

Anex

Cooler Master V1300 Platinum

Lab ID#: CM19130021
Receipt Date: Apr 4, 2019
Test Date: Apr 18, 2019

Report:

Report Date: Sep 5, 2019

DUT INFORMATION

Brand	Cooler Master
Manufacturer (OEM)	Delta Electronics
Series	V Platinum
Model Number	
Serial Number	MPZD001AFBAPV1184500224
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	15-8
Rated Frequency (Hz)	50-60
Rated Power (W)	1300
Type	ATX12V
Cooling	135mm Double Ball Bearing Fan (AFB1312M)
Semi-Passive Operation	X
Cable Design	Fully Modular

POWER SPECIFICATIONS

Rail		3.3V	5V	12V1	12V2	5VSB	-12V
Max. Power	Amps	25	25	54	54	3	0.5
	Watts	130		1296		15	6
Total Max. Power (W)		1300					

CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (650mm)	1	1	18-22AWG	No
8 pin EPS12V (750mm)	1	1	18AWG	No
4+4 pin EPS12V (680mm)	1	1	18AWG	No
6+2 pin PCIe (650mm+120mm)	6	12	16-18AWG	No
SATA (560mm+120mm+120mm+120mm)	1	4	18AWG	No
SATA (520mm+120mm+120mm+120mm)	3	12	18AWG	No
4 pin Molex (500mm+120mm+120mm+120mm)	2	8	18AWG	No
FDD Adapter (+120mm)	1	1	22AWG	No
AC Power Cord (1360mm) - C13 coupler	1	1	17AWG	-

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General Data	
Manufacturer (OEM)	Delta Electronics
PCB Type	Single Sided
Primary Side	
Transient Filter	6x Y caps, 2x X caps, 1x CM choke, 1x DM choke, 1x MOV, 1x Discharge IC
Inrush Protection	NTC Thermistor & Relay
Bridge Rectifier(s)	2x Shindengen LL25XB60 (600V, 25A @ 113°C)
APFC MOSFETS	3x Infineon IPP60R125CP (650V, 16A @ 100°C, 0.125Ohm)
APFC Boost Diode	1x CREE C3D10060A (600V, 10A @ 150°C)
Hold-up Cap(s)	2x Rubycon (450V, 680uF, 3000h @ 105°C, MXK), 1x Rubycon (450V, 120uF, 2000h @ 105°C, QXW)
Main Switchers	4x Infineon IPA65R110CFD (700V, 19.7A @ 100°C, 0.11Ohm)
APFC Controller	Champion CM6502SNX & CM03AX Green PFC Controller
Resonant Controller	Champion CM6901X
Topology	Primary side: Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	Unknown number of FETs
5V & 3.3V	DC-DC Converters: 5x Infineon BSC042N03LS (30V, 59A @ 100°C, 4.2mOhm), 1x Infineon BSC057N03LS (30V, 45A, 5.7mOhm)
Filtering Capacitors	Electrolytics: 3x Nichicon (2-5,000h @ 105°C, HD), 2x Rubycon (1-5,000h @ 105°C, ZL), 5x Rubycon (6-10,000h @ 105°C, ZLH), 12x Nippon Chemi-con (5-6,000h @ 105°C, KZH) Polymers: Nichicon (LG, UD), NIC
Supervisor IC	Texas Instruments DWA103N-A (OCP, OVP, UVP, SCP, PG)
Fan Model	Delta AFB1312M (135mm, 12V, 0.38A, Double Ball Bearing Fan)
5VSB Circuit	
Rectifier	1x STMicroelectronics STPS20L60CT SBR (60V, 20A @ 140°C)
Standby PWM Controller	Power Integrations TNY280PG

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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

115V

Average Efficiency	89.294%
Efficiency With 10W (≤500W) or 2% (>500W)	67.220
Average Efficiency 5VSB	81.234%
Standby Power Consumption (W)	0.0373916
Average PF	0.978
Avg Noise Output	29.70 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	A-

230V

Average Efficiency	90.893%
Average Efficiency 5VSB	81.468%
Standby Power Consumption (W)	0.0888742
Average PF	0.927
Avg Noise Output	29.46 dB(A)
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	A-

