CPS PCCooler YN1000

Serial Number

Lab ID PL10002281

Certification ID 252281

Test Result Report ID: 23PS2281A

Certificate Issue Date: Nov 2, 2023

Scheme: ETA-EMI PSU

115V



230V



Scheme: LAMBDA PSU

115V



230V





Outside Validation Scope



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	CPS PCCooler
Model	YN1000
OEM/ODM	Andyson
Serial Number	
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240

Rated Current (Arms)	12-6
Rated Frequency (Hz)	50-60
Rated Power (W)	1000
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	135mm Fluid Dynamic Bearing Fan (HA13525M12F-Z)
Semi-Passive Operation	✓ (selectable)
Cybenetics Testing Information	
Lab ID	PL10002281
Date of receipt	Oct 23, 2023
Testing Date	Oct 31, 2023
Report Issued Date	Nov 2, 2023
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 (550mm)	1	1	18AWG	No
4+4 pin EPS12V (650mm)	2	2	18AWG	No
6+2 pin PCIe (500mm)	3	3	18AWG	No
12+2 pin PCIe (650mm) (600W)	1	1	16-26AWG	No

SATA (450mm+120mm+120mm) / 4-pin Molex (+120mm)	3	9 / 3	20AWG	No
AC Power Cord (1370mm) - C13 coupler	1	1	18AWG	-

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	83.3	3	0.3
	Watts	100		999.6	15	3.6
Total Max. Power (W)		1000				

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)	89.144%
Average Noise Output (>1450 Load Combinations)	29.40dBA
Average PF (>1450 Load Combinations)	0.979
Efficiency With 10W (≤500W) or 2% (>500W) Load	77.789%
Standby Power Consumption	0.0545W
Non-Accredited	
12V Ripple (Full Load)	15.16mV
5V Ripple (Full Load)	12.13mV

3.3V Ripple (Full Load)	18.43mV
5VSB Ripple (Full Load)	31.92mV
12V Load Regulation	0.30%
5V Load Regulation	0.64%
3.3V Load Regulation	1.19%
5VSB Load Regulation	3.80%
Inrush Current	37.670A

230V

Accredited	
Average Efficiency (>1450 load combinations)	91.316%
Average Noise Output (>1450 Load Combinations)	29.48dBA
Average PF (>1450 Load Combinations)	0.942
Efficiency With 10W (≤500W) or 2% (>500W) Load	78.358%
Standby Power Consumption	0.1322W
Non-Accredited	
12V Ripple (Full Load)	15.14mV
5V Ripple (Full Load)	11.54mV
3.3V Ripple (Full Load)	15.20mV
5VSB Ripple (Full Load)	25.92mV
12V Load Regulation	0.28%
5V Load Regulation	0.72%
3.3V Load Regulation	1.22%
5VSB Load Regulation	3.80%
Inrush Current	69.640A
12V Transient Response (200%)	11.27V
5V Transient Response (200%)	4.921V
3.3V Transient Response (200%)	3.193V
5VSB Transient Response (200%)	4.868V
Hold-Up Time & PWR_OK Signal	23.70ms
AC Loss to PWR_OK Hold Up Time	18.70ms
PWR_OK Inactive to DC Loss Delay	5.00ms

PSU Timings: T1 (20% / 100%)	90.0ms	89.0ms
PSU Timings: T3 (20% / 100%)	124.0ms	127.0ms
OPP (21.86°C / 38.80°C)	141.41%	125.86%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	23.7
AC Loss to PWR_OK Hold Up Time (ms)	18.7
PWR_OK Inactive to DC Loss Delay (ms)	5

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Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.88 V	114.84 V	113.85 V	114.92 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	1.418	1.490	PASS
Mains Voltage THD:	0.14 %	0.11 %	N/A	0.18 %	2.00 %	PASS
Real Power:	0.055 W	-0.002 W	N/A	0.091 W	N/A	N/A
Apparent Power:	10.645 W	10.612 W	N/A	10.687 W	N/A	N/A
Power Factor:	0.008	N/A	N/A	N/A	N/A	N/A

