

Anex

Chieftronic SteelPower 750W

Lab ID#: CT75001922
Receipt Date: Oct 1, 2021
Test Date: Oct 21, 2021

Report: 21PS1922A
Report Date: Oct 22, 2021

DUT INFORMATION

Brand	Chieftronic
Manufacturer (OEM)	CWT
Series	SteelPower
Model Number	BDK-750FC
Serial Number	G210400039115
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10
Rated Frequency (Hz)	47-63
Rated Power (W)	750
Type	ATX12V
Cooling	120mm Double Ball Bearing Fan (HA1225H12B-Z)
Semi-Passive Operation	X
Cable Design	Fully Modular

TEST EQUIPMENT

Electronic Loads	Chroma 63601-5 x4 Chroma 63600-2 x2 63640-80-80 x20 63610-80-20 x2
AC Sources	Chroma 6530, Keysight AC6804B
Power Analyzers	N4L PPA1530 x2
Sound Analyzer	Bruel & Kjaer 2270 G4
Microphone	Bruel & Kjaer Type 4955-A
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2
Tachometer	UNI-T UT372 x2
Digital Multimeter	Keysight U1273AX, Fluke 289, Keithley 2015 - THD
UPS	CyberPower OLS3000E 3kVA x2
Transformer	3kVA x2

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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

115V

Average Efficiency	85.293%
Efficiency With 10W (≤500W) or 2% (>500W)	60.853
Average Efficiency 5VSB	78.025%
Standby Power Consumption (W)	0.0421239
Average PF	0.986
Avg Noise Output	36.39 dB(A)
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	Standard+

230V

Average Efficiency	87.734%
Average Efficiency 5VSB	77.807%
Standby Power Consumption (W)	0.0823736
Average PF	0.953
Avg Noise Output	35.93 dB(A)
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	Standard+

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62.5	2.5	0.3
	Watts	120		750	12.5	3.6
Total Max. Power (W)		750				

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

Hold-Up Time (ms)	10.7
AC Loss to PWR_OK Hold Up Time (ms)	9.8
PWR_OK Inactive to DC Loss Delay (ms)	0.9

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CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (650mm)	1	1	18AWG	No
8 pin EPS12V (600mm) / 4+4 pin EPS12V (+150mm)	1	1 / 1	18AWG	No
6+2 pin PCIe (500mm+150mm)	2	4	18AWG	No
SATA (500mm+150mm+150mm)	2	6	18AWG	No
4-pin Molex (500mm+150mm+150mm) / FDD (+150mm)	1	3 / 1	18-20AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	18AWG	-

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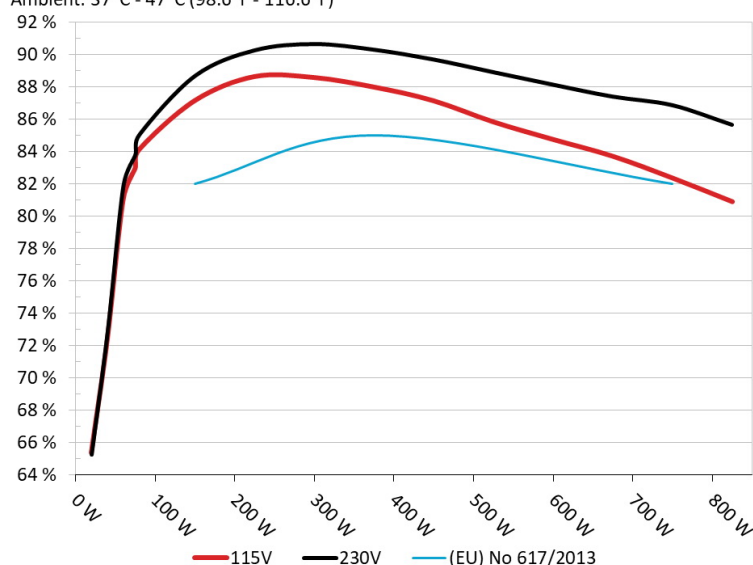
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Chieftronic SteelPower 750W

