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

Cooler Master MWE Bronze 700

Lab ID#: CM19700037
Receipt Date: Jul 5, 2019
Test Date: May 17, 2019

Report:
Report Date: Jun 21, 2019

DUT INFORMATION

Brand	Cooler Master
Manufacturer (OEM)	Gospower
Series	MWE Bronze
Model Number	
Serial Number	MPE7001ACAAB1191400002
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-6
Rated Frequency (Hz)	50-60
Rated Power (W)	700
Type	ATX12V
Cooling	120mm Fluid Dynamic Bearing Fan (HA1225H12F-Z)
Semi-Passive Operation	✓
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
UPS	CyberPower OLS3000E 3kVA x2
Transformer	3kVA x2

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD
Syrou 6, Latsia, 2231, Nicosia Cyprus

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

Cooler Master MWE Bronze 700

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	✓

115V

Average Efficiency	86.201%
Efficiency With 10W (≤500W) or 2% (>500W)	73.656
Average Efficiency 5VSB	78.407%
Standby Power Consumption (W)	0.0757913
Average PF	0.967
Avg Noise Output	38.63 dB(A)
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	Standard+

230V

Average Efficiency	88.120%
Average Efficiency 5VSB	77.798%
Standby Power Consumption (W)	0.1895610
Average PF	0.898
Avg Noise Output	39.55 dB(A)
Efficiency Rating (ETA)	
Noise Rating (LAMBDA)	Standard+

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	58.3	3	0.3
	Watts	120		699.6	15	3.6
Total Max. Power (W)		700				

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD
Syrou 6, Latsia, 2231, Nicosia Cyprus

CABLES AND CONNECTORS

Captive Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (610mm)	1	1	18-20AWG	No
8 pin EPS12V (630mm) / 4+4 pin EPS12V (120mm)	1	1 / 1	18AWG	No
6+2 pin PCIe (530mm+120mm)	2	4	16-18AWG	No
SATA (530mm+120mm+120mm+120mm)	2	8	18AWG	No
4-pin Molex (520mm+120mm+120mm+120mm)	1	4	18AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	18AWG	-

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD
Syrou 6, Latsia, 2231, Nicosia Cyprus

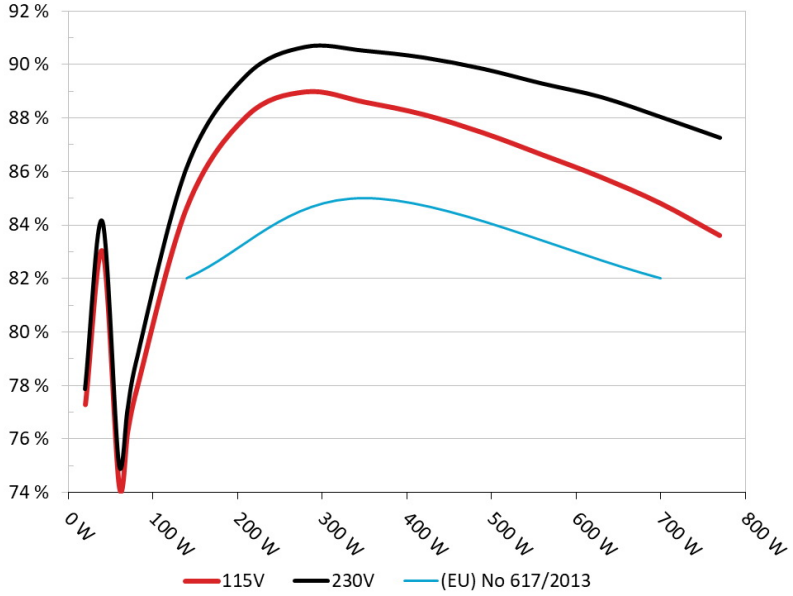
Cooler Master MWE Bronze 700

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 GBU2508 (800V, 25A @ 100°C)
APFC MOSFETS	2x Sanrise Tech SRC60R140B (630V, 11.2A @ 125°C, 0.14Ohm)
APFC Boost Diode	1x Cengol CGC1S06510 (650V, 10A @ 150°C)
Hold-up Cap(s)	1x Elite (420V, 680uF, 2000h @ 85°C, GM)
Main Switchers	2x Jilin Sino Microelectronics JCS18N50FH (500V, 11A @ 100°C, 0.27Ohm)
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: 5x Elite (2-5,000h @ 105°C, ED), 4x Elite (2,000h @ 105°C, EL), 1x CapXon (3-10,000h @ 105°C, GH), 1x Fcon (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

