

Lab ID#: CM11002109
Receipt Date: Dec 16, 2022
Test Date: Jan 10, 2023

Report: 23PS2109A
Report Date: Jan 10, 2023

DUT INFORMATION	
Brand	Cooler Master
Manufacturer (OEM)	Sysgration
Series	V SFX Series
Model Number	MPZ-B001-SFAP
Serial Number	
DUT Notes	

DUT SPECIFICATIONS	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	14-6.5
Rated Frequency (Hz)	50-60
Rated Power (W)	1100
Type	SFX
Cooling	92mm Fluid Dynamic Bearing Fan (HA9215SH12FD-F00)
Semi-Passive Operation	X
Cable Design	Fully Modular

TEST EQUIPMENT	
Electronic Loads	Chroma 63601-5 x2 Chroma 63600-2 63640-80-80 x10 63610-80-20
AC Sources	Chroma 6530, APM SP300VAC4000W-P
Power Analyzers	RS HMC8015, N4L PPA1530, N4L PPA5530
Oscilloscopes	Picoscope 4444, Rigol DS7014, 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, Keithley 2015 - THD
UPS	FSP Champ Tower 3kVA, CyberPower OLS3000E 3kVA
Isolation Transformer	4kVA

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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	✓
ATX v3.0 PSU Power Excursion	✓

115V

Average Efficiency	89.337%
Efficiency With 10W (≤500W) or 2% (>500W)	61.846
Average Efficiency 5VSB	82.971%
Standby Power Consumption (W)	0.0876000
Average PF	0.977
Avg Noise Output	29.03 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	A-

230V

Average Efficiency	91.962%
Average Efficiency 5VSB	82.297%
Standby Power Consumption (W)	0.2042000
Average PF	0.946
Avg Noise Output	28.17 dB(A)
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	A-

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	91.6	3	0.3
	Watts	120		1099.2	15	3.6
Total Max. Power (W)		1100				

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CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (300mm)	1	1	18AWG	No
8 pin EPS12V (450mm)	1	1	16AWG	No
4+4 pin EPS12V (450mm)	1	1	16AWG	No
6+2 pin PCIe (400mm)	3	3	16-18AWG	No
12+4 pin PCIe (400mm) (600W)	1	1	16-28AWG	No
SATA (100mm+150mm+150mm+150mm)	2	8	18AWG	No
4-pin Molex (100mm+120mm+120mm+120mm)	1	4	18AWG	No
AC Power Cord (1360mm) - C13 coupler	1	1	18AWG	-

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PAGE 3/14

General Data	
Manufacturer (ODM)	Sysgration
PCB Type	Double Sided
Primary Side	
Transient Filter	4x Y caps, 3x X caps, 2x CM chokes, 1x DM choke, 1x MOV
Inrush Protection	NTC Thermistor & Relay
Bridge Rectifier(s)	1x Vishay GBUE2560 (600V, 25A @ 140°C)
APFC MOSFETs	no info
APFC Boost Diode	no info
Bulk Cap(s)	1x TDK EPCOS (450V, 800uF, 2,000h @ 105°C, B43647)
Main Switchers	4x Infineon IPL60R095CFD7 (600V, 16A @ 100°C, Rds(on): 0.095Ohm)
Driver ICs	2x Infineon 2ED21814S06FJ
APFC Controller	Champion CU6510VC
Resonant Controller	Infineon ICE2HS01G
Topology	Primary side: APFC, Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	10x Infineon BSC007N04LS6 (40V, 269A @ 100°C, Rds(on): 0.7mOhm)
5V & 3.3V	DC-DC Converters: 6x Infineon BSC0901NS (30V, 94A @ 100°C, Rds(on): 2.4mOhm) PWM Controller(s): 2x ON Semiconductor NCP1589A
Driver IC	Infineon 2EDN7524AF
Digital Isolator	Novosense NSi824x
Filtering Capacitors	Electrolytic: 3x Rubycon (4-10,000h @ 105°C, YXJ) Polymer: 10x United Chemi-Con, 1x NIC, 4x Unicon
Supervisor IC	Weltrend WT7502R (OVP, UVP, SCP, PG)
Fan Controller	APW9010
Fan Model	Hong Hua HA9215SH12FD-F00 (92mm, 12V, 0.46A, Fluid Dynamic Bearing Fan)
5VSB Circuit	
Rectifier	1x Infineon BSC0702LS FET (60V, 84A @ 100°C, Rds(on): 2.7mOhm)
Standby PWM Controller	Power Integrations INN3165C

