

Anex

Cooler Master G800 Gold

Lab ID#: CM80001883
Receipt Date: Jul 21, 2021
Test Date: Jul 31, 2021

Report: 21PS1883A

Report Date: Aug 2, 2021

DUT INFORMATION

Brand	Cooler Master
Manufacturer (OEM)	Xin Hui Yuan Tech (Fusion Power)
Series	G Gold
Model Number	MPW-8001-ACAAG
Serial Number	
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	12-6
Rated Frequency (Hz)	50-60
Rated Power (W)	800
Type	ATX12V
Cooling	120mm Rifle Bearing Fan (EFS-12E12H)
Semi-Passive Operation	X
Cable Design	Fixed cables

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	87.484%
Efficiency With 10W (≤500W) or 2% (>500W)	60.182
Average Efficiency 5VSB	80.956%
Standby Power Consumption (W)	0.0525372
Average PF	0.983
Avg Noise Output	43.23 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	Standard

230V

Average Efficiency	89.439%
Average Efficiency 5VSB	79.638%
Standby Power Consumption (W)	0.1119590
Average PF	0.953
Avg Noise Output	43.30 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	Standard

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	66.6	3	0.3
	Watts	100		799.2	15	3.6
Total Max. Power (W)		800				

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

Hold-Up Time (ms)	20.2
AC Loss to PWR_OK Hold Up Time (ms)	17.6
PWR_OK Inactive to DC Loss Delay (ms)	2.6

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CABLES AND CONNECTORS

Captive Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (560mm)	1	1	18-22AWG	No
8 pin EPS12V (630mm)/ 4+4 pin EPS12V (+125mm)	1	1 / 1	18AWG	No
6+2 pin PCIe (590mm+125mm)	2	4	18AWG	No
SATA (530mm+120mm+120mm)	2	6	18AWG	No
4-pin Molex (500mm+120mm+120mm)	1	3	18AWG	No

Modular Cables

AC Power Cord (1400mm) - C13 coupler	1	1	17AWG	-
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General Data

Manufacturer (OEM)	Xin Hui Yuan Tech (Fusion Power)
PCB Type	Double Sided

Primary Side

Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	1x NTC Thermistor MF72-5D15 (5 Ohm) & Relay
Bridge Rectifier(s)	2x GBU1006 (600V, 10A @ 100°C)
APFC MOSFETs	2x NCE Power NCE65T130 (650V, 18A @ 100°C, Rds(on): 0.13Ohm)
APFC Boost Diode	1x Dongguan Hoen Semiconductor CH3D08065I (650V, 8A @ 150°C)
Bulk Cap(s)	1x Elite (400V, 560uF, 2,000h @ 105°C, PL)
Main Switchers	4x Jilin Sing Microelectronics JCS13N50FC (500V, 8A @ 100°C, Rds(on): 0.49Ohm)
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	4x Excelliance MOS EMP16N04HS (40V, 100A @ 100°C, Rds(on): 1.6mOhm)
5V & 3.3V	DC-DC Converters: 4x Excelliance MOS EMB04N03A (30V, 55A @ 100°C, Rds(on): 4mOhm) PWM Controller(s): 2x Excelliance MOS EM5301F
Filtering Capacitors	Electrolytic: 5x Chengx (2-4,000h @ 105°C, GR), 2x Elite (4-10,000h @ 105°C, EY), 5x (105°C, WE) Polymer: 10x FPCAP
Supervisor IC	IN1S313I-SAG
Fan Model	DWPH EFS-12E12H (120mm, 12V, 0.50A, Rifle Bearing Fan)

