

Anex

Cooler Master MWE 750

Lab ID#: CM19750029
Receipt Date: Sep 5, 2019
Test Date: Oct 5, 2019

Report:

Report Date: Nov 6, 2019

DUT INFORMATION

Brand	Cooler Master
Manufacturer (OEM)	Gospower
Series	MWE White
Model Number	
Serial Number	MPE7501ACABW119140001
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	200-240
Rated Current (Arms)	6
Rated Frequency (Hz)	50-60
Rated Power (W)	750
Type	ATX12V
Cooling	120mm Fluid Dynamic Bearing Fan (HA1225H12F-Z)
Semi-Passive Operation	✓
Cable Design	Fixed cables

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62	3	0.3
	Watts	120		744	15	3.6
Total Max. Power (W)		750				

CABLES AND CONNECTORS

Captive Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (510mm)	1	1	18-20AWG	No
8 pin EPS12V (540mm) / 4+4 pin EPS12V (120mm)	1	1 / 1	18AWG	No
6+2 pin PCIe (490mm+100mm)	2	4	16-18AWG	No
SATA (410mm+150mm+150mm)	2	6	18-20AWG	No
4-pin Molex (410mm+150mm+150mm)	1	3	18-20AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	18AWG	-

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

PAGE 1/11

Anex

Cooler Master MWE 750

General Data	
Manufacturer (OEM)	Gospower
PCB Type	Single Sided
Primary Side	
Transient Filter	3x Y caps, 2x X caps, 2x CM chokes
Inrush Protection	NTC Thermistor & Relay
Bridge Rectifier(s)	1x Diode Incorporated GBU808 (800V, 8A @ 100°C)
APFC MOSFETS	2x Sanrise Tech SRC60R200TFE (630V, 7.1A @ 125°C, 0.2Ohm)
APFC Boost Diode	1x JILIN SINO-MICROELECTRONICS 10F60UHF (600V, 10A @ 100°C)
Hold-up Cap(s)	1x Elite (420V, 560uF, 2000h @ 85°C, GM)
Main Switchers	2x JILIN SINO-MICROELECTRONICS JCS18N50FH (500V, 11A @ 100°C, 0.270hm)
APFC Controller	Champion CM6500UNX
Resonant Controllers	Champion CU6901V
Topology	Primary side: Half-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	4x Nce Power NCEP40T11K (40V, 85A @ 100°C, 2.8mOhm)
5V & 3.3V	DC-DC Converters: 4x IPS FTD05N03NA (30V, 75A @ 100°C, 6mOhm) PWM Controllers: ANPEC APW7159C
Filtering Capacitors	Electrolytics: 4x Elite (2-5,000h @ 105°C, ED), 4x Elite (2,000h @ 105°C, EL), 1x Rubycon(4-10,000h @ 105°C, YXJ), 1x CapXon (2-6,000h @ 105°C, GL) Polymers: CapXon
Supervisor IC	IN1S313I-SAG
Fan Model	Hong Hua HA1225H12F-Z (120mm, 12V, 0.58A, Fluid Dynamic Bearing Fan)
5VSB Circuit	
Rectifier	-
Standby PWM Controller	On-Bright OB2365SP

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

PAGE 2/11

Anex

Cooler Master MWE 750

RESULTS

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

230V

Average Efficiency	87.201%
Average Efficiency 5VSB	77.543%
Standby Power Consumption (W)	0.1855910
Average PF	0.927
Avg Noise Output	37.06 dB(A)
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	S+

TEST EQUIPMENT

Electronic Loads	Chroma 6314A x2 63123A x6 63102A 63101A	Chroma 63601-5 x4 Chroma 63600-2 x2 63640-80-80 x20 63610-80-20 x2
AC Sources	Chroma 6530, Chroma 61604, Keysight AC6804B	
Power Analyzers	N4L PPA1530 x2, N4L PPA5530	
Oscilloscopes	Picoscope 4444 & 3424, Keysight DSOX3024A, Rigol DS2072A	
Voltmeter	Keithley 2015 THD 6.5 Digit	
Sound Analyzer	Bruel & Kjaer 2250-L G4	
Microphone	Bruel & Kjaer Type 4955-A, Bruel & Kjaer Type 4189	
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2	

