



Kolink Continuum 1200W (#2)

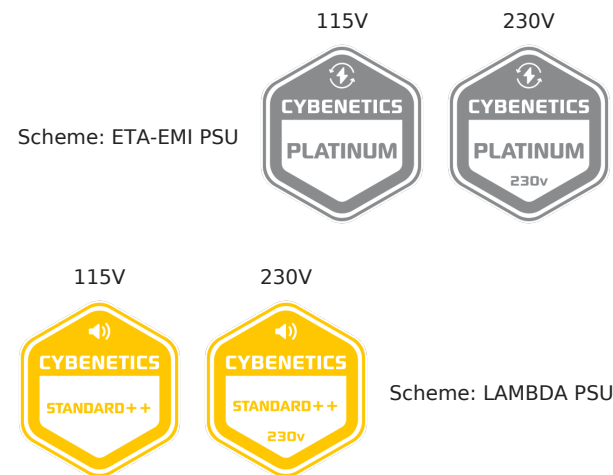
Serial Number 173291B00PTT1F05004468

Lab ID 181

Certification ID 25181

Test Result Report ID:

Certificate Issue Date: Sep 26, 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 1200W (#2)
OEM/ODM	Sirfa / High Power
Serial Number	173291B00PTT1F05004468
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	15
Rated Frequency (Hz)	50-60

Rated Power (W)	1200
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	181
Date of receipt	Sep 14, 2018
Testing Date	Sep 23, 2018
Report Issued Date	Sep 26, 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
ATX connector 20+4 pin (600mm)	1	1	18AWG
4+4 pin EPS12V (700mm)	1	1	16AWG
8 pin EPS12V (600mm)	1	1	16AWG
6+2 pin PCIe (600mm+200mm)	6	12	18-16AWG
SATA (400mm+150mm+150mm+150mm)	2	8	18AWG
4 pin Molex (450mm+100mm+100mm+100mm)	2	8	18AWG

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	25	25	100	3	0.3
	Watts	130		1200	15	3.6
Total Max. Power (W)		1200				

Parts Description

General Data	
Manufacturer (OEM)	CWT
Platform Model	-
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor & Diode
Bridge Rectifier(s)	2x GBU1006 (600V, 10A @ 100°C)
APFC MOSFETS	2x Infineon IPW50R280CE (550V, 11.4A @ 100°C, 0.28Ohm)
APFC Boost Diode	1x Power Integrations QH08TZ600 (600V, 8A @ 150°C)
Hold-up Cap(s)	1x Nichicon (400V, 390uF, 2000h @ 105 °C, GG)
Main Switchers	2x Vishay SiHG20N50C (560V, 11A @ 100°C, 0.27Ohm)
Combo APFC/PWM Controller	Champion CM6800TX & CM03X Green PFC controller
Topology	Primary side: Half-Bridge & LLC Resonant Controller Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETS	4x APEC AP9990GH-HF (60V, 100A @ 25°C, 6mOhm)
5V & 3.3V	DC-DC Converters: 6x APEC AP72T03GP (30V, 47A @ 100°C, 9.5mOhm) PWM Controller: APW7159C
Filtering Capacitors	Electrolytics: Nippon Chemi-Con (1-5,000 @ 105°C, KZE), Su' scon (2-5,000h @ 105°C, MF), TAICON (105°C) Polymers: APAQ, EneSol
Supervisor IC	Weltrend WT7502 (OVP, UVP, SCP, PG)
Fan Model	Power Logic PLA13525S12M (12V, 0.40A, 111.1CFM, 41.6 dBA, Hydro Dynamic Bearing)
5VSB Circuit	
Rectifier	1x MBR2045CT SBR (45V, 20A) & CEF04N7G (700V, 4A, 3.3Ohm)

Standby PWM Controller	On-Bright OB5269CP
-12V Circuit	
Rectifier	UTC 2SB834L

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)	89.668%
Average Noise Output (>1450 Load Combinations)	32.96dBA
Average PF (>1450 Load Combinations)	0.980
Efficiency With 10W ($\leq$ 500W) or 2% (>500W) Load	-
Standby Power Consumption	0.0999W
Non-Accredited	
12V Ripple (Full Load)	70.04mV
5V Ripple (Full Load)	27.25mV
3.3V Ripple (Full Load)	22.50mV
5VSB Ripple (Full Load)	34.97mV
12V Load Regulation	1.15%
5V Load Regulation	0.93%
3.3V Load Regulation	1.66%
5VSB Load Regulation	6.97%
Inrush Current	106.901A

