



Kolink Continuum 850W

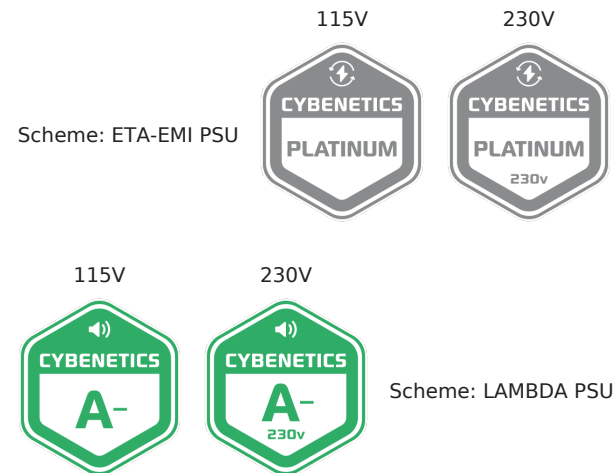
Serial Number 1804100080291850PT11F05000157

Lab ID 359

Certification ID 25359

Test Result Report ID:

Certificate Issue Date: Apr 24, 2018



Aristeidis Bitziopoulos, Certification Body General Manager

General Information

Test Equipment

Electronic Loads	Chroma 63601-5 x2 Chroma 63600-2 Chroma 63640-80-80 x10 Chroma 63610-80-20
AC Sources	Chroma 6530, APM SP300VAC4000W-P, GW Instek ASR-3500
Power Analyzers	Rohde & Schwarz HMC8015 & NPA701
Oscilloscopes	Picoscope 4444, 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
EMI Analyzer	TekBox TBMR-110M-EU
Isolation Transformer	4kVA
UPS	FSP Champ Tower 3kVA, CyberPower OLS3000E 3kVA
Testing Methodology	Cybenetics PSU Test Protocol

DUT Information(Non-accredited measurements)

Product Identification Details	
Brand	Kolink
Model	Continuum 850W
OEM/ODM	Sirfa / High Power
Serial Number	1804100080291850PT11F05000157
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	12
Rated Frequency (Hz)	50-60

Rated Power (W)	850
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	135mm Double Ball-Bearing Fan (RL4Z B1352512H)
Semi-Passive Operation	X
Cybenetics Testing Information	
Lab ID	359
Date of receipt	Apr 18, 2018
Testing Date	Apr 22, 2018
Report Issued Date	Apr 24, 2018
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

Cables and Connectors(Non-accredited measurements)

Modular Cables				
Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (610mm)	1	1	18AWG	No
4+4 pin EPS12V (600mm)	1	1	16AWG	No
8 pin EPS12V (700mm)	1	1	16AWG	No
6+2 pin PCIe (610mm+160mm)	3	6	16-18AWG	No
SATA (400mm+160mm+160mm+160mm)	2	8	18AWG	No
4 pin Molex (450mm+100mm+100mm+100mm)	2	8	18AWG	No
FDD Adapter (+110mm)	1	1	22AWG	No

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	22	22	70.9	3	0.3
	Watts	120		850	15	3.6
Total Max. Power (W)		850				

Test Results

Temperature & Compliance Info

Temperature Range (°C /°F)	28-32 / 82.4-89.6
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

Performance Summary

115V

Accredited	
Average Efficiency (>1450 load combinations)	90.135%
Average Noise Output (>1450 Load Combinations)	29.88dBA
Average PF (>1450 Load Combinations)	0.992
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
Standby Power Consumption	0.0787W
Non-Accredited	
12V Ripple (Full Load)	24.38mV
5V Ripple (Full Load)	13.80mV
3.3V Ripple (Full Load)	11.59mV
5VSB Ripple (Full Load)	14.18mV
12V Load Regulation	1.14%
5V Load Regulation	1.59%
3.3V Load Regulation	2.43%

5VSB Load Regulation	3.21%
Inrush Current	56.332A

230V

Accredited		
Average Efficiency (>1450 load combinations)	91.808%	
Average Noise Output (>1450 Load Combinations)	29.79dBA	
Average PF (>1450 Load Combinations)	0.957	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.1407W	
Non-Accredited		
12V Ripple (Full Load)	23.81mV	
5V Ripple (Full Load)	14.17mV	
3.3V Ripple (Full Load)	11.64mV	
5VSB Ripple (Full Load)	14.55mV	
12V Load Regulation	1.12%	
5V Load Regulation	1.59%	
3.3V Load Regulation	2.41%	
5VSB Load Regulation	3.19%	
Inrush Current	75.452A	
Hold-Up Time & PWR_OK Signal	11.60ms	
AC Loss to PWR_OK Hold Up Time	9.30ms	
PWR_OK Inactive to DC Loss Delay	2.30ms	
OPP (0.00°C / 0.00°C)	-	-

