Seasonic Vertex PX-1000

Serial Number

Lab ID SS10002495

Certification ID 252495

Test Result Report ID: 24PS2495A

Certificate Issue Date: Jul 8, 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	Seasonic
Model	Vertex PX-1000
OEM/ODM	Seasonic
Serial Number	
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240

Rated Current (Arms)	6.5-13
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	135mm Fluid Dynamic Bearing Fan (HA13525H12F-Z)
Semi-Passive Operation	✓ (selectable)
Cybenetics Testing Information	
Lab ID	SS10002495
Date of receipt	Jun 10, 2024
Testing Date	Jul 1, 2024
Report Issued Date	Jul 8, 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 (610mm)	1	1	16-18AWG	No
4+4 pin EPS12V (700mm)	2	2	16AWG	No
6+2 pin PCIe (750mm)	3	3	16-18AWG	No
12+4 pin PCIe (700mm) (600W)	1	1	16-28AWG	No

SATA 3.3 (410mm+150mm)	1	2	18AWG	No
SATA (500mm+155mm+155mm+155mm)	3	12	18AWG	No
4 pin Molex (450mm+120mm+120mm)	1	3	18AWG	No

Protection Features

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	25	25	83	3	0.3
	Watts	125		996	15	3.6
Total Max. Power (W)		1000				

Parts Description

General Data	
Manufacturer (OEM)	Seasonic
PCB Type	Double Sided
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV, 1x CM02X (Discharge IC)
Inrush Protection	1x NTC Thermistor MF72-5D20L (5 Ohm) & Relay
Bridge Rectifier(s)	2x
APFC MOSFETs	2x Infineon 6R125P6 (650V, 19A, @ 100°C, Rds(on): 0.125Ohm)
APFC Boost Diode	1x Cree C6D10065 (650V, 10A @ 155°C)
Bulk Cap(s)	1x Nippon Chemi-Con (420V, 470uF, 2,000h @ 105°C, KMZ) & 1x Nippon Chemi-Con (420V, 390uF, 2,000h @ 105°C, KMR)
Main Switchers	4x Infineon IPA60R190P6 (650V, 12.7A @ 100°C, Rds(on): 0.12Ohm)

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 Nexperia PSMN1R0-40YLD (40V, 198A @ 100°C, Rds(on): 1.93mOhm)
5V & 3.3V	DC-DC Converters: 6x Nexperia PSMN4R0-30YLD (30V, 67A @ 100°C, Rds(on): 6.6mOhm) PWM Controller(s): ANPEC APW7159C
Filtering Capacitors	Electrolytic: 3x Nichicon (2-5,000h @ 105°C, HD), 1x Nippon Chemi-Con (1-5,000h @ 105°C, KZE), 5x Rubycon (3-6,000h @ 105°C, YXG) 8x Rubycon (6-10,000h @ 105°C, ZLH) Polymer: 6x Nippon Chemi-Con, 22x FPCAP, 9x NIC
Supervisor IC	Weltrend WT7527RA (OVP, UVP, OCP, SCP, PG)
Fan Controller	Nuvoton M031FB0AE
Fan Model	Hong Hua HA13525H12F-Z (135mm, 12V, 0.50A, Fluid Dynamic Bearing Fan)
5VSB Circuit	
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 v3.0 Compliance	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	89.134%
Average Noise Output (>1450 Load Combinations)	20.70dBA
Average PF (>1450 Load Combinations)	0.983
Efficiency With 10W (≤500W) or 2% (>500W) Load	73.587%
Standby Power Consumption	0.0659W
Non-Accredited	
12V Ripple (Full Load)	26.51mV
5V Ripple (Full Load)	21.91mV
3.3V Ripple (Full Load)	29.02mV
5VSB Ripple (Full Load)	33.27mV
12V Load Regulation	0.86%
5V Load Regulation	0.40%
3.3V Load Regulation	0.81%
5VSB Load Regulation	2.26%
Inrush Current	31.460A

230V

Accredited	
Average Efficiency (>1450 load combinations)	91.414%
Average Noise Output (>1450 Load Combinations)	20.66dBA
Average PF (>1450 Load Combinations)	0.952
Efficiency With 10W (≤500W) or 2% (>500W) Load	73.536%
Standby Power Consumption	0.1400W
Non-Accredited	
12V Ripple (Full Load)	26.30mV
5V Ripple (Full Load)	21.43mV
3.3V Ripple (Full Load)	26.91mV

5VSB Ripple (Full Load)		28.08mV
12V Load Regulation		0.82%
5V Load Regulation		0.40%
3.3V Load Regulation		0.84%
5VSB Load Regulation		2.35%
Inrush Current		66.880A
12V Transient Response (200%)		11.50V
5V Transient Response (200%)		4.922V
3.3V Transient Response (200%)		3.221V
5VSB Transient Response (200%)		4.912V
Hold-Up Time & PWR_OK Signal		21.20ms
AC Loss to PWR_OK Hold Up Time		16.40ms
PWR_OK Inactive to DC Loss Delay		4.80ms
PSU Timings: T1 (20% / 100%)	70.0ms	71.0ms
PSU Timings: T3 (20% / 100%)	126.0ms	126.0ms
12V OCP (26.5°C / 44.1°C)	112.80A (135.90%), 12.128V	113.00A (136.14%), 12.133V
5V OCP (26.5°C / 44.1°C)	34.3A (137.20%), 5.022V	33.6A (134.40%), 5.023V
3.3V OCP (26.5°C / 44.1°C)	34A (136.00%), 3.322V	33.8A (135.20%), 3.326V
5VSB OCP (26.5°C / 44.1°C)	6.3A (210.00%), 4.959V	6.3A (210.00%), 4.958V
OPP (27.34°C / 44.35°C)	136.51%	136.21%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	21.2
AC Loss to PWR_OK Hold Up Time (ms)	16.4
PWR_OK Inactive to DC Loss Delay (ms)	4.8

