

Lab ID#: CM75001770
Receipt Date: Dec 14, 2020
Test Date: Dec 23, 2020

Report: 20PS1770A
Report Date: Dec 24, 2020

DUT INFORMATION

Brand	Cooler Master
Manufacturer (OEM)	Huizhou Xin Hui Yuan Tech (Fusion Power)
Series	MWE Gold V2
Model Number	MPE-7501-AFAAG
Serial Number	
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	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 (+-2°C / +- 3.6°F)
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓
ALPM (Alternative Low Power Mode) compatible	✓

115V

Average Efficiency	88.405%
Efficiency With 10W (≤500W) or 2% (>500W)	62.473
Average Efficiency 5VSB	80.172%
Standby Power Consumption (W)	0.0692381
Average PF	0.986
Avg Noise Output	30.19 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	Standard++

230V

Average Efficiency	90.383%
Average Efficiency 5VSB	80.172%
Standby Power Consumption (W)	0.1136480
Average PF	0.941
Avg Noise Output	29.90 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

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 (610mm)	1	1	18AWG	No
8 pin EPS12V (650mm)	1	1	18AWG	No
6+2 pin PCIe (560mm+125mm)	2	4	16-18AWG	No
SATA (500mm+125mm+125mm+125mm)	3	12	18AWG	No
4-pin Molex (500mm+125mm+125mm+125mm)	1	4	18-20AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	16AWG	-

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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 NCE65T180F (650V, 13.2A @ 100°C, Rds(on): 0.180hm)
APFC Boost Diode	1x GH3D08065I
Bulk Cap(s)	1x Elite (400V, 560uF, 2,000h @ 105°C, PL)
Main Switchers	4x Great Power GPT10N50ADG (500V, 9.7A, Rds(on): 0.70hm)
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: 10x Elite (4-10,000h @ 105°C, EY), 7x Lelon (105°C, LZG) Polymer: 4x FPCAP, 4x Elite, 4x no info
Supervisor IC	IN1S313I-DAG
Fan Model	Hong Hua HA1225M12F-Z (120mm, 12V, 0.45A, Fluid Dynamic Bearing Fan)
5VSB Circuit	-
Standby PWM Controller	Excelliance MOS Corp EM8569C

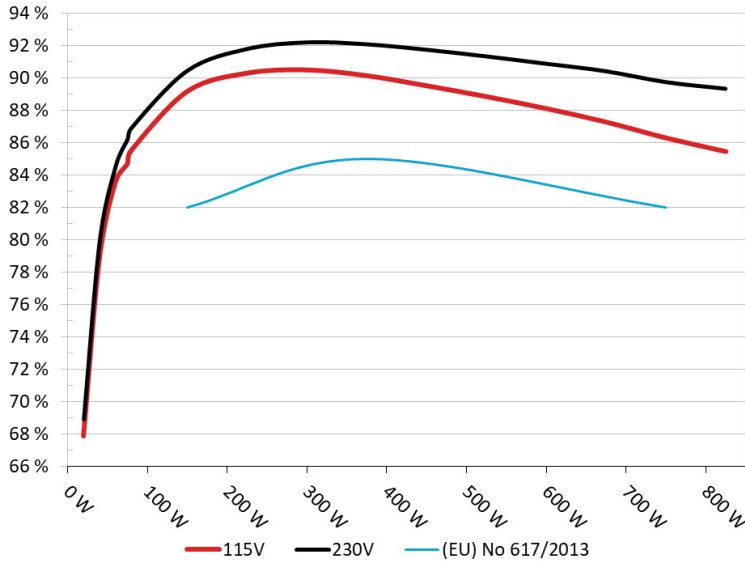
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Cooler Master MWE Gold 750W V2

