Make It Yours.

Cooler Master V750 Gold

Serial Number MPY7501AFAAGV1184300027

Lab ID 572

Certification ID 25572

Test Result Report ID: 19PS572A

Certificate Issue Date: Dec 22, 2018

Scheme: ETA-EMI PSU

115V

230V

115V

230V

Scheme: LAMBDA PSU

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
OEM/ODM	Chicony Electronics
Serial Number	MPY7501AFAAGV1184300027
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	572
Date of receipt	Dec 13, 2018
Testing Date	Dec 20, 2018
Report Issued Date	Dec 22, 2018
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	-

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 Side
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 converters
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

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)	88.825%
Average Noise Output (>1450 Load Combinations)	34.02dBA
Average PF (>1450 Load Combinations)	0.991
Efficiency With 10W (≤500W) or 2% (>500W) Load	63.266%
Standby Power Consumption	0.0765W
Non-Accredited	
12V Ripple (Full Load)	26.00mV
5V Ripple (Full Load)	14.52mV
3.3V Ripple (Full Load)	21.98mV
5VSB Ripple (Full Load)	16.40mV
12V Load Regulation	0.72%
5V Load Regulation	1.05%
3.3V Load Regulation	1.01%
5VSB Load Regulation	4.39%
Inrush Current	83.693A

230V		
Accredited		
Average Efficiency (>1450 load combinations)	90.638%	
Average Noise Output (>1450 Load Combinations)	33.76dBA	
Average PF (>1450 Load Combinations)	0.966	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.1645W	
Non-Accredited		
12V Ripple (Full Load)	23.40mV	
5V Ripple (Full Load)	13.54mV	
3.3V Ripple (Full Load)	19.60mV	
5VSB Ripple (Full Load)	21.70mV	
12V Load Regulation	0.73%	
5V Load Regulation	1.07%	
3.3V Load Regulation	1.04%	
5VSB Load Regulation	4.43%	
Inrush Current	60.216A	
Hold-Up Time & PWR_OK Signal	23.80ms	
AC Loss to PWR_OK Hold Up Time	19.50ms	
PWR_OK Inactive to DC Loss Delay	4.30ms	
OPP (0.00°C / 0.00°C)	-	-

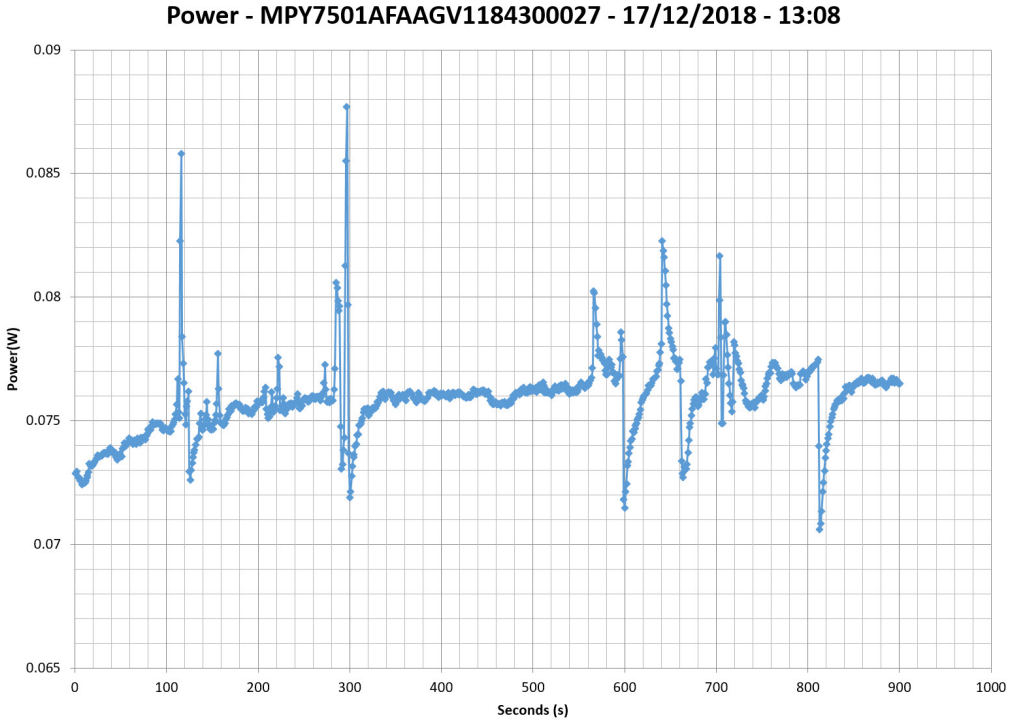
Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	23.8
AC Loss to PWR_OK Hold Up Time (ms)	19.5
PWR_OK Inactive to DC Loss Delay (ms)	4.3