Stromverbrauch im Ruhezustand

Tables

115V

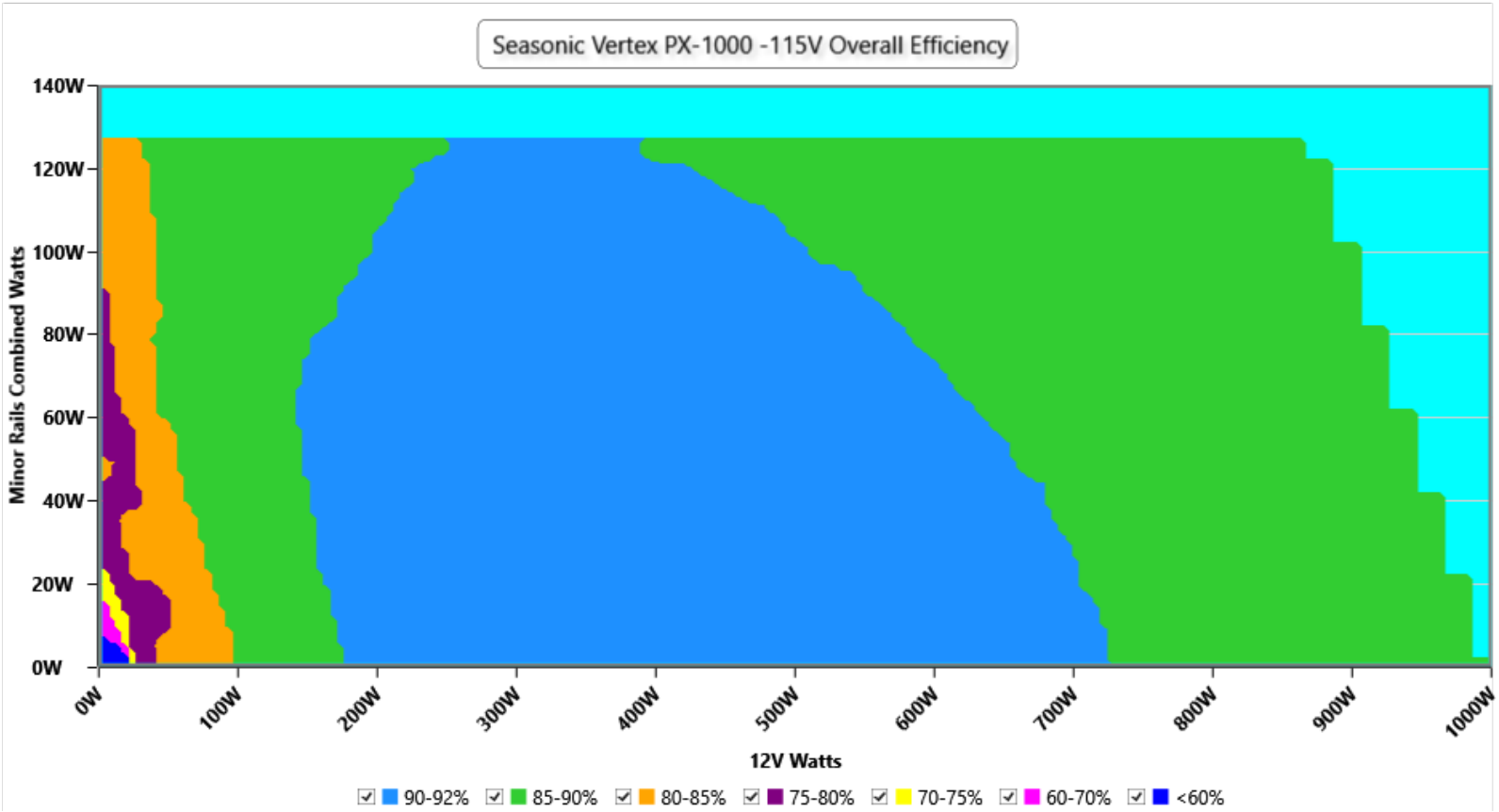
Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.07 V	115.04 V	113.85 V	115.12 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.99 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.418	1.490	PASS
Mains Voltage THD:	0.13 %	0.09 %	N/A	0.19 %	2.00 %	PASS
Real Power:	0.066 W	0.056 W	N/A	0.082 W	N/A	N/A
Apparent Power:	10.734 W	10.343 W	N/A	11.132 W	N/A	N/A
Power Factor:	0.006	N/A	N/A	N/A	N/A	N/A

230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	231.02 V	230.92 V	227.70 V	231.09 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:	0.140 W	0.122 W	N/A	0.181 W	N/A	N/A
Apparent Power:	35.240 W	34.717 W	N/A	35.803 W	N/A	N/A
Power Factor:	0.004	N/A	N/A	N/A	N/A	N/A

