

Lab ID#: CR55001811
Receipt Date: Feb 19, 2021
Test Date: Mar 18, 2021

Report: 21PS1811A
Report Date: Mar 18, 2021

DUT INFORMATION

Brand	Corsair
Manufacturer (OEM)	Channel Well Technology
Series	CX-M
Model Number	
Serial Number	
DUT Notes	

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	47-63
Rated Power (W)	550
Type	ATX12V
Cooling	120mm Rifle Bearing Fan (HA1225H12F-Z)
Semi-Passive Operation	X
Cable Design	Semi 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	85.905%
Efficiency With 10W (≤500W) or 2% (>500W)	63.562
Average Efficiency 5VSB	79.355%
Standby Power Consumption (W)	0.0492382
Average PF	0.982
Avg Noise Output	20.20 dB(A)
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	A

230V

Average Efficiency	88.106%
Average Efficiency 5VSB	78.904%
Standby Power Consumption (W)	0.0916057
Average PF	0.952
Avg Noise Output	22.44 dB(A)
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	A

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	45.8	3	0.3
	Watts	120		549.6	15	3.6
Total Max. Power (W)		550				

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CABLES AND CONNECTORS

Native Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Caps
ATX connector 20+4 pin (610mm)	1	1	18-22AWG	No
4+4 pin EPS12V (670mm)	1	1	18AWG	No

Modular Cables

6+2 pin PCIe (600mm+150mm)	1	2	16-18AWG	No
SATA (350mm+110mm+110mm+110mm)	1	4	18AWG	No
SATA (480mm+110mm)	1	2	18AWG	No
4-pin Molex (450mm+100mm+100mm) / FDD (+100mm)	1	3 / 1	18-22AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	18AWG	-

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PAGE 3/14

General Data	-
Manufacturer (OEM)	CWT
PCB Type	Single Sided
Primary Side	-
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV, 1x CAP200DG (Discharge IC)
Inrush Protection	NTC Thermistor SCK - 2R58 (2.50hm)
Bridge Rectifier(s)	1x GBU1506 (600V, 15A @ 100°C)
APFC MOSFETs	2x Champion GP18S50 (500V, 18A, Rds(on): 0.190hm)
APFC Boost Diode	1x ON Semiconductor FFSP0665A (650V, 6A @ 153°C)
Bulk Cap(s)	1x Nippon Chemi-Con (400V, 330uF, 2,000h @ 105°C, KMR)
Main Switchers	2x Silan Microelectronics SVF18N50F (500V, 11A @ 100°C, Rds(on): 0.310hm)
PFC/PWM Combo Controller	Champion CM6800TX & Champion CM03X
Topology	Primary side: APFC, Double Forward Secondary side: Semi-Synchronous Rectification (12V) & DC-DC converters (5V & 3.3V)
Secondary Side	-
+12V	2x Advanced Power AP6N6R0 FET & 2x PFC PFR20L60CT (60V, 20A @ 100°C) SBR
5V & 3.3V MOSFETs	2x UBIQ QM3054M6 (30V, 61A @ 100°C, Rds(on): 4.8mOhm) & 2x UBIQ QN3107M6N (30V, 70A @ 100°C, Rds(on): 2.6mOhm) PWM Controller: ANPEC APW7159C
Filtering Capacitors	Electrolytic: 10x Elite (2-5,000h @ 105°C, ED), 3x Elite (4-10,000h @ 105°C, EY), 1x Elite (2-5,000h @ 105°C, EK), 1x Nippon Chemi-Con (4-10,000h @ 105°C, KY), 1x Nippon Chemi-Con (1-5,000h @ 105°C, KZE), 2x Elite (2,000h @ 105°C, PF) Polymer: 7x APAQ, 2x Elite
Driver IC	Sync Power SP6019
Supervisor IC	INI1S429I - DCG (OVP, UVP, OCP, PG, SCP)
Fan Model	Hong Hua HA1225H12F-Z (120mm, 12V, 0.58A, Rifle Bearing Fan)
5VSB Circuit	-
Standby PWM Controller	Power Integrations TNY290PG

