

Lab ID#: CM75001848
Receipt Date: May 6, 2021
Test Date: May 24, 2021

Report: 21PS1848A

Report Date: May 26, 2021

DUT INFORMATION

Brand	Cooler Master
Manufacturer (OEM)	Huizhou Xin Hui Yuan Tech (Fusion Power)
Series	MWE Gold V2
Model Number	MPE-7501-ACAAG-U2
Serial Number	MPE7501ACAAGU21205200001
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	50-60
Rated Power (W)	750
Type	ATX12V
Cooling	120mm Fluid Dynamic Bearing Fan (HA1225M12F-Z)
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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PAGE 1/14

RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6 (+-2°C / +- 3.6°F)
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
ALPM (Alternative Low Power Mode) compatible	✓

115V

Average Efficiency	88.615%
Efficiency With 10W (≤500W) or 2% (>500W)	61.110
Average Efficiency 5VSB	81.476%
Standby Power Consumption (W)	0.1138590
Average PF	0.988
Avg Noise Output	26.60 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	A-

230V

Average Efficiency	90.949%
Average Efficiency 5VSB	80.378%
Standby Power Consumption (W)	0.1793050
Average PF	0.945
Avg Noise Output	24.24 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	A

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62.5	3	0.3
	Watts	100		750	15	3.6
Total Max. Power (W)		750				

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CABLES AND CONNECTORS

Captive Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (620mm)	1	1	18-22AWG	No
8 pin EPS12V (630mm) / 4+4 pin EPS12V (+125mm)	1	1 / 1	16-18AWG	No
6+2 pin PCIe (590mm+120mm)	2	4	16-18AWG	No
SATA (510mm+125mm+125mm+125mm)	3	12	18AWG	No
4-pin Molex (510mm+125mm+125mm+125mm)	1	4	18AWG	No

Modular Cables

AC Power Cord (1370mm) - C13 coupler	1	1	18AWG	-
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PAGE 3/14

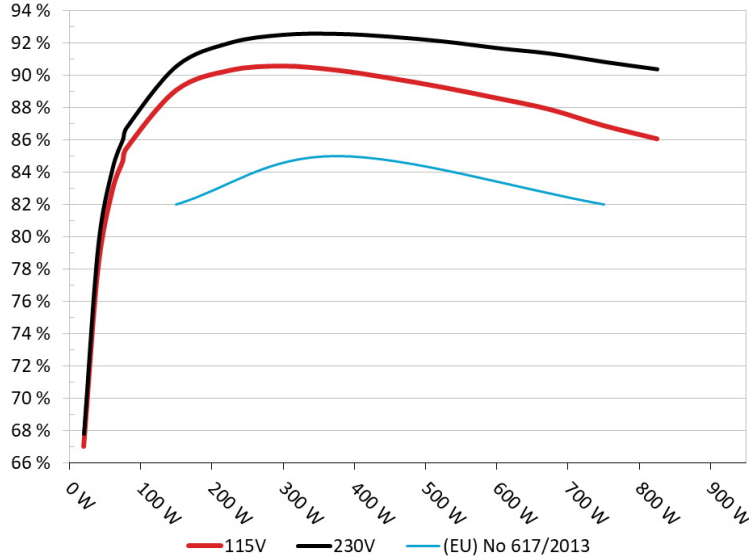
General Data	
Manufacturer (OEM)	Huizhou Xin Hui Yuan Tech (Fusion Power)
PCB Type	Double Sided
Primary Side	
Transient Filter	4x Y caps, 3x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor MF72 5D15 (50hm) & Relay
Bridge Rectifier(s)	1x GBU15J (600V, 15A @ 100°C)
APFC MOSFETs	2x NCE Power NCE65TF180F (650V, 13.2A @ 100°C, Rds(on): 0.180hm)
APFC Boost Diode	1x ON Semiconductor RHRP1560 (600V, 15A @ 140°C)
Bulk Cap(s)	1x Elite (400V, 560uF, 105°C, 2,000h @ 105°C, PL)
Main Switchers	4x Great Power GPT13N50DG (500V, 13A, Rds(on): 0.490hm)
APFC Controller	ON Semiconductor NCP1654
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 Corp EMP16N04HS (40V, 100A @ 100°C, Rds(on): 1.6mOhm)
5V & 3.3V	DC-DC Converters: 4x Excelliance MOS Corp EMB06N03HR (30V, 45A @ 100°C, Rds(on): 6mOhm) PWM Controller(s): ANPEC APW7159C
Filtering Capacitors	Electrolytic: 5x Ltec (4-7,000h @ 105°C, LZG), 7x Elite (4-10,000h @ 105°C, EY) Polymer: 4x FPCAP, 2x Elite, 4x info
Supervisor IC	IN1S313I-DAG
Fan Model	Hong Hua HA1225M12F-Z (120mm, 12V, 0.45A, Fluid Dynamic Bearing Fan)
5VSB Circuit	
Rectifier	1x 45R10C
Standby PWM Controller	Excelliance MOS Corp EM8569

