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

Corsair CX750M (2021)

Lab ID#: CR75001806
Receipt Date: Feb 19, 2021
Test Date: Mar 10, 2021

Report: 21PS1806A
Report Date: Mar 17, 2021

DUT INFORMATION

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

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	47-63
Rated Power (W)	750
Type	ATX12V
Cooling	
Semi-Passive Operation	✗
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	86.065%
Efficiency With 10W (≤500W) or 2% (>500W)	66.630
Average Efficiency 5VSB	79.153%
Standby Power Consumption (W)	0.0525485
Average PF	0.982
Avg Noise Output	26.90 dB(A)
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	A-

230V

Average Efficiency	88.325%
Average Efficiency 5VSB	78.698%
Standby Power Consumption (W)	0.1022060
Average PF	0.957
Avg Noise Output	27.06 dB(A)
Efficiency Rating (ETA)	SILVER
Noise Rating (LAMBDA)	A-

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				

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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

4+4 pin EPS12V (650mm)	1	1	18AWG	No
6+2 pin PCIe (600mm+150mm)	2	4	16-18AWG	No
SATA (450mm+110mm+110mm+110mm)	2	8	18AWG	No
4-pin Molex (450mm+100mm+100mm) / FDD (+100mm)	1	2 / 1	18-22AWG	No
AC Power Cord (1400mm) - C13 coupler	1	1	18AWG	-

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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 (2.5Ohm)
Bridge Rectifier(s)	1x GBU15L06 (800V, 10A @ 100°C)
APFC MOSFETs	2x Champion GP28S50 (500V, 28A, Rds(on): 0.125Ohm)
APFC Boost Diode	1x ON Semiconductor FFSP0665A (650V, 6A @ 153°C)
Bulk Cap(s)	1x Nippon Chemi-Con (400V, 390uF, 2,000h @ 105°C, KMW)
Main Switchers	2x Champion GP23S60HX
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 AP6N3R5P (60V, 80A @ 100°C, Rds(on): 3.58mOhm) FET & 2x PFC PFR40V60CT (60V, 40A @ 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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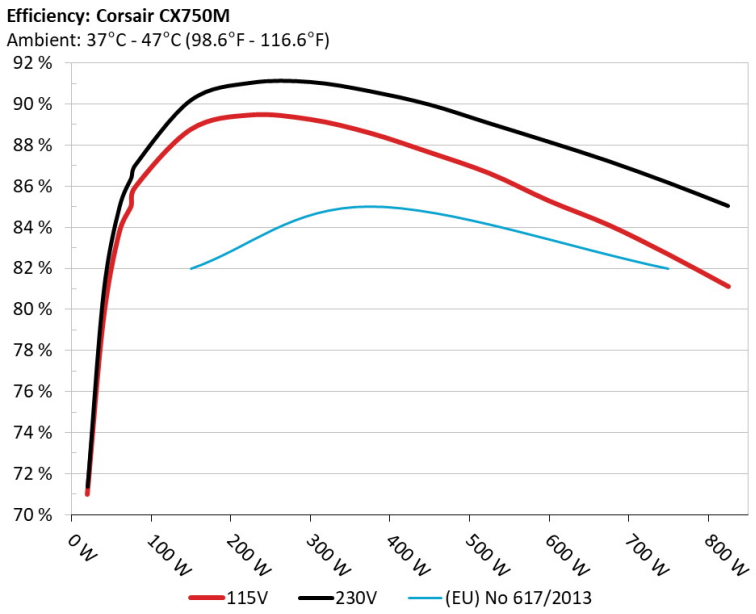
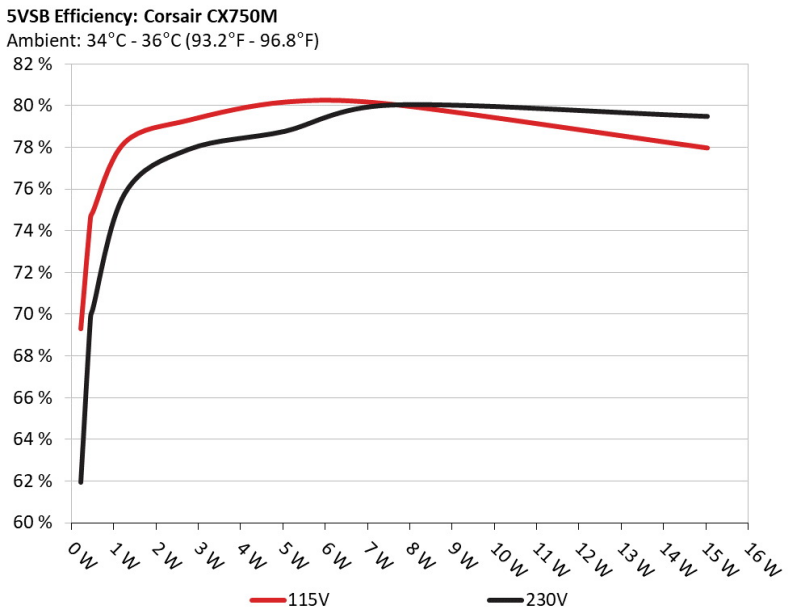
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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