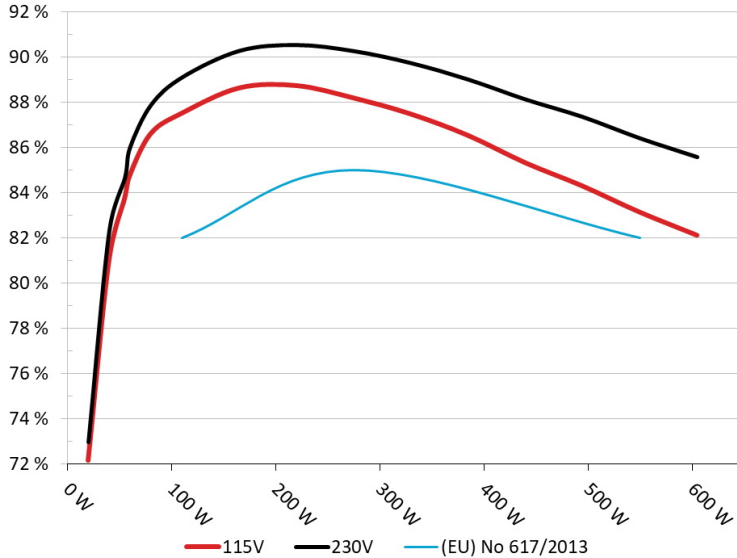
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Corsair CX550M

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



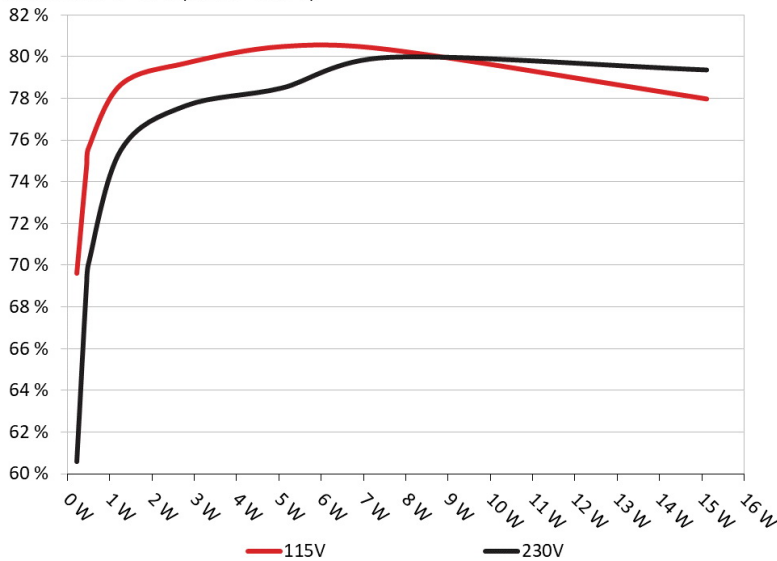
INFO

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: Corsair CX550M

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	0.229	69.605%	0.037
	5.096V	0.329		115.16V
2	0.090A	0.458	74.715%	0.067
	5.095V	0.613		115.15V
3	0.550A	2.797	79.687%	0.270
	5.087V	3.510		115.15V
4	1.000A	5.077	80.485%	0.348
	5.077V	6.308		115.15V
5	1.500A	7.601	80.340%	0.391
	5.068V	9.461		115.15V
6	2.999A	15.107	77.972%	0.449
	5.037V	19.375		115.15V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.229	60.582%	0.013
	5.096V	0.378		230.28V
2	0.090A	0.458	69.080%	0.022
	5.095V	0.663		230.28V
3	0.550A	2.797	77.651%	0.112
	5.086V	3.602		230.31V
4	1.000A	5.077	78.506%	0.180
	5.077V	6.467		230.28V
5	1.500A	7.601	79.977%	0.234
	5.068V	9.504		230.28V
6	2.999A	15.108	79.374%	0.323
	5.037V	19.034		230.28V

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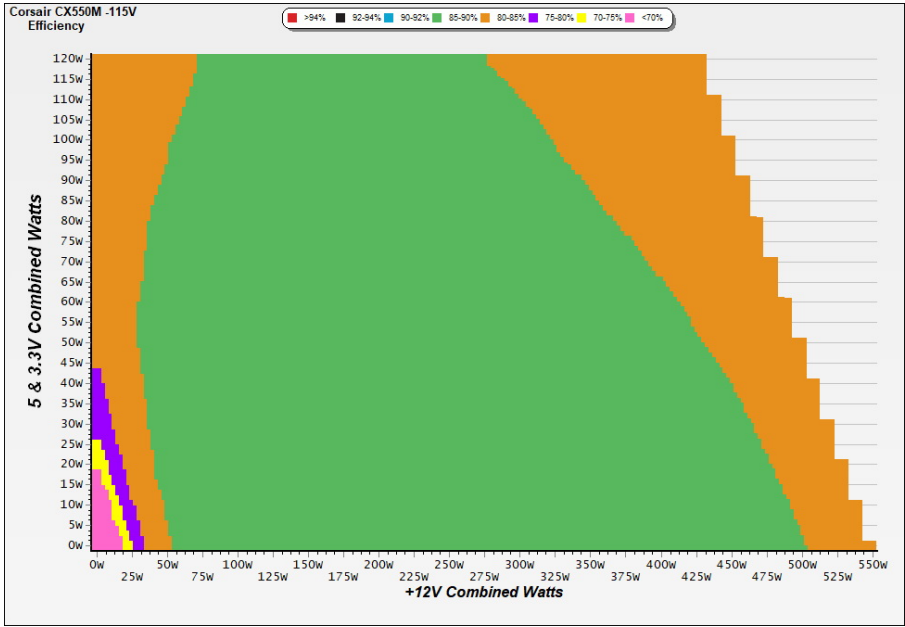
115V