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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Cooler Master MWE Gold 750 V2 (Fixed)
Ambient: 37°C - 47°C (98.6°F - 116.6°F)

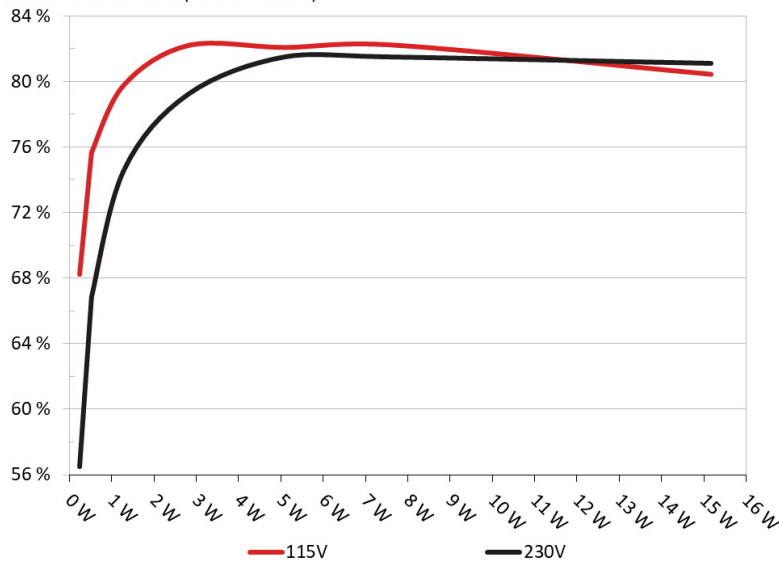


INFO

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 MWE Gold 750 V2 (Fixed)
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	0.230	68.249%	0.041
	5.112V	0.337		115.11V
2	0.090A	0.460	75.658%	0.072
	5.111V	0.608		115.11V
3	0.550A	2.807	82.172%	0.294
	5.103V	3.416		115.11V
4	1.000A	5.096	82.048%	0.385
	5.095V	6.211		115.11V
5	1.500A	7.630	82.202%	0.434
	5.086V	9.282		115.11V
6	3.000A	15.176	80.420%	0.494
	5.058V	18.871		115.12V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.230	56.511%	0.015
	5.112V	0.407		230.24V
2	0.090A	0.460	66.860%	0.025
	5.111V	0.688		230.24V
3	0.550A	2.807	79.249%	0.120
	5.103V	3.542		230.24V
4	1.000A	5.096	81.523%	0.192
	5.095V	6.251		230.24V
5	1.500A	7.630	81.508%	0.253
	5.086V	9.361		230.24V
6	3.000A	15.177	81.121%	0.356
	5.059V	18.709		230.24V