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5VSB EFFICIENCY -115V (ERP LOT 3/6 & CEC)

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.228	69.301%	0.037
	5.072V	0.329		115.16V
2	0.090A	0.456	74.632%	0.068
	5.071V	0.611		115.14V
3	0.550A	2.784	79.316%	0.272
	5.063V	3.510		115.14V
4	1.000A	5.054	80.184%	0.351
	5.054V	6.303		115.14V
5	1.500A	7.566	80.080%	0.395
	5.044V	9.448		115.15V
6	2.999A	15.041	77.981%	0.456
	5.015V	19.288		115.15V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.228	61.957%	0.013
	5.072V	0.368		230.31V
2	0.090A	0.456	69.832%	0.022
	5.071V	0.653		230.29V
3	0.550A	2.784	77.896%	0.112
	5.063V	3.574		230.29V
4	1.000A	5.053	78.756%	0.181
	5.054V	6.416		230.31V
5	1.500A	7.566	80.013%	0.233
	5.044V	9.456		230.31V
6	2.999A	15.041	79.468%	0.323
	5.015V	18.927		230.31V

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115V

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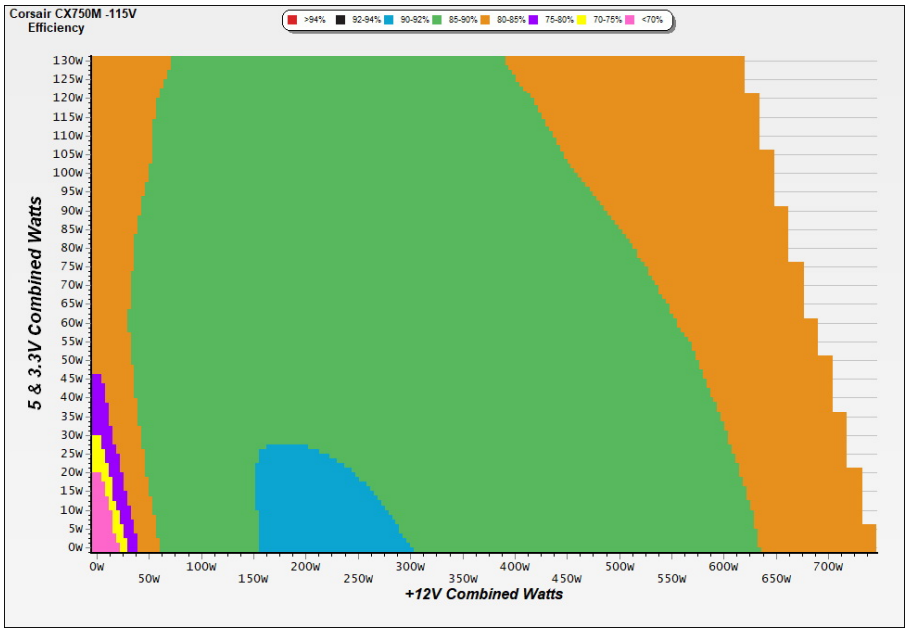
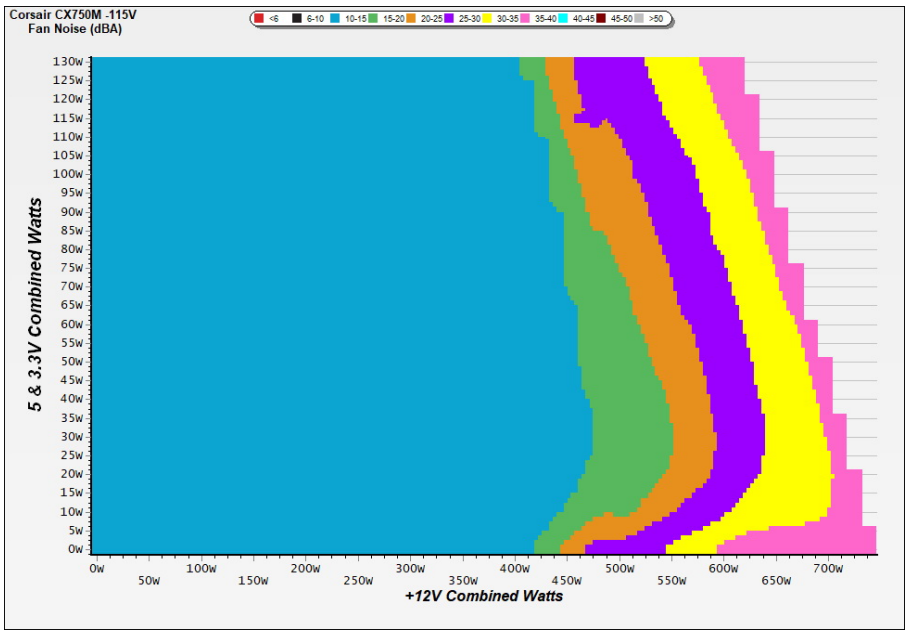
EFFICIENCY GRAPH 115V