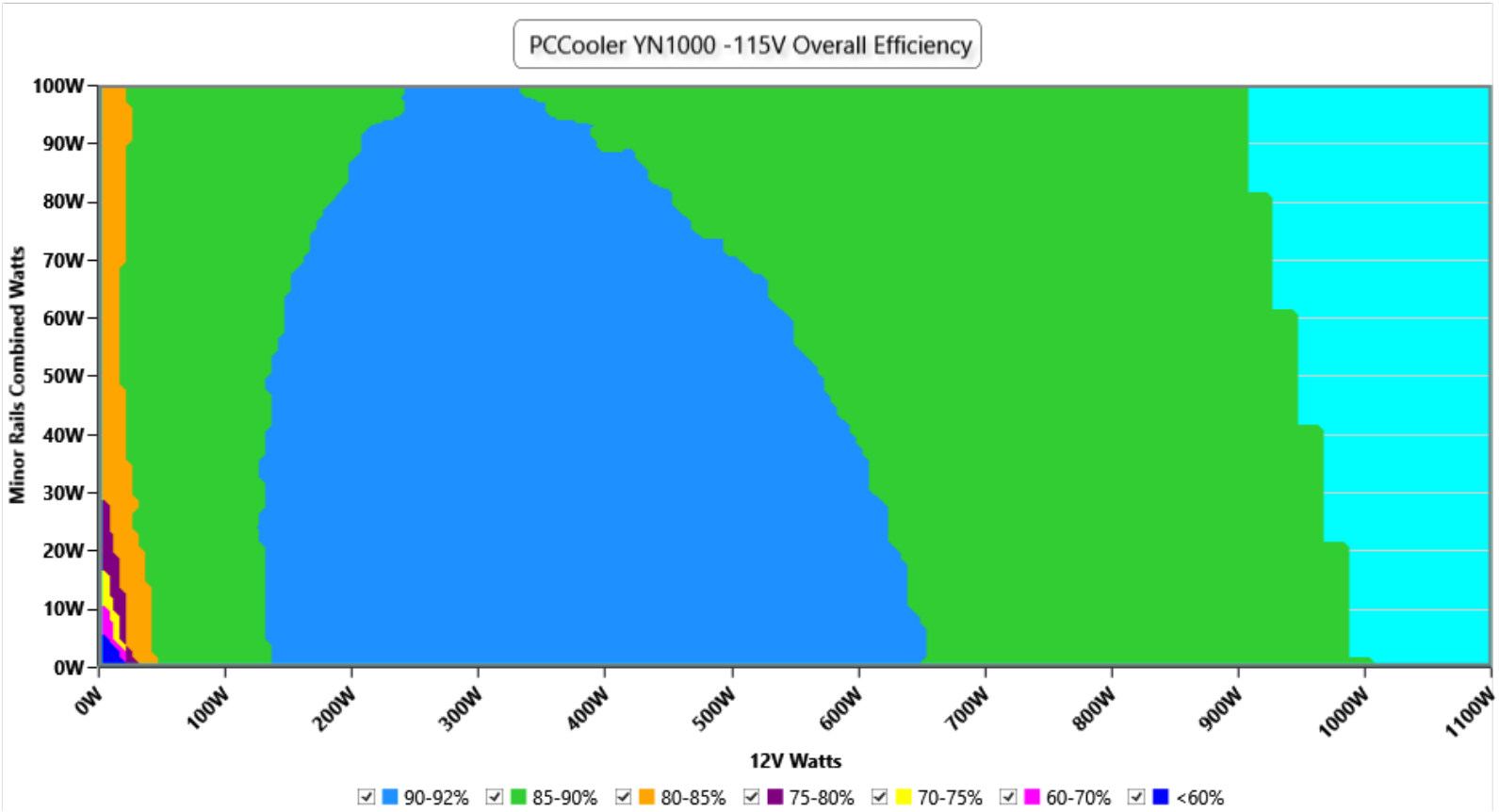
230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	229.96 V	229.90 V	227.70 V	229.99 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	50.00 Hz	49.50 Hz	50.01 Hz	50.50 Hz	PASS

Mains Voltage CF:	1.416	1.415	1.340	1.416	1.490	PASS
Mains Voltage THD:	0.12 %	0.10 %	N/A	0.14 %	2.00 %	PASS
Real Power:	0.132 W	0.087 W	N/A	0.191 W	N/A	N/A
Apparent Power:	36.090 W	36.048 W	N/A	36.142 W	N/A	N/A
Power Factor:	0.003	N/A	N/A	N/A	N/A	N/A

