XPG Pylon 750W

Serial Number 4K2980524634

Lab ID AD75001778

Certification ID 251778

Test Result Report ID: 21PS1778A

Certificate Issue Date: Jan 25, 2021

Scheme: ETA-EMI PSU

115V

230V

Scheme: LAMBDA PSU

115V

230V

Aristeidis Bitziopoulos, Certification Body General Manager

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	XPG
Model	Pylon 750W
OEM/ODM	Channel Well Technology
Serial Number	4K2980524634
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	50-60

Rated Power (W)	750
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fixed cables
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	120mm Fluid Dynamic Bearing Fan (HA1225H12F-Z)
Semi-Passive Operation	✗
Cybenetics Testing Information	
Lab ID	AD75001778
Date of receipt	Jan 8, 2021
Testing Date	Jan 14, 2021
Report Issued Date	Jan 25, 2021
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

Cables and Connectors(Non-accredited measurements)

Native Cables				
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Caps
ATX connector 20+4 pin (660mm)	1	1	18-22AWG	No
8 pin EPS12V (650mm) / 4+4 pinEPS12V (+150mm)	1	1 / 1	18AWG	No
6+2 pin PCIe (560mm+150mm)	2	4	18AWG	No
SATA (560mm+150mm+150mm) / 4-pin Molex (+150mm)	2	6 / 2	18AWG	No
SATA (560mm+150mm) / 4-pin Molex (+150mm) / FDD (+150mm)	1	2 / 1 / 1	18-20AWG	No
Modular Cables				
AC Power Cord (1420mm) - C13 coupler	1	1	17AWG	-

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62.5	2.5	3
	Watts	120		750	12.5	3.6
Total Max. Power (W)		750				

Parts Description

General Data	-
Manufacturer (OEM)	CWT
PCB Type	Single Sided
Primary Side	-
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV, 1x CAP200DG (Discharge IC)
Inrush Protection	NTC Thermistor SCK - 2R58 (2.5 Ohm)
Bridge Rectifier(s)	1x GBU1506 (600V, 15A @ 100°C)
APFC MOSFETs	2x Great Power GP28S50G (500V, 28A, Rds (on): 0.125Ohm)
APFC Boost Diode	1x On Semiconductor FFSP0665A (650V, 6A @ 153°C)
Bulk Cap(s)	1x Nippon Chemi-Con (400V, 470uF, 2,000h @ 105°C, KMW)
Main Switchers	2x GP23S60HX
PFC/PWM Combo Controller	Champion CM6800TX & Champion CM03X
Topology	Primary side: APFC, Double Forward Secondary side: Semi-Synchronous Rectification (12V) & DC-DC converters (5V & 3.3V)
Secondary Side	-
+12V	2x PFC PFR40V60CT SBR (60V, 40A), 2x Advanced Power Electronics AP6N3R5P FET(60V, 80A @ 100°C, Rds (on): 3.58 mOhm) & 1x Sync Power SP6019 Driver IC
5V & 3.3V	4x Sync Power SPN3006 (30V, 57A @ 100°C, Rds(on): 5.5mOhm) PWM Controller: ANPEC APW7159C
Filtering Capacitors	Electrolytic: 5x Elite (2-5,000h @ 105°C, ED), 4x Elite (2-5,000h @ 105°C, EK), 3x Elite (4-10,000h @ 105°C, EY), 2x Elite (3-6,000h @ 105°C, EV), 1x Elite (3-6,000h @ 105°C, EG), 2x Elite (2,000h @ 105°C, PF) Polymer: 2x Elite
Supervisor IC	IN1S429I - DCG
Fan Model	Hong Hua HA1225H12F-Z (120mm, 12V, 0.58A, Fluid Dynamic Bearing Fan)
5VSB Circuit	-

Standby PWM Controller	Power Integrations TNY287PG

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	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	85.796%
Average Noise Output (>1450 Load Combinations)	29.81dBA
Average PF (>1450 Load Combinations)	0.989
Efficiency With 10W (≤500W) or 2% (>500W) Load	66.738%
Standby Power Consumption	0.0428W
Non-Accredited	
12V Ripple (Full Load)	73.38mV
5V Ripple (Full Load)	22.78mV
3.3V Ripple (Full Load)	24.33mV
5VSB Ripple (Full Load)	23.64mV
12V Load Regulation	1.46%
5V Load Regulation	0.44%
3.3V Load Regulation	1.03%
5VSB Load Regulation	2.89%
Inrush Current	35.920A

230V		
Accredited		
Average Efficiency (>1450 load combinations)	88.126%	
Average Noise Output (>1450 Load Combinations)	30.46dBA	
Average PF (>1450 Load Combinations)	0.967	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.0906W	
Non-Accredited		
12V Ripple (Full Load)	67.41mV	
5V Ripple (Full Load)	22.54mV	
3.3V Ripple (Full Load)	24.29mV	
5VSB Ripple (Full Load)	24.39mV	
12V Load Regulation	1.44%	
5V Load Regulation	0.42%	
3.3V Load Regulation	1.03%	
5VSB Load Regulation	2.87%	
Inrush Current	87.420A	
Hold-Up Time & PWR_OK Signal	12.20ms	
AC Loss to PWR_OK Hold Up Time	9.60ms	
PWR_OK Inactive to DC Loss Delay	2.60ms	
PSU Timings: T1 (20% / 100%)	38.0ms	38.0ms
PSU Timings: T3 (20% / 100%)	132.0ms	132.0ms
OPP (23.40°C / 39.45°C)	115.94%	115.93%

