

Lab ID#: CM85001903
Receipt Date: Sep 6, 2021
Test Date: Sep 10, 2021

Report: 21PS1903A
Report Date: Sep 14, 2021

DUT INFORMATION	
Brand	Cooler Master
Manufacturer (OEM)	Gospower
Series	V Gold SFX
Model Number	MPY-8501-SFHAGV-EU
Serial Number	MPY8501SFHAGVEU1211500121
DUT Notes	

DUT SPECIFICATIONS	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	6
Rated Frequency (Hz)	50-60
Rated Power (W)	850
Type	SFX
Cooling	92mm Fluid Dynamic Bearing Fan (HA9215VH12FD-F00)
Semi-Passive Operation	✓
Cable Design	Fully Modular

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, Keithley 2015 - THD
UPS	CyberPower OLS3000E 3kVA x2
Transformer	3kVA x2

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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	✓

115V

Average Efficiency	88.519%
Efficiency With 10W (≤500W) or 2% (>500W)	51.215
Average Efficiency 5VSB	78.394%
Standby Power Consumption (W)	0.0446994
Average PF	0.985
Avg Noise Output	37.32 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	Standard+

230V

Average Efficiency	91.022%
Average Efficiency 5VSB	78.989%
Standby Power Consumption (W)	0.0824394
Average PF	0.955
Avg Noise Output	37.09 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	Standard+

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	70.8	3	0.3
	Watts	120		849.6	15	3.6
Total Max. Power (W)		850				

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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	18-22AWG	No
4+4 pin EPS12V (460mm)	1	1	18AWG	No
8 pin EPS12V (460mm)	1	1	18AWG	No
6+2 pin PCIe (400mm+120mm)	2	4	16-18AWG	No
SATA (100mm+110mm+110mm+110mm)	2	8	18AWG	No
4 pin Molex (100mm+110mm+110mm+110mm)	1	4	18AWG	No
AC Power Cord (1380mm) - C13 coupler	1	1	18AWG	-

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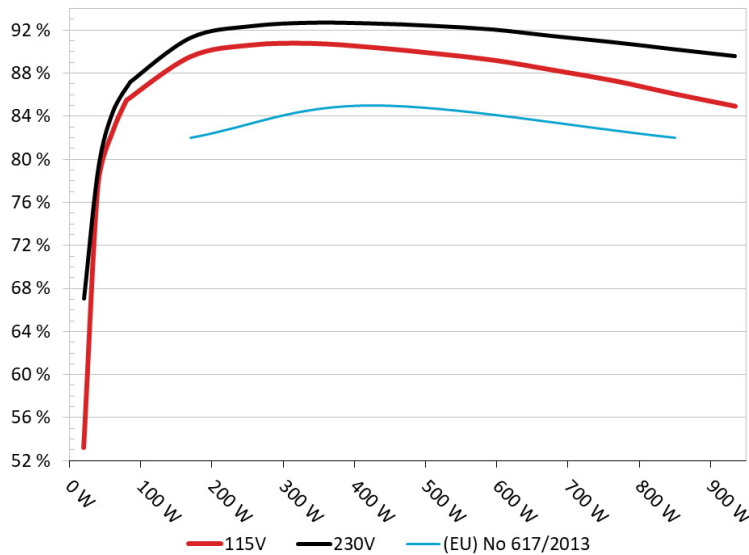
General Data	-
Manufacturer (OEM)	Gospower
PCB Type	Double Sided
Primary Side	-
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV, 1x MPS HF81 (Discharge IC)
Inrush Protection	NTC Thermistor & Relay
Bridge Rectifier(s)	1x
APFC MOSFETs	2x STMicroelectronics STF33N60DM2 (600V, 15.5A @ 100°C, Rds(on): 0.130hm)
APFC Boost Diode	1x
Bulk Cap(s)	1x Nichicon (450V, 560uF, 2,000h @ 105°C, LGM)
Main Switchers	2x Sanrise Tech SRC60R140BTFE (600V, 11.2A @ 125°C, Rds(on): 0.140hm)
APFC Controller	Champion CM6500UNX & CM03AX
Resonant Controller	Champion CU6901VAC
Topology	Primary side: APFC, Half-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	-
+12V MOSFETs	6x On Semiconductor NTMFS5C410NL (40V, 230A @ 100°C, Rds(on): 0.82mOhm)
5V & 3.3V	DC-DC Converters: 6x On Semiconductor NTMFS4C022N (30V, 136A, Rds(on): 1.7mOhm) PWM Controller(s): ANPEC APW7159C
Filtering Capacitors	Electrolytic: 4x Rubycon (4-10,000h @ 105°C, YXF) Polymer: 28x FPCAP, 1x Nippon Chemi-Con
Supervisor IC	IN1S313I-SAG
Fan Model	Hong Hua HA9215VH12FD-F00 (92mm, 12V, 0.36A, Fluid Dynamic Bearing Fan)
5VSB Circuit	-
Standby PWM Controller	On-Bright OB2365SP