Hold-Up Time & PWR_OK Signal

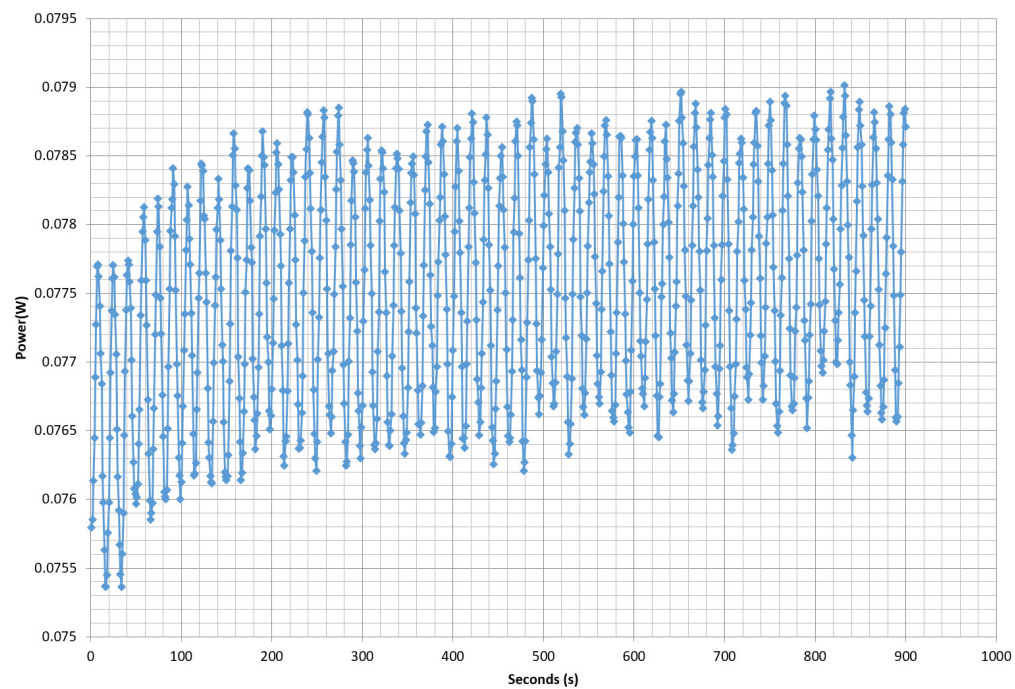
Hold-Up Time (ms)	11.6
AC Loss to PWR_OK Hold Up Time (ms)	9.3
PWR_OK Inactive to DC Loss Delay (ms)	2.3



