



PCYES Aether 850W

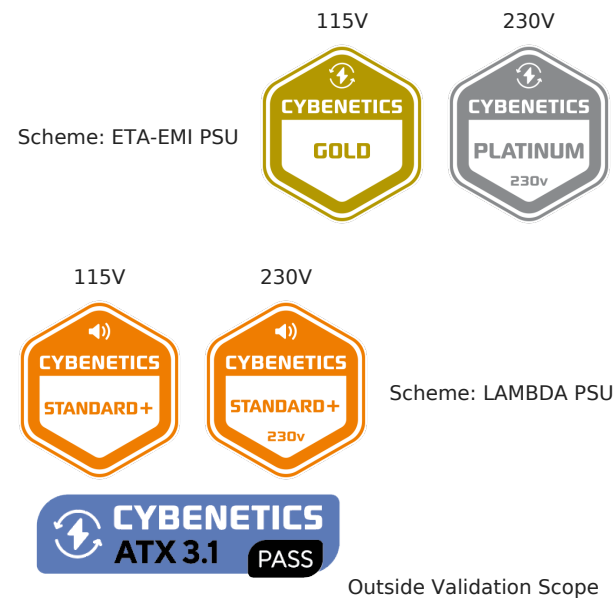
Serial Number

Lab ID PY85002437

Certification ID 252437

Test Result Report ID: 24PS2437A

Certificate Issue Date: May 11, 2024



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	PCYES
Model	Aether 850W
OEM/ODM	Kinpower
Serial Number	
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	15

Rated Frequency (Hz)	50-60
Rated Power (W)	850
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	120mm Rifle Bearing (EFS-14E12H)
Semi-Passive Operation	x
Cybenetics Testing Information	
Lab ID	PY85002437
Date of receipt	Apr 23, 2024
Testing Date	May 9, 2024
Report Issued Date	May 11, 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 (595mm)	1	1	16-22AWG	No
4+4 pin EPS12V (700mm)	2	2	16AWG	No
6+2 pin PCIe (550mm+150mm)	2	4	16-18AWG	No
12+4 pin PCIe (600mm) (600W)	1	1	16-24AWG	No
SATA (450mm+155mm+155mm)	3	9	18AWG	No
4-pin Molex (450mm+150mm+150mm)	1	3	18AWG	No

Protection Features(Manufacturer)

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	20	20	70.8	3	0.3
	Watts	103		850	15	3.6
Total Max. Power (W)		850				

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 v3.1 PSU Power Excursion	✓

Performance Summary

115V	
Accredited	
Average Efficiency (>1450 load combinations)	89.012%

Average Noise Output (>1450 Load Combinations)	37.41dBA
Average PF (>1450 Load Combinations)	0.973
Efficiency With 10W ($\leq$ 500W) or 2% (>500W) Load	69.021%
Standby Power Consumption	0.0615W
Non-Accredited	
12V Ripple (Full Load)	32.38mV
5V Ripple (Full Load)	16.19mV
3.3V Ripple (Full Load)	19.98mV
5VSB Ripple (Full Load)	50.85mV
12V Load Regulation	0.71%
5V Load Regulation	0.72%
3.3V Load Regulation	1.29%
5VSB Load Regulation	2.41%
Inrush Current	34.520A

230V

Accredited	
Average Efficiency (>1450 load combinations)	91.183%
Average Noise Output (>1450 Load Combinations)	37.05dBA
Average PF (>1450 Load Combinations)	0.935
Efficiency With 10W ($\leq$ 500W) or 2% (>500W) Load	68.448%
Standby Power Consumption	0.1088W
Non-Accredited	
12V Ripple (Full Load)	31.79mV
5V Ripple (Full Load)	17.33mV
3.3V Ripple (Full Load)	18.50mV
5VSB Ripple (Full Load)	49.32mV
12V Load Regulation	0.72%
5V Load Regulation	0.67%
3.3V Load Regulation	1.19%
5VSB Load Regulation	2.39%
Inrush Current	66.100A

12V Transient Response (200%)	11.48V	
5V Transient Response (200%)	5.049V	
3.3V Transient Response (200%)	3.261V	
5VSB Transient Response (200%)	5.017V	
Hold-Up Time & PWR_OK Signal	20.40ms	
AC Loss to PWR_OK Hold Up Time	17.90ms	
PWR_OK Inactive to DC Loss Delay	2.50ms	
PSU Timings: T1 (20% / 100%)	39.0ms	40.0ms
PSU Timings: T3 (20% / 100%)	117.0ms	116.0ms
OPP (25.74°C / 41.17°C)	124.12%	116.48%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	20.4
AC Loss to PWR_OK Hold Up Time (ms)	17.9
PWR_OK Inactive to DC Loss Delay (ms)	2.5



