EFFICIENCY AND NOISE REPORT IN ACCORDANCE WITH
CYBENETICS ETA AND CYBENETICS LAMBDA PROCEDURE

XPG Pylon 750W

Lab ID#: AD75001701
Receipt Date: Jul 31, 2020
Test Date: Aug 24, 2020

Report: 20PS1701A
Report Date: Aug 25, 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)	10-5
Rated Frequency (Hz)	50-60
Rated Power (W)	750
Type	ATX12V
Cooling	120mm Fluid Dynamic Bearing Fan (HA1225H12F-Z)
Semi-Passive Operation	✗
Cable Design	Fixed cables

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
Transformer	3kVA x2

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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6 (+-2°C / +- 3.6°F)
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
ALPM (Alternative Low Power Mode) compatible	✓

115V

Average Efficiency	85.940%
Efficiency With 10W (≤500W) or 2% (>500W)	66.482
Average Efficiency 5VSB	79.781%
Standby Power Consumption (W)	0.0375167
Average PF	0.986
Avg Noise Output	31.49 dB(A)
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	Standard++

230V

Average Efficiency	88.172%
Average Efficiency 5VSB	78.305%
Standby Power Consumption (W)	0.0730365
Average PF	0.963
Avg Noise Output	30.98 dB(A)
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	Standard++

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62.5	2.5	0.3
	Watts	120		750	12.5	3.6
Total Max. Power (W)		750				

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CABLES AND CONNECTORS

Native Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Caps
ATX connector 20+4 pin (640mm)	1	1	16-22AWG	No
8 pin EPS12V (660mm) / 4+4 pinEPS12V (+150mm)	1	1 / 1	18AWG	No
6+2 pin PCIe (580mm+150mm)	2	4	18AWG	No
SATA (550mm+150mm+150mm) / 4-pin Molex (+150mm)	2	6 / 2	18AWG	No
SATA (550mm+150mm) / 4-pin Molex (+150mm) / FDD (+150mm)	1	2 / 1 / 1	18-22AWG	No

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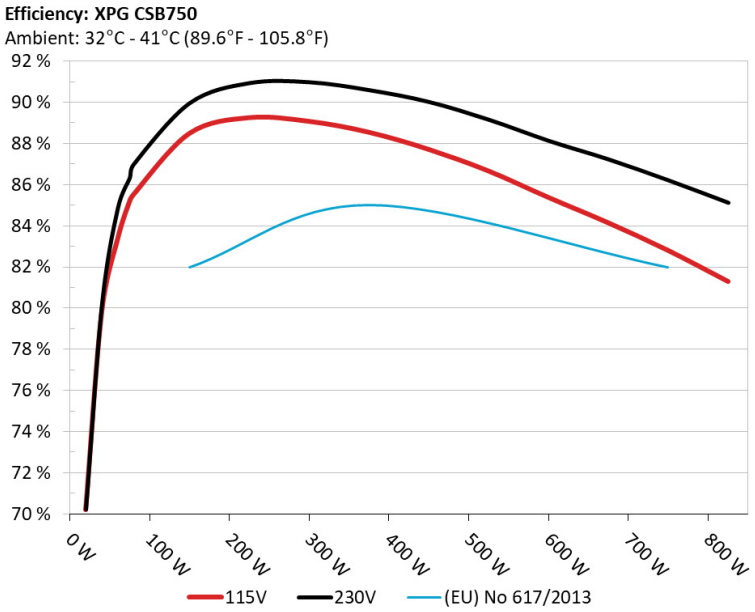
General Data	-
Manufacturer (OEM)	CWT
PCB Type	Single Sided
Primary Side	-
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV, 1x CAP200DG (Discharge IC)
Inrush Protection	NTC Thermistor SCK - 2R58
Bridge Rectifier(s)	1x GBU1506 (600V, 15A @ 100°C)
APFC MOSFETs	2x Great Power GP28S50G (500 V, 28 A, Rds (on): 0.125 Ohm)
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 AP6N3R5I FET(60V, 45A @ 100°C, Rds (on): 3.58 mOhm) & 1x Sync Power SP6019 Driver IC
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