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PAGE 7/14

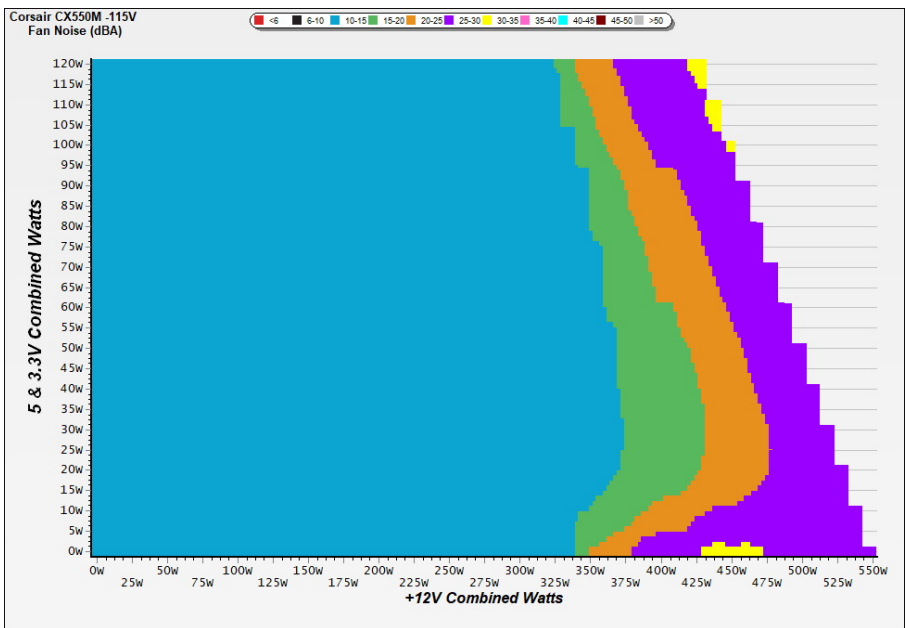
EFFICIENCY GRAPH 115V



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

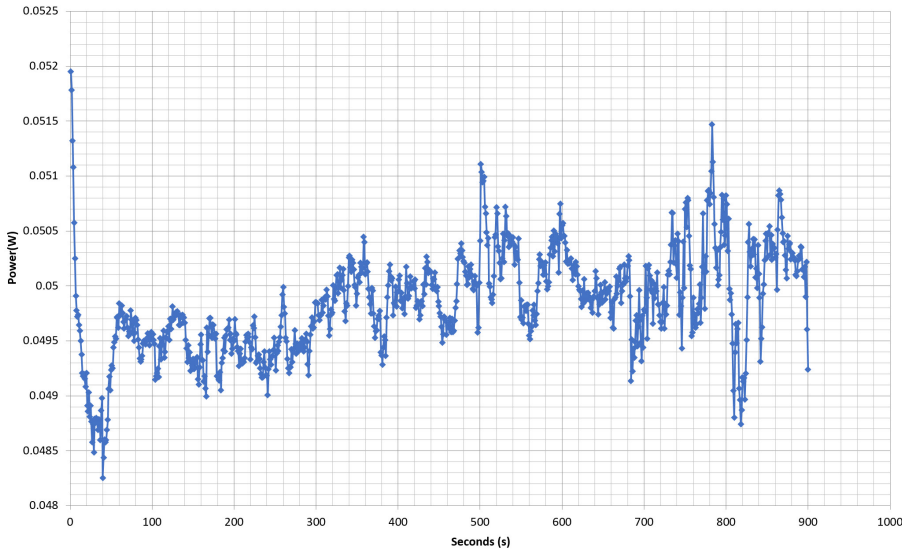
The PSU's noise in its entire operational range and under 30-32 °C (+-2 °C) ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