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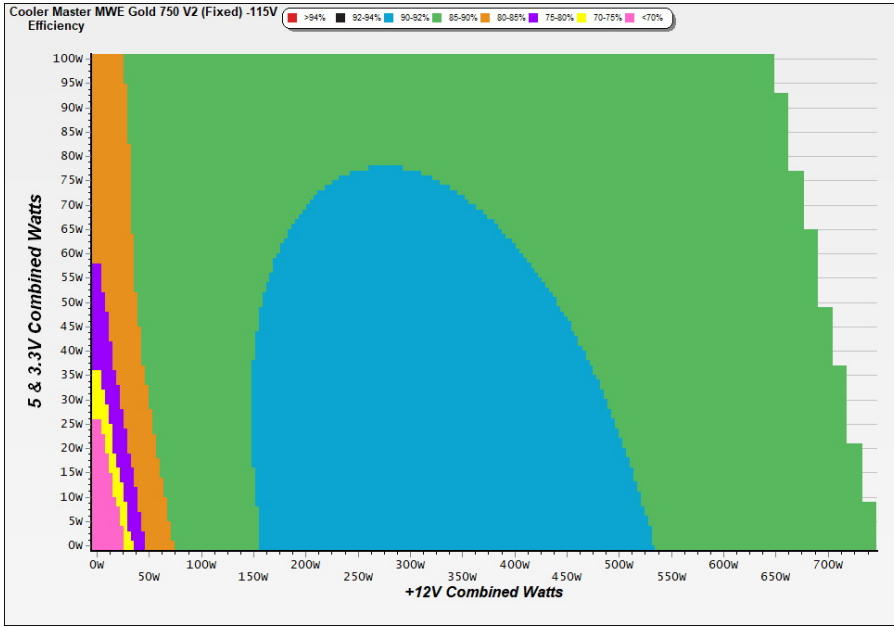
115V

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PAGE 7/14

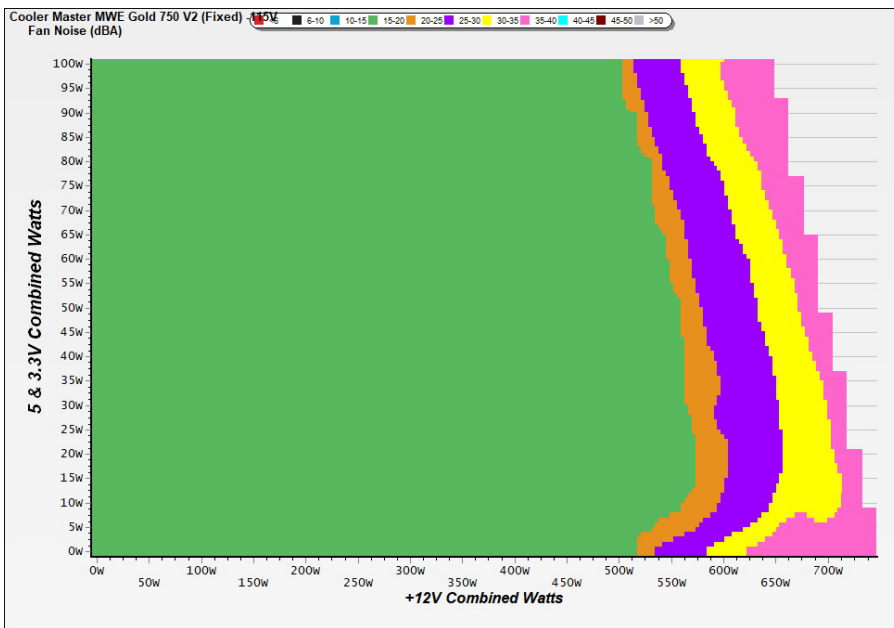
EFFICIENCY GRAPH 115V



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

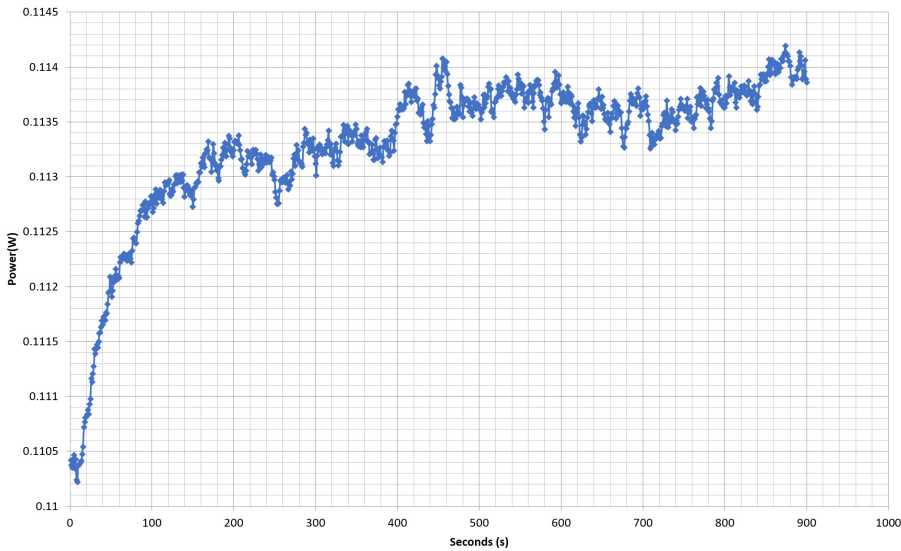
The PSU's noise in its entire operational range and under 30-32 °C (+-2 °C) ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