Tables

115V

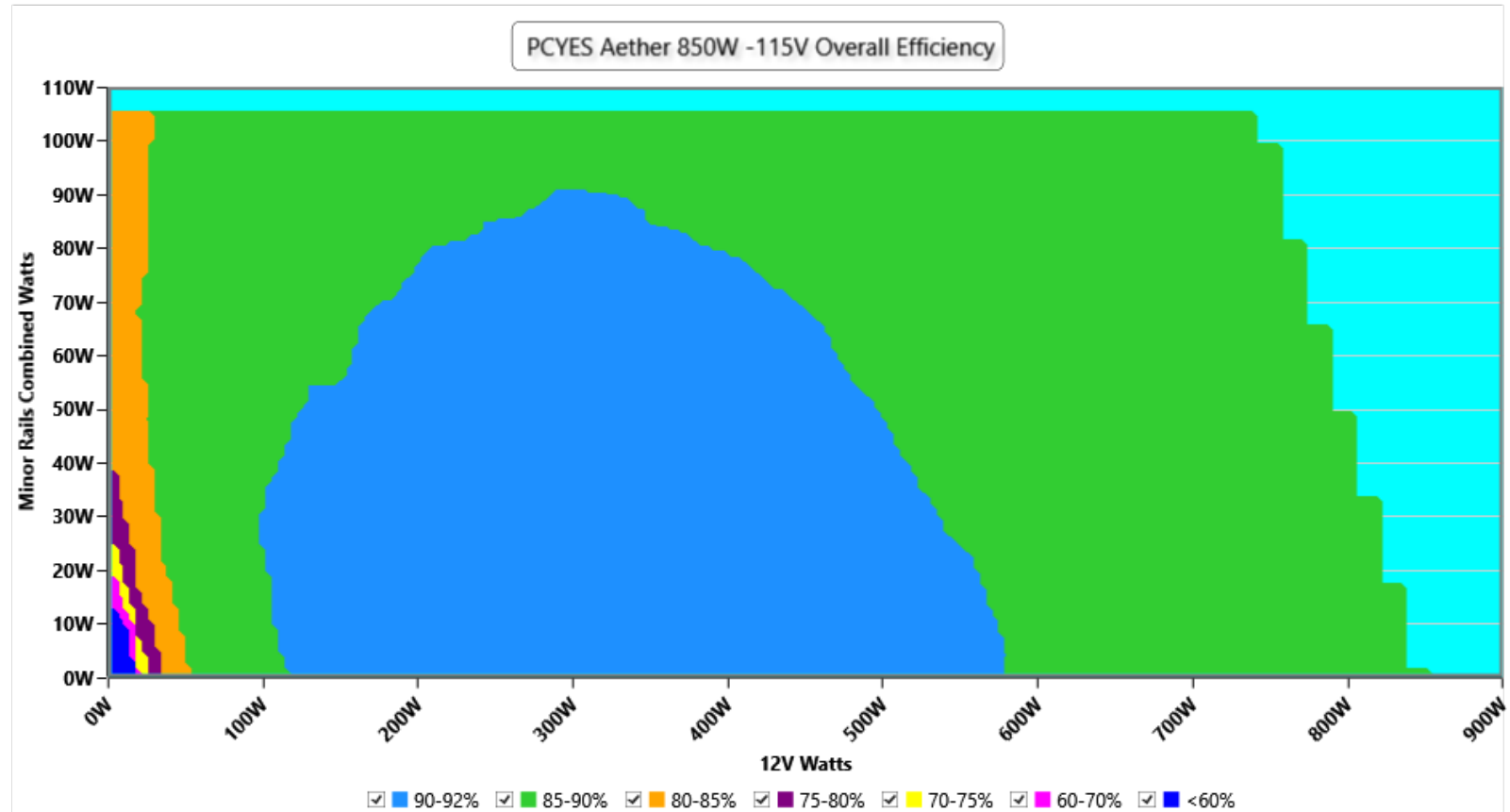
Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.93 V	114.89 V	113.85 V	114.97 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.99 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.417	1.490	PASS
Mains Voltage THD:	0.14 %	0.12 %	N/A	0.17 %	2.00 %	PASS
Real Power:	0.061 W	0.054 W	N/A	0.070 W	N/A	N/A
Apparent Power:	8.082 W	8.061 W	N/A	8.102 W	N/A	N/A
Power Factor:	0.008	N/A	N/A	N/A	N/A	N/A

230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	229.90 V	229.84 V	227.70 V	229.94 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	50.00 Hz	49.50 Hz	50.00 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.416	1.490	PASS
Mains Voltage THD:	0.13 %	0.11 %	N/A	0.16 %	2.00 %	PASS
Real Power:	0.109 W	0.075 W	N/A	0.156 W	N/A	N/A
Apparent Power:	27.558 W	27.504 W	N/A	27.653 W	N/A	N/A
Power Factor:	0.005	N/A	N/A	N/A	N/A	N/A

