

Lab ID#: CR85002022
Receipt Date: -
Test Date: May 31, 2022

Report: 22PS2022A

Report Date: May 31, 2022

DUT INFORMATION

Brand	Corsair
Manufacturer (OEM)	CWT
Series	Shift
Model Number	RPS0160
Serial Number	22177119000051910189
DUT Notes	CP-9020252

DUT SPECIFICATIONS

Rated Voltage (Vrms)	100-240
Rated Current (Arms)	10-5
Rated Frequency (Hz)	47-63
Rated Power (W)	850
Type	ATX12V
Cooling	140mm Fluid Dynamic Bearing Fan (NR140P)
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	✓
ATX 3.0 Ready	✓

115V

Average Efficiency	88.672%
Efficiency With 10W (≤500W) or 2% (>500W)	77.560
Average Efficiency 5VSB	77.812%
Standby Power Consumption (W)	0.0525000
Average PF	0.988
Avg Noise Output	22.94 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	A

230V

Average Efficiency	90.817%
Average Efficiency 5VSB	78.123%
Standby Power Consumption (W)	0.0779000
Average PF	0.964
Avg Noise Output	23.03 dB(A)
Efficiency Rating (ETA)	GOLD
Noise Rating (LAMBDA)	A

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	70.8	3	NaN
	Watts	150		849.6	15	NaN
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 (610mm)	1	1	16-18AWG	No
4+4 pin EPS12V (660mm)	2	2	18AWG	No
12 pin PCIe (660mm)	1	1	16AWG	No
6+2 pin PCIe (660mm+100mm)	3	6	16-18AWG	No
SATA (460mm+110mm+110mm+110mm)	3	12	18AWG	No
4 pin Molex (450mm+100mm+100mm+100mm)	2	8	18AWG	No
AC Power Cord (1370mm) - C13 coupler	1	1	18AWG	-

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General Data	-
Manufacturer (OEM)	CWT
PCB Type	Double Sided
Primary Side	-
Transient Filter	6x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	1x NTC Thermistor SCK207R0 (7 Ohm) & Relay
Bridge Rectifier(s)	2x GBJ1506 (600V, 15A @ 100°C)
APFC MOSFETs	2x Infineon IPA60R125P6 (600V, 19A @ 100°C, Rds(on): 0.125Ohm) & 1x Sync Power SPN5003 FET (for reduced no-load consumption)
APFC Boost Diode	1x On Semiconductor FFSP0865A (650V, 8A @ 155°C)
Bulk Cap(s)	2x Nippon Chemi-Con (400V, 470uF each or 940uF combined, 2,000h @ 105°C, KMW)
Main Switchers	2x STMicroelectronics STF33N60M2 (600V, 16A @ 100°C, Rds(on): 0.125Ohm)
Driver IC(s)	Champion CM6500UNX
Digital Controllers	Champion CU6901VAC
Topology	Primary side: APFC, Half-bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	-
+12V MOSFETs	6x On Semiconductor NTMF55C430N (40V, 131A @ 100°C, Rds(on): 1.7mOhm)
5V & 3.3V	DC-DC Converters: 4x UBIQ QN3107M6N (30V, 70A @ 100°C, Rds(on): 2.6mOhm) PWM Controllers: UPI-Semi uP3861P
Filtering Capacitors	Electrolytic: 4x Nichicon (2-5,000h @ 105°C, HD), 1x Nichicon (5-6,000h @ 105°C, HV), 1x Nippon Chemi-Con (1-5,000h @ 105°C, KZE), 1x Nippon Chemi-Con (4-10,000h @ 105°C, KYA), 4x Nichicon (4-10,000h @ 105°C, HE) Polymer: 22x FPCAP, 5x Nippon Chemi-Con
Supervisor IC	Weltrend WT7502R
Fan controller	Microchip PIC16F1503
Fan Model	Corsair NR140P (140mm, 12V, 0.22A, Fluid Dynamic Bearing Fan)
5VSB Circuit	-
Rectifier	1x PS1045L SBR (45V, 10A)
Standby PWM Controller	On-Bright OB2365T