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



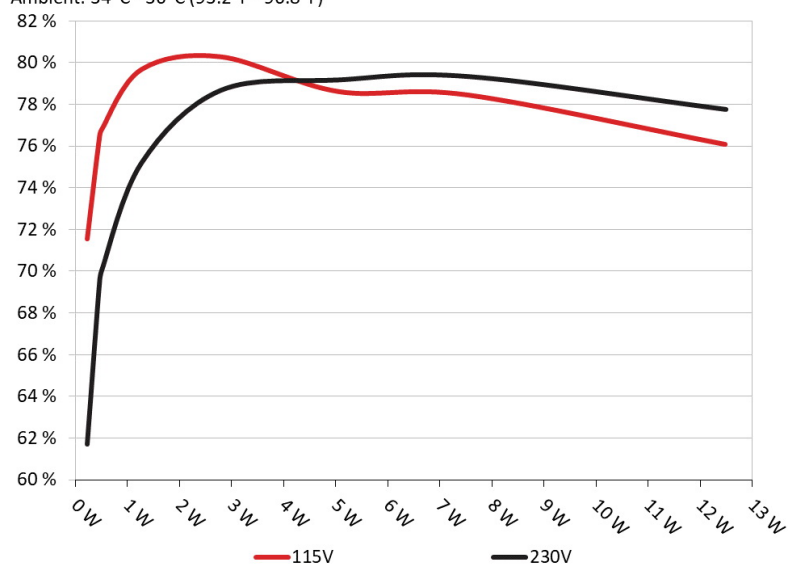
INFO

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: Chieftronic SteelPower 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	0.229W	71.54%	0.032
	5.094V	0.32W		115.15V
2	0.09A	0.458W	76.315%	0.06
	5.093V	0.6W		115.14V
3	0.55A	2.791W	80.287%	0.254
	5.073V	3.476W		115.15V
4	1A	5.055W	78.618%	0.34
	5.054V	6.43W		115.15V
5	1.5A	7.555W	78.448%	0.385
	5.036V	9.631W		115.16V
6	2.501A	12.487W	76.081%	0.433
	4.994V	16.413W		115.16V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.229W	61.716%	0.011
	5.094V	0.371W		230.39V
2	0.09A	0.458W	69.278%	0.02
	5.092V	0.661W		230.39V
3	0.55A	2.791W	78.672%	0.102
	5.073V	3.548W		230.39V
4	1A	5.055W	79.175%	0.168
	5.054V	6.385W		230.38V
5	1.5A	7.556W	79.334%	0.222
	5.036V	9.524W		230.38V
6	2.501A	12.489W	77.76%	0.295
	4.995V	16.061W		230.37V

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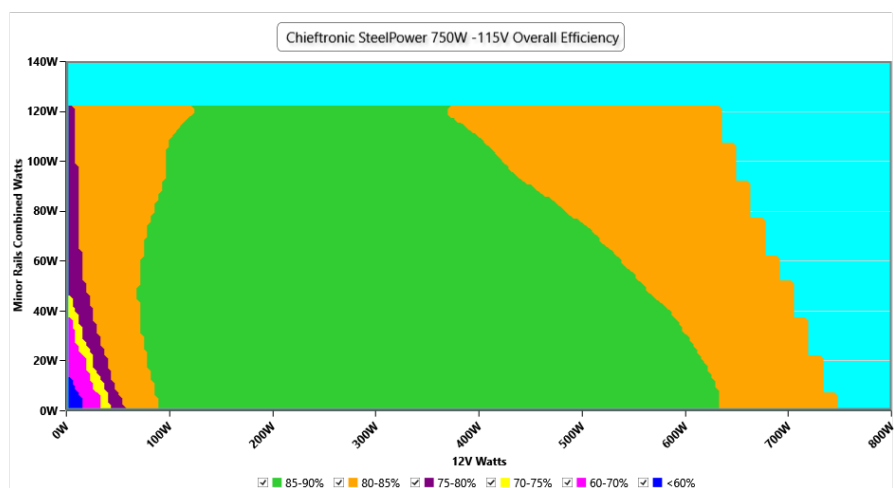
115V

