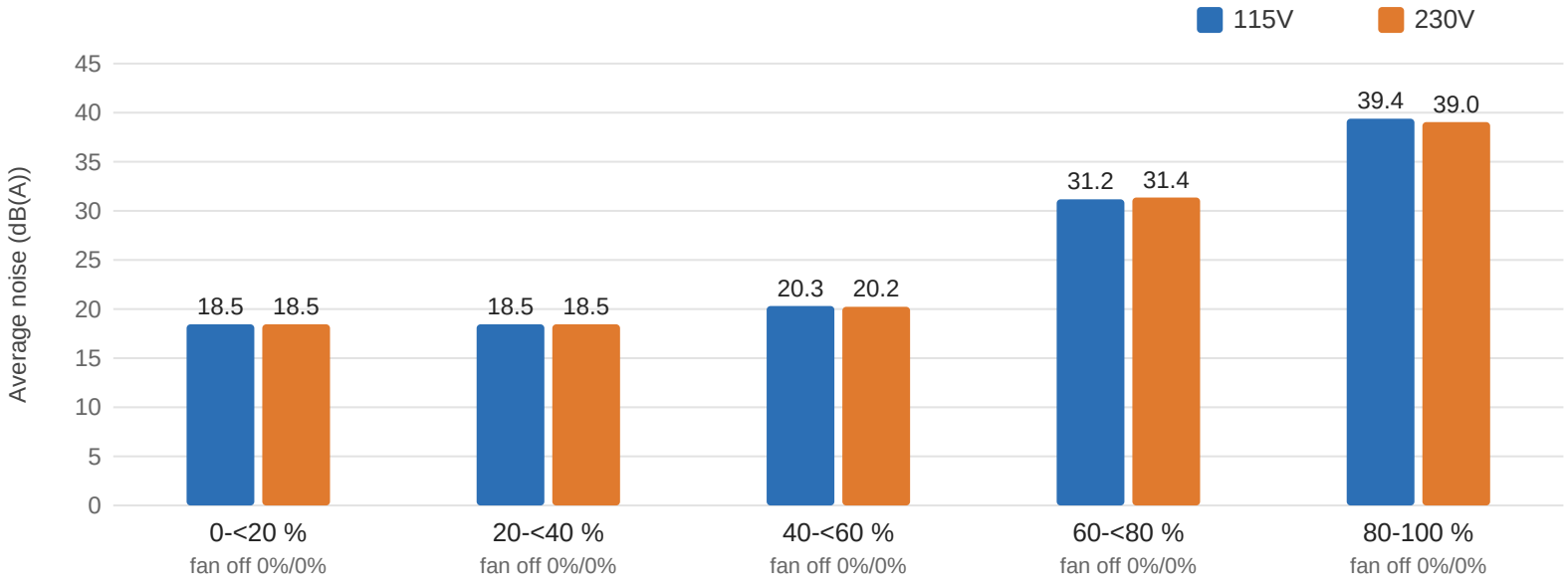
The PSU`s noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Noise by load range

High-Load Index (70-100 % load)

Noise **38.1 dB(A)** at 115V and **37.8 dB(A)** at 230V · loudest point 42.1 dB(A)

Efficiency 86.31% / 89.20% · power factor 0.994 / 0.978 (115V / 230V)



Load range	Noise 115V avg (loudest)	Noise 230V avg (loudest)	Fan off 115V / 230V
0-<20 %	18.5 (18.5)	18.5 (18.5)	0% / 0%
20-<40 %	18.5 (18.5)	18.5 (18.5)	0% / 0%
40-<60 %	20.3 (30.7)	20.2 (30.7)	0% / 0%
60-<80 %	31.2 (39.9)	31.4 (39.8)	0% / 0%
80-100 %	39.4 (42.1)	39.0 (42.1)	0% / 0%
70-100 % (High-Load)	38.1 (42.1)	37.8 (42.1)	0% / 0%
All (published average)	33.5 (42.1)	33.3 (42.1)	0% / 0%

