



Make It Yours.

Cooler Master V750 Gold (#2)

Serial Number MPY7501AFAAGV1184300028

Lab ID 623

Certification ID 25623

Test Result Report ID: 19PS623A

Certificate Issue Date: Aug 2, 2019

115V

230V

Scheme: ETA-EMI PSU



115V

230V



Scheme: LAMBDA PSU

A handwritten signature in blue ink, appearing to read "Aristeidis Bitziopoulos".

Aristeidis Bitziopoulos, Certification Body General Manager

General Information

Test Equipment

Electronic Loads	Chroma 63601-5 x2 Chroma 63600-2 Chroma 63640-80-80 x10 Chroma 63610-80-20
AC Sources	Chroma 6530, APM SP300VAC4000W-P, GW Instek ASR-3500
Power Analyzers	Rohde & Schwarz HMC8015 & NPA701
Oscilloscopes	Picoscope 4444, Siglent SDS2104X PLUS
Sound Analyzer	Bruel & Kjaer 2270 G4
Microphone	Bruel & Kjaer Type 4955-A
Temperature Logger	Picoscope TC-08
Tachometer	UNI-T UT372
Multimeters	Keysight 34465A
EMI Analyzer	TekBox TBMR-110M-EU
Isolation Transformer	4kVA
UPS	FSP Champ Tower 3kVA, CyberPower OLS3000E 3kVA
Testing Methodology	Cybenetics PSU Test Protocol

DUT Information(Non-accredited measurements)

Product Identification Details	
Brand	Cooler Master
Model	V750 Gold (#2)
OEM/ODM	Chicony Electronics
Serial Number	MPY7501AFAAGV1184300028
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10
Rated Frequency (Hz)	50-60

Rated Power (W)	750
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	135mm Fluid Dynamic Bearing Fan (APISTEK SAC4H2H)
Semi-Passive Operation	✓ (selectable)
Cybenetics Testing Information	
Lab ID	623
Date of receipt	Jul 22, 2019
Testing Date	Jul 30, 2019
Report Issued Date	Aug 2, 2019
DUT Notes	MPY-7501-AFAAGV
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

Cables and Connectors(Non-accredited measurements)

Modular Cables				
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (650mm)	1	1	18-22AWG	No
4+4 pin EPS12V (650mm)	1	1	18AWG	No
8 pin EPS12V (650mm)	1	1	18AWG	No
6+2 pin PCIe (560mm+120mm)	2	4	18AWG	No
SATA (500mm+120mm+120mm+120mm)	3	12	18AWG	No
4 pin Molex (500mm+120mm+120mm+120mm)	1	4	18AWG	No
FDD Adapter (125mm)	1	1	22AWG	No

AC Power Cord (1350mm) - C13 coupler	1	1	18AWG	-
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Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	62	3	0.3
	Watts	130		744	15	3.6
Total Max. Power (W)		750				

Parts Description

General Data	
Manufacturer (OEM)	Chicony Electronics
PCB Type	Single Sided
Primary Side	
Transient Filter	5x Y caps, 2x X caps, 2x CM chokes
Inrush Protection	-
Bridge Rectifier(s)	2x Lite-On GBU15JL (600V, 15A @ 115°C)
APFC MOSFETS	2x Infineon IPP60R120P7 (650V, 16A @ 100°C, 0.12Ohm)
APFC Boost Diode	1x CREE C3D08060A (600 V, 8 A @ 152 °C)
Hold-up Cap(s)	1x Nichicon (450V, 560uF, 2,000h @ 105°C, GL)
Main Switchers	2x Toshiba TK16A60W (600V, 15.8A @ 150°C, 0.19Ohm)
APFC Controller	Infineon ICE3PCS03G
Resonant Controllers	MPS HR1000A & 2x MPS MP6903 (Installed on the secondary side)
Topology	Primary side: Half Bridge & LLC resonant converter Secondary side: Synchronous Rectification & DC-DC converterss
Secondary Side	
+12V MOSFETS	6x Nexperia PSMN2R6-40YS (40V, 100A @ 100°C, 5.3mOhm @ 175°C)
5V & 3.3V	DC-DC Converters:4x Advanced Power AP0403GH (30V, 50A @ 100°C, 4.5mOhm) & 2x Advanced Power AP3N4R0H (30V, 56A @ 100°C, 4mOhm) PWM Controllers: 2x APW7160A
Filtering Capacitors	Electrolytics: 4x Rubycon (6 - 10,000h @ 105°C, ZLH), Nippon Chemi-con (5 - 6,000h @ 105°C, KZH), Nippon Chemi-con (4 - 10,000h @ 105°C, KY), Nichicon (5 - 6,000h @ 105°C, HV) Polymers: FPCAP, Nichicon (LG), Nippon Chemi-con
Supervisor IC	CP006WD
Fan Model	Apistek SAC4H2H (135 mm, 0.5 A, Fluid Dynamic Bearing Fan)
5VSB Circuit	
Rectifier	On Semiconductor MBR20100CT SBR (100V, 10A @ 133°C) & STMicroelectronics STD4N80K5 FET (800V, 1.7A @ 100°C)