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD
Syrou 6, Latsia, 2231, Nicosia Cyprus

EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Cooler Master MWE Bronze 700
Ambient: 32°C - 40°C (89.6°F - 104°F)

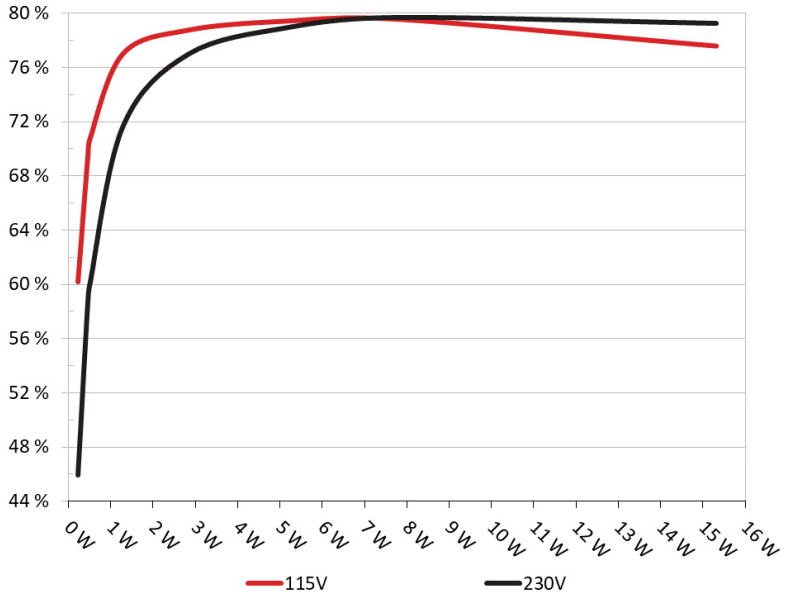


INFO

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 Bronze 700
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

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD
Syrou 6, Latsia, 2231, Nicosia Cyprus

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.233	60.207%	0.025
	5.176V	0.387		115.10V
2	0.090A	0.466	69.449%	0.042
	5.176V	0.671		115.10V
3	0.550A	2.841	78.764%	0.201
	5.165V	3.607		115.10V
4	1.000A	5.154	79.427%	0.304
	5.154V	6.489		115.10V
5	1.500A	7.713	79.573%	0.372
	5.141V	9.693		115.10V
6	3.000A	15.312	77.584%	0.454
	5.104V	19.736		115.10V

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

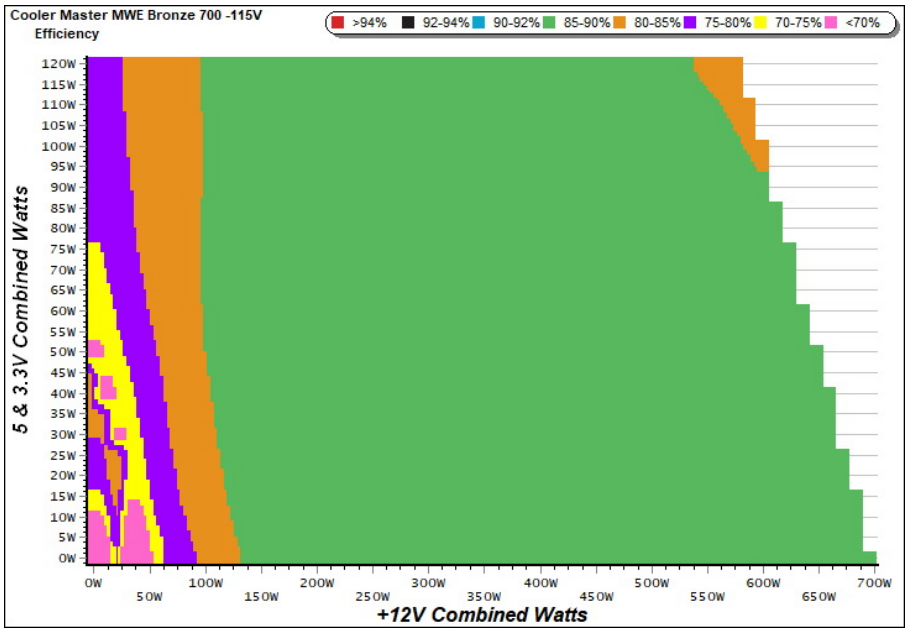
Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.233	45.957%	0.010
	5.176V	0.507		230.23V
2	0.090A	0.466	58.764%	0.015
	5.176V	0.793		230.22V
3	0.550A	2.841	76.971%	0.068
	5.165V	3.691		230.23V
4	1.000A	5.154	78.916%	0.116
	5.154V	6.531		230.22V
5	1.500A	7.713	79.672%	0.164
	5.142V	9.681		230.22V
6	3.000A	15.312	79.242%	0.270
	5.104V	19.323		230.22V

