

Anex

Cougar Polar X2 1050W

Lab ID#: CG10502176
Receipt Date: May 4, 2023
Test Date: May 15, 2023

Report: 23PS2176A
Report Date: May 16, 2023

DUT INFORMATION		DUT SPECIFICATIONS	
Brand	Cougar	Rated Voltage (Vrms)	100-240
Manufacturer (OEM)	XHY-Power	Rated Current (Arms)	15-7
Series	Polar X2	Rated Frequency (Hz)	47-63
Model Number	CGR PRX2-1050	Rated Power (W)	1050
Serial Number	12BC02PX10500098	Type	ATX12V
DUT Notes		Cooling	135mm Hydraulic Dynamic Bearing Fan (DWPH EFF-14E12H)
		Semi-Passive Operation	✓
		Cable Design	Fully Modular

TEST EQUIPMENT	
Electronic Loads	Chroma 63601-5 x2 Chroma 63600-2 63640-80-80 x10 63610-80-20
AC Sources	Chroma 6530, APM SP300VAC4000W-P
Power Analyzers	RS HMC8015, N4L PPA1530, N4L PPA5530
Oscilloscopes	Picoscope 4444, Rigol DS7014, 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, Keithley 2015 - THD
UPS	FSP Champ Tower 3kVA, CyberPower OLS3000E 3kVA
Isolation Transformer	4kVA

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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
ALPM (Alternative Low Power Mode) compatible	✓
ATX v3.0 PSU Power Excursion	✓

115V

Average Efficiency	90.182%
Efficiency With 10W (≤500W) or 2% (>500W)	67.679
Average Efficiency 5VSB	81.696%
Standby Power Consumption (W)	0.0536000
Average PF	0.979
Avg Noise Output	22.37 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	A

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	87.5	3	0.3
	Watts	100		1050	15	3.6
Total Max. Power (W)		1050				

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

Hold-Up Time (ms)	27.4
AC Loss to PWR_OK Hold Up Time (ms)	23
PWR_OK Inactive to DC Loss Delay (ms)	4.4

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CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (650mm)	1	1	18AWG	No
4+4 pin EPS12V (650mm)	1	1	16AWG	No
8 pin EPS12V (650mm)	1	1	16AWG	No
6+2 pin PCIe (650mm)	1	1	16AWG	No
6+2 pin PCIe (650mm+100mm)	3	6	16AWG	No
12+4 pin PCIe (750mm) (600W)	1	1	16-26AWG	No
SATA (500mm+110mm+110mm+110mm)	3	12	18AWG	No
4-pin Molex (500mm+120mm+120mm+120mm)	1	4	18AWG	No
AC Power Cord (1360mm) - C13 coupler	1	1	18AWG	-

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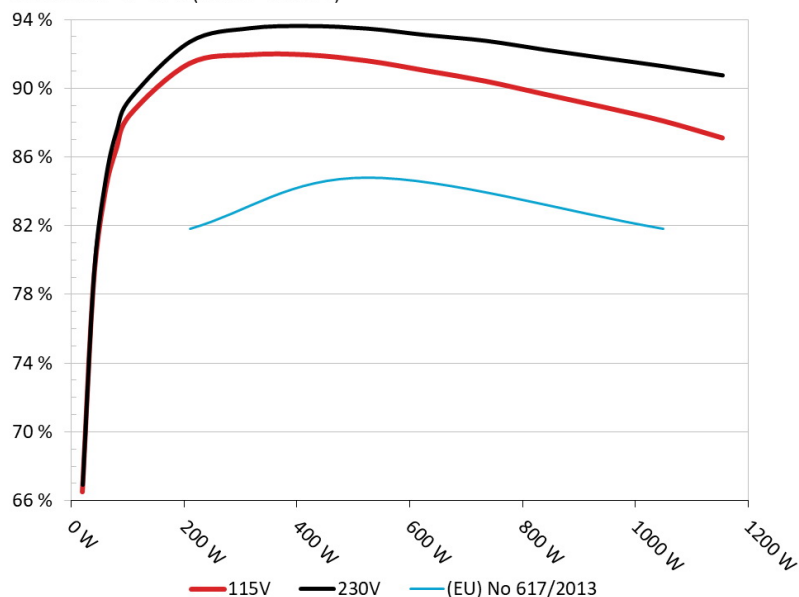
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Cougar Polar X2 1050W

Ambient: 37°C - 47°C (98.6°F - 116.6°F)