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VAMPIRE POWER -115V

Power - 11/03/2021 - 11:46



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
1	2.734A	1.998A	1.986A	0.987A	54.945	83.749%	708	13.8	40.73°C	0.948
	12.195V	5.004V	3.327V	5.064V	65.607				44.70°C	115.11V
2	6.494A	2.999A	2.977A	1.188A	109.992	87.532%	712	14.0	41.03°C	0.972
	12.180V	5.002V	3.323V	5.052V	125.659				45.40°C	115.11V
5	18.497A	5.005A	4.978A	1.795A	274.963	88.207%	721	14.4	42.49°C	0.987
	12.135V	4.996V	3.314V	5.014V	311.724				48.85°C	115.12V
10	38.155A	9.024A	9.005A	3.037A	549.613	83.149%	1875	43.1	45.95°C	0.992
	12.054V	4.987V	3.297V	4.939V	660.999				56.12°C	115.13V

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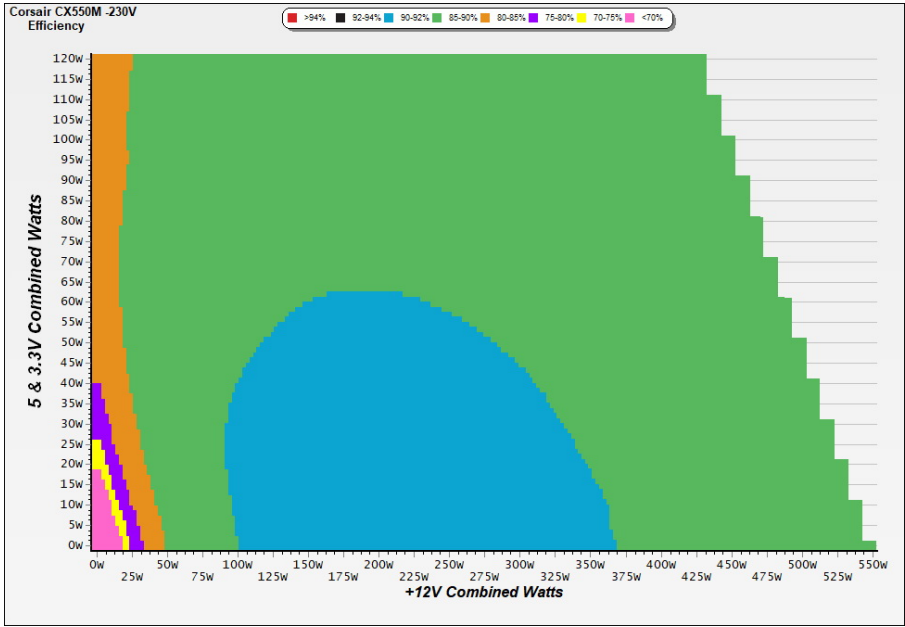
230V

