



1st Player NGDP 1300W

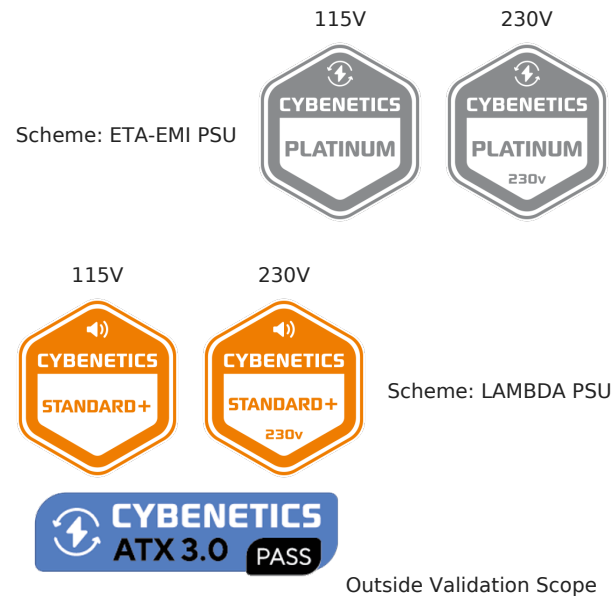
Serial Number 230722PSNGDP-C0317

Lab ID 1P13002258

Certification ID 252258

Test Result Report ID: 23PS2258A

Certificate Issue Date: Oct 17, 2023



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	Brueel & Kjaer 2270 G4
Microphone	Brueel & 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	1st Player
Model	NGDP 1300W
OEM/ODM	Helly Technology
Serial Number	230722PSNGDP-C0317
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	15.7.5

Rated Frequency (Hz)	50-60
Rated Power (W)	1300
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	120mm Fluid Dynamic Bearing Fan (HA1225H12F-Z)
Semi-Passive Operation	✓ (selectable)
Cybenetics Testing Information	
Lab ID	1P13002258
Date of receipt	Sep 26, 2023
Testing Date	Oct 12, 2023
Report Issued Date	Oct 17, 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 (610mm)	1	1	16-22AWG	No
4+4 pin EPS12V (650mm)	2	2	16AWG	No
6+2 pin PCIe (600mm)	4	4	16AWG	No
12+4 pin PCIe (720mm) (600W)	1	1	16-24AWG	No
4-pin Molex (450mm+145mm+145mm+145mm)	1	4	18AWG	No
SATA (450mm+150mm+150mm+150mm)	3	12	18AWG	No
AC Power Cord (1360mm) - C13 coupler	1	1	18AWG	-

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	108	3	0.3
	Watts	120		1296	15	3.6
Total Max. Power (W)		1300				

Parts Description

General Data	
Manufacturer (OEM)	Helly Technology
PCB Type	Double-Sided
Primary Side	
Transient Filter	2x Y caps, 2x X caps, 3x TRX Y1222M caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor MF73T-1 20/6 (20 Ohm) & Relay
Bridge Rectifier(s)	2x GeneSiC GBU15J (600V, 15A @ 100°C) (one of them on heatsink)
APFC MOSFETs	3x Oriental Semiconductor OSG60R099FT3 (600V, 19A @ 100°C, Rds(on): 0.099Ohm)
APFC Boost Diode	1x G3S06510A (650V, 10A @ 154°C)
Bulk Cap(s)	2x Nippon Chemi-Con (400V, 680uF each or 1,360 combined, 2,000h @ 105°C, KMR)
Main Switchers	4x Oriental Semiconductor OSG60R099FT3 (600V, 19A @ 100°C, Rds(on): 0.099Ohm)
APFC Controller	Champion CM6500UNX
Resonant Controller	Champion CM6901T6X
Topology	Primary side: APFC, Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	12x G013N04G
5V & 3.3V	DC-DC Converters: 2x XSEMI XP3NA3R4MT (30V, 46A @ 100°C, Rds(on): 3.4mOhm) & 3x RMN3N5R0DF (30V, 19.7A @ 70°C, Rds(on): 5mOhm) PWM Controller(s): ANPEC APW7159C
Filtering Capacitors	Electrolytic: 2x Nippon Chemi-Con (2-5,000h @ 105°C, KZE), 3x Rubycon (4-10,000h @ 105°C, YXF) Polymer: 30x
Supervisor IC	Weltrend WT7527 (OCP, OVP, UVP, PG, SCP)
Fan Model	Hong Hua HA1225H12F-Z (120mm, 12V, 0.58A, Fluid Dynamic Bearing Fan)
5VSB Circuit	

Rectifier	1x 60R20S
Standby PWM Controller	Excelliance MOS EM8569C

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 v3.0 Compliance	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	90.445%
Average Noise Output (>1450 Load Combinations)	37.28dBA
Average PF (>1450 Load Combinations)	0.990
Efficiency With 10W (≤500W) or 2% (>500W) Load	76.316%
Standby Power Consumption	0.0758W
Non-Accredited	
12V Ripple (Full Load)	33.86mV
5V Ripple (Full Load)	18.07mV
3.3V Ripple (Full Load)	27.73mV
5VSB Ripple (Full Load)	23.23mV
12V Load Regulation	0.33%
5V Load Regulation	0.64%
3.3V Load Regulation	0.90%
5VSB Load Regulation	1.32%
Inrush Current	11.030A