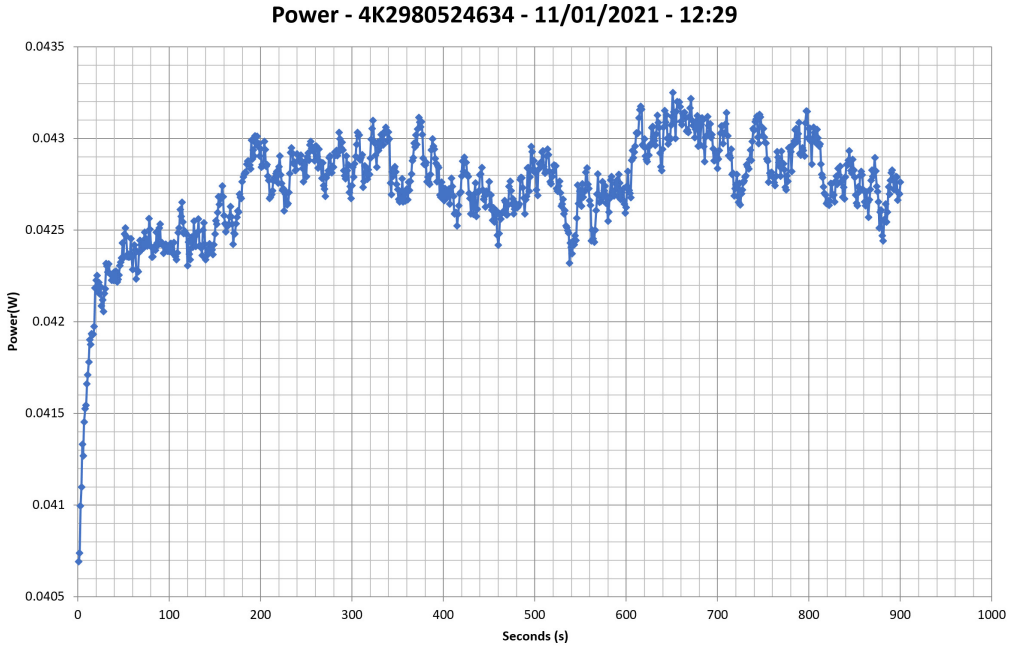
Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	12.2
AC Loss to PWR_OK Hold Up Time (ms)	9.6
PWR_OK Inactive to DC Loss Delay (ms)	2.6