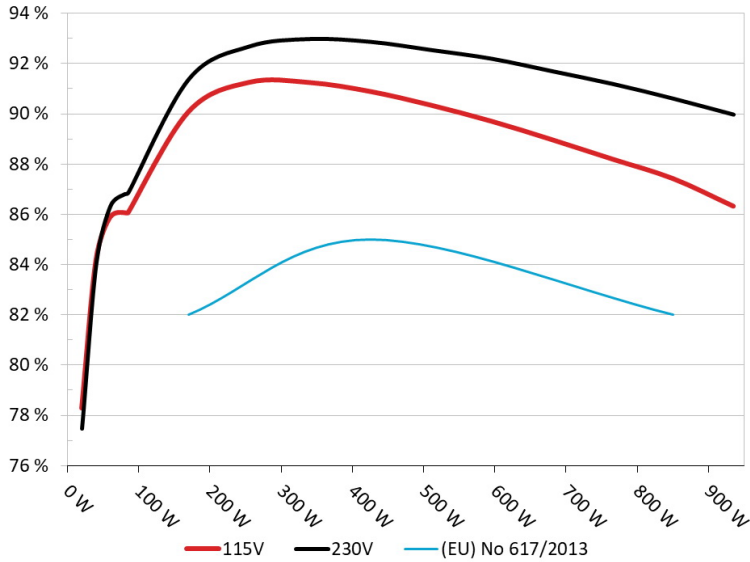
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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: Corsair RM850x (Shift)

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



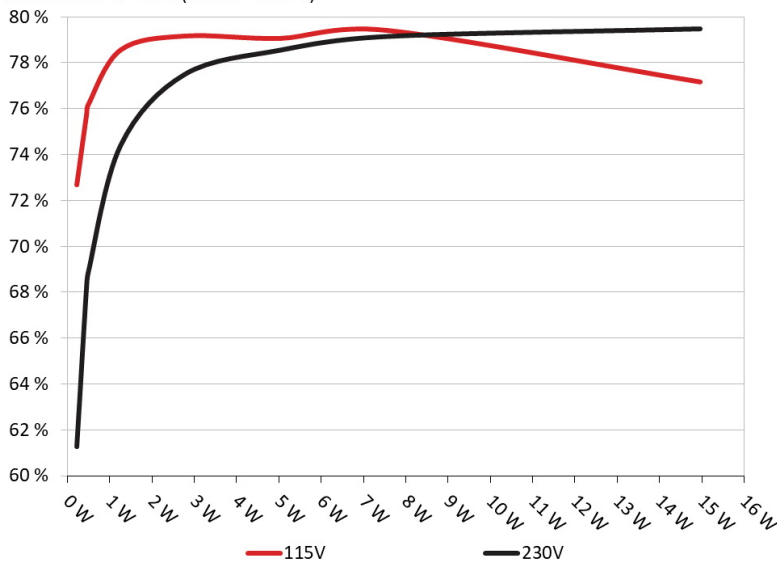
INFO

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 RM850x (Shift)

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	0.228W	72.67%	0.031
	5.069V	0.314W		115.17V
2	0.09A	0.456W	75.716%	0.06
	5.068V	0.602W		115.17V
3	0.55A	2.781W	79.18%	0.271
	5.055V	3.512W		115.16V
4	1A	5.044W	79.075%	0.374
	5.043V	6.379W		115.16V
5	1.5A	7.545W	79.429%	0.429
	5.029V	9.499W		115.17V
6	3A	14.964W	77.171%	0.502
	4.988V	19.39W		115.15V

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.228W	61.271%	0.011
	5.069V	0.372W		230.39V
2	0.09A	0.456W	68.185%	0.02
	5.067V	0.669W		230.39V
3	0.55A	2.781W	77.495%	0.103
	5.055V	3.589W		230.39V
4	1A	5.044W	78.55%	0.172
	5.043V	6.421W		230.39V
5	1.5A	7.545W	79.143%	0.232
	5.029V	9.535W		230.39V
6	3A	14.965W	79.476%	0.342
	4.988V	18.831W		230.38V