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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Cooler Master V850 SFX Gold
Ambient: 37°C - 47°C (98.6°F - 116.6°F)

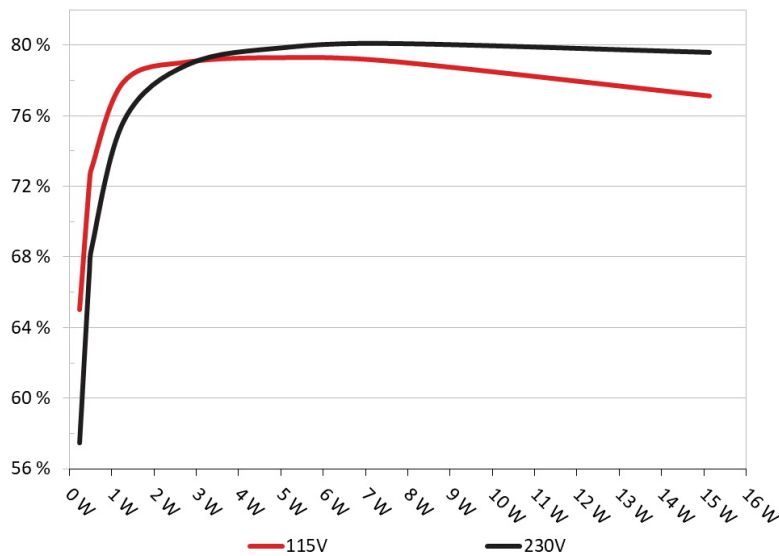


INFO

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 V850 SFX Gold
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	0.231W	65.007%	0.038
	5.136V	0.341W		115.13V
2	0.09A	0.462W	72.205%	0.069
	5.135V	0.64W		115.13V
3	0.55A	2.817W	79.059%	0.275
	5.121V	3.563W		115.13V
4	1A	5.108W	79.297%	0.371
	5.107V	6.442W		115.13V
5	1.5A	7.638W	79.08%	0.424
	5.091V	9.658W		115.13V
6	3.001A	15.133W	77.12%	0.49
	5.043V	19.622W		115.13V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231W	57.455%	0.013
	5.135V	0.402W		230.28V
2	0.09A	0.462W	67.17%	0.022
	5.135V	0.688W		230.28V
3	0.55A	2.817W	78.929%	0.11
	5.12V	3.569W		230.29V
4	1A	5.108W	79.873%	0.18
	5.106V	6.395W		230.29V
5	1.5A	7.637W	80.096%	0.24
	5.09V	9.535W		230.29V
6	3.001A	15.131W	79.591%	0.344
	5.042V	19.011W		230.28V