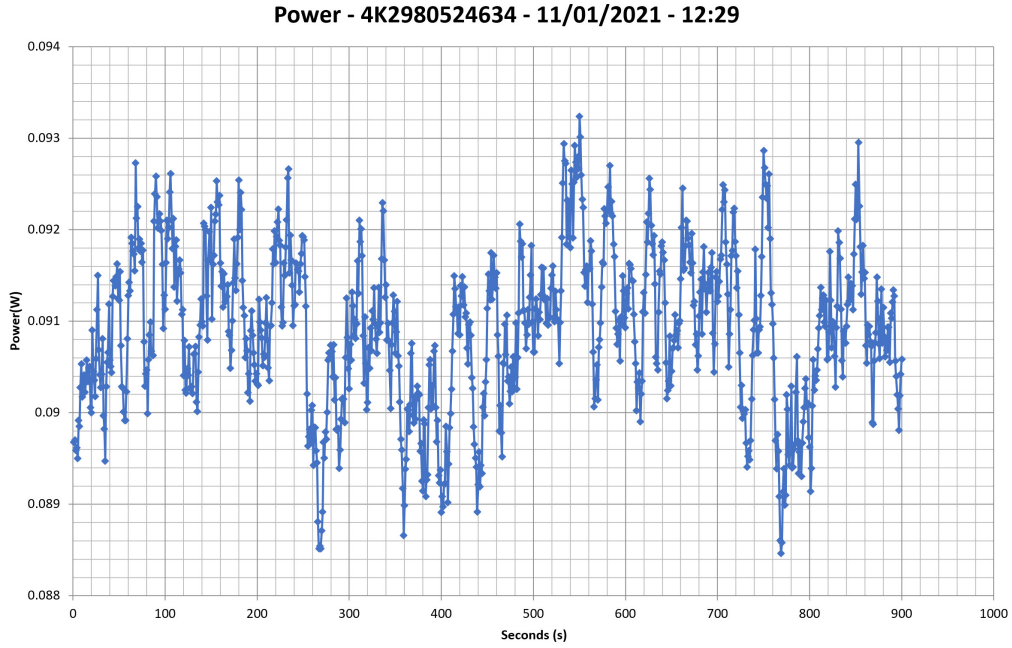
Stromverbrauch im Ruhezustand

Graphs

115V

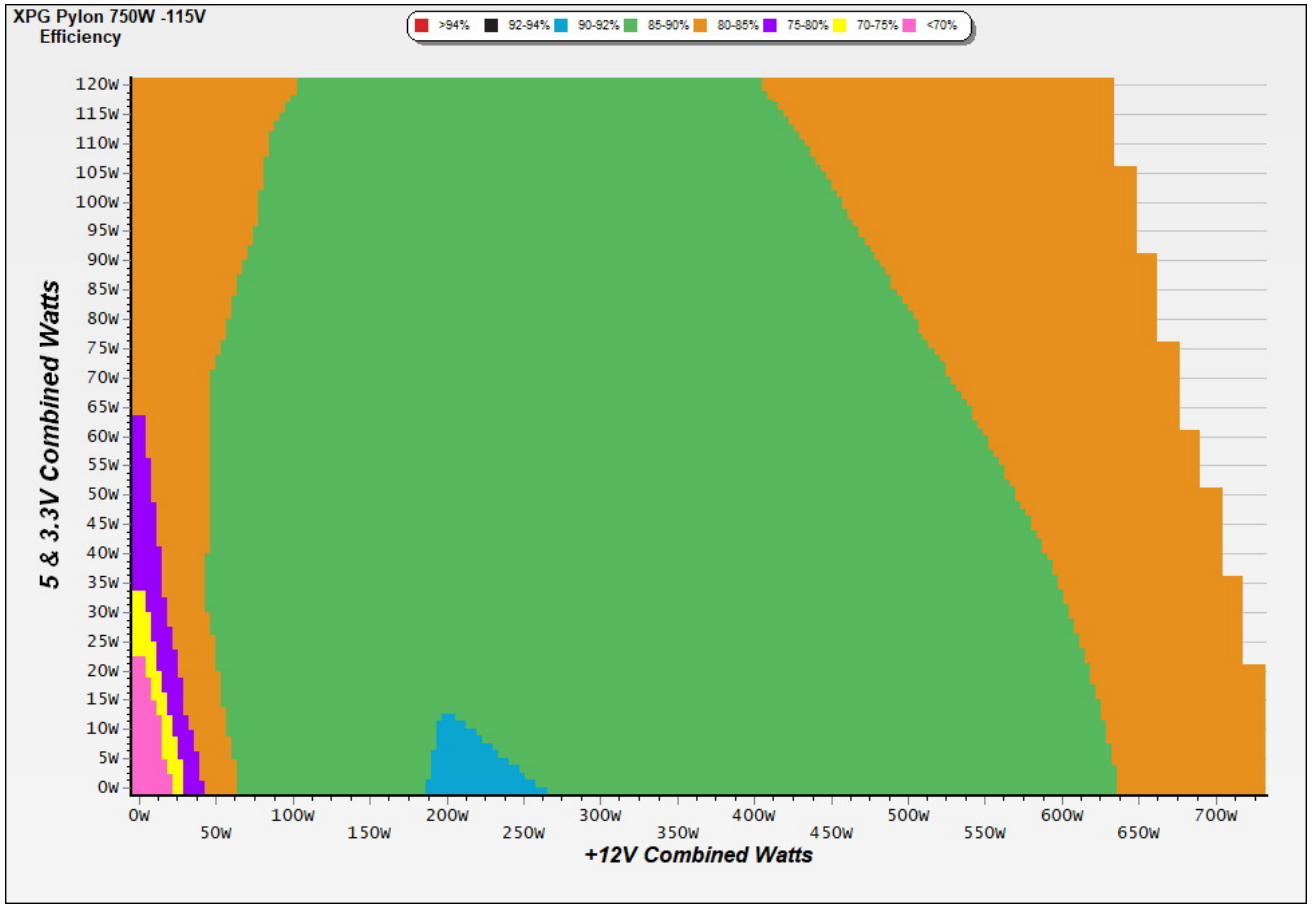


230V



Efficiency Graph

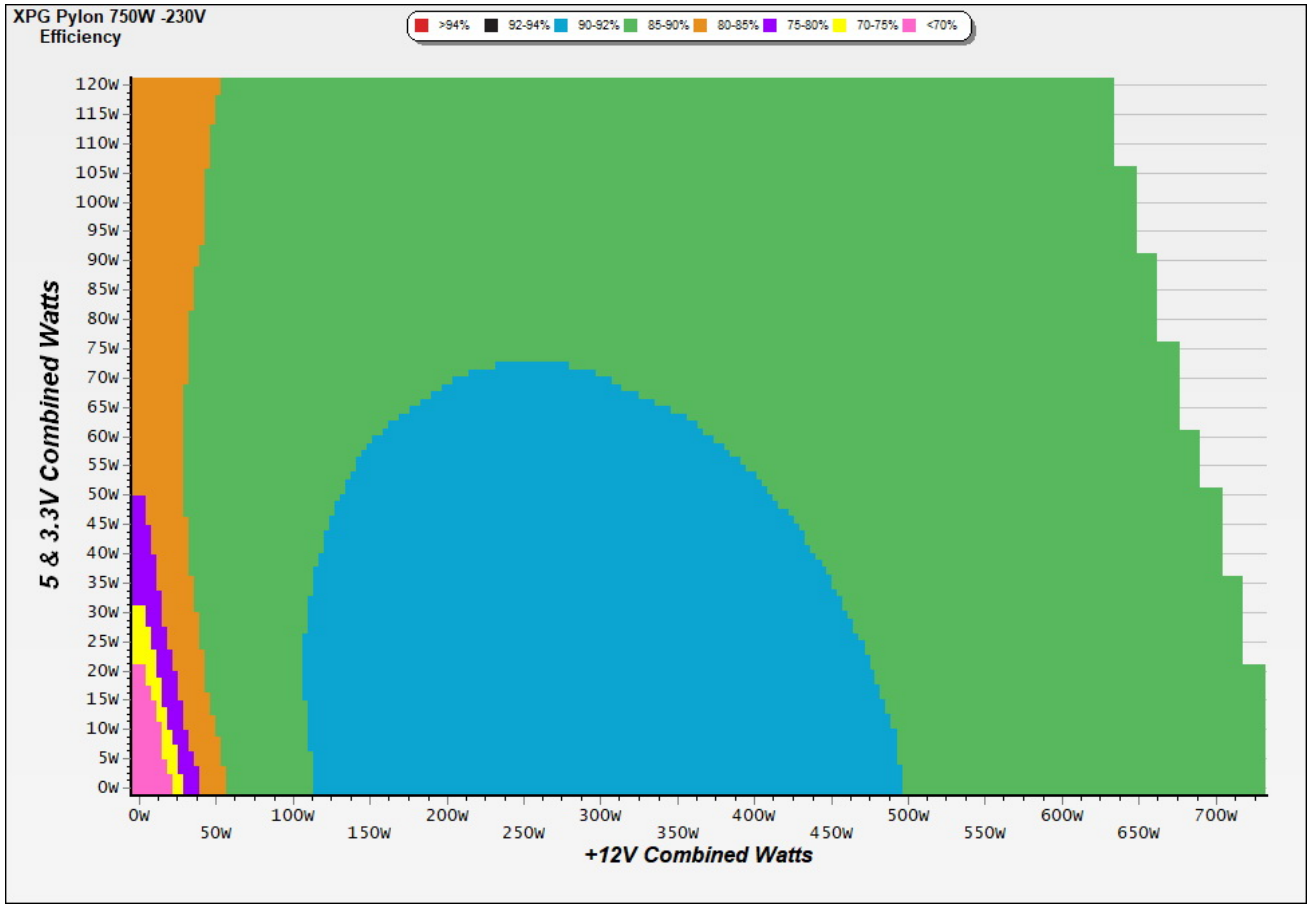