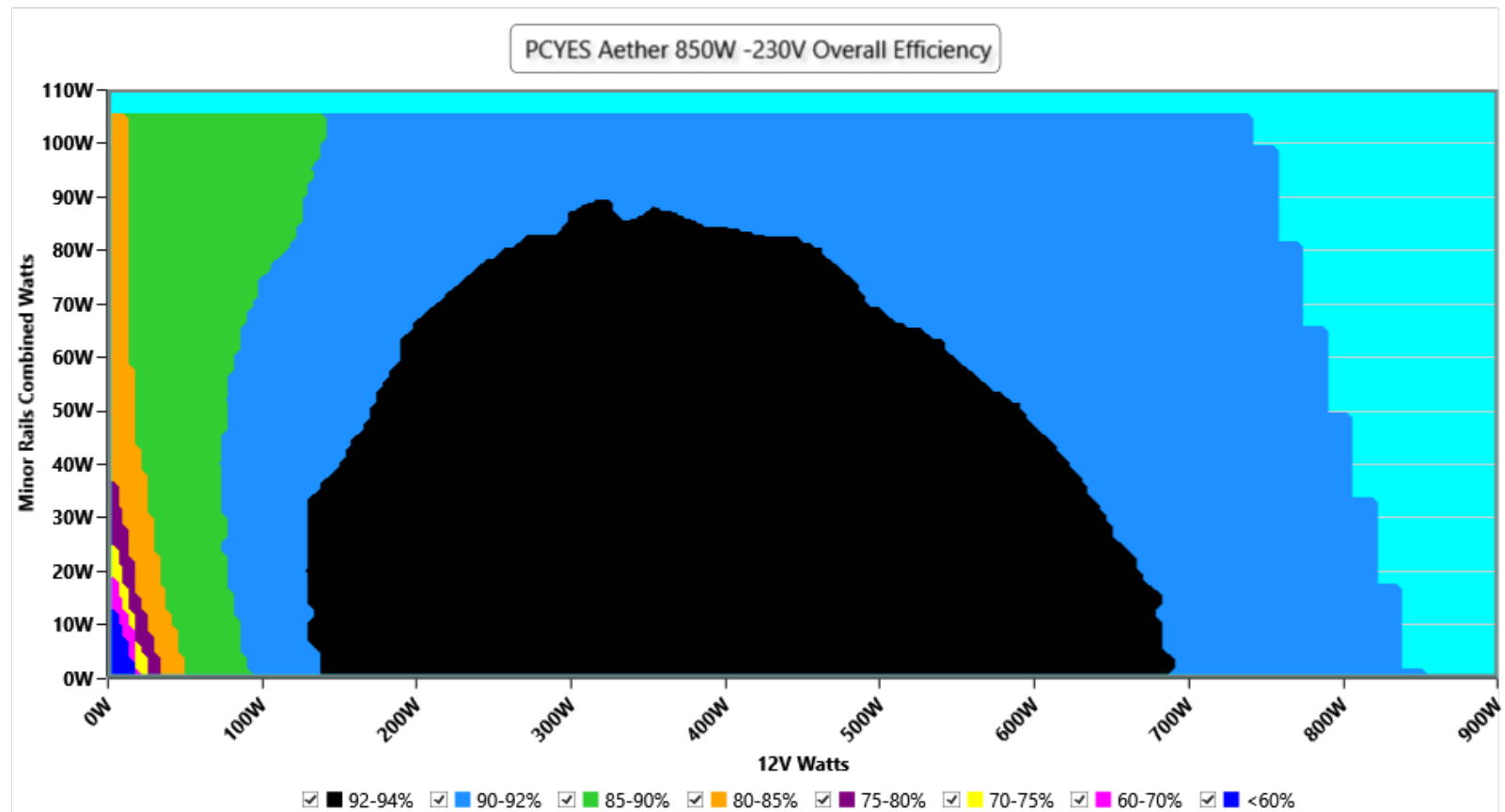
Efficiency Graph

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

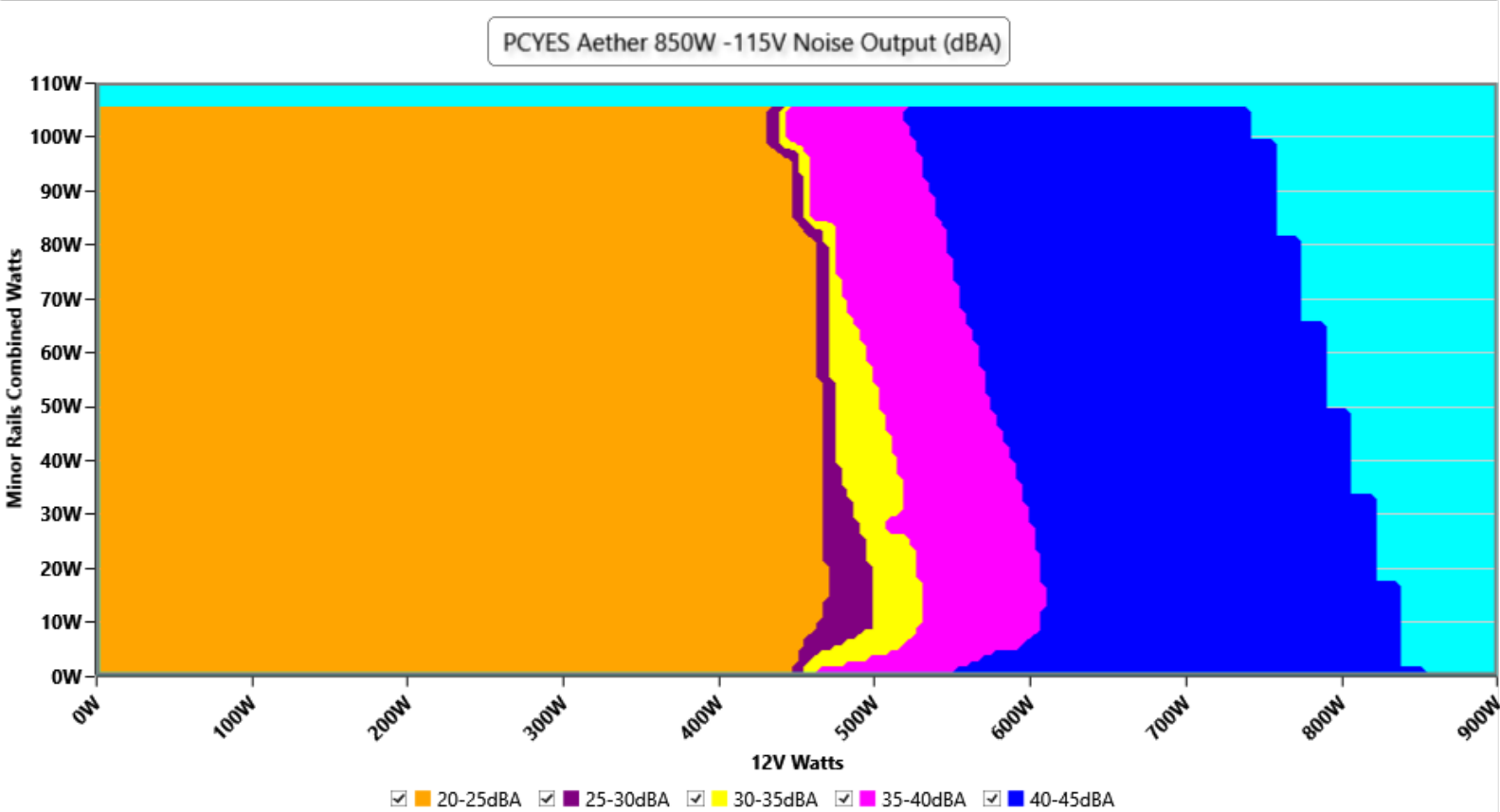


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This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations

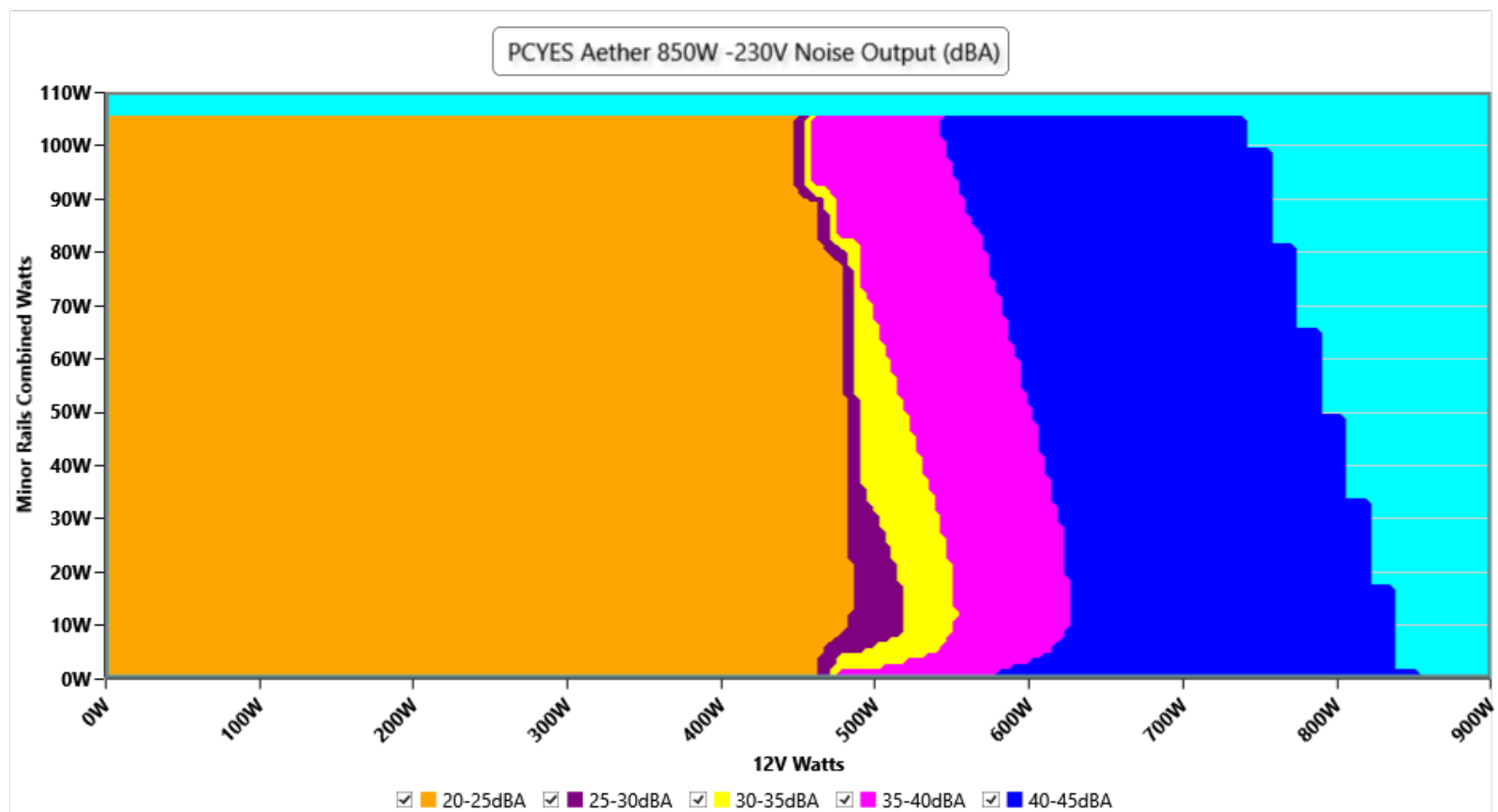
Noise Graph

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



INFO

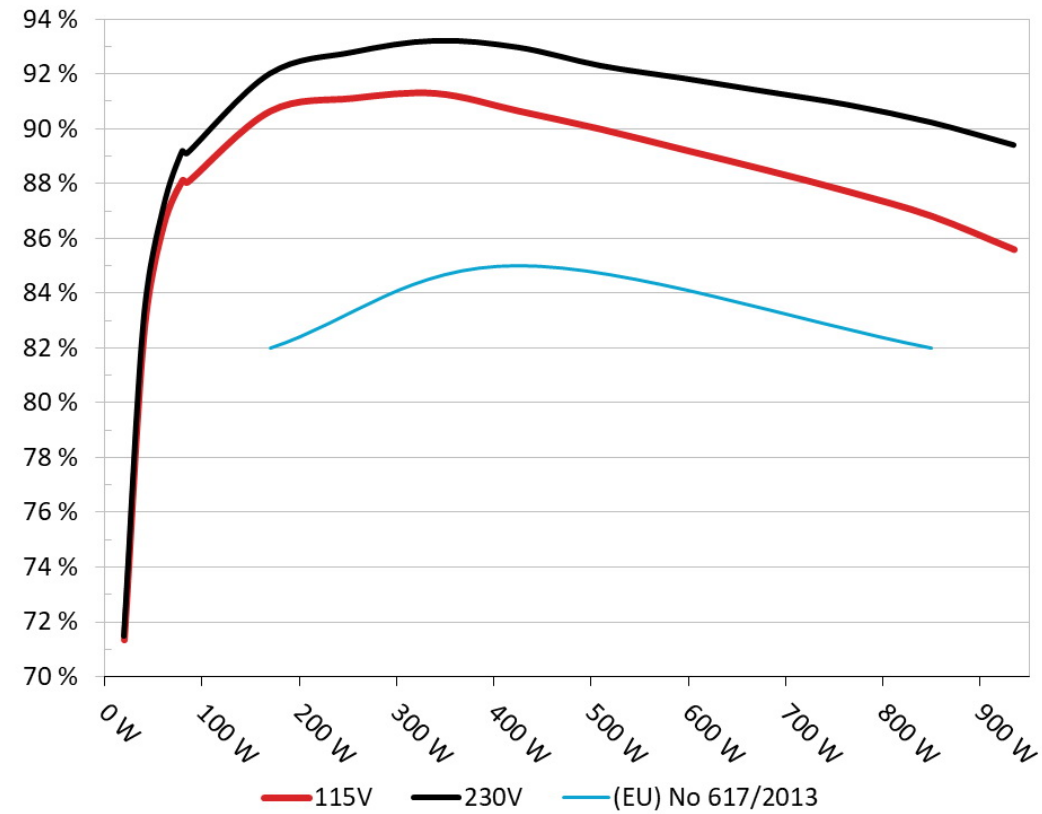
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance

Efficiency under high ambient temperature

Efficiency: PCYES Aether 850W

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



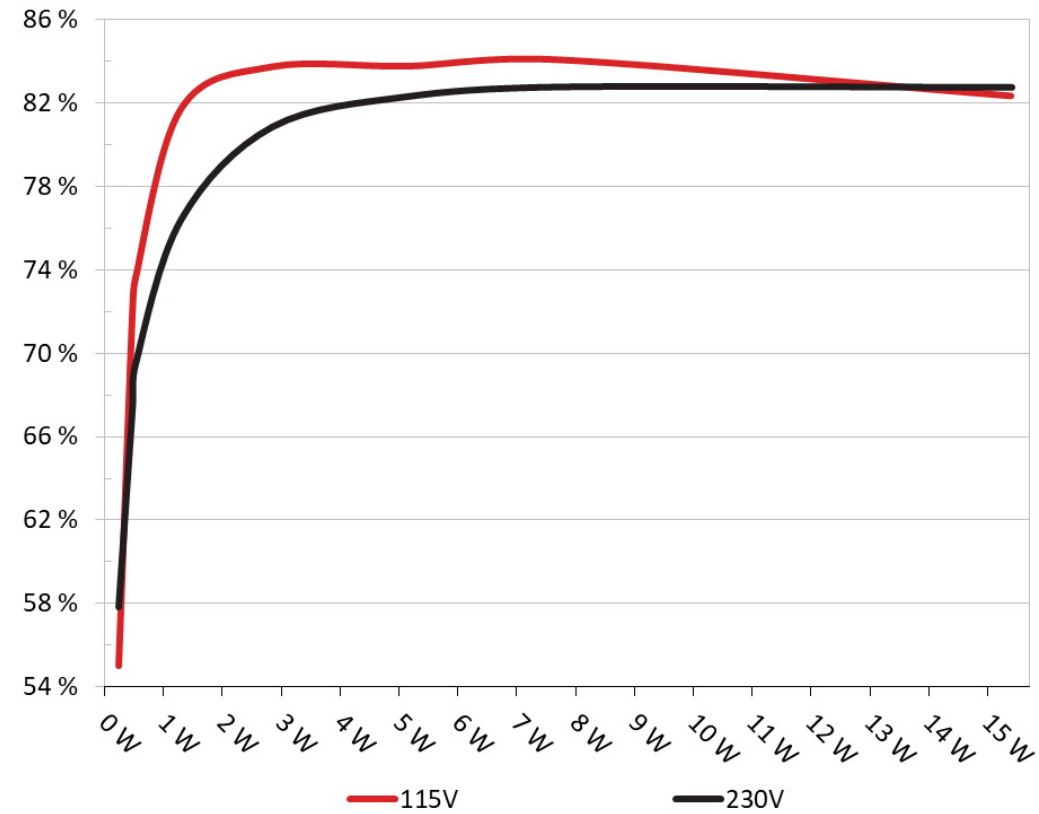
INFO

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: PCYES Aether 850W

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

5VSB Efficiency (ERP LOT 3/6 & CEC)

115V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.233W	55%	0.032
	5.177V	0.259W		114.91V
2	0.09A	0.466W	72.027%	0.078
	5.176V	0.647W		114.91V
3	0.55A	2.843W	83.764%	0.292
	5.169V	3.394W		114.91V
4	1A	5.163W	83.789%	0.364
	5.163V	6.162W		114.91V
5	1.5A	7.734W	84.094%	0.413
	5.156V	9.197W		114.91V
6	3A	15.401W	82.363%	0.471
	5.134V	18.698W		114.9V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.233W	57.843%	0.015
	5.177V	0.405W		229.88V
2	0.09A	0.466W	67.358%	0.025
	5.176V	0.693W		229.88V
3	0.55A	2.843W	80.862%	0.119
	5.17V	3.513W		229.88V
4	1A	5.163W	82.324%	0.193
	5.163V	6.271W		229.87V
5	1.5A	7.735W	82.775%	0.234
	5.156V	9.345W		229.87V
6	3A	15.402W	82.756%	0.338
	5.134V	18.61W		229.87V

Protection Features

Protection Features	
OCP (Cold @ 25°C)	12V: 92.4A (130.51%), 12.117V 5V: 27.3A (136.5%), 5.092V 3.3V: 27.1A (135.5%), 3.338V 5VSB: 4.4A (146.67%), 5.112V
OCP (Hot @ 41°C)	12V: 88.4A (124.86%), 12.128V 5V: 27.1A (135.5%), 5.086V 3.3V: 27A (135%), 3.313V 5VSB: 4.5A (150%), 4.961V, 54.01mV ripple
OPP (Cold @ 26°C)	1055.02W (124.12%)
OPP (Hot @ 41°C)	990.1W (116.48%)
OTP	✓ (145°C @ +12V 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 Thermistor & 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%	5.192A	1.947A	1.953A	0.97A	84.999	88.068%	900	23.2	40.05°C	0.921
	12.211V	5.135V	3.379V	5.157V	96.508				44.32°C	114.88V
20%	11.395A	2.923A	2.933A	1.166A	169.936	90.661%	902	23.2	40.53°C	0.95