Standby PWM Controller	400BBBBB2 PAJH
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Test Results

Temperature & Compliance Info

Temperature Range (°C /°F)	28-32 / 82.4-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

Performance Summary 115V

Accredited	
Average Efficiency (>1450 load combinations)	88.937%
Average Noise Output (>1450 Load Combinations)	36.51dBA
Average PF (>1450 Load Combinations)	0.992
Efficiency With 10W (≤500W) or 2% (>500W) Load	63.901%
Standby Power Consumption	0.0790W
Non-Accredited	
12V Ripple (Full Load)	30.75mV
5V Ripple (Full Load)	11.81mV
3.3V Ripple (Full Load)	11.94mV
5VSB Ripple (Full Load)	14.50mV
12V Load Regulation	0.72%
5V Load Regulation	0.96%
3.3V Load Regulation	1.01%
5VSB Load Regulation	4.26%
Inrush Current	81.423A

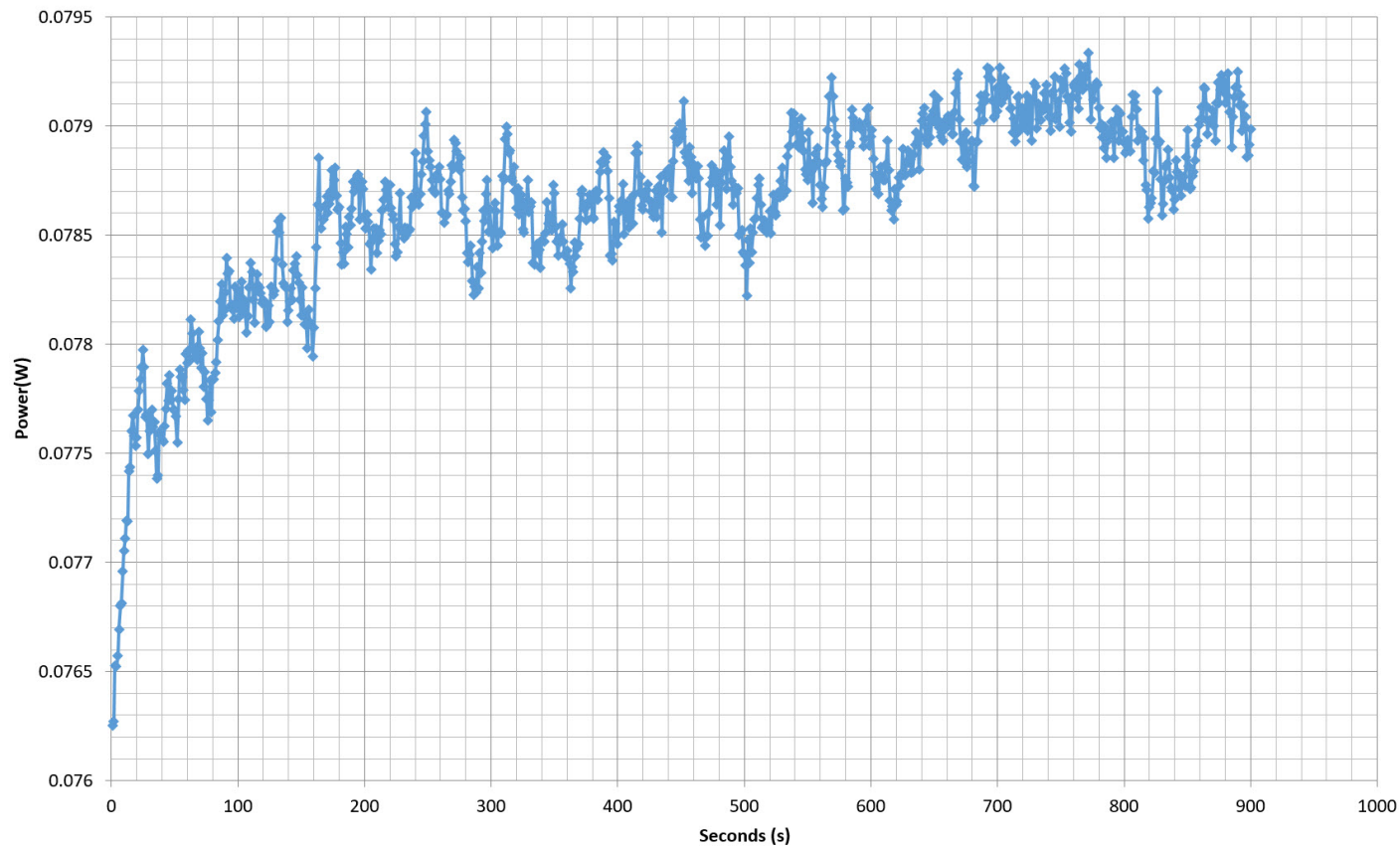
Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	22.8
AC Loss to PWR_OK Hold Up Time (ms)	18.4
PWR_OK Inactive to DC Loss Delay (ms)	4.4