INFO

The average noise in five ranges of load, the share of points with the fan stopped (semi-passive operation), and the High-Load Index: the same figures for all points at 70 % of the rated output and above. Calculated from the 1549 (115V) and 1549 (230V) load combinations of the certification sweep, the same data that ETA and LAMBDA use (test 0 excluded). Load is the total DC output as a share of the rated 650 W. Noise is averaged on the energy scale, as for LAMBDA, so the ranges combined give back the published average noise. Each load combination is held for about five seconds; the stabilized readings at fixed loads are under "Noise under high ambient temperature". Below 6 dB(A), the floor of our sound meter, the table and the chart show <6.0. In the averages a stopped fan counts as 5 dB(A),

as in the published average.

Informational. Not part of the ETA or LAMBDA rating.

Noise under high ambient temperature (indicative)

115V

Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	805 RPM · 18.6 dB(A) · 30.6 °C	837 RPM · 20.4 dB(A) · 40.1 °C	**+1.8 dB(A)**
20%	810 RPM · 18.8 dB(A) · 30.5 °C	838 RPM · 20.4 dB(A) · 40.8 °C	**+1.6 dB(A)**
50%	814 RPM · 19.0 dB(A) · 30.7 °C	1035 RPM · 26.9 dB(A) · 42.2 °C	**+7.9 dB(A)**
100%	1827 RPM · 42.2 dB(A) · 30.5 °C	2091 RPM · 46.2 dB(A) · 45.2 °C	**+4.0 dB(A)**

230V

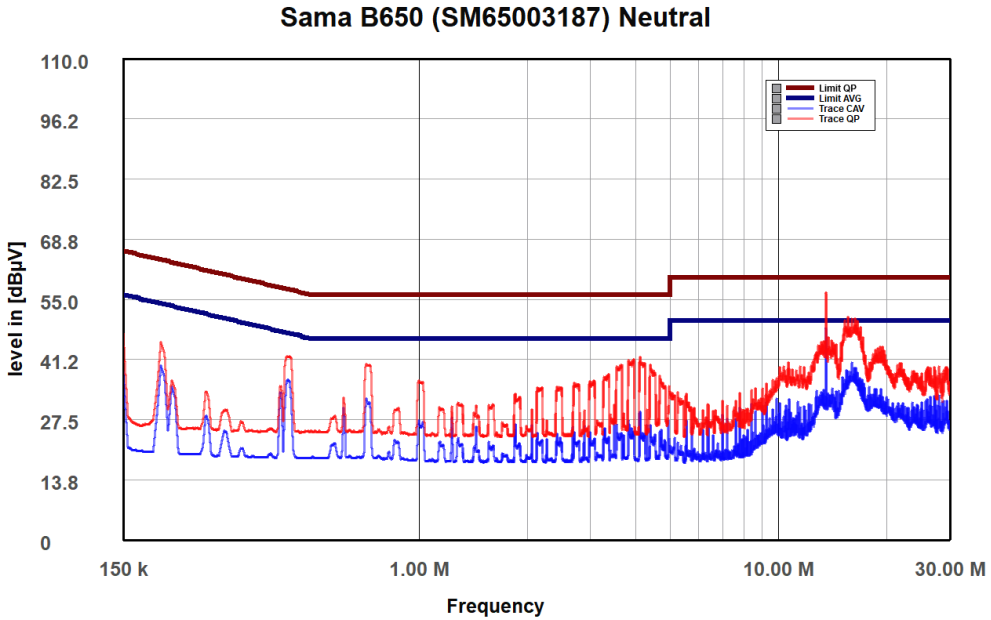
Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	810 RPM · 18.8 dB(A) · 30.4 °C	838 RPM · 20.4 dB(A) · 40.1 °C	**+1.6 dB(A)**
20%	813 RPM · 18.9 dB(A) · 30.3 °C	839 RPM · 20.4 dB(A) · 40.9 °C	**+1.5 dB(A)**
50%	816 RPM · 19.1 dB(A) · 30.2 °C	1043 RPM · 27.0 dB(A) · 42.3 °C	**+7.9 dB(A)**
100%	1801 RPM · 42.1 dB(A) · 30.9 °C	2090 RPM · 46.2 dB(A) · 45.1 °C	**+4.1 dB(A)**