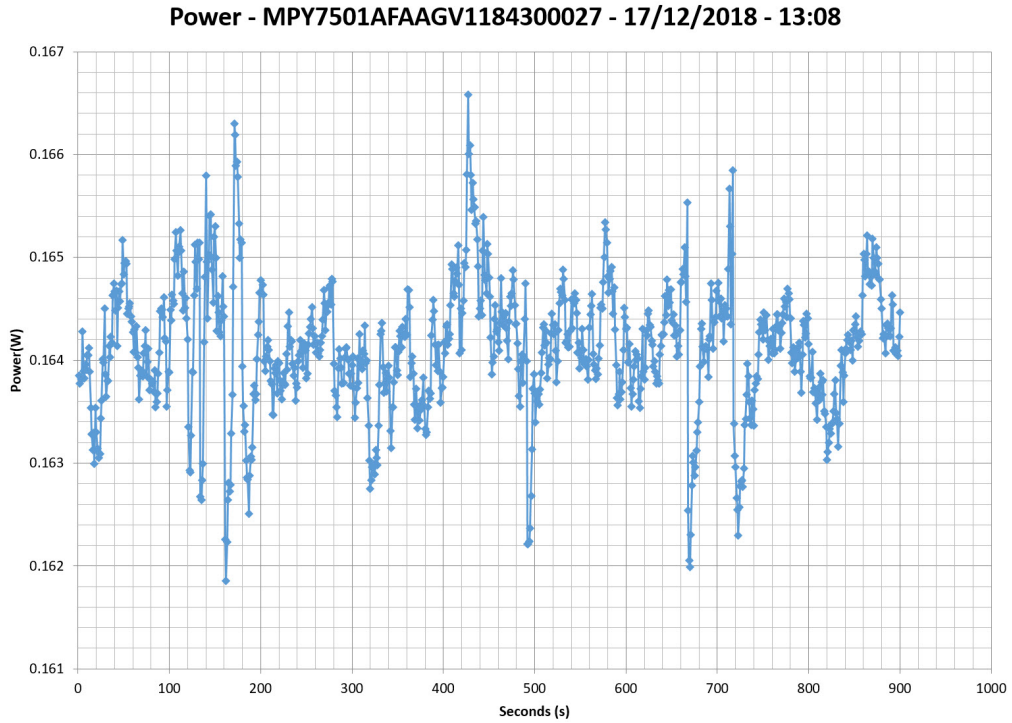
Vampire Power

Graphs

115V

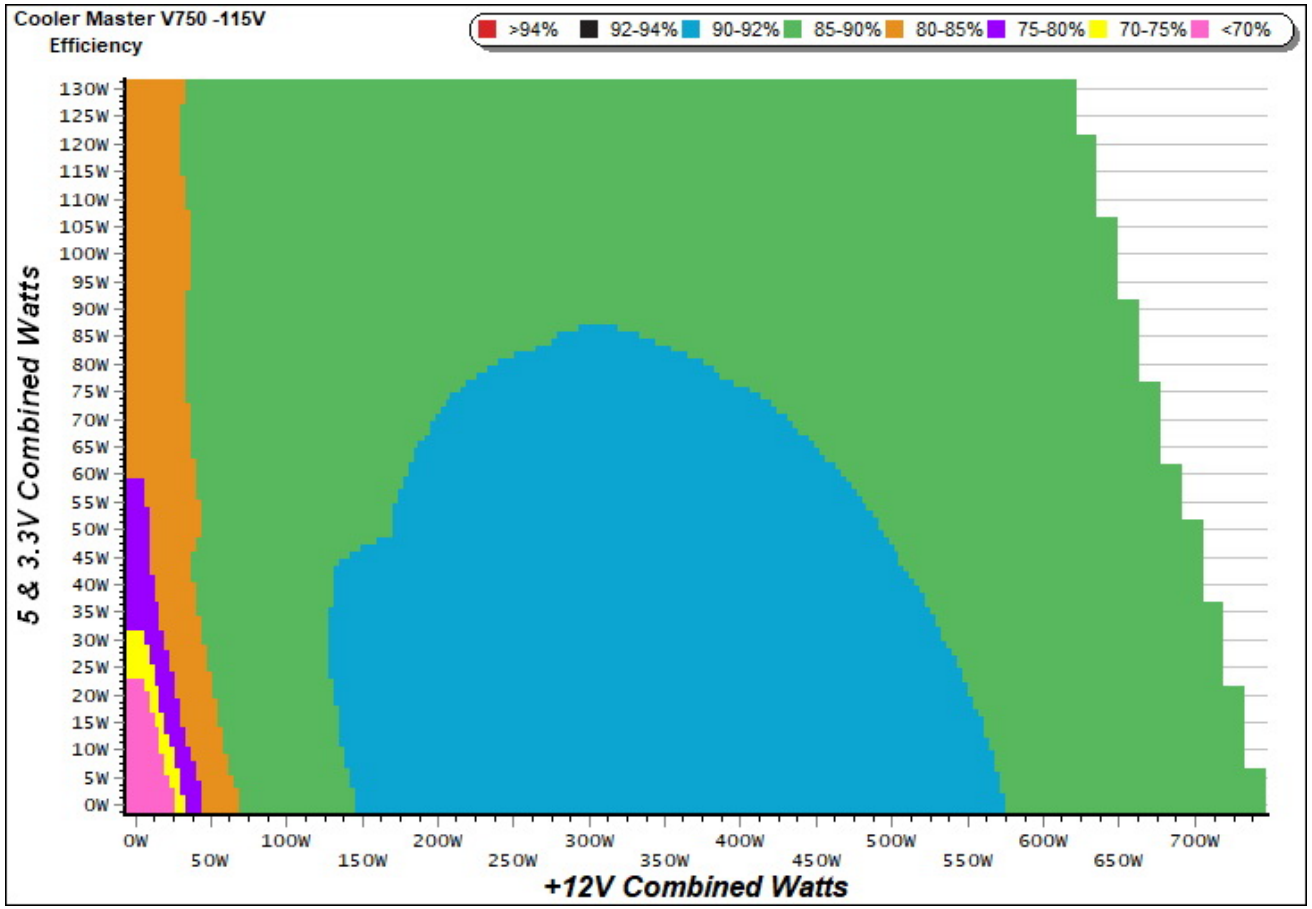


230V



Efficiency Graph

