

Anex

XPG Pylon 450W Bronze

Lab ID#: AD45001703
Receipt Date: Jul 31, 2020
Test Date: Aug 27, 2020

Report: 20PS1703A

Report Date: Aug 27, 2020

DUT INFORMATION

Brand	XPG
Manufacturer (OEM)	Channel Well Technology
Series	Pylon
Model Number	
Serial Number	
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	7-3.5
Rated Frequency (Hz)	50-60
Rated Power (W)	450
Type	ATX12V
Cooling	120mm Fluid Dynamic Bearing Fan (HA1225H12F-Z)
Semi-Passive Operation	X
Cable Design	Fixed cables

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	37.5	2.5	0.3
	Watts	100		450	12.5	3.6
Total Max. Power (W)		450				

CABLES AND CONNECTORS

Native Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Caps
ATX connector 20+4 pin (660mm)	1	1	16-22AWG	No
4+4 pin EPS12V (680mm)	1	1	18AWG	No
6+2 pin PCIe (580mm+150mm)	1	2	18AWG	No
SATA (550mm+150mm+150mm) / 4-pin Molex (+150mm)	1	3 / 1	18AWG	No
SATA (550mm+150mm) / 4-pin Molex (+150mm) / FDD (+150mm)	1	2 / 1 / 1	18-22AWG	No

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PAGE 1/16

Anex

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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
Bridge Rectifier(s)	1x GBU806 (600V, 8A @ 100°C)
APFC MOSFETs	2x Silan Microelectronics SVF18N50F (500V, 11A @ 100°C, Rds(on): 0.31Ohm)
APFC Boost Diode	1x STMicroelectronics STTH8S06 (600V, 8A @ 25°C)
Bulk Cap(s)	1x Nippon Chemi-Con (400V, 390uF, 2,000h @ 105°C, KMW)
Main Switchers	2x Silan Microelectronics SVF13N50F (500V, 8.2 @ 100°C, Rds(on): 0.52Ohm)
PFC/PWM Combo Controller	Champion CM6800TX & Champion CM03X
Topology	Primary side: APFC, Double Forward Secondary side: Passive Rectification (12V) & DC-DC converters (5V & 3.3V)
Secondary Side	-
+12V SBRs	4x PFC PFR20L60CT (60V, 20A)
5V & 3.3V MOSFETs	4x Sync Power SPN3006 (30V, 57A @ 100°C, Rds(on): 5.5mOhm) PWM Controller: ANPEC APW7159C
Filtering Capacitors	Electrolytic: 6x Jun Fu (2-5,000h @ 105°C, WL), 4x Jun Fu (2,000h @ 105°C, WG), 3x CapXon (2-5,000h @ 105°C, KF), 4x CapXon (2,000h @ 105°C, GF) Polymer: 2x APAQ
Supervisor IC	INI1S429I - DCG
Fan Model	Hong Hua HA1225H12F-Z (120mm, 12V, 0.58A, Rifle Bearing Fan)
5VSB Circuit	-
Standby PWM Controller	Power Integrations TNY287PG

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PAGE 2/16

Anex

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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

115V

Average Efficiency	83.670%
Efficiency With 10W ($\leq 500W$) or 2% ($> 500W$)	56.371
Average Efficiency 5VSB	80.206%
Standby Power Consumption (W)	0.0357554
Average PF	0.986
Avg Noise Output	28.96 dB(A)
Efficiency Rating (ETA)	BRONZE
Noise Rating (LAMBDA)	A-

230V

Average Efficiency	85.810%
Average Efficiency 5VSB	79.257%
Standby Power Consumption (W)	0.0695658
Average PF	0.958
Avg Noise Output	28.97 dB(A)
Efficiency Rating (ETA)	BRONZE
Noise Rating (LAMBDA)	A-

TEST EQUIPMENT

Electronic Loads	Chroma 63601-5 x4 Chroma 63600-2 x2 63640-80-80 x20 63610-80-20 x2
AC Sources	Chroma 6530, Keysight AC6804B
Power Analyzers	N4L PPA1530 x2
Sound Analyzer	Bruel & Kjaer 2270 G4
Microphone	Bruel & Kjaer Type 4955-A
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2
Tachometer	UNI-T UT372 x2
Digital Multimeter	Keysight U1273AX, Fluke 289, Keithley 2015 - THD
UPS	CyberPower OLS3000E 3kVA x2