	12.202V	5.132V	3.375V	5.146V	187.424				45.15°C	114.86V
30%	17.952A	3.412A	3.425A	1.363A	254.94	91.133%	904	23.2	41.34°C	0.966
	12.193V	5.129V	3.372V	5.136V	279.749				46.34°C	114.83V
40%	24.524A	3.901A	3.919A	1.561A	340.023	91.312%	906	23.2	41.65°C	0.977
	12.185V	5.127V	3.368V	5.125V	372.359				47.2°C	114.79V
50%	30.740A	4.88A	4.904A	1.76A	424.803	90.668%	1278	35.8	42.16°C	0.982
	12.176V	5.123V	3.365V	5.114V	468.523				48.18°C	114.77V
60%	36.947A	5.859A	5.889A	1.96A	509.322	90.007%	1527	39.6	42.62°C	0.985
	12.166V	5.121V	3.362V	5.102V	565.875				49.14°C	114.74V
70%	43.233A	6.84A	6.878A	2.16A	594.621	89.254%	1737	42.7	43.38°C	0.988
	12.155V	5.117V	3.359V	5.091V	666.214				50.41°C	114.71V
80%	49.530A	7.821A	7.872A	2.263A	679.478	88.509%	1745	42.7	43.79°C	0.99
	12.146V	5.113V	3.353V	5.08V	767.64				51.82°C	114.69V
90%	56.232A	8.316A	8.36A	2.367A	764.932	87.713%	1743	42.7	44.21°C	0.992
	12.136V	5.11V	3.349V	5.07V	872.053				53.29°C	114.64V
100%	62.676A	8.81A	8.876A	2.969A	849.742	86.825%	1741	42.7	45.88°C	0.993
	12.127V	5.107V	3.346V	5.052V	978.677				55.89°C	114.61V
110%	69.007A	9.8A	9.971A	2.975A	934.36	85.606%	1743	42.7	46.67°C	0.994
	12.116V	5.101V	3.34V	5.042V	1091.473				57.54°C	114.56V
CL1	0.115A	12.144A	12.236A	0.001A	104.301	81.903%	896	23.1	42.42°C	0.934
	12.206V	5.105V	3.343V	5.159V	127.352				52.63°C	114.88V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL2	0.113A	19.67A	0A	0.001A	101.364	80.913%	900	23.2	41.03°C	0.934
	12.207V	5.082V	3.359V	5.164V	125.279				50.15°C	114.87V
CL3	0.113A	0A	19.847A	0A	67.398	75.463%	900	23.2	42.4°C	0.918
	12.207V	5.111V	3.326V	5.163V	89.314				50.9°C	114.89V
CL4	70.011A	0A	0A	0.008A	849.545	87.797%	1759	43.0	44.63°C	0.993
	12.135V	5.123V	3.36V	5.105V	967.634				55.93°C	114.62V