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD
Syrou 6, Latsia, 2231, Nicosia Cyprus

115V

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD
Syrou 6, Latsia, 2231, Nicosia Cyprus

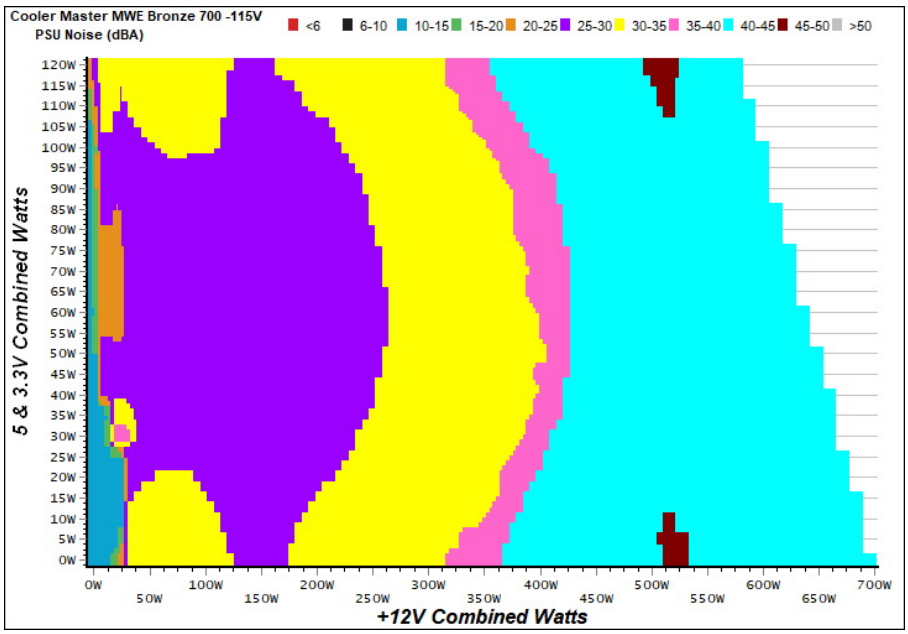
EFFICIENCY GRAPH 115V



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

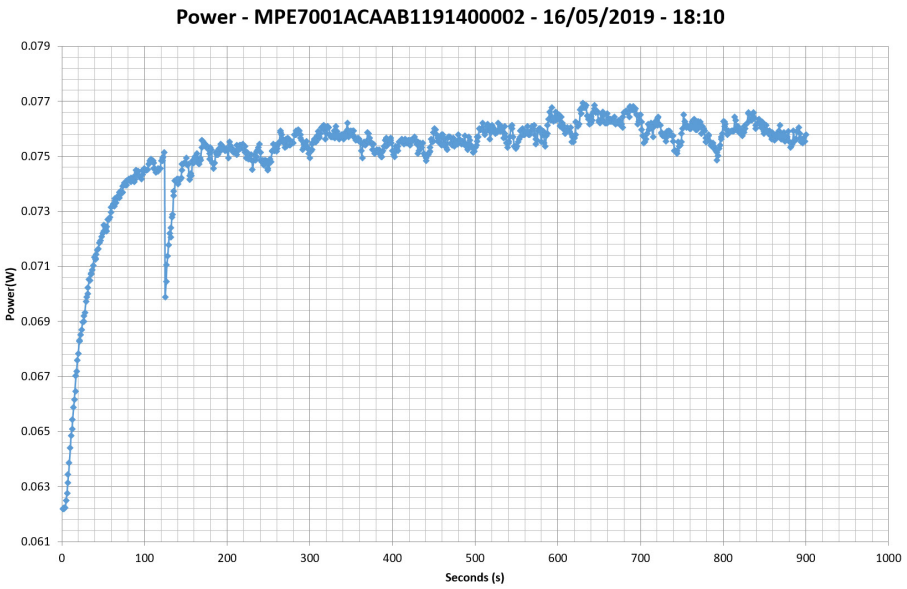


INFO

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

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD
Syrou 6, Latsia, 2231, Nicosia Cyprus

VAMPIRE POWER -115V



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

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