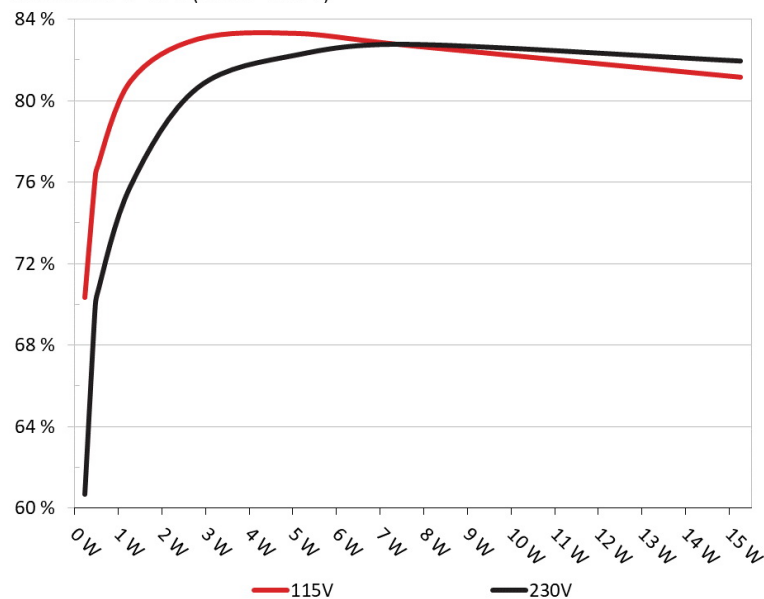
INFO

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: Cougar Polar X2 1050W

Ambient: 34°C - 36°C (93.2°F - 96.8°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	0.231W	69.858%	0.05
	5.135V	0.331W		114.89V
2	0.09A	0.462W	75.616%	0.09
	5.134V	0.611W		114.88V
3	0.55A	2.819W	82.525%	0.324
	5.126V	3.416W		114.88V
4	1A	5.118W	82.799%	0.395
	5.118V	6.181W		114.88V
5	1.5A	7.664W	82.207%	0.439
	5.11V	9.323W		114.87V
6	3A	15.244W	80.657%	0.492
	5.082V	18.9W		114.88V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231W	60.168%	0.017
	5.135V	0.385W		229.77V
2	0.09A	0.462W	69.2%	0.029
	5.134V	0.668W		229.78V
3	0.55A	2.819W	80.152%	0.141
	5.126V	3.517W		229.77V
4	1A	5.118W	81.772%	0.221
	5.118V	6.259W		229.78V
5	1.5A	7.664W	82.279%	0.274
	5.109V	9.315W		229.78V
6	3A	15.246W	81.462%	0.369
	5.083V	18.715W		229.77V

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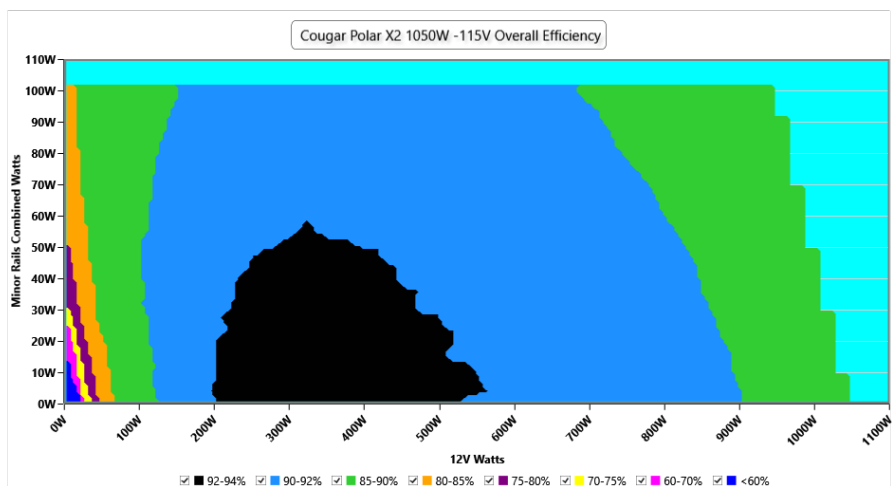
115V