Efficiency Graph

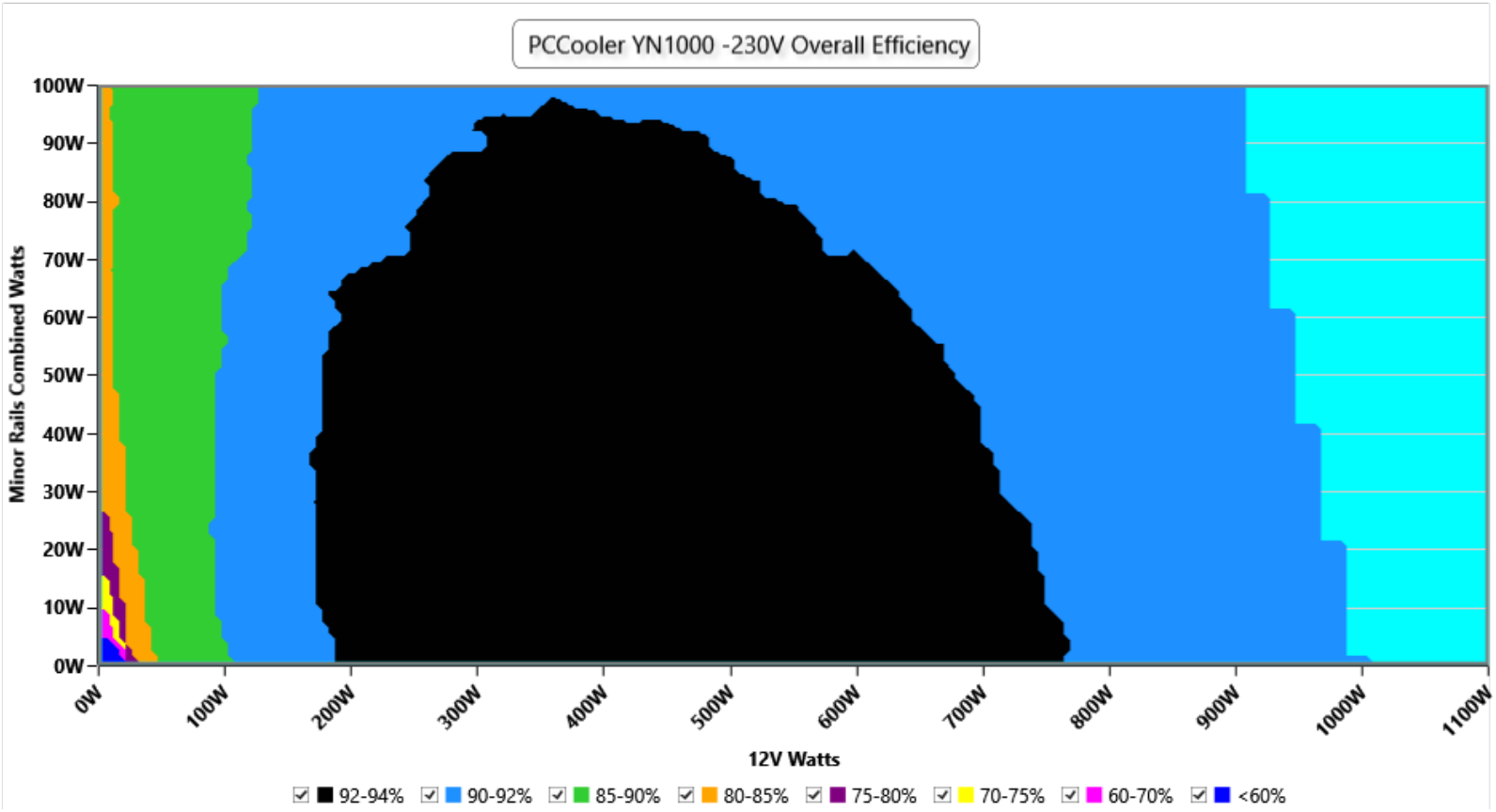
115V



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

230V

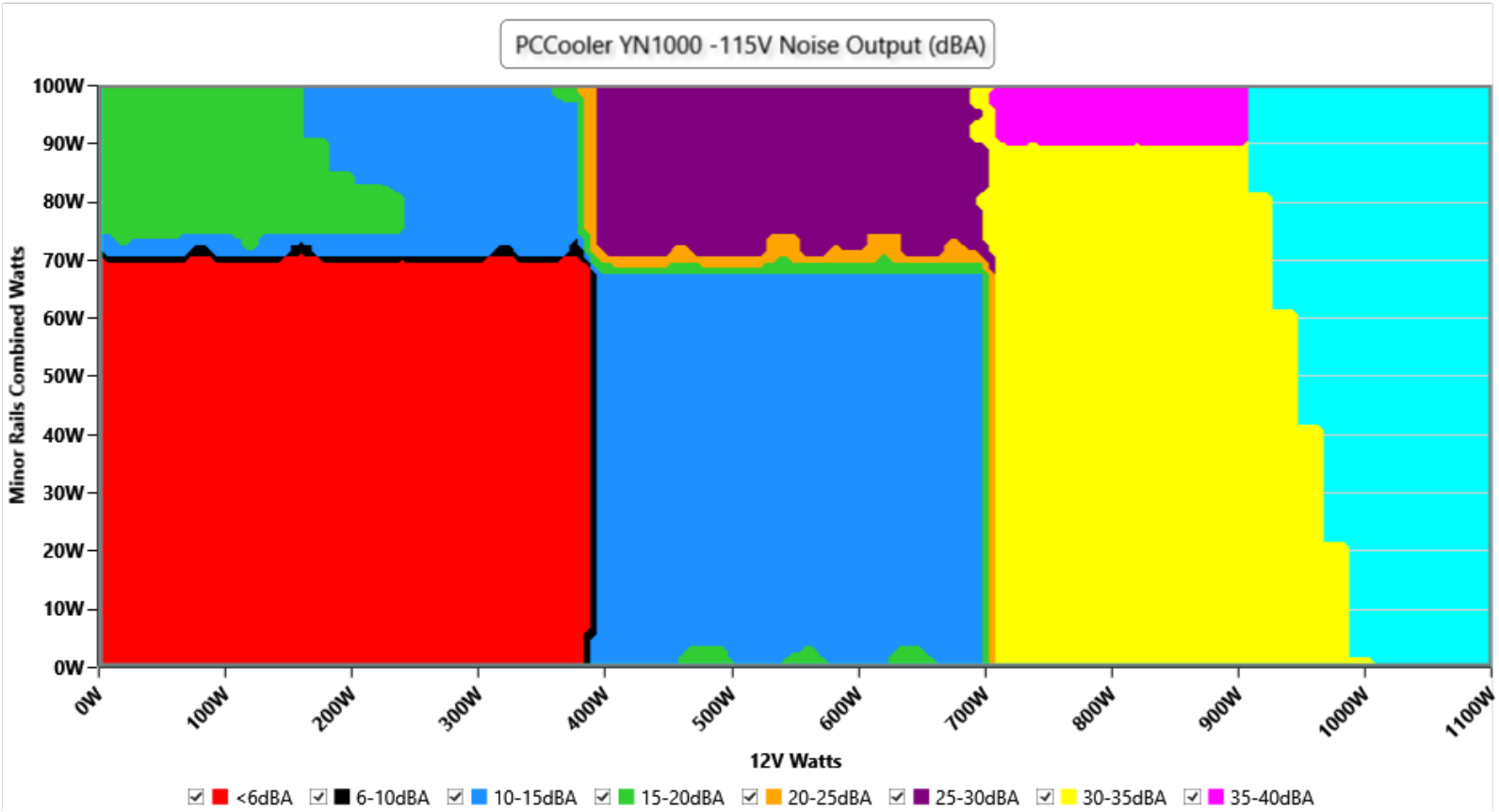


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This graph depicts the PSU`s efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations

Noise Graph

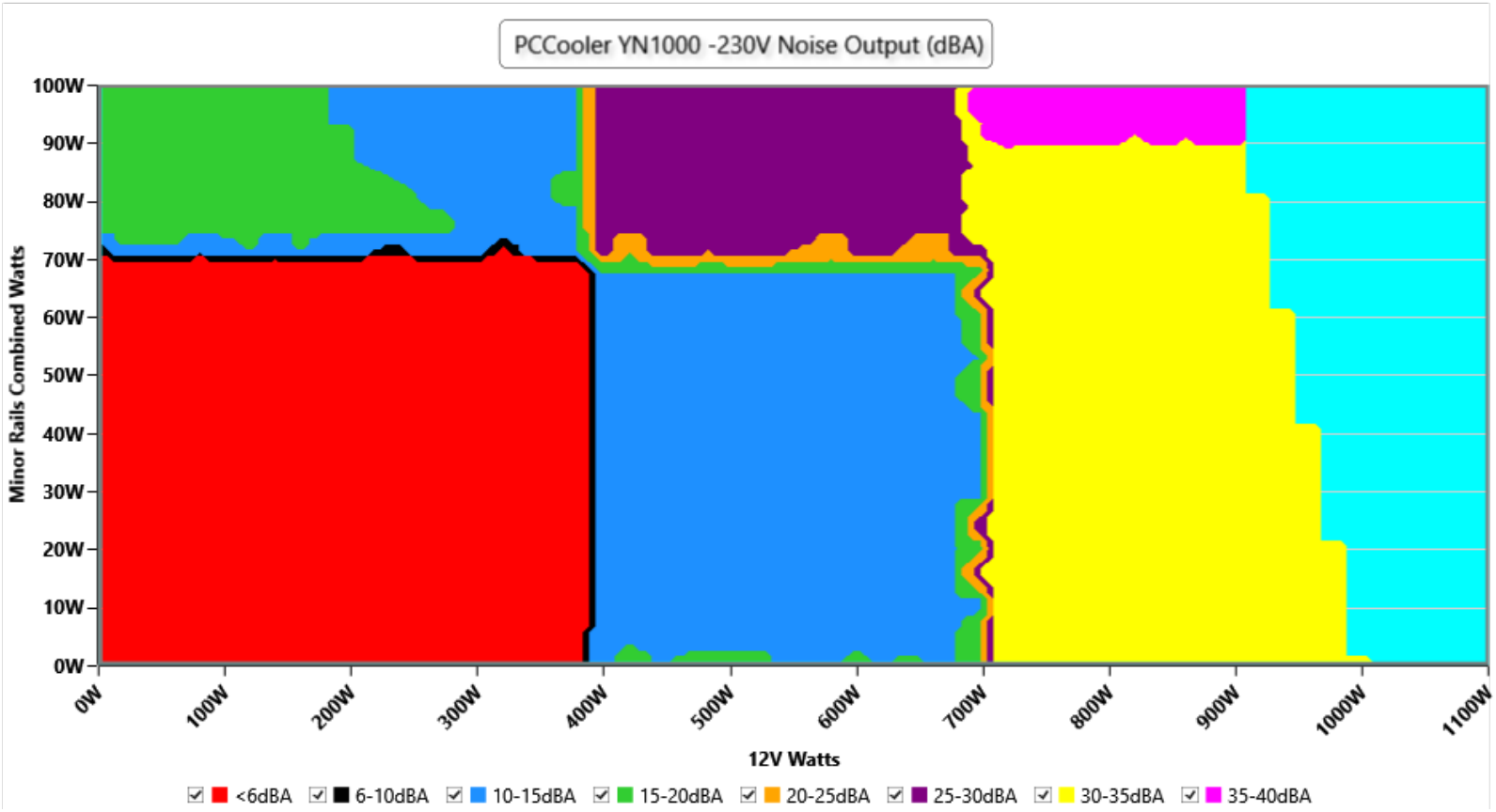
115V



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

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

Noise under high ambient temperature (indicative)