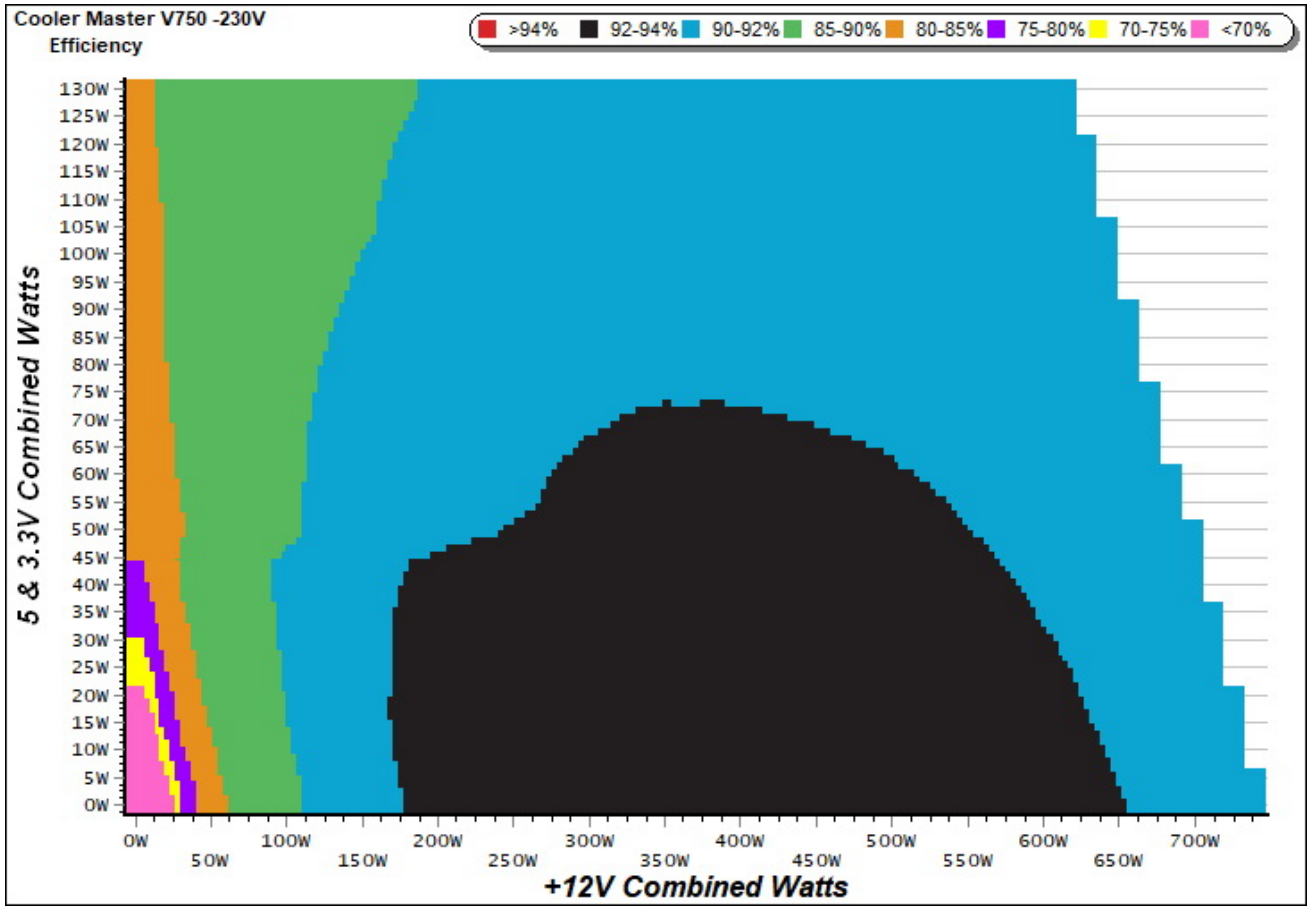
115V



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.

230V



INFO