5VSB Circuit

Rectifier	1x 45R10C
Standby PWM Controller	Excelliance MOS Corp EM8569C

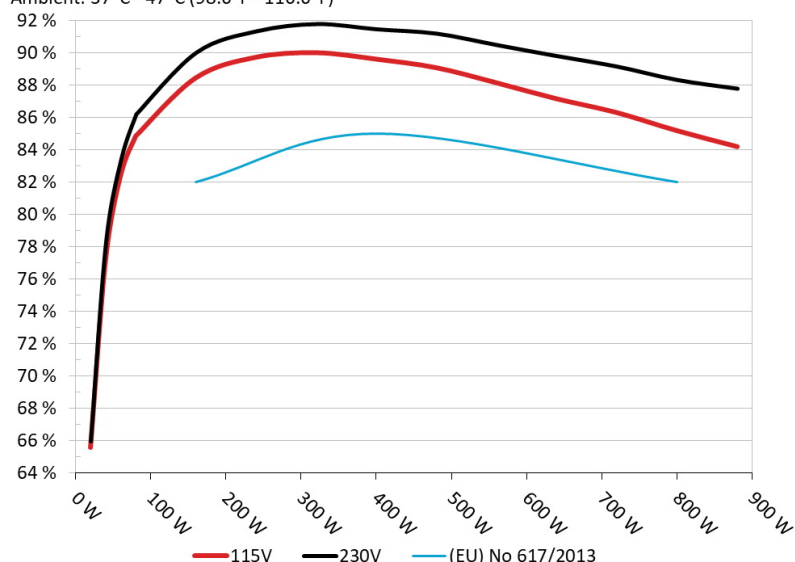
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Cooler Master G800 Gold
Ambient: 37°C - 47°C (98.6°F - 116.6°F)

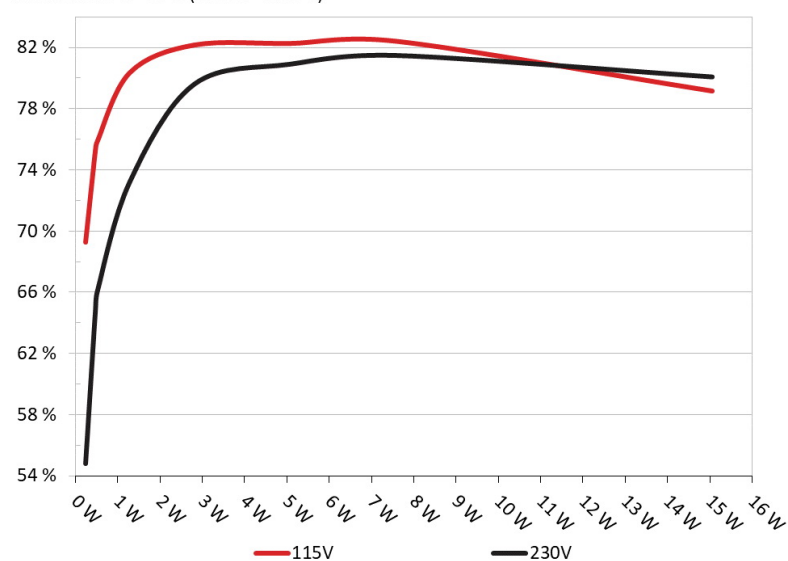


INFO

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: Cooler Master G800 Gold
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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Cooler Master G800 Gold

5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.23W	69.292%	0.053
	5.107V	0.332W		115.13V
2	0.09A	0.46W	75.256%	0.094
	5.105V	0.611W		115.13V
3	0.55A	2.802W	82.149%	0.322
	5.092V	3.411W		115.13V
4	1A	5.08W	82.252%	0.394
	5.078V	6.176W		115.14V
5	1.5A	7.597W	82.392%	0.432
	5.064V	9.221W		115.14V
6	3.001A	15.056W	79.15%	0.482
	5.018V	19.023W		115.14V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.23W	54.801%	0.02
	5.107V	0.42W		230.28V
2	0.09A	0.46W	64.718%	0.034
	5.106V	0.711W		230.28V
3	0.55A	2.802W	79.582%	0.151
	5.092V	3.521W		230.28V
4	1A	5.08W	80.891%	0.229
	5.078V	6.28W		230.28V
5	1.5A	7.597W	81.453%	0.285
	5.064V	9.327W		230.28V
6	3.001A	15.061W	80.057%	0.366
	5.019V	18.813W		230.28V