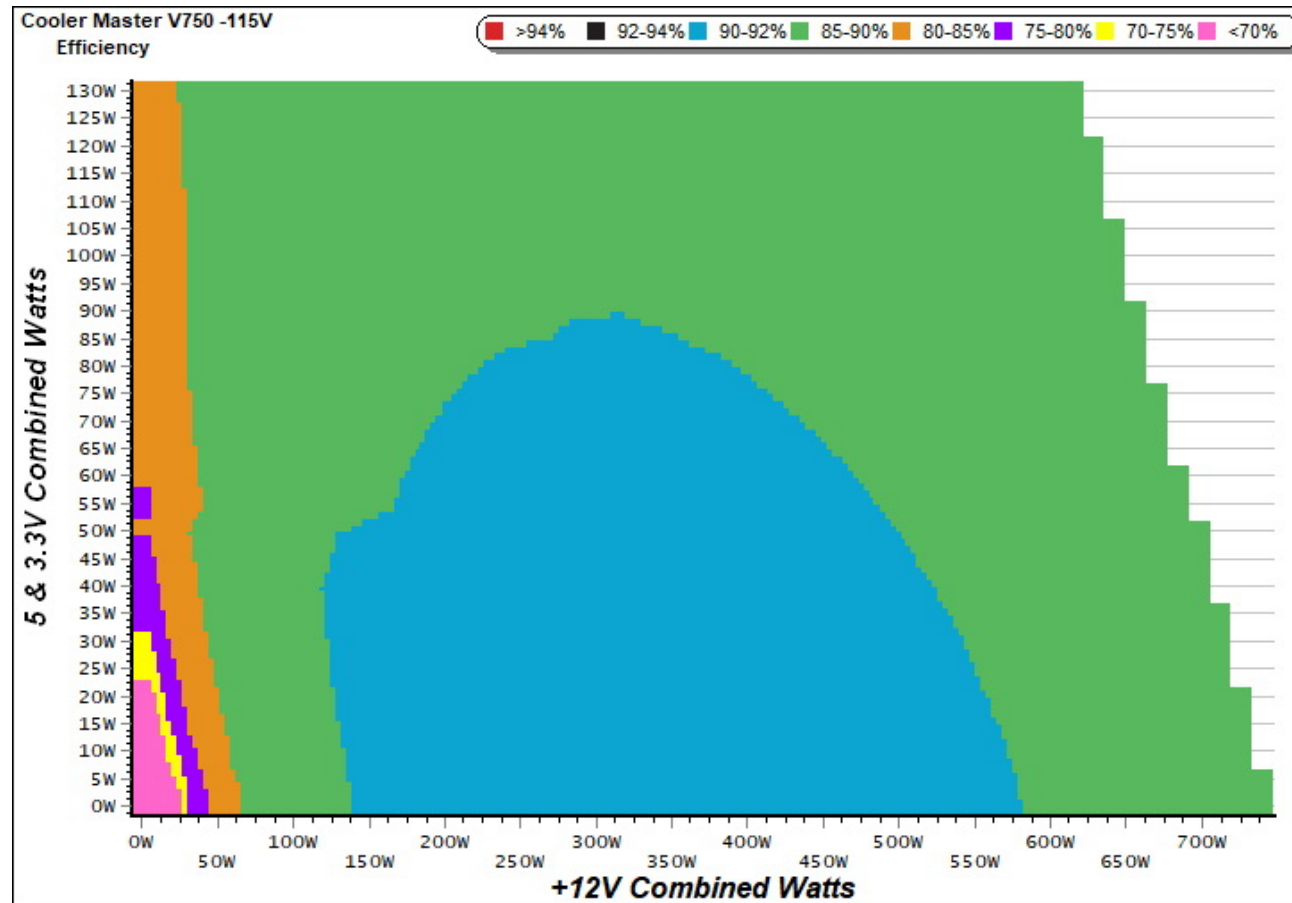
Graphs 115V

Power - MPY7501AFAAGV1184300028 - 30/01/2019 - 12:22