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



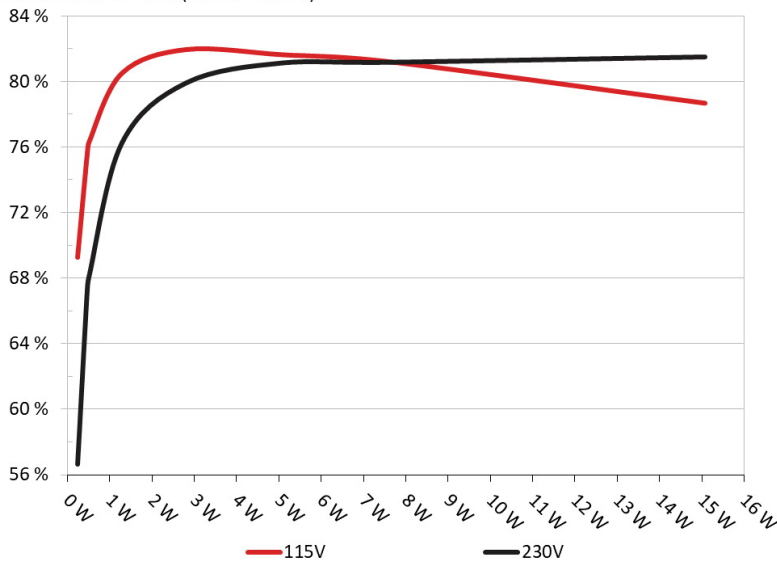
INFO

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 750W V2

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	69.277%	0.039
	5.112V	0.332		115.12V
2	0.090A	0.460	75.658%	0.071
	5.111V	0.608		115.12V
3	0.550A	2.804	81.964%	0.285
	5.097V	3.421		115.12V
4	1.000A	5.084	81.644%	0.375
	5.083V	6.227		115.12V
5	1.500A	7.603	81.220%	0.425
	5.068V	9.361		115.12V
6	3.000A	15.067	78.687%	0.490
	5.022V	19.148		115.12V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.230	56.650%	0.015
	5.112V	0.406		230.24V
2	0.090A	0.460	67.350%	0.024
	5.111V	0.683		230.24V
3	0.550A	2.804	79.909%	0.117
	5.097V	3.509		230.24V
4	1.000A	5.084	81.123%	0.188
	5.083V	6.267		230.24V
5	1.500A	7.603	81.159%	0.248
	5.068V	9.368		230.25V
6	3.000A	15.068	81.484%	0.347
	5.023V	18.492		230.24V

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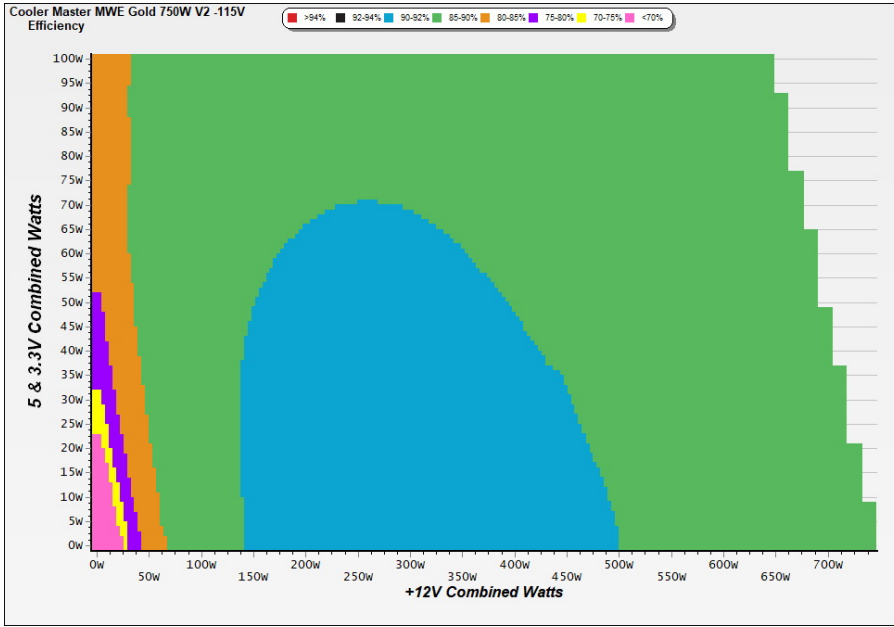
115V