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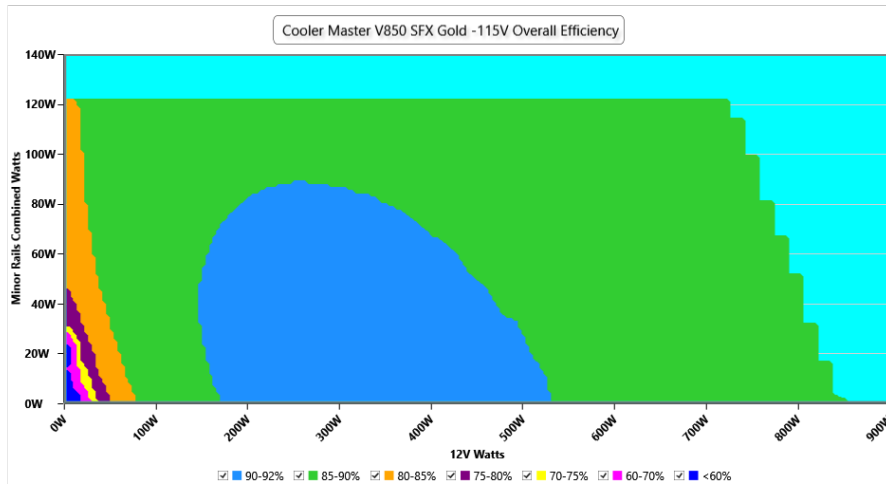
115V

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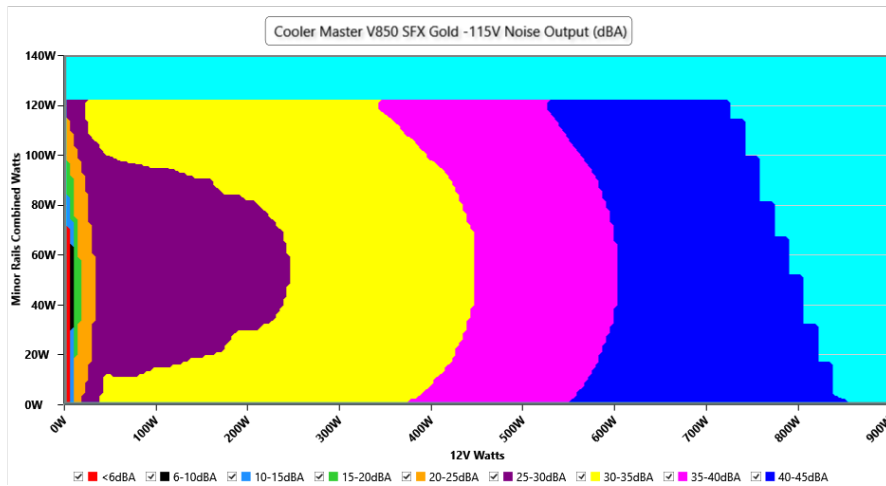
EFFICIENCY GRAPH 115V



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

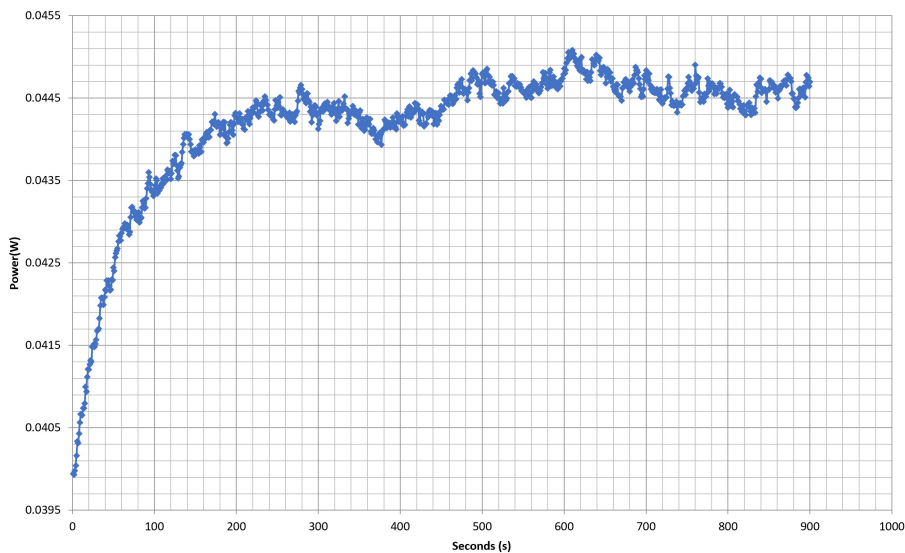
The PSU's noise in its entire operational range and under 30-32 °C (+2 °C) ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