TEST EQUIPMENT

Electronic Loads	Chroma 6314A x2 63123A x6 63102A 63101A	Chroma 63601-5 x4 Chroma 63600-2 x2 63640-80-80 x20 63610-80-20 x2
AC Sources	Chroma 6530, Chroma 61604, Keysight AC6804B	
Power Analyzers	N4L PPA1530 x2, N4L PPA5530	
Oscilloscopes	Picoscope 4444 & 3424, Keysight DSOX3024A, Rigol DS2072A	
Voltmeter	Keithley 2015 THD 6.5 Digit	
Sound Analyzer	Bruel & Kjaer 2250-L G4	
Microphone	Bruel & Kjaer Type 4955-A, Bruel & Kjaer Type 4189	
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2	

HOLD-UP TIME & POWER OK SIGNAL (230V)

Hold-Up Time (ms)	19.5
AC Loss to PWR_OK Hold Up Time (ms)	16.7
PWR_OK Inactive to DC Loss Delay (ms)	2.8

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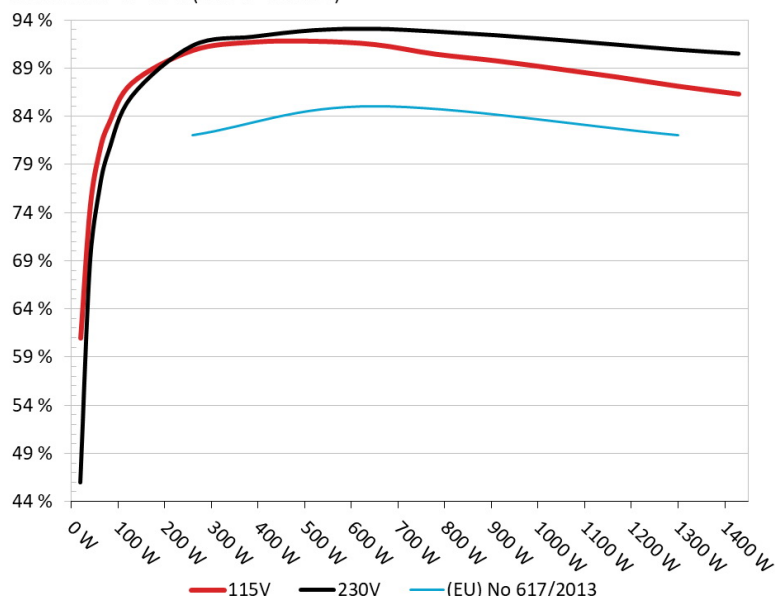
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Cooler Master V1300 Platinum