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115V

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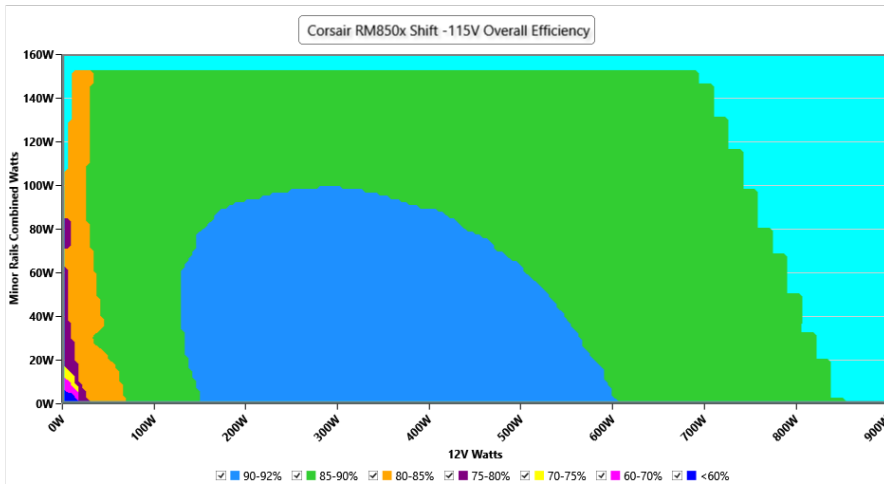
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EFFICIENCY GRAPH 115V

INFO

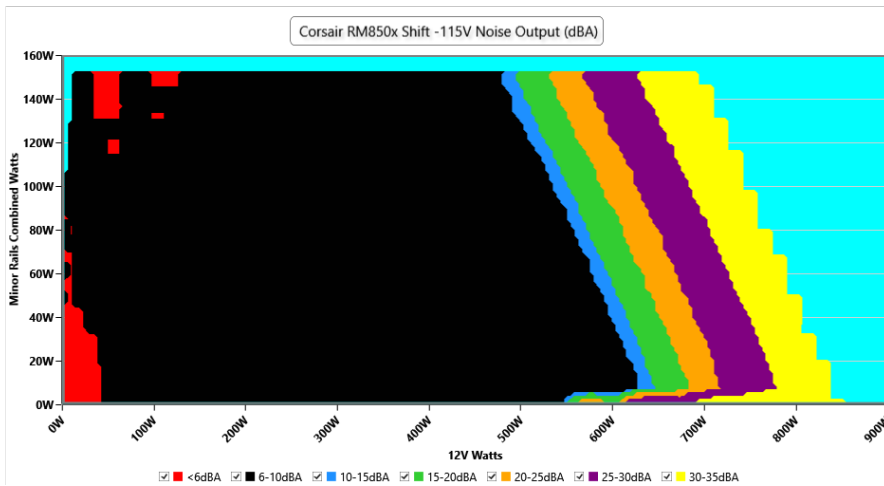
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



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

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.12 V	115.09 V	113.85 V	115.16 V	116.15 V	PASS
Mains Frequency:	60.00 Hz	59.99 Hz	59.40 Hz	60.01 Hz	60.60 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.418	1.490	PASS
Mains Voltage THD:	0.13 %	0.10 %	N/A	0.18 %	2.00 %	PASS
Real Power:	0.052 W	0.045 W	N/A	0.065 W	N/A	N/A
Apparent Power:	9.649 W	9.591 W	N/A	9.703 W	N/A	N/A
Power Factor:	0.005	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%	5.234A	1.984A	1.998A	0.994A	85.008	85.751%	0	<6.0	45.45°C	0.98
	12.114V	5.041V	3.303V	5.032V	99.137				40.37°C	115.15V
20%	11.496A	2.978A	2.999A	1.196A	169.971	90.097%	0	<6.0	46.08°C	0.988
	12.096V	5.038V	3.301V	5.018V	188.654				40.56°C	115.13V
50%	31.039A	4.97A	5.006A	1.808A	425.154	90.903%	0	<6.0	50.28°C	0.989
	12.070V	5.032V	3.297V	4.978V	467.702				43.16°C	115.06V
100%	63.150A	8.969A	9.032A	3.003A	850.06	87.432%	1090	33.0	45.84°C	0.994
	12.041V	5.018V	3.289V	4.995V	972.255				55.96°C	114.94V