INFO

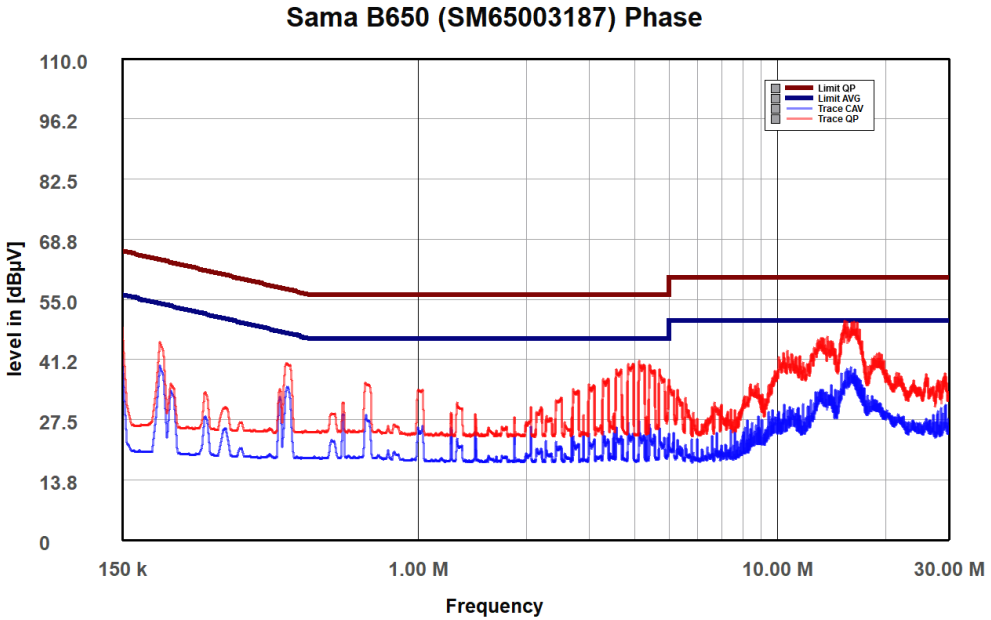
Fan speed, noise and the measured intake temperature at 10, 20, 50 and 100 % load, from the two load regulation tests: at normal ambient (about 30-32 °C) and at high ambient (about 40-47 °C). These are stabilized readings at fixed loads, not averages over the certification sweep, so they are indicative 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.