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



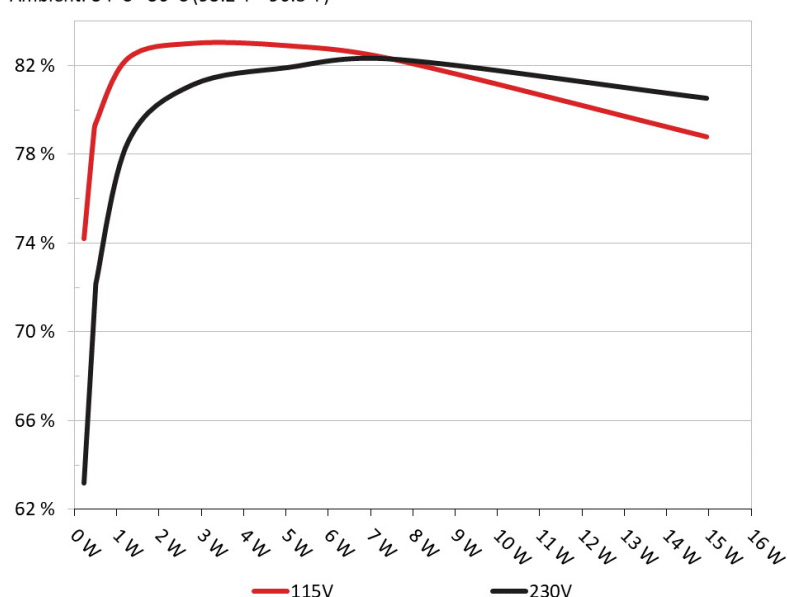
INFO

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 V1300 Platinum

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	74.194%	0.021
	5.095V	0.310		115.10V
2	0.090A	0.459	78.866%	0.039
	5.093V	0.582		115.08V
3	0.550A	2.792	82.996%	0.195
	5.075V	3.364		115.08V
4	1.000A	5.057	82.888%	0.298
	5.057V	6.101		115.09V
5	1.500A	7.557	82.266%	0.369
	5.037V	9.186		115.10V
6	3.000A	14.939	78.784%	0.469
	4.980V	18.962		115.10V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.230	63.187%	0.007
	5.095V	0.364		230.24V
2	0.090A	0.459	72.170%	0.013
	5.093V	0.636		230.24V
3	0.550A	2.791	81.134%	0.066
	5.074V	3.440		230.24V
4	1.000A	5.057	81.921%	0.114
	5.057V	6.173		230.24V
5	1.500A	7.556	82.291%	0.162
	5.037V	9.182		230.25V
6	3.000A	14.938	80.533%	0.273
	4.979V	18.549		230.25V

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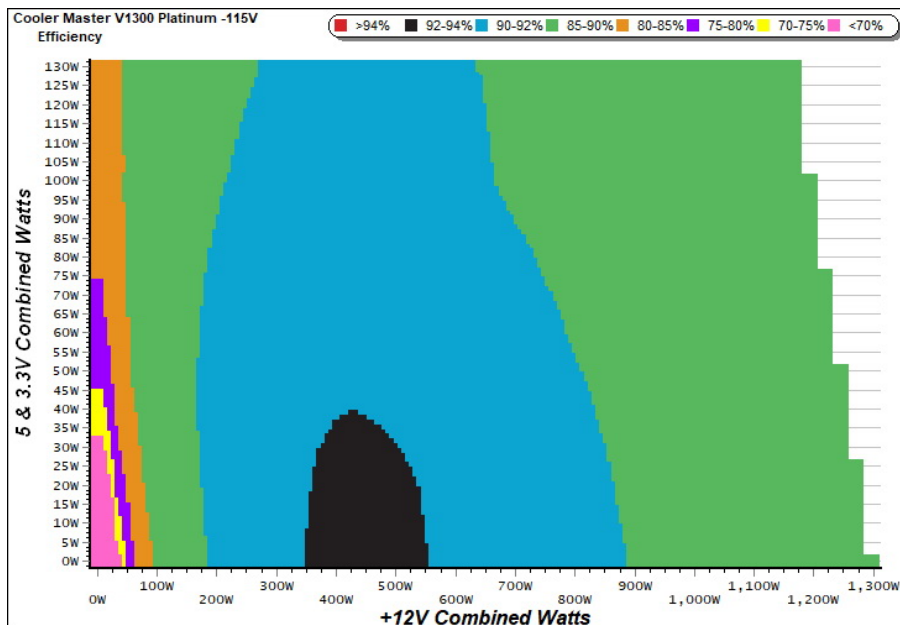
115V

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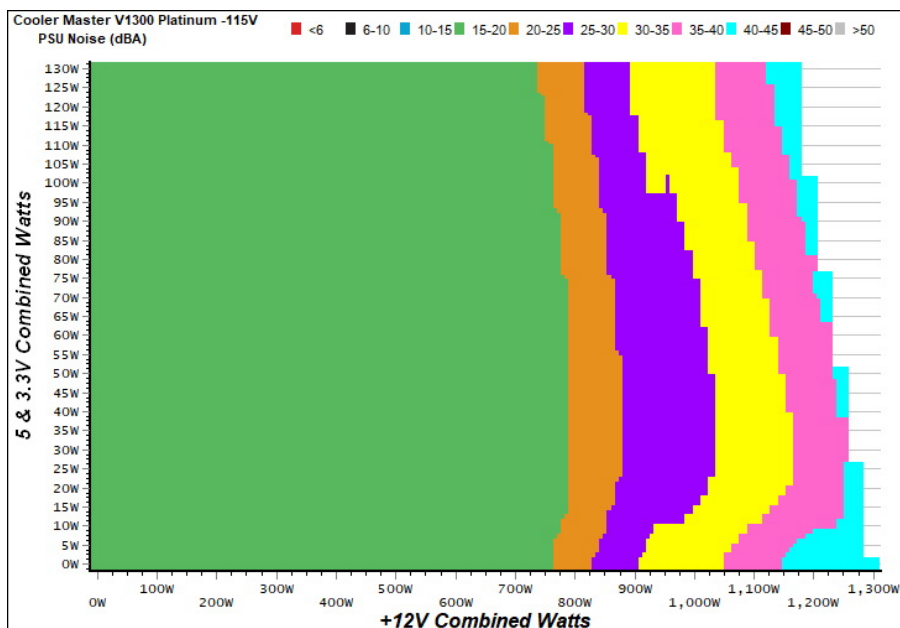
EFFICIENCY GRAPH 115V