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VAMPIRE POWER -115V

Power - MPE7501ACAAGU21205200001 - 18/05/2021 - 14:04



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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COMMISSION REGULATION (EU) NO 617/2013 TESTING 115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	4.404A	1.975A	1.973A	0.984A	74.970	84.692%	849	19.6	40.27°C	0.964
	12.118V	5.063V	3.346V	5.083V	88.521				44.81°C	115.13V
2	9.836A	2.965A	2.962A	1.183A	150.050	89.069%	852	19.1	40.54°C	0.978
	12.114V	5.059V	3.341V	5.072V	168.465				45.73°C	115.12V
5	26.793A	4.952A	4.957A	1.786A	374.679	90.305%	859	18.6	42.26°C	0.994
	12.099V	5.049V	3.330V	5.040V	414.905				49.70°C	115.11V
10	54.693A	8.955A	8.981A	3.015A	749.986	86.880%	1666	38.2	45.63°C	0.998
	12.072V	5.028V	3.307V	4.977V	863.241				55.66°C	115.09V

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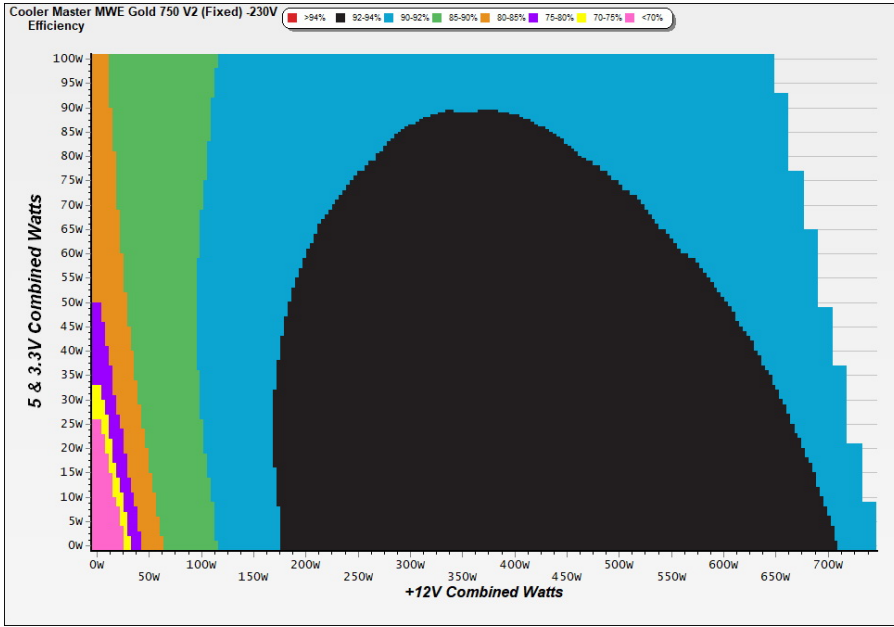
230V