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

Hold-Up Time (ms)	14.4
AC Loss to PWR_OK Hold Up Time (ms)	12.4
PWR_OK Inactive to DC Loss Delay (ms)	2

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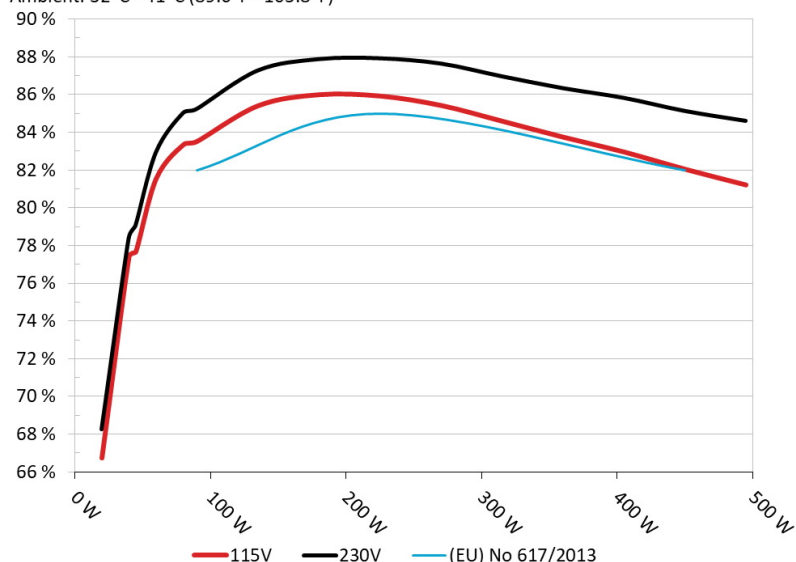
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PAGE 3/16

EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: XPG CSB450

Ambient: 32°C - 41°C (89.6°F - 105.8°F)



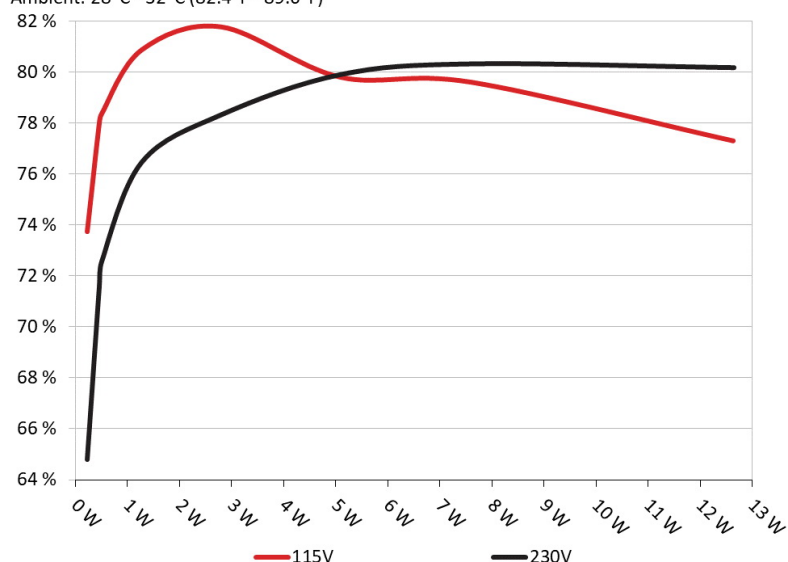
INFO

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: XPG CSB450

Ambient: 28°C - 32°C (82.4°F - 89.6°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	0.230	73.718%	0.099
	5.083V	0.312		115.12V
2	0.090A	0.460	77.966%	0.077
	5.108V	0.590		115.12V
3	0.550A	2.805	81.778%	0.296
	5.098V	3.430		115.12V
4	1.000A	5.089	79.802%	0.375
	5.089V	6.377		115.12V
5	1.500A	7.616	79.599%	0.416
	5.077V	9.568		115.12V
6	2.500A	12.642	77.293%	0.455
	5.056V	16.356		115.12V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.230	64.789%	0.015
	5.109V	0.355		230.26V
2	0.090A	0.460	71.540%	0.027
	5.108V	0.643		230.26V
3	0.550A	2.805	78.330%	0.137
	5.098V	3.581		230.26V
4	1.000A	5.090	79.906%	0.211
	5.089V	6.370		230.26V
5	1.500A	7.618	80.325%	0.267
	5.078V	9.484		230.26V
6	2.500A	12.645	80.179%	0.330
	5.057V	15.771		230.26V