230V

Accredited		
Average Efficiency (>1450 load combinations)	92.747%	
Average Noise Output (>1450 Load Combinations)	36.97dBA	
Average PF (>1450 Load Combinations)	0.971	
Efficiency With 10W (≤500W) or 2% (>500W) Load	77.744%	
Standby Power Consumption	0.1199W	
Non-Accredited		
12V Ripple (Full Load)	35.12mV	
5V Ripple (Full Load)	18.36mV	
3.3V Ripple (Full Load)	26.97mV	
5VSB Ripple (Full Load)	22.57mV	
12V Load Regulation	0.34%	
5V Load Regulation	0.58%	
3.3V Load Regulation	0.87%	
5VSB Load Regulation	1.26%	
Inrush Current	17.800A	
12V Transient Response (200%)	11.35V	
5V Transient Response (200%)	4.864V	
3.3V Transient Response (200%)	3.214V	
5VSB Transient Response (200%)	4.853V	
Hold-Up Time & PWR_OK Signal	23.50ms	
AC Loss to PWR_OK Hold Up Time	21.10ms	
PWR_OK Inactive to DC Loss Delay	2.40ms	
PSU Timings: T1 (20% / 100%)	56.0ms	54.0ms
PSU Timings: T3 (20% / 100%)	122.0ms	125.0ms
OPP (30.07°C / 41.20°C)	136.24%	131.32%

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	23.5
AC Loss to PWR_OK Hold Up Time (ms)	21.1
PWR_OK Inactive to DC Loss Delay (ms)	2.4



Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	114.91 V	114.82 V	113.85 V	115.01 V	116.15 V	PASS
Mains Frequency:	60.01 Hz	59.96 Hz	59.40 Hz	60.06 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.421	1.419	1.340	1.424	1.490	PASS
Mains Voltage THD:	0.33 %	0.25 %	N/A	0.43 %	2.00 %	PASS
Real Power:	0.076 W	0.069 W	N/A	0.083 W	N/A	N/A
Apparent Power:	7.412 W	7.394 W	N/A	7.433 W	N/A	N/A
Power Factor:	0.010	N/A	N/A	N/A	N/A	N/A

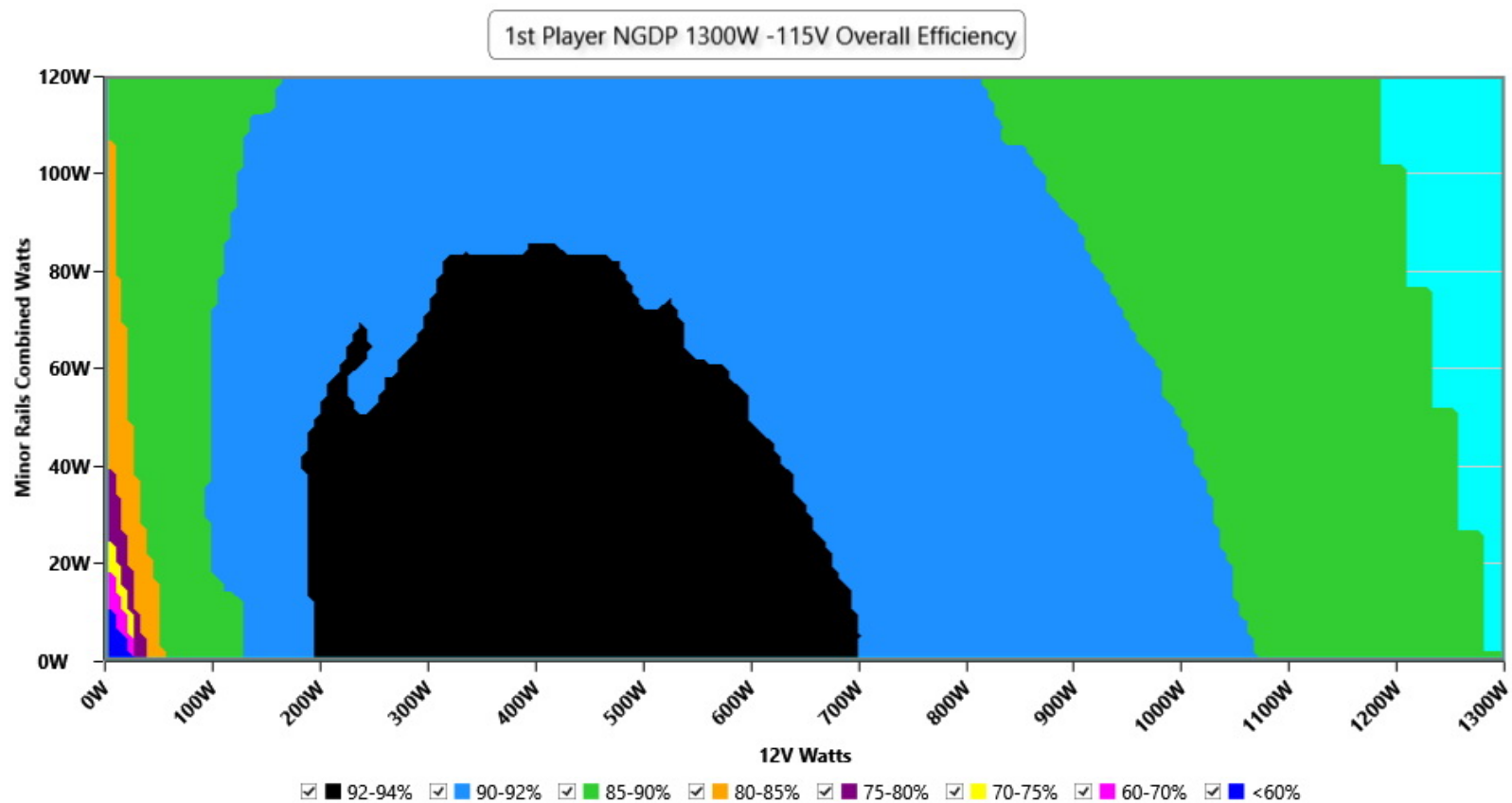
230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	229.88 V	229.75 V	227.70 V	229.98 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	49.99 Hz	49.50 Hz	50.01 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.418	1.416	1.340	1.419	1.490	PASS
Mains Voltage THD:	0.20 %	0.17 %	N/A	0.27 %	2.00 %	PASS
Real Power:	0.120 W	0.097 W	N/A	0.184 W	N/A	N/A
Apparent Power:	25.435 W	25.405 W	N/A	25.472 W	N/A	N/A