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

Hold-Up Time (ms)	22
AC Loss to PWR_OK Hold Up Time (ms)	70
PWR_OK Inactive to DC Loss Delay (ms)	-48

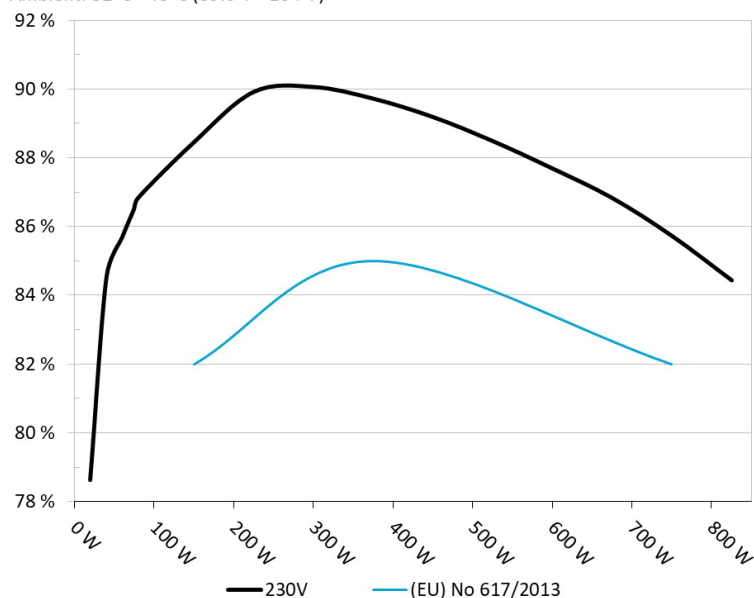
All data and graphs included in this test report can be used by any individual on the following conditions:

- > 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

PAGE 3/11

EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Cooler Master MWE 750
Ambient: 32°C - 40°C (89.6°F - 104°F)

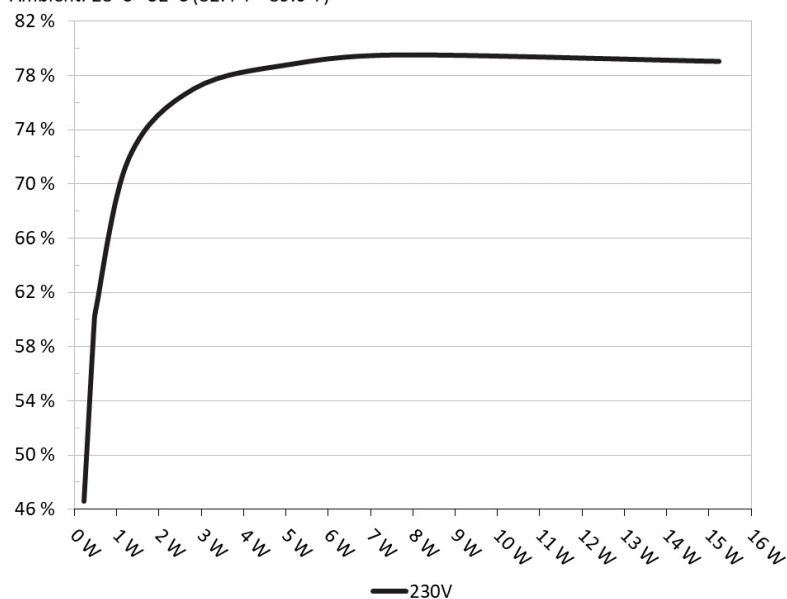


INFO

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 MWE 750
Ambient: 28°C - 32°C (82.4°F - 89.6°F)



INFO

This graph depicts the efficiency levels of the 5VSB rail with 115V and 230V input