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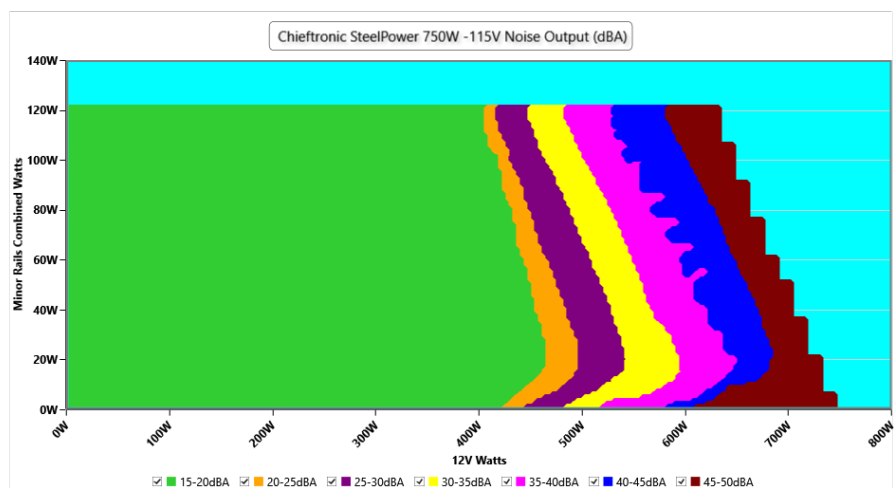
EFFICIENCY GRAPH 115V



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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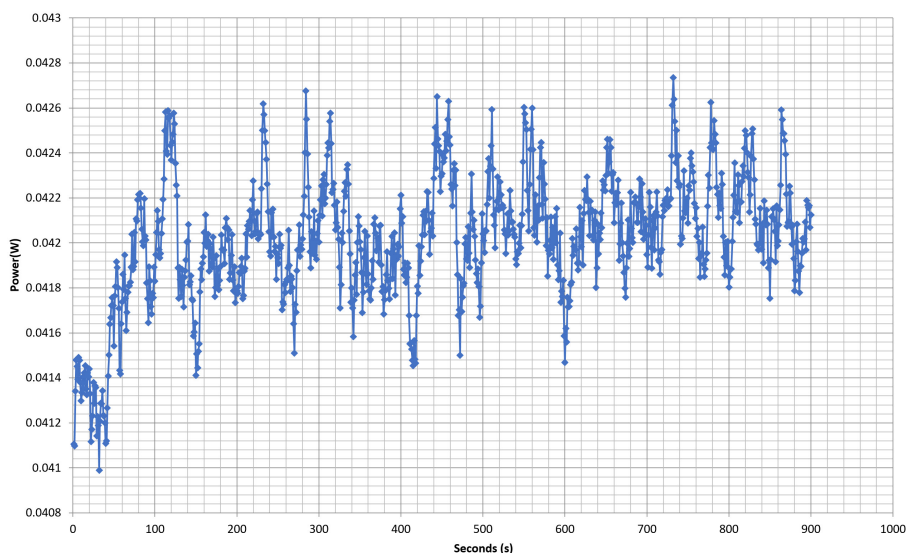
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Chieftronic SteelPower 750W

VAMPIRE POWER -115V

Power - G210400039115 - 14/10/2021 - 11:02



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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Chieftronic SteelPower 750W