115V

Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	0 RPM · <6.0 dB(A) · 44.4 °C	0 RPM · <6.0 dB(A) · 44.4 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 45.4 °C	0 RPM · <6.0 dB(A) · 45.4 °C	fan off in both
50%	899 RPM · 26.3 dB(A) · 42.3 °C	899 RPM · 26.3 dB(A) · 42.3 °C	**+0.0 dB(A)**
100%	1443 RPM · 39.7 dB(A) · 45.2 °C	1443 RPM · 39.7 dB(A) · 45.2 °C	**+0.0 dB(A)**

230V

Load	Normal ambient fan · noise · intake	High ambient fan · noise · intake	Noise change
10%	0 RPM · <6.0 dB(A) · 44.5 °C	0 RPM · <6.0 dB(A) · 44.5 °C	fan off in both
20%	0 RPM · <6.0 dB(A) · 45.3 °C	0 RPM · <6.0 dB(A) · 45.3 °C	fan off in both
50%	897 RPM · 26.3 dB(A) · 42.2 °C	897 RPM · 26.3 dB(A) · 42.2 °C	**+0.0 dB(A)**
100%	1441 RPM · 39.7 dB(A) · 45.3 °C	1441 RPM · 39.7 dB(A) · 45.3 °C	**+0.0 dB(A)**

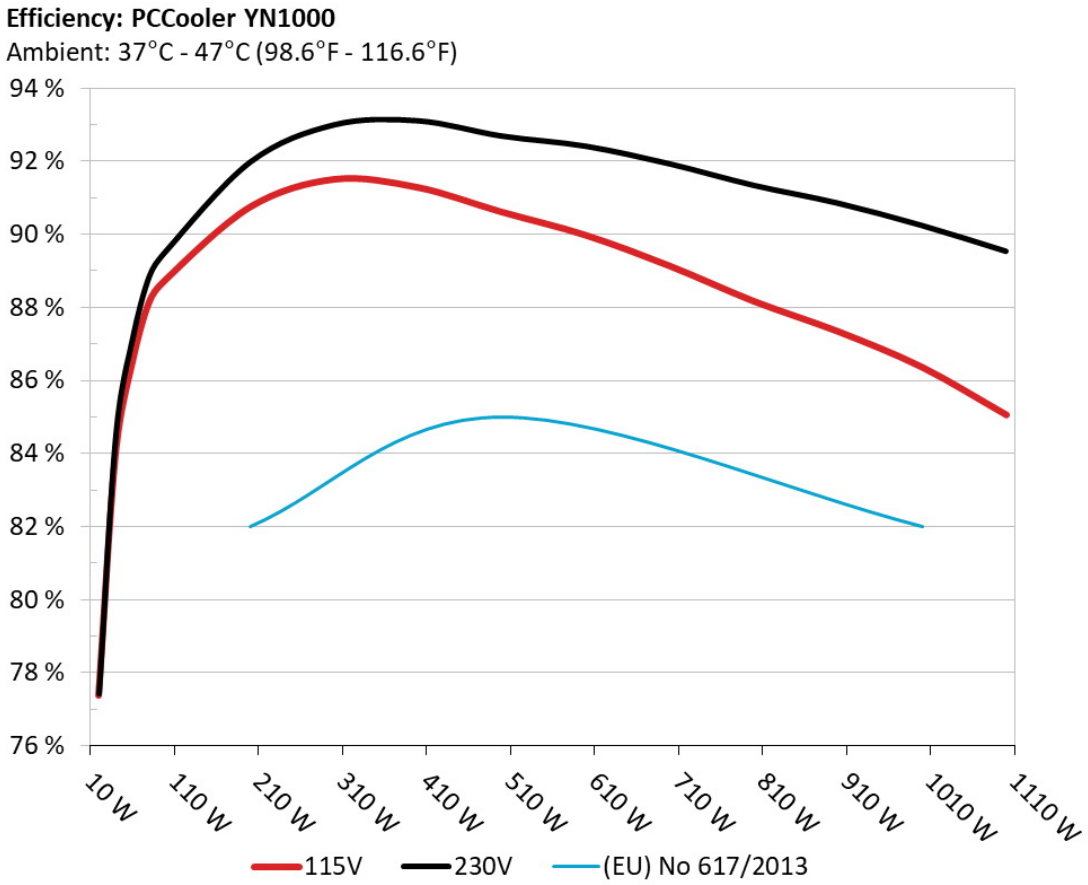
INFO

Fan speed, noise and the measured intake temperature at 10, 20, 50 and 100 % load, from the two load regulation tests: at normal ambient (about 30-32 °C) and at high ambient (about 40-47 °C). These are stabilized readings at fixed loads, not averages over the certification sweep, so they are indicative of how the fan behaves when it is hot. "<6.0" is the floor of our sound meter: the fan is stopped or too quiet to measure (the fan speed column says which); with the fan stopped, the intake sensor can read higher than the chamber air.

Informational. Not part of the ETA or LAMBDA rating.