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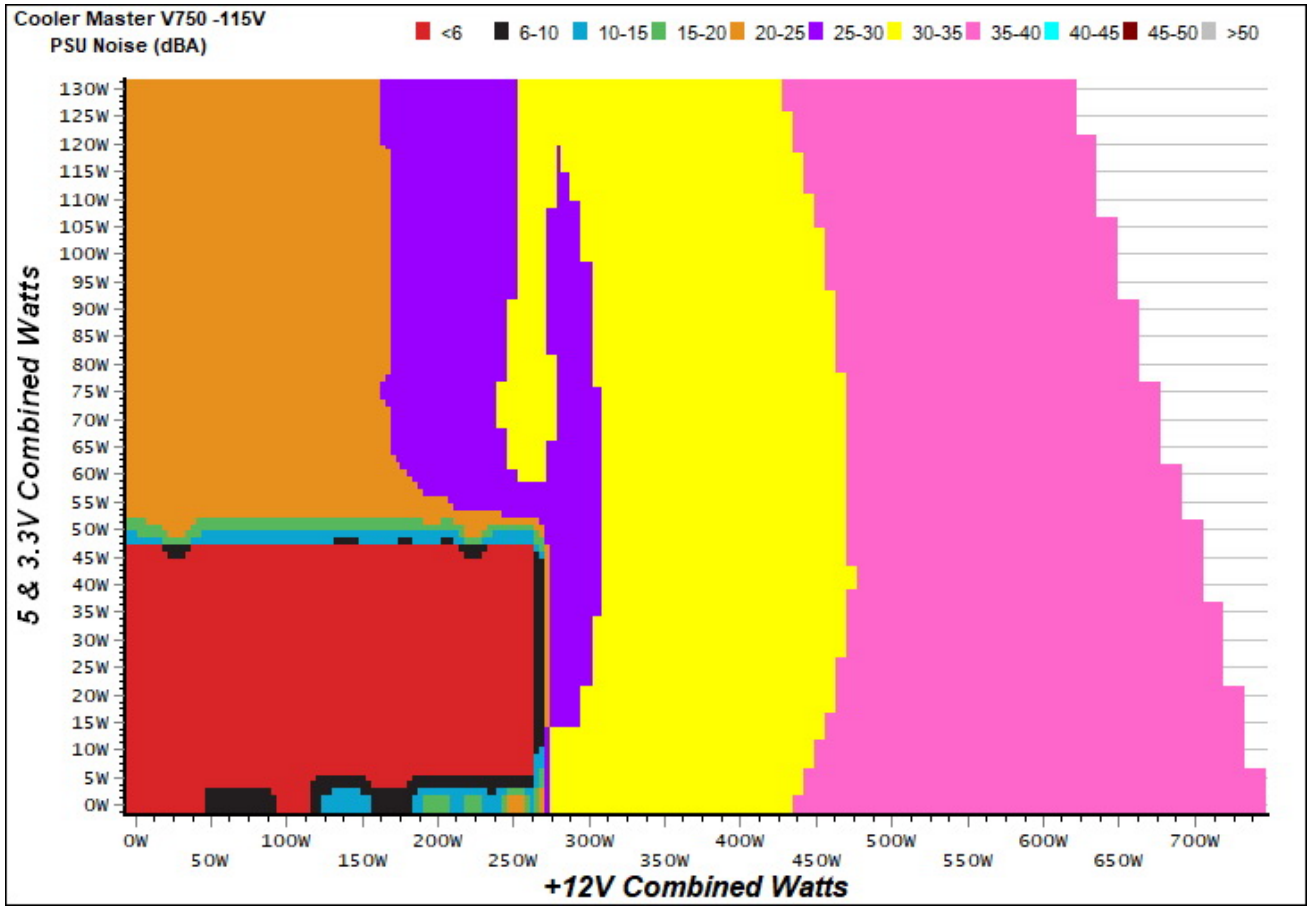
Noise Graph

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.