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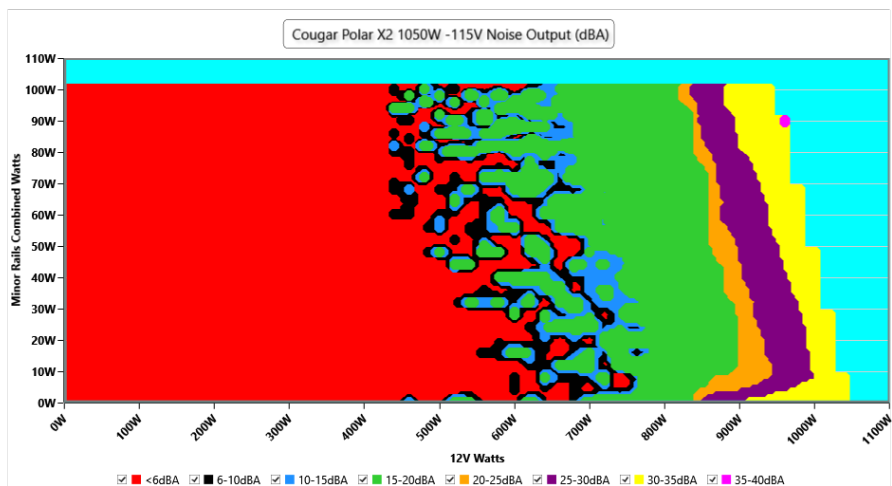
EFFICIENCY GRAPH 115V



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 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

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.88 V	114.81 V	113.85 V	114.95 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.97 Hz	59.40 Hz	60.03 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.419	1.417	1.340	1.421	1.490	PASS
Mains Voltage THD:	0.21 %	0.16 %	N/A	0.30 %	2.00 %	PASS
Real Power:	0.054 W	0.034 W	N/A	0.075 W	N/A	N/A
Apparent Power:	6.869 W	6.834 W	N/A	6.910 W	N/A	N/A
Power Factor:	0.009	N/A	N/A	N/A	N/A	N/A

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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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
10%	6.838A	1.99A	1.98A	0.978A	104.926	88.69%	0	<6.0	44.32°C	0.957
	12.186V	5.025V	3.332V	5.114V	118.306				40.1°C	114.83V
20%	14.680A	2.985A	2.973A	1.175A	209.908	91.654%	0	<6.0	45.31°C	0.973
	12.194V	5.024V	3.33V	5.105V	229.02				40.68°C	114.78V
30%	22.872A	3.484A	3.471A	1.374A	314.905	92.159%	0	<6.0	46.29°C	0.977
	12.192V	5.022V	3.327V	5.096V	341.702				41.29°C	114.74V
40%	31.022A	3.983A	3.97A	1.573A	419.401	92.152%	0	<6.0	47.39°C	0.977
	12.191V	5.021V	3.324V	5.087V	455.119				41.99°C	114.71V
50%	38.902A	4.981A	4.967A	1.773A	524.753	91.808%	0	<6.0	48.41°C	0.981
	12.191V	5.019V	3.322V	5.078V	571.572				42.4°C	114.67V
60%	46.711A	5.979A	5.966A	1.973A	629.297	91.232%	586	14.1	42.6°C	0.984
	12.192V	5.018V	3.319V	5.068V	689.781				49.21°C	114.64V
70%	54.595A	6.976A	6.965A	2.175A	734.64	90.621%	849	25.0	43.33°C	0.986
	12.190V	5.017V	3.317V	5.058V	810.666				50.43°C	114.6V
80%	62.489A	7.975A	7.965A	2.277A	839.474	89.862%	1233	35.8	43.65°C	0.988
	12.187V	5.016V	3.314V	5.05V	934.182				51.73°C	114.56V
90%	70.784A	8.474A	8.455A	2.38A	944.862	89.107%	1695	45.0	44.23°C	0.989
	12.184V	5.015V	3.311V	5.042V	1060.368				53.26°C	114.53V
100%	78.811A	8.976A	8.976A	2.984A	1049.707	88.304%	1711	45.3	45.16°C	0.99
	12.182V	5.013V	3.309V	5.026V	1188.746				55.25°C	114.48V
110%	86.693A	9.98A	10.074A	2.989A	1154.338	87.318%	1725	45.7	46.6°C	0.99
	12.181V	5.01V	3.305V	5.019V	1322				57.52°C	114.45V
CL1	0.114A	11.996A	11.931A	0A	101.292	83.865%	0	<6.0	45.39°C	0.959
	12.197V	5.019V	3.327V	5.123V	120.791				39.9°C	114.81V
CL2	0.113A	20.006A	0A	0A	101.326	82.216%	465	7.9	41.15°C	0.96
	12.200V	4.996V	3.335V	5.127V	123.24				48.16°C	114.81V
CL3	0.113A	0A	19.922A	0A	67.381	76.169%	0	<6.0	51.65°C	0.944
	12.200V	5.019V	3.313V	5.122V	88.463				42.63°C	114.83V
CL4	86.117A	0A	0A	0A	1049.469	88.889%	1706	45.2	45°C	0.99
	12.186V	5.01V	3.313V	5.082V	1180.656				55.98°C	114.49V