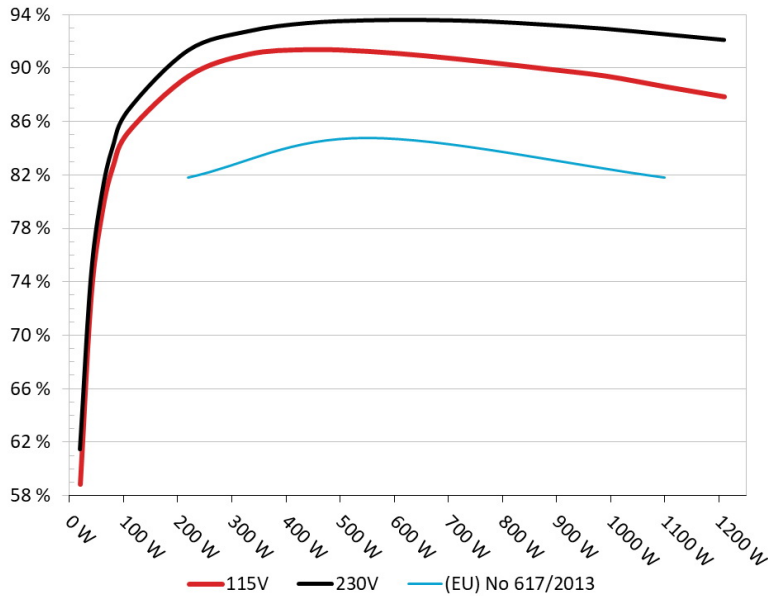
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Cooler Master V1100 SFX Platinum

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



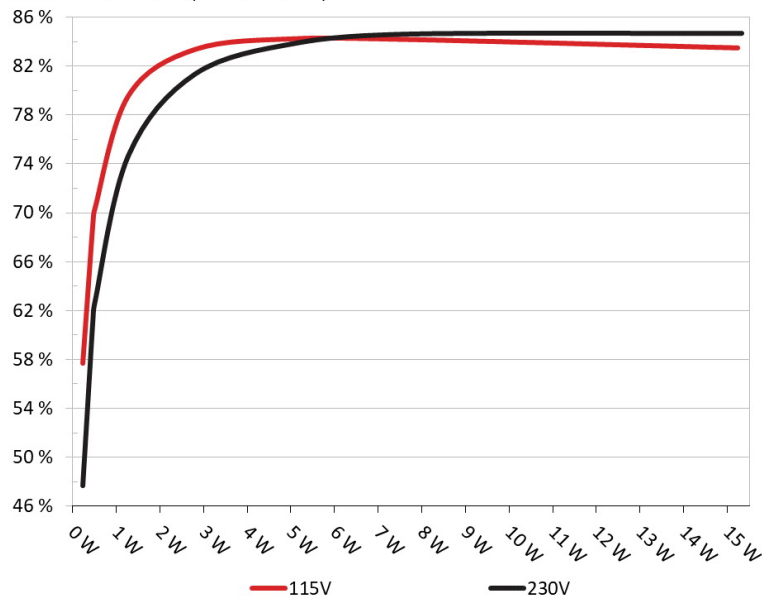
INFO

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 V1100 SFX 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	0.229W	57.704%	0.026
	5.084V	0.397W		115.13V
2	0.09A	0.458W	69.052%	0.044
	5.085V	0.663W		115.13V
3	0.55A	2.808W	83.383%	0.2
	5.105V	3.368W		115.14V
4	1A	5.122W	84.25%	0.31
	5.12V	6.079W		115.14V
5	1.5A	7.686W	84.183%	0.391
	5.123V	9.13W		115.14V
6	3A	15.234W	83.496%	0.495
	5.078V	18.246W		115.13V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.229W	47.647%	0.01
	5.1V	0.482W		230.34V
2	0.09A	0.458W	61.076%	0.015
	5.085V	0.751W		230.34V
3	0.55A	2.81W	81.339%	0.067
	5.107V	3.454W		230.35V
4	1A	5.125W	83.855%	0.116
	5.124V	6.112W		230.35V
5	1.5A	7.709W	84.592%	0.165
	5.138V	9.115W		230.35V
6	3A	15.338W	84.656%	0.28
	5.112V	18.117W		230.36V