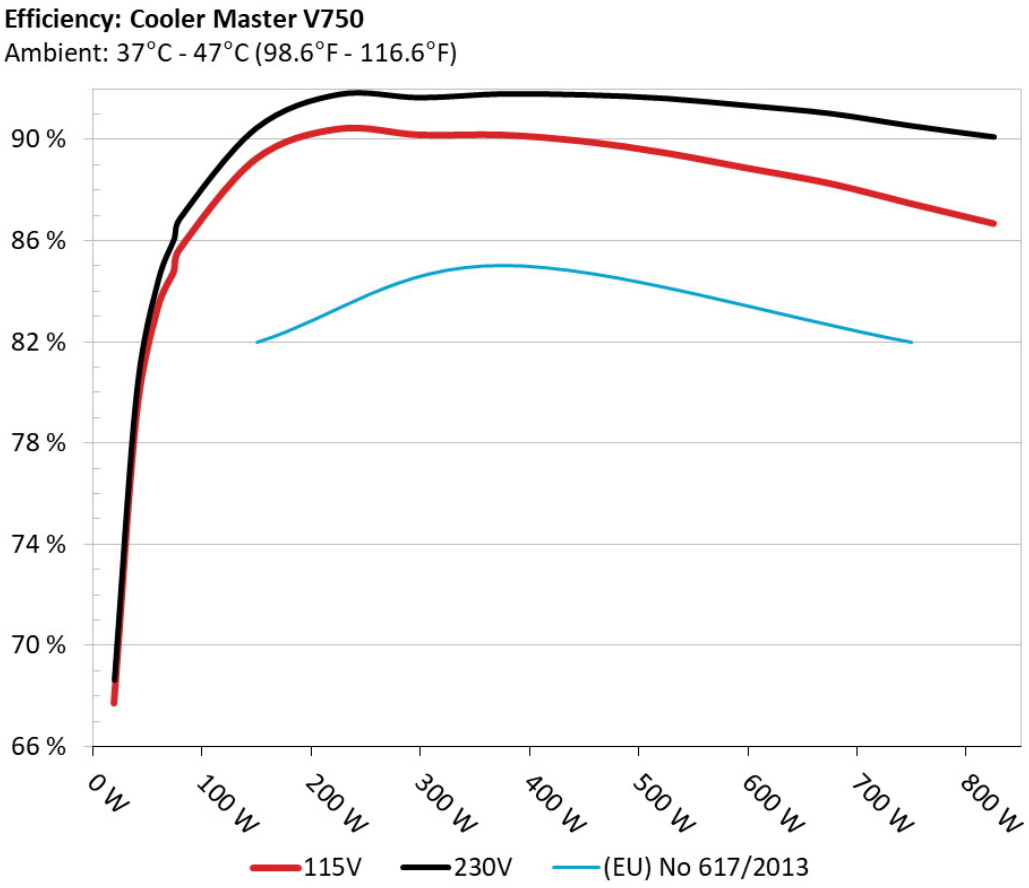
230V

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.