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230V

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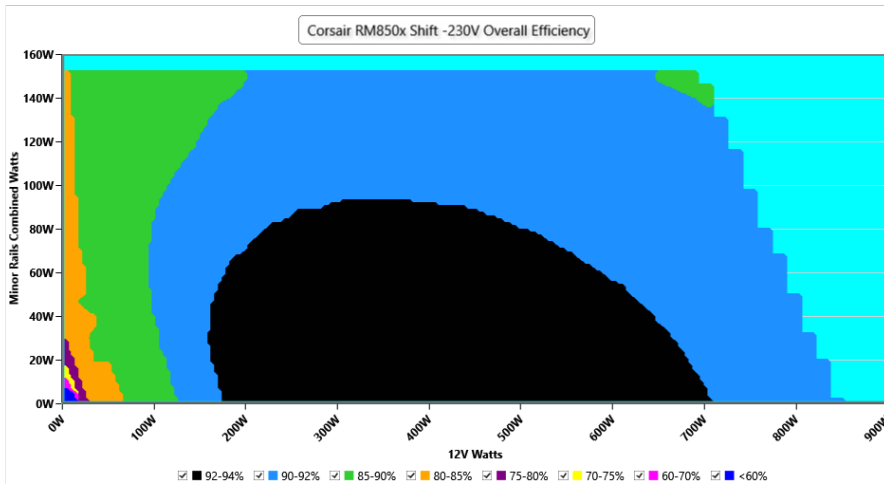
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EFFICIENCY GRAPH 230V

INFO

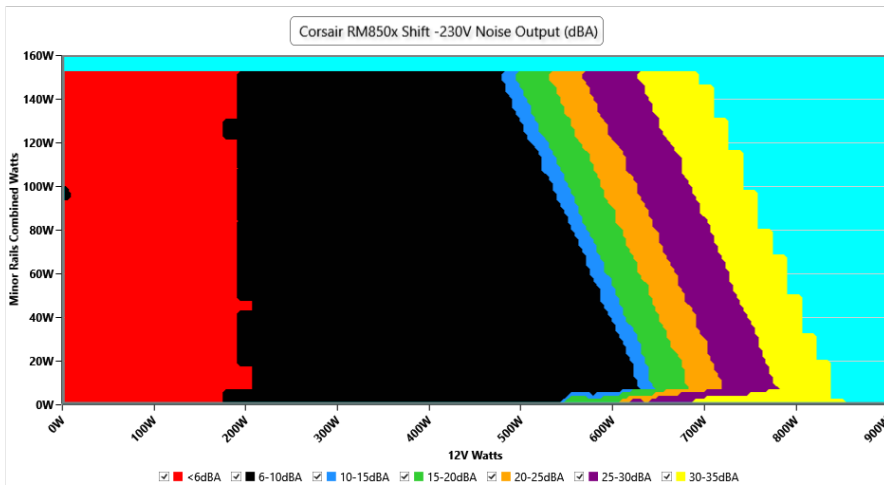
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



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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VAMPIRE POWER -230V

Detailed Results

	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	230.27 V	230.17 V	227.70 V	230.34 V	232.30 V	PASS
Mains Frequency:	50.00 Hz	49.99 Hz	49.50 Hz	50.01 Hz	50.50 Hz	PASS
Mains Voltage CF:	1.416	1.415	1.340	1.417	1.490	PASS
Mains Voltage THD:	0.12 %	0.10 %	N/A	0.19 %	2.00 %	PASS
Real Power:	0.078 W	0.065 W	N/A	0.099 W	N/A	N/A
Apparent Power:	32.270 W	32.048 W	N/A	32.462 W	N/A	N/A
Power Factor:	0.002	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%	5.230A	1.983A	1.998A	0.994A	85.011	86.86%	0	<6.0	45.8°C	0.863
	12.123V	5.044V	3.303V	5.031V	97.873				40.58°C	230.4V
20%	11.484A	2.977A	3A	1.196A	169.981	91.387%	0	<6.0	46.74°C	0.941
	12.111V	5.041V	3.301V	5.017V	186				40.96°C	230.39V
50%	31.020A	4.968A	5.009A	1.809A	425.2	92.872%	0	<6.0	49.01°C	0.978
	12.079V	5.034V	3.295V	4.977V	457.834				41.93°C	230.37V
100%	63.154A	8.975A	9.042A	3.005A	850.163	90.609%	1092	33.0	45.91°C	0.986
	12.041V	5.015V	3.285V	4.992V	938.279				55.95°C	230.31V

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

Corsair RM850x (Shift)

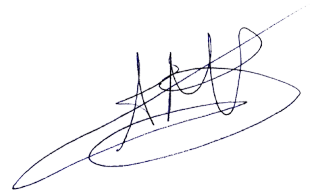


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Power specifications label

CERTIFICATIONS 115V

Aris Mpitsiopoulos
Lab Director

CERTIFICATIONS 230V



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