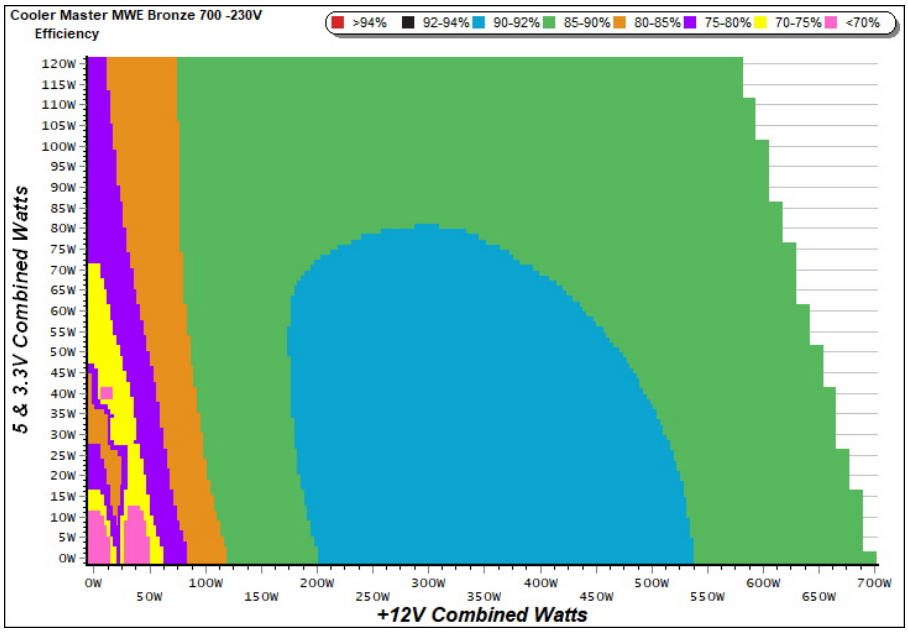
Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
2	8.974A	3.029A	2.950A	1.169A	139.781	84.673%	1516	32.8	34.69°C	0.935
	12.134V	4.951V	3.354V	5.133V	165.083				40.75°C	115.13V
5	24.774A	5.079A	4.952A	1.766A	349.787	88.594%	1962	40.4	36.58°C	0.974
	12.080V	4.924V	3.333V	5.098V	394.819				44.15°C	115.13V
10	50.764A	9.233A	9.019A	2.984A	699.848	84.812%	2458	45.9	39.75°C	0.990
	12.019V	4.875V	3.293V	5.029V	825.175				50.58°C	115.09V

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD
Syrou 6, Latsia, 2231, Nicosia Cyprus

230V

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD
Syrou 6, Latsia, 2231, Nicosia Cyprus