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PAGE 5/16

Anex

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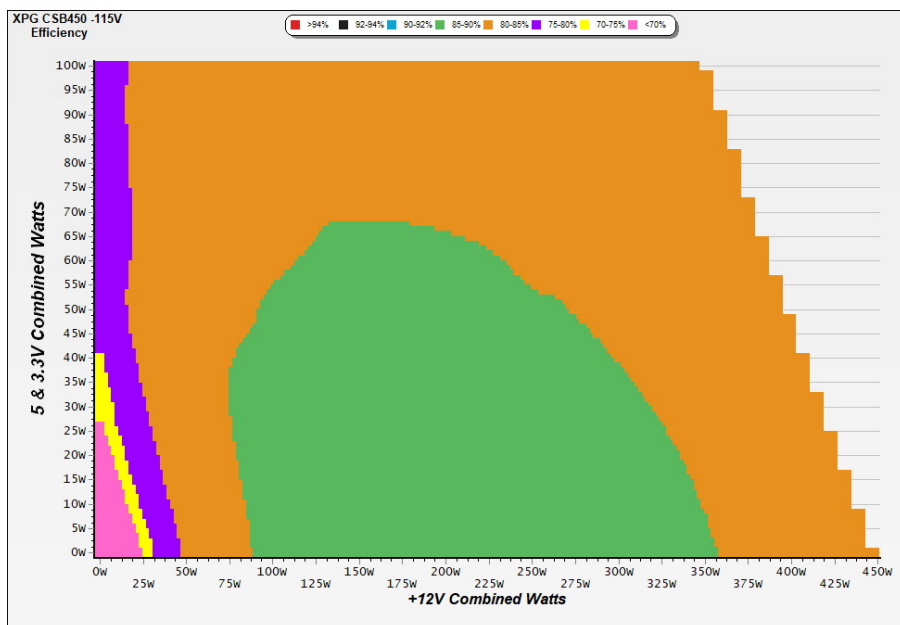
115V