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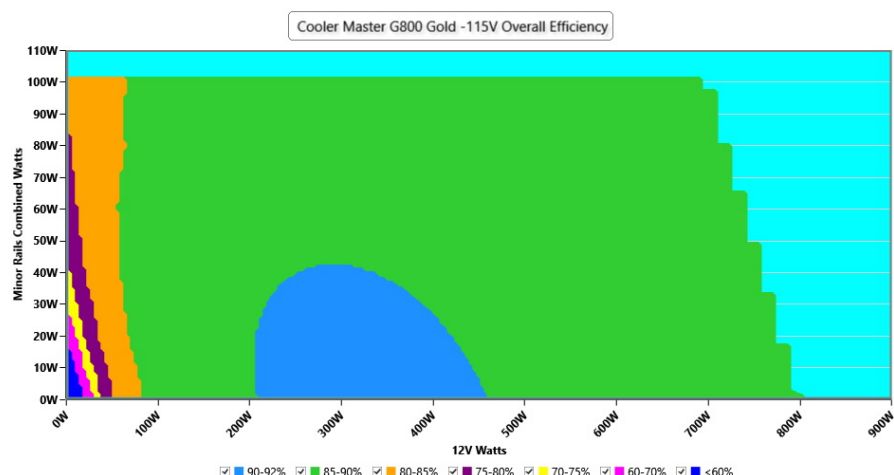
115V

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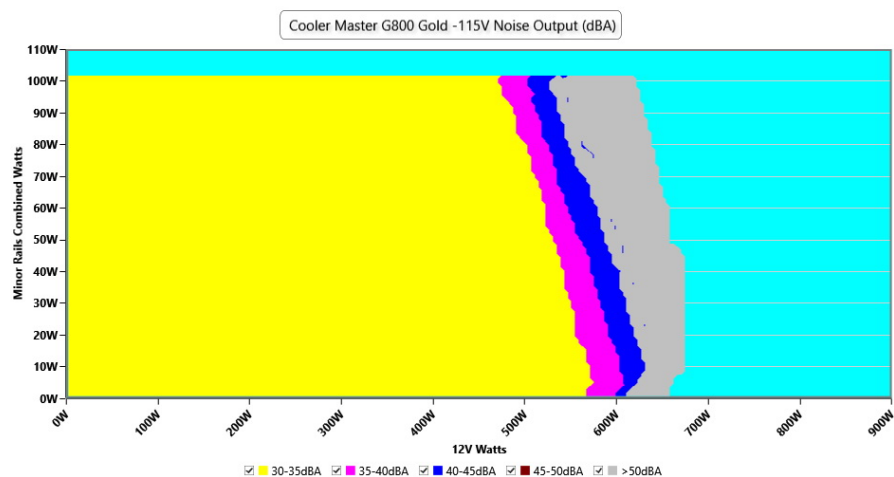
EFFICIENCY GRAPH 115V



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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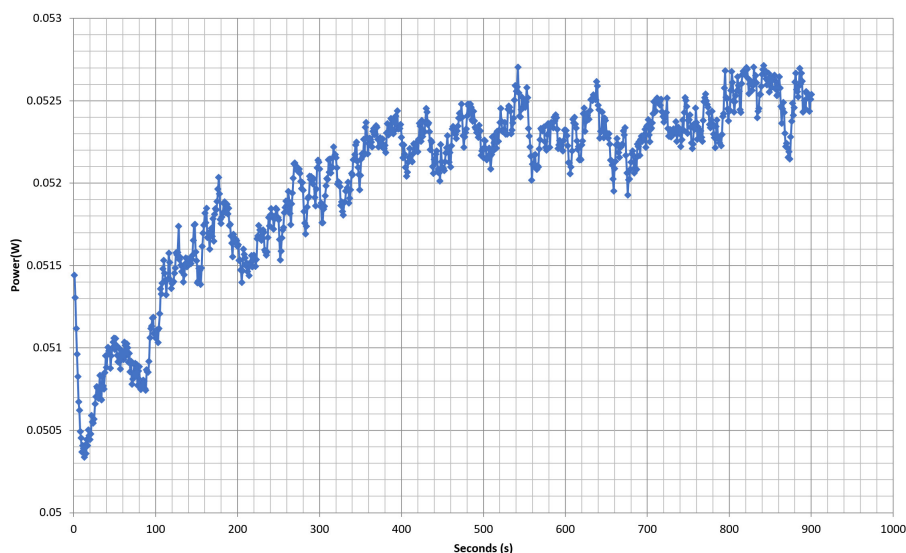
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Cooler Master G800 Gold