Conducted Emissions EN 55032 & CISPR 32



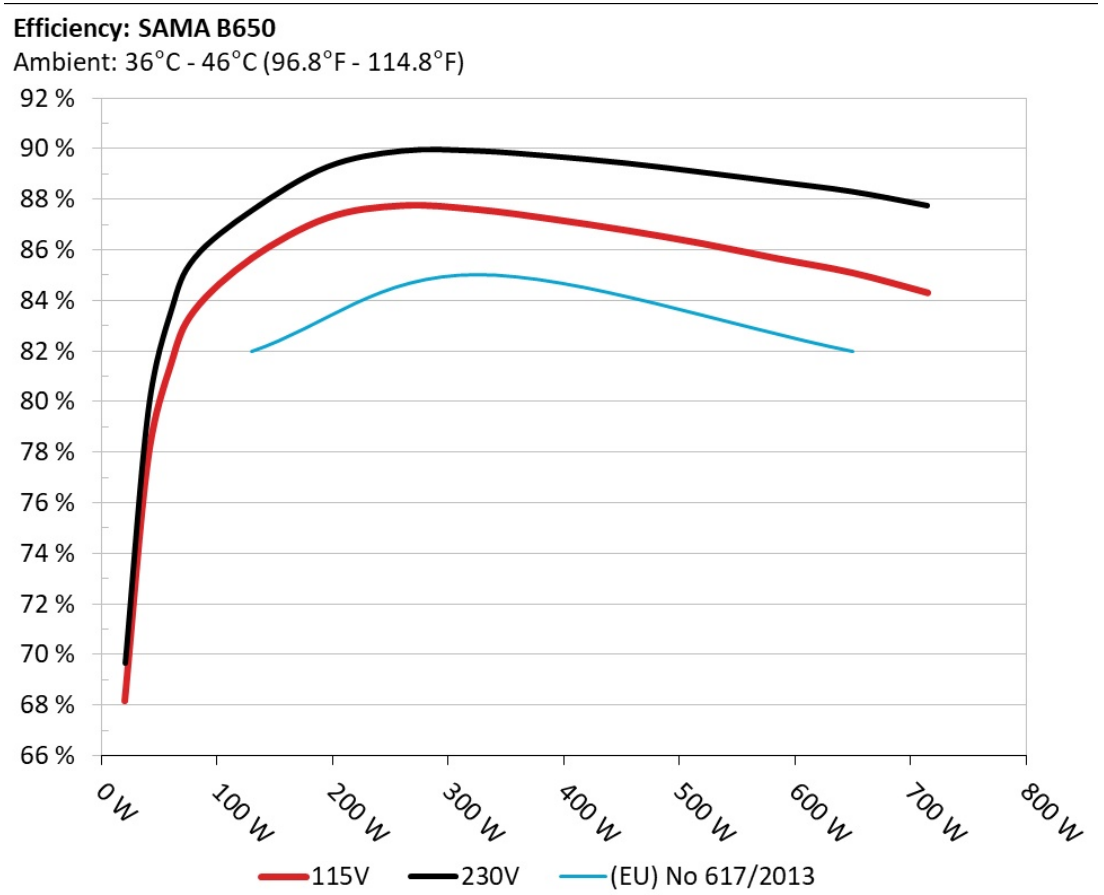
NEUTRAL



PHASE

Indicative Performance

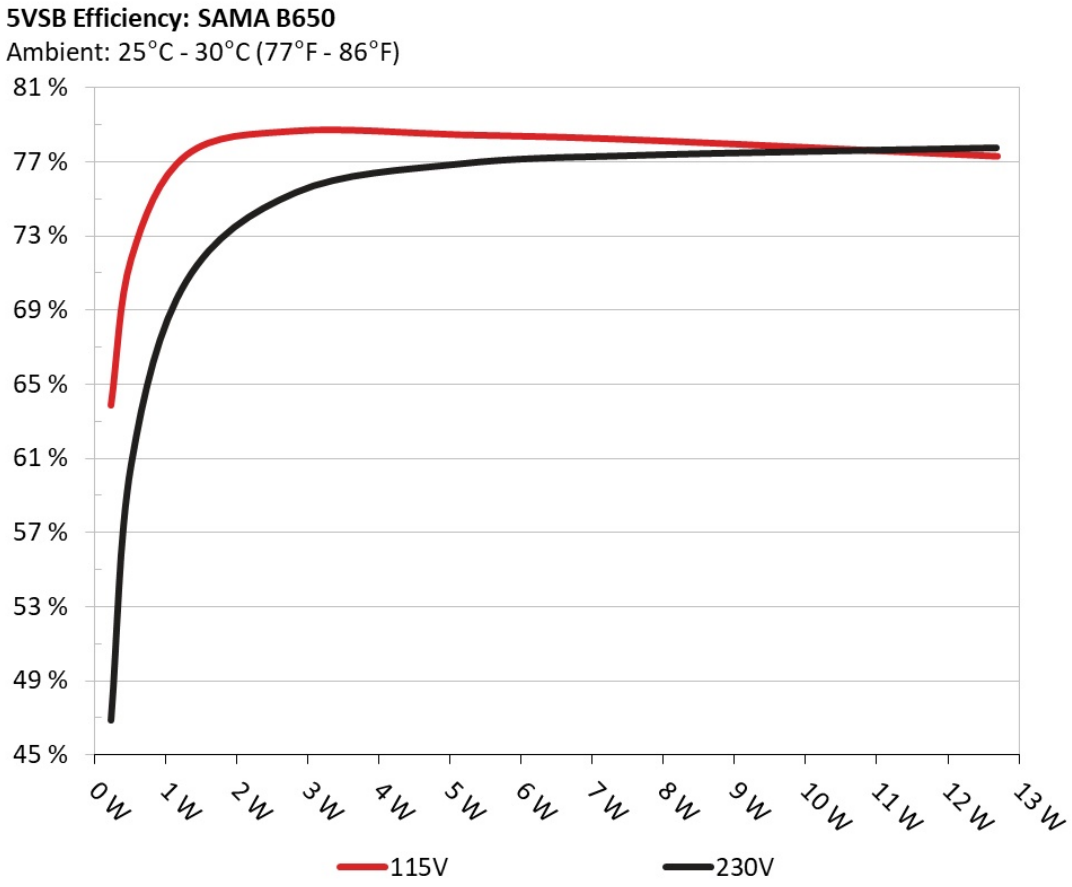
Efficiency under high ambient temperature



