



Corsair HX1500i (2022)

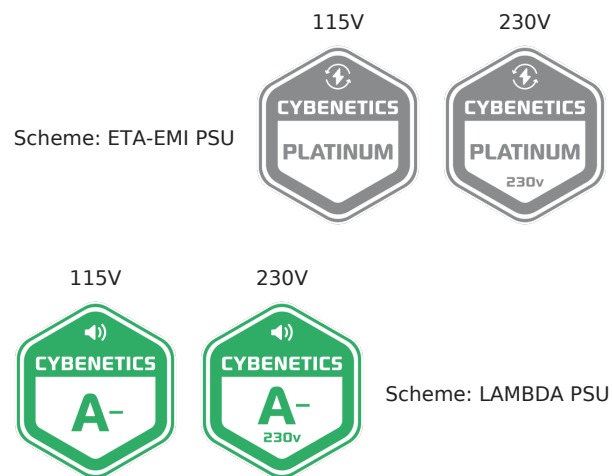
Serial Number

Lab ID CR15001913

Certification ID 251913

Test Result Report ID: 21PS1913A

Certificate Issue Date: Sep 30, 2021



A handwritten signature in blue ink, appearing to read "A. Bitziopoulos", written over a faint circular stamp.

Aristeidis Bitziopoulos, Certification Body General Manager

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	Corsair
Model	HX1500i (2022)
OEM/ODM	Channel Well Technology
Serial Number	
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	47-63

Rated Power (W)	1500
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	140mm Fluid Dynamic Bearing Fan (NR140P)
Semi-Passive Operation	✓
Cybenetics Testing Information	
Lab ID	CR15001913
Date of receipt	Sep 16, 2021
Testing Date	Sep 30, 2021
Report Issued Date	Sep 30, 2021
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 (610mm)	1	1	16-22AWG	No
4+4 pin EPS12V (650mm)	3	3	18AWG	No
6+2 pin PCIe (680mm+100mm)	3	6	16-18AWG	No
6+2 pin PCIe (650mm)	3	3	16AWG	No
SATA (450mm+115mm+115mm+115mm)	2	8	18AWG	No
4 pin Molex (450mm+100mm+100mm+100mm)	2	8	18AWG	No
USB Type C to Motherboard Header Cable (+530mm)	1	1	24-28AWG	No

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	25	25	125	3.5	0.3
	Watts	150		1500	17.5	3.6
Total Max. Power (W)		1500				

Parts Description

General Data	
Manufacturer (OEM)	CWT
PCB Type	Double Sided
Primary Side	
Transient Filter	6x Y caps, 3x X caps, 2x CM chokes, 1x MOV, 1x MPS HF81 (Discharge IC)
Inrush Protection	2x NTC Thermistor SCK-075 (7 Ohm) & Relay
Bridge Rectifier(s)	2x VISHAY LVB2560 (600V, 25A @ 105°C)
APFC MOSFETs	2x Infineon IPW60R099P6 (600V, 24A @ 100°C, Rds(on): 0.099Ohm)
APFC Boost Diode	2x CREE C3D10060A (600V, 10A @ 153°C)
Bulk Cap(s)	2x Nippon Chemi-Con (450V, 680uF each or 1,360uF combined, 2,000h @ 105°C, KMZ) & 1x Nippon Chemi-Con (420V, 470uF, 2,000h @ 105°C, KMZ)
Main Switchers	4x Vishay SiHA105N60EF (600V, 8A @ 100°C, Rds(on): 0.102Ohm)
Digital Controllers	2x Texas Instruments UCD3138A
MCU	Microchip PIC32MM0064GPM036
Topology	Primary side: Semi-Digital, Interleaved PFC, Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	12x Vishay SiR626DP (60V, 100A @ 70°C, Rds(on): 1.7mOhm)
5V & 3.3V	DC-DC Converters: 8x FETs PWM Controller(s): 1x
Filtering Capacitors	Electrolytic: 2x Nippon Chemi-Con (105°C, W), 7x Nippon Chemi-Con (4-10,000h @ 105°C, KY), 3x Rubycon (4-10,000h @ 105°C, YXF), 1x Rubycon (4-10,000h @ 105°C, YXJ) Polymer: 19x United Chemi-Con, 28x FPCAP
Supervisor IC	Weltrend WT7502R (OVP, UVP, SCP, PG)
Fan Controller	Microchip PIC32MM0064GPM036
Fan Model	Corsair NR140P (140mm, 12V, 0.22A, Fluid Dynamic Bearing Fan)

5VSB Circuit	
Rectifier	1x IPS ISD04N65A FET & 1x D10S45L SBR (45V, 10A)
Standby PWM Controller	On Bright OB5282CP

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	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	89.515%
Average Noise Output (>1450 Load Combinations)	28.82dBA
Average PF (>1450 Load Combinations)	0.992
Efficiency With 10W (≤500W) or 2% (>500W) Load	73.642%
Standby Power Consumption	0.0141W
Non-Accredited	
12V Ripple (Full Load)	23.05mV
5V Ripple (Full Load)	12.09mV
3.3V Ripple (Full Load)	12.02mV
5VSB Ripple (Full Load)	15.81mV
12V Load Regulation	1.27%
5V Load Regulation	0.70%
3.3V Load Regulation	1.04%
5VSB Load Regulation	1.35%
Inrush Current	25.640A

230V

Accredited		
Average Efficiency (>1450 load combinations)	91.472%	
Average Noise Output (>1450 Load Combinations)	29.97dBA	
Average PF (>1450 Load Combinations)	0.944	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.0625W	
Non-Accredited		
12V Ripple (Full Load)	24.46mV	
5V Ripple (Full Load)	13.01mV	
3.3V Ripple (Full Load)	12.96mV	
5VSB Ripple (Full Load)	17.34mV	
12V Load Regulation	1.24%	
5V Load Regulation	0.72%	
3.3V Load Regulation	1.04%	
5VSB Load Regulation	1.35%	
Inrush Current	90.280A	
12V Transient Response (150%)	10.80V	
5V Transient Response (150%)	4.839V	
3.3V Transient Response (150%)	3.160V	
5VSB Transient Response (150%)	4.806V	
Hold-Up Time & PWR_OK Signal	21.50ms	
AC Loss to PWR_OK Hold Up Time	19.60ms	
PWR_OK Inactive to DC Loss Delay	1.90ms	
PSU Timings: T1 (20% / 100%)	50.0ms	50.0ms
PSU Timings: T3 (20% / 100%)	145.0ms	145.0ms
OPP (30.41°C / 39.79°C)	121.41%	121.40%

Hold-Up Time & PWR_OK Signal

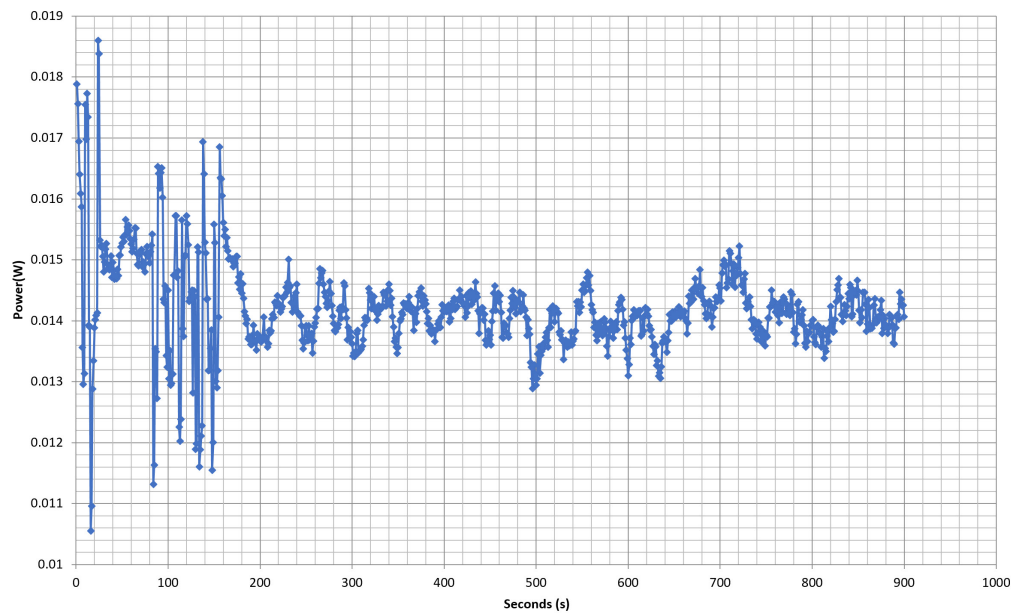
Hold-Up Time (ms)	21.5
AC Loss to PWR_OK Hold Up Time (ms)	19.6
PWR_OK Inactive to DC Loss Delay (ms)	1.9

Vampire Power

Graphs

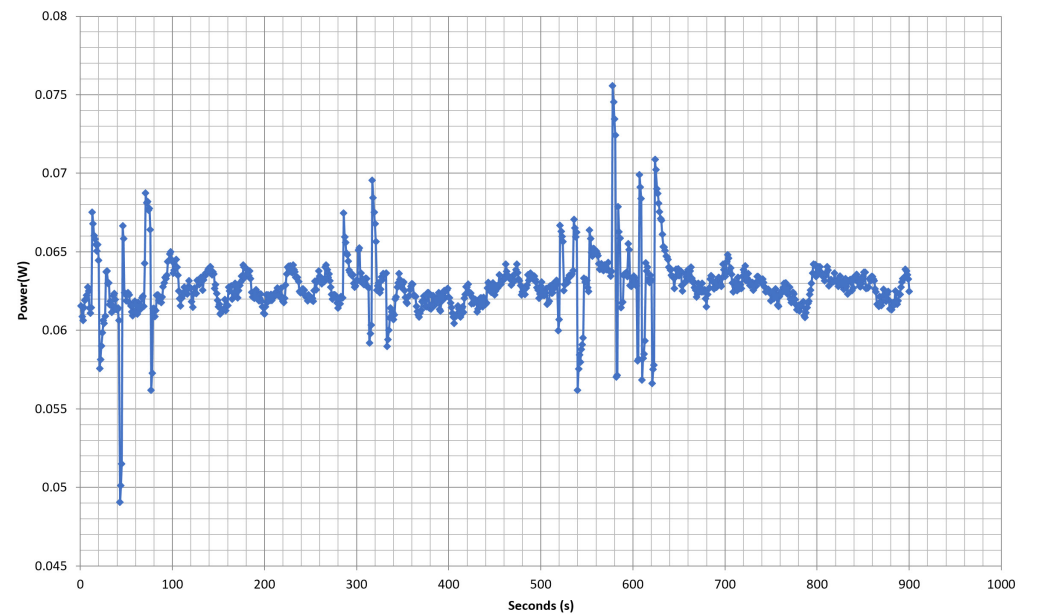
115V

Power - 27/09/2021 - 13:28



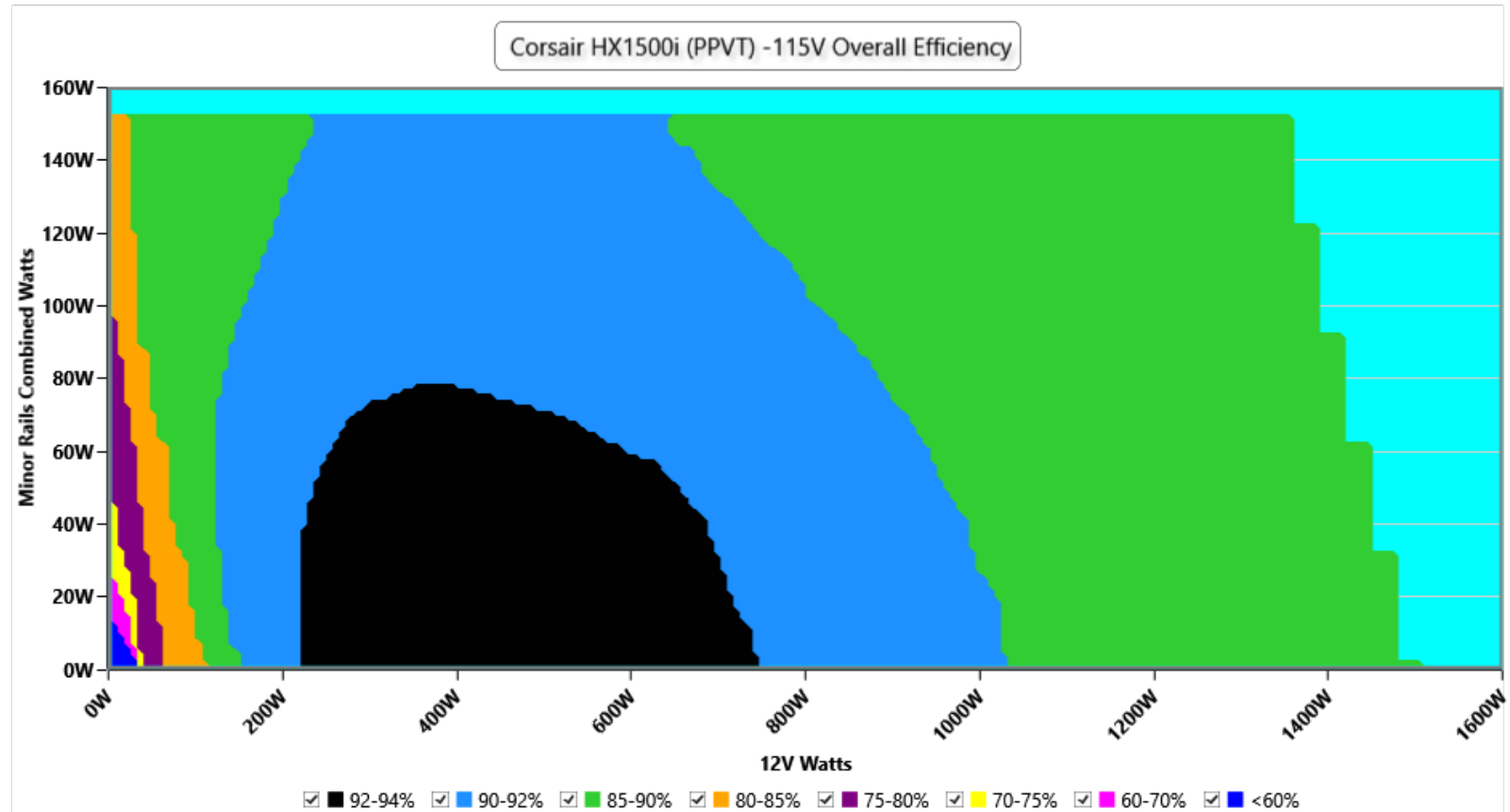
230V

Power - 27/09/2021 - 13:28



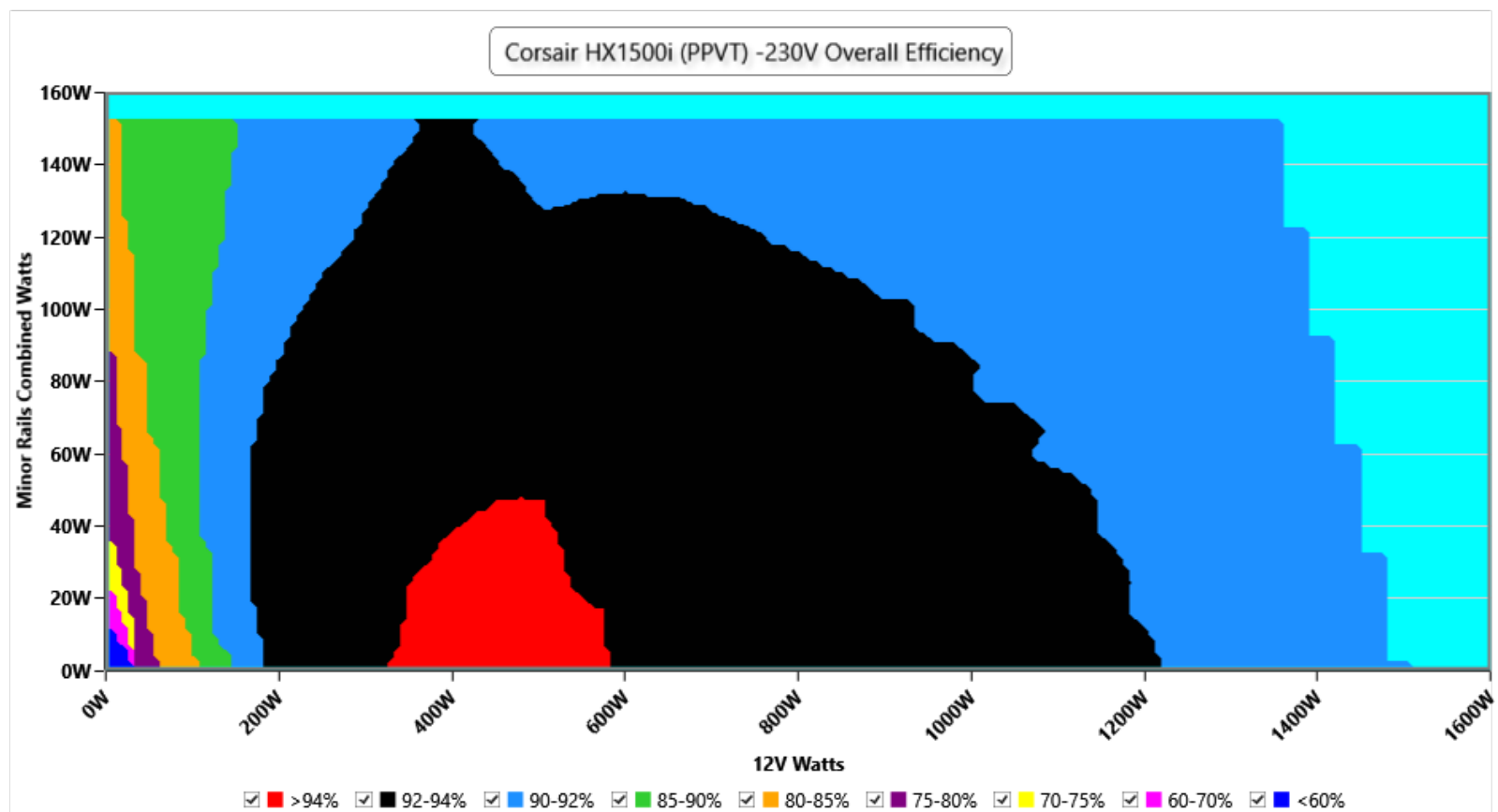
Efficiency Graph

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

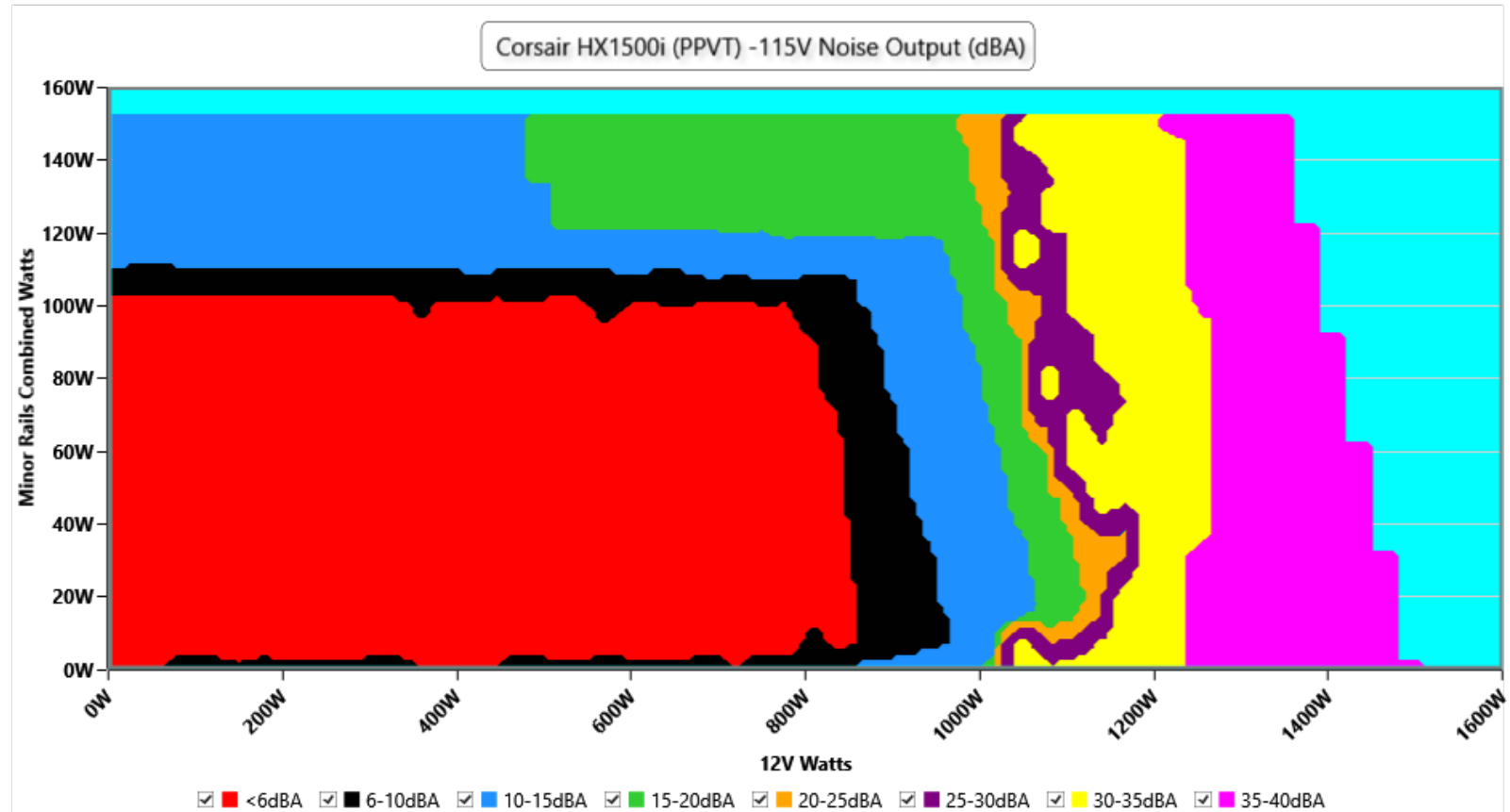


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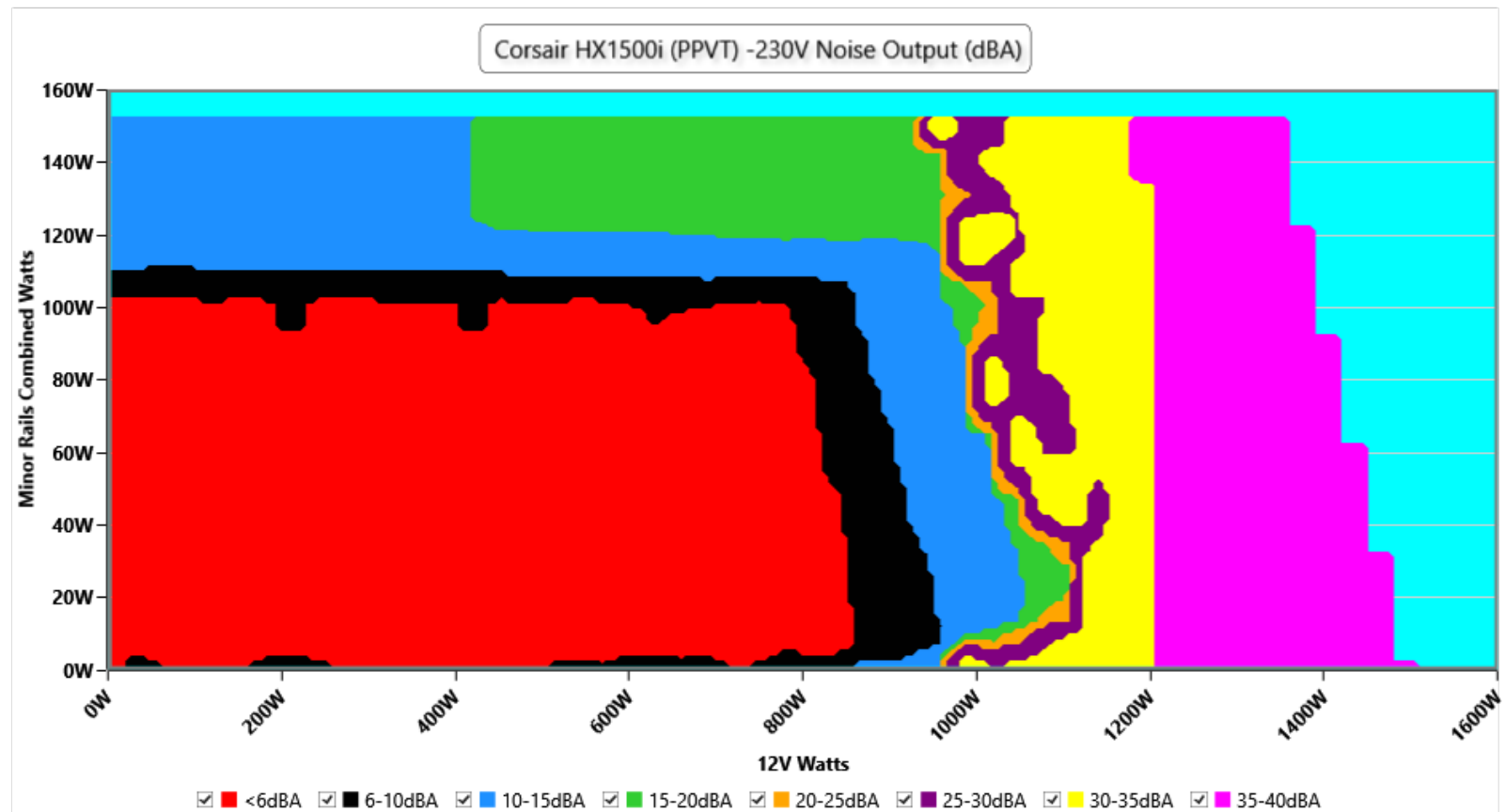
Noise Graph

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



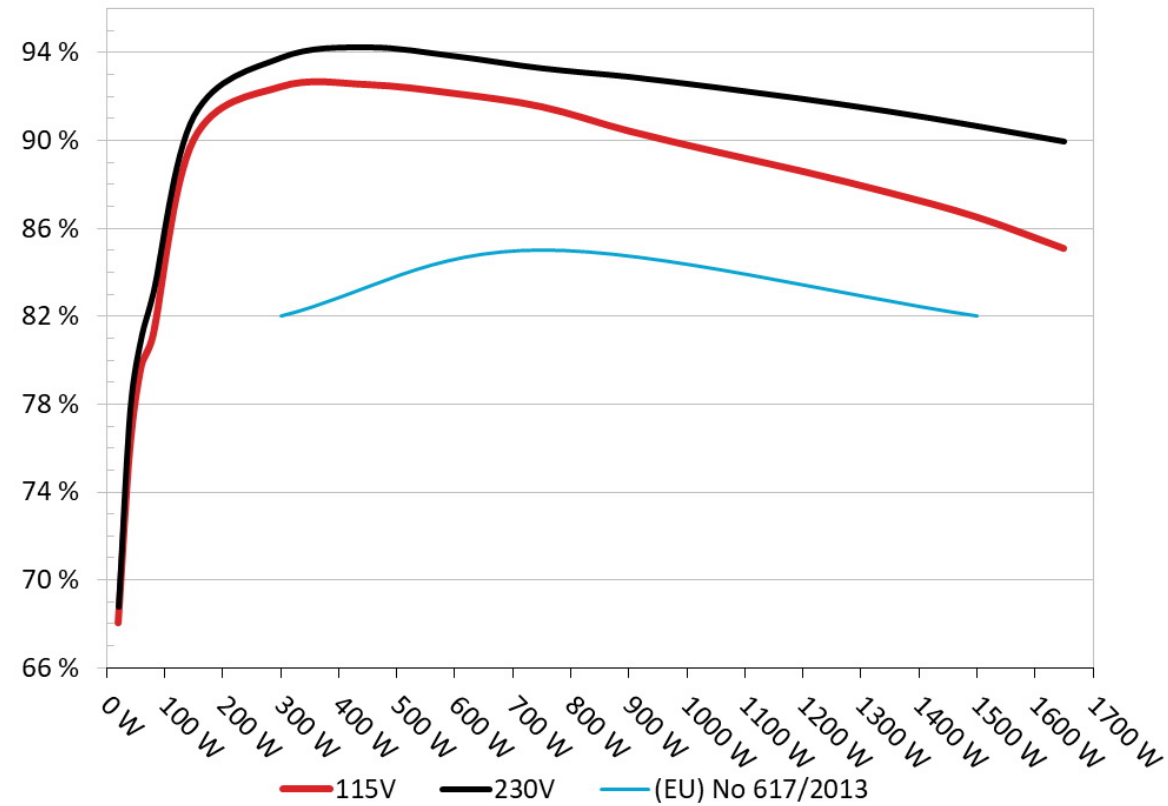
INFO

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: Corsair HX1500i (PPVT)
Ambient: 37°C - 47°C (98.6°F - 116.6°F)



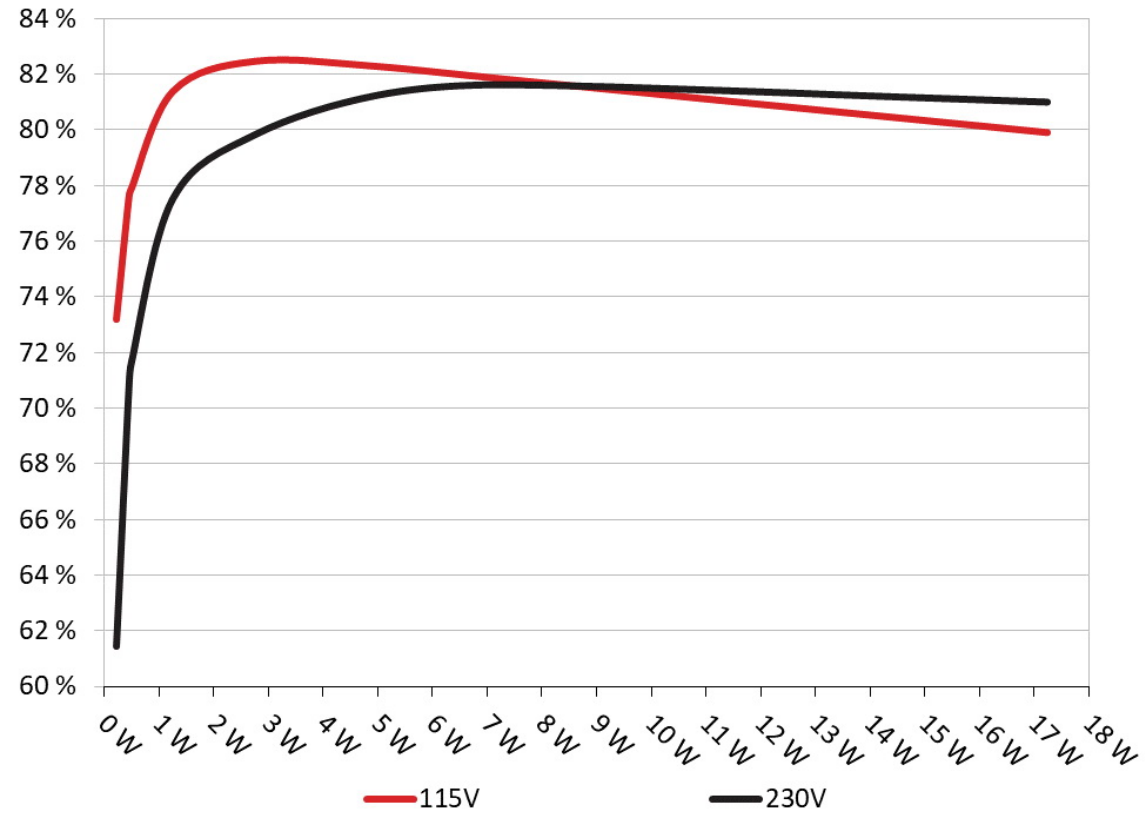
INFO

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: Corsair HX1000i (PPVT)

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	0.227W	73.192%	0.02
	5.046V	0.31W		115.14V
2	0.09A	0.454W	77.584%	0.037
	5.044V	0.585W		115.14V
3	0.55A	2.764W	82.471%	0.193
	5.027V	3.351W		115.14V
4	1A	5.01W	82.281%	0.302
	5.011V	6.089W		115.13V
5	1.5A	7.49W	81.793%	0.381
	4.994V	9.157W		115.13V
6	3.499A	17.229W	79.908%	0.515
	4.924V	21.561W		115.13V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.227W	61.435%	0.007
	5.045V	0.369W		230.25V
2	0.09A	0.454W	70.735%	0.013
	5.042V	0.642W		230.24V
3	0.55A	2.763W	79.811%	0.066
	5.025V	3.462W		230.24V
4	1A	5.009W	81.23%	0.115
	5.01V	6.166W		230.24V
5	1.5A	7.489W	81.599%	0.165
	4.993V	9.178W		230.24V
6	3.499A	17.232W	80.978%	0.312
	4.925V	21.279W		230.24V

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%	10.658A	1.983A	2.007A	0.994A	150.012	90.051%	0	<6.0	45.75°C	0.985
	12.049V	5.043V	3.289V	5.032V	166.588				40.56°C	115.2V
20%	22.361A	2.977A	3.013A	1.193A	299.973	92.473%	0	<6.0	46.27°C	0.99
	12.033V	5.04V	3.286V	5.028V	324.39				40.64°C	115.19V
30%	34.414A	3.475A	3.519A	1.394A	449.628	92.572%	0	<6.0	47.48°C	0.995
	12.017V	5.036V	3.283V	5.023V	485.71				41.21°C	115.17V
40%	46.523A	3.975A	4.025A	1.594A	599.572	92.167%	0	<6.0	48.57°C	0.998
	12.002V	5.032V	3.279V	5.017V	650.528				41.89°C	115.16V
50%	58.323A	4.972A	5.036A	1.795A	749.645	91.562%	0	<6.0	49.17°C	0.999
	11.987V	5.029V	3.276V	5.013V	818.733				42.15°C	115.13V
60%	70.165A	5.97A	6.051A	1.996A	899.77	90.457%	511	8.0	42.89°C	0.999
	11.972V	5.026V	3.273V	5.009V	994.699				50.39°C	115.1V
70%	82.029A	6.971A	7.068A	2.197A	1049.889	89.512%	1014	29.9	43.03°C	0.999
	11.956V	5.022V	3.269V	5.004V	1172.91				51.05°C	115.08V
80%	93.926A	7.974A	8.084A	2.299A	1199.526	88.614%	1265	36.6	43.78°C	0.999
	11.942V	5.018V	3.265V	5V	1353.659				52.58°C	115.06V
90%	106.245A	8.476A	8.583A	2.401A	1349.73	87.634%	1400	39.3	44.85°C	0.998
	11.927V	5.014V	3.261V	4.996V	1540.197				54.27°C	115.04V
100%	118.132A	8.982A	9.115A	3.516A	1499.44	86.535%	1559	41.6	45.27°C	0.998
	11.913V	5.01V	3.257V	4.976V	1732.76				54.96°C	115.03V
110%	130.172A	9.989A	10.232A	3.518A	1649.663	85.101%	1764	45.0	46.92°C	0.998
	11.899V	5.006V	3.253V	4.973V	1938.496				57.78°C	115V
CL1	0.116A	17.933A	18.179A	0A	151.29	83.73%	691	17.7	42.62°C	0.985
	12.039V	5.036V	3.278V	5.073V	180.686				49.53°C	115.16V

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	24.819A	0A	0A	126.392	82.878%	706	17.7	43.19°C	0.985
	12.047V	5.037V	3.273V	5.088V	152.509				50.72°C	115.16V
CL3	0.114A	0A	25.085A	0A	83.869	71.819%	1023	30.5	44.35°C	0.981
	12.050V	5.039V	3.289V	5.039V	116.779				52.65°C	115.15V
CL4	125.786A	0A	0A	0A	1499.908	87.41%	1330	37.6	45.75°C	0.998
	11.924V	5.013V	3.263V	5.012V	1715.945				55.01°C	115.02V

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%	10.654A	1.983A	2.007A	0.993A	149.973	91.137%	0	<6.0	44.35°C	0.612
	12.050V	5.043V	3.288V	5.033V	164.557				39.16°C	230.27V
20%	22.352A	2.976A	3.014A	1.193A	299.918	93.786%	0	<6.0	45.25°C	0.949
	12.035V	5.04V	3.285V	5.029V	319.792				39.63°C	230.27V
30%	34.397A	3.475A	3.52A	1.393A	449.503	94.259%	0	<6.0	46.43°C	0.966
	12.020V	5.037V	3.281V	5.023V	476.879				40.42°C	230.27V
40%	46.501A	3.974A	4.027A	1.594A	599.481	93.854%	0	<6.0	47.99°C	0.978
	12.006V	5.033V	3.278V	5.018V	638.739				41.39°C	230.26V
50%	58.303A	4.972A	5.039A	1.795A	749.616	93.304%	0	<6.0	49.16°C	0.985
	11.991V	5.029V	3.274V	5.013V	803.408				42.1°C	230.26V
60%	70.140A	5.97A	6.054A	1.997A	899.729	92.915%	514	8.0	42.97°C	0.988
	11.976V	5.025V	3.271V	5.008V	968.337				50.41°C	230.26V
70%	81.996A	6.971A	7.07A	2.197A	1049.853	92.434%	987	29.6	43.1°C	0.988
	11.961V	5.022V	3.267V	5.004V	1135.787				51.39°C	230.26V
80%	93.887A	7.973A	8.086A	2.299A	1199.491	91.911%	1236	35.5	43.68°C	0.99
	11.946V	5.018V	3.264V	5.001V	1305.062				52.44°C	230.25V
90%	106.205A	8.475A	8.586A	2.401A	1349.717	91.331%	1399	39.3	44.98°C	0.992
	11.932V	5.014V	3.26V	4.996V	1477.829				54.37°C	230.25V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	118.082A	8.981A	9.118A	3.516A	1499.435	90.674%	1527	41.3	45.7°C	0.992
	11.918V	5.01V	3.256V	4.976V	1653.66				55.88°C	230.25V
110%	130.118A	9.988A	10.235A	3.518A	1649.662	89.97%	1731	44.3	47.33°C	0.993
	11.903V	5.006V	3.252V	4.973V	1833.565				58.22°C	230.25V
CL1	0.116A	17.929A	18.185A	0A	151.287	84.579%	690	17.7	42.81°C	0.714
	12.040V	5.037V	3.277V	5.074V	178.872				49.73°C	230.29V
CL2	0.114A	24.817A	0A	0A	126.391	84.027%	705	17.7	43.92°C	0.686
	12.047V	5.037V	3.272V	5.089V	150.418				51.34°C	230.29V
CL3	0.114A	0A	25.109A	0A	83.871	72.597%	1023	30.5	44.68°C	0.608
	12.050V	5.037V	3.285V	5.037V	115.529				53.06°C	230.28V
CL4	125.755A	0A	0A	0A	1499.931	91.166%	1350	38.0	45.01°C	0.992
	11.928V	5.013V	3.261V	5.013V	1645.261				54.12°C	230.25V

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	1.230A	0.496A	0.501A	0.198A	19.996	68.025%	0	<6.0	40.07°C	0.683
	12.064V	5.045V	3.291V	5.043V	29.395				36.85°C	115.19V
40W	2.710A	0.694A	0.702A	0.298A	39.995	75.926%	0	<6.0	41.53°C	0.775
	12.062V	5.045V	3.291V	5.042V	52.675				37.81°C	115.19V
60W	4.190A	0.892A	0.902A	0.397A	59.995	79.775%	0	<6.0	42.86°C	0.805
	12.060V	5.045V	3.291V	5.041V	75.208				38.61°C	115.2V
80W	5.666A	1.09A	1.103A	0.496A	79.96	81.119%	0	<6.0	44.35°C	0.815
	12.058V	5.045V	3.291V	5.039V	98.562				39.66°C	115.2V

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	1.230A	0.495A	0.501A	0.198A	19.986	68.773%	0	<6.0	40.11°C	0.349
	12.065V	5.046V	3.29V	5.043V	29.06				36.81°C	230.28V
40W	2.709A	0.694A	0.702A	0.297A	39.988	77.766%	0	<6.0	40.82°C	0.436
	12.063V	5.045V	3.29V	5.042V	51.421				37.12°C	230.27V
60W	4.188A	0.892A	0.902A	0.397A	59.988	81.141%	0	<6.0	41.82°C	0.477
	12.062V	5.046V	3.29V	5.041V	73.93				37.68°C	230.27V
80W	5.664A	1.09A	1.103A	0.496A	79.927	83.09%	0	<6.0	42.65°C	0.505
	12.059V	5.045V	3.29V	5.04V	96.191				38.01°C	230.27V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	9.19mV	3.35mV	5.66mV	7.74mV	Pass
20% Load	10.56mV	3.81mV	5.36mV	7.44mV	Pass
30% Load	11.95mV	3.45mV	5.36mV	7.64mV	Pass
40% Load	12.81mV	3.86mV	5.81mV	7.79mV	Pass
50% Load	13.82mV	4.11mV	6.47mV	8.40mV	Pass
60% Load	13.37mV	4.27mV	6.98mV	8.20mV	Pass
70% Load	15.34mV	4.62mV	7.33mV	9.21mV	Pass
80% Load	16.10mV	4.98mV	10.87mV	9.05mV	Pass
90% Load	19.29mV	6.76mV	10.16mV	9.97mV	Pass
100% Load	23.05mV	12.09mV	12.02mV	15.81mV	Pass
110% Load	25.70mV	17.50mV	13.27mV	20.55mV	Pass
Crossload1	13.31mV	6.78mV	11.82mV	9.07mV	Pass
Crossload2	10.13mV	7.57mV	5.21mV	7.79mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	21.87mV	4.32mV	12.54mV	8.95mV	Pass
Crossload4	24.92mV	10.82mV	9.42mV	15.08mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	8.28mV	3.71mV	5.46mV	7.08mV	Pass
20% Load	10.56mV	3.76mV	5.71mV	7.39mV	Pass
30% Load	11.98mV	3.71mV	5.86mV	7.79mV	Pass
40% Load	14.28mV	3.91mV	6.27mV	8.30mV	Pass
50% Load	12.96mV	4.52mV	6.52mV	8.45mV	Pass
60% Load	14.63mV	4.68mV	6.98mV	8.65mV	Pass
70% Load	15.49mV	4.98mV	7.38mV	9.31mV	Pass
80% Load	16.10mV	5.18mV	9.66mV	9.21mV	Pass
90% Load	17.82mV	6.60mV	9.60mV	9.26mV	Pass
100% Load	24.46mV	13.01mV	12.96mV	17.34mV	Pass
110% Load	26.08mV	16.39mV	14.09mV	20.26mV	Pass
Crossload1	14.47mV	6.73mV	11.32mV	8.67mV	Pass
Crossload2	10.43mV	7.72mV	4.55mV	8.04mV	Pass
Crossload3	21.97mV	4.32mV	12.74mV	9.01mV	Pass
Crossload4	18.58mV	9.91mV	8.29mV	13.92mV	Pass

The results above are not used in the certification process

Corsair HX1500i (2022)



Top side

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

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

MODEL / MODELO / 型号 / 型號 / 모델: RPS0132					
POWER SUPPLY / FUENTE DE ALIMENTACIÓN / 전원 공급 장치					
PART NUMBER: CP-9020215 / 75-004203					
交流輸入 AC 입력 Entrada de CA	AC INPUT 100 - 240V a.c. • 15 - 9A • 47 - 63Hz				
直流輸出 DC 출력 Salida de CC	+3.3V	+5V	+12V	-12V	+5Vsb
最大電流 MAX LOAD 최대 부하 Carga Máximo	25A	25A	125A	0.3A	3.5A
最大瓦特數 MAX POWER 최대 결합 와트 Wataje Combinado Máximo	150W	1500W	3.6W	17.5W	
PODER TOTAL / 总功率 / 總功率					
Total Power: 1500W 115V a.c.-240V a.c.					
Total Power: 1200W 100V a.c.-115V a.c.					
 Bauart geprüft sicherheit Regelmäßige Produktions- Überwachung www.tuv.com ID 1111243948  CERTIFICADO www.tuv.com ID 0000100000  C US  R39708 RoHS					

Power specifications label

Cybenetics runs voluntary certification programs for power supplies - ETA for efficiency, LAMBDA for noise and SAFE for safety and correct operation - and for cooling products, with DELTA for chassis soundproofing and PHI for fan airflow and static pressure. THETA rates cooler performance on AMD AM5 and Intel LGA1851 outside ISO 17065 and accreditation scope

www.cybenetics.com - info@cybenetics.com