

## Anex

1st Player NGDP 750W

Lab ID#: FP75002360  
Receipt Date: Jan 24, 2024  
Test Date: Feb 19, 2024

Report: 24PS2360A  
Report Date: Feb 21, 2024

DUT INFORMATION		DUT SPECIFICATIONS	
Brand	1st Player	Rated Voltage (Vrms)	100-240
Manufacturer (OEM)	Helly Technology	Rated Current (Arms)	10-5
Series	NGDP	Rated Frequency (Hz)	50-60
Model Number	HA-750BA4	Rated Power (W)	750
Serial Number	240126PSNGDP-J0116	Type	ATX12V
DUT Notes		Cooling	120mm Fluid Dynamic Bearing Fan (HA1225M12F-Z)
		Semi-Passive Operation	✓ (selectable)
		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 v3.1 PSU Power Excursion	✓

### 115V

Average Efficiency	88.719%
Efficiency With 10W (≤500W) or 2% (>500W)	65.382
Average Efficiency 5VSB	80.858%
Standby Power Consumption (W)	0.0523000
Average PF	0.993
Avg Noise Output	22.42 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	A

### 230V

Average Efficiency	91.113%
Average Efficiency 5VSB	80.512%
Standby Power Consumption (W)	0.0893000
Average PF	0.967
Avg Noise Output	22.43 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	A

### POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62.5	3	0.3
	Watts	120		750	15	3.6
Total Max. Power (W)		750				

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

Hold-Up Time (ms)	20.6
AC Loss to PWR_OK Hold Up Time (ms)	17.4
PWR_OK Inactive to DC Loss Delay (ms)	3.2

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### CABLES AND CONNECTORS

#### Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (610mm)	1	1	18-22AWG	No
4+4 pin EPS12V (650mm)	2	2	18AWG	No
6+2 pin PCIe (600mm)	2	2	18AWG	No
12+4 pin PCIe (710mm) (600W)	1	1	16-24AWG	No
SATA (450mm+145mm+145mm+145mm)	2	8	18AWG	No
4-pin Molex (450mm+145mm+145mm+145mm)	1	4	18AWG	No
AC Power Cord (1360mm) - C13 coupler	1	1	18AWG	-

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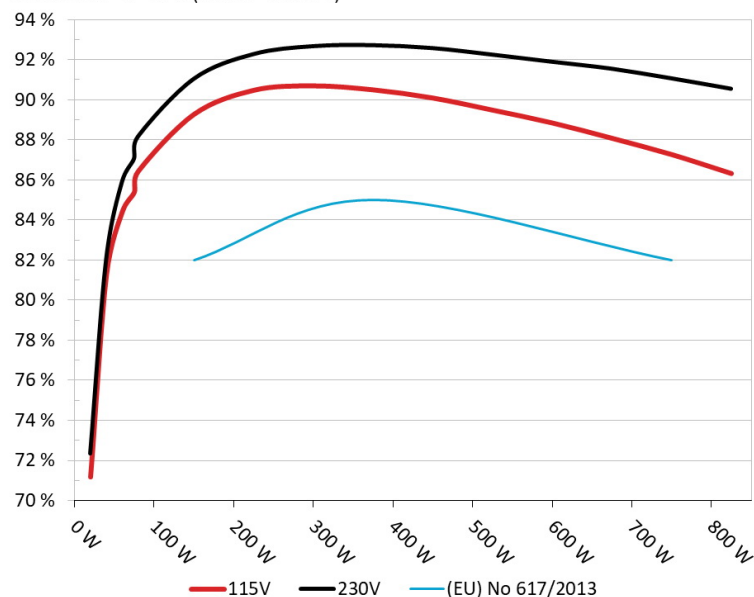
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### EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