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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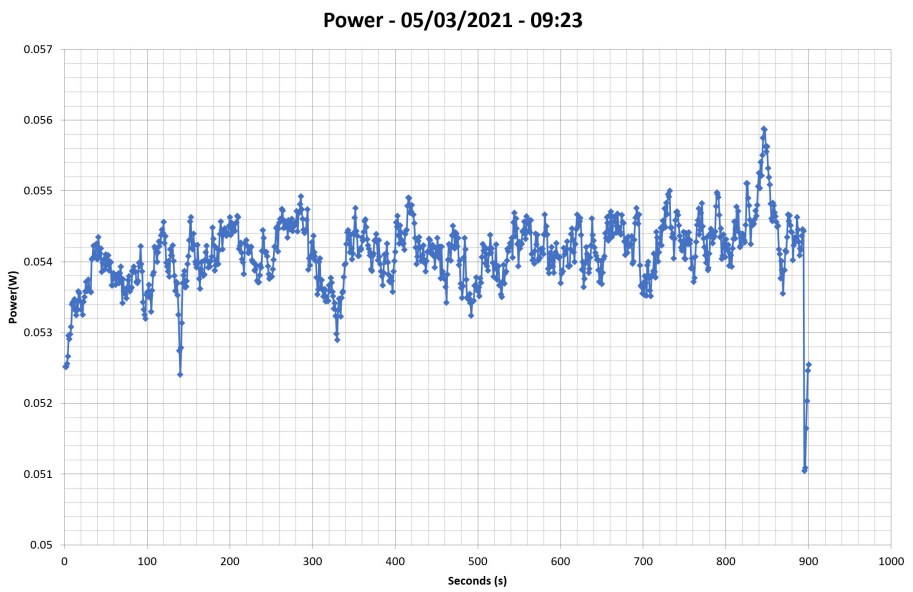
VAMPIRE POWER -115V



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	4.382A	2.002A	1.983A	0.992A	74.950	85.016%	706	13.8	40.33°C	0.952
	12.174V	4.996V	3.329V	5.041V	88.160				43.85°C	115.14V
2	9.797A	3.004A	2.978A	1.193A	149.995	88.753%	706	13.8	40.54°C	0.972
	12.157V	4.991V	3.325V	5.028V	169.002				44.67°C	115.13V
5	26.742A	5.019A	4.981A	1.804A	374.299	88.579%	719	14.3	42.43°C	0.987
	12.108V	4.982V	3.313V	4.989V	422.558				48.69°C	115.12V
10	54.925A	9.063A	9.024A	3.052A	749.614	82.665%	2245	45.5	45.48°C	0.993
	12.015V	4.965V	3.291V	4.913V	906.814				55.81°C	115.10V