Efficiency Graph

115V

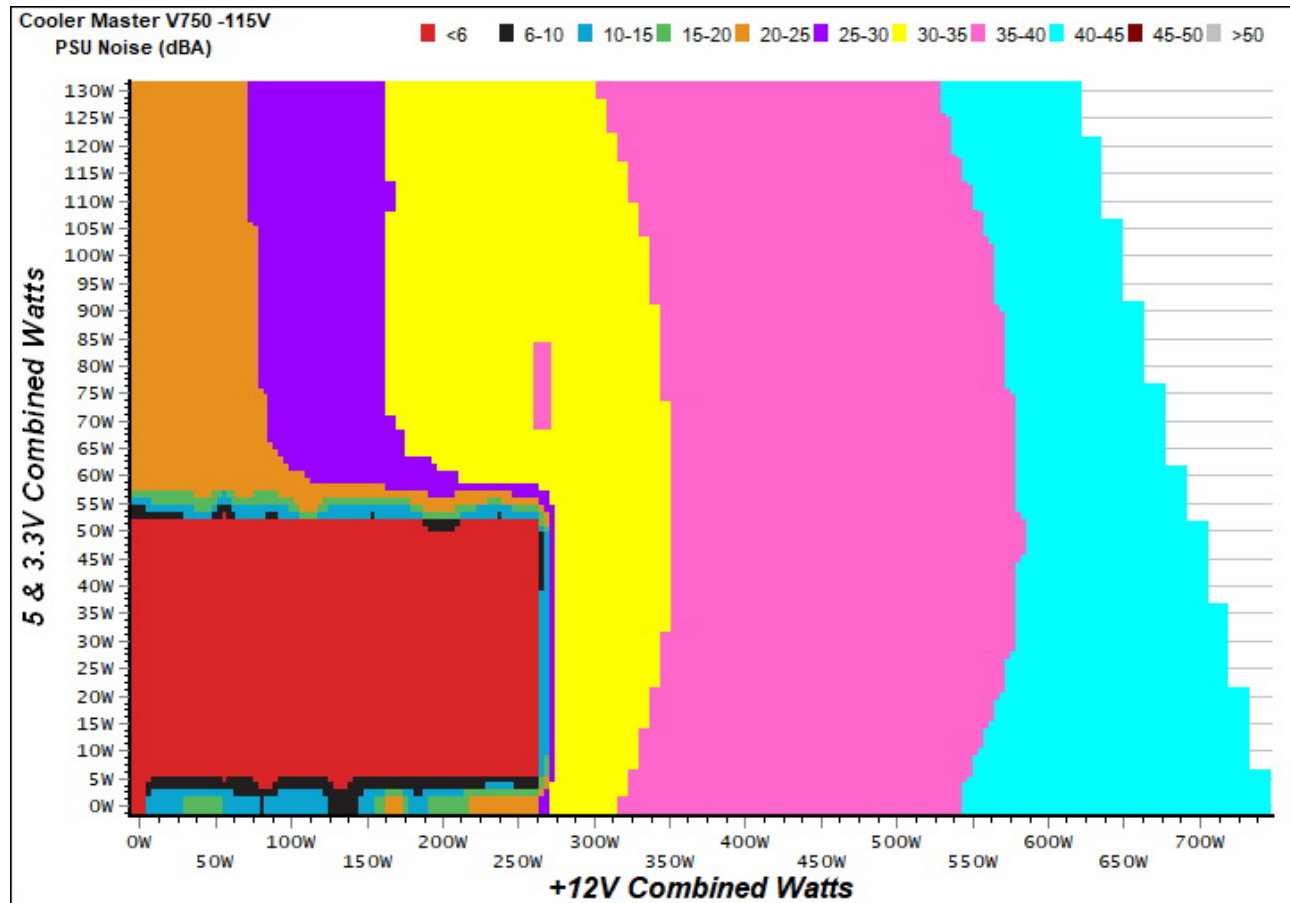


INFO

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