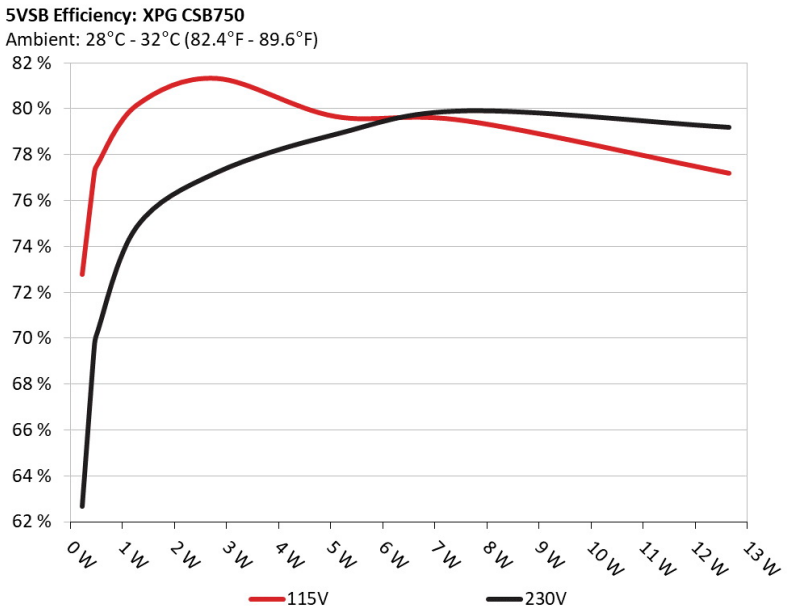
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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

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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	72.785%	0.034
	5.107V	0.316		115.14V
2	0.090A	0.460	77.181%	0.062
	5.107V	0.596		115.14V
3	0.550A	2.805	81.328%	0.259
	5.098V	3.449		115.14V
4	1.000A	5.090	79.668%	0.341
	5.089V	6.389		115.14V
5	1.500A	7.618	79.470%	0.385
	5.078V	9.586		115.14V
6	2.500A	12.647	77.196%	0.430
	5.058V	16.383		115.14V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.230	62.670%	0.065
	5.083V	0.367		230.28V
2	0.090A	0.460	69.592%	0.022
	5.107V	0.661		230.28V
3	0.550A	2.805	77.209%	0.112
	5.098V	3.633		230.28V
4	1.000A	5.090	78.878%	0.179
	5.089V	6.453		230.28V
5	1.500A	7.618	79.904%	0.231
	5.078V	9.534		230.28V
6	2.501A	12.648	79.184%	0.299
	5.058V	15.973		230.28V