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230V

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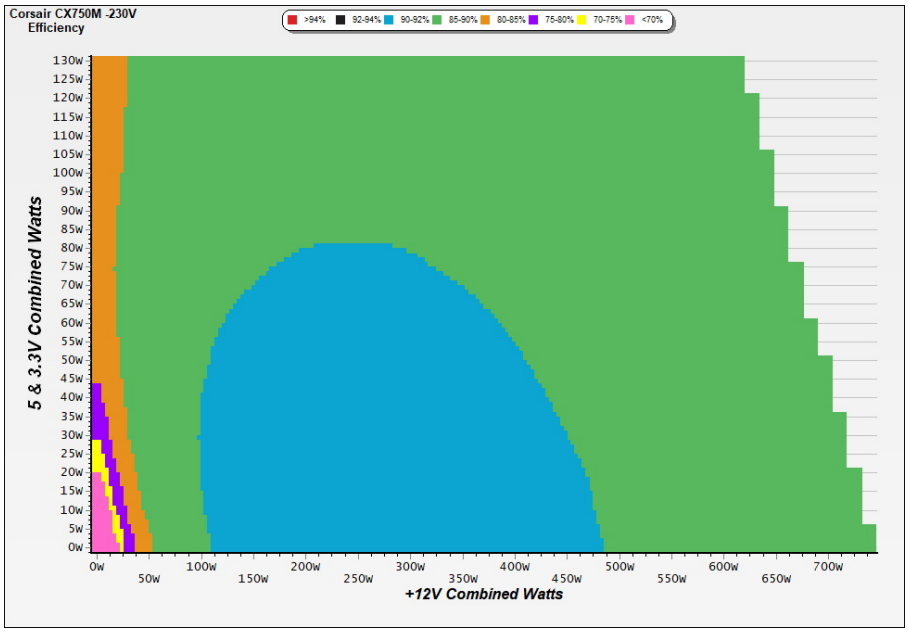
EFFICIENCY GRAPH 230V



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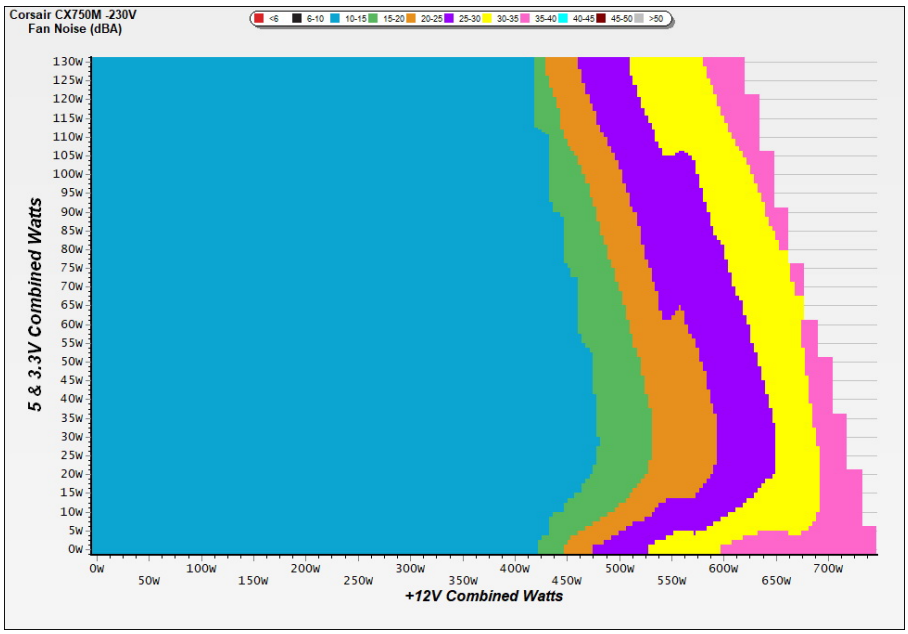
NOISE GRAPH 230V