Indicative Performance

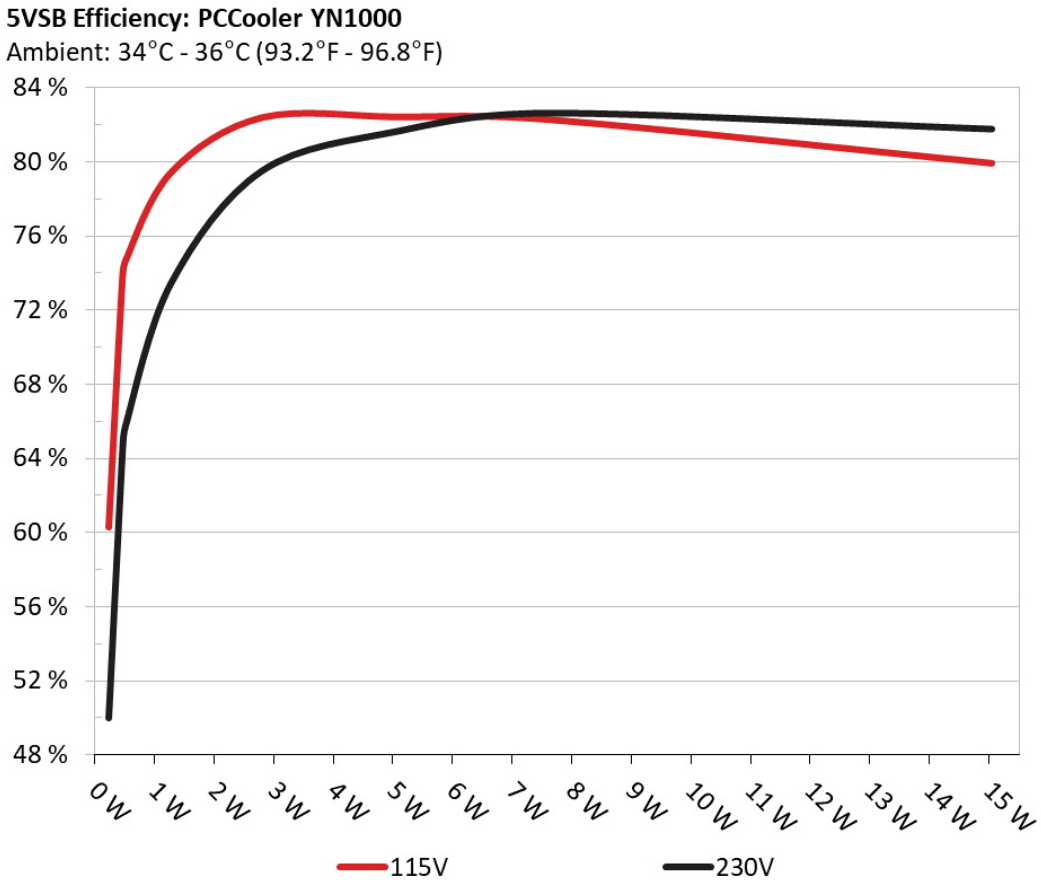
Efficiency under high ambient temperature



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	0.23W	60.307%	0.037
	5.118V	0.382W		114.87V
2	0.09A	0.46W	73.741%	0.059
	5.117V	0.624W		114.88V
3	0.55A	2.805W	82.373%	0.257
	5.1V	3.405W		114.88V
4	1A	5.085W	82.404%	0.357
	5.085V	6.171W		114.87V
5	1.5A	7.601W	82.264%	0.407
	5.067V	9.24W		114.88V
6	3A	15.043W	79.912%	0.481
	5.014V	18.824W		114.87V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.23W	49.986%	0.013
	5.117V	0.461W		229.95V
2	0.09A	0.461W	64.409%	0.02
	5.116V	0.716W		229.94V
3	0.55A	2.805W	79.533%	0.097
	5.1V	3.527W		229.95V
4	1A	5.085W	81.672%	0.161
	5.085V	6.227W		229.94V
5	1.5A	7.603W	82.644%	0.215
	5.068V	9.2W		229.94V
6	3A	15.049W	81.785%	0.323
	5.017V	18.401W		229.94V