Efficiency Graph

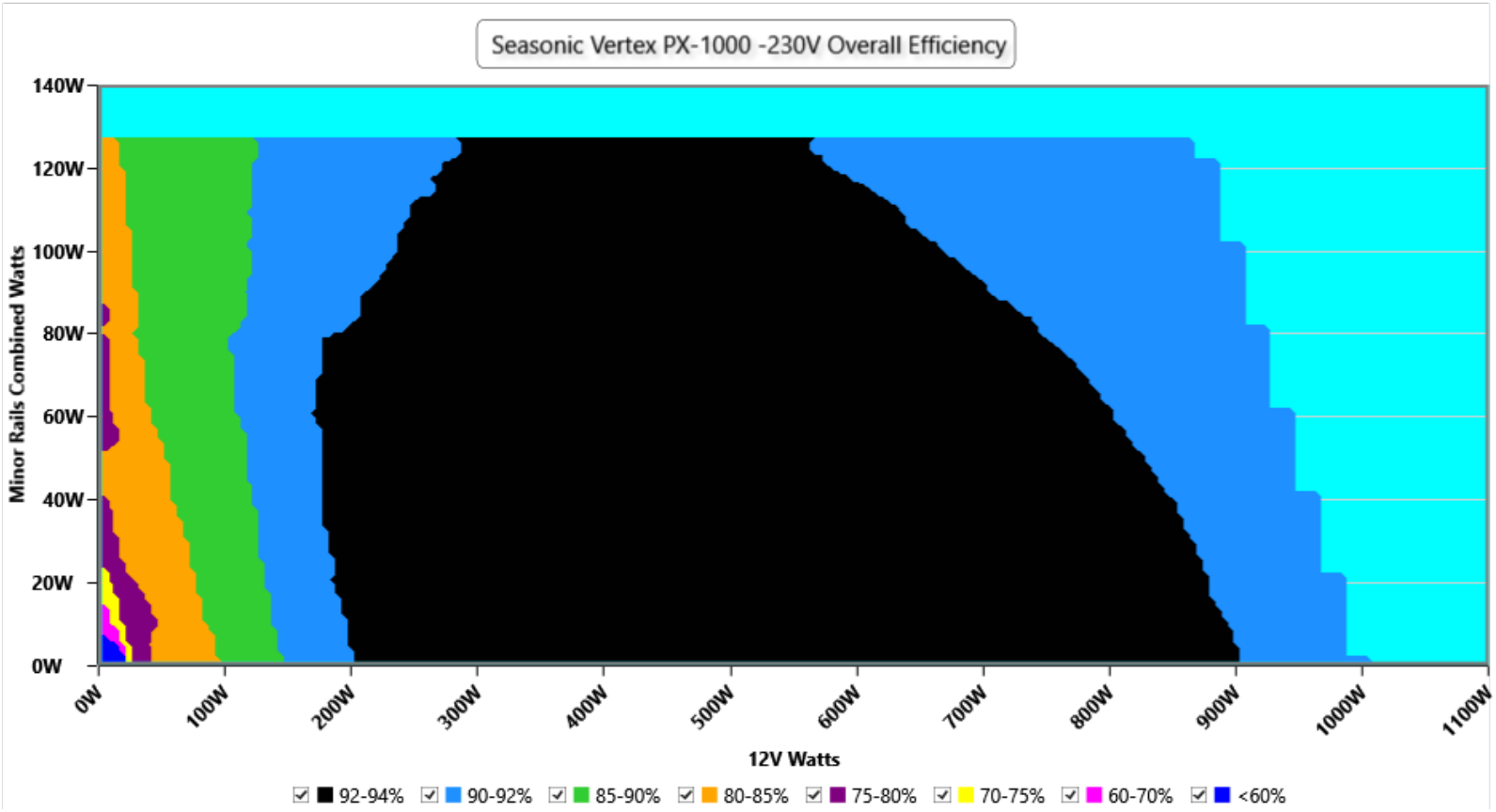
115V



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

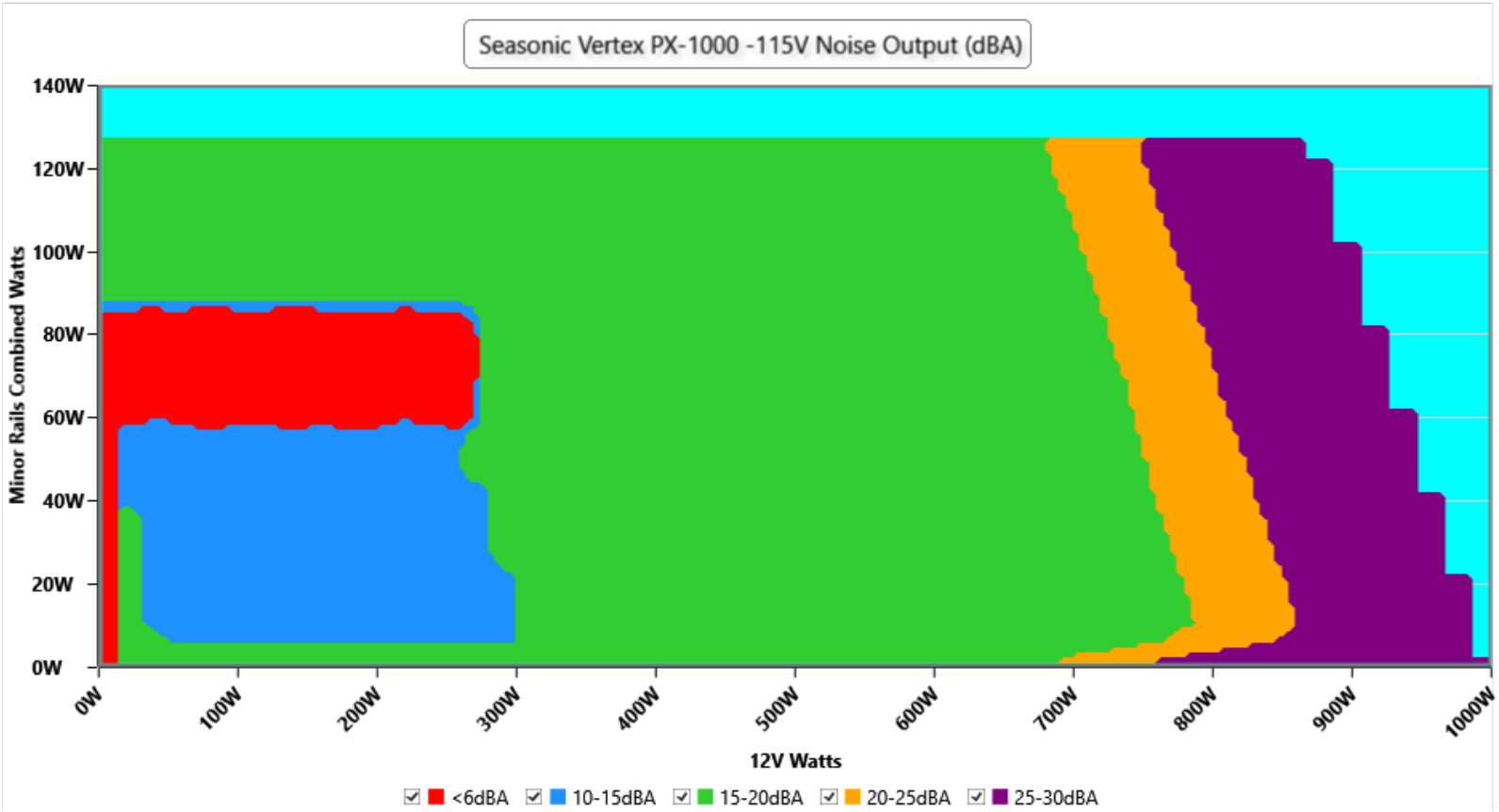


INFO

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Noise Graph

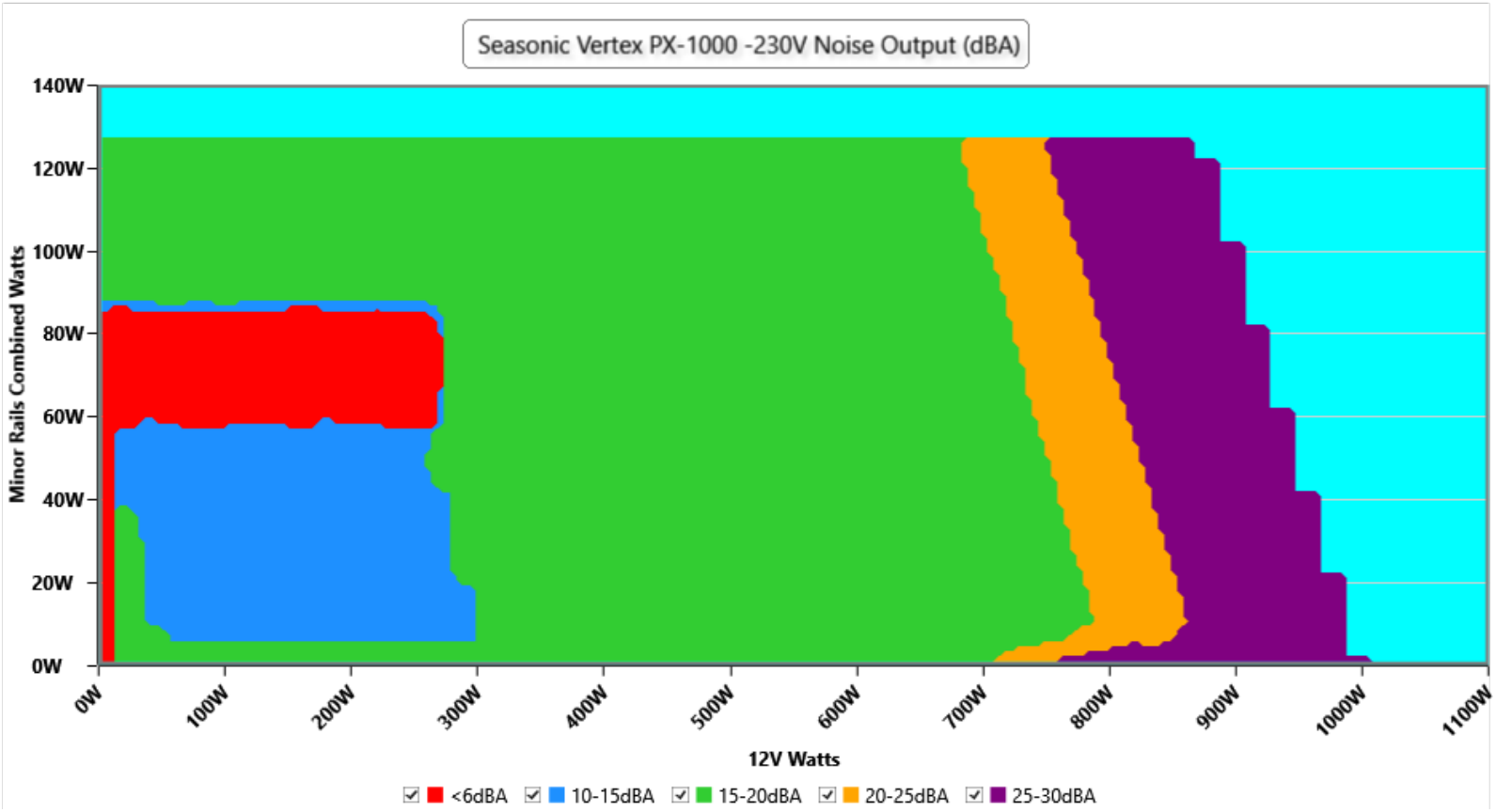
115V



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) · 42.0 °C	0 RPM · <6.0 dB(A) · 53.0 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 37.0 °C	0 RPM · <6.0 dB(A) · 53.1 °C	fan off in both
50%	737 RPM · 19.2 dB(A) · 30.8 °C	738 RPM · 19.2 dB(A) · 42.3 °C	**+0.0 dB(A)**
100%	997 RPM · 28.9 dB(A) · 30.6 °C	1021 RPM · 29.6 dB(A) · 45.5 °C	**+0.7 dB(A)**

230V

Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	0 RPM · <6.0 dB(A) · 34.9 °C	0 RPM · <6.0 dB(A) · 41.7 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 32.7 °C	0 RPM · <6.0 dB(A) · 41.1 °C	fan off in both
50%	737 RPM · 19.2 dB(A) · 30.2 °C	737 RPM · 19.2 dB(A) · 42.4 °C	**+0.0 dB(A)**
100%	997 RPM · 28.9 dB(A) · 30.2 °C	1013 RPM · 29.4 dB(A) · 45.3 °C	**+0.5 dB(A)**