Indicative Performance

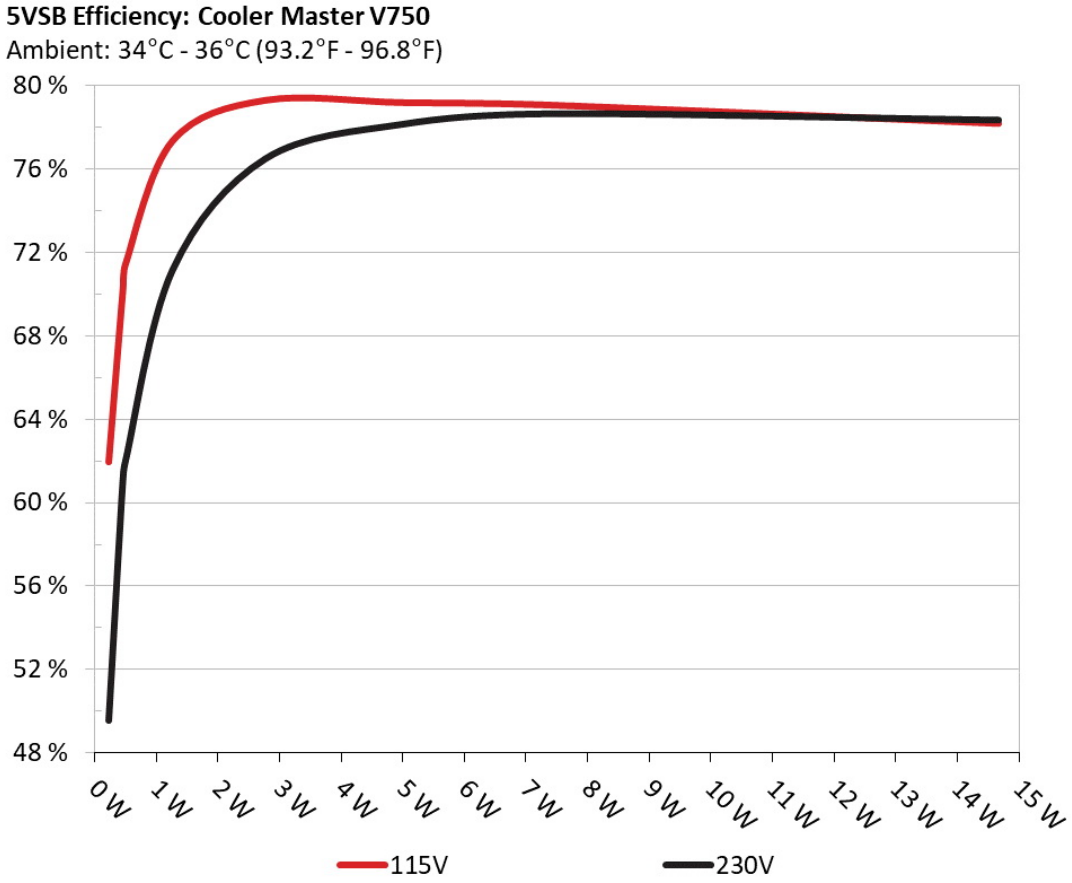
Efficiency under high ambient temperature



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



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	0.228	61.957%	0.053
	5.069V	0.368		115.09V
2	0.090A	0.456	70.154%	0.090
	5.066V	0.650		115.09V
3	0.550A	2.771	79.307%	0.274
	5.038V	3.494		115.11V
4	1.000A	5.013	79.194%	0.325
	5.012V	6.330		115.11V
5	1.500A	7.475	79.067%	0.350
	4.983V	9.454		115.10V
6	2.999A	14.676	78.193%	0.388
	4.893V	18.769		115.09V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.228	49.565%	0.020
	5.070V	0.460		230.24V
2	0.090A	0.456	61.044%	0.032
	5.066V	0.747		230.24V
3	0.550A	2.771	76.505%	0.138
	5.037V	3.622		230.25V
4	1.000A	5.012	78.166%	0.206
	5.011V	6.412		230.25V
5	1.500A	7.473	78.663%	0.253
	4.981V	9.500		230.25V
6	3.000A	14.671	78.358%	0.320
	4.890V	18.723		230.25V

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	4.322A	1.955A	1.966A	1.000A	74.305	84.782%	0	<6.0	44.27°C	0.971
	12.198V	5.111V	3.352V	5.003V	87.642				39.32°C	115.10V
2	9.714A	2.917A	2.932A	1.204A	149.191	89.215%	0	<6.0	45.96°C	0.991
	12.180V	5.136V	3.373V	4.986V	167.226				40.27°C	115.10V
3	15.517A	3.410A	3.415A	1.409A	224.684	90.410%	0	<6.0	47.20°C	0.991
	12.161V	5.129V	3.365V	4.968V	248.518				41.16°C	115.08V
4	21.212A	3.913A	3.933A	1.615A	299.515	90.174%	1343	36.9	41.88°C	0.992
	12.179V	5.107V	3.354V	4.953V	332.153				48.58°C	115.08V
5	26.455A	4.909A	4.933A	1.824A	374.482	90.172%	1448	38.9	42.02°C	0.994
	12.247V	5.092V	3.343V	4.935V	415.299				49.10°C	115.08V
6	31.856A	5.900A	5.894A	2.034A	449.393	89.923%	1526	40.0	42.52°C	0.995
	12.230V	5.084V	3.359V	4.917V	499.753				50.06°C	115.08V
7	37.307A	6.852A	6.897A	2.245A	524.729	89.461%	1592	41.2	43.08°C	0.995
	12.213V	5.108V	3.349V	4.900V	586.544				51.35°C	115.09V
8	42.777A	7.847A	7.905A	2.458A	600.064	88.856%	1656	42.0	43.76°C	0.996
	12.195V	5.098V	3.339V	4.882V	675.321				52.54°C	115.09V
9	48.624A	8.350A	8.340A	2.461A	674.596	88.261%	1707	42.5	44.22°C	0.996
	12.177V	5.090V	3.357V	4.877V	764.319				53.46°C	115.09V
10	54.292A	8.854A	8.871A	3.105A	749.830	87.456%	1762	43.3	45.53°C	0.996
	12.159V	5.082V	3.347V	4.833V	857.376				55.50°C	115.09V
11	60.575A	8.871A	8.891A	3.107A	825.080	86.677%	1805	43.9	46.57°C	0.996
	12.140V	5.073V	3.340V	4.828V	951.904				57.36°C	115.08V
CL1	0.142A	16.000A	16.000A	0.000A	138.608	82.551%	1485	39.4	42.62°C	0.991
	12.173V	5.152V	3.403V	5.048V	167.906				50.41°C	115.11V