230V

Accredited		
Average Efficiency (>1450 load combinations)	91.320%	
Average Noise Output (>1450 Load Combinations)	32.69dBA	
Average PF (>1450 Load Combinations)	0.943	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
Standby Power Consumption	0.1189W	
Non-Accredited		
12V Ripple (Full Load)	69.56mV	
5V Ripple (Full Load)	30.95mV	
3.3V Ripple (Full Load)	21.83mV	
5VSB Ripple (Full Load)	51.78mV	
12V Load Regulation	1.16%	
5V Load Regulation	1.13%	
3.3V Load Regulation	1.78%	
5VSB Load Regulation	6.36%	
Inrush Current	79.026A	
Hold-Up Time & PWR_OK Signal	18.40ms	
AC Loss to PWR_OK Hold Up Time	13.00ms	
PWR_OK Inactive to DC Loss Delay	5.40ms	
OPP (0.00°C / 0.00°C)	-	-

Hold-Up Time & PWR_OK Signal

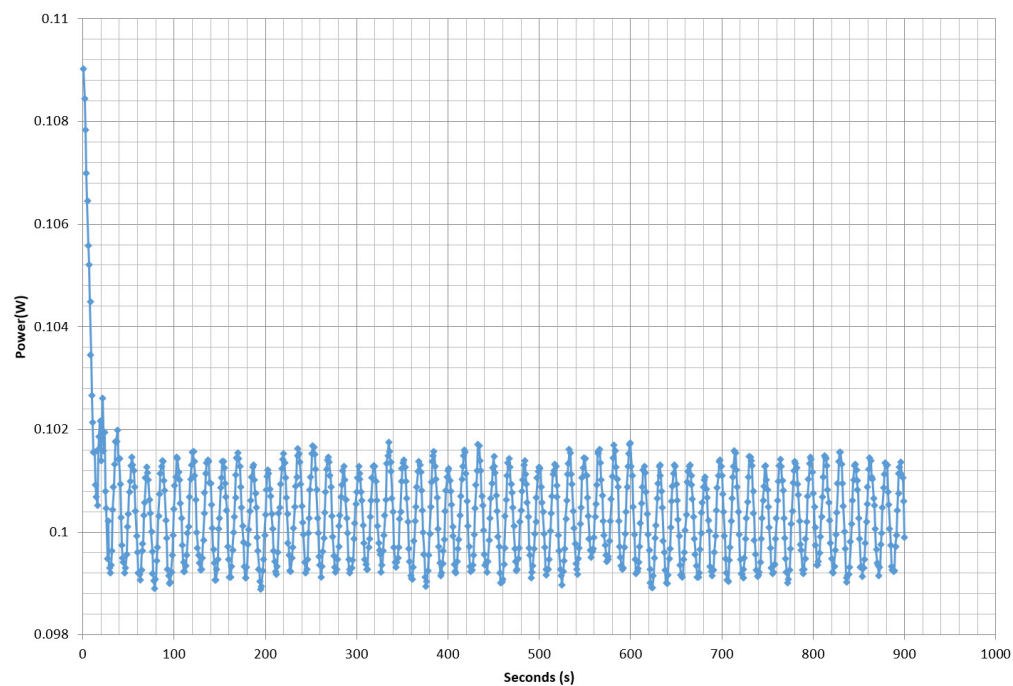
Hold-Up Time (ms)	18.4
AC Loss to PWR_OK Hold Up Time (ms)	13
PWR_OK Inactive to DC Loss Delay (ms)	5.4



Graphs

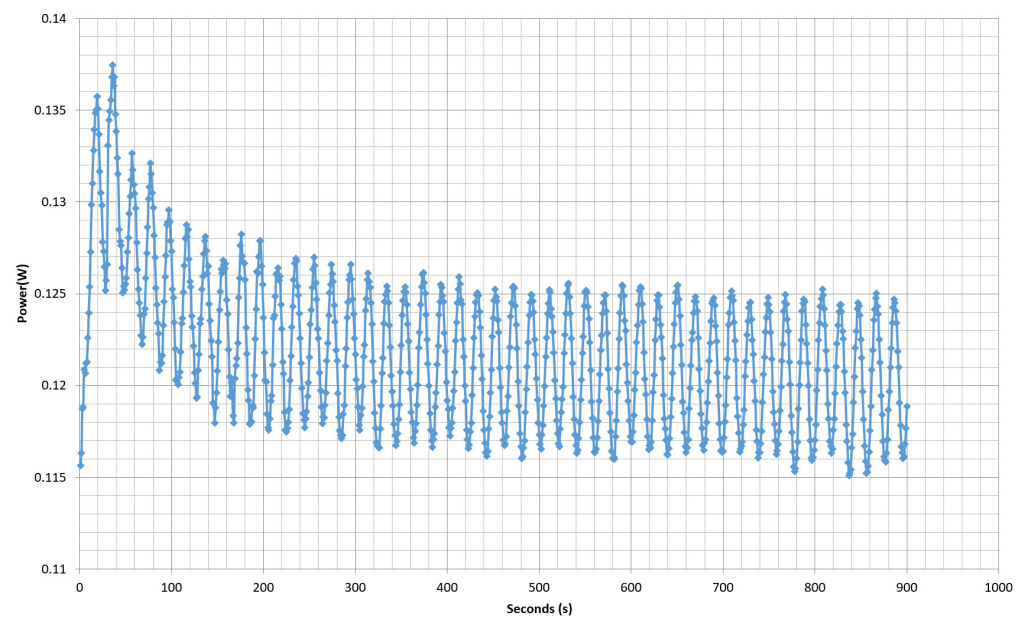
115V

Power - 173291B00PTT1F05004468 - 25/09/2017 - 11:50



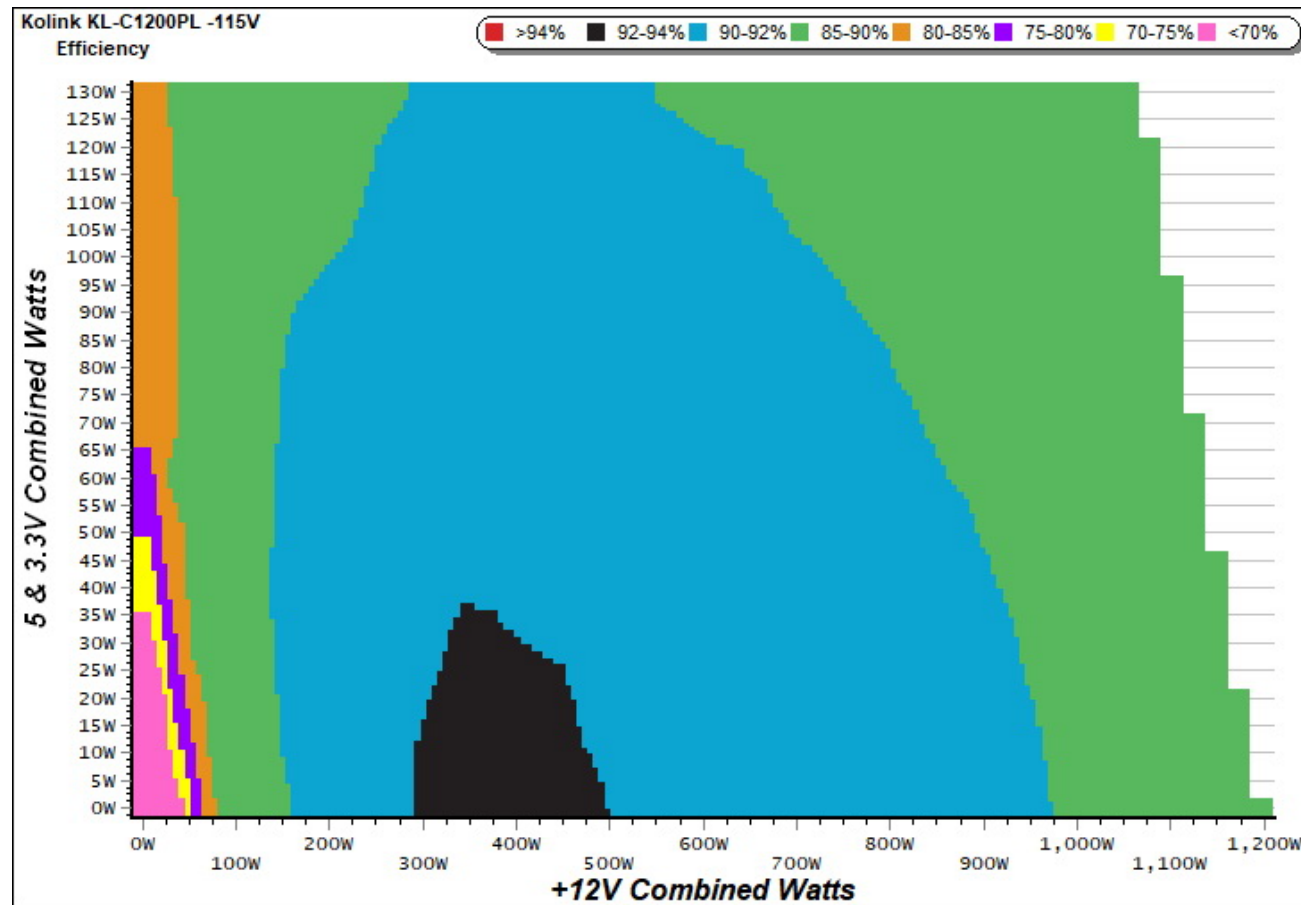
230V

Power - 173291B00PTT1F05004468 - 25/09/2017 - 11:50



Efficiency Graph

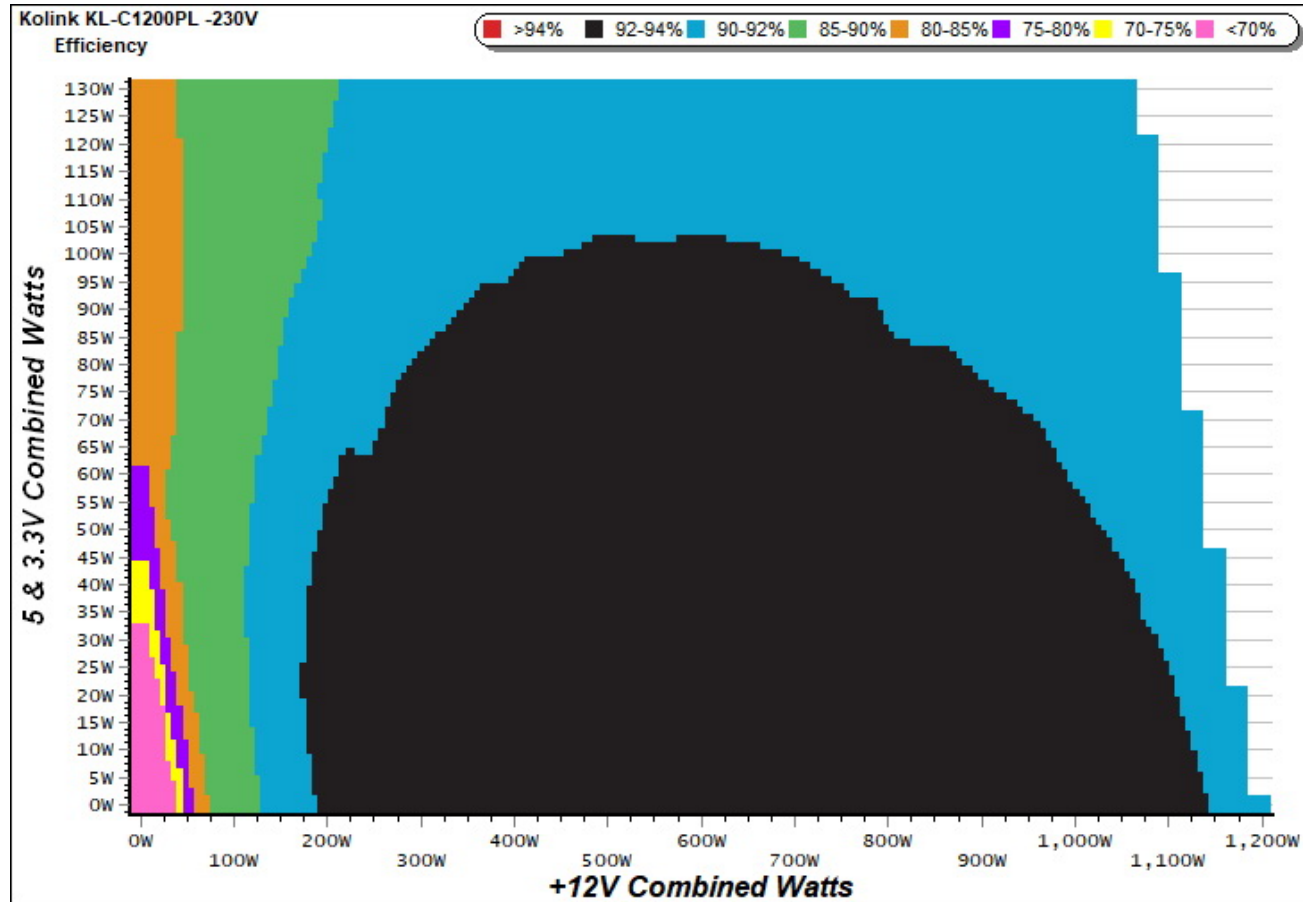
115V



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

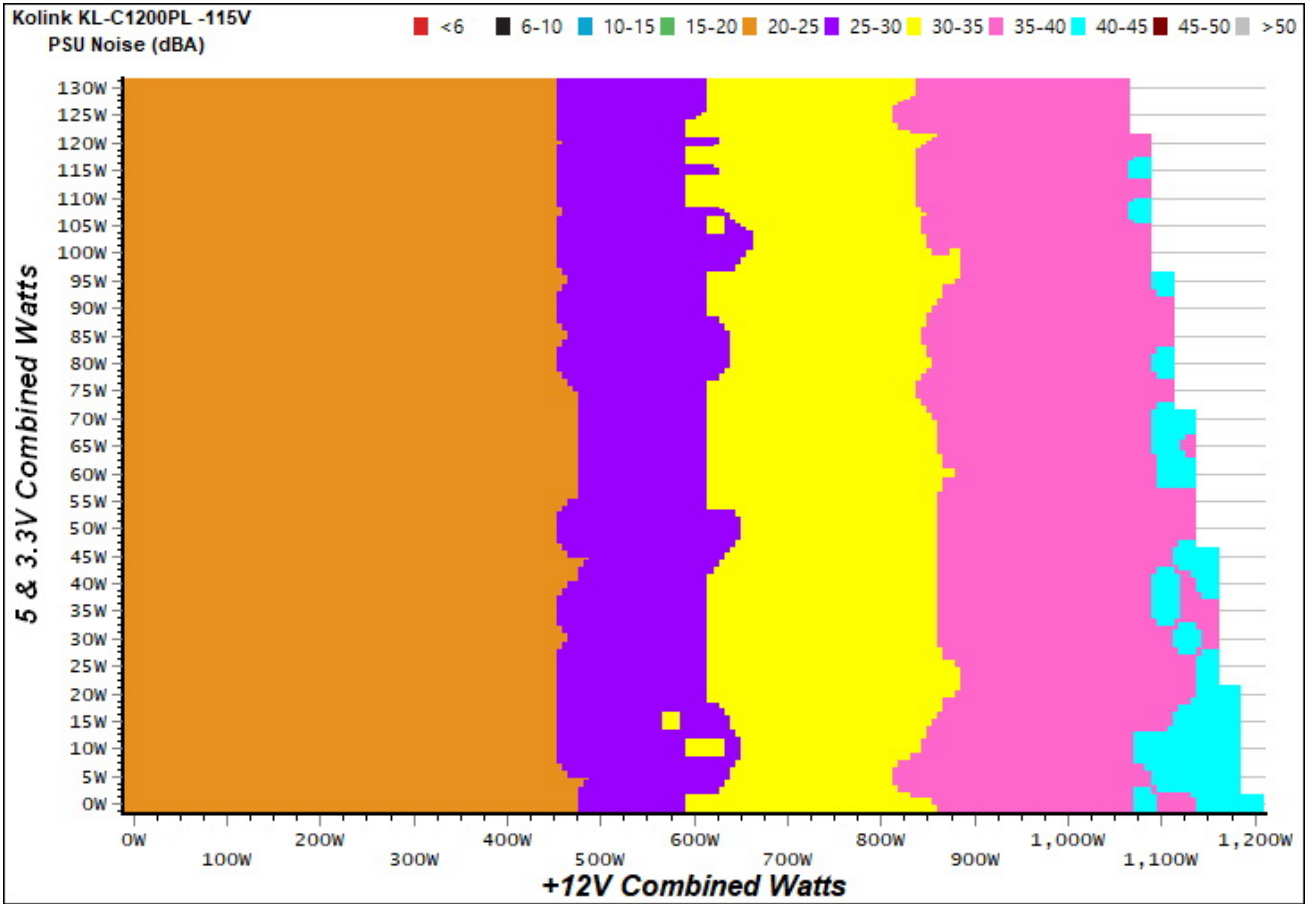


INFO

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