#### Efficiency: 1st Player NGDP 750W

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



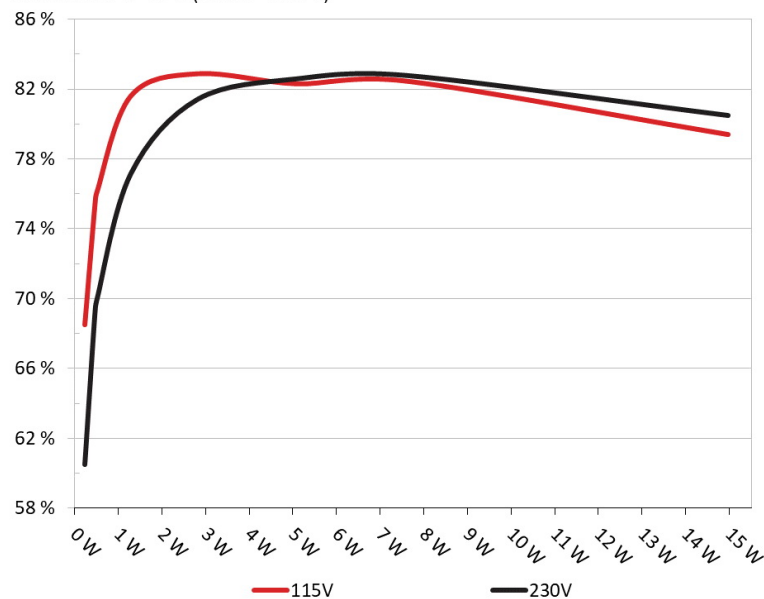
#### INFO

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 750W

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	67.989%	0.053
	5.136V	0.34W		115.17V
2	0.09A	0.462W	74.851%	0.095
	5.134V	0.617W		115.16V
3	0.55A	2.812W	82.366%	0.37
	5.111V	3.414W		115.17V
4	1A	5.09W	81.784%	0.478
	5.088V	6.223W		115.16V
5	1.5A	7.596W	81.943%	0.53
	5.063V	9.271W		115.15V
6	3A	14.962W	78.883%	0.579
	4.987V	18.967W		115.15V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231W	59.988%	0.018
	5.137V	0.385W		230.39V
2	0.09A	0.462W	68.648%	0.032
	5.134V	0.673W		230.39V
3	0.55A	2.812W	80.905%	0.152
	5.111V	3.476W		230.39V
4	1A	5.09W	82.084%	0.244
	5.088V	6.201W		230.39V
5	1.5A	7.597W	82.272%	0.318
	5.063V	9.234W		230.39V
6	3A	14.962W	79.985%	0.434
	4.987V	18.706W		230.39V

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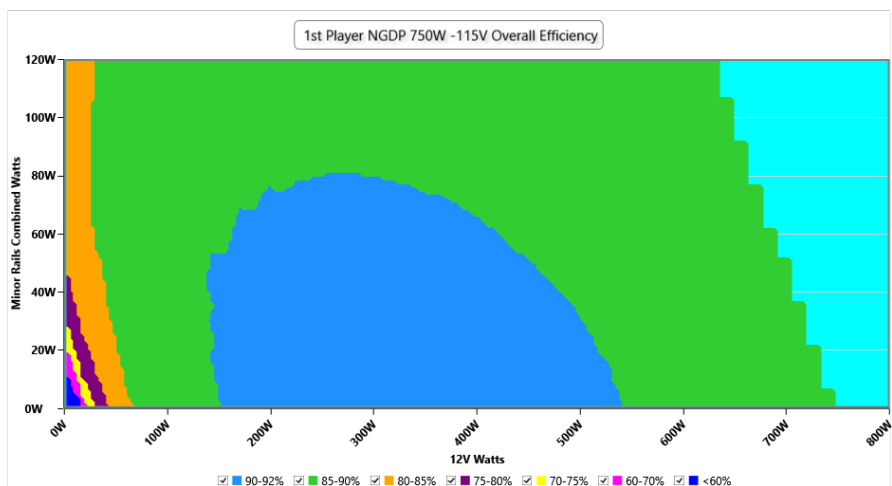
# 115V