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%	6.507A	1.993A	1.986A	0.985A	99.979	88.772%	0	<6.0	44.38°C	0.959
	12.046V	5.017V	3.323V	5.075V	112.626				40.15°C	114.84V
20%	14.009A	2.992A	2.983A	1.186A	199.92	90.75%	0	<6.0	45.37°C	0.976
	12.066V	5.014V	3.319V	5.059V	220.3				40.83°C	114.8V
30%	21.860A	3.491A	3.483A	1.388A	299.963	91.511%	0	<6.0	46.34°C	0.979
	12.072V	5.012V	3.316V	5.043V	327.784				41.29°C	114.77V
40%	29.683A	3.991A	3.984A	1.591A	399.455	91.291%	0	<6.0	47.18°C	0.98
	12.070V	5.011V	3.313V	5.028V	437.561				41.55°C	114.73V
50%	37.196A	4.996A	4.988A	1.796A	499.185	90.619%	899	26.3	42.25°C	0.981
	12.063V	5.004V	3.308V	5.012V	550.852				48.26°C	114.69V
60%	44.769A	5.999A	5.993A	2A	599.712	89.98%	897	26.3	42.81°C	0.982
	12.060V	5.001V	3.304V	4.995V	666.49				49.35°C	114.66V
70%	52.270A	7.005A	7A	2.21A	699.447	89.14%	891	26.1	43.15°C	0.985
	12.059V	4.997V	3.3V	4.977V	784.661				50.24°C	114.62V
80%	59.844A	8.001A	8.009A	2.316A	799.411	88.175%	1448	39.8	43.67°C	0.987
	12.058V	4.992V	3.296V	4.964V	906.617				51.73°C	114.58V
90%	67.750A	8.516A	8.503A	2.423A	899.262	87.35%	1446	39.7	44.34°C	0.988
	12.056V	4.99V	3.293V	4.952V	1029.497				53.39°C	114.53V
100%	75.450A	9.021A	9.029A	3.047A	999.268	86.374%	1443	39.7	45.18°C	0.989
	12.056V	4.988V	3.289V	4.922V	1156.916				55.27°C	114.5V
110%	83.056A	10.027A	10.135A	3.055A	1099.895	85.066%	1440	39.7	46.51°C	0.989
	12.059V	4.986V	3.285V	4.91V	1292.998				57.42°C	114.44V
CL1	0.114A	12.04A	11.992A	0A	101.276	83.713%	909	26.5	40.01°C	0.963
	12.062V	5V	3.31V	5.091V	120.979				45.46°C	114.83V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
CL2	0.114A	20.062A	0A	0A	101.349	81.565%	1459	39.9	41.07°C	0.964
	12.056V	4.983V	3.326V	5.098V	124.257				48.09°C	114.82V
CL3	0.114A	0A	19.987A	0A	67.374	77.186%	911	26.7	40.61°C	0.953
	12.046V	5.024V	3.302V	5.095V	87.293				49.62°C	114.84V
CL4	83.002A	0A	0A	0.001A	999.857	87.162%	1445	39.7	45.06°C	0.989
	12.046V	5.009V	3.304V	5.032V	1147.136				55.98°C	114.5V

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%	6.507A	1.993A	1.986A	0.986A	100.003	89.556%	0	<6.0	44.52°C	0.83
	12.048V	5.018V	3.323V	5.072V	111.666				40.29°C	229.92V
20%	14.009A	2.992A	2.983A	1.187A	199.957	91.985%	0	<6.0	45.31°C	0.916
	12.067V	5.015V	3.319V	5.056V	217.384				40.64°C	229.91V
30%	21.860A	3.491A	3.483A	1.389A	300.01	93.006%	0	<6.0	46.63°C	0.944
	12.075V	5.013V	3.316V	5.039V	322.57				41.47°C	229.89V
40%	29.690A	3.991A	3.985A	1.593A	399.62	93.116%	0	<6.0	47.51°C	0.957
	12.072V	5.012V	3.313V	5.023V	429.163				41.92°C	229.88V
50%	37.195A	4.995A	4.988A	1.798A	499.318	92.699%	897	26.3	42.2°C	0.964
	12.066V	5.006V	3.308V	5.007V	538.641				48.22°C	229.86V
60%	44.768A	5.999A	5.993A	2A	599.767	92.418%	895	26.2	42.89°C	0.968
	12.061V	5.001V	3.304V	4.992V	648.972				49.47°C	229.84V
70%	52.267A	7.005A	6.999A	2.211A	699.443	91.935%	891	26.1	43.12°C	0.972
	12.060V	4.997V	3.301V	4.975V	760.8				50.16°C	229.83V
80%	59.844A	8.001A	8.009A	2.317A	799.393	91.349%	1447	39.7	43.77°C	0.974
	12.057V	4.992V	3.296V	4.963V	875.095				51.83°C	229.81V
90%	67.754A	8.516A	8.503A	2.424A	899.25	90.864%	1445	39.7	44.43°C	0.975
	12.055V	4.99V	3.293V	4.95V	989.67				53.45°C	229.79V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	75.445A	9.02A	9.029A	3.049A	999.285	90.253%	1441	39.7	45.3°C	0.976
	12.056V	4.988V	3.289V	4.92V	1107.197				55.37°C	229.78V
110%	83.060A	10.027A	10.134A	3.055A	1099.895	89.544%	1442	39.7	46.6°C	0.978
	12.059V	4.986V	3.285V	4.909V	1228.333				57.52°C	229.76V
CL1	0.114A	12.038A	11.991A	0A	101.284	84.395%	906	26.5	41.54°C	0.843
	12.065V	5.001V	3.311V	5.091V	120.017				47.03°C	229.93V
CL2	0.114A	20.058A	0A	0A	101.352	82.301%	1457	39.9	40.36°C	0.847
	12.057V	4.984V	3.326V	5.098V	123.149				47.43°C	229.93V
CL3	0.114A	0A	19.987A	0A	67.375	77.738%	1253	35.8	41.47°C	0.778
	12.046V	5.024V	3.302V	5.095V	86.671				50.52°C	229.94V
CL4	83.004A	0A	0A	0.001A	999.871	90.861%	1442	39.7	45.24°C	0.976
	12.046V	5.009V	3.304V	5.032V	1100.446				56.2°C	229.77V