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**	0.233W	63.889%	0.048
	5.17V	0.364W		115.04V
2	**0.09A**	0.465W	70.879%	0.084
	5.169V	0.657W		115.04V
3	**0.55A**	2.835W	78.682%	0.255
	5.156V	3.603W		115.04V
4	**1A**	5.142W	78.477%	0.305
	5.142V	6.552W		115.04V
5	**1.5A**	7.687W	78.191%	0.331
	5.125V	9.831W		115.04V
6	**2.5A**	12.698W	77.317%	0.36
	5.08V	16.423W		115.04V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	**0.045A**	0.233W	46.853%	0.02
	5.17V	0.497W		230V
2	**0.09A**	0.465W	59.038%	0.032
	5.169V	0.788W		230V
3	**0.55A**	2.835W	75.353%	0.131
	5.156V	3.763W		230V
4	**1A**	5.142W	76.892%	0.189
	5.142V	6.688W		229.99V
5	**1.5A**	7.686W	77.356%	0.228
	5.124V	9.936W		229.98V
6	**2.5A**	12.686W	77.759%	0.269
	5.075V	16.314W		229.98V

Protection Features

OCP (Normal @ 29.3°C)	12V: 76.2A (140.85%), 12.028V 5V: 25.1A (167.33%), 4.937V 3.3V: 26.4A (176%), 3.297V 5VSB: 3.9A (156%), 5.013V *High Ripple (74.53mV)
OCP (Hot @ 43.2°C)	12V: 67.8A (125.32%), 12.034V 5V: 24.7A (164.67%), 4.949V 3.3V: 25.2A (168%), 3.3V 5VSB: 3.9A (156%), 5.024V
OPP (Normal @ 29.6°C)	877.46W (134.99%)
OPP (Hot @ 43°C)	790.91W (121.68%)
OTP	✓ (101°C @ 12V Heatsink)
SCP	12V to Earth: ✓ 5V to Earth: ✓ 3.3V to Earth: ✓ 5VSB to Earth: ✓ -12V to Earth: ✓
PWR_OK	Proper Operation
UVP (Full Load @ 90V)	✓
UVP (No Damage @ 80V)	✓
Conducted Emissions EN55032 & CISPR 32	✓
NLO	✓
Fan Failure Protection	✗
SIP	Surge: MOV Inrush: NTC