115V



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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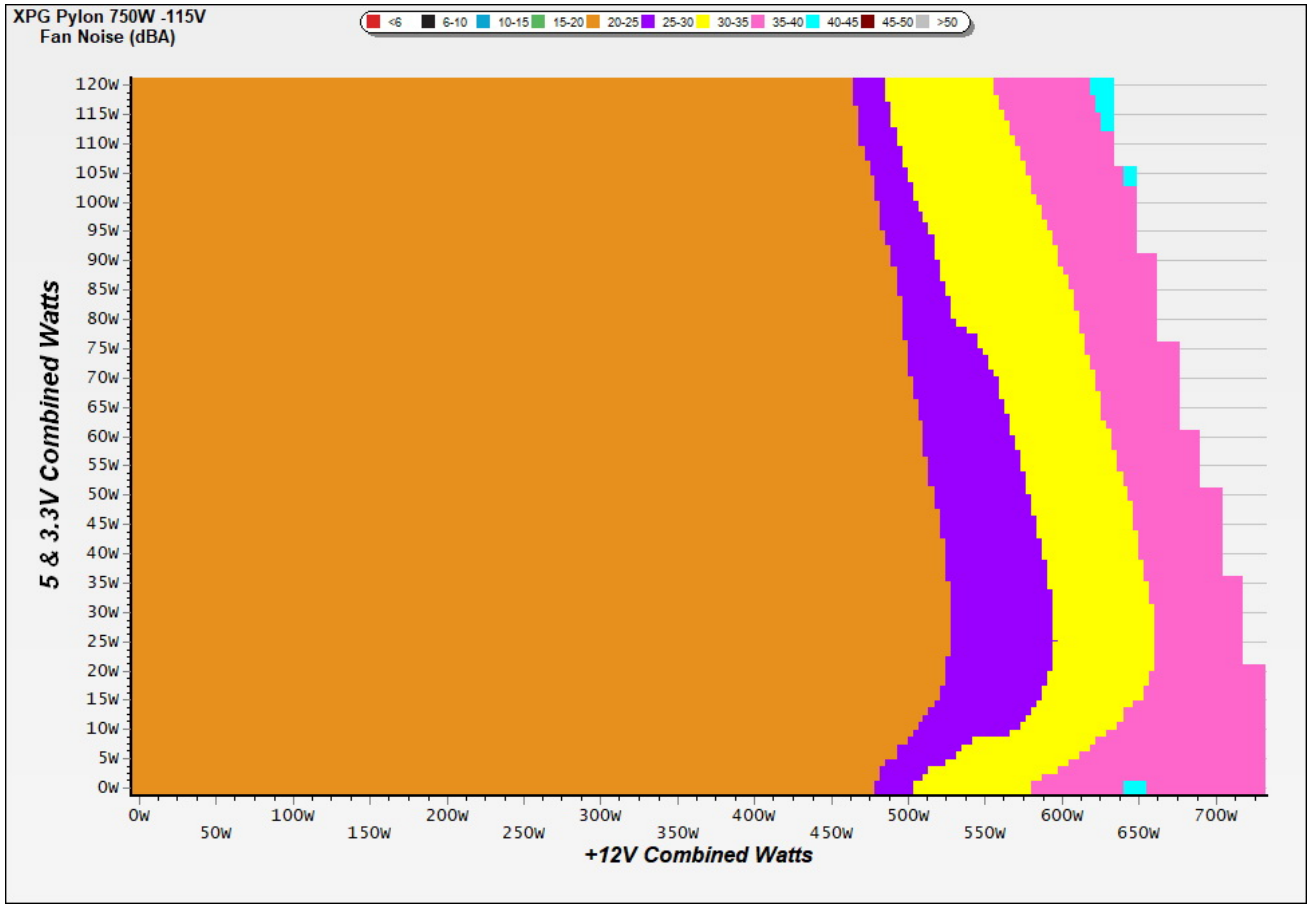
Noise Graph