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PAGE 6/16

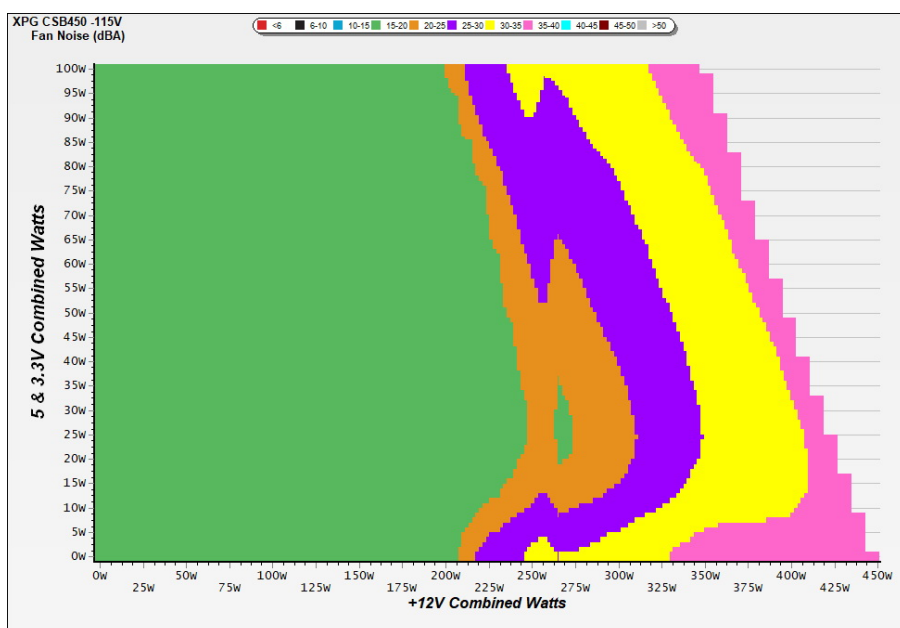
EFFICIENCY GRAPH 115V



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

NOISE GRAPH 115V



INFO

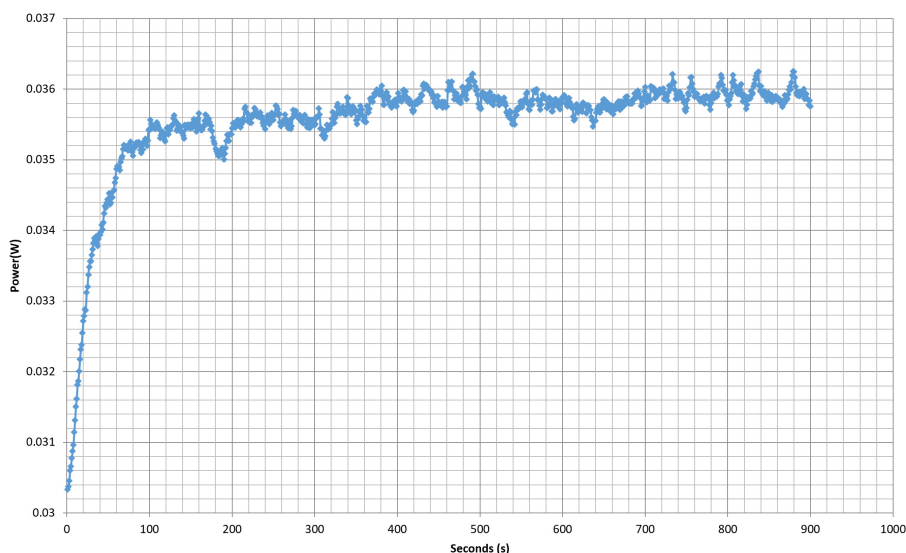
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

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VAMPIRE POWER -115V

Power - 25/08/2020 - 08:50



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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Anex

XPG Pylon 450W Bronze

10-110% 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	1.921A	1.992A	2.003A	0.985A	44.968	77.678%	798	19.6	34.46°C	0.955
	12.163V	5.021V	3.296V	5.076V	57.890				37.85°C	115.13V
2	4.865A	2.991A	3.006A	1.185A	90.029	83.530%	800	19.7	34.80°C	0.975
	12.152V	5.018V	3.293V	5.065V	107.780				39.08°C	115.12V
3	8.152A	3.491A	3.509A	1.385A	135.025	85.421%	802	19.8	35.30°C	0.983
	12.141V	5.015V	3.290V	5.054V	158.070				40.27°C	115.12V
4	11.444A	3.991A	4.015A	1.587A	180.027	86.009%	805	19.9	35.67°C	0.987
	12.130V	5.013V	3.288V	5.043V	209.311				41.44°C	115.12V
5	14.399A	4.991A	5.025A	1.790A	225.018	85.937%	809	20.0	36.11°C	0.989
	12.119V	5.010V	3.285V	5.031V	261.840				42.53°C	115.12V
6	17.361A	5.991A	6.030A	1.993A	270.014	85.436%	890	22.5	36.84°C	0.991
	12.108V	5.009V	3.283V	5.018V	316.043				43.79°C	115.12V
7	20.335A	6.994A	7.044A	2.199A	315.094	84.602%	1235	31.5	37.47°C	0.993
	12.096V	5.006V	3.280V	5.005V	372.443				45.39°C	115.12V
8	23.310A	7.999A	8.056A	2.404A	360.094	83.756%	1488	37.0	37.84°C	0.993
	12.084V	5.002V	3.277V	4.994V	429.934				46.43°C	115.12V
9	26.726A	8.505A	8.552A	2.407A	405.137	82.964%	1775	40.8	38.98°C	0.993
	12.071V	4.999V	3.275V	4.987V	488.330				48.23°C	115.11V
10	30.071A	9.010A	9.075A	2.512A	449.848	82.056%	2043	44.4	39.30°C	0.994
	12.059V	4.997V	3.272V	4.978V	548.223				49.09°C	115.11V
11	33.820A	9.013A	9.082A	2.515A	494.653	81.224%	2047	44.4	40.95°C	0.994
	12.047V	4.995V	3.270V	4.972V	609.000				51.78°C	115.11V
CL1	0.102A	12.002A	12.001A	0.000A	100.684	79.061%	820	20.5	36.57°C	0.980
	12.144V	5.003V	3.283V	5.067V	127.350				43.44°C	115.13V
CL2	37.518A	1.001A	0.999A	1.000A	465.784	83.021%	2042	44.4	39.95°C	0.994
	12.060V	5.010V	3.281V	5.024V	561.041				49.88°C	115.11V