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	1.234A	0.498A	0.496A	0.196A	19.996	77.389%	0	<6.0	39.79°C	0.813
	12.036V	5.019V	3.328V	5.109V	25.839				36.71°C	114.86V
40W	2.716A	0.697A	0.694A	0.294A	39.995	83.98%	0	<6.0	40.59°C	0.908
	12.037V	5.019V	3.327V	5.104V	47.624				37.28°C	114.86V
60W	4.196A	0.896A	0.893A	0.392A	59.993	86.502%	0	<6.0	41.89°C	0.94
	12.040V	5.019V	3.327V	5.099V	69.358				38.16°C	114.85V
80W	5.672A	1.095A	1.091A	0.491A	79.929	88.143%	0	<6.0	43.09°C	0.954
	12.042V	5.02V	3.326V	5.093V	90.679				39.12°C	114.84V

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	1.234A	0.498A	0.496A	0.196A	20.007	77.427%	0	<6.0	39.8°C	0.448
	12.041V	5.024V	3.329V	5.107V	25.843				36.72°C	229.94V
40W	2.714A	0.697A	0.694A	0.294A	40.003	84.528%	0	<6.0	40.28°C	0.621
	12.042V	5.023V	3.328V	5.102V	47.323				37°C	229.94V
60W	4.196A	0.896A	0.893A	0.392A	60.002	87.16%	0	<6.0	41.95°C	0.722
	12.044V	5.022V	3.327V	5.097V	68.844				38.43°C	229.93V
80W	5.672A	1.095A	1.091A	0.491A	79.95	88.869%	0	<6.0	43.05°C	0.786
	12.046V	5.022V	3.326V	5.091V	89.959				39.22°C	229.93V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	19.69mV	7.37mV	8.38mV	15.43mV	Pass
20% Load	24.80mV	7.21mV	8.27mV	15.79mV	Pass
30% Load	9.47mV	7.32mV	8.38mV	16.41mV	Pass
40% Load	8.51mV	9.94mV	11.48mV	18.17mV	Pass
50% Load	8.71mV	12.05mV	13.34mV	20.18mV	Pass
60% Load	9.18mV	9.38mV	11.12mV	23.18mV	Pass
70% Load	9.28mV	8.96mV	11.79mV	24.16mV	Pass
80% Load	9.69mV	9.58mV	12.82mV	26.02mV	Pass
90% Load	10.11mV	11.28mV	13.60mV	28.44mV	Pass
100% Load	15.16mV	12.13mV	18.43mV	31.92mV	Pass
110% Load	15.28mV	12.37mV	20.20mV	35.85mV	Pass
Crossload1	19.02mV	10.43mV	10.14mV	13.10mV	Pass
Crossload2	22.94mV	15.04mV	10.34mV	11.92mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	22.53mV	8.29mV	10.86mV	11.56mV	Pass
Crossload4	14.02mV	11.13mV	18.49mV	19.57mV	Pass

The results above are not used in the certification process

230V

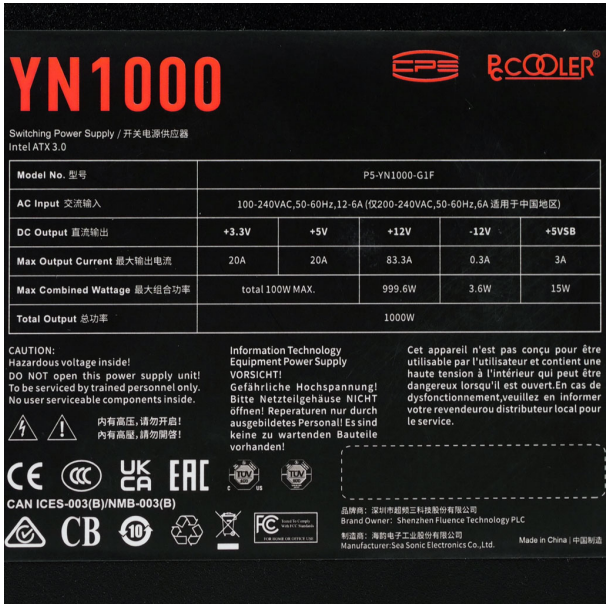
Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	19.44mV	6.75mV	7.55mV	14.04mV	Pass
20% Load	24.54mV	6.75mV	7.65mV	14.25mV	Pass
30% Load	10.86mV	6.65mV	8.02mV	14.40mV	Pass
40% Load	16.03mV	12.42mV	39.41mV	19.82mV	Pass
50% Load	8.97mV	11.69mV	12.20mV	17.34mV	Pass
60% Load	9.13mV	9.07mV	11.07mV	19.41mV	Pass
70% Load	9.64mV	8.96mV	12.31mV	22.71mV	Pass
80% Load	10.05mV	9.22mV	12.88mV	20.85mV	Pass
90% Load	9.49mV	11.85mV	12.31mV	22.25mV	Pass
100% Load	15.14mV	11.54mV	15.20mV	25.92mV	Pass
110% Load	15.99mV	12.63mV	17.38mV	28.84mV	Pass
Crossload1	19.99mV	10.24mV	10.89mV	14.34mV	Pass
Crossload2	22.58mV	15.82mV	9.05mV	12.29mV	Pass
Crossload3	23.00mV	8.09mV	10.81mV	11.62mV	Pass
Crossload4	14.70mV	11.02mV	16.11mV	18.43mV	Pass

The results above are not used in the certification process

CPS PCCooler YN1000



Top side



Power specifications label

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