Graphs

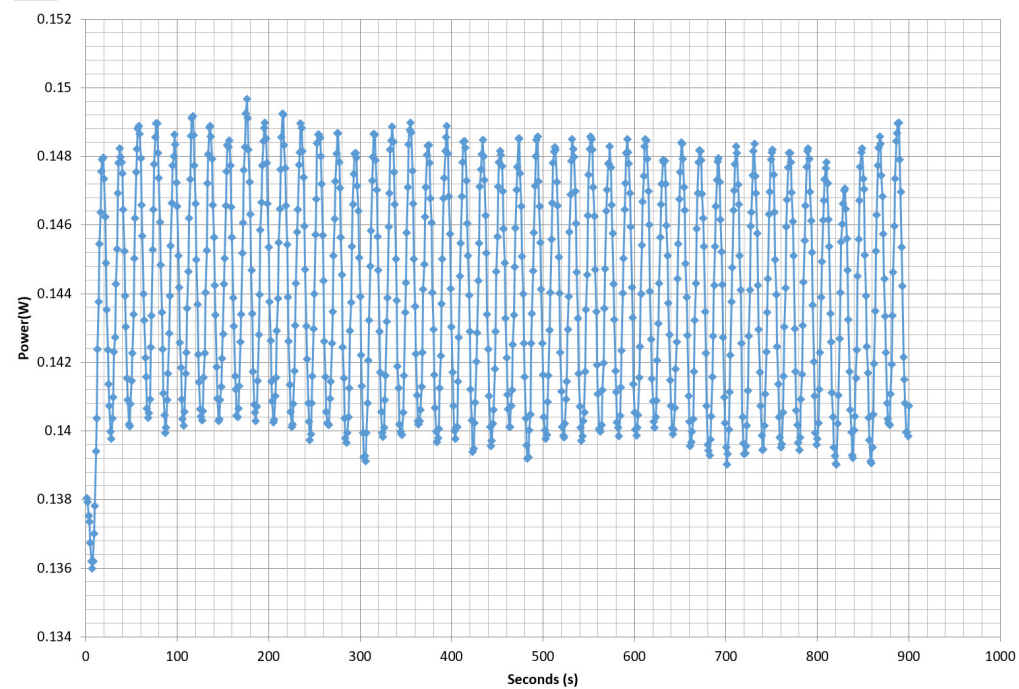
115V

Power - 1804100080291850PT11F05000157 - 18/04/2018 - 11:25



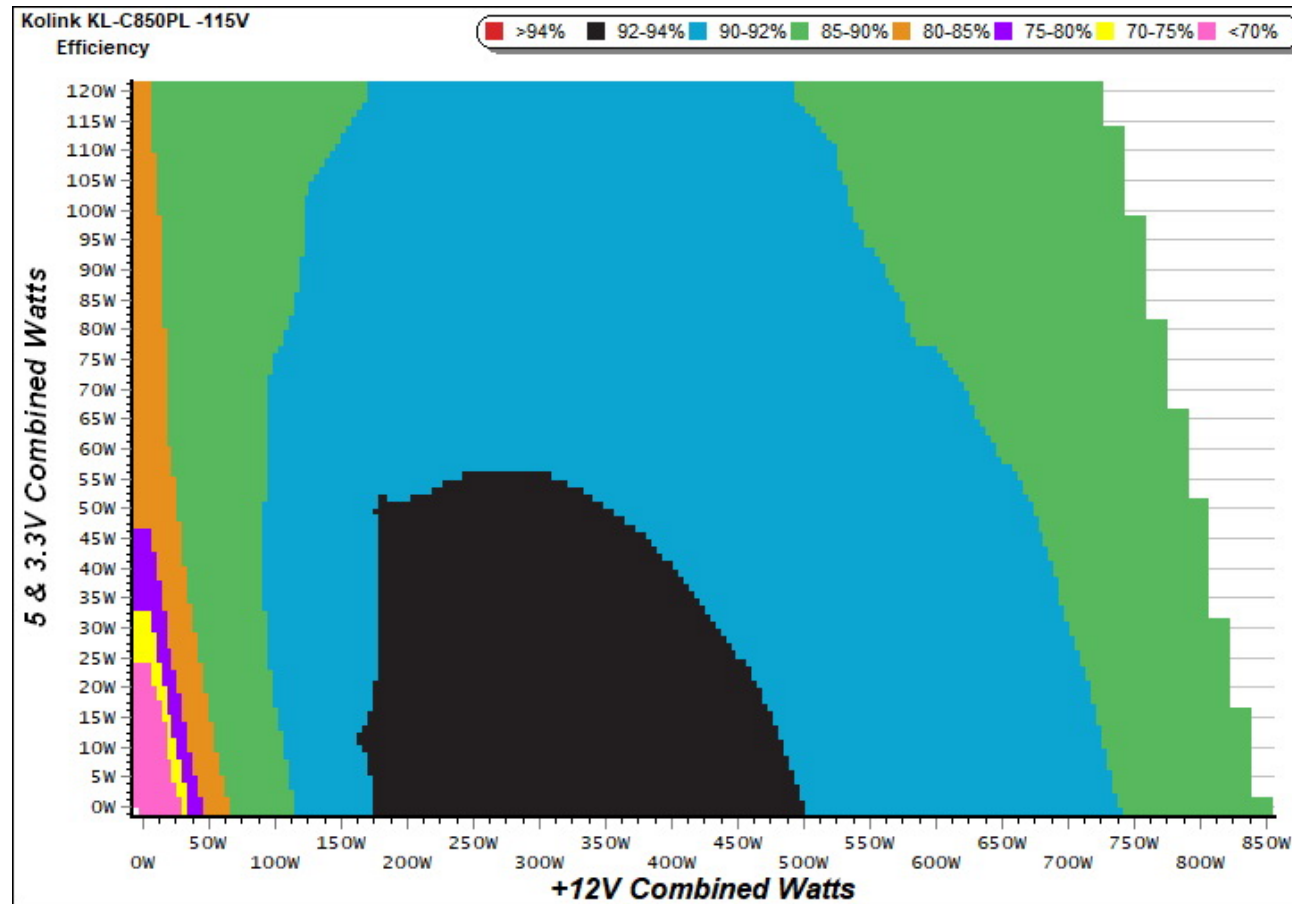
230V