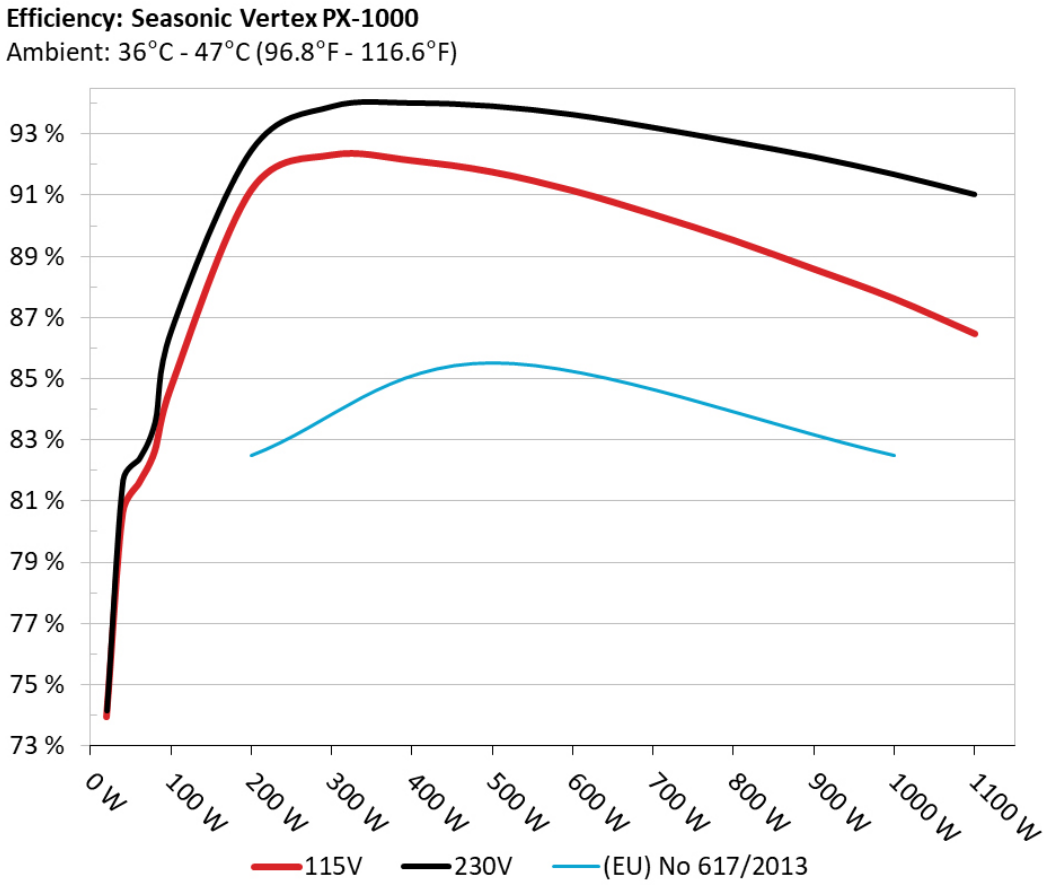
INFO

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

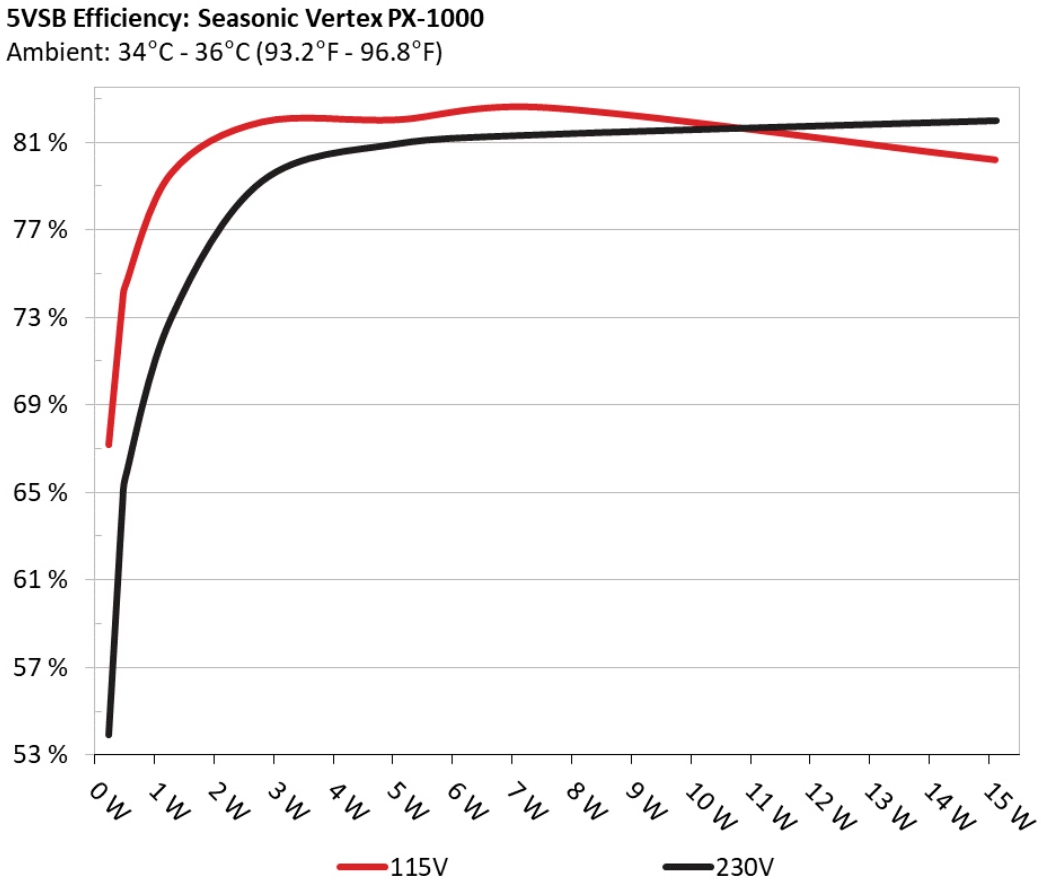
Efficiency under high ambient temperature



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	66.687%	0.033
	5.106V	0.345W		114.88V
2	**0.09A**	0.459W	73.151%	0.06
	5.105V	0.627W		114.87V
3	**0.55A**	2.801W	81.433%	0.26
	5.095V	3.44W		114.87V
4	**1A**	5.084W	81.533%	0.362
	5.085V	6.235W		114.86V
5	**1.5A**	7.611W	82.085%	0.413
	5.075V	9.272W		114.86V
6	**3A**	15.108W	79.706%	0.491
	5.037V	18.954W		114.86V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	**0.045A**	0.23W	53.409%	0.012
	5.106V	0.431W		229.93V
2	**0.09A**	0.459W	63.898%	0.021
	5.105V	0.718W		229.94V
3	**0.55A**	2.801W	78.73%	0.098
	5.094V	3.558W		229.94V
4	**1A**	5.084W	80.447%	0.163
	5.085V	6.319W		229.93V
5	**1.5A**	7.61W	80.87%	0.217
	5.074V	9.41W		229.94V
6	**3A**	15.123W	81.498%	0.327
	5.042V	18.555W		229.93V