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%	5.192A	1.947A	1.953A	0.97A	84.999	89.096%	900	23.2	40.23°C	0.812
	12.210V	5.136V	3.379V	5.157V	95.365				44.48°C	229.86V
20%	11.396A	2.923A	2.933A	1.166A	169.937	92.002%	902	23.2	40.57°C	0.895
	12.201V	5.133V	3.375V	5.146V	184.674				45.07°C	229.87V
30%	17.954A	3.411A	3.425A	1.363A	254.944	92.782%	904	23.2	41.01°C	0.926
	12.192V	5.13V	3.372V	5.135V	274.779				46.08°C	229.85V
40%	24.529A	3.901A	3.918A	1.561A	340.04	93.202%	906	23.2	41.67°C	0.943
	12.184V	5.127V	3.369V	5.125V	364.843				47.17°C	229.83V
50%	30.751A	4.88A	4.904A	1.76A	424.871	92.959%	1300	35.8	42.34°C	0.954
	12.174V	5.124V	3.365V	5.113V	457.05				48.4°C	229.82V
60%	36.957A	5.858A	5.89A	1.96A	509.384	92.292%	1542	40.1	42.86°C	0.961
	12.165V	5.121V	3.362V	5.102V	551.913				49.45°C	229.81V
70%	43.241A	6.839A	6.879A	2.161A	594.668	91.832%	1737	42.7	43.48°C	0.966
	12.154V	5.118V	3.358V	5.09V	647.546				50.49°C	229.78V
80%	49.535A	7.82A	7.872A	2.264A	679.5	91.347%	1743	42.7	43.84°C	0.971
	12.145V	5.114V	3.354V	5.08V	743.875				51.85°C	229.76V
90%	56.233A	8.313A	8.356A	2.367A	764.917	90.856%	1742	42.7	44.36°C	0.974
	12.136V	5.111V	3.351V	5.07V	841.902				53.39°C	229.76V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	62.677A	8.807A	8.872A	2.969A	849.724	90.218%	1741	42.7	45.84°C	0.976
	12.126V	5.109V	3.348V	5.053V	941.86				55.85°C	229.74V
110%	69.002A	9.795A	9.966A	2.974A	934.301	89.395%	1739	42.7	46.81°C	0.978
	12.116V	5.104V	3.342V	5.043V	1045.124				57.69°C	229.73V
CL1	1.968A	12.144A	12.237A	0.485A	129.406	85.55%	895	23.1	42.39°C	0.876
	12.202V	5.105V	3.342V	5.15V	151.266				53.05°C	229.87V
CL2	1.966A	18.989A	0.983A	0.485A	126.481	84.742%	898	23.1	41.07°C	0.875
	12.204V	5.091V	3.358V	5.154V	149.257				49.2°C	229.87V
CL3	1.966A	0.977A	18.347A	0.485A	92.508	81.701%	898	23.1	40.91°C	0.841
	12.203V	5.117V	3.325V	5.155V	113.218				46.97°C	229.88V
CL4	69.159A	0.976A	0.982A	0.49A	849.863	91.104%	1756	42.9	44.49°C	0.976
	12.133V	5.124V	3.361V	5.098V	932.86				53.42°C	229.75V

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	1.216A	0.486A	0.487A	0.193A	19.998	71.347%	895	23.1	36.56°C	0.818
	12.204V	5.144V	3.389V	5.174V	28.029				39.66°C	114.89V
40W	2.676A	0.681A	0.682A	0.29A	39.997	82.477%	897	23.1	37.14°C	0.881
	12.213V	5.142V	3.387V	5.171V	48.493				40.5°C	114.89V
60W	4.138A	0.875A	0.877A	0.387A	59.995	86.45%	897	23.1	38.17°C	0.904
	12.212V	5.14V	3.384V	5.168V	69.403				41.82°C	114.89V
80W	5.594A	1.07A	1.073A	0.484A	79.938	88.14%	900	23.2	39.1°C	0.918
	12.211V	5.138V	3.382V	5.165V	90.681				43.06°C	114.89V