Power - 1804100080291850PT11F05000157 - 18/04/2018 - 11:25



Efficiency Graph

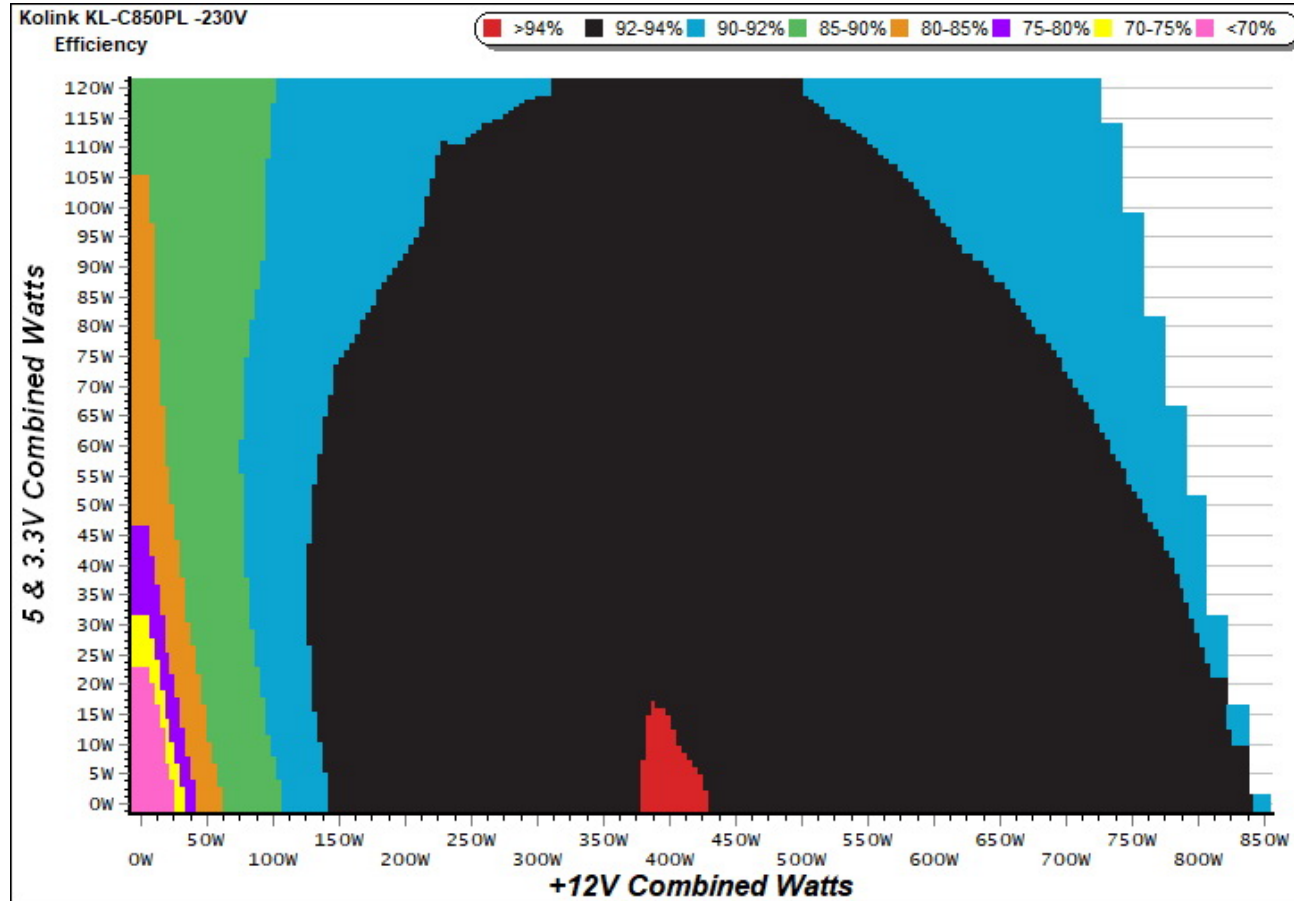
115V



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.