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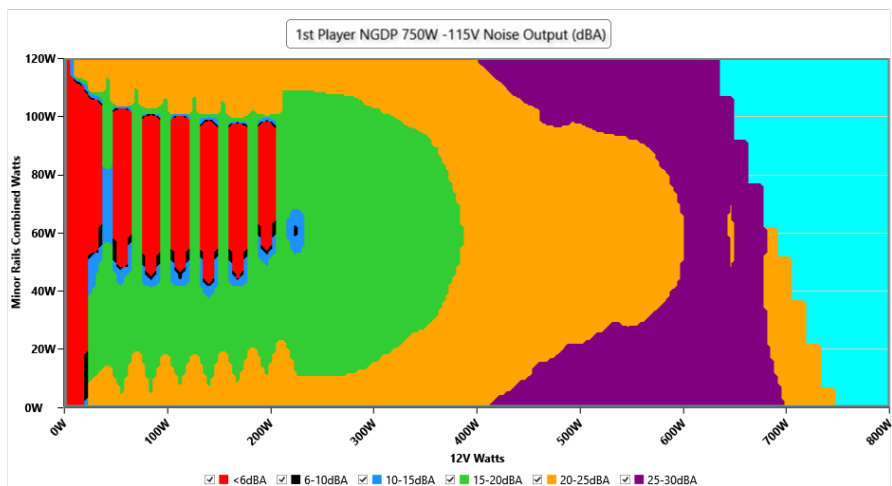
#### EFFICIENCY GRAPH 115V



#### 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:	115.14 V	115.11 V	113.85 V	115.17 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:	1.415	1.415	1.340	1.416	1.490	PASS
Mains Voltage THD:	0.13 %	0.11 %	N/A	0.15 %	2.00 %	PASS
Real Power:	0.052 W	0.008 W	N/A	0.062 W	N/A	N/A
Apparent Power:	6.328 W	6.324 W	N/A	6.333 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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## Anex

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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%	4.484A	1.979A	1.987A	0.985A	75.009	85.409%	924	21.1	40.26°C	0.982
	11.908V	5.055V	3.322V	5.08V	87.823				44.48°C	115.16V
20%	10.004A	2.97A	2.983A	1.186A	149.981	89.29%	978	23.0	40.7°C	0.988
	11.902V	5.052V	3.319V	5.061V	167.969				45.27°C	115.14V
30%	15.881A	3.467A	3.484A	1.389A	224.99	90.49%	1012	24.0	41.27°C	0.993
	11.897V	5.049V	3.316V	5.043V	248.648				46.28°C	115.12V
40%	21.769A	3.964A	3.985A	1.593A	300.083	90.709%	1059	25.7	41.68°C	0.995
	11.892V	5.047V	3.313V	5.024V	330.82				47.24°C	115.1V
50%	27.273A	4.958A	4.986A	1.799A	374.7	90.514%	1134	27.7	42.14°C	0.996
	11.887V	5.044V	3.31V	5.005V	413.97				48.21°C	115.08V
60%	32.808A	5.953A	5.99A	2.001A	449.586	90.106%	1217	29.9	42.79°C	0.997
	11.882V	5.041V	3.306V	4.986V	498.952				49.32°C	115.06V
70%	38.348A	6.95A	6.996A	2.216A	524.542	89.504%	1447	34.8	43.25°C	0.997
	11.876V	5.038V	3.302V	4.965V	586.052				50.31°C	115.05V
80%	43.961A	7.947A	8.003A	2.323A	599.749	88.862%	1532	36.4	43.89°C	0.997
	11.870V	5.034V	3.299V	4.951V	674.921				51.99°C	115.01V
90%	49.919A	8.449A	8.496A	2.431A	674.791	88.098%	1624	38.0	44.47°C	0.998
	11.865V	5.031V	3.295V	4.936V	765.961				53.51°C	115V
100%	55.678A	8.95A	9.02A	3.066A	749.999	87.283%	1750	39.7	45.66°C	0.998
	11.859V	5.028V	3.293V	4.894V	859.281				55.67°C	114.98V
110%	61.313A	9.951A	10.126A	3.072A	825.044	86.336%	1847	41.0	46.76°C	0.998
	11.853V	5.025V	3.288V	4.884V	955.625				57.69°C	114.96V
CL1	0.118A	14.35A	14.429A	0A	121.303	82.967%	1526	36.2	40.35°C	0.986
	11.903V	5.031V	3.306V	5.108V	146.206				45.84°C	115.14V
CL2	0.118A	19.9A	0A	0A	101.4	82.096%	1237	30.3	40.61°C	0.982
	11.908V	5.025V	3.324V	5.121V	123.514				47.71°C	115.15V
CL3	0.117A	0A	19.987A	0A	67.391	76.468%	1437	34.4	40.22°C	0.982
	11.905V	5.057V	3.302V	5.116V	88.129				49.31°C	115.16V
CL4	63.202A	0A	0A	0A	749.719	88.133%	1534	36.4	45.79°C	0.998
	11.862V	5.047V	3.305V	5.072V	850.669				56.74°C	114.98V