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PAGE 9/16

Anex

XPG Pylon 450W Bronze

20-80W LOAD TESTS 115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.220A	0.498A	0.500A	0.196A	19.997	66.748%	788	19.4	0.912
	12.169V	5.026V	3.299V	5.099V	29.959				115.13V
2	2.440A	0.995A	1.003A	0.393A	39.987	77.430%	792	19.5	0.951
	12.164V	5.024V	3.297V	5.092V	51.643				115.13V
3	3.665A	1.494A	1.502A	0.590A	60.017	81.566%	794	19.5	0.965
	12.159V	5.022V	3.296V	5.084V	73.581				115.13V
4	4.884A	1.992A	2.005A	0.788A	79.969	83.353%	796	19.6	0.973
	12.155V	5.020V	3.294V	5.077V	95.940				115.13V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	8.70mV	11.10mV	13.90mV	6.40mV	Pass
20% Load	9.20mV	11.40mV	16.10mV	6.70mV	Pass
30% Load	9.90mV	11.90mV	16.90mV	6.60mV	Pass
40% Load	10.10mV	12.90mV	15.70mV	6.60mV	Pass
50% Load	10.70mV	13.40mV	16.10mV	7.20mV	Pass
60% Load	11.30mV	14.50mV	16.20mV	7.50mV	Pass
70% Load	12.10mV	14.80mV	20.70mV	15.80mV	Pass
80% Load	13.70mV	15.20mV	20.60mV	9.90mV	Pass
90% Load	15.20mV	17.20mV	27.40mV	10.50mV	Pass
100% Load	21.40mV	18.00mV	22.10mV	10.90mV	Pass
110% Load	23.80mV	18.20mV	21.40mV	11.50mV	Pass
Crossload1	10.20mV	16.30mV	20.10mV	4.30mV	Pass
Crossload2	20.70mV	13.90mV	18.10mV	8.20mV	Pass