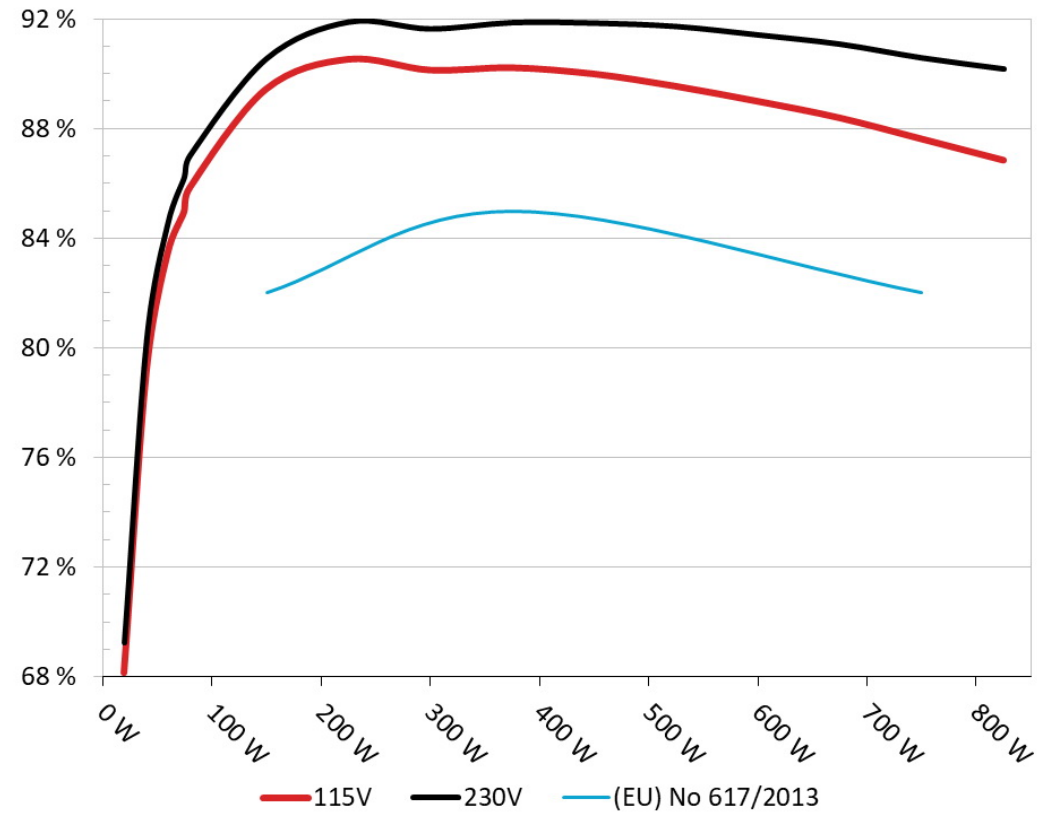
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