Protection Features

OCP (Cold @ 26.5°C)	12V: 112.8A (135.9%), 12.128V 5V: 34.3A (137.2%), 5.022V 3.3V: 34A (136%), 3.322V 5VSB: 6.3A (210%), 4.959V
OCP (Hot) @ 44.1°C)	12V: 113A (136.14%), 12.133V 5V: 33.6A (134.4%), 5.023V 3.3V: 33.8A (135.2%), 3.326V 5VSB: 6.3A (210%), 4.958V
OPP (Cold @ 27.3°C)	1365.07W (136.51%)
OPP (Hot @ 44.4°C)	1362.06W (136.21%)
OTP	✓ (115°C @ Heat Sink)
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%	**6.453A**	**1.984A**	**1.974A**	**0.984A**	99.982	84.199%	0	<6.0	52.98°C	0.966
	12.147V	5.041V	3.344V	5.081V	118.747				40.12°C	114.83V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
20%	**13.919A**	**2.977A**	**2.963A**	**1.183A**	199.925	90.654%	0	<6.0	53.12°C	0.979
	12.144V	5.039V	3.341V	5.072V	220.535				40.68°C	114.8V
30%	**21.770A**	**3.474A**	**3.459A**	**1.383A**	299.971	91.801%	0	<6.0	51.61°C	0.984
	12.123V	5.037V	3.339V	5.062V	326.766				41.18°C	114.77V
40%	**29.566A**	**3.973A**	**3.958A**	**1.583A**	399.477	91.622%	742	19.3	41.7°C	0.986
	12.118V	5.034V	3.335V	5.052V	436.011				56.4°C	114.74V
50%	**37.038A**	**4.969A**	**4.954A**	**1.785A**	499.203	91.248%	738	19.2	42.34°C	0.985
	12.115V	5.031V	3.331V	5.042V	547.084				55.93°C	114.71V
60%	**44.573A**	**5.966A**	**5.95A**	**1.987A**	599.729	90.638%	732	19	42.62°C	0.986
	12.113V	5.029V	3.328V	5.032V	661.673				58.73°C	114.67V
70%	**52.044A**	**6.963A**	**6.947A**	**2.19A**	699.47	89.864%	727	18.9	43.41°C	0.988
	12.112V	5.027V	3.325V	5.022V	778.365				63.34°C	114.62V
80%	**59.581A**	**7.958A**	**7.945A**	**2.293A**	799.479	89.018%	751	19.7	43.66°C	0.99
	12.111V	5.025V	3.323V	5.015V	898.11				67.79°C	114.59V
90%	**67.447A**	**8.458A**	**8.432A**	**2.396A**	899.289	88.077%	898	25.4	44.81°C	0.991
	12.111V	5.024V	3.321V	5.007V	1021.023				71.25°C	114.54V
100%	**75.112A**	**8.959A**	**8.95A**	**3.006A**	999.289	87.108%	1021	29.6	45.54°C	0.993
	12.111V	5.022V	3.318V	4.989V	1147.178				74.92°C	114.51V
110%	**82.703A**	**9.958A**	**10.043A**	**3.01A**	1099.901	85.957%	1293	36.3	46.57°C	0.994
	12.111V	5.02V	3.315V	4.983V	1279.604				77.42°C	114.46V
CL1	**0.115A**	**14.968A**	**14.876A**	**0A**	126.287	82.505%	739	19.2	41.71°C	0.976
	12.145V	5.031V	3.334V	5.094V	153.066				57.22°C	114.81V
CL2	**0.113A**	**24.828A**	**0A**	**0A**	126.236	81.365%	741	19.3	40.81°C	0.974
	12.143V	5.029V	3.347V	5.098V	155.152				53.08°C	114.82V
CL3	**0.113A**	**0A**	**24.752A**	**0A**	83.873	73.687%	738	19.2	40.6°C	0.966