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%	**3.588A**	**1.982A**	**1.971A**	**0.975A**	65.004	81.247%	837	20.4	40.07°C	0.959
	12.095V	5.046V	3.348V	5.13V	80.008				43.08°C	115.01V
20%	**8.194A**	**2.98A**	**2.966A**	**1.173A**	129.939	85.659%	838	20.4	40.81°C	0.985
	12.086V	5.034V	3.338V	5.115V	151.693				43.53°C	114.99V
30%	**13.156A**	**3.482A**	**3.47A**	**1.372A**	194.941	87.248%	839	20.4	41.25°C	0.987
	12.077V	5.026V	3.329V	5.101V	223.432				43.94°C	114.97V
40%	**18.133A**	**3.986A**	**3.977A**	**1.573A**	260.025	87.741%	841	20.3	41.56°C	0.991
	12.067V	5.017V	3.319V	5.087V	296.356				43.99°C	114.95V
50%	**22.767A**	**4.995A**	**4.988A**	**1.775A**	325.021	87.584%	1035	26.9	42.19°C	0.993
	12.058V	5.005V	3.308V	5.072V	371.096				44.12°C	114.92V
60%	**27.353A**	**6.009A**	**6.007A**	**1.978A**	389.358	87.206%	1295	33.6	42.61°C	0.994
	12.048V	4.993V	3.297V	5.057V	446.481				44.76°C	114.9V
70%	**32.027A**	**7.029A**	**7.034A**	**2.182A**	454.656	86.754%	1551	39.8	43.42°C	0.994
	12.038V	4.98V	3.285V	5.041V	524.078				45.38°C	114.88V
80%	**36.709A**	**8.05A**	**8.066A**	**2.287A**	519.446	86.241%	1828	42.2	43.65°C	0.994
	12.029V	4.967V	3.273V	5.028V	602.317				47.86°C	114.85V
90%	**41.805A**	**8.57A**	**8.581A**	**2.392A**	584.865	85.646%	2086	46.2	44.68°C	0.994
	12.018V	4.958V	3.263V	5.016V	682.882				48.13°C	114.82V
100%	**46.840A**	**9.092A**	**9.132A**	**2.498A**	649.574	85.085%	2091	46.2	45.21°C	0.994
	12.007V	4.948V	3.252V	5.003V	763.447				50.42°C	114.79V
110%	**51.619A**	**10.128A**	**10.278A**	**2.503A**	714.995	84.293%	2091	46.2	46.05°C	0.994
	11.996V	4.935V	3.24V	4.993V	848.226				52.28°C	114.77V
CL1	**0.116A**	**12.081A**	**11.976A**	**0A**	101.285	78.495%	971	24.4	41.4°C	0.98
	12.092V	4.982V	3.315V	5.139V	129.035				48.15°C	115V

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**	**15.054A**	**0A**	**0A**	76.373	77.046%	851	20.3	41.31°C	0.968
	12.095V	4.981V	3.343V	5.15V	99.127				45.89°C	115.01V
CL3	**0.114A**	**0A**	**14.887A**	**0A**	50.887	72.213%	842	20.3	40.17°C	0.949
	12.097V	5.047V	3.325V	5.151V	70.468				42.61°C	115.02V
CL4	**54.124A**	**0A**	**0A**	**0.001A**	649.515	86.222%	2087	46.2	45.2°C	0.994
	12.001V	5.006V	3.284V	5.098V	753.309				51.23°C	114.8V