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115V

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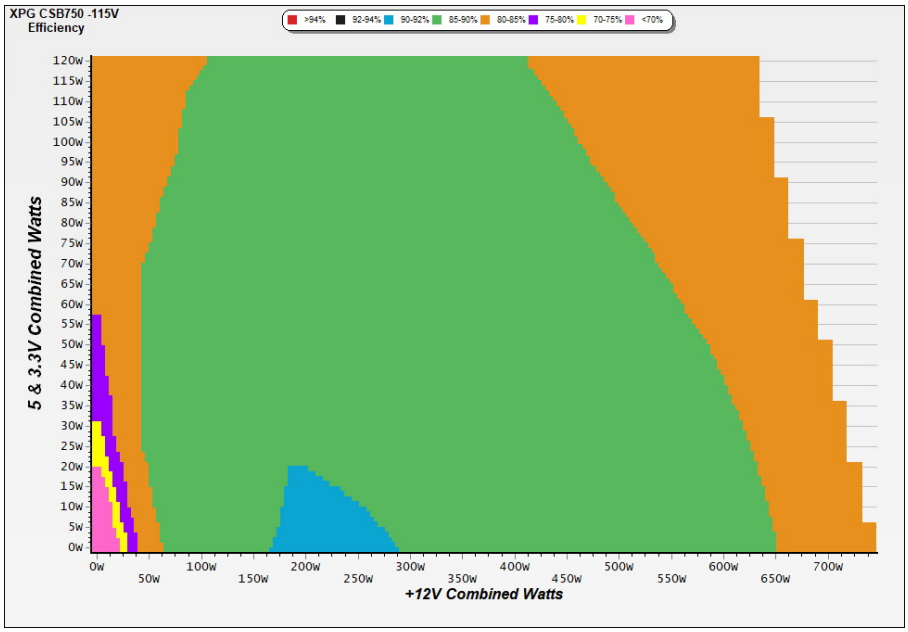
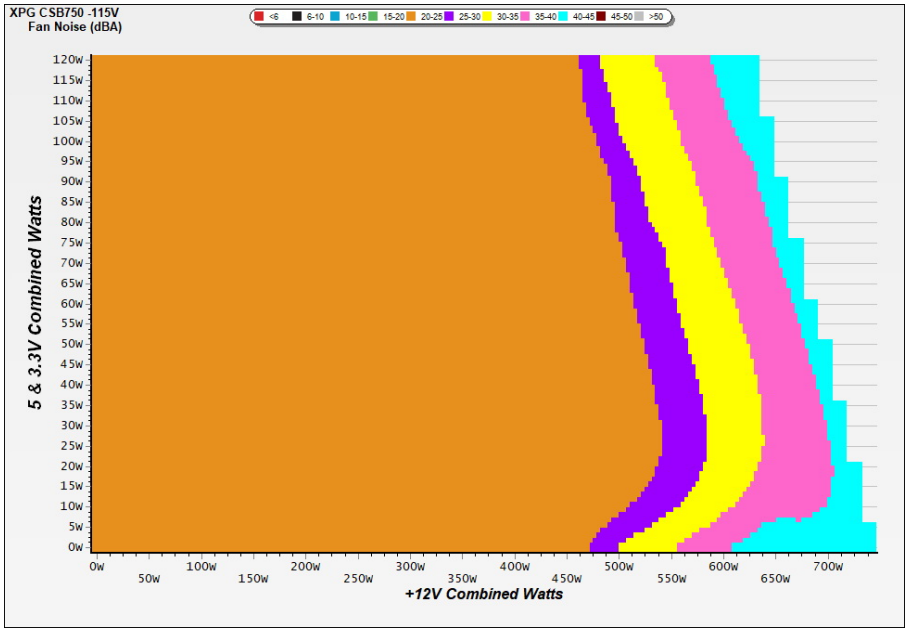
EFFICIENCY GRAPH 115V



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

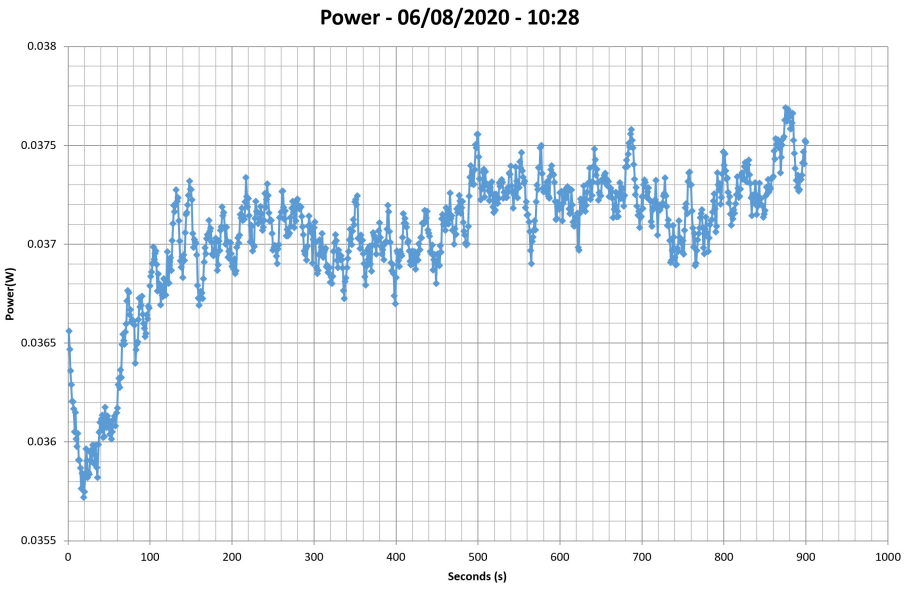
NOISE GRAPH 115V



INFO

The PSU's noise in its entire operational range and under 30-32 °C (+-2 °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