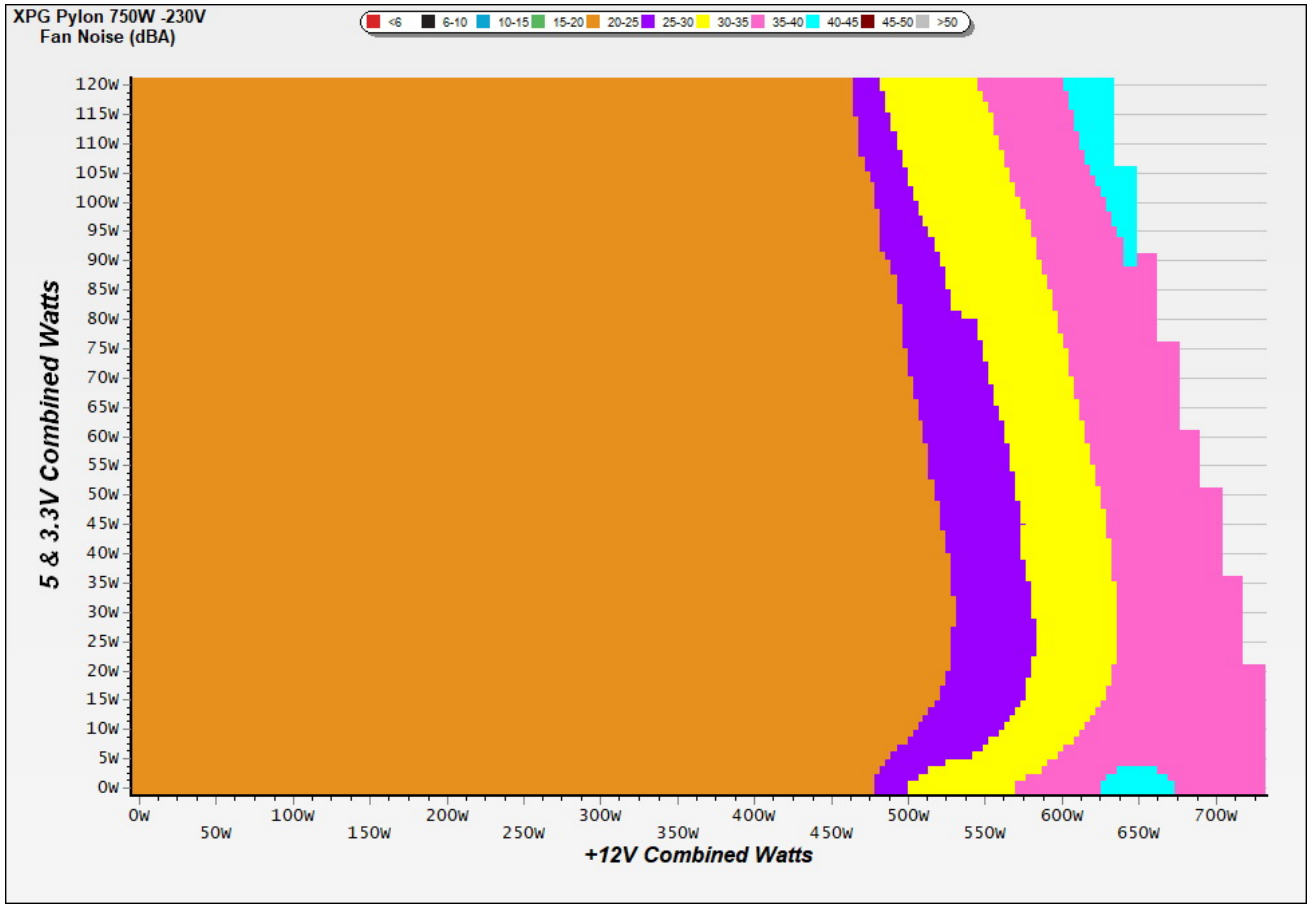
115V



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

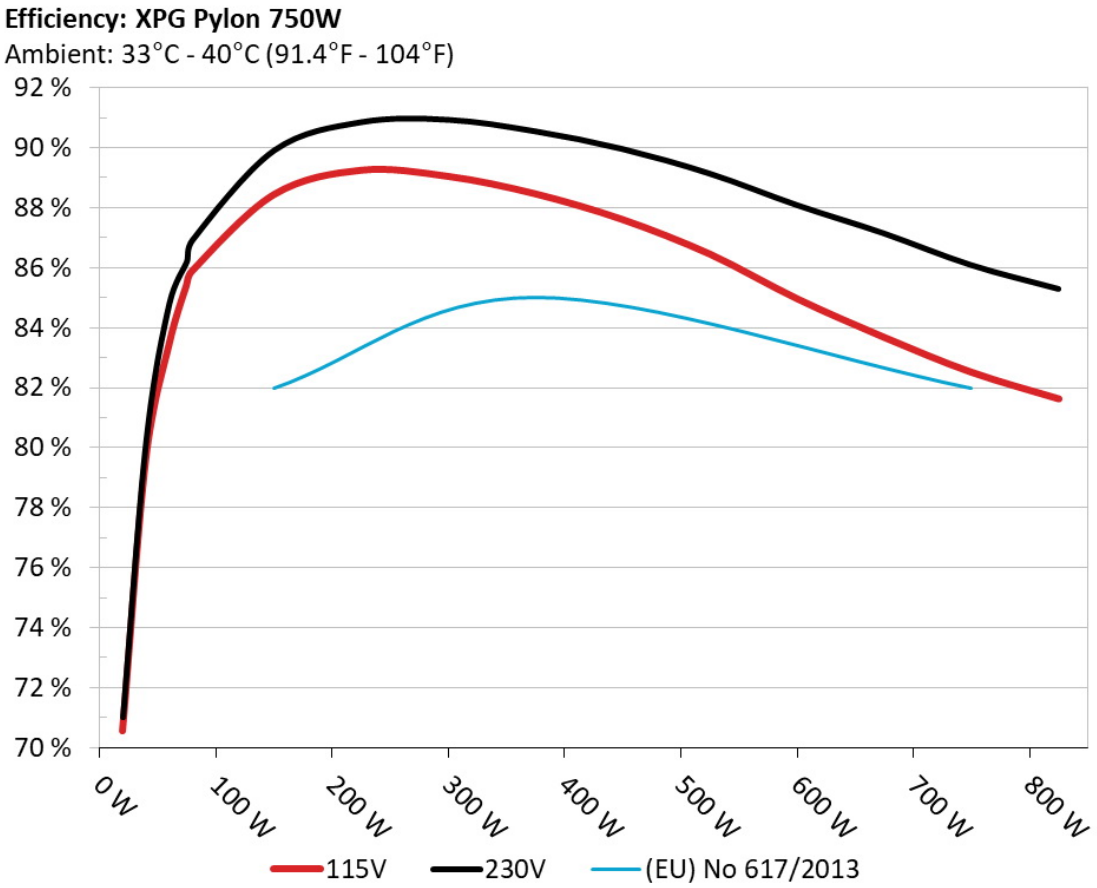


INFO