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%	4.438A	1.987A	1.966A	0.993A	75.003	82.951%	718	21.2	39.65°C	0.97
	12.033V	5.035V	3.358V	5.037V	90.418				44.83°C	115.19V
20%	9.902A	2.983A	2.951A	1.197A	149.963	87.138%	724	19.2	40.69°C	0.981
	12.023V	5.03V	3.355V	5.014V	172.098				46.35°C	115.19V
30%	15.719A	3.483A	3.445A	1.403A	224.971	88.623%	727	18.8	41.86°C	0.986
	12.018V	5.026V	3.353V	4.991V	253.853				48.27°C	115.19V
40%	21.544A	3.984A	3.94A	1.611A	300.062	88.561%	730	18.4	41.94°C	0.986
	12.015V	5.022V	3.351V	4.968V	338.818				48.85°C	115.18V
50%	27.008A	4.984A	4.929A	1.821A	374.633	87.974%	732	19.0	42.15°C	0.986
	12.001V	5.017V	3.348V	4.945V	425.847				49.66°C	115.18V
60%	32.515A	5.985A	5.918A	2A	449.357	87.131%	736	19.4	42.74°C	0.986
	11.985V	5.014V	3.346V	4.923V	515.729				50.87°C	115.18V
70%	38.010A	6.991A	6.91A	2.248A	524.524	85.824%	1086	27.6	43.21°C	0.989
	11.981V	5.008V	3.343V	4.894V	611.165				51.88°C	115.18V
80%	43.607A	7.996A	7.902A	2.36A	599.738	84.734%	1525	37.3	43.82°C	0.991
	11.967V	5.004V	3.341V	4.873V	707.786				53.01°C	115.18V
90%	49.554A	8.5A	8.386A	2.473A	674.786	83.695%	2115	47.4	44.06°C	0.992
	11.952V	5.001V	3.339V	4.854V	806.245				53.81°C	115.18V
100%	55.509A	9.007A	8.902A	2.587A	749.924	82.343%	2360	49.6	45.44°C	0.993
	11.939V	4.997V	3.336V	4.833V	910.728				55.62°C	115.18V
110%	61.135A	10.018A	9.989A	2.596A	824.926	80.886%	2361	49.6	46.66°C	0.994
	11.926V	4.991V	3.333V	4.816V	1019.884				57.49°C	115.19V
CL1	0.116A	14.437A	14.271A	0A	121.306	79.812%	741	19.1	42.04°C	0.983
	12.047V	5.001V	3.342V	5.034V	151.989				49.14°C	115.2V
CL2	0.116A	20.027A	0A	0A	101.397	78.43%	743	18.4	43.46°C	0.976
	12.061V	4.993V	3.348V	5.059V	129.284				51.91°C	115.2V
CL3	0.116A	0A	19.712A	0A	67.393	72.809%	721	21.2	44.45°C	0.973
	12.053V	5.021V	3.348V	5.048V	92.561				53.62°C	115.2V
CL4	62.819A	0.001A	0A	0.004A	749.793	83.277%	2362	49.6	45.18°C	0.993
	11.935V	5.015V	3.346V	4.967V	900.376				55.41°C	115.18V