VAMPIRE POWER -115V



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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COMMISSION REGULATION (EU) NO 617/2013 TESTING 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	4.380A	1.992A	2.009A	0.985A	74.969	85.180%	882	22.1	34.48°C	0.966
	12.185V	5.018V	3.286V	5.077V	88.012				36.80°C	115.12V
2	9.790A	2.990A	3.017A	1.185A	150.040	88.493%	885	22.5	34.51°C	0.980
	12.170V	5.014V	3.282V	5.065V	169.550				37.30°C	115.12V
5	26.739A	4.996A	5.041A	1.791A	374.690	88.549%	896	22.8	36.45°C	0.990
	12.124V	5.005V	3.273V	5.027V	423.145				40.97°C	115.11V
10	55.071A	9.024A	9.116A	2.519A	749.892	82.803%	2091	45.6	39.86°C	0.994
	12.033V	4.989V	3.258V	4.963V	905.630				49.10°C	115.09V

230V

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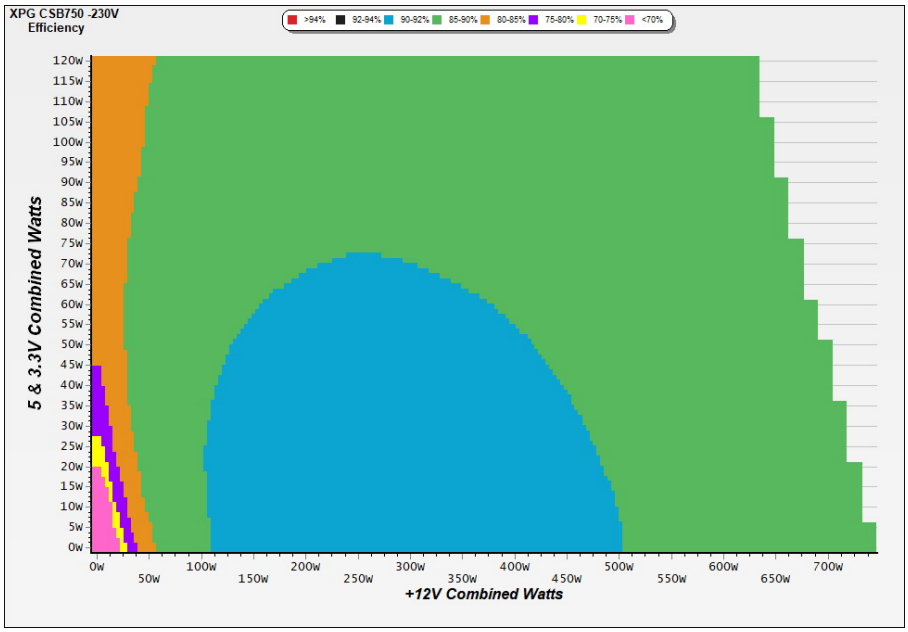
EFFICIENCY GRAPH 230V



INFO

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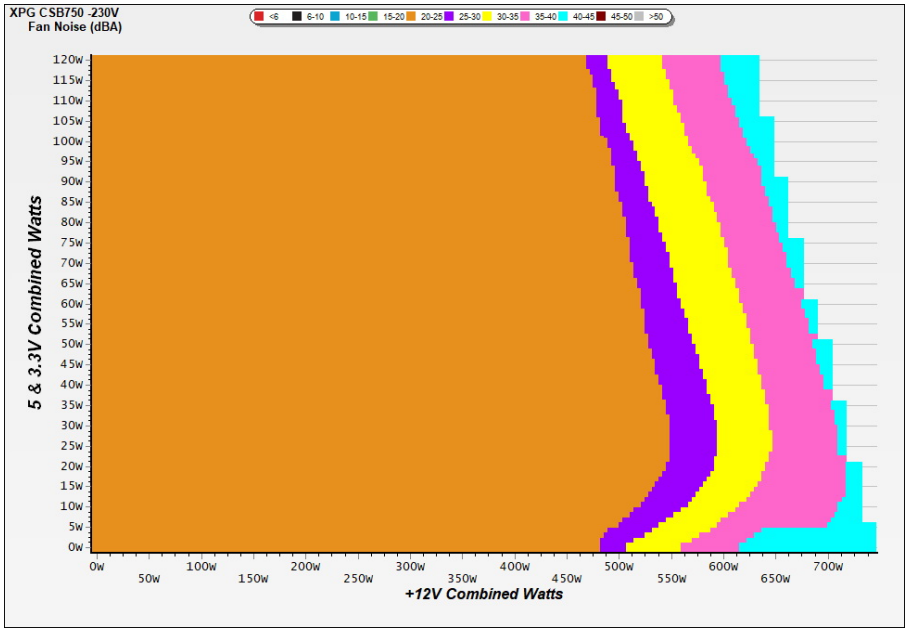
NOISE GRAPH 230V