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PAGE 7/14

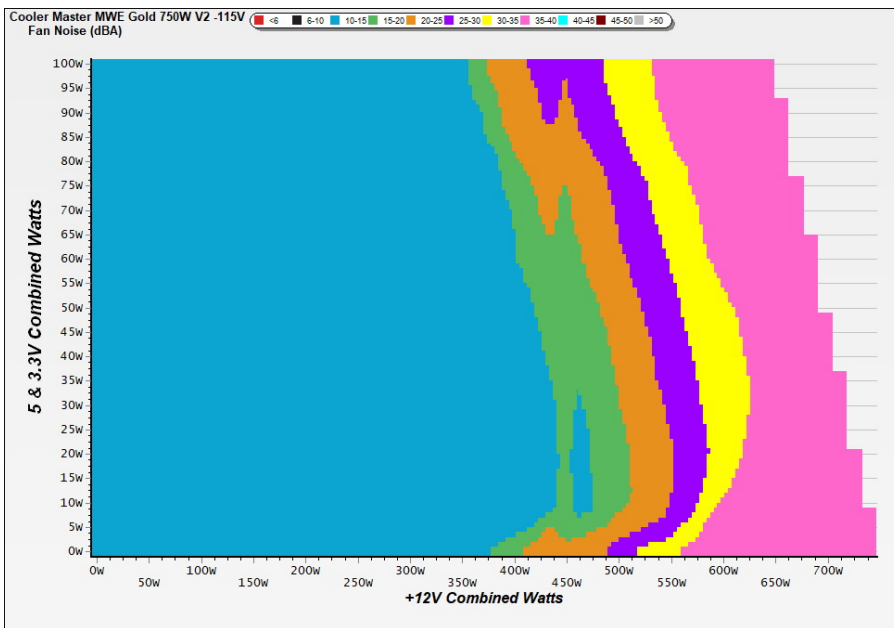
EFFICIENCY GRAPH 115V



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

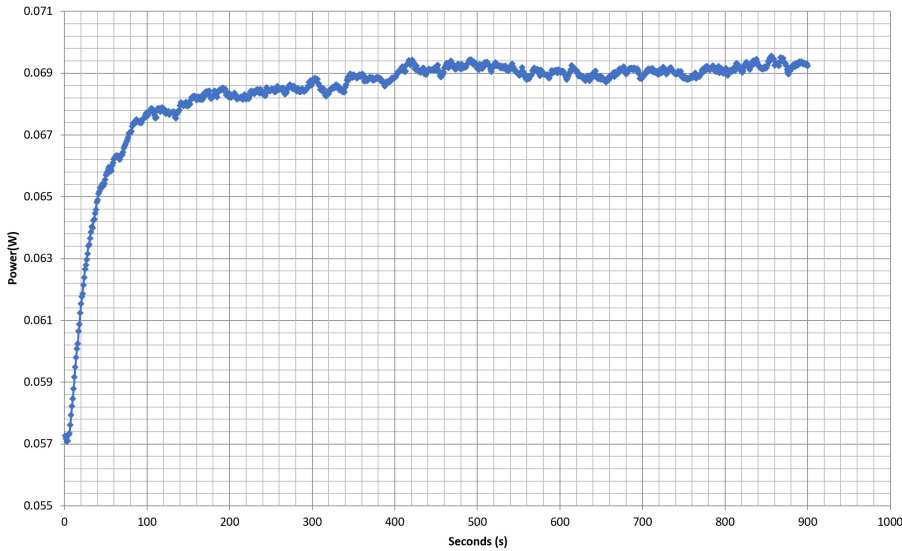
The PSU's noise in its entire operational range and under 30-32 °C (+-2 °C) ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

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VAMPIRE POWER -115V

Power - 18/12/2020 - 12:31



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	4.435A	1.985A	1.981A	0.987A	74.960	84.704%	599	10.9	40.44°C	0.965
	12.032V	5.037V	3.330V	5.068V	88.496				43.52°C	115.10V
2	9.904A	2.981A	2.975A	1.188A	150.021	89.193%	601	10.9	40.61°C	0.970
	12.028V	5.032V	3.326V	5.050V	168.198				44.34°C	115.10V
5	26.969A	4.980A	4.978A	1.801A	374.524	90.170%	943	21.4	42.09°C	0.993
	12.015V	5.018V	3.315V	4.997V	415.351				47.36°C	115.09V
10	55.035A	9.020A	9.018A	3.065A	749.857	86.313%	1661	37.7	46.77°C	0.997
	11.995V	4.990V	3.293V	4.896V	868.765				56.56°C	115.07V