VAMPIRE POWER -115V

Power - 28/07/2021 - 16:15



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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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%	4.840A	1.979A	1.975A	0.988A	80.017	84.221%	1077	31.8	40.58°C	0.966
	12.070V	5.055V	3.342V	5.06V	95.009				45.33°C	115.13V
20%	10.699A	2.98A	2.982A	1.192A	159.983	88.473%	1083	31.9	40.97°C	0.983
	12.064V	5.034V	3.321V	5.036V	180.827				46.35°C	115.13V
30%	16.917A	3.489A	3.499A	1.397A	240.037	89.749%	1087	32.1	41.35°C	0.98
	12.058V	5.016V	3.302V	5.013V	267.454				47.32°C	115.13V
40%	23.141A	4.003A	4.022A	1.604A	320.099	90.03%	1092	32.2	41.74°C	0.981
	12.052V	4.997V	3.282V	4.989V	355.547				48.28°C	115.13V
50%	28.976A	5.027A	5.062A	1.814A	399.58	89.636%	1107	32.7	42.68°C	0.984
	12.047V	4.974V	3.26V	4.963V	445.781				49.61°C	115.12V
60%	34.909A	6.06A	6.12A	2A	479.965	89.102%	1118	33.3	42.88°C	0.986
	12.039V	4.952V	3.236V	4.937V	538.669				50.61°C	115.12V
70%	40.794A	7.106A	7.198A	2.242A	559.806	88.168%	1708	44.3	43.14°C	0.988
	12.028V	4.927V	3.21V	4.907V	634.935				51.91°C	115.11V
80%	46.753A	8.004A	8.289A	2.357A	639.073	87.184%	2170	50.3	44.1°C	0.989
	12.019V	4.904V	3.185V	4.881V	733.017				53.41°C	115.11V
90%	53.044A	8.712A	8.856A	2.472A	719.659	86.322%	2189	50.5	45.02°C	0.99
	12.011V	4.881V	3.162V	4.857V	833.691				54.86°C	115.1V
100%	59.150A	9.267A	9.464A	3.115A	799.605	85.201%	2200	50.9	45.77°C	0.991
	12.001V	4.858V	3.138V	4.817V	938.496				55.65°C	115.09V
110%	65.142A	10.322A	10.656A	3.122A	880.228	84.206%	2206	51	46.05°C	0.992
	12.003V	4.846V	3.125V	4.806V	1045.354				56.87°C	115.09V
CL1	0.116A	12.033A	12.074A	0A	101.326	81.293%	1114	33	42.8°C	0.978
	12.065V	5.004V	3.288V	5.057V	124.642				49.47°C	115.14V
CL2	0.116A	19.963A	0A	0A	101.431	79.945%	1104	32.6	43.66°C	0.977
	12.070V	5.011V	3.316V	5.068V	126.875				51.01°C	115.14V
CL3	0.116A	0A	20.059A	0A	67.395	71.751%	1095	32.3	44.45°C	0.966
	12.070V	5.02V	3.29V	5.065V	93.928				52.69°C	115.14V
CL4	66.515A	0.001A	0.002A	0.001A	800.17	86.503%	2192	50.6	45.09°C	0.991
	12.030V	4.921V	3.21V	4.955V	925.022				54.89°C	115.09V