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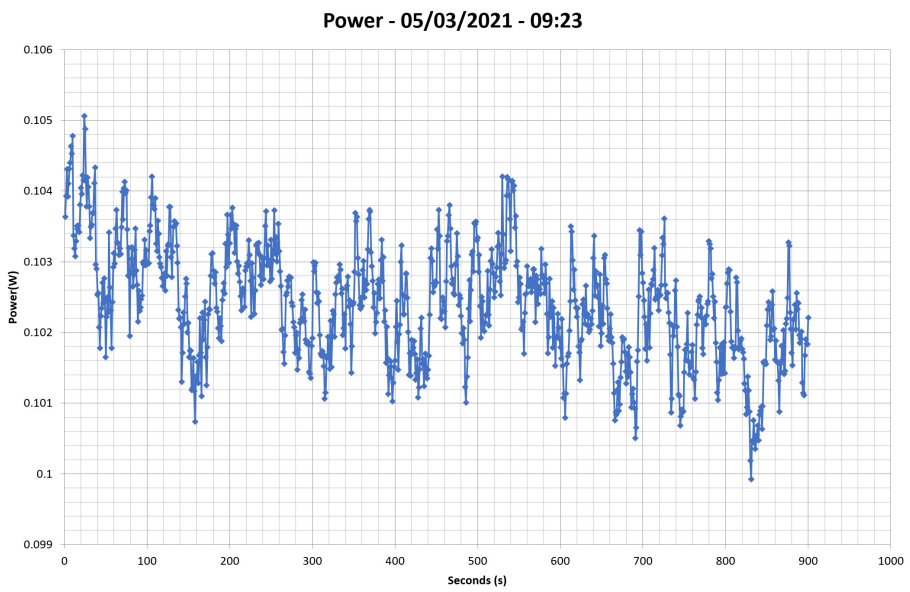
VAMPIRE POWER -230V



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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
1	4.383A	2.002A	1.981A	0.992A	74.949	86.409%	705	13.7	40.16°C	0.862
	12.173V	4.995V	3.329V	5.040V	86.737				43.33°C	230.27V
2	9.797A	3.005A	2.977A	1.193A	149.995	90.187%	709	13.9	40.39°C	0.929
	12.157V	4.992V	3.324V	5.027V	166.315				44.14°C	230.27V
5	26.744A	5.018A	4.982A	1.804A	374.288	90.618%	720	14.3	42.33°C	0.971
	12.107V	4.982V	3.312V	4.988V	413.039				48.57°C	230.28V
10	54.935A	9.063A	9.023A	3.052A	749.603	86.166%	2105	46.6	45.57°C	0.985
	12.013V	4.964V	3.290V	4.913V	869.949				55.83°C	230.29V

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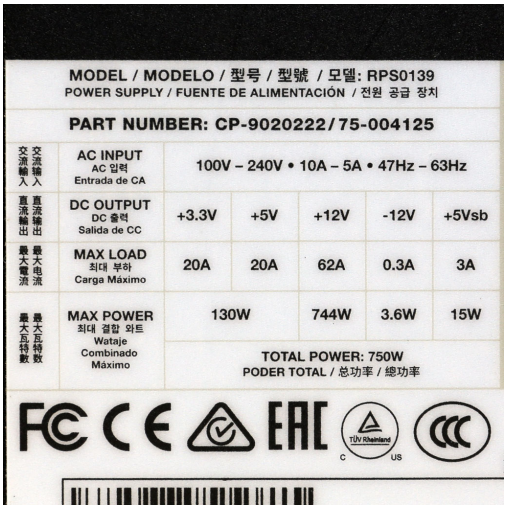
Corsair CX750M (2021)

Top side



MODEL / MODELO / 型号 / 型號 / 모델: RPS0139
POWER SUPPLY / FUENTE DE ALIMENTACIÓN / 전원 공급 장치

PART NUMBER: CP-9020222/75-004125

交流輸入	AC INPUT AC 입력 Entrada de CA	100V – 240V • 10A – 5A • 47Hz – 63Hz				
直流輸出	DC OUTPUT DC 출력 Salida de CC	+3.3V	+5V	+12V	-12V	+5Vsb
最大電流	MAX LOAD 최대 부하 Carga Máximo	20A	20A	62A	0.3A	3A
最大瓦特數	MAX POWER 최대 결합 와트 Wataje Combinado Máximo	130W		744W	3.6W	15W
		TOTAL POWER: 750W PODER TOTAL / 总功率 / 總功率				

Power specifications label

CERTIFICATIONS 115V

CYBENETICS SILVER

CYBENETICS A–

CERTIFICATIONS 230V

CYBENETICS SILVER 230v

CYBENETICS A– 230v

Aristeidis Bitziopoulos
Lab Director

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