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

Anex

Cooler Master MWE 750

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

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.233	46.600%	0.009
	5.171V	0.500		230.28V
2	0.090A	0.466	59.363%	0.014
	5.170V	0.785		230.26V
3	0.550A	2.837	77.051%	0.066
	5.156V	3.682		230.26V
4	1.000A	5.143	78.856%	0.114
	5.143V	6.522		230.27V
5	1.500A	7.692	79.537%	0.161
	5.128V	9.671		230.27V
6	3.000A	15.246	79.064%	0.267
	5.082V	19.283		230.28V

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

PAGE 5/11

Anex

Cooler Master MWE 750

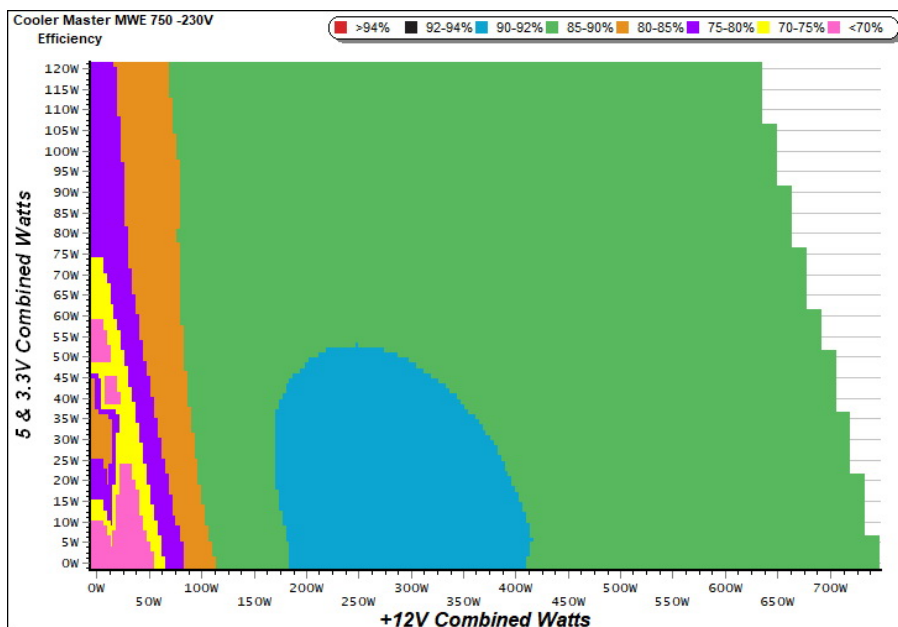
230V

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

PAGE 6/11

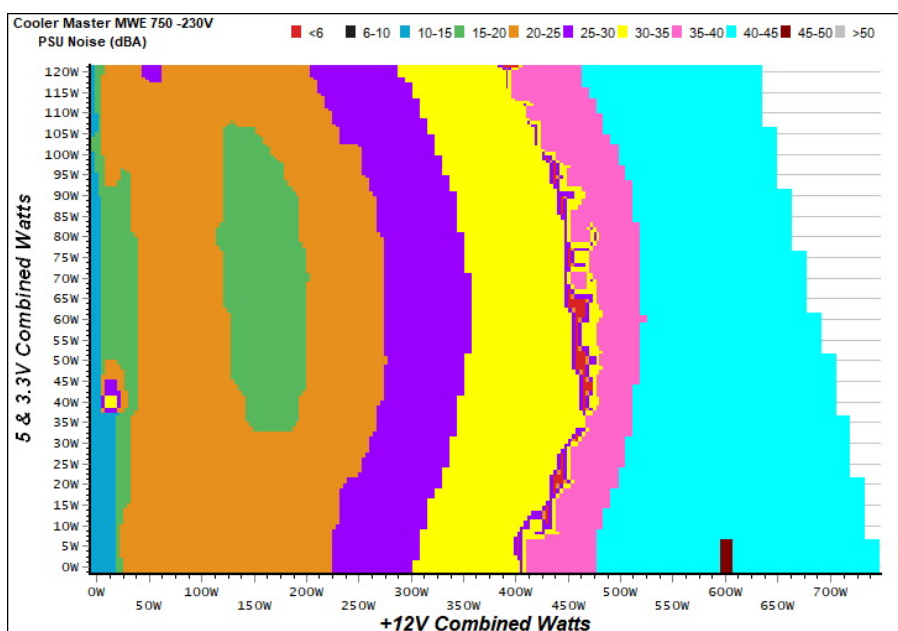
EFFICIENCY GRAPH 230V



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

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

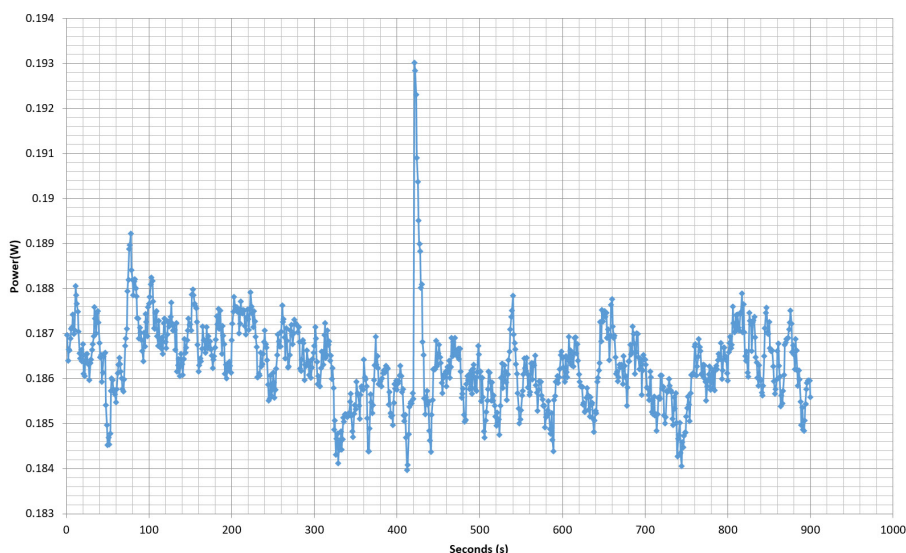
- > It should be mentioned that the test results are provided by Cybenetics
- > The link to the original test results document should be provided in any case