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Chieftronic SteelPower 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	1.234A	0.496A	0.491A	0.197A	20.002	65.364%	714	22.5	36.87°C	0.891
	12.040V	5.041V	3.361V	5.082V	30.602				40.14°C	115.19V
40W	2.716A	0.694A	0.687A	0.296A	40	72.345%	715	22.5	37.34°C	0.949
	12.038V	5.04V	3.36V	5.074V	55.291				41.12°C	115.19V
60W	4.198A	0.893A	0.884A	0.395A	59.999	81.022%	715	22.5	38.04°C	0.96
	12.034V	5.038V	3.359V	5.066V	74.053				42.32°C	115.19V
80W	5.680A	1.092A	1.081A	0.494A	79.962	84.104%	715	22.5	38.58°C	0.974
	12.031V	5.037V	3.359V	5.058V	95.076				43.21°C	115.19V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.74mV	10.53mV	4.50mV	11.22mV	Pass
20% Load	13.69mV	10.64mV	5.68mV	16.32mV	Pass
30% Load	39.45mV	11.61mV	6.86mV	12.08mV	Pass
40% Load	34.65mV	28.64mV	10.14mV	17.13mV	Pass
50% Load	29.33mV	14.37mV	7.98mV	17.23mV	Pass
60% Load	24.79mV	17.85mV	11.92mV	20.60mV	Pass
70% Load	22.75mV	18.26mV	13.92mV	24.11mV	Pass
80% Load	24.36mV	20.51mV	18.32mV	25.90mV	Pass
90% Load	26.40mV	26.49mV	21.19mV	28.75mV	Pass
100% Load	45.68mV	40.49mV	31.39mV	34.10mV	Pass
110% Load	46.69mV	32.96mV	25.33mV	35.23mV	Pass
Crossload1	11.18mV	9.77mV	14.46mV	8.00mV	Pass
Crossload2	23.04mV	11.10mV	6.60mV	7.50mV	Pass
Crossload3	12.26mV	9.41mV	20.98mV	7.14mV	Pass
Crossload4	44.32mV	30.50mV	19.77mV	25.29mV	Pass

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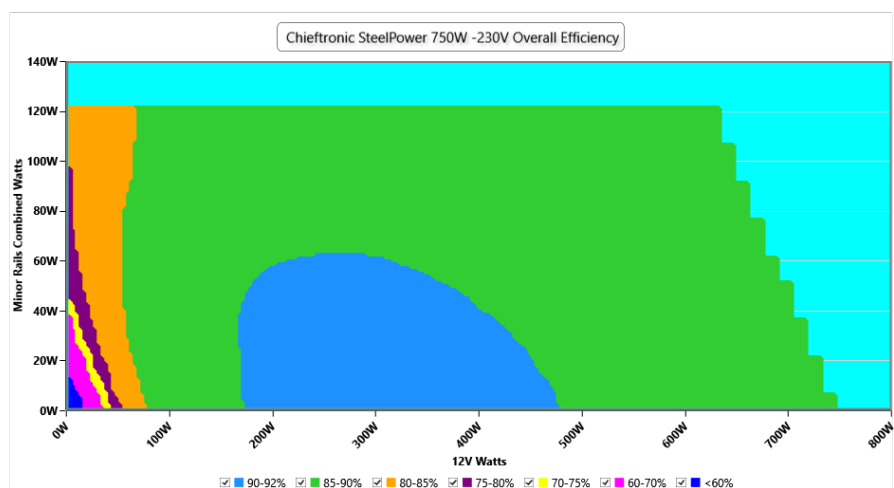
230V

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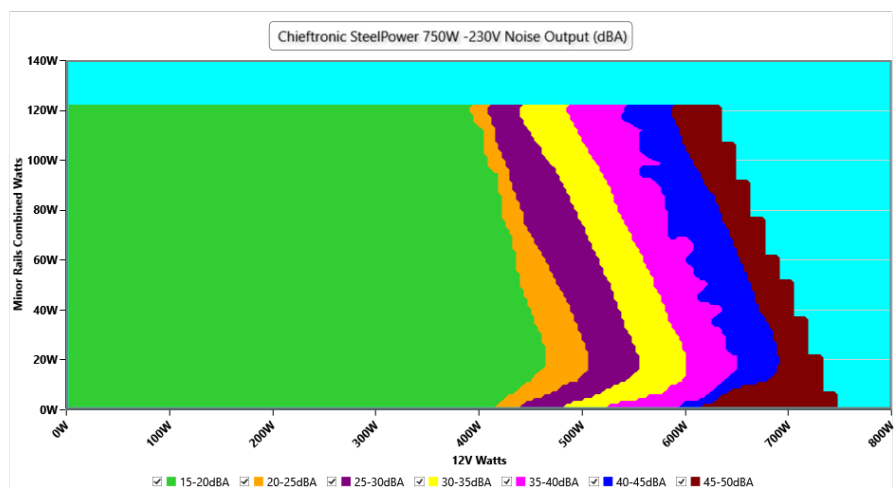
EFFICIENCY GRAPH 230V