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VAMPIRE POWER -115V

Power - MPY8501SFHAGVEU1211500121 - 07/09/2021 - 11:30



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%	5.240A	2.001A	1.98A	0.982A	85.019	85.501%	1993	33.7	40.14°C	0.949
	12.102V	4.998V	3.333V	5.094V	99.436				43.32°C	115.14V
20%	11.512A	3.007A	2.978A	1.181A	169.995	89.556%	2148	36.2	40.88°C	0.97
	12.082V	4.989V	3.325V	5.081V	189.821				44.57°C	115.14V
50%	31.155A	5.037A	5A	1.786A	425.189	90.417%	2611	41.3	42.24°C	0.992
	12.026V	4.965V	3.3V	5.039V	470.254				47.84°C	115.12V
100%	63.781A	9.151A	9.123A	3.032A	850.109	86.08%	3062	46.5	45.44°C	0.992
	11.922V	4.92V	3.256V	4.949V	987.582				54.27°C	115.15V

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230V

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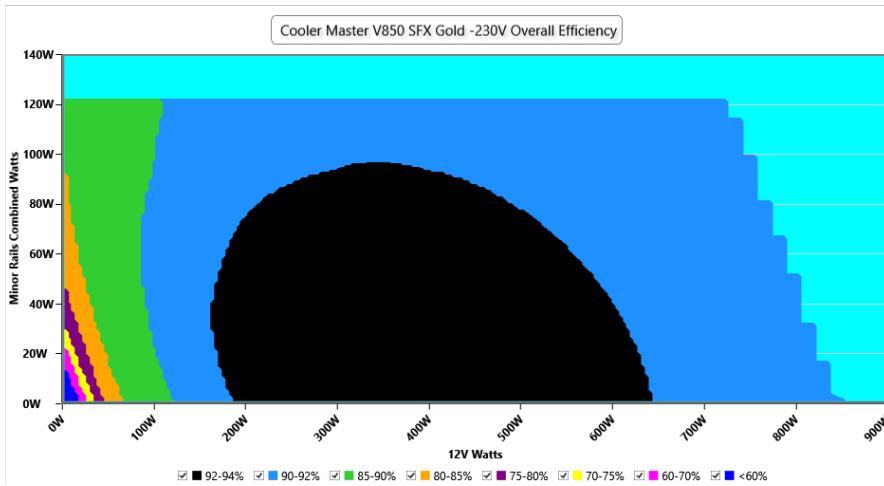
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EFFICIENCY GRAPH 230V

INFO

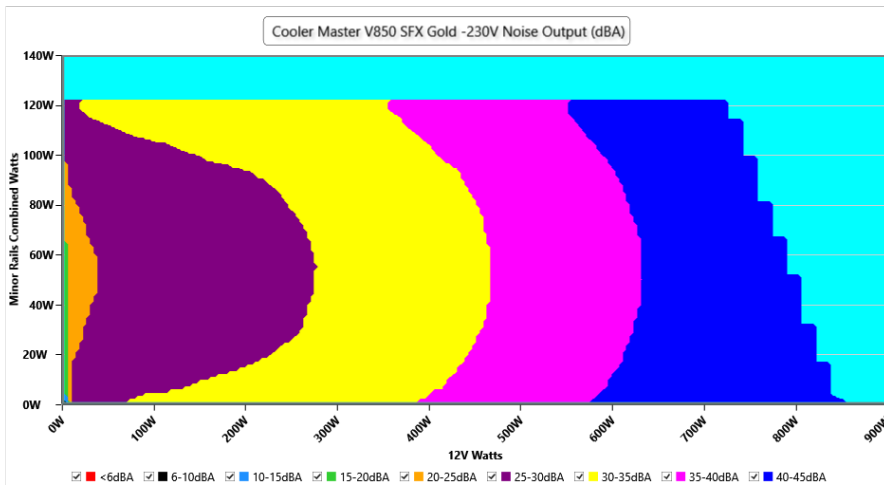
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