230V

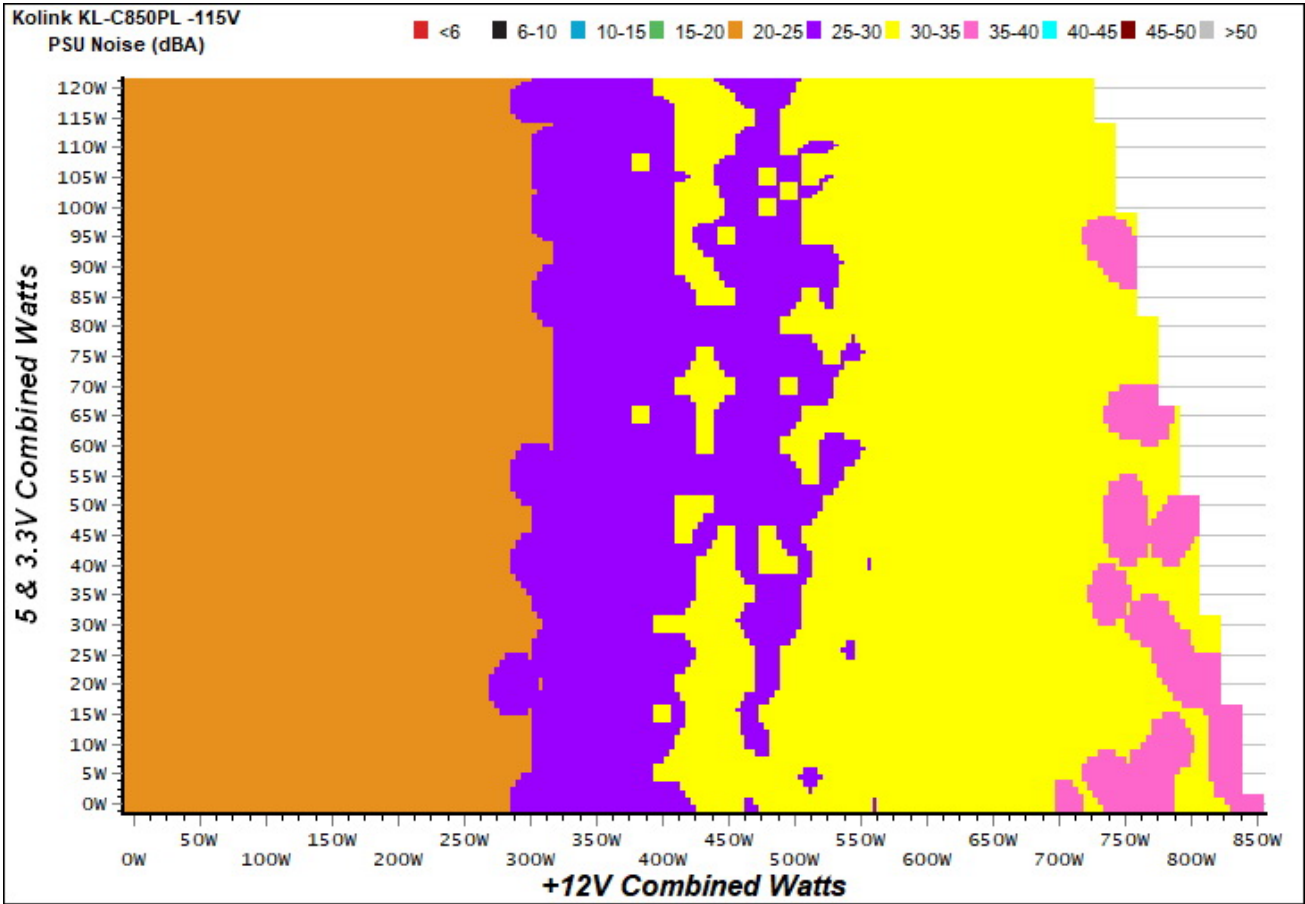


INFO

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

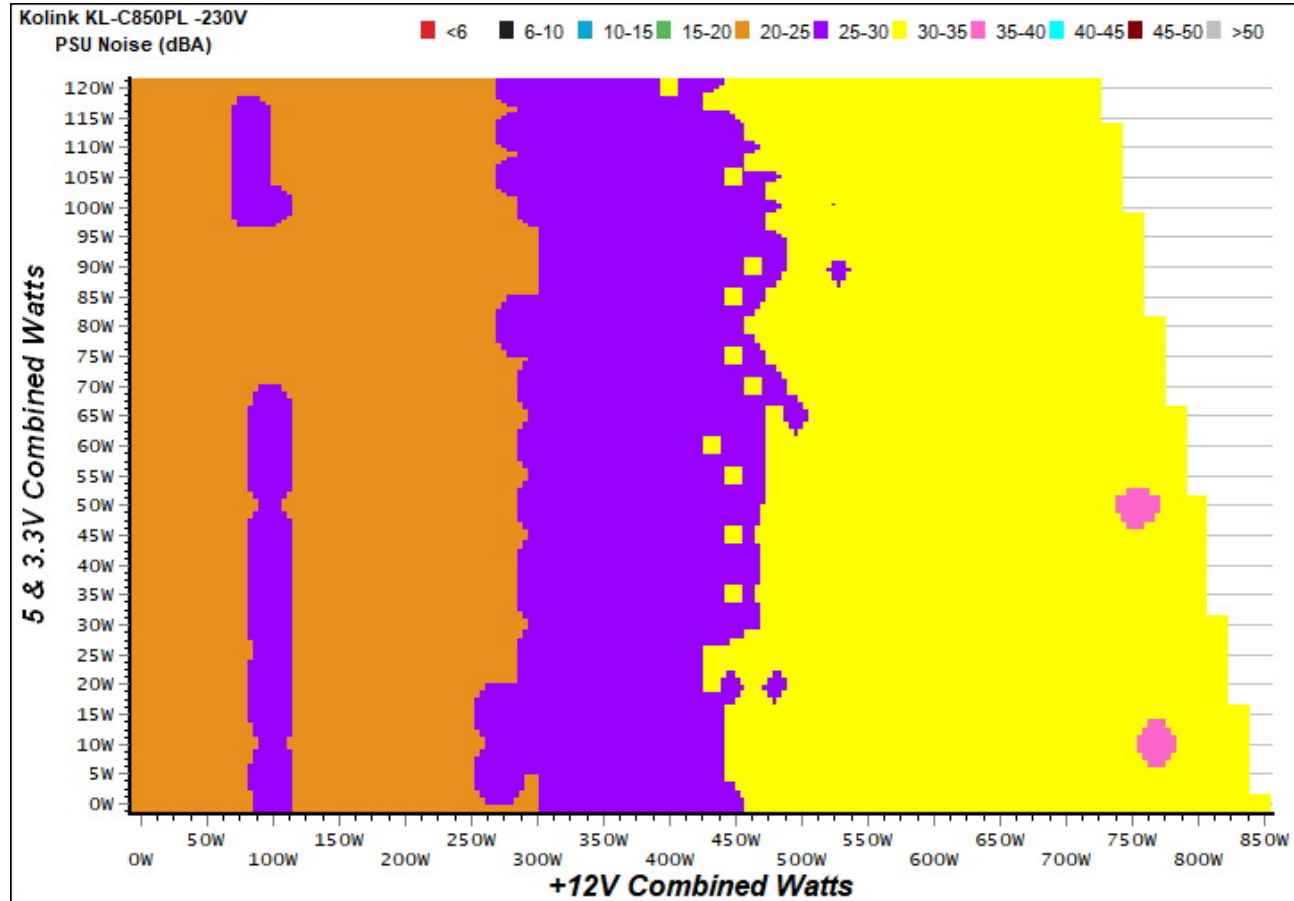
115V



INFO

The PSU`s noise in its entire operational range and under 30-32 °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.