	12.138V	5.044V	3.333V	5.094V	113.822				51.32°C	114.83V
CL4	**82.575A**	**0A**	**0A**	**0A**	999.869	87.871%	1006	29.2	45.71°C	0.991
	12.109V	5.033V	3.328V	5.06V	1137.888				69.61°C	114.51V

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%	**6.452A**	**1.984A**	**1.974A**	**0.984A**	99.976	86.059%	0	<6.0	41.71°C	0.844
	12.147V	5.04V	3.344V	5.081V	116.169				40.13°C	229.92V
20%	**13.917A**	**2.977A**	**2.963A**	**1.183A**	199.912	91.967%	0	<6.0	41.11°C	0.925
	12.144V	5.038V	3.341V	5.071V	217.375				40.95°C	229.91V
30%	**21.770A**	**3.474A**	**3.459A**	**1.383A**	299.951	93.39%	0	<6.0	45.95°C	0.951
	12.122V	5.037V	3.339V	5.062V	321.182				41.1°C	229.9V
40%	**29.560A**	**3.973A**	**3.958A**	**1.584A**	399.403	93.503%	740	19.3	41.98°C	0.964
	12.117V	5.034V	3.335V	5.052V	427.156				55.42°C	229.88V
50%	**37.031A**	**4.97A**	**4.954A**	**1.785A**	499.136	93.404%	737	19.2	42.41°C	0.971
	12.115V	5.031V	3.331V	5.041V	534.381				56.32°C	229.87V
60%	**44.569A**	**5.967A**	**5.951A**	**1.988A**	599.664	93.127%	732	19	42.88°C	0.974
	12.113V	5.029V	3.327V	5.031V	643.924				59.64°C	229.85V
70%	**52.042A**	**6.964A**	**6.948A**	**2.191A**	699.41	92.706%	727	18.9	43.36°C	0.978
	12.111V	5.027V	3.325V	5.02V	754.437				64.03°C	229.84V
80%	**59.577A**	**7.959A**	**7.946A**	**2.294A**	799.426	92.241%	751	19.7	43.63°C	0.979
	12.111V	5.025V	3.322V	5.012V	866.672				69.11°C	229.82V
90%	**67.445A**	**8.46A**	**8.434A**	**2.397A**	899.219	91.751%	897	25.4	44.55°C	0.981
	12.110V	5.023V	3.32V	5.005V	980.067				71.52°C	229.81V
100%	**75.111A**	**8.96A**	**8.953A**	**3.008A**	999.231	91.178%	1013	29.4	45.33°C	0.983
	12.110V	5.022V	3.317V	4.985V	1095.917				74.45°C	229.79V
110%	**82.708A**	**9.96A**	**10.046A**	**3.012A**	1099.84	90.519%	1182	33.9	46.44°C	0.984
	12.110V	5.02V	3.314V	4.979V	1215.035				77.82°C	229.77V
CL1	**0.114A**	**14.968A**	**14.876A**	**0A**	126.284	83.808%	738	19.2	40.76°C	0.885
	12.144V	5.031V	3.334V	5.093V	150.681				59.04°C	229.93V
CL2	**0.114A**	**24.828A**	**0A**	**0A**	126.241	82.577%	741	19.3	40.69°C	0.887
	12.143V	5.029V	3.347V	5.098V	152.875				55.12°C	229.93V
CL3	**0.114A**	**0A**	**24.753A**	**0A**	83.878	74.877%	738	19.2	40.52°C	0.837
	12.138V	5.043V	3.333V	5.094V	112.019				53.29°C	229.94V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL4	**82.574A**	**0A**	**0A**	**0A**	999.802	91.732%	1006	29.2	45.52°C	0.982
	12.108V	5.033V	3.328V	5.058V	1089.927				69.21°C	229.79V