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

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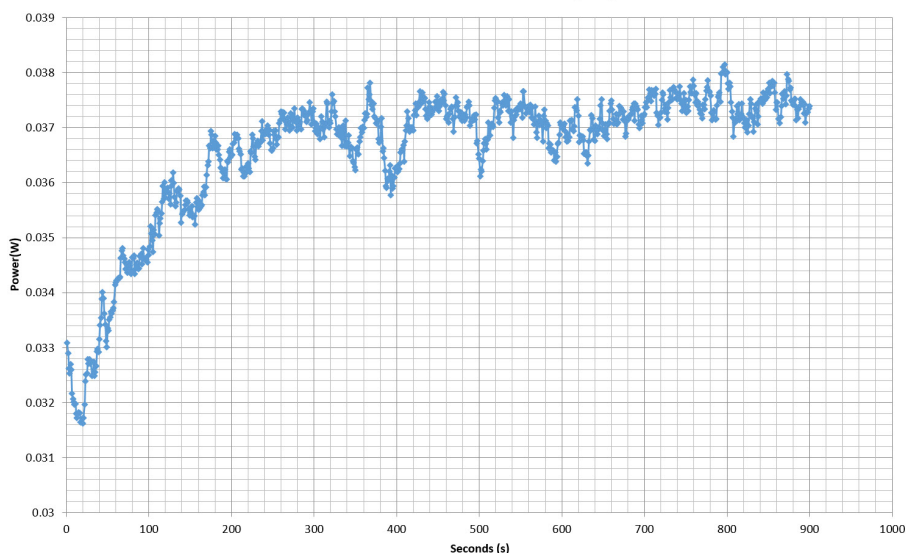
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Cooler Master V1300 Platinum

VAMPIRE POWER -115V

Power - MPZD001AFBAPV1184500224 - 05/04/2019 - 10:54



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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Cooler Master V1300 Platinum

10-110% 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	8.908A	2.007A	1.970A	0.990A	129.708	87.479%	648	15.1	39.78°C	0.966
	12.135V	4.987V	3.351V	5.050V	148.274				43.72°C	115.13V
2	18.887A	3.011A	2.957A	1.192A	259.813	90.858%	648	15.1	40.97°C	0.958
	12.120V	4.983V	3.347V	5.035V	285.956				45.19°C	115.13V
3	29.223A	3.515A	3.438A	1.395A	389.719	91.724%	647	15.1	41.31°C	0.972
	12.104V	4.980V	3.344V	5.020V	424.884				47.31°C	115.12V
4	39.586A	4.020A	3.950A	1.599A	519.726	91.808%	649	15.1	41.72°C	0.979
	12.088V	4.978V	3.341V	5.005V	566.104				49.52°C	115.12V
5	49.649A	5.028A	4.943A	1.804A	649.871	91.466%	647	15.1	42.32°C	0.984
	12.072V	4.974V	3.338V	4.989V	710.507				51.06°C	115.12V
6	59.663A	6.036A	5.937A	2.011A	779.998	90.468%	882	24.1	43.06°C	0.987
	12.071V	4.971V	3.335V	4.973V	862.177				52.88°C	115.11V
7	69.760A	7.048A	6.934A	2.220A	910.080	89.777%	1201	32.4	43.84°C	0.989
	12.055V	4.968V	3.332V	4.957V	1013.709				54.29°C	115.11V
8	79.903A	8.060A	7.932A	2.430A	1040.203	88.947%	1633	39.7	44.17°C	0.990
	12.037V	4.964V	3.328V	4.940V	1169.466				55.30°C	115.11V
9	90.483A	8.569A	8.423A	2.434A	1169.950	88.083%	2187	47.2	45.44°C	0.992
	12.018V	4.961V	3.325V	4.933V	1328.240				57.30°C	115.10V
10	100.852A	9.079A	8.942A	3.063A	1299.948	87.135%	2186	47.2	45.86°C	0.992
	12.000V	4.958V	3.322V	4.899V	1491.877				58.39°C	115.10V
11	111.817A	9.082A	8.948A	3.066A	1429.727	86.322%	2188	47.2	46.97°C	0.993
	11.984V	4.956V	3.319V	4.893V	1656.272				59.90°C	115.09V
CL1	0.139A	16.004A	15.999A	0.000A	134.695	82.860%	647	15.1	42.33°C	0.966
	12.134V	4.969V	3.343V	5.081V	162.557				51.05°C	115.12V
CL2	107.994A	1.002A	1.002A	1.000A	1309.775	87.479%	2185	47.2	45.52°C	0.993
	12.005V	4.971V	3.328V	4.992V	1497.248				57.87°C	115.09V