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	1.216A	0.486A	0.487A	0.193A	20	71.471%	896	23.1	36.65°C	0.508
	12.205V	5.143V	3.388V	5.174V	27.981				39.75°C	229.88V
40W	2.676A	0.681A	0.682A	0.29A	39.998	82.93%	897	23.1	37.2°C	0.662
	12.213V	5.141V	3.385V	5.171V	48.228				40.52°C	229.88V
60W	4.138A	0.875A	0.878A	0.387A	59.995	87.044%	897	23.1	38.25°C	0.751
	12.212V	5.14V	3.384V	5.168V	68.926				41.83°C	229.88V
80W	5.594A	1.07A	1.073A	0.484A	79.934	89.176%	898	23.1	39.45°C	0.802
	12.210V	5.139V	3.382V	5.165V	89.639				43.19°C	229.88V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	12.8 mV	9.1 mV	9.2 mV	13.9 mV	Pass
20% Load	13.1 mV	8.9 mV	8.5 mV	16.3 mV	Pass
30% Load	15.2 mV	10.3 mV	9.5 mV	20.7 mV	Pass
40% Load	15.6 mV	10.5 mV	9.0 mV	21.8 mV	Pass
50% Load	17.3 mV	10.9 mV	10.3 mV	25.9 mV	Pass
60% Load	19.8 mV	11.6 mV	11.9 mV	30.2 mV	Pass
70% Load	21.9 mV	12.7 mV	12.8 mV	35.5 mV	Pass
80% Load	19.8 mV	12.5 mV	13.9 mV	37.0 mV	Pass
90% Load	21.1 mV	12.7 mV	15.2 mV	40.2 mV	Pass
100% Load	32.4 mV	16.2 mV	20.0 mV	50.9 mV	Fail
110% Load	33.7 mV	18.0 mV	19.6 mV	56.3 mV	Fail
Crossload 1	22.2 mV	18.8 mV	21.9 mV	17.1 mV	Pass
Crossload 2	14.6 mV	16.6 mV	15.7 mV	14.0 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload 3	14.1 mV	19.7 mV	18.5 mV	12.9 mV	Pass
Crossload 4	31.3 mV	14.4 mV	11.3 mV	45.1 mV	Pass

The results above are not used in the certification process

230V

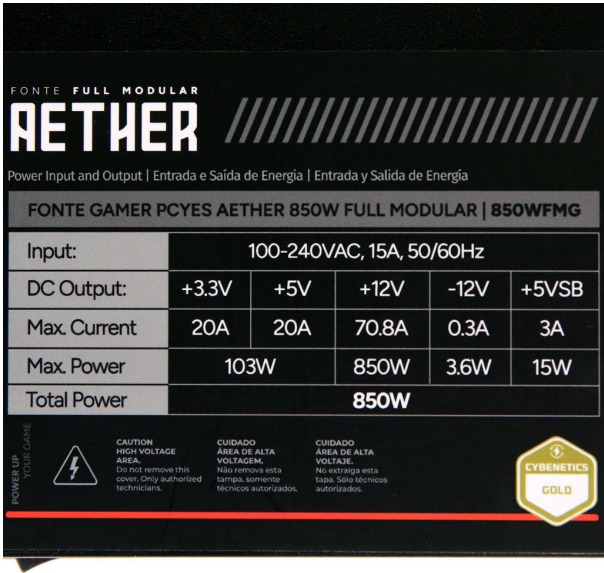
Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	10.4 mV	7.8 mV	7.2 mV	11.7 mV	Pass
20% Load	11.8 mV	8.8 mV	8.8 mV	15.8 mV	Pass
30% Load	14.3 mV	11.1 mV	10.0 mV	20.2 mV	Pass
40% Load	16.2 mV	10.9 mV	10.1 mV	22.5 mV	Pass
50% Load	17.5 mV	11.7 mV	10.9 mV	26.6 mV	Pass
60% Load	16.6 mV	10.2 mV	10.5 mV	29.6 mV	Pass
70% Load	17.4 mV	11.5 mV	11.5 mV	33.5 mV	Pass
80% Load	20.5 mV	12.8 mV	15.1 mV	37.9 mV	Pass
90% Load	22.5 mV	15.2 mV	17.6 mV	42.8 mV	Pass
100% Load	31.8 mV	17.3 mV	18.5 mV	49.3 mV	Pass
110% Load	33.7 mV	18.2 mV	19.6 mV	53.4 mV	Fail
Crossload 1	22.3 mV	18.2 mV	22.2 mV	18.8 mV	Pass
Crossload 2	14.9 mV	16.6 mV	24.9 mV	16.2 mV	Pass
Crossload 3	13.2 mV	17.9 mV	15.9 mV	14.4 mV	Pass
Crossload 4	30.4 mV	14.0 mV	11.5 mV	46.0 mV	Pass

The results above are not used in the certification process

PCYES Aether 850W



Top side



Power specifications label

Cybenetics [REDACTED] ETA [REDACTED] LAMBDA [REDACTED] SAFE [REDACTED]

DELTA [REDACTED] PHI [REDACTED]

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

www.cybenetics.com - info@cybenetics.com