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PAGE 10/16

Anex

XPG Pylon 450W Bronze

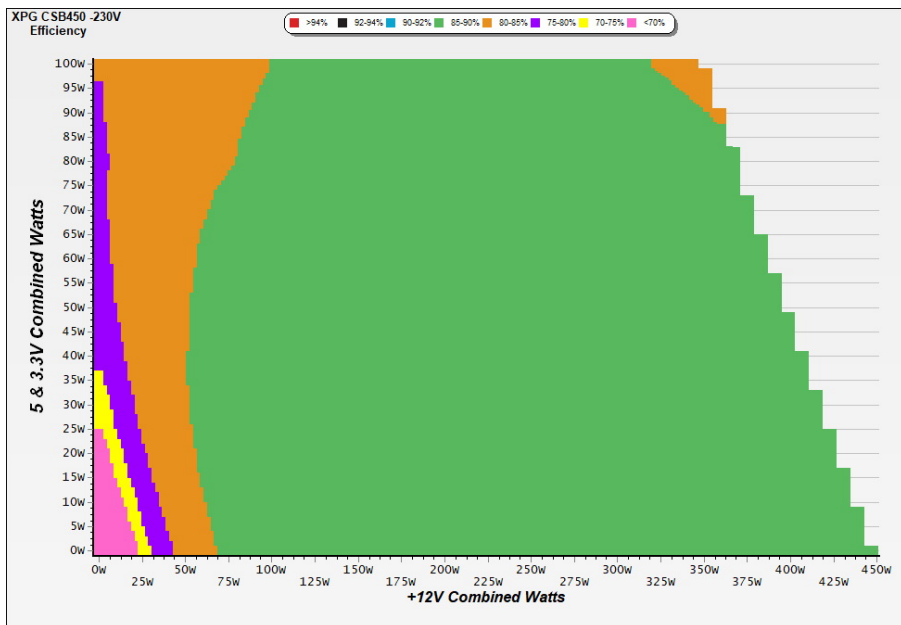
230V

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PAGE 11/16

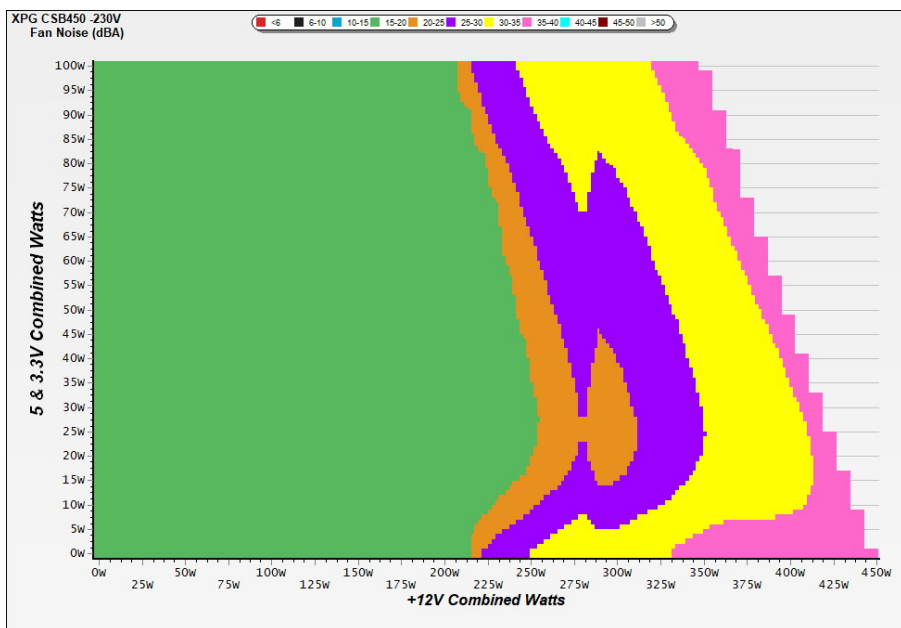
EFFICIENCY GRAPH 230V



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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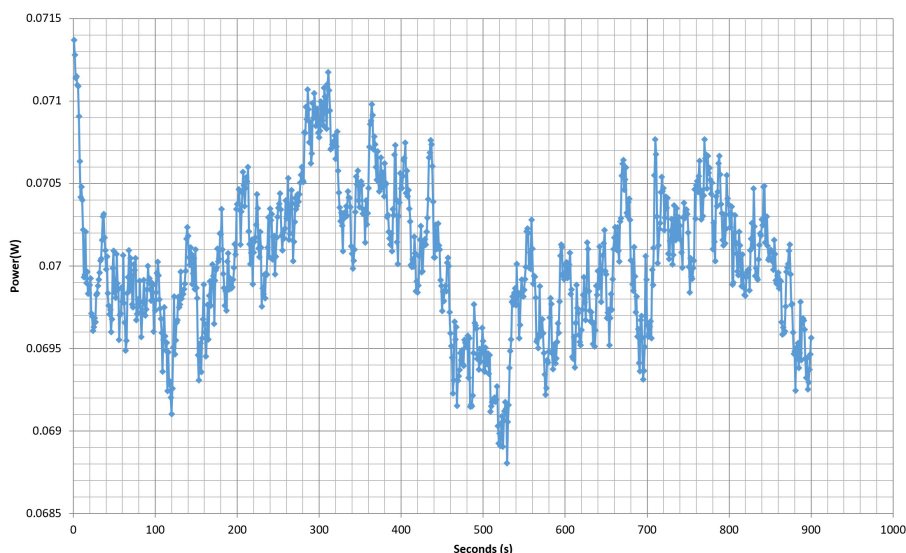
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VAMPIRE POWER -230V