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Cooler Master V1300 Platinum

20-80W LOAD TESTS 115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.195A	0.503A	0.478A	0.197A	19.630	60.965%	648	15.1	0.759
	12.147V	4.990V	3.352V	5.088V	32.199				115.15V
2	2.450A	1.004A	0.985A	0.394A	40.068	74.588%	648	15.1	0.876
	12.145V	4.990V	3.352V	5.079V	53.719				115.15V
3	3.632A	1.504A	1.463A	0.592A	59.512	80.219%	648	15.1	0.914
	12.143V	4.989V	3.352V	5.070V	74.187				115.15V
4	4.889A	2.007A	1.967A	0.790A	79.960	83.239%	648	15.1	0.939
	12.141V	4.988V	3.352V	5.061V	96.061				115.13V

RIPPLE MEASUREMENTS 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	9.3 mV	13.7 mV	13.2 mV	13.7 mV	Pass
20% Load	11.3 mV	14.9 mV	13.3 mV	12.6 mV	Pass
30% Load	13.5 mV	14.9 mV	14.8 mV	14.5 mV	Pass
40% Load	15.2 mV	15.2 mV	14.3 mV	15.8 mV	Pass
50% Load	18.0 mV	16.4 mV	15.8 mV	16.2 mV	Pass
60% Load	17.8 mV	16.8 mV	20.2 mV	17.3 mV	Pass
70% Load	19.4 mV	19.2 mV	21.2 mV	16.7 mV	Pass
80% Load	22.1 mV	18.5 mV	19.4 mV	18.5 mV	Pass
90% Load	24.8 mV	19.2 mV	20.3 mV	20.6 mV	Pass
100% Load	28.0 mV	22.4 mV	23.6 mV	24.2 mV	Pass
110% Load	30.9 mV	23.8 mV	24.4 mV	28.4 mV	Pass
Crossload 1	12.5 mV	19.4 mV	19.6 mV	13.4 mV	Pass
Crossload 2	27.5 mV	17.4 mV	19.6 mV	23.6 mV	Pass

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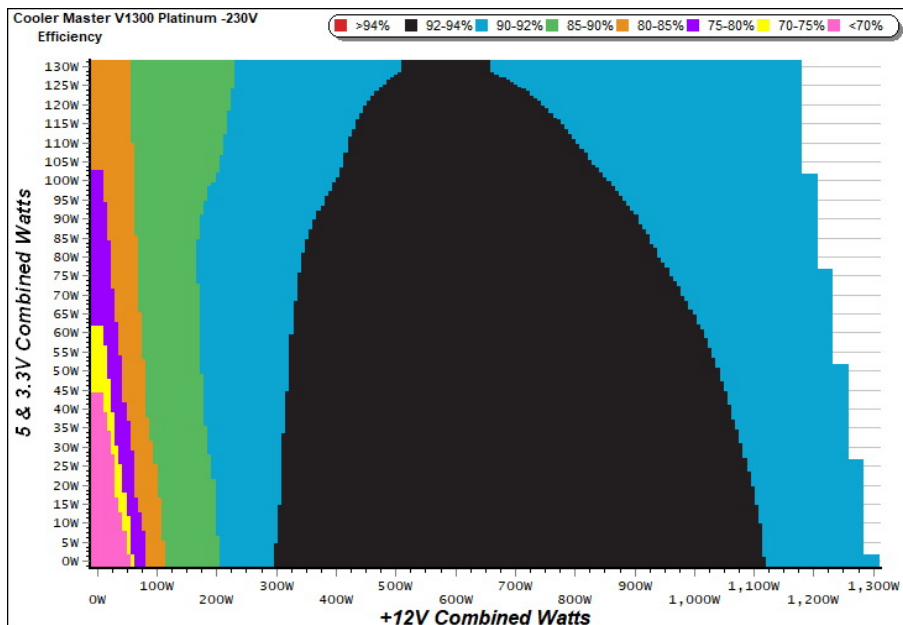
230V