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**	**0.496A**	**0.493A**	**0.196A**	19.993	73.435%	0	<6.0	49.96°C	0.822
	12.049V	5.042V	3.345V	5.102V	27.225				36.09°C	114.86V
40W	**2.714A**	**0.694A**	**0.691A**	**0.294A**	39.993	80.102%	0	<6.0	50.87°C	0.916
	12.045V	5.042V	3.345V	5.099V	49.925				37.31°C	114.85V
60W	**4.159A**	**0.892A**	**0.888A**	**0.392A**	59.993	81.065%	0	<6.0	48.2°C	0.948
	12.148V	5.042V	3.345V	5.096V	74.009				38.12°C	114.85V
80W	**5.623A**	**1.091A**	**1.085A**	**0.491A**	79.931	82.121%	0	<6.0	48.24°C	0.962
	12.147V	5.042V	3.345V	5.093V	97.332				39.06°C	114.84V

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	**1.232A**	**0.496A**	**0.493A**	**0.196A**	19.992	73.648%	0	<6.0	44.6°C	0.468
	12.049V	5.042V	3.345V	5.102V	27.148				36.26°C	229.94V
40W	**2.712A**	**0.694A**	**0.691A**	**0.294A**	39.992	81.179%	0	<6.0	47.28°C	0.638
	12.049V	5.042V	3.345V	5.099V	49.265				37.29°C	229.94V
60W	**4.159A**	**0.892A**	**0.888A**	**0.392A**	59.992	81.861%	0	<6.0	48.61°C	0.745
	12.148V	5.041V	3.345V	5.096V	73.289				38.6°C	229.93V
80W	**5.623A**	**1.091A**	**1.085A**	**0.491A**	79.93	83.074%	0	<6.0	45.06°C	0.807
	12.146V	5.042V	3.345V	5.093V	96.214				39.47°C	229.93V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	16.5 mV	15.2 mV	22.9 mV	14.9 mV	Pass
20% Load	22.5 mV	15.7 mV	20.5 mV	14.2 mV	Pass
30% Load	19.9 mV	15.7 mV	20.3 mV	15.5 mV	Pass
40% Load	18.6 mV	16.4 mV	21.4 mV	27.8 mV	Pass
50% Load	19.2 mV	17.3 mV	23.3 mV	28.1 mV	Pass
60% Load	19.5 mV	17.7 mV	24.9 mV	29.2 mV	Pass
70% Load	19.4 mV	18.6 mV	24.5 mV	30.3 mV	Pass
80% Load	19.8 mV	19.5 mV	25.1 mV	30.5 mV	Pass
90% Load	20.1 mV	19.9 mV	26.1 mV	30.6 mV	Pass
100% Load	26.5 mV	21.9 mV	29.0 mV	33.3 mV	Pass
110% Load	26.9 mV	23.6 mV	29.3 mV	33.2 mV	Pass
Crossload 1	17.1 mV	17.9 mV	26.7 mV	28.8 mV	Pass
Crossload 2	18.8 mV	28.9 mV	27.8 mV	29.1 mV	Pass
Crossload 3	16.4 mV	15.9 mV	27.1 mV	27.0 mV	Pass
Crossload 4	25.8 mV	21.4 mV	27.0 mV	32.7 mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	15.1 mV	14.6 mV	22.7 mV	13.9 mV	Pass
20% Load	23.9 mV	14.4 mV	19.5 mV	12.4 mV	Pass
30% Load	17.3 mV	12.4 mV	18.2 mV	13.5 mV	Pass
40% Load	17.8 mV	14.2 mV	19.1 mV	24.0 mV	Pass
50% Load	17.1 mV	14.2 mV	20.6 mV	25.1 mV	Pass
60% Load	17.8 mV	15.3 mV	20.8 mV	26.0 mV	Pass

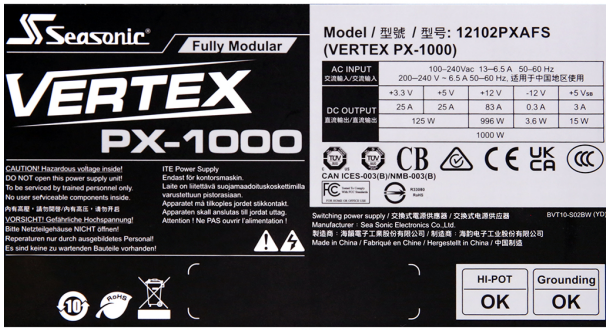
Test	12V	5V	3.3V	5VSB	Pass/Fail
70% Load	18.6 mV	16.5 mV	22.2 mV	25.5 mV	Pass
80% Load	17.8 mV	16.3 mV	22.7 mV	25.1 mV	Pass
90% Load	18.2 mV	17.2 mV	23.0 mV	25.3 mV	Pass
100% Load	26.3 mV	21.4 mV	26.9 mV	28.1 mV	Pass
110% Load	26.8 mV	21.6 mV	28.0 mV	29.0 mV	Pass
Crossload 1	15.5 mV	15.4 mV	25.2 mV	25.0 mV	Pass
Crossload 2	15.9 mV	23.0 mV	24.5 mV	24.1 mV	Pass
Crossload 3	15.0 mV	13.9 mV	25.2 mV	23.3 mV	Pass
Crossload 4	26.5 mV	20.3 mV	26.3 mV	28.7 mV	Pass

The results above are not used in the certification process

Seasonic Vertex PX-1000



Top side



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