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

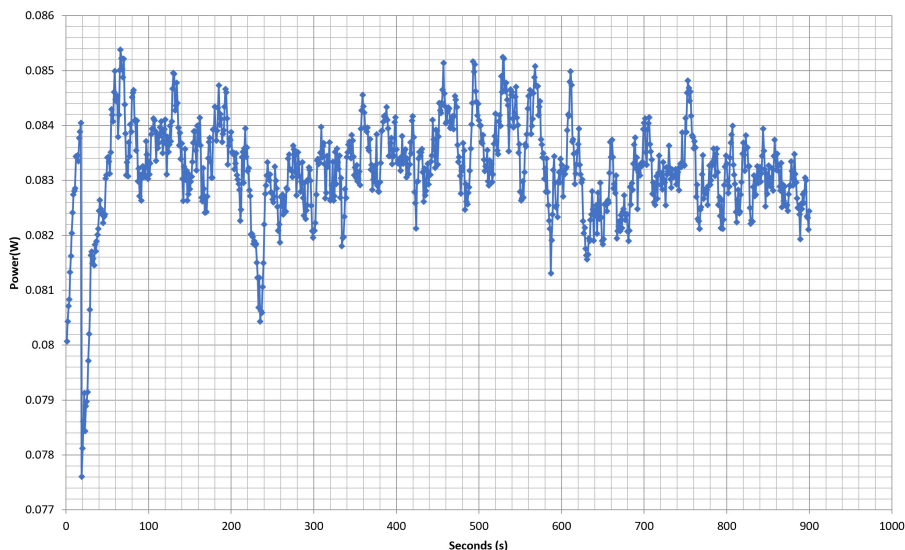


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COMMISSION REGULATION (EU) NO 617/2013 TESTING 230V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
10%	5.240A	2.001A	1.98A	0.982A	85.018	87.109%	2088	35.3	40.13°C	0.843
	12.103V	4.998V	3.334V	5.093V	97.599				43.89°C	230.28V
20%	11.512A	3.007A	2.978A	1.181A	169.993	91.27%	2132	35.8	40.41°C	0.923
	12.081V	4.99V	3.325V	5.08V	186.253				44.54°C	230.28V
50%	31.158A	5.036A	5A	1.787A	425.166	92.584%	2591	41.2	42.17°C	0.972
	12.024V	4.966V	3.301V	5.038V	459.222				47.81°C	230.28V
100%	63.792A	9.151A	9.123A	3.033A	850.118	90.189%	3069	46.6	45.42°C	0.986
	11.920V	4.92V	3.256V	4.946V	942.599				54.55°C	230.27V

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

Cooler Master V850 SFX Gold (2021)



Top side

850W		MODEL / 型	
		Switching Power S	
AC INPUT	100-240V~, 12-6A, 50-60Hz		
交流輸入	200-240V~, 6A, 50-60Hz, For Korea Use Only		
交流輸入	200-240V~, 6A, 50-60Hz, 适用于中国地区使用		
DC OUTPUT	+5V	+3.3V	+12V
直流輸出/直流輸出	20A	20A	70.8A
			0.3A
			3A
TOTAL POWER	120W	849.6W	3.6W
總功率/總功率	850W		
MADE IN CHINA / 中國製造 / 中国製造 ■ Cooler Master Technology Inc.			
製造商: 酷碼科技股份有限公司 / 制造商: 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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