Anex

Cooler Master MWE 750

VAMPIRE POWER -230V

Power - MPE7501ACABW119140001 - 10/05/2019 - 08:52



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

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

PAGE 8/11

Anex

Cooler Master MWE 750

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
1	4.370A	2.006A	1.965A	0.975A	74.490	77.205%	1077	23.2	34.51°C	0.679
	12.102V	4.988V	3.358V	5.129V	96.484				40.29°C	230.29V
2	9.807A	3.019A	2.959A	1.174A	149.381	87.438%	1169	25.7	35.26°C	0.839
	12.081V	4.970V	3.345V	5.112V	170.842				41.37°C	230.29V
3	15.674A	3.531A	3.447A	1.374A	224.900	89.912%	1157	25.4	35.99°C	0.915
	12.052V	4.957V	3.334V	5.095V	250.134				42.50°C	230.29V
4	21.493A	4.047A	3.973A	1.576A	299.680	90.055%	1340	30.2	36.56°C	0.941
	12.026V	4.943V	3.322V	5.077V	332.773				43.44°C	230.29V
5	26.993A	5.077A	4.988A	1.779A	374.592	89.717%	1772	38.2	36.95°C	0.949
	12.006V	4.926V	3.309V	5.059V	417.526				44.56°C	230.29V
6	32.518A	6.112A	6.009A	1.985A	449.497	89.183%	1893	38.4	37.21°C	0.967
	11.984V	4.908V	3.295V	5.040V	504.017				45.49°C	230.29V
7	38.097A	7.161A	7.040A	2.192A	524.831	88.483%	2106	41.5	37.90°C	0.975
	11.962V	4.889V	3.281V	5.021V	593.144				46.64°C	230.29V
8	43.692A	8.214A	8.080A	2.400A	600.133	87.682%	2358	44.3	38.28°C	0.978
	11.941V	4.871V	3.267V	5.000V	684.443				47.49°C	230.29V
9	49.678A	8.753A	8.602A	2.407A	674.680	86.829%	2406	45.1	39.09°C	0.980
	11.920V	4.857V	3.255V	4.988V	777.024				48.59°C	230.28V
10	55.487A	9.296A	9.159A	3.028A	749.892	85.725%	2407	45.1	39.44°C	0.978
	11.898V	4.842V	3.242V	4.955V	874.762				49.81°C	230.29V
11	61.923A	9.316A	9.191A	3.036A	825.123	84.431%	2400	45.1	39.88°C	0.976
	11.876V	4.832V	3.232V	4.942V	977.277				51.11°C	230.29V
CL1	0.146A	14.004A	13.999A	0.000A	116.578	77.537%	1944	40.1	36.61°C	0.787
	12.074V	4.887V	3.313V	5.126V	150.352				44.45°C	230.29V
CL2	62.011A	1.002A	1.000A	1.000A	751.724	86.546%	2414	45.3	39.35°C	0.979
	11.909V	4.914V	3.275V	5.036V	868.585				49.36°C	230.29V

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

PAGE 9/11

Anex

Cooler Master MWE 750

20-80W LOAD TESTS 230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.196A	0.499A	0.475A	0.194A	19.533	78.626%	0	<6.0	0.335
	12.065V	5.010V	3.373V	5.163V	24.843				230.26V
2	2.458A	0.998A	0.980A	0.388A	39.961	84.525%	0	<6.0	0.531
	12.070V	5.003V	3.368V	5.154V	47.277				230.27V
3	3.639A	1.502A	1.457A	0.583A	59.451	74.373%	928	19.4	0.645
	12.105V	4.994V	3.363V	5.144V	79.936				230.28V
4	4.899A	2.006A	1.963A	0.779A	79.874	78.735%	1065	23.0	0.699
	12.100V	4.987V	3.358V	5.134V	101.446				230.28V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	11.5 mV	15.9 mV	10.6 mV	20.7 mV	Pass
20% Load	13.0 mV	16.5 mV	12.6 mV	22.5 mV	Pass
30% Load	33.5 mV	16.6 mV	13.9 mV	25.6 mV	Pass
40% Load	30.7 mV	17.9 mV	14.7 mV	26.9 mV	Pass
50% Load	28.8 mV	19.5 mV	15.4 mV	29.1 mV	Pass
60% Load	27.8 mV	19.3 mV	16.7 mV	30.6 mV	Pass
70% Load	25.8 mV	20.0 mV	19.3 mV	32.7 mV	Pass
80% Load	34.2 mV	22.4 mV	20.9 mV	33.5 mV	Pass
90% Load	27.4 mV	24.3 mV	21.6 mV	33.7 mV	Pass
100% Load	40.2 mV	26.3 mV	23.7 mV	41.4 mV	Pass
110% Load	42.0 mV	28.2 mV	24.7 mV	44.2 mV	Pass
Crossload 1	18.1 mV	26.9 mV	22.1 mV	22.9 mV	Pass
Crossload 2	38.8 mV	24.0 mV	18.0 mV	40.5 mV	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

PAGE 10/11

Anex

Cooler Master MWE 750



Top side

750W MODEL / 型 Switching Power S					
AC INPUT 交流輸入/交流輸入	200-240V~, 6A, 50-60Hz				
DC OUTPUT 直流輸出/直流輸出	+5V 20A	+3.3V 20A	+12V 62A	-12V 0.3A	+5VSB 3A
TOTAL POWER 總功率/總功率	120W 744W 3.6W 15W 750W				

Power specifications label

CERTIFICATIONS 230V



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