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

Indicative Performance

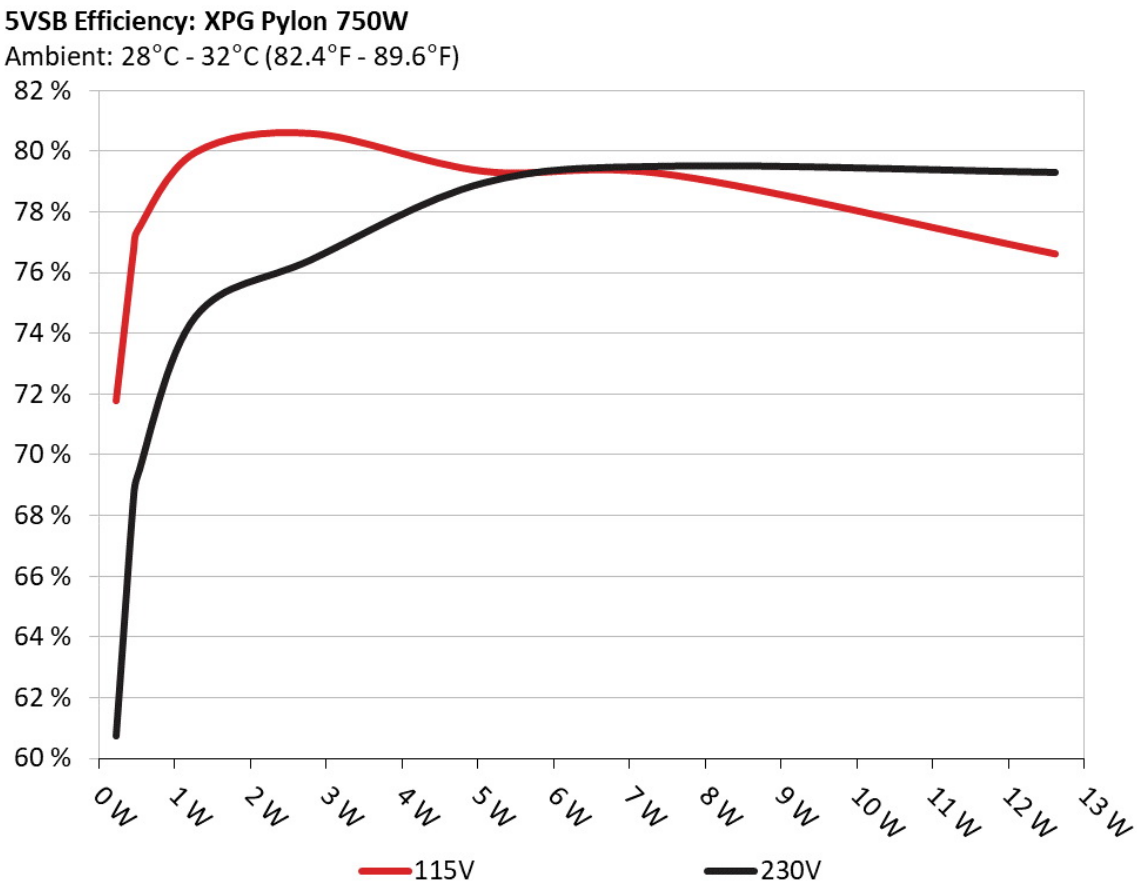
Efficiency under high ambient temperature