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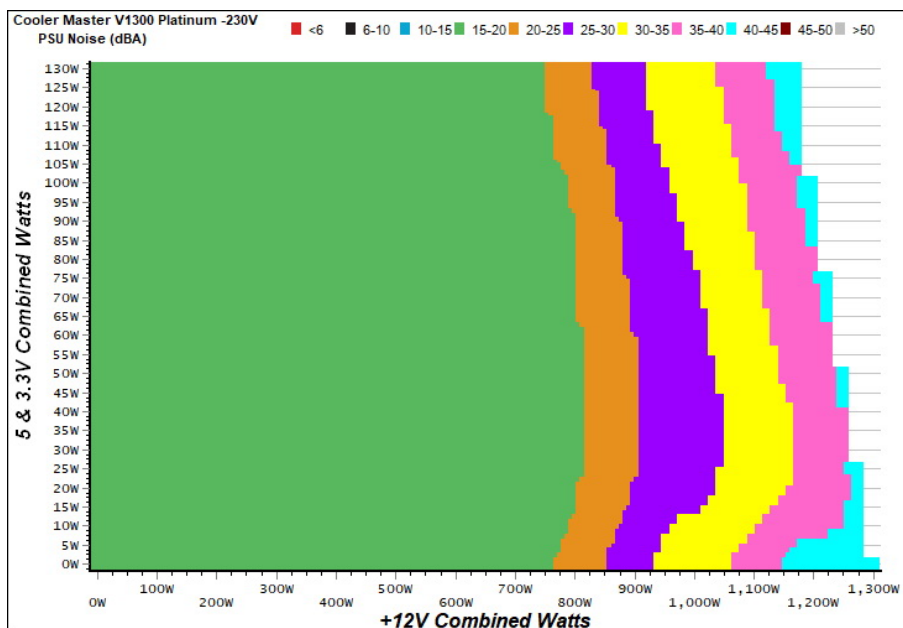
EFFICIENCY GRAPH 230V



INFO

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NOISE GRAPH 230V



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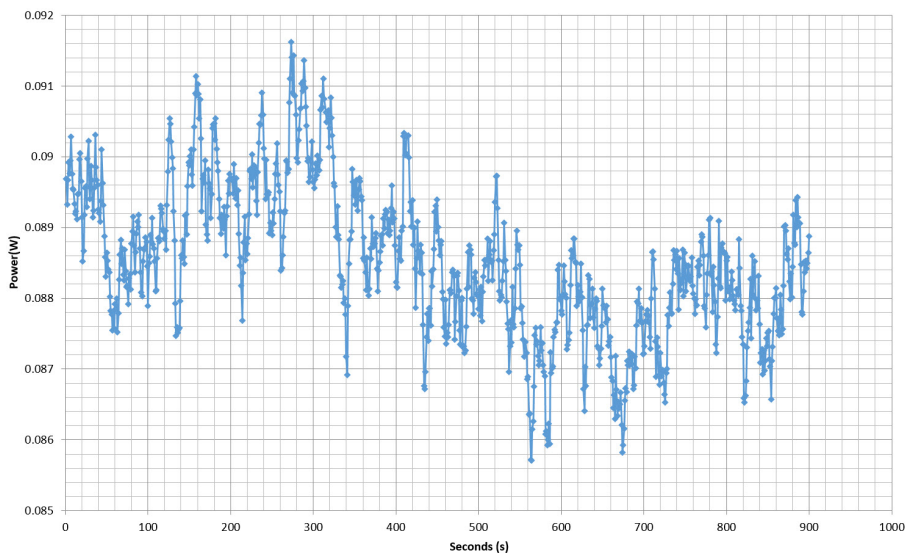
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10-110% LOAD TESTS 230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
1	8.901A	2.006A	1.966A	0.990A	129.605	86.077%	648	15.1	39.83°C	0.811
	12.135V	4.986V	3.351V	5.051V	150.569				43.67°C	230.24V
2	18.866A	3.009A	2.956A	1.192A	259.715	91.334%	647	15.1	40.61°C	0.896
	12.129V	4.982V	3.348V	5.035V	284.357				45.15°C	230.24V
3	29.189A	3.515A	3.437A	1.395A	389.622	92.269%	648	15.1	41.10°C	0.923
	12.115V	4.979V	3.344V	5.020V	422.268				46.25°C	230.23V
4	39.539A	4.020A	3.950A	1.599A	519.705	92.941%	647	15.1	41.83°C	0.938
	12.102V	4.976V	3.341V	5.005V	559.176				48.37°C	230.23V
5	49.582A	5.028A	4.943A	1.804A	649.851	93.089%	649	15.1	42.30°C	0.948
	12.088V	4.973V	3.338V	4.989V	698.099				49.51°C	230.24V
6	59.668A	6.039A	5.936A	2.012A	780.003	92.808%	913	25.1	42.81°C	0.955
	12.070V	4.969V	3.335V	4.973V	840.450				51.19°C	230.25V
7	69.768A	7.050A	6.934A	2.220A	910.094	92.420%	1220	32.7	43.15°C	0.959
	12.054V	4.966V	3.331V	4.956V	984.739				52.19°C	230.27V
8	79.910A	8.063A	7.934A	2.430A	1040.207	91.947%	1625	39.6	43.97°C	0.963
	12.036V	4.962V	3.327V	4.940V	1131.314				53.83°C	230.27V
9	90.495A	8.573A	8.422A	2.434A	1169.993	91.439%	2154	47.0	44.49°C	0.967
	12.017V	4.959V	3.324V	4.933V	1279.527				55.27°C	230.28V
10	100.875A	9.083A	8.945A	3.063A	1300.026	90.919%	2186	47.2	45.65°C	0.970
	11.998V	4.956V	3.321V	4.899V	1429.880				56.85°C	230.28V
11	111.867A	9.085A	8.950A	3.067A	1429.983	90.509%	2190	47.2	46.73°C	0.973
	11.981V	4.954V	3.318V	4.891V	1579.931				58.67°C	230.28V
CL1	0.151A	16.004A	15.999A	0.000A	134.825	81.474%	647	15.1	42.33°C	0.825
	12.134V	4.968V	3.343V	5.080V	165.483				49.53°C	230.28V
CL2	108.016A	1.003A	1.003A	1.000A	1309.613	91.220%	2186	47.2	45.42°C	0.971
	12.001V	4.970V	3.328V	4.990V	1435.657				56.73°C	230.28V