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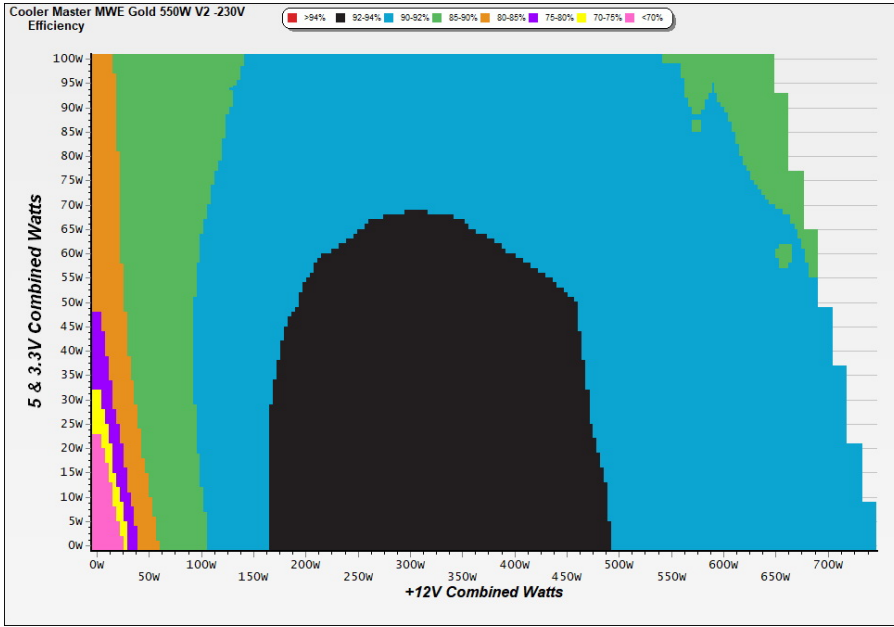
230V