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PAGE 11/14

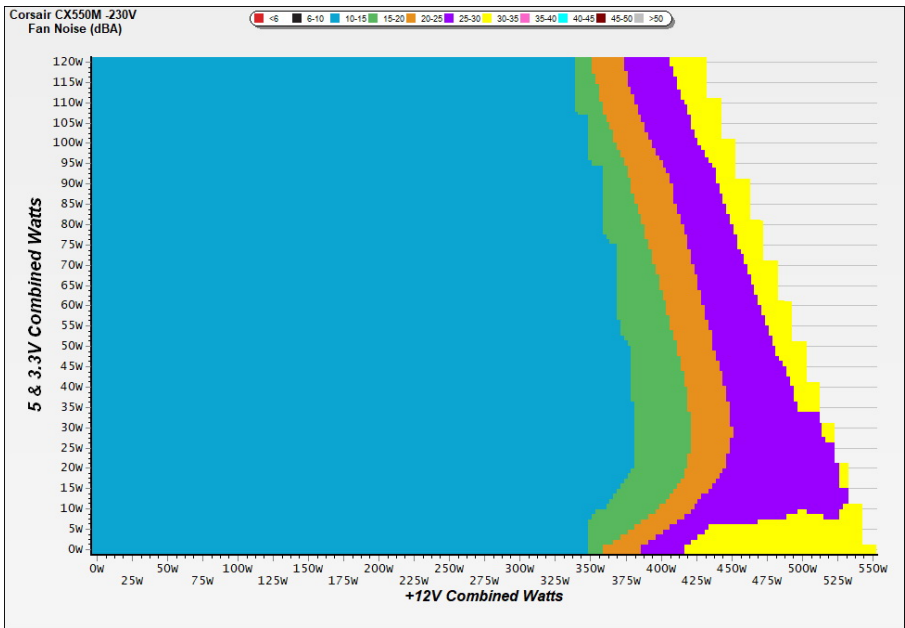
EFFICIENCY GRAPH 230V



INFO

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NOISE GRAPH 230V



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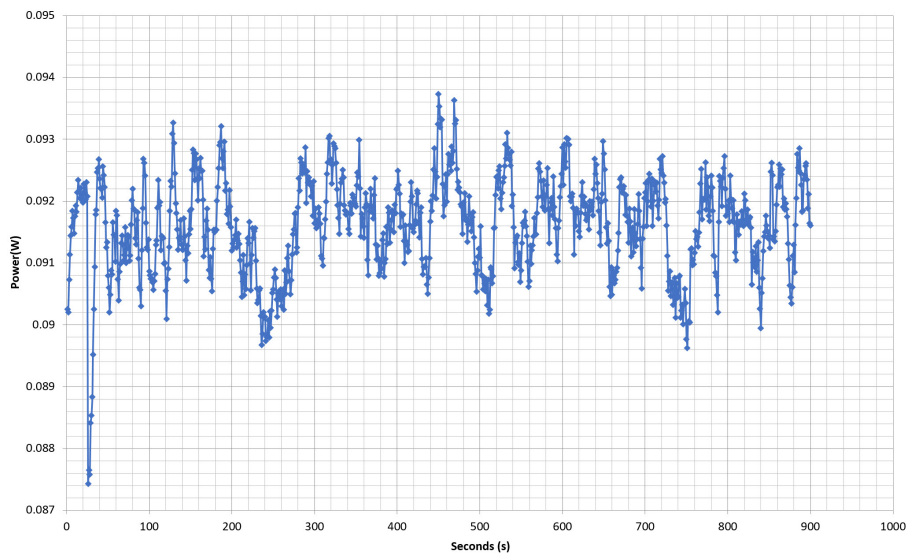
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COMMISSION REGULATION (EU) NO 617/2013 TESTING 230V

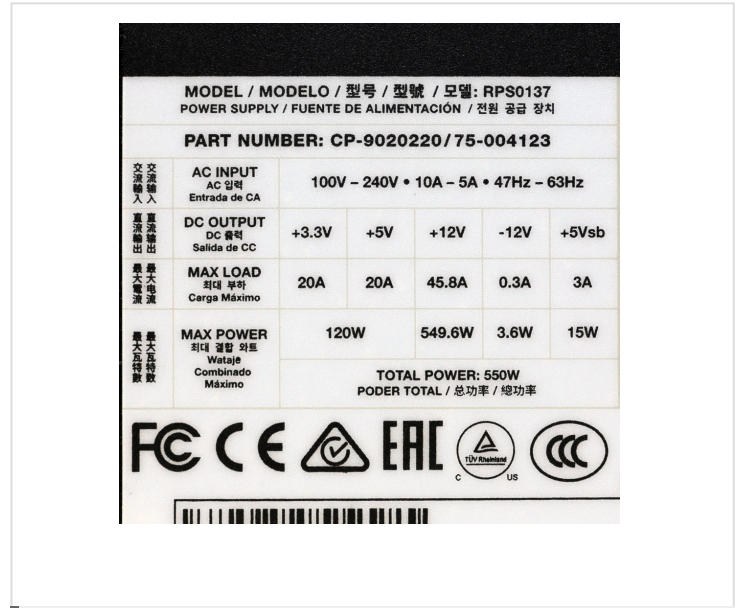
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1	2.734A	1.998A	1.986A	0.987A	54.946	84.659%	711	14.0	40.87°C	0.819
	12.195V	5.004V	3.327V	5.065V	64.903				44.27°C	230.23V
2	6.493A	3.001A	2.978A	1.187A	109.991	89.117%	715	14.1	40.92°C	0.910
	12.180V	5.002V	3.324V	5.052V	123.423				44.81°C	230.23V
5	18.493A	5.004A	4.978A	1.795A	274.958	90.279%	727	14.6	42.73°C	0.966
	12.137V	4.997V	3.315V	5.015V	304.564				48.98°C	230.23V
10	38.146A	9.022A	9.003A	3.035A	549.571	86.424%	1957	44.0	45.29°C	0.982
	12.056V	4.987V	3.298V	4.942V	635.900				55.58°C	230.24V

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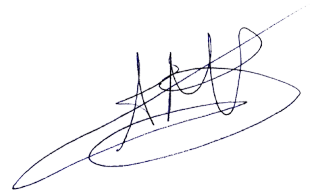


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Power specifications label

CERTIFICATIONS 115V

Aristeidis Bitziopoulos
Lab Director

CERTIFICATIONS 230V



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