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

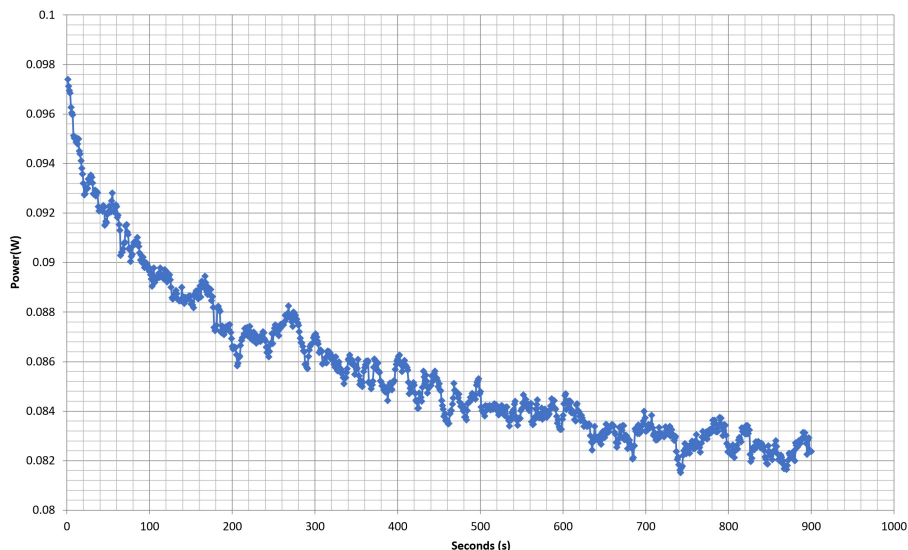
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VAMPIRE POWER -230V

Power - G210400039115 - 14/10/2021 - 11:02



INFO

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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%	4.438A	1.986A	1.966A	0.993A	75	83.799%	717	22.0	40.72°C	0.841
	12.033V	5.035V	3.358V	5.037V	89.5				46.61°C	230.39V
20%	9.903A	2.982A	2.951A	1.197A	149.951	88.677%	720	21.2	41.12°C	0.921
	12.022V	5.03V	3.355V	5.014V	169.097				47.51°C	230.39V
30%	15.723A	3.482A	3.445A	1.403A	224.957	90.261%	726	19.2	41.44°C	0.948
	12.014V	5.026V	3.353V	4.991V	249.23				48.22°C	230.4V
40%	21.548A	3.983A	3.94A	1.611A	300.047	90.643%	728	18.4	41.78°C	0.96
	12.012V	5.022V	3.351V	4.968V	331.019				49.04°C	230.4V
50%	27.014A	4.984A	4.929A	1.821A	374.617	90.296%	732	19.0	42.11°C	0.967
	11.998V	5.017V	3.348V	4.944V	414.876				49.84°C	230.4V
60%	32.507A	5.987A	5.919A	2.001A	449.382	89.693%	737	19.5	42.88°C	0.971
	11.989V	5.012V	3.345V	4.92V	501.021				51.34°C	230.41V
70%	38.019A	6.991A	6.911A	2.248A	524.481	88.909%	1112	30.2	43.35°C	0.974
	11.977V	5.008V	3.343V	4.894V	589.909				52.42°C	230.41V
80%	43.620A	7.996A	7.902A	2.36A	599.685	88.135%	1487	37.0	43.92°C	0.976
	11.962V	5.004V	3.341V	4.873V	680.421				53.55°C	230.41V
90%	49.572A	8.499A	8.386A	2.473A	674.729	87.397%	2012	45.4	44.61°C	0.976
	11.947V	5.001V	3.339V	4.854V	772.03				54.72°C	230.42V
100%	55.527A	9.004A	8.9A	2.585A	749.728	86.868%	2277	49.7	45.51°C	0.976
	11.932V	4.998V	3.337V	4.836V	863.076				56.05°C	230.41V
110%	61.156A	10.016A	9.989A	2.596A	824.863	85.655%	2358	49.5	46.73°C	0.978
	11.921V	4.992V	3.333V	4.816V	963.016				57.62°C	230.42V
CL1	0.116A	14.44A	14.271A	0A	121.301	81.137%	739	19.5	42.1°C	0.913
	12.048V	5V	3.342V	5.035V	149.503				49.85°C	230.43V
CL2	0.116A	19.996A	0A	0A	101.39	79.713%	738	19.5	43.24°C	0.896
	12.043V	5.001V	3.349V	5.059V	127.195				51.67°C	230.42V
CL3	0.116A	0A	19.707A	0A	67.387	73.411%	720	21.2	44.84°C	0.847
	12.048V	5.024V	3.349V	5.049V	91.794				54.2°C	230.42V
CL4	62.819A	0.001A	0A	0.004A	749.727	87.447%	2346	49.7	45.93°C	0.978
	11.934V	5.015V	3.346V	4.967V	857.357				56.46°C	230.42V