Power Factor:	0.005	N/A	N/A	N/A	N/A	N/A
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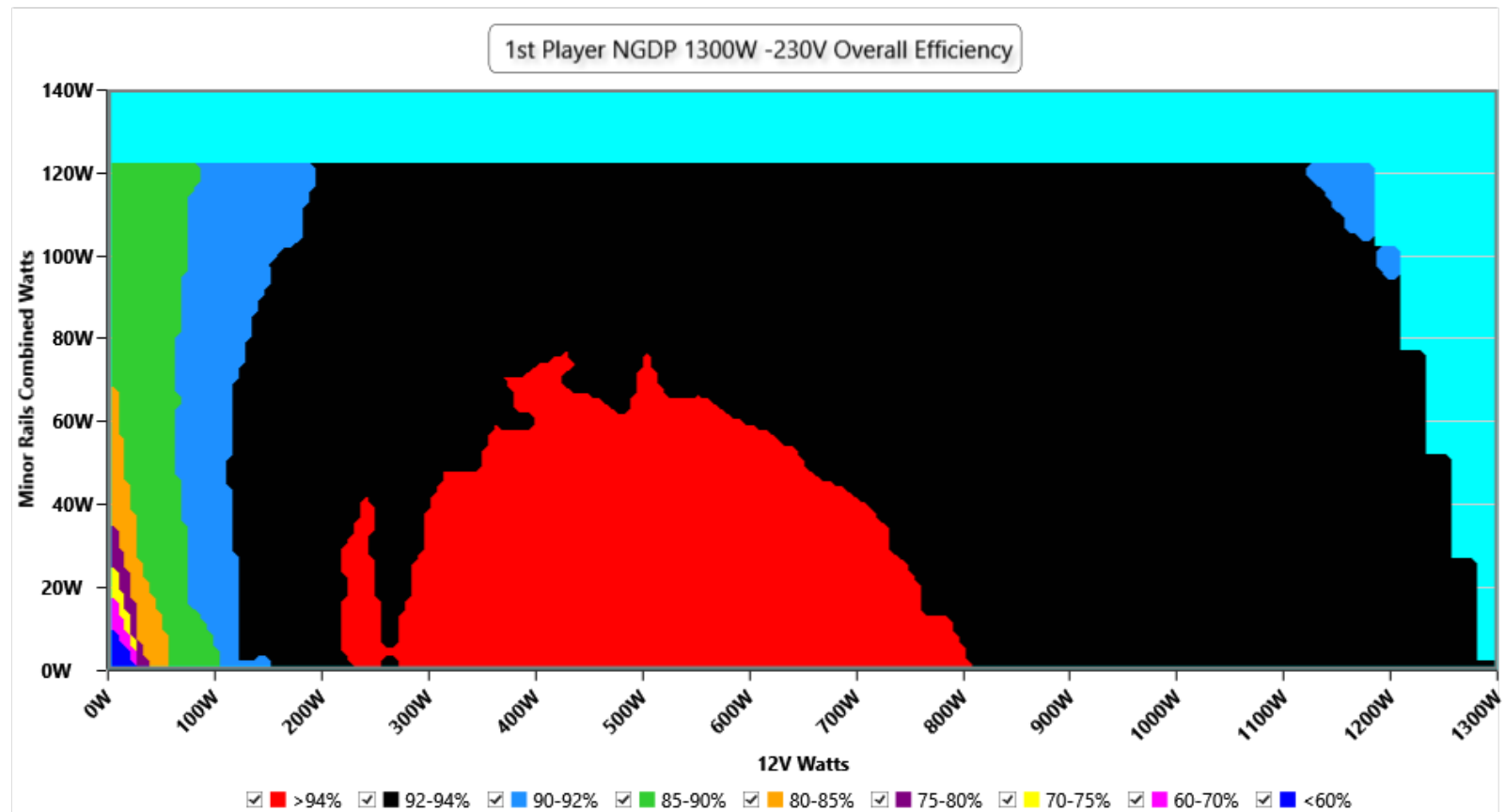
Efficiency Graph