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PAGE 11/14

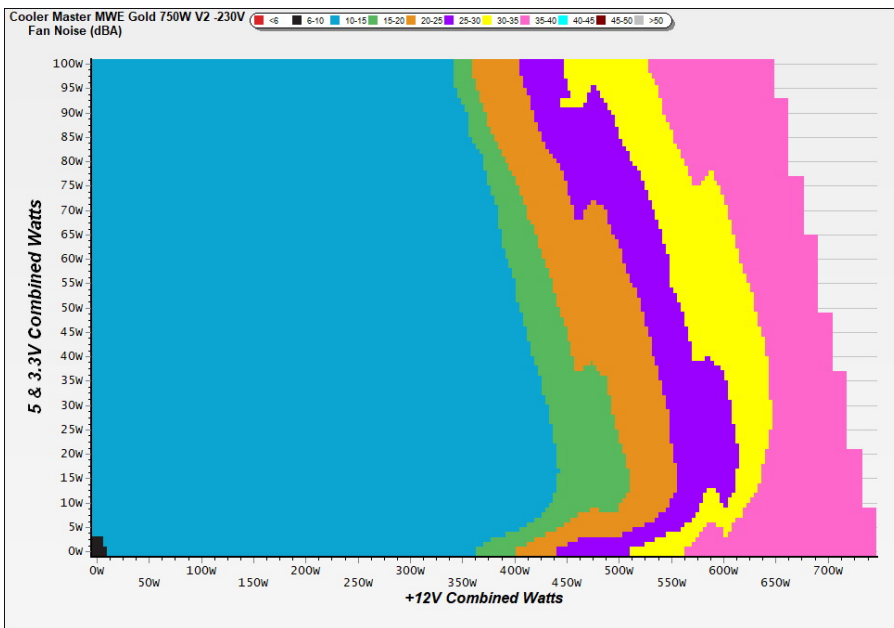
EFFICIENCY GRAPH 230V



INFO

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NOISE GRAPH 230V



INFO

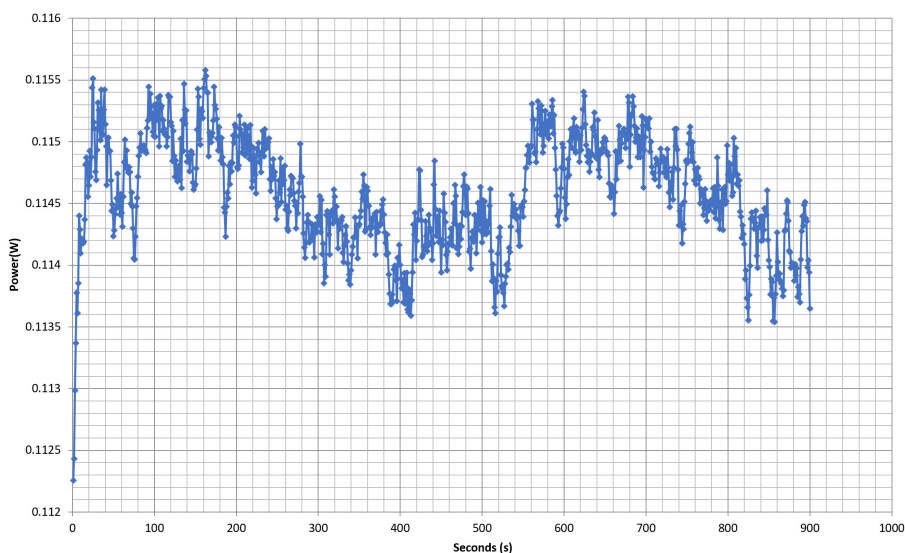
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VAMPIRE POWER -230V

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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	4.435A	1.986A	1.984A	0.987A	74.978	86.224%	601	10.9	40.09°C	0.801
	12.034V	5.036V	3.329V	5.066V	86.957				43.26°C	230.29V
2	9.910A	2.983A	2.980A	1.189A	150.076	90.475%	603	11.2	40.67°C	0.905
	12.024V	5.031V	3.325V	5.048V	165.875				44.23°C	230.29V
5	26.966A	4.983A	4.980A	1.802A	374.636	92.106%	913	20.7	42.86°C	0.960
	12.020V	5.017V	3.314V	4.995V	406.744				47.82°C	230.27V
10	55.023A	9.018A	9.016A	3.065A	749.931	89.767%	1660	37.6	46.17°C	0.988
	11.999V	4.991V	3.294V	4.895V	835.418				55.61°C	230.25V

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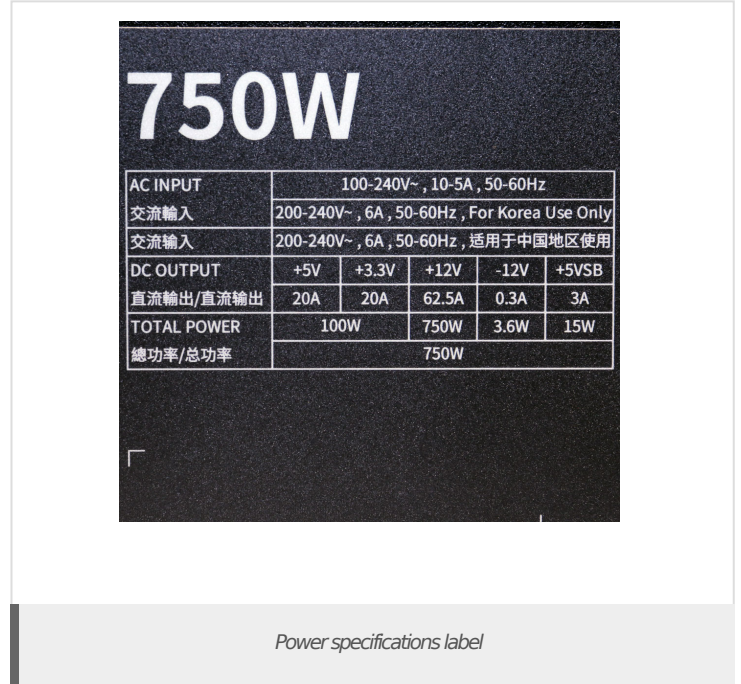
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EFFICIENCY AND NOISE REPORT IN ACCORDANCE WITH
CYBENETICS ETA AND CYBENETICS LAMBDA PROCEDURE

Cooler Master MWE Gold 750W V2

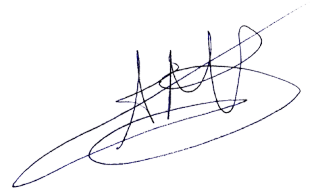


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Power specifications label

CERTIFICATIONS 115V

Aristeidis Bitziopoulos
Lab Director

CERTIFICATIONS 230V



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