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20-80W LOAD TESTS 230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.184A	0.501A	0.478A	0.197A	19.494	45.976%	648	15.1	0.480
	12.153V	4.988V	3.353V	5.090V	42.400				230.24V
2	2.441A	1.002A	0.984A	0.394A	39.941	68.546%	648	15.1	0.566
	12.144V	4.988V	3.352V	5.080V	58.269				230.24V
3	3.623A	1.504A	1.458A	0.592A	59.381	76.085%	648	15.1	0.643
	12.142V	4.988V	3.352V	5.071V	78.046				230.23V
4	4.881A	2.005A	1.969A	0.790A	79.847	80.324%	648	15.1	0.706
	12.139V	4.987V	3.352V	5.061V	99.406				230.23V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	12.2 mV	14.0 mV	12.6 mV	13.6 mV	Pass
20% Load	11.2 mV	14.8 mV	14.0 mV	12.6 mV	Pass
30% Load	16.1 mV	14.9 mV	14.5 mV	14.1 mV	Pass
40% Load	12.0 mV	15.5 mV	14.6 mV	13.2 mV	Pass
50% Load	14.3 mV	16.0 mV	15.9 mV	15.3 mV	Pass
60% Load	16.5 mV	15.9 mV	20.3 mV	14.2 mV	Pass
70% Load	18.1 mV	17.0 mV	19.6 mV	15.5 mV	Pass
80% Load	20.1 mV	17.5 mV	17.4 mV	16.3 mV	Pass
90% Load	22.4 mV	17.4 mV	17.0 mV	17.0 mV	Pass
100% Load	26.0 mV	20.7 mV	18.0 mV	19.4 mV	Pass
110% Load	27.9 mV	18.9 mV	18.6 mV	20.6 mV	Pass
Crossload 1	13.5 mV	18.6 mV	19.8 mV	11.3 mV	Pass
Crossload 2	25.9 mV	14.6 mV	14.7 mV	17.2 mV	Pass

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

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Anex

Cooler Master V1300 Platinum



Top side



Power specifications label

CERTIFICATIONS 115V



CERTIFICATIONS 230V



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- › It should be mentioned that the test results are provided by Cybenetics
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