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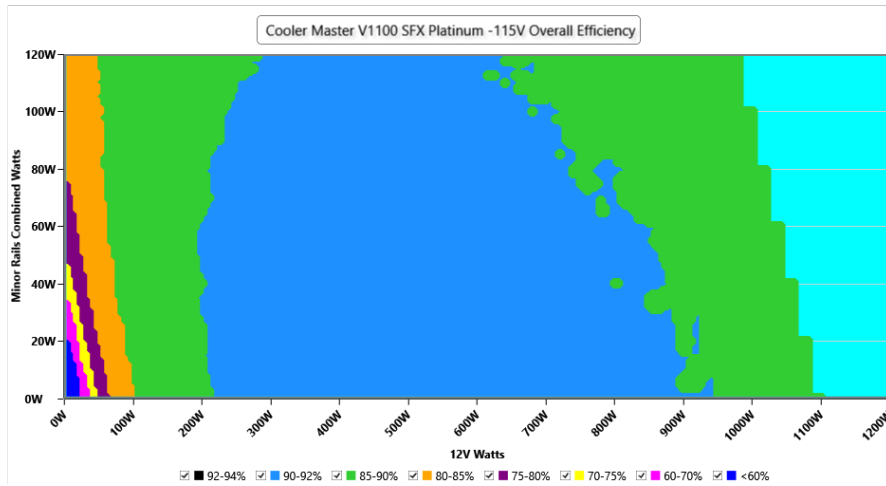
115V

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PAGE 7/14

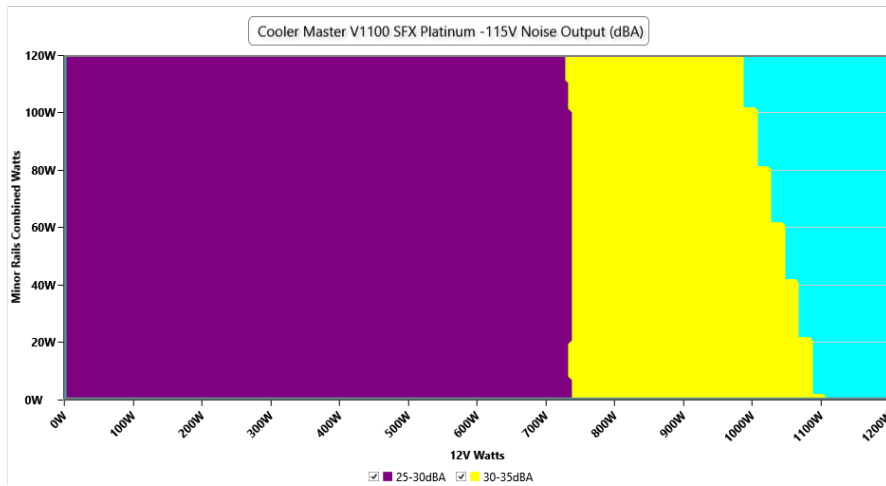
EFFICIENCY GRAPH 115V



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

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.15 V	115.13 V	113.85 V	115.17 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	60.00 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.415	1.415	1.340	1.416	1.490	PASS
Mains Voltage THD:	0.13 %	0.11 %	N/A	0.15 %	2.00 %	PASS
Real Power:	0.088 W	0.027 W	N/A	0.119 W	N/A	N/A
Apparent Power:	15.093 W	15.087 W	N/A	15.097 W	N/A	N/A
Power Factor:	0.008	N/A	N/A	N/A	N/A	N/A

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
10%	7.312A	1.981A	1.953A	0.978A	109.968	85.446%	1581	25.8	40.09°C	0.887
	12.086V	5.048V	3.378V	5.113V	128.696				44.41°C	115.11V
20%	15.648A	2.977A	2.936A	1.173A	219.92	89.565%	1585	25.9	40.87°C	0.929
	12.080V	5.039V	3.371V	5.114V	245.521				45.57°C	115.08V
50%	41.393A	4.99A	4.92A	1.764A	549.617	91.425%	1772	29.4	42.55°C	0.993
	12.058V	5.01V	3.353V	5.102V	601.18				48.69°C	114.98V
100%	83.981A	9.082A	8.953A	2.973A	1099.275	88.782%	2719	41.8	45.56°C	0.996
	12.021V	4.954V	3.316V	5.046V	1238.187				55.63°C	114.84V

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230V

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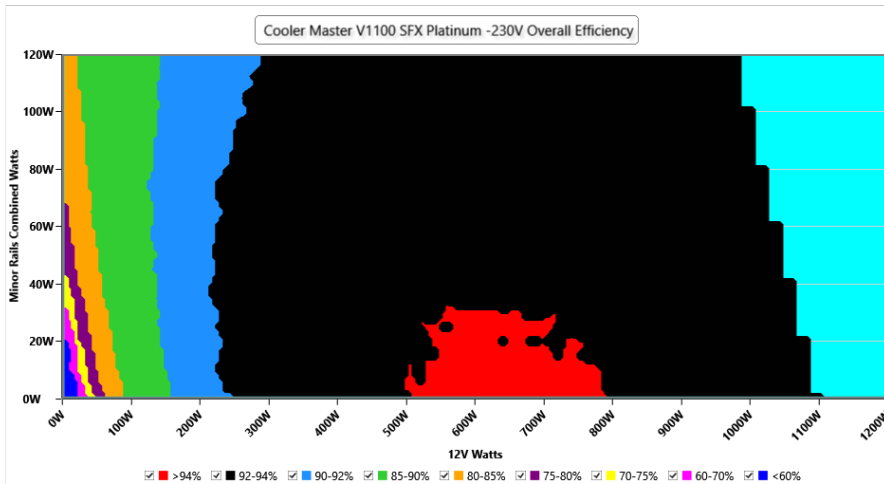
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PAGE 11/14