Indicative Performance

Efficiency under high ambient temperature

Efficiency: Cooler Master V750

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



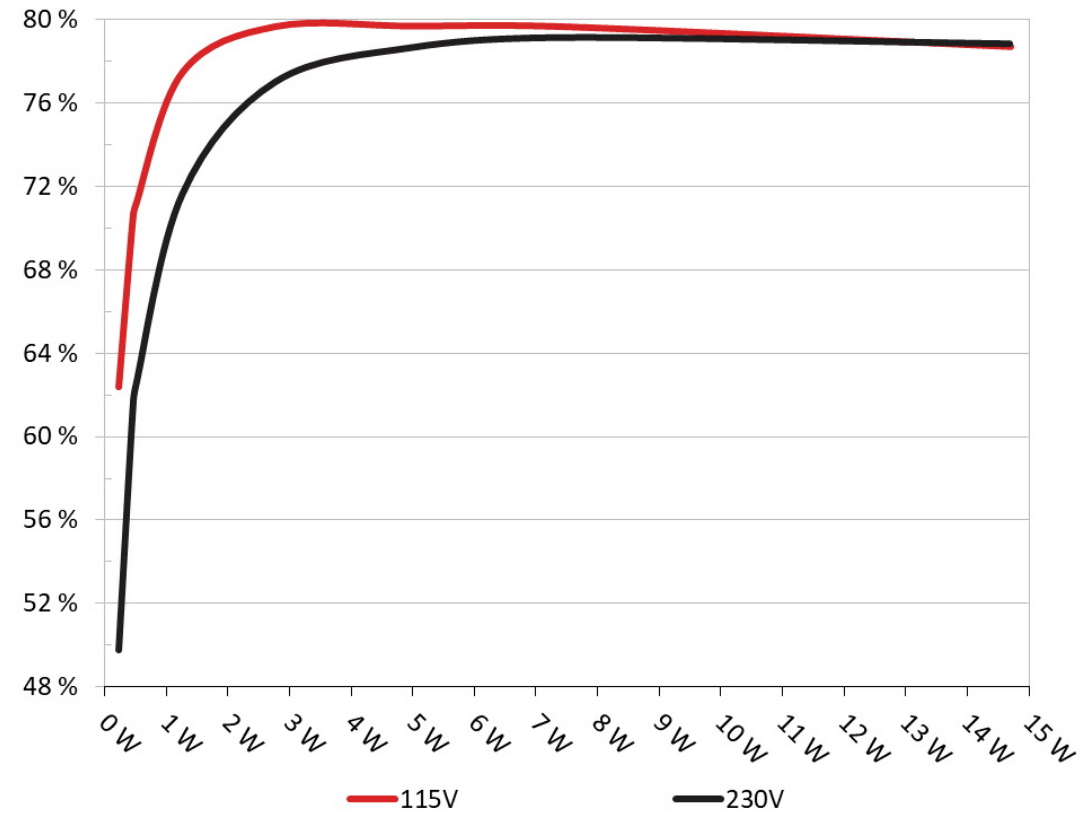
INFO

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 V750

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.

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.229	62.398%	0.053
	5.081V	0.367		115.09V

2	0.090A	0.457	70.416%	0.089
	5.077V	0.649		115.09V
3	0.550A	2.777	79.662%	0.269
	5.049V	3.486		115.08V
4	1.000A	5.023	79.680%	0.317
	5.023V	6.304		115.08V
5	1.500A	7.490	79.647%	0.342
	4.994V	9.404		115.08V
6	2.999A	14.697	78.699%	0.378
	4.900V	18.675		115.08V

Supplementary Tests (For Reference)

Typical 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
1	4.317A	1.961A	1.971A	0.997A	74.461	84.964%	0	<6.0	42.86°C	0.966
	12.246V	5.096V	3.350V	5.014V	87.638				39.09°C	115.12V
2	9.688A	2.928A	2.937A	1.201A	149.351	89.427%	0	<6.0	43.86°C	0.991
	12.227V	5.122V	3.370V	4.997V	167.009				39.81°C	115.12V
3	15.470A	3.421A	3.421A	1.406A	224.860	90.524%	0	<6.0	45.18°C	0.992
	12.208V	5.116V	3.361V	4.981V	248.398				40.77°C	115.11V
4	21.101A	3.922A	3.940A	1.612A	299.679	90.129%	1583	40.9	41.87°C	0.994
	12.249V	5.100V	3.352V	4.965V	332.500				47.41°C	115.11V
5	26.358A	4.920A	4.936A	1.819A	374.576	90.216%	1616	41.5	42.40°C	0.996
	12.295V	5.082V	3.342V	4.950V	415.200				48.59°C	115.11V
6	31.734A	5.915A	5.896A	2.028A	449.498	89.990%	1677	42.1	42.73°C	0.996
	12.280V	5.073V	3.357V	4.933V	499.500				49.79°C	115.11V
7	37.165A	6.866A	6.902A	2.239A	524.826	89.541%	1754	43.1	43.00°C	0.997
	12.262V	5.098V	3.347V	4.915V	586.128				51.28°C	115.11V
8	42.610A	7.862A	7.913A	2.450A	600.126	88.989%	1805	43.9	43.63°C	0.997
	12.244V	5.089V	3.336V	4.899V	674.382				52.61°C	115.11V