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	0.229	71.787%	0.035
	5.096V	0.319		115.12V
2	0.090A	0.459	76.756%	0.063
	5.096V	0.598		115.11V
3	0.550A	2.798	80.588%	0.262
	5.086V	3.472		115.12V
4	1.000A	5.077	79.341%	0.344
	5.077V	6.399		115.12V
5	1.500A	7.599	79.206%	0.387
	5.065V	9.594		115.12V
6	2.500A	12.614	76.620%	0.432
	5.045V	16.463		115.12V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.229	60.743%	0.013
	5.096V	0.377		230.23V
2	0.090A	0.459	68.610%	0.023
	5.096V	0.669		230.23V
3	0.550A	2.798	76.406%	0.114
	5.087V	3.662		230.23V
4	1.000A	5.078	78.937%	0.179
	5.077V	6.433		230.22V
5	1.500A	7.600	79.490%	0.233
	5.066V	9.561		230.23V
6	2.500A	12.617	79.282%	0.300
	5.046V	15.914		230.23V

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
1	4.377A	1.999A	1.999A	0.987A	74.962	85.403%	864	22.1	35.75°C	0.969
	12.193V	5.001V	3.301V	5.064V	87.774				40.00°C	115.11V
2	9.784A	3.002A	3.002A	1.188A	150.031	88.420%	868	21.9	36.46°C	0.984
	12.176V	4.998V	3.297V	5.051V	169.680				41.50°C	115.10V
3	15.544A	3.505A	3.506A	1.390A	225.038	89.233%	872	21.8	36.55°C	0.989
	12.158V	4.995V	3.293V	5.037V	252.191				42.32°C	115.10V
4	21.322A	4.006A	4.012A	1.593A	300.054	89.027%	875	21.7	36.90°C	0.991
	12.140V	4.993V	3.290V	5.024V	337.036				43.31°C	115.10V
5	26.734A	5.009A	5.019A	1.797A	374.575	88.448%	882	22.1	37.43°C	0.992
	12.122V	4.992V	3.287V	5.010V	423.497				45.07°C	115.09V
6	32.199A	6.011A	6.028A	2.000A	449.464	87.593%	887	22.9	38.11°C	0.993
	12.102V	4.992V	3.284V	4.995V	513.127				46.65°C	115.09V
7	37.719A	7.015A	7.043A	2.211A	524.806	86.436%	910	22.9	38.53°C	0.993
	12.081V	4.991V	3.281V	4.977V	607.163				48.07°C	115.09V
8	43.259A	8.003A	8.057A	2.419A	600.024	84.946%	1243	31.7	38.82°C	0.994
	12.060V	4.988V	3.276V	4.963V	706.359				49.40°C	115.08V
9	49.176A	8.528A	8.551A	2.424A	674.634	83.663%	1652	39.1	39.74°C	0.994
	12.041V	4.985V	3.273V	4.953V	806.367				51.38°C	115.07V
10	55.108A	9.036A	9.081A	2.530A	749.771	82.499%	1979	44.1	39.90°C	0.995
	12.023V	4.981V	3.270V	4.942V	908.825				51.95°C	115.06V
11	61.430A	9.041A	9.086A	2.532A	824.860	81.612%	2186	45.8	40.32°C	0.995
	12.008V	4.979V	3.268V	4.937V	1010.704				53.13°C	115.06V
CL1	0.117A	14.003A	13.998A	0.000A	117.339	80.260%	893	22.9	37.89°C	0.984
	12.168V	4.995V	3.284V	5.052V	146.198				44.99°C	115.11V

CL2	62.507A	1.000A	1.000A	1.000A	765.025	83.415%	1622	38.7	39.28°C	0.995
	12.027V	4.986V	3.279V	4.987V	917.130				51.51°C	115.07V