230V



INFO

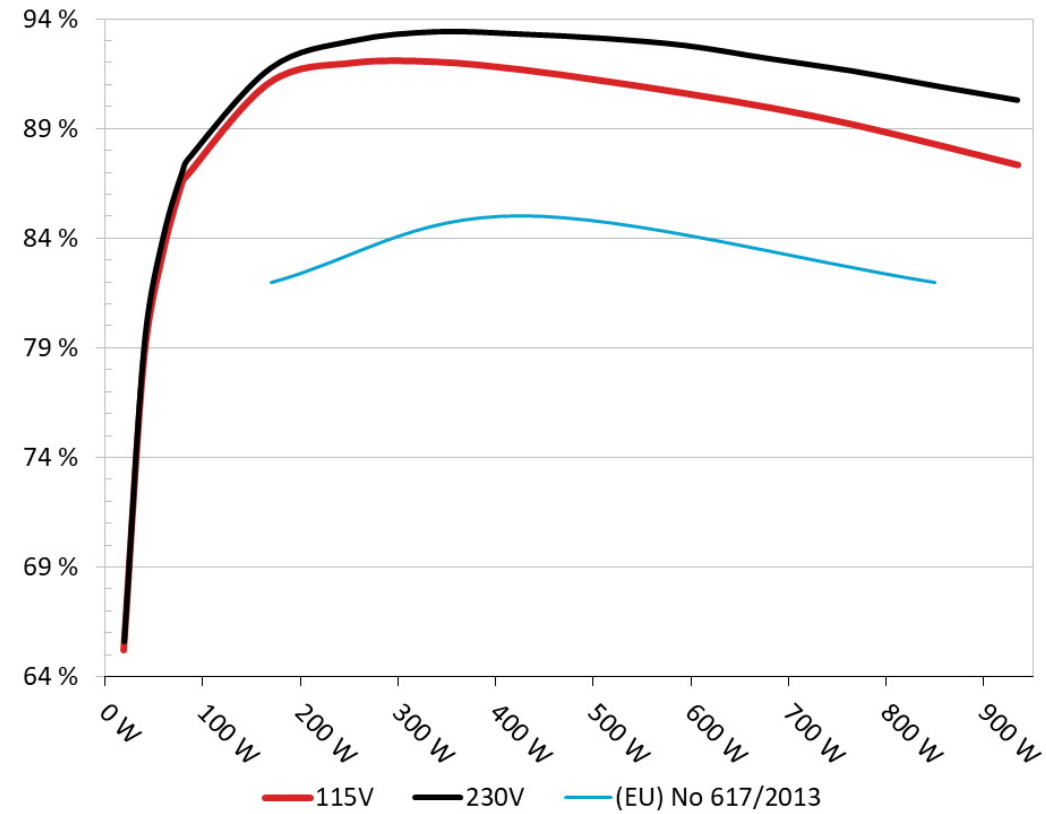
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

Indicative Performance

Efficiency under high ambient temperature

Efficiency: Kolink KL-C850PL

Ambient: 36°C - 46°C (96.8°F - 114.8°F)

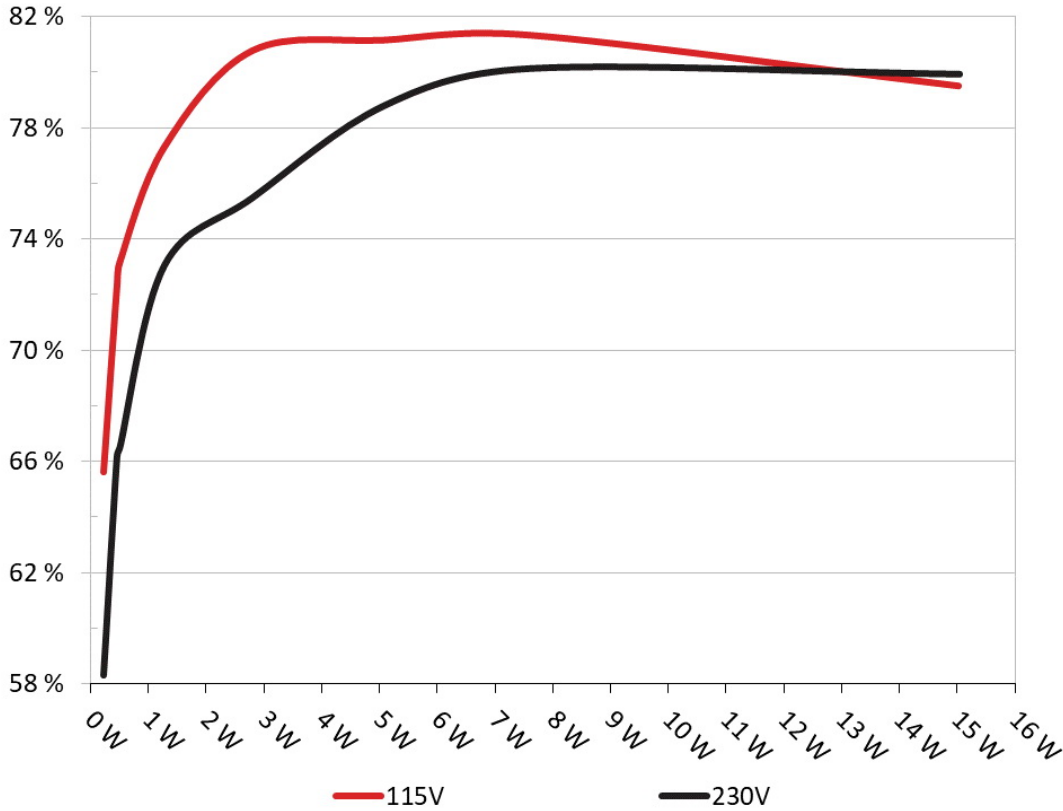


INFO

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: Kolink KL-C850PL
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.