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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	1.233A	0.496A	0.491A	0.197A	19.999	65.256%	712	22.4	36.83°C	0.563
	12.042V	5.041V	3.361V	5.082V	30.647				40.06°C	230.4V
40W	2.716A	0.694A	0.687A	0.296A	39.998	72.806%	708	21.9	37.73°C	0.735
	12.036V	5.04V	3.36V	5.075V	54.938				41.61°C	230.4V
60W	4.200A	0.893A	0.884A	0.395A	59.996	81.896%	709	21.9	38.46°C	0.801
	12.029V	5.039V	3.359V	5.067V	73.258				42.71°C	230.4V
80W	5.680A	1.092A	1.081A	0.494A	79.954	85.036%	712	22.4	38.97°C	0.85
	12.028V	5.038V	3.359V	5.058V	94.023				43.86°C	230.39V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.89mV	9.97mV	4.45mV	10.91mV	Pass
20% Load	14.87mV	10.12mV	5.63mV	15.55mV	Pass
30% Load	41.44mV	12.07mV	6.81mV	12.08mV	Pass
40% Load	35.00mV	27.20mV	10.59mV	17.38mV	Pass
50% Load	31.89mV	14.22mV	8.14mV	18.35mV	Pass
60% Load	26.27mV	18.77mV	12.23mV	21.05mV	Pass
70% Load	24.53mV	20.91mV	15.56mV	23.04mV	Pass
80% Load	26.17mV	20.45mV	18.63mV	24.52mV	Pass
90% Load	27.90mV	29.66mV	22.67mV	29.82mV	Pass
100% Load	45.91mV	38.73mV	33.22mV	31.59mV	Pass
110% Load	47.89mV	31.80mV	30.54mV	36.26mV	Pass
Crossload1	11.90mV	10.43mV	14.41mV	8.43mV	Pass
Crossload2	17.06mV	10.89mV	6.30mV	7.09mV	Pass
Crossload3	11.85mV	10.28mV	20.52mV	6.83mV	Pass
Crossload4	45.79mV	29.49mV	19.59mV	25.23mV	Pass

All data and graphs included in this test report can be used by any individual on the following conditions:

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- > The link to the original test results document should be provided in any case

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Anex

Chieftronic SteelPower 750W



Top side

CHIEFTRONIC STEELPOWER					
Model No.	BDK-750FC				
AC Input	100 - 240 V ~	10.0 A	47 - 63 Hz		
DC Output	+3.3 V	+5 V	+12 V	-12 V	+5 VSB
MAX Current	20.0 A	20.0 A	62.5 A	0.3 A	2.5 A
MAX Power	120 W	750 W	3.6 W	12.5 W	
Total Power	750 W				

Power specifications label

CERTIFICATIONS 115V




Aristeidis Bitziopoulos
Lab Director

CERTIFICATIONS 230V



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