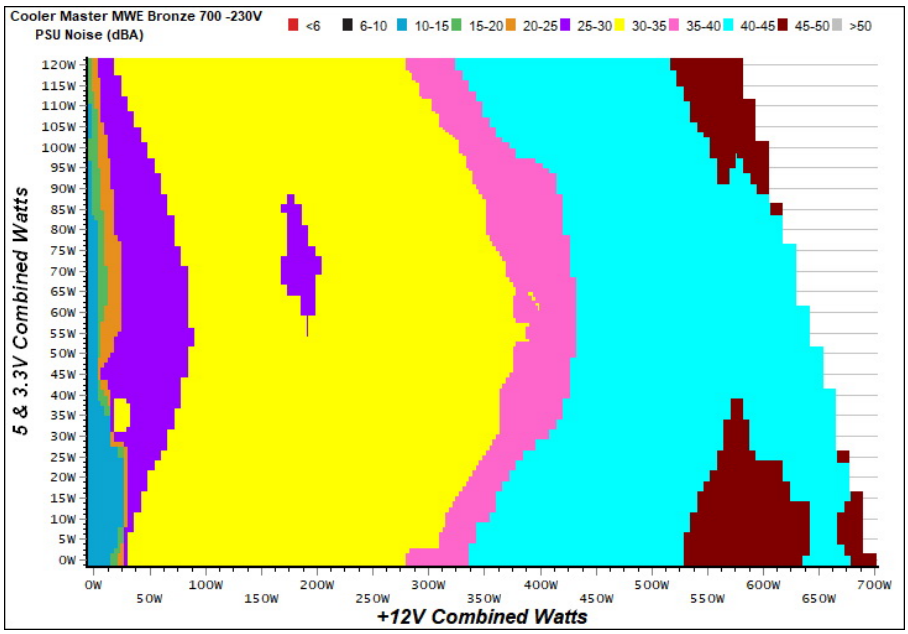
EFFICIENCY GRAPH 230V



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

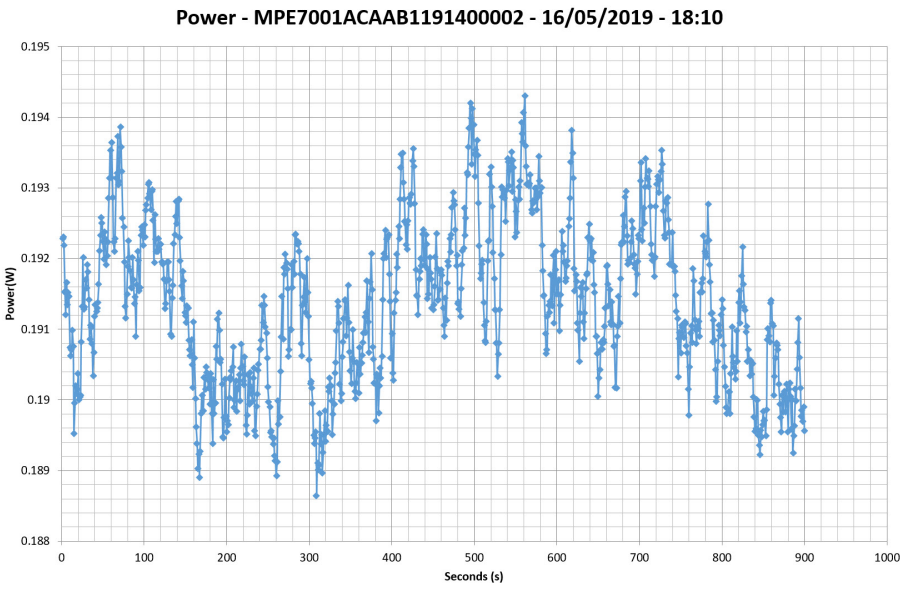
NOISE GRAPH 230V



INFO

The PSU's noise in its entire operational range and under 30-32 °C (+-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

VAMPIRE POWER -230V



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

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD
Syrou 6, Latsia, 2231, Nicosia Cyprus

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
2	8.973A	3.030A	2.951A	1.169A	139.779	86.167%	1471	32.4	34.61°C	0.825
	12.134V	4.951V	3.354V	5.133V	162.219				40.96°C	230.25V
5	24.777A	5.079A	4.951A	1.766A	349.789	90.524%	1904	38.6	36.52°C	0.924
	12.079V	4.924V	3.332V	5.098V	386.404				44.53°C	230.25V
10	50.770A	9.234A	9.019A	2.984A	699.875	88.046%	2457	45.9	39.65°C	0.958
	12.018V	4.875V	3.293V	5.029V	794.894				50.87°C	230.26V

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD
Syrou 6, Latsia, 2231, Nicosia Cyprus

Cooler Master MWE Bronze 700

Top side

Power specifications label

CERTIFICATIONS 115V

CYBENETICS SILVER

CYBENETICS STANDARD+

CERTIFICATIONS 230V

CYBENETICS STANDARD+ 230v

Aristeidis Bitziopoulos
Lab Director