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
1	4.377A	2.000A	2.000A	0.988A	74.963	86.199%	864	22.1	35.10°C	0.875
	12.191V	5.000V	3.300V	5.064V	86.965				39.91°C	230.25V
2	9.786A	3.002A	3.003A	1.188A	150.035	89.902%	868	21.9	35.89°C	0.944
	12.174V	4.997V	3.296V	5.051V	166.888				41.18°C	230.25V
3	15.547A	3.502A	3.508A	1.390A	225.051	90.847%	872	21.8	36.23°C	0.965
	12.157V	4.995V	3.293V	5.037V	247.726				42.18°C	230.25V
4	21.326A	4.003A	4.013A	1.593A	300.067	90.926%	876	21.7	37.01°C	0.975
	12.139V	4.992V	3.290V	5.025V	330.012				43.62°C	230.25V
5	26.740A	5.011A	5.020A	1.797A	374.601	90.543%	879	21.9	37.38°C	0.981
	12.120V	4.991V	3.287V	5.010V	413.728				44.98°C	230.25V
6	32.206A	6.012A	6.030A	2.000A	449.516	89.954%	884	22.5	37.47°C	0.984
	12.101V	4.990V	3.284V	4.995V	499.720				46.00°C	230.24V
7	37.730A	7.016A	7.045A	2.210A	524.852	89.132%	891	23.0	38.31°C	0.986
	12.079V	4.989V	3.280V	4.978V	588.848				47.64°C	230.25V
8	43.273A	8.004A	8.058A	2.419A	600.051	88.078%	1277	32.3	38.71°C	0.988
	12.057V	4.986V	3.276V	4.962V	681.273				49.04°C	230.25V
9	49.183A	8.530A	8.556A	2.423A	674.615	87.140%	1619	38.6	39.36°C	0.989
	12.039V	4.983V	3.272V	4.953V	774.174				50.42°C	230.25V
10	55.119A	9.037A	9.083A	2.530A	749.738	86.083%	1996	44.2	40.19°C	0.990
	12.020V	4.981V	3.269V	4.941V	870.949				52.31°C	230.25V
11	61.462A	9.041A	9.088A	2.534A	824.927	85.288%	2161	45.6	40.27°C	0.991
	12.003V	4.978V	3.267V	4.934V	967.227				53.08°C	230.24V
CL1	0.117A	14.001A	13.999A	0.000A	117.317	81.446%	898	22.7	37.53°C	0.935
	12.166V	4.995V	3.283V	5.052V	144.043				45.22°C	230.25V

CL2	62.508A	1.000A	1.000A	1.000A	764.848	87.151%	1405	34.9	40.01°C	0.990
	12.024V	4.987V	3.278V	4.987V	877.617				52.69°C	230.23V

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])	PF/AC Volts
1	1.215A	0.500A	0.500A	0.197A	19.990	70.549%	856	21.6	0.896
	12.207V	5.005V	3.305V	5.089V	28.335				115.11V
2	2.432A	0.999A	1.001A	0.394A	39.980	79.605%	858	21.7	0.944
	12.201V	5.003V	3.304V	5.082V	50.223				115.11V
3	3.654A	1.499A	1.499A	0.591A	60.011	83.430%	862	22.0	0.966
	12.196V	5.002V	3.302V	5.075V	71.930				115.11V
4	4.869A	2.000A	2.000A	0.789A	79.962	85.882%	864	22.1	0.972
	12.191V	5.001V	3.301V	5.068V	93.107				115.11V

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])	PF/AC Volts
1	1.215A	0.500A	0.501A	0.197A	19.988	71.000%	861	21.9	0.597
	12.204V	5.004V	3.305V	5.088V	28.152				230.24V
2	2.433A	0.999A	0.997A	0.394A	39.978	80.230%	860	21.9	0.764
	12.200V	5.003V	3.304V	5.082V	49.829				230.24V
3	3.654A	1.500A	1.499A	0.591A	60.010	84.811%	862	22.0	0.841
	12.195V	5.001V	3.302V	5.075V	70.757				230.24V
4	4.870A	2.000A	1.998A	0.789A	79.961	86.923%	863	22.0	0.884
	12.191V	5.000V	3.300V	5.067V	91.991				230.24V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	10.50mV	13.80mV	11.30mV	7.90mV	Pass
20% Load	11.10mV	13.30mV	11.20mV	8.00mV	Pass
30% Load	12.50mV	11.40mV	11.10mV	10.10mV	Pass
40% Load	13.60mV	10.50mV	10.90mV	8.60mV	Pass
50% Load	15.10mV	11.20mV	12.10mV	9.90mV	Pass
60% Load	17.80mV	13.00mV	13.40mV	10.60mV	Pass
70% Load	24.70mV	13.20mV	13.00mV	19.70mV	Pass
80% Load	39.30mV	14.70mV	16.60mV	17.50mV	Pass
90% Load	54.20mV	17.50mV	20.30mV	18.50mV	Pass
100% Load	73.40mV	22.80mV	24.30mV	23.60mV	Pass
110% Load	79.80mV	22.80mV	25.50mV	24.90mV	Pass
Crossload1	14.00mV	17.90mV	18.00mV	7.00mV	Pass
Crossload2	70.90mV	17.30mV	21.70mV	17.80mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	10.50mV	14.30mV	11.10mV	8.10mV	Pass
20% Load	11.00mV	12.60mV	12.80mV	7.90mV	Pass
30% Load	12.50mV	11.00mV	11.40mV	9.70mV	Pass
40% Load	13.40mV	10.00mV	10.90mV	8.80mV	Pass
50% Load	14.60mV	10.90mV	11.90mV	9.40mV	Pass
60% Load	17.40mV	13.40mV	12.10mV	10.60mV	Pass
70% Load	22.90mV	12.20mV	12.70mV	17.80mV	Pass
80% Load	38.30mV	15.10mV	16.10mV	16.20mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	52.90mV	17.30mV	19.30mV	18.70mV	Pass
100% Load	67.40mV	22.50mV	24.30mV	24.40mV	Pass
110% Load	75.70mV	23.40mV	25.60mV	25.70mV	Pass
Crossload1	14.20mV	18.10mV	17.60mV	7.00mV	Pass
Crossload2	68.10mV	18.30mV	22.40mV	18.40mV	Pass

The results above are not used in the certification process

XPG Pylon 750W

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

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