5VSB Efficiency (ERP LOT 3/6 & CEC)

115V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231	65.625%	0.028
	5.127V	0.352		115.37V
2	0.090A	0.462	72.300%	0.050
	5.125V	0.639		115.38V
3	0.550A	2.810	80.770%	0.212
	5.107V	3.479		115.37V
4	1.000A	5.091	81.144%	0.290
	5.090V	6.274		115.37V
5	1.500A	7.610	81.321%	0.334
	5.072V	9.358		115.37V
6	3.000A	15.030	79.499%	0.393
	5.010V	18.906		115.36V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.231	58.333%	0.011
	5.127V	0.396		230.95V
2	0.090A	0.462	66.189%	0.019
	5.125V	0.698		230.93V
3	0.550A	2.808	75.504%	0.096
	5.105V	3.719		230.93V
4	1.000A	5.090	78.817%	0.155
	5.089V	6.458		230.94V
5	1.500A	7.608	80.152%	0.206
	5.071V	9.492		230.94V
6	3.000A	15.047	79.948%	0.297
	5.015V	18.821		230.93V

Supplementary Tests (For Reference)

Typical Load Tests

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	5.143A	2.021A	1.985A	1.016A	84.687	86.885%	1220	34.4	38.99°C	0.965
	12.266V	4.952V	3.322V	4.922V	97.470				41.35°C	115.27V
2	11.288A	3.032A	2.987A	1.222A	169.201	91.113%	1235	34.7	40.05°C	0.986
	12.253V	4.944V	3.314V	4.910V	185.705				42.88°C	115.16V
3	17.840A	3.544A	3.476A	1.430A	254.317	92.002%	1275	35.2	40.88°C	0.995
	12.238V	4.937V	3.306V	4.897V	276.427				43.99°C	115.05V
4	24.405A	4.057A	4.001A	1.639A	339.523	92.048%	1320	36.0	41.03°C	0.995
	12.224V	4.929V	3.298V	4.883V	368.856				44.51°C	115.04V
5	30.662A	5.080A	5.013A	1.848A	424.841	91.700%	1342	36.6	41.99°C	0.996
	12.209V	4.920V	3.290V	4.871V	463.293				45.54°C	114.93V
6	36.869A	6.108A	6.032A	2.059A	509.377	91.185%	1365	36.9	42.35°C	0.997
	12.194V	4.912V	3.281V	4.858V	558.618				46.41°C	114.81V
7	43.155A	7.138A	7.058A	2.271A	594.690	90.604%	1410	38.4	43.10°C	0.998
	12.179V	4.904V	3.272V	4.846V	656.365				47.40°C	114.79V
8	49.465A	8.172A	8.087A	2.483A	680.040	89.963%	1445	38.9	43.88°C	0.998
	12.163V	4.895V	3.264V	4.833V	755.909				48.38°C	114.67V
9	56.178A	8.699A	8.601A	2.487A	764.972	89.197%	1480	39.7	44.68°C	0.998
	12.148V	4.887V	3.256V	4.827V	857.625				49.75°C	114.63V
10	62.653A	9.225A	9.147A	3.129A	849.801	88.289%	1500	40.0	45.97°C	0.998
	12.132V	4.878V	3.246V	4.795V	962.523				51.49°C	114.51V
11	69.719A	9.242A	9.170A	3.134A	934.577	87.344%	1512	40.4	46.11°C	0.998
	12.118V	4.871V	3.239V	4.787V	1069.996				52.29°C	114.37V
CL1	0.136A	14.003A	14.000A	0.000A	117.113	83.810%	1400	38.2	41.53°C	0.979
	12.261V	4.933V	3.312V	4.989V	139.737				45.39°C	115.20V

CL2	70.843A	1.001A	1.000A	1.000A	872.404	88.690%	1465	39.3	45.92°C	0.998
	12.131V	4.891V	3.255V	4.857V	983.660				51.74°C	114.49V

The results above are not used in the certification process

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	5.161A	2.021A	1.986A	1.016A	84.904	87.586%	1230	34.6	39.33°C	0.823
	12.265V	4.952V	3.321V	4.921V	96.938				42.10°C	230.89V
2	11.305A	3.035A	2.989A	1.222A	169.413	91.730%	1295	35.6	40.16°C	0.921
	12.252V	4.943V	3.313V	4.909V	184.686				43.44°C	230.84V
3	17.856A	3.547A	3.480A	1.430A	254.532	92.985%	1320	36.0	40.63°C	0.948
	12.238V	4.936V	3.305V	4.896V	273.735				44.18°C	230.78V
4	24.423A	4.060A	4.003A	1.639A	339.729	93.392%	1360	36.8	41.20°C	0.971
	12.223V	4.928V	3.297V	4.882V	363.767				45.16°C	230.71V
5	30.682A	5.084A	5.020A	1.849A	425.064	93.288%	1330	36.3	41.81°C	0.977
	12.207V	4.920V	3.289V	4.870V	455.647				46.53°C	230.75V
6	36.888A	6.111A	6.035A	2.060A	509.587	93.093%	1365	36.9	42.03°C	0.984
	12.193V	4.911V	3.280V	4.857V	547.397				47.02°C	230.69V
7	43.175A	7.142A	7.060A	2.271A	594.891	92.763%	1420	38.7	42.69°C	0.989
	12.178V	4.902V	3.271V	4.845V	641.304				48.11°C	230.45V
8	49.483A	8.177A	8.094A	2.485A	680.246	92.169%	1440	39.0	43.41°C	0.991
	12.162V	4.894V	3.263V	4.831V	738.045				49.35°C	230.56V
9	56.203A	8.702A	8.605A	2.488A	765.173	91.609%	1480	39.7	44.74°C	0.994
	12.146V	4.886V	3.255V	4.825V	835.259				51.23°C	230.42V
10	62.674A	9.230A	9.151A	3.130A	850.013	90.934%	1490	39.9	45.44°C	0.996
	12.131V	4.877V	3.245V	4.794V	934.761				52.37°C	230.53V
11	69.747A	9.245A	9.178A	3.135A	934.791	90.277%	1508	40.2	46.33°C	0.997
	12.116V	4.870V	3.237V	4.786V	1035.471				53.80°C	230.28V
CL1	0.149A	14.007A	14.001A	0.000A	117.267	84.416%	1420	38.7	42.33°C	0.888
	12.259V	4.932V	3.311V	4.989V	138.916				48.23°C	230.95V