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%	**3.502A**	**1.708A**	**1.67A**	**0.975A**	63.625	83.213%	838	20.4	40.05°C	0.248
	12.104V	5.063V	3.363V	5.167V	10.154				43.41°C	230V
20%	**8.194A**	**2.98A**	**2.966A**	**1.173A**	129.933	87.567%	839	20.4	40.85°C	0.905
	12.086V	5.034V	3.338V	5.116V	148.382				43.88°C	229.98V
30%	**13.156A**	**3.483A**	**3.47A**	**1.372A**	194.935	89.281%	839	20.4	41.35°C	0.939
	12.077V	5.025V	3.329V	5.101V	218.339				44.02°C	229.97V
40%	**18.133A**	**3.987A**	**3.977A**	**1.573A**	260.02	89.912%	841	20.3	41.87°C	0.958
	12.067V	5.016V	3.32V	5.087V	289.193				44.84°C	229.95V
50%	**22.767A**	**4.996A**	**4.988A**	**1.775A**	325.017	89.912%	1043	27	42.25°C	0.97
	12.057V	5.005V	3.308V	5.072V	361.481				45.02°C	229.94V
60%	**27.353A**	**6.01A**	**6.007A**	**1.978A**	389.349	89.704%	1284	33.6	42.77°C	0.976
	12.048V	4.992V	3.297V	5.057V	434.035				46.68°C	229.93V
70%	**32.028A**	**7.03A**	**7.033A**	**2.182A**	454.654	89.423%	1551	39.8	43.23°C	0.979
	12.038V	4.98V	3.285V	5.041V	508.434				47.13°C	229.92V
80%	**36.712A**	**8.052A**	**8.066A**	**2.287A**	519.451	89.071%	1815	42.2	43.74°C	0.979
	12.028V	4.967V	3.273V	5.028V	583.187				48.84°C	229.91V
90%	**41.807A**	**8.572A**	**8.581A**	**2.393A**	584.876	88.692%	2085	46.2	44.18°C	0.978
	12.017V	4.957V	3.263V	5.015V	659.442				50.23°C	229.9V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	**46.844A**	**9.094A**	**9.133A**	**2.499A**	649.591	88.305%	2090	46.2	45.08°C	0.976
	12.006V	4.947V	3.252V	5.003V	735.625				52.28°C	229.88V
110%	**51.627A**	**10.131A**	**10.279A**	**2.504A**	715.014	87.752%	2093	46.2	46.18°C	0.974
	11.995V	4.934V	3.24V	4.992V	814.815				54.41°C	229.87V
CL1	**0.116A**	**12.083A**	**11.976A**	**0A**	101.287	80.315%	1045	26.9	41.74°C	0.891
	12.091V	4.981V	3.315V	5.139V	126.114				48.62°C	229.98V
CL2	**0.114A**	**15.056A**	**0A**	**0A**	76.374	78.878%	852	20.3	40.36°C	0.857
	12.095V	4.98V	3.343V	5.149V	96.827				45.31°C	229.98V
CL3	**0.114A**	**0A**	**14.887A**	**0A**	50.888	74.175%	845	20.3	41.15°C	0.788
	12.096V	5.048V	3.325V	5.151V	68.605				44.58°C	229.99V
CL4	**54.126A**	**0A**	**0A**	**0.001A**	649.51	89.391%	2087	46.2	45.66°C	0.976
	12.001V	5.006V	3.284V	5.098V	726.599				51.67°C	229.88V

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	**1.228A**	**0.494A**	**0.492A**	**0.194A**	20.004	68.162%	816	19.1	36.54°C	0.865
	12.102V	5.057V	3.357V	5.161V	29.349				40.02°C	115.03V
40W	**2.702A**	**0.693A**	**0.689A**	**0.291A**	40.003	77.693%	823	19.6	37.46°C	0.935
	12.099V	5.054V	3.354V	5.156V	51.489				40.42°C	115.03V
60W	**4.178A**	**0.891A**	**0.886A**	**0.388A**	60.002	81.477%	830	20.2	38.65°C	0.951
	12.095V	5.051V	3.351V	5.151V	73.643				41.38°C	115.02V
80W	**5.650A**	**1.089A**	**1.084A**	**0.486A**	79.95	83.58%	834	20.3	39.38°C	0.965
	12.092V	5.049V	3.349V	5.145V	95.656				40.36°C	115.01V