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

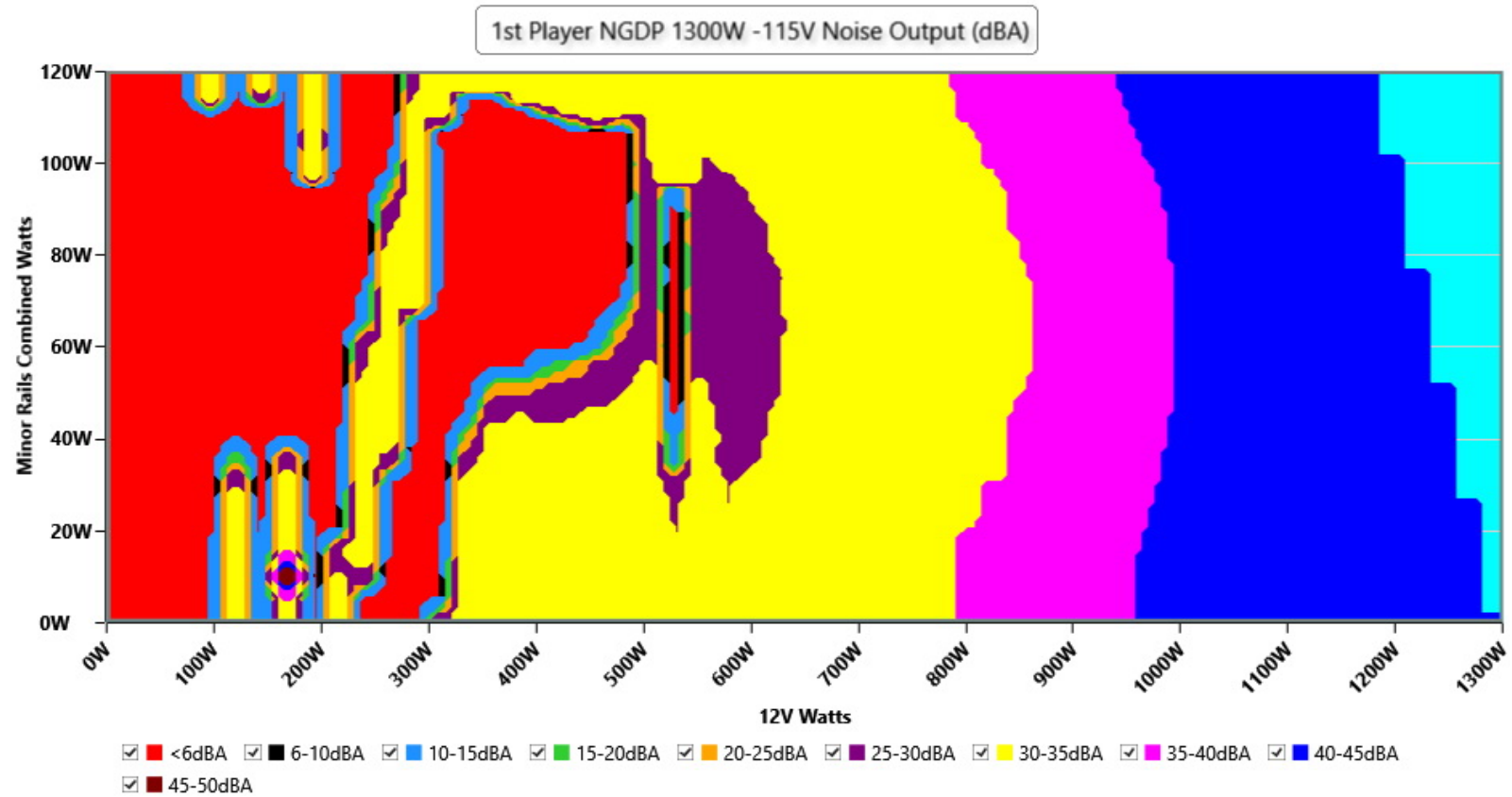


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This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations

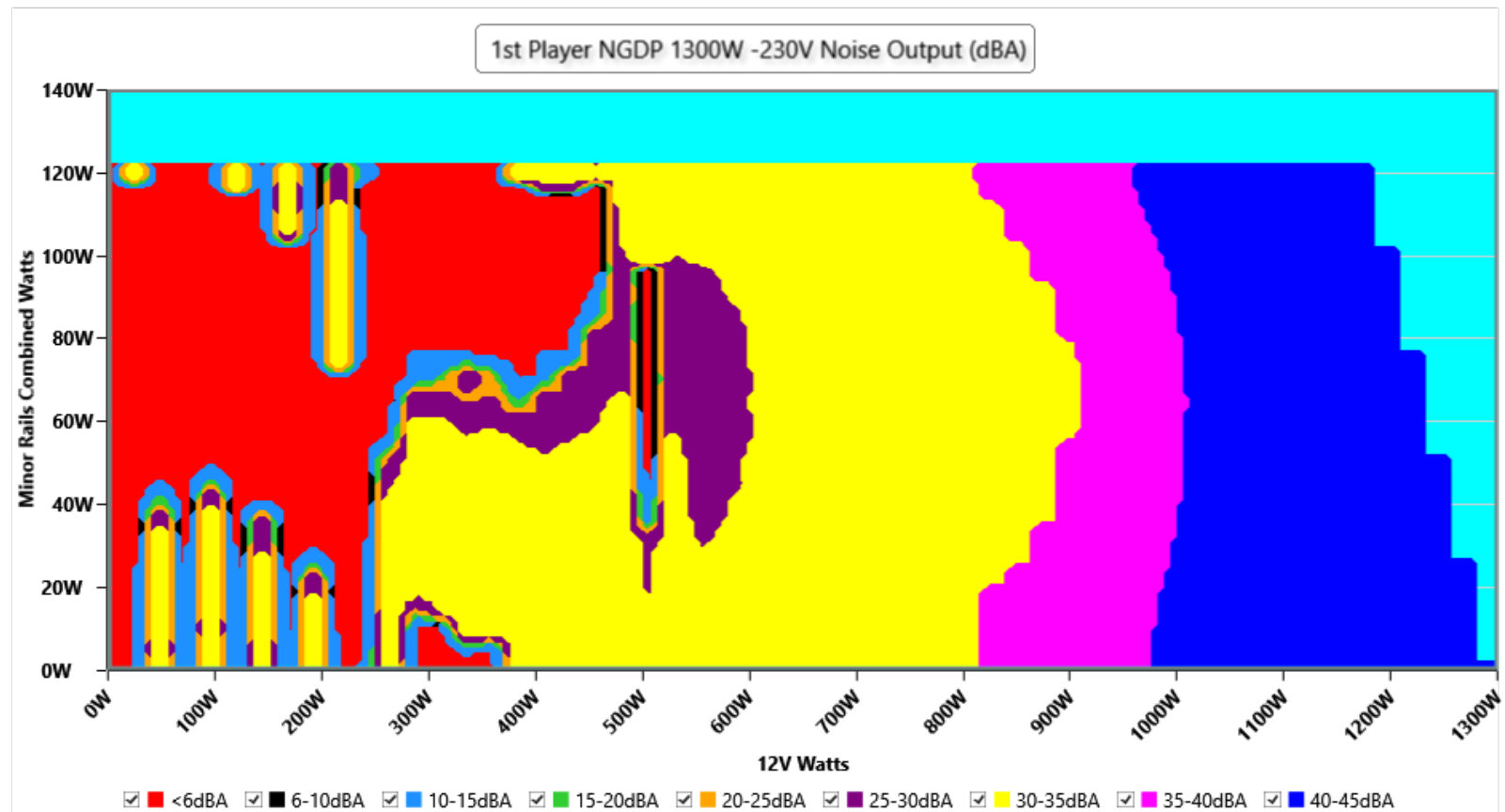
Noise Graph

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

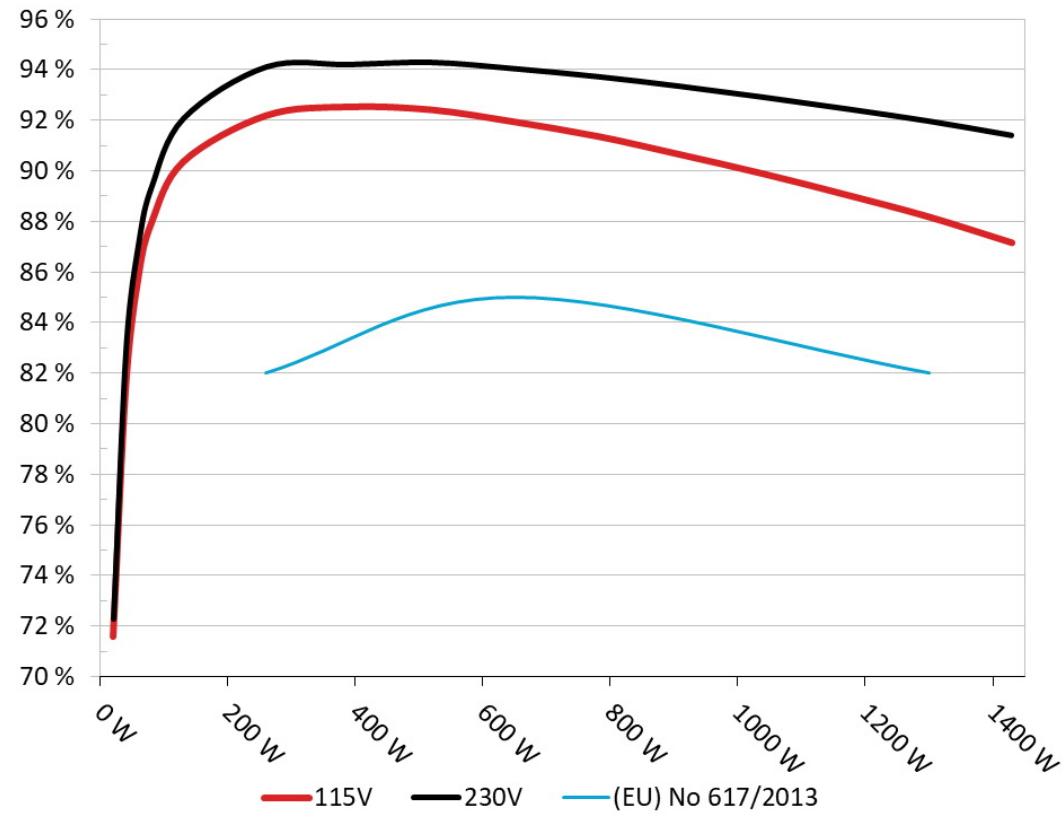
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance

Efficiency under high ambient temperature

Efficiency: 1st Player NGDP 1300W

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



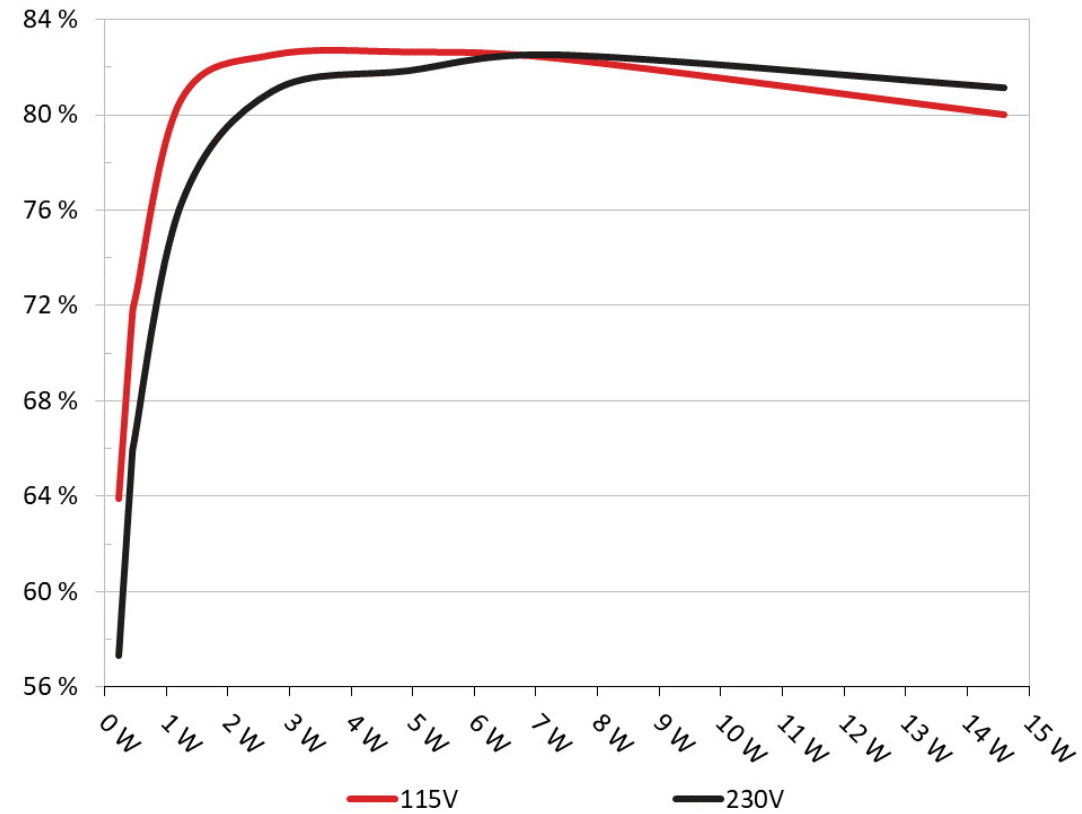
INFO

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: 1st Player NGDP 1300W

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	0.223W	63.882%	0.047
	4.955V	0.349W		114.91V
2	0.09A	0.446W	71.676%	0.082
	4.953V	0.622W		114.93V
3	0.55A	2.716W	82.534%	0.331
	4.94V	3.291W		114.92V
4	1A	4.926W	82.658%	0.444
	4.926V	5.959W		114.91V
5	1.5A	7.367W	82.385%	0.504
	4.911V	8.942W		114.91V
6	3A	14.596W	80.025%	0.557
	4.866V	18.239W		114.9V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.223W	57.293%	0.015
	4.954V	0.39W		229.88V
2	0.09A	0.446W	66.039%	0.027
	4.953V	0.675W		229.88V
3	0.55A	2.717W	80.994%	0.126
	4.939V	3.354W		229.88V
4	1A	4.926W	81.854%	0.208
	4.926V	6.018W		229.88V
5	1.5A	7.367W	82.521%	0.279
	4.911V	8.928W		229.88V
6	3A	14.596W	81.14%	0.379
	4.866V	17.988W		229.88V