9	48.435A	8.363A	8.357A	2.452A	674.666	88.390%	1858	44.6	44.24°C	0.997
	12.226V	5.082V	3.350V	4.895V	763.286				54.06°C	115.11V
10	54.083A	8.870A	8.885A	3.094A	749.902	87.621%	1902	45.3	45.99°C	0.997
	12.207V	5.074V	3.343V	4.849V	855.847				56.32°C	115.11V
11	60.340A	8.883A	8.907A	3.097A	825.135	86.844%	1929	45.7	46.67°C	0.997
	12.188V	5.067V	3.334V	4.845V	950.136				58.48°C	115.11V
CL1	0.143A	16.004A	16.000A	0.000A	138.568	82.764%	1694	42.3	42.04°C	0.992
	12.219V	5.142V	3.408V	5.069V	167.425				48.66°C	115.13V
CL2	62.013A	1.002A	1.000A	1.000A	770.290	88.162%	1869	44.8	45.81°C	0.997
	12.207V	5.019V	3.280V	4.987V	873.717				56.63°C	115.11V

The results above are not used in the certification process

Light Load Tests 115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.174A	0.490A	0.476A	0.198A	19.493	68.155%	0	<6.0	0.828
	12.261V	5.098V	3.359V	5.065V	28.601				115.11V
2	2.418A	0.980A	0.983A	0.396A	39.927	79.120%	0	<6.0	0.921
	12.256V	5.096V	3.355V	5.052V	50.464				115.11V
3	3.592A	1.472A	1.459A	0.595A	59.391	83.446%	0	<6.0	0.955
	12.250V	5.095V	3.352V	5.039V	71.173				115.12V
4	4.838A	1.963A	1.968A	0.796A	79.832	85.849%	0	<6.0	0.971
	12.245V	5.094V	3.349V	5.026V	92.991				115.12V

The results above are not used in the certification process

Ripple Measurements 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.1 mV	5.9 mV	5.8 mV	7.1 mV	Pass
20% Load	12.6 mV	7.1 mV	6.5 mV	7.1 mV	Pass
30% Load	9.6 mV	7.3 mV	6.4 mV	7.7 mV	Pass
40% Load	12.2 mV	7.8 mV	7.1 mV	9.6 mV	Pass

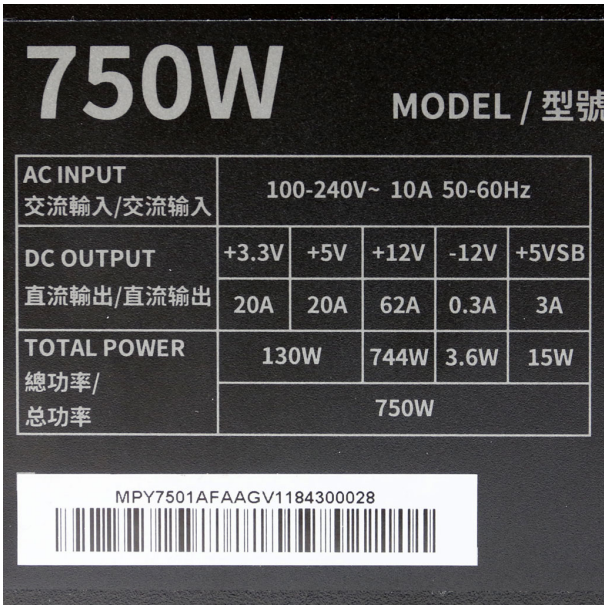
Test	12V	5V	3.3V	5VSB	Pass/Fail
50% Load	12.9 mV	9.3 mV	7.8 mV	10.0 mV	Pass
60% Load	14.5 mV	9.3 mV	8.4 mV	10.3 mV	Pass
70% Load	15.6 mV	9.5 mV	8.4 mV	11.9 mV	Pass
80% Load	17.2 mV	10.3 mV	10.1 mV	17.9 mV	Pass
90% Load	26.6 mV	11.2 mV	36.3 mV	19.9 mV	Pass
100% Load	30.8 mV	11.8 mV	11.9 mV	14.5 mV	Pass
110% Load	32.9 mV	11.6 mV	12.6 mV	19.1 mV	Pass
Crossload 1	12.4 mV	10.2 mV	10.4 mV	7.6 mV	Pass
Crossload 2	31.1 mV	9.3 mV	9.3 mV	13.0 mV	Pass

The results above are not used in the certification process

Cooler Master V750 Gold (#2)



Top side



Power specifications label