CL2	62.013A	1.001A	1.000A	1.000A	767.187	87.967%	1761	43.3	45.50°C	0.996
	12.157V	5.029V	3.289V	4.972V	872.134				55.34°C	115.08V

The results above are not used in the certification process

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	4.330A	1.957A	1.965A	1.000A	74.395	86.069%	0	<6.0	44.37°C	0.813
	12.196V	5.110V	3.351V	5.001V	86.436				40.49°C	230.28V
2	9.723A	2.922A	2.933A	1.204A	149.304	90.426%	0	<6.0	45.36°C	0.929
	12.178V	5.135V	3.373V	4.984V	165.111				41.12°C	230.28V
3	15.530A	3.412A	3.418A	1.410A	224.823	91.762%	0	<6.0	46.19°C	0.962
	12.159V	5.127V	3.364V	4.966V	245.006				41.47°C	230.29V
4	21.230A	3.920A	3.936A	1.616A	299.639	91.634%	1313	36.4	41.83°C	0.979
	12.173V	5.104V	3.353V	4.951V	326.995				47.03°C	230.31V
5	26.469A	4.910A	4.936A	1.825A	374.590	91.783%	1489	39.5	42.38°C	0.984
	12.244V	5.092V	3.343V	4.932V	408.127				48.23°C	230.30V
6	31.872A	5.903A	5.896A	2.035A	449.503	91.744%	1559	40.5	42.91°C	0.988
	12.227V	5.083V	3.358V	4.914V	489.953				49.38°C	230.30V
7	37.323A	6.856A	6.899A	2.247A	524.827	91.602%	1601	41.3	43.17°C	0.992
	12.210V	5.106V	3.349V	4.896V	572.944				50.27°C	230.31V
8	42.795A	7.850A	7.908A	2.460A	600.159	91.317%	1658	42.0	43.74°C	0.994
	12.192V	5.096V	3.338V	4.879V	657.223				51.41°C	230.30V
9	48.644A	8.352A	8.345A	2.462A	674.685	91.010%	1712	42.6	44.77°C	0.994
	12.174V	5.088V	3.355V	4.874V	741.333				53.49°C	230.30V
10	54.315A	8.861A	8.876A	3.107A	749.915	90.516%	1767	43.3	45.55°C	0.995
	12.155V	5.080V	3.346V	4.829V	828.489				55.13°C	230.30V
11	60.601A	8.875A	8.894A	3.109A	825.157	90.081%	1807	43.9	46.59°C	0.995
	12.136V	5.072V	3.338V	4.825V	916.013				57.47°C	230.31V
CL1	0.144A	16.000A	16.000A	0.000A	138.632	83.664%	1494	39.6	42.33°C	0.921
	12.171V	5.152V	3.403V	5.046V	165.701				48.72°C	230.32V

CL2	62.018A	1.003A	0.998A	1.000A	767.123	91.115%	1740	43.0	45.71°C	0.995
	12.155V	5.027V	3.288V	4.970V	841.928				55.34°C	230.32V

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	1.180A	0.488A	0.472A	0.198A	19.494	67.727%	0	<6.0	0.848
	12.212V	5.118V	3.360V	5.055V	28.783				115.17V
2	2.422A	0.976A	0.982A	0.397A	39.856	79.035%	0	<6.0	0.932
	12.207V	5.115V	3.357V	5.042V	50.428				115.17V
3	3.598A	1.466A	1.457A	0.597A	59.286	83.307%	0	<6.0	0.960
	12.202V	5.112V	3.354V	5.028V	71.166				115.23V
4	4.845A	1.956A	1.968A	0.798A	79.686	85.665%	0	<6.0	0.974
	12.197V	5.110V	3.351V	5.015V	93.020				115.11V