EFFICIENCY GRAPH 230V

INFO

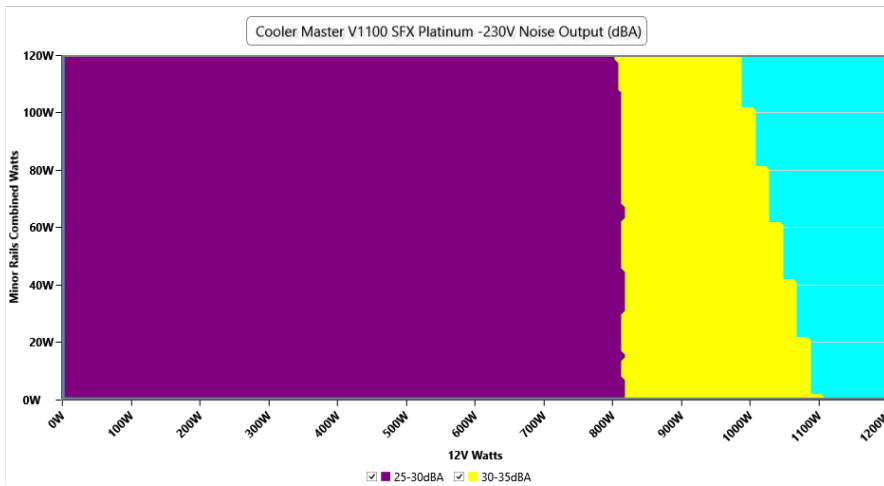
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



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



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VAMPIRE POWER -230V

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	230.37 V	230.34 V	227.70 V	230.38 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	50.00 Hz	49.50 Hz	50.00 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.415	1.415	1.340	1.416	1.490	PASS
Mains Voltage THD:	0.14 %	0.13 %	N/A	0.16 %	2.00 %	PASS
Real Power:	0.204 W	0.184 W	N/A	0.222 W	N/A	N/A
Apparent Power:	50.380 W	50.373 W	N/A	50.395 W	N/A	N/A
Power Factor:	0.004	N/A	N/A	N/A	N/A	N/A

INFO

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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
10%	7.314A	1.981A	1.953A	0.978A	109.998	87.08%	1587	25.9	40.54°C	0.792
	12.086V	5.048V	3.378V	5.113V	126.324				44.85°C	230.34V
20%	15.652A	2.978A	2.937A	1.174A	219.959	91.517%	1590	26.0	40.75°C	0.879
	12.079V	5.038V	3.371V	5.114V	240.338				45.47°C	230.33V
50%	41.407A	4.992A	4.922A	1.765A	549.793	93.762%	1756	29.1	42.43°C	0.977
	12.058V	5.009V	3.353V	5.102V	586.369				48.45°C	230.3V
100%	84.023A	9.086A	8.955A	2.974A	1099.534	92.724%	3060	45.8	45.73°C	0.986
	12.018V	4.953V	3.316V	5.044V	1185.856				55.77°C	230.21V

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

Cooler Master V1100 SFX Platinum



Top side

1100W MODEL / Switching Po	
AC INPUT	100-240V~, 14-6.5A, 50-60Hz
交流輸入/交流輸入	200-240V~, 6.5A, 50-60Hz, For Korea Use Only
	200-240V~, 6.5A, 50-60Hz, 适用于中国地区使用
DC OUTPUT	+5V +3.3V +12V -12V +5VSB
直流輸出/直流輸出	20A 20A 91.6A 0.3A 3A
TOTAL POWER	120W 1099.2W 3.6W 15W
總功率/總功率	1100W
MADE IN TAIWAN, CHINA / 中國台灣製造 / 中國台灣製造 ■ Cooler Master Technology Inc. 製造商：酷碼科技股份有限公司 / 製造商：酷碼科技股份有限公司	

Power specifications label

CERTIFICATIONS 115V




Aristeidis Bitziopoulos
Lab Director

CERTIFICATIONS 230V



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