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Cooler Master G800 Gold

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	1.232A	0.493A	0.491A	0.196A	20.015	65.541%	1064	31.4	37.25°C	0.876
	12.074V	5.075V	3.362V	5.098V	30.538				39.51°C	115.14V
40W	2.708A	0.691A	0.688A	0.295A	40.014	77.142%	1066	31.4	38.01°C	0.942
	12.073V	5.07V	3.357V	5.091V	51.87				40.82°C	115.14V
60W	4.187A	0.889A	0.886A	0.394A	60.014	82.414%	1067	31.6	39.28°C	0.965
	12.072V	5.065V	3.352V	5.084V	72.82				43.03°C	115.13V
80W	5.662A	1.087A	1.085A	0.493A	79.979	84.851%	1070	31.6	40.18°C	0.966
	12.070V	5.06V	3.347V	5.077V	94.258				44.34°C	115.13V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	10.24mV	13.23mV	15.09mV	7.32mV	Pass
20% Load	12.54mV	14.30mV	17.13mV	7.01mV	Pass
30% Load	14.74mV	15.99mV	22.45mV	7.42mV	Pass
40% Load	16.17mV	23.55mV	22.60mV	7.42mV	Pass
50% Load	18.27mV	23.34mV	20.87mV	7.73mV	Pass
60% Load	19.45mV	22.93mV	25.62mV	7.68mV	Pass
70% Load	22.77mV	24.16mV	27.97mV	8.80mV	Pass
80% Load	27.94mV	27.43mV	30.12mV	12.54mV	Pass
90% Load	37.61mV	30.75mV	31.71mV	14.33mV	Pass
100% Load	55.68mV	34.34mV	36.08mV	13.66mV	Pass
110% Load	64.66mV	35.62mV	37.68mV	15.99mV	Pass
Crossload1	17.39mV	20.23mV	21.26mV	6.47mV	Pass
Crossload2	10.85mV	16.75mV	16.21mV	6.30mV	Pass
Crossload3	11.21mV	20.22mV	23.57mV	6.09mV	Pass
Crossload4	58.47mV	32.05mV	34.57mV	11.42mV	Pass

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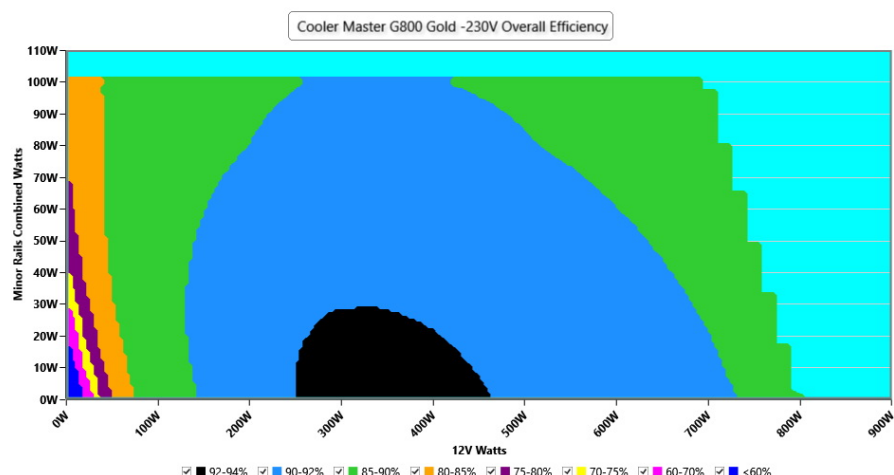
230V

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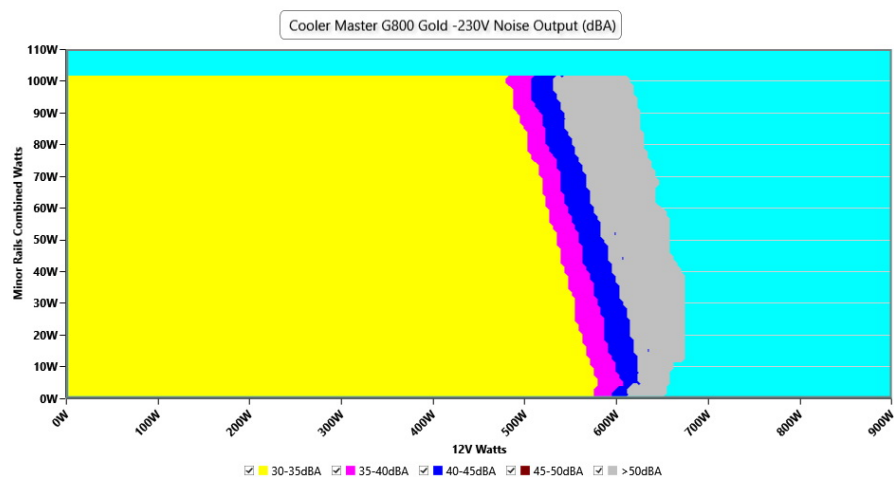
EFFICIENCY GRAPH 230V