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PAGE 11/14

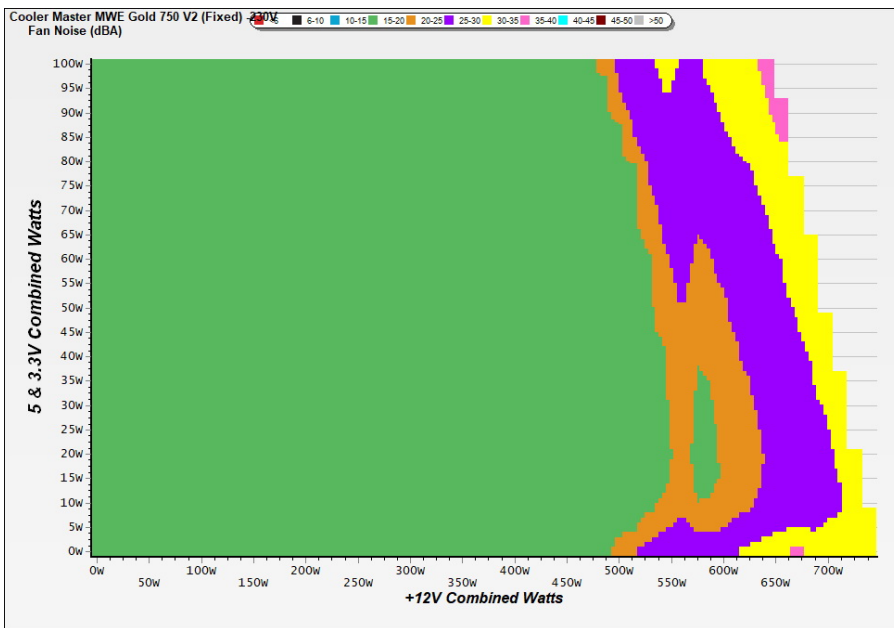
EFFICIENCY GRAPH 230V



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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 230V



INFO

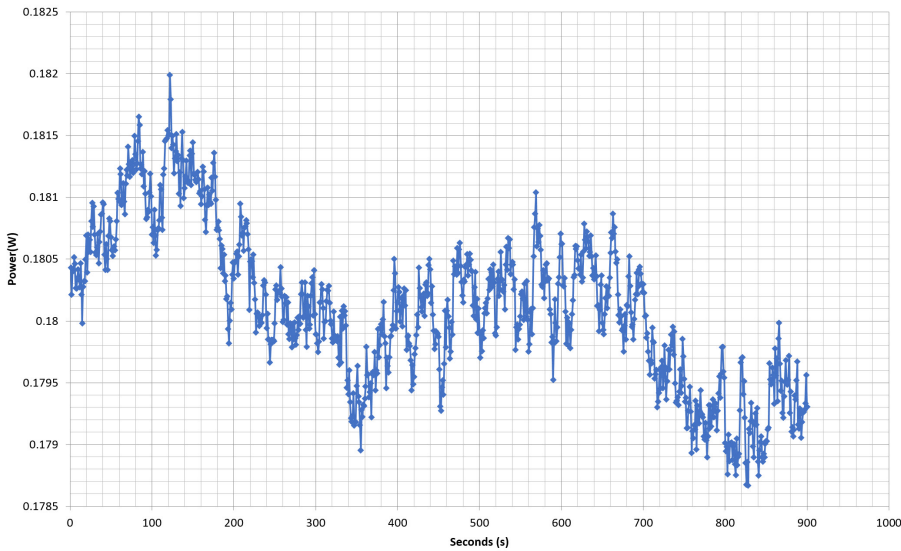
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COMMISSION REGULATION (EU) NO 617/2013 TESTING 230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	4.404A	1.975A	1.973A	0.984A	74.967	86.044%	853	19.1	40.32°C	0.803
	12.117V	5.063V	3.346V	5.084V	87.126				44.17°C	230.25V
2	9.836A	2.966A	2.963A	1.183A	150.039	90.553%	854	18.9	40.92°C	0.902
	12.112V	5.059V	3.341V	5.073V	165.692				45.34°C	230.25V
5	26.792A	4.953A	4.955A	1.786A	374.630	92.547%	859	18.6	42.06°C	0.970
	12.098V	5.048V	3.329V	5.040V	404.798				48.27°C	230.25V
10	54.693A	8.954A	8.978A	3.013A	749.915	90.813%	1670	38.1	45.15°C	0.987
	12.071V	5.028V	3.307V	4.980V	825.775				54.92°C	230.24V

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EFFICIENCY AND NOISE REPORT IN ACCORDANCE WITH
CYBENETICS ETA AND CYBENETICS LAMBDA PROCEDURE

Cooler Master MWE Gold 750 V2 (Fixed)

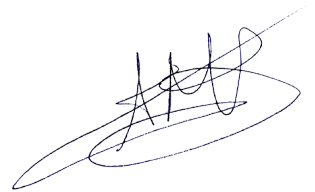


Top side

750W		MOD Switch			
AC INPUT	100-240V~, 10-5A, 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	-12V	+5VSB
直流輸出/直流輸出	20A	20A	62.5A	0.3A	3A
TOTAL POWER	100W	750W	3.6W	15W	
總功率/總功率	750W				

Power specifications label

CERTIFICATIONS 115V

Aristeidis Bitziopoulos
Lab Director

CERTIFICATIONS 230V



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