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%	8.876A	2.004A	1.963A	1.004A	129.993	90.351%	1381	33.5	40.52°C	0.972
	12.211V	4.99V	3.362V	4.98V	143.882				44.71°C	114.87V
20%	18.764A	3.009A	2.948A	1.207A	259.947	92.176%	1300	31.9	40.72°C	0.982
	12.206V	4.984V	3.358V	4.973V	282.014				45.29°C	114.82V
30%	28.974A	3.513A	3.441A	1.409A	389.608	92.519%	1384	33.6	41.45°C	0.989
	12.203V	4.982V	3.356V	4.967V	421.177				46.48°C	114.81V
40%	39.212A	4.016A	3.936A	1.613A	519.538	92.401%	1493	35.8	41.74°C	0.993
	12.199V	4.98V	3.354V	4.961V	562.268				47.23°C	114.74V
50%	49.134A	5.024A	4.924A	1.816A	649.7	91.924%	1755	40.1	42.3°C	0.995
	12.195V	4.976V	3.351V	4.957V	706.787				48.29°C	114.7V
60%	59.061A	6.033A	5.915A	2A	779.725	91.356%	1873	42.2	42.83°C	0.996
	12.191V	4.973V	3.348V	4.953V	853.506				49.42°C	114.64V
70%	68.994A	7.043A	6.907A	2.223A	909.911	90.632%	1976	43.4	43.16°C	0.996
	12.187V	4.97V	3.345V	4.948V	1003.97				50.21°C	114.59V
80%	78.933A	8.052A	7.9A	2.325A	1039.532	89.875%	2098	44.7	43.98°C	0.997
	12.183V	4.967V	3.342V	4.946V	1156.638				52.02°C	114.54V
90%	89.273A	8.559A	8.385A	2.428A	1169.767	89.044%	2177	45.6	44.97°C	0.997
	12.179V	4.965V	3.339V	4.942V	1313.697				54.03°C	114.48V
100%	99.359A	9.066A	8.9A	3.043A	1299.376	88.173%	2184	45.8	45.33°C	0.997
	12.174V	4.963V	3.337V	4.929V	1473.668				55.39°C	114.43V
110%	109.384A	10.08A	9.989A	3.044A	1429.594	87.151%	2189	45.8	46.63°C	0.996
	12.170V	4.96V	3.334V	4.928V	1640.369				57.56°C	114.37V
CL1	0.115A	14.551A	14.29A	0A	121.305	83.413%	1847	41.8	40.45°C	0.972
	12.208V	4.961V	3.338V	5.038V	145.424				45.91°C	114.86V

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	20.157A	0A	0.001A	101.343	82.843%	1432	34.7	39.18°C	0.967
	12.210V	4.959V	3.355V	5.056V	122.32				46.24°C	114.87V
CL3	0.113A	0A	19.765A	0A	67.4	77.865%	1431	34.7	39.71°C	0.952
	12.211V	4.984V	3.34V	4.991V	86.563				48.75°C	114.89V
CL4	106.763A	0A	0.001A	0.001A	1300.016	88.605%	2179	45.6	44.55°C	0.997
	12.176V	4.983V	3.354V	4.957V	1467.186				55.53°C	114.44V

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%	8.878A	2.005A	1.964A	1.005A	130.01	92.074%	0	<6.0	44.67°C	0.922
	12.212V	4.988V	3.361V	4.978V	141.203				40.44°C	229.87V
20%	18.764A	3.009A	2.948A	1.206A	259.974	94.107%	0	<6.0	45.18°C	0.96
	12.208V	4.986V	3.358V	4.974V	276.24				40.56°C	229.85V
30%	28.972A	3.513A	3.442A	1.41A	389.622	94.198%	1351	33.1	41.27°C	0.972
	12.204V	4.982V	3.356V	4.967V	413.619				46.39°C	229.82V
40%	39.208A	4.018A	3.937A	1.613A	519.546	94.284%	1391	33.8	41.61°C	0.978
	12.200V	4.978V	3.353V	4.96V	551.043				47.18°C	229.8V
50%	49.130A	5.025A	4.925A	1.816A	649.689	94.036%	1724	39.5	42.11°C	0.981
	12.196V	4.976V	3.351V	4.956V	690.92				48.2°C	229.8V
60%	59.057A	6.034A	5.915A	2A	779.734	93.724%	1832	41.5	42.74°C	0.984
	12.192V	4.973V	3.347V	4.952V	831.951				49.26°C	229.75V
70%	68.989A	7.044A	6.908A	2.223A	909.904	93.338%	1950	43.4	43.25°C	0.986
	12.188V	4.97V	3.345V	4.948V	974.834				50.31°C	229.73V
80%	78.930A	8.053A	7.901A	2.325A	1039.529	92.912%	2060	44.1	43.56°C	0.988
	12.183V	4.966V	3.341V	4.945V	1118.827				51.57°C	229.7V
90%	89.268A	8.56A	8.385A	2.428A	1169.762	92.45%	2170	45.5	44.04°C	0.989
	12.179V	4.964V	3.339V	4.941V	1265.227				53.14°C	229.68V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
100%	99.346A	9.068A	8.901A	3.044A	1299.372	91.967%	2178	45.6	45.47°C	0.99
	12.176V	4.962V	3.337V	4.928V	1412.867				55.52°C	229.66V
110%	109.372A	10.081A	9.99A	3.044A	1429.574	91.403%	2187	45.8	46.98°C	0.991
	12.172V	4.959V	3.334V	4.927V	1564.042				57.89°C	229.64V
CL1	0.113A	14.555A	14.291A	0A	121.281	85.664%	1358	33.1	42.2°C	0.922
	12.211V	4.96V	3.338V	5.035V	141.536				47.7°C	229.86V
CL2	0.113A	20.149A	0A	0.001A	101.332	84.161%	1413	35.3	43.89°C	0.909
	12.210V	4.961V	3.356V	5.058V	120.4				50.95°C	229.87V
CL3	0.113A	0A	19.762A	0A	67.392	79.13%	1423	35.1	42.13°C	0.87
	12.212V	4.985V	3.34V	4.992V	85.158				51.14°C	229.87V
CL4	106.754A	0A	0.001A	0.001A	1299.946	92.399%	2179	45.6	46.31°C	0.99
	12.177V	4.983V	3.355V	4.957V	1406.894				57.24°C	229.66V