INFO

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NOISE GRAPH 230V



INFO

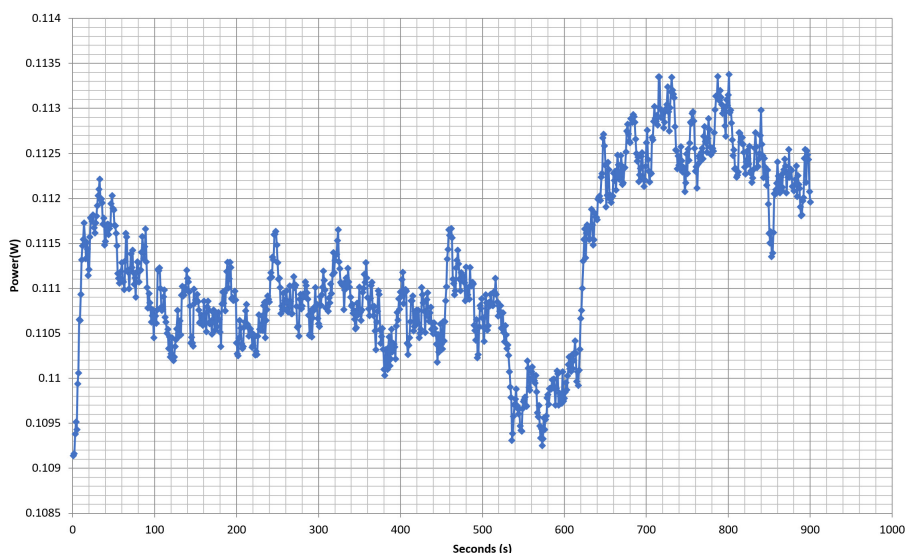
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VAMPIRE POWER -230V

Power - 28/07/2021 - 16:15



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10-110% LOAD TESTS 230V

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10%	4.866A	2A	2A	1A	80.592	85.575%	1080	32.0	40.34°C	0.848
	12.071V	5.056V	3.343V	5.061V	94.177				45.01°C	230.28V
20%	10.764A	3.001A	3A	1.2A	160.992	90.03%	1083	31.9	40.62°C	0.929
	12.064V	5.037V	3.323V	5.037V	178.82				45.7°C	230.29V
30%	17.006A	3.501A	3.501A	1.4A	241.233	91.344%	1091	32.2	41.6°C	0.954
	12.059V	5.019V	3.304V	5.015V	264.092				47.01°C	230.28V
40%	23.250A	4.001A	4.001A	1.6A	321.392	91.786%	1095	32.3	41.81°C	0.963
	12.054V	5V	3.286V	4.993V	350.153				47.71°C	230.28V
50%	28.987A	5.026A	5.063A	1.814A	399.579	91.466%	1101	32.6	42.28°C	0.97
	12.042V	4.975V	3.259V	4.963V	436.862				48.72°C	230.29V
60%	34.923A	6.058A	6.12A	2A	479.99	91.194%	1114	33.0	42.77°C	0.973
	12.035V	4.953V	3.236V	4.937V	526.341				49.81°C	230.29V
70%	40.801A	7.102A	7.193A	2.242A	559.849	90.49%	1808	46.2	43.21°C	0.977
	12.027V	4.93V	3.212V	4.909V	618.687				50.83°C	230.29V
80%	46.756A	8.004A	8.283A	2.355A	639.159	89.814%	2171	50.3	44.18°C	0.978
	12.019V	4.908V	3.188V	4.884V	711.647				52.46°C	230.28V
90%	53.051A	8.705A	8.85A	2.47A	719.725	89.156%	2191	50.6	45.02°C	0.98
	12.011V	4.885V	3.164V	4.859V	807.269				54.53°C	230.28V
100%	59.144A	9.257A	9.449A	3.112A	799.728	88.327%	2203	51.0	45.78°C	0.982
	12.004V	4.864V	3.143V	4.822V	905.421				56.09°C	230.28V
110%	65.168A	10.319A	10.655A	3.121A	880.245	87.784%	2204	51.0	46.57°C	0.983
	11.998V	4.847V	3.125V	4.807V	1002.751				57.39°C	230.28V
CL1	0.116A	12.035A	12.08A	0A	101.33	82.677%	1112	33.0	42.64°C	0.884
	12.063V	5.004V	3.286V	5.055V	122.562				48.88°C	230.29V
CL2	0.116A	19.958A	0A	0A	101.436	81.355%	1101	32.6	43.68°C	0.887
	12.067V	5.012V	3.314V	5.066V	124.685				51.5°C	230.29V
CL3	0.116A	0A	20.068A	0A	67.399	72.844%	1094	32.3	44.85°C	0.844
	12.068V	5.018V	3.289V	5.063V	92.525				53.65°C	230.29V
CL4	66.557A	0.001A	0.002A	0.001A	800.204	89.602%	2200	50.9	45.27°C	0.981
	12.023V	4.918V	3.207V	4.952V	893.067				55.61°C	230.29V