Power - 25/08/2020 - 08:50



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PAGE 13/16

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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
1	1.922A	1.992A	2.003A	0.985A	44.977	79.072%	796	19.6	34.14°C	0.831
	12.162V	5.021V	3.296V	5.075V	56.881				37.83°C	230.28V
2	4.867A	2.990A	3.007A	1.185A	90.040	85.257%	799	19.7	34.91°C	0.918
	12.151V	5.017V	3.292V	5.064V	105.610				39.55°C	230.28V
3	8.154A	3.491A	3.512A	1.386A	135.051	87.295%	801	19.7	35.22°C	0.948
	12.140V	5.014V	3.290V	5.053V	154.707				40.36°C	230.28V
4	11.448A	3.992A	4.015A	1.587A	180.059	87.901%	804	19.9	35.83°C	0.963
	12.129V	5.012V	3.287V	5.042V	204.843				41.50°C	230.28V
5	14.403A	4.992A	5.025A	1.790A	225.055	87.943%	808	20.0	36.24°C	0.971
	12.118V	5.010V	3.285V	5.030V	255.910				42.80°C	230.28V
6	17.364A	5.992A	6.034A	1.994A	270.048	87.663%	898	22.7	36.66°C	0.975
	12.107V	5.008V	3.283V	5.017V	308.051				44.00°C	230.28V
7	20.340A	6.995A	7.043A	2.199A	315.130	86.986%	1194	30.4	37.23°C	0.978
	12.095V	5.005V	3.280V	5.005V	362.275				45.27°C	230.28V
8	23.315A	8.003A	8.060A	2.404A	360.130	86.358%	1457	36.0	37.74°C	0.982
	12.082V	5.001V	3.277V	4.993V	417.022				46.40°C	230.27V
9	26.733A	8.505A	8.553A	2.408A	405.201	85.840%	1739	40.6	38.46°C	0.985
	12.070V	4.999V	3.275V	4.986V	472.041				47.77°C	230.27V
10	30.078A	9.010A	9.079A	2.512A	449.906	85.148%	2043	44.4	38.82°C	0.987
	12.058V	4.996V	3.272V	4.978V	528.382				48.70°C	230.27V
11	33.824A	9.014A	9.084A	2.516A	494.705	84.625%	2045	44.4	39.56°C	0.988
	12.047V	4.994V	3.270V	4.971V	584.582				50.40°C	230.27V
CL1	0.102A	12.004A	11.999A	0.000A	100.687	80.297%	821	20.5	36.42°C	0.934
	12.143V	5.003V	3.283V	5.066V	125.393				42.60°C	230.28V
CL2	37.520A	1.001A	0.999A	1.000A	465.807	86.168%	2041	44.4	38.62°C	0.987
	12.060V	5.010V	3.281V	5.023V	540.581				48.92°C	230.27V

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PAGE 14/16

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20-80W LOAD TESTS 230V

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1	1.220A	0.499A	0.500A	0.196A	20.003	68.253%	792	19.5	0.669
	12.169V	5.026V	3.299V	5.098V	29.307				230.28V
2	2.441A	0.996A	1.001A	0.393A	39.994	78.407%	792	19.5	0.809
	12.163V	5.023V	3.297V	5.091V	51.008				230.29V
3	3.666A	1.494A	1.502A	0.590A	60.026	82.955%	793	19.5	0.872
	12.159V	5.021V	3.296V	5.083V	72.360				230.28V
4	4.885A	1.993A	2.004A	0.788A	79.977	85.039%	794	19.5	0.905
	12.154V	5.020V	3.294V	5.076V	94.047				230.28V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	7.70mV	9.50mV	13.50mV	6.60mV	Pass
20% Load	8.10mV	10.60mV	13.20mV	6.40mV	Pass
30% Load	8.90mV	10.70mV	14.20mV	6.70mV	Pass
40% Load	9.20mV	11.70mV	14.30mV	6.70mV	Pass
50% Load	10.00mV	12.60mV	15.00mV	7.50mV	Pass
60% Load	10.40mV	13.00mV	15.30mV	8.30mV	Pass
70% Load	12.00mV	14.50mV	16.10mV	15.90mV	Pass
80% Load	12.40mV	15.40mV	17.00mV	9.80mV	Pass
90% Load	13.80mV	16.60mV	17.40mV	10.50mV	Pass
100% Load	19.50mV	18.20mV	20.50mV	10.90mV	Pass
110% Load	21.90mV	18.30mV	20.40mV	11.10mV	Pass
Crossload1	10.10mV	15.20mV	19.70mV	4.30mV	Pass
Crossload2	18.90mV	13.50mV	18.20mV	8.30mV	Pass

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

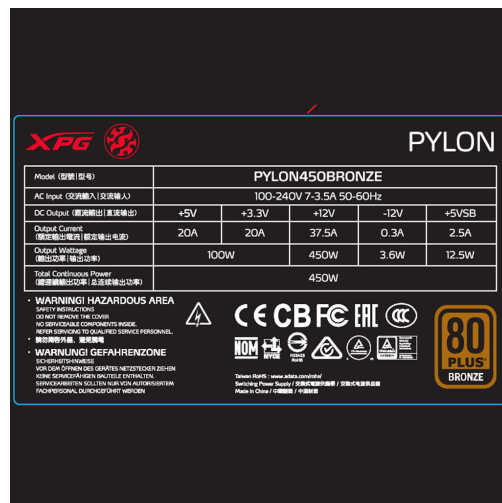
PAGE 15/16

Anex

XPG Pylon 450W Bronze



Top side



Power specifications label

CERTIFICATIONS 115V



CERTIFICATIONS 230V



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