The results above are not used in the certification process

230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.180A	0.489A	0.473A	0.198A	19.502	68.621%	0	<6.0	0.522
	12.212V	5.115V	3.360V	5.054V	28.420				230.28V
2	2.424A	0.978A	0.981A	0.397A	39.880	79.997%	0	<6.0	0.664
	12.206V	5.112V	3.356V	5.041V	49.852				230.28V
3	3.602A	1.467A	1.459A	0.597A	59.338	84.368%	0	<6.0	0.759
	12.201V	5.110V	3.353V	5.027V	70.332				230.28V
4	4.852A	1.958A	1.966A	0.798A	79.761	86.875%	0	<6.0	0.827
	12.195V	5.108V	3.351V	5.014V	91.811				230.29V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.5 mV	7.3 mV	11.9 mV	9.6 mV	Pass
20% Load	8.1 mV	7.3 mV	12.3 mV	9.5 mV	Pass
30% Load	9.6 mV	8.0 mV	13.3 mV	10.4 mV	Pass
40% Load	11.4 mV	9.9 mV	14.3 mV	11.2 mV	Pass
50% Load	12.6 mV	10.1 mV	15.1 mV	13.1 mV	Pass
60% Load	13.3 mV	11.9 mV	16.3 mV	14.1 mV	Pass
70% Load	13.9 mV	12.1 mV	16.7 mV	13.9 mV	Pass
80% Load	16.2 mV	12.6 mV	20.0 mV	19.8 mV	Pass
90% Load	17.8 mV	13.1 mV	20.0 mV	20.1 mV	Pass
100% Load	26.0 mV	14.5 mV	22.0 mV	16.4 mV	Pass
110% Load	26.9 mV	15.0 mV	21.0 mV	20.0 mV	Pass
Crossload 1	12.1 mV	10.0 mV	20.0 mV	11.7 mV	Pass
Crossload 2	25.8 mV	11.8 mV	16.0 mV	17.8 mV	Pass

The results above are not used in the certification process

230V

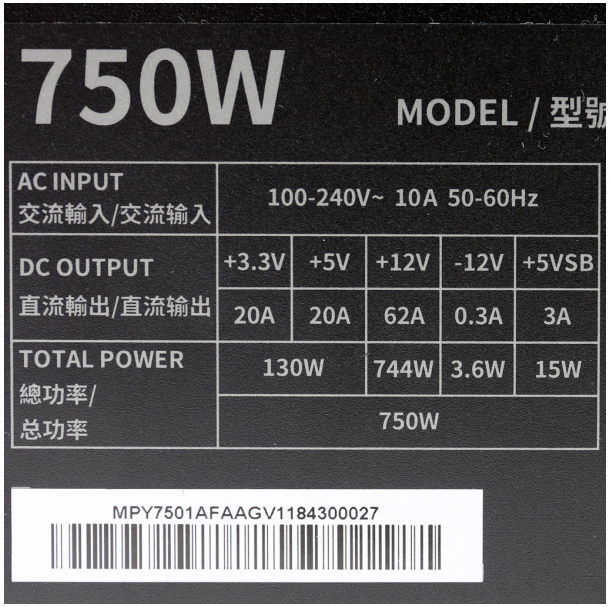
Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	6.3 mV	7.0 mV	10.2 mV	7.7 mV	Pass
20% Load	8.5 mV	7.2 mV	11.4 mV	9.4 mV	Pass
30% Load	10.2 mV	8.5 mV	12.3 mV	9.6 mV	Pass
40% Load	15.0 mV	10.6 mV	14.6 mV	10.7 mV	Pass
50% Load	12.8 mV	10.3 mV	14.2 mV	12.2 mV	Pass
60% Load	13.3 mV	10.9 mV	15.7 mV	12.7 mV	Pass
70% Load	14.0 mV	11.6 mV	15.5 mV	12.9 mV	Pass
80% Load	15.6 mV	12.6 mV	17.1 mV	17.3 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	16.9 mV	12.0 mV	18.8 mV	18.3 mV	Pass
100% Load	23.4 mV	13.5 mV	19.6 mV	21.7 mV	Pass
110% Load	25.9 mV	14.0 mV	22.3 mV	20.7 mV	Pass
Crossload 1	12.2 mV	10.2 mV	19.3 mV	11.2 mV	Pass
Crossload 2	23.0 mV	10.7 mV	14.4 mV	13.8 mV	Pass

The results above are not used in the certification process

Cooler Master V750 Gold

Top side



Power specifications label

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

Cybenetics runs voluntary certification programs for power supplies - ETA for efficiency, LAMBDA for noise and SAFE for safety and correct operation - and for cooling products, with DELTA for chassis soundproofing and PHI for fan airflow and static pressure. THETA rates cooler performance on AMD AM5 and Intel LGA1851 outside ISO 17065 and accreditation scope

CYBENETICS LTD Syrou 6, Latsia, 2231, Nicosia Cyprus

www.cybenetics.com - info@cybenetics.com