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Anex

Cooler Master G800 Gold

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	1.242A	0.5A	0.5A	0.2A	20.228	65.941%	1071	31.6	36.83°C	0.587
	12.075V	5.074V	3.363V	5.099V	30.676				39.13°C	230.28V
40W	2.722A	0.7A	0.7A	0.3A	40.283	78.181%	1068	31.6	37.5°C	0.719
	12.073V	5.071V	3.358V	5.092V	51.525				40.21°C	230.28V
60W	4.226A	0.9A	0.9A	0.4A	60.621	83.395%	1071	31.6	38.7°C	0.8
	12.072V	5.065V	3.353V	5.085V	72.69				41.95°C	230.28V
80W	5.706A	1.1A	1.1A	0.5A	80.661	86.192%	1073	31.6	39.97°C	0.847
	12.071V	5.06V	3.348V	5.078V	93.584				43.95°C	230.28V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	9.93mV	13.43mV	16.16mV	6.76mV	Pass
20% Load	11.97mV	14.10mV	15.75mV	7.06mV	Pass
30% Load	14.53mV	16.85mV	20.81mV	7.57mV	Pass
40% Load	15.09mV	22.11mV	25.46mV	7.27mV	Pass
50% Load	17.55mV	22.93mV	21.22mV	7.42mV	Pass
60% Load	19.09mV	22.68mV	24.09mV	7.57mV	Pass
70% Load	21.85mV	23.80mV	25.52mV	7.78mV	Pass
80% Load	27.43mV	26.97mV	29.87mV	8.95mV	Pass
90% Load	37.20mV	29.67mV	30.78mV	12.38mV	Pass
100% Load	57.64mV	31.99mV	34.66mV	12.97mV	Pass
110% Load	67.68mV	35.27mV	39.08mV	14.92mV	Pass
Crossload1	17.03mV	19.50mV	20.61mV	6.57mV	Pass
Crossload2	10.34mV	16.70mV	15.85mV	5.99mV	Pass
Crossload3	10.54mV	19.61mV	22.86mV	5.89mV	Pass
Crossload4	59.37mV	30.36mV	33.72mV	11.63mV	Pass

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Anex

Cooler Master G800 Gold



Top side

800W		MOD Switch			
AC INPUT	100-240V~, 12-6A, 50-60Hz				
交流輸入	200-240V~, 6A, 50-60Hz, For Korea Use Only				
交流輸入	200-240V~, 6A, 50-60Hz, 适用于中国地区使用				
DC OUTPUT	+5V	+3.3V	+12V		
直流輸出/直流輸出	20A	20A	66.6A		
		-12V	0.3A		
		+5VSB	3A		
TOTAL POWER	100W	799.2W	3.6W		
總功率/總功率	800W				

Power specifications label

CERTIFICATIONS 115V



CERTIFICATIONS 230V



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