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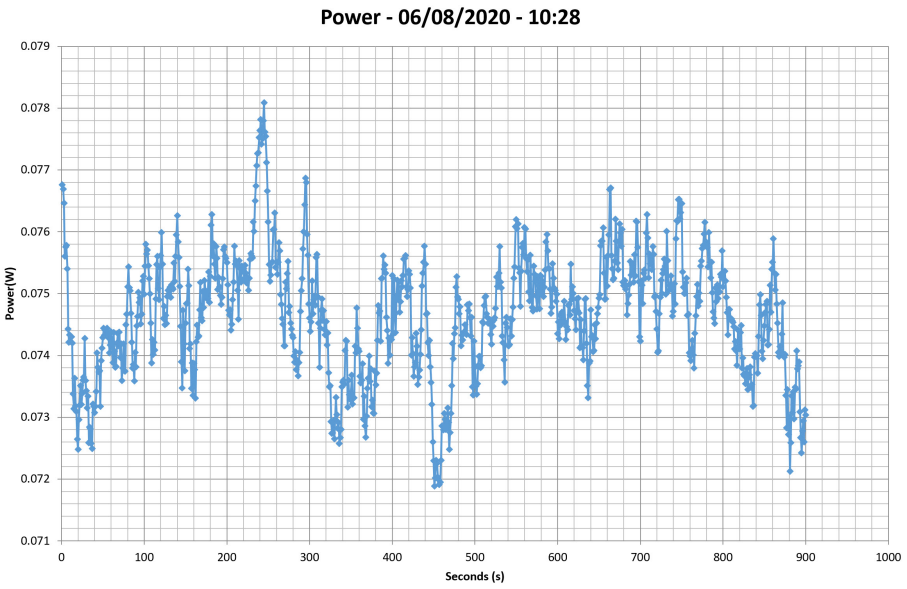
VAMPIRE POWER -230V



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COMMISSION REGULATION (EU) NO 617/2013 TESTING 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	4.382A	1.994A	2.008A	0.985A	74.969	86.323%	881	22.0	34.60°C	0.870
	12.179V	5.017V	3.285V	5.076V	86.847				37.11°C	230.27V
2	9.794A	2.992A	3.018A	1.185A	150.039	89.946%	884	22.5	34.87°C	0.939
	12.164V	5.013V	3.282V	5.064V	166.810				37.87°C	230.27V
5	26.756A	4.999A	5.043A	1.792A	374.716	90.577%	896	22.8	36.44°C	0.978
	12.117V	5.003V	3.272V	5.024V	413.701				42.11°C	230.26V
10	55.111A	9.032A	9.122A	2.521A	749.939	86.197%	2101	45.9	39.73°C	0.988
	12.025V	4.985V	3.256V	4.960V	870.027				49.22°C	230.26V

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XPG Pylon 750W

Top side

Power specifications label

CERTIFICATIONS 115V

CYBENETICS SILVER

CYBENETICS STANDARD++

CERTIFICATIONS 230V

CYBENETICS SILVER 230v

CYBENETICS STANDARD++ 230v

Aristeidis Bitziopoulos
Lab Director

Cybenetics offers the ETA and Lambda voluntary certification programs, through which the efficient and silent power supplies are promoted

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