CL2	70.856A	1.003A	1.003A	1.000A	872.507	91.575%	1470	39.4	45.33°C	0.996
	12.130V	4.890V	3.254V	4.856V	952.775				51.97°C	230.34V

The results above are not used in the certification process

Light Load Tests

115V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.178A	0.505A	0.481A	0.202A	19.568	65.216%	1170	33.5	0.833
	12.275V	4.960V	3.329V	4.954V	30.005				115.34V
2	2.423A	1.008A	0.991A	0.405A	40.032	78.403%	1115	32.2	0.923
	12.272V	4.957V	3.327V	4.946V	51.059				115.32V
3	3.596A	1.514A	1.473A	0.608A	59.520	83.300%	1160	33.3	0.951
	12.269V	4.955V	3.325V	4.937V	71.453				115.30V
4	4.817A	2.018A	1.983A	0.811A	79.669	86.599%	1150	32.9	0.964
	12.266V	4.953V	3.323V	4.930V	91.998				115.27V

The results above are not used in the certification process

230V

Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.177A	0.505A	0.479A	0.202A	19.547	65.623%	1195	34.0	0.479
	12.275V	4.959V	3.329V	4.953V	29.787				230.94V
2	2.422A	1.008A	0.992A	0.405A	40.019	79.090%	1135	32.5	0.637
	12.271V	4.957V	3.327V	4.945V	50.599				230.93V
3	3.596A	1.513A	1.475A	0.608A	59.515	84.045%	1160	33.3	0.739
	12.268V	4.954V	3.324V	4.937V	70.813				230.92V
4	4.832A	2.020A	1.988A	0.812A	79.879	87.132%	1180	33.7	0.812
	12.266V	4.952V	3.322V	4.929V	91.676				230.90V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	7.1 mV	4.6 mV	3.6 mV	3.3 mV	Pass
20% Load	5.4 mV	5.6 mV	4.6 mV	4.0 mV	Pass
30% Load	8.1 mV	7.3 mV	5.8 mV	6.0 mV	Pass
40% Load	10.4 mV	8.5 mV	6.6 mV	6.8 mV	Pass
50% Load	12.0 mV	8.5 mV	7.2 mV	7.5 mV	Pass
60% Load	13.9 mV	9.7 mV	8.2 mV	7.8 mV	Pass
70% Load	15.6 mV	10.6 mV	8.4 mV	8.9 mV	Pass
80% Load	18.4 mV	11.3 mV	9.4 mV	9.6 mV	Pass
90% Load	20.7 mV	12.0 mV	10.3 mV	10.8 mV	Pass
100% Load	24.4 mV	13.8 mV	11.6 mV	14.2 mV	Pass
110% Load	29.8 mV	14.4 mV	11.9 mV	17.0 mV	Pass
Crossload 1	5.5 mV	8.1 mV	7.8 mV	3.5 mV	Pass
Crossload 2	25.2 mV	11.3 mV	8.0 mV	13.8 mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	7.8 mV	4.6 mV	3.6 mV	3.2 mV	Pass
20% Load	5.4 mV	5.9 mV	4.7 mV	4.3 mV	Pass
30% Load	7.6 mV	7.6 mV	6.0 mV	6.3 mV	Pass
40% Load	9.4 mV	8.7 mV	6.7 mV	7.1 mV	Pass
50% Load	11.2 mV	9.1 mV	8.5 mV	7.9 mV	Pass
60% Load	13.2 mV	9.9 mV	7.9 mV	8.1 mV	Pass
70% Load	15.5 mV	11.0 mV	8.5 mV	9.0 mV	Pass
80% Load	18.0 mV	11.6 mV	9.6 mV	9.9 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	20.2 mV	12.5 mV	10.4 mV	11.3 mV	Pass
100% Load	23.8 mV	14.2 mV	11.6 mV	14.6 mV	Pass
110% Load	29.2 mV	14.8 mV	12.3 mV	17.4 mV	Pass
Crossload 1	5.3 mV	8.1 mV	8.1 mV	3.5 mV	Pass
Crossload 2	25.3 mV	11.7 mV	7.9 mV	14.2 mV	Pass

The results above are not used in the certification process

Kolink Continuum 850W



Top side



Power specifications label

Cybenetics [REDACTED] ETA[REDACTED] LAMBDA[REDACTED] SAFE[REDACTED] DELTA[REDACTED] PHI[REDACTED]

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