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20-80W 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	1.216A	0.497A	0.494A	0.195A	19.988	66.717%	0	<6.0	39.61°C	0.881
	12.202V	5.025V	3.337V	5.133V	29.96				36.53°C	114.85V
40W	2.681A	0.696A	0.692A	0.292A	39.989	78.955%	0	<6.0	40.31°C	0.921
	12.189V	5.025V	3.336V	5.13V	50.646				37.03°C	114.85V
60W	4.146A	0.895A	0.89A	0.39A	59.988	84.108%	0	<6.0	42.69°C	0.938
	12.186V	5.025V	3.335V	5.127V	71.331				38.95°C	114.84V
80W	5.604A	1.094A	1.089A	0.488A	79.918	86.66%	0	<6.0	43.22°C	0.946
	12.186V	5.026V	3.334V	5.124V	92.228				39.31°C	114.83V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	15.09mV	9.14mV	9.13mV	9.29mV	Pass
20% Load	35.70mV	10.98mV	9.54mV	9.23mV	Pass
30% Load	34.83mV	9.60mV	9.80mV	9.44mV	Pass
40% Load	32.02mV	9.70mV	9.54mV	10.37mV	Pass
50% Load	32.38mV	11.08mV	10.00mV	10.32mV	Pass
60% Load	31.10mV	11.44mV	10.82mV	11.19mV	Pass
70% Load	26.75mV	11.29mV	10.67mV	11.49mV	Pass
80% Load	27.93mV	12.83mV	13.64mV	11.80mV	Pass
90% Load	28.28mV	14.16mV	13.75mV	12.27mV	Pass
100% Load	43.53mV	15.69mV	14.89mV	14.69mV	Pass
110% Load	46.21mV	16.90mV	15.89mV	14.35mV	Pass
Crossload1	13.87mV	12.24mV	14.25mV	12.92mV	Pass
Crossload2	11.51mV	21.35mV	14.83mV	11.91mV	Pass
Crossload3	9.72mV	9.45mV	16.21mV	11.90mV	Pass
Crossload4	43.09mV	13.42mV	11.30mV	16.18mV	Pass

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Top side

MODEL NO. 型號 / 型号		CGR PRX2-1050				
AC INPUT 交流輸入 / 交流輸入		100-240V~ 47-63Hz 15-7A (AC 220V~ 50Hz 7A 中国大陆地区使用)				
DC OUTPUT 直流輸出 / 直流輸出		+3.3V	+5V	+12V	-12V	+5Vsb
MAX. A 最大電流 / 最大電流		20A	20A	87.5A	0.3A	3A
COMBINED 最大瓦特數 / 最大瓦特數		100W	1050W	3.6W	15W	
TOTAL MAX. OUTPUT POWER 總功率 / 总功率		1050W				



CAUTION! 警告
 • HAZARDOUS VOLTAGE INSIDE / 内部有危险电压 / Tension dangereuse à l'intérieur
 • DO NOT OPEN POWER SUPPLY UNIT / 请勿打开电源 / Ne pas ouvrir l'alimentation
 • SELECT THE RIGHT INPUT VOLTAGE / 選擇正確的輸入電壓 / Sélectionnez la bonne tension d'entrée
 • WARRANTY VOID IF SECURITY SEAL IS DAMAGED, REMOVED OR LOST / 包裝封條損壞、移動、遺失或丟失，本開關電源保固將失效 / Annulation de la garantie si le sceau est endommagé, retiré ou perdu / attention ne pas ouvrir l'alimentation
 中國製造 中國製造 Made in China

80 PLUS PLATINUM
 REAL GEAR FOR REAL GAMERS

Power specifications label

CERTIFICATIONS 115V




Aristeidis Bitziopoulos
Lab Director

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