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	**1.228A**	**0.494A**	**0.491A**	**0.194A**	20.001	69.666%	839	20.4	36.39°C	0.56
	12.101V	5.059V	3.359V	5.161V	28.708				37.18°C	229.99V
40W	**2.702A**	**0.692A**	**0.688A**	**0.291A**	40	79.684%	837	20.4	37.11°C	0.715
	12.098V	5.055V	3.356V	5.156V	50.197				38.73°C	229.99V
60W	**4.178A**	**0.891A**	**0.886A**	**0.388A**	59.999	83.627%	836	20.4	38.35°C	0.798
	12.095V	5.052V	3.352V	5.151V	71.744				39.25°C	229.99V
80W	**5.650A**	**1.089A**	**1.084A**	**0.486A**	79.944	85.68%	836	20.4	39.4°C	0.85
	12.092V	5.049V	3.349V	5.145V	93.306				41.06°C	229.99V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	27.06mV	22.53mV	28.14mV	24.40mV	Pass
20% Load	30.59mV	22.63mV	28.14mV	25.63mV	Pass
30% Load	34.33mV	23.25mV	28.90mV	25.83mV	Pass
40% Load	36.63mV	23.50mV	29.77mV	26.24mV	Pass
50% Load	36.84mV	24.37mV	31.97mV	27.27mV	Pass
60% Load	41.13mV	27.43mV	36.78mV	28.80mV	Pass
70% Load	43.59mV	27.59mV	35.25mV	29.87mV	Pass
80% Load	48.25mV	28.10mV	39.19mV	31.10mV	Pass
90% Load	50.44mV	30.14mV	39.59mV	31.05mV	Pass
100% Load	55.35mV	31.68mV	40.97mV	31.66mV	Pass
110% Load	56.53mV	31.98mV	42.71mV	32.58mV	Pass
Crossload1	34.53mV	21.35mV	37.09mV	22.30mV	Pass
Crossload2	30.29mV	20.89mV	27.52mV	23.33mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	30.80mV	21.35mV	35.65mV	20.77mV	Pass
Crossload4	50.65mV	31.63mV	36.17mV	28.18mV	Pass

The results above are not used in the certification process

230V

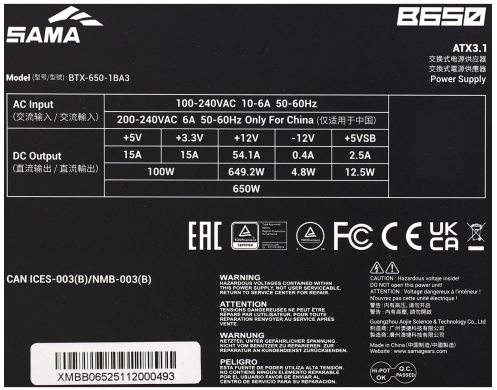
Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	25.22mV	21.00mV	27.11mV	26.80mV	Pass
20% Load	29.32mV	22.38mV	28.39mV	25.22mV	Pass
30% Load	32.69mV	23.19mV	28.80mV	27.57mV	Pass
40% Load	36.07mV	24.83mV	29.87mV	27.37mV	Pass
50% Load	36.79mV	24.22mV	31.21mV	26.86mV	Pass
60% Load	42.00mV	25.29mV	34.02mV	28.13mV	Pass
70% Load	45.18mV	27.44mV	34.83mV	29.62mV	Pass
80% Load	47.99mV	28.61mV	38.67mV	30.33mV	Pass
90% Load	49.83mV	31.52mV	39.70mV	30.74mV	Pass
100% Load	54.02mV	31.47mV	42.00mV	31.36mV	Pass
110% Load	58.12mV	31.68mV	41.80mV	32.53mV	Pass
Crossload1	34.53mV	22.38mV	34.17mV	22.56mV	Pass
Crossload2	32.79mV	21.97mV	28.54mV	23.17mV	Pass
Crossload3	31.31mV	21.35mV	34.68mV	20.46mV	Pass
Crossload4	50.80mV	30.96mV	36.06mV	28.29mV	Pass

The results above are not used in the certification process

SAMA B650



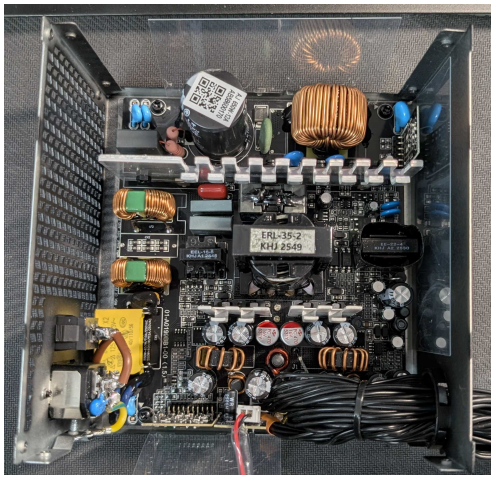
Top side



Power specifications label



Fan



PSU Internals

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

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

www.cybenetics.com - info@cybenetics.com