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## Anex

1st Player NGDP 750W

### 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	1.248A	0.494A	0.496A	0.195A	20.008	71.193%	0	<6.0	39.65°C	0.884
	11.914V	5.061V	3.327V	5.127V	28.104				36.59°C	115.18V
40W	2.744A	0.692A	0.694A	0.293A	40.005	81.3%	0	<6.0	40.91°C	0.955
	11.911V	5.06V	3.326V	5.12V	49.207				37.62°C	115.17V
60W	4.243A	0.89A	0.894A	0.391A	60.005	84.438%	847	19	38.16°C	0.975
	11.910V	5.058V	3.324V	5.113V	71.068				41.98°C	115.16V
80W	5.738A	1.088A	1.092A	0.49A	79.976	86.448%	866	18.9	39.13°C	0.981
	11.909V	5.057V	3.323V	5.106V	92.5				43.09°C	115.16V

### RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	13.32mV	7.65mV	7.17mV	7.44mV	Pass
20% Load	13.60mV	7.60mV	7.53mV	7.75mV	Pass
30% Load	13.11mV	6.78mV	7.27mV	7.64mV	Pass
40% Load	14.11mV	8.31mV	7.88mV	8.51mV	Pass
50% Load	14.37mV	8.77mV	8.65mV	9.42mV	Pass
60% Load	14.59mV	10.56mV	9.00mV	9.43mV	Pass
70% Load	14.79mV	10.00mV	8.90mV	9.78mV	Pass
80% Load	15.77mV	10.00mV	11.95mV	10.54mV	Pass
90% Load	15.06mV	9.64mV	10.89mV	10.03mV	Pass
100% Load	27.67mV	12.35mV	14.88mV	15.03mV	Pass
110% Load	28.26mV	11.76mV	13.84mV	15.36mV	Pass
Crossload1	19.33mV	12.19mV	14.38mV	22.58mV	Pass
Crossload2	13.19mV	8.26mV	8.59mV	19.21mV	Pass
Crossload3	12.55mV	9.64mV	11.95mV	18.49mV	Pass
Crossload4	27.42mV	8.45mV	7.94mV	24.92mV	Pass

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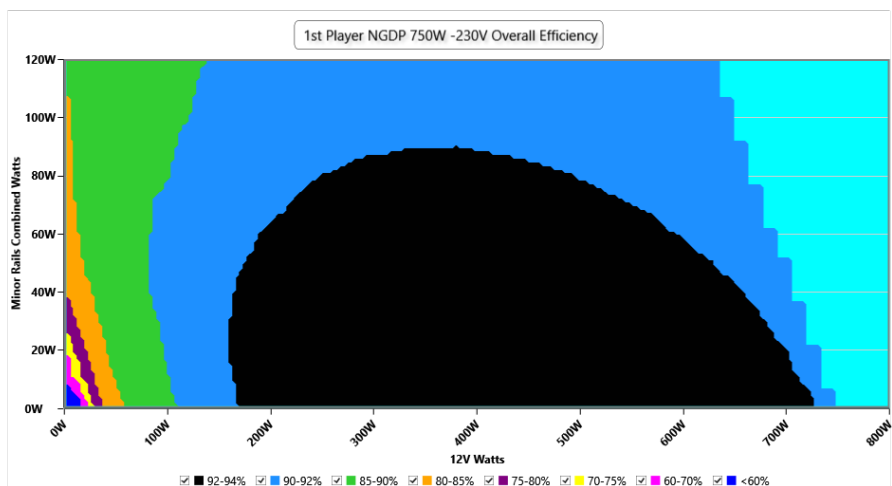
# 230V

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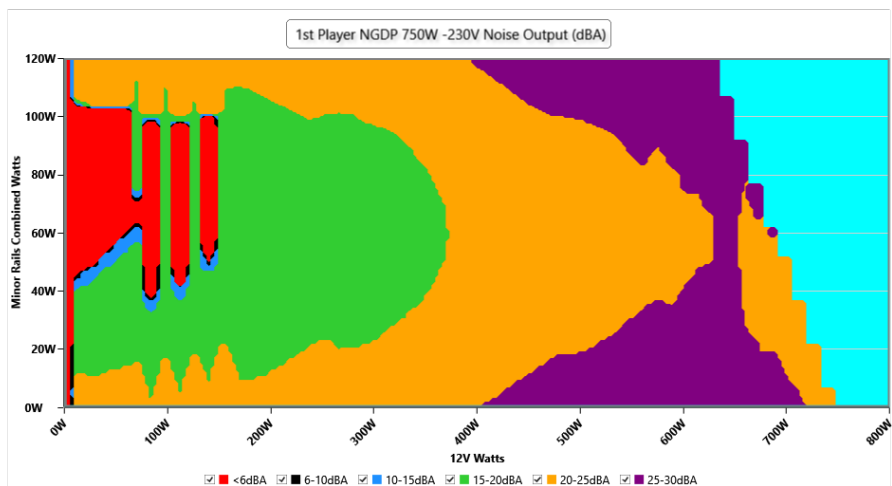
#### EFFICIENCY GRAPH 230V



#### 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 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

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### VAMPIRE POWER -230V

#### Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	230.38 V	230.37 V	227.70 V	230.41 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:	1.415	1.415	1.340	1.416	1.490	PASS
Mains Voltage THD:	0.14 %	0.13 %	N/A	0.16 %	2.00 %	PASS
Real Power:	0.089 W	0.078 W	N/A	0.099 W	N/A	N/A
Apparent Power:	21.249 W	21.240 W	N/A	21.257 W	N/A	N/A
Power Factor:	0.004	N/A	N/A	N/A	N/A	N/A

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### 10-110% LOAD TESTS 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%	4.484A	1.979A	1.987A	0.985A	75.007	87.059%	905	20.5	40.28°C	0.869
	11.909V	5.055V	3.322V	5.08V	86.161				44.52°C	230.38V
20%	10.002A	2.97A	2.983A	1.186A	149.972	91.034%	936	21.7	40.87°C	0.945
	11.904V	5.052V	3.319V	5.061V	164.74				45.46°C	230.38V
30%	15.878A	3.467A	3.484A	1.388A	224.979	92.27%	994	23.4	41.2°C	0.967
	11.898V	5.049V	3.316V	5.043V	243.821				46.28°C	230.37V
40%	21.765A	3.964A	3.984A	1.593A	300.065	92.666%	1046	25.1	41.61°C	0.976
	11.893V	5.047V	3.313V	5.025V	323.815				47.15°C	230.36V
50%	27.267A	4.958A	4.987A	1.799A	374.666	92.715%	1101	26.9	42.45°C	0.981
	11.888V	5.044V	3.309V	5.005V	404.119				48.45°C	230.36V
60%	32.804A	5.953A	5.991A	2.001A	449.56	92.571%	1182	28.9	42.9°C	0.983
	11.882V	5.041V	3.306V	4.986V	485.628				49.43°C	230.35V
70%	38.344A	6.95A	6.997A	2.215A	524.511	92.247%	1428	34.2	43.09°C	0.985
	11.876V	5.037V	3.302V	4.966V	568.608				50.18°C	230.33V
80%	43.959A	7.948A	8.004A	2.323A	599.729	91.892%	1507	35.9	43.74°C	0.987
	11.871V	5.033V	3.298V	4.951V	652.637				51.78°C	230.32V
90%	49.914A	8.448A	8.495A	2.431A	674.761	91.544%	1608	37.6	44.98°C	0.989
	11.865V	5.031V	3.296V	4.937V	737.094				53.99°C	230.31V
100%	55.674A	8.949A	9.02A	3.065A	749.972	91.062%	1717	39.2	45.81°C	0.99
	11.860V	5.028V	3.292V	4.895V	823.587				55.84°C	230.3V
110%	61.304A	9.951A	10.126A	3.071A	825.004	90.544%	1839	40.9	46.78°C	0.991
	11.854V	5.025V	3.288V	4.885V	911.162				57.72°C	230.29V
CL1	0.118A	14.35A	14.427A	0A	121.3	84.624%	1552	36.7	40.57°C	0.936
	11.904V	5.031V	3.306V	5.108V	143.343				45.98°C	230.38V
CL2	0.117A	19.902A	0A	0A	101.397	83.638%	1413	33.8	40.8°C	0.919
	11.909V	5.025V	3.325V	5.121V	121.236				47.95°C	230.39V
CL3	0.117A	0A	19.987A	0A	67.392	77.901%	1445	34.7	40.02°C	0.87
	11.906V	5.056V	3.302V	5.116V	86.505				49.03°C	230.39V
CL4	63.206A	0A	0A	0A	749.774	91.806%	1513	36.1	45.82°C	0.99
	11.862V	5.046V	3.306V	5.072V	816.62				56.79°C	230.31V

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## Anex

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### 20-80W LOAD TESTS 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	1.246A	0.494A	0.496A	0.195A	20.004	72.354%	0	<6.0	39.7°C	0.542
	11.914V	5.061V	3.328V	5.128V	27.639				36.65°C	230.38V
40W	2.744A	0.692A	0.694A	0.293A	40.003	82.034%	883	19.6	37.26°C	0.729
	11.913V	5.059V	3.326V	5.121V	48.764				40.56°C	230.38V
60W	4.242A	0.89A	0.893A	0.391A	60.002	85.915%	836	18.5	38.13°C	0.827
	11.911V	5.057V	3.324V	5.114V	69.831				41.65°C	230.38V
80W	5.738A	1.088A	1.092A	0.49A	79.966	88.16%	865	18.9	39.04°C	0.878
	11.909V	5.056V	3.323V	5.106V	90.708				42.89°C	230.38V

### RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	13.04mV	6.78mV	6.56mV	6.93mV	Pass
20% Load	13.04mV	7.14mV	7.98mV	7.79mV	Pass
30% Load	13.50mV	8.37mV	7.83mV	7.85mV	Pass
40% Load	14.47mV	8.72mV	9.05mV	8.61mV	Pass
50% Load	14.67mV	9.64mV	7.98mV	8.40mV	Pass
60% Load	14.52mV	8.37mV	8.24mV	8.97mV	Pass
70% Load	14.01mV	8.98mV	8.49mV	9.07mV	Pass
80% Load	15.28mV	9.39mV	10.43mV	9.32mV	Pass
90% Load	16.57mV	10.51mV	12.05mV	10.34mV	Pass
100% Load	27.56mV	11.71mV	13.20mV	14.19mV	Pass
110% Load	28.39mV	12.17mV	13.85mV	14.66mV	Pass
Crossload1	19.00mV	12.15mV	14.47mV	22.20mV	Pass
Crossload2	12.89mV	8.41mV	8.04mV	19.21mV	Pass
Crossload3	12.59mV	10.35mV	12.20mV	19.36mV	Pass
Crossload4	26.82mV	7.66mV	8.04mV	24.15mV	Pass

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

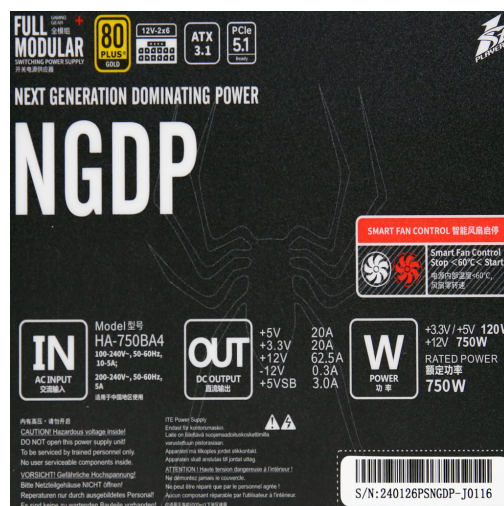
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## Anex

## 1st Player NGDP 750W



Top side



Power specifications label

## CERTIFICATIONS 115V




**Aristeidis Bitziopoulos**  
Lab Director

## CERTIFICATIONS 230V



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