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	0.5A	0.49A	0.2A	19.997	71.589%	0	<6.0	39.69°C	0.883
	12.214V	4.995V	3.367V	4.994V	27.928				36.64°C	114.9V
40W	2.676A	0.701A	0.686A	0.3A	39.996	81.53%	0	<6.0	40.91°C	0.927
	12.214V	4.995V	3.367V	4.993V	49.056				37.67°C	114.9V
60W	4.137A	0.901A	0.882A	0.401A	59.995	85.868%	0	<6.0	42.27°C	0.95
	12.213V	4.994V	3.365V	4.99V	69.873				38.53°C	114.89V
80W	5.594A	1.101A	1.079A	0.501A	79.936	87.923%	0	<6.0	43.3°C	0.953
	12.212V	4.993V	3.365V	4.988V	90.913				39.33°C	114.88V

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	0.501A	0.49A	0.2A	19.997	72.282%	0	<6.0	39.79°C	0.631
	12.217V	4.991V	3.366V	4.99V	27.67				36.73°C	229.9V
40W	2.676A	0.701A	0.686A	0.301A	39.999	83.096%	0	<6.0	40.99°C	0.763
	12.215V	4.991V	3.365V	4.989V	48.132				37.79°C	229.89V
60W	4.136A	0.902A	0.883A	0.401A	59.999	87.226%	0	<6.0	41.69°C	0.835
	12.215V	4.99V	3.364V	4.986V	68.784				38.2°C	229.88V
80W	5.594A	1.102A	1.079A	0.501A	79.949	89.38%	0	<6.0	42.97°C	0.877
	12.214V	4.99V	3.364V	4.985V	89.447				39.12°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	13.10mV	9.09mV	10.95mV	12.68mV	Pass
20% Load	13.30mV	10.42mV	11.92mV	13.10mV	Pass
30% Load	12.23mV	9.25mV	10.95mV	12.17mV	Pass
40% Load	14.99mV	11.24mV	13.91mV	14.17mV	Pass
50% Load	16.22mV	11.55mV	15.34mV	14.17mV	Pass
60% Load	18.42mV	12.72mV	18.11mV	16.37mV	Pass
70% Load	18.72mV	12.82mV	20.46mV	17.55mV	Pass
80% Load	20.92mV	15.33mV	23.79mV	18.41mV	Pass
90% Load	22.92mV	17.37mV	25.27mV	19.64mV	Pass
100% Load	33.86mV	18.07mV	27.73mV	23.23mV	Pass
110% Load	36.24mV	20.62mV	29.53mV	24.77mV	Pass
Crossload1	19.72mV	12.62mV	16.59mV	15.42mV	Pass
Crossload2	13.66mV	18.49mV	12.84mV	15.81mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	11.87mV	8.12mV	17.95mV	11.87mV	Pass
Crossload4	33.71mV	15.70mV	24.17mV	20.19mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	12.74mV	8.99mV	10.23mV	11.66mV	Pass
20% Load	11.46mV	9.86mV	11.36mV	12.38mV	Pass
30% Load	13.46mV	11.04mV	12.69mV	13.76mV	Pass
40% Load	14.17mV	10.83mV	14.58mV	13.45mV	Pass
50% Load	13.61mV	10.99mV	14.22mV	13.61mV	Pass
60% Load	16.58mV	12.52mV	18.01mV	15.65mV	Pass
70% Load	18.47mV	13.08mV	20.21mV	16.72mV	Pass
80% Load	19.75mV	14.05mV	21.99mV	18.05mV	Pass
90% Load	21.59mV	14.81mV	23.89mV	18.31mV	Pass
100% Load	35.12mV	18.36mV	26.97mV	22.57mV	Pass
110% Load	37.08mV	21.07mV	29.05mV	25.58mV	Pass
Crossload1	20.53mV	13.13mV	16.68mV	15.77mV	Pass
Crossload2	13.51mV	19.41mV	13.45mV	16.27mV	Pass
Crossload3	11.51mV	7.51mV	17.95mV	12.33mV	Pass
Crossload4	34.64mV	15.73mV	23.90mV	19.85mV	Pass

The results above are not used in the certification process

1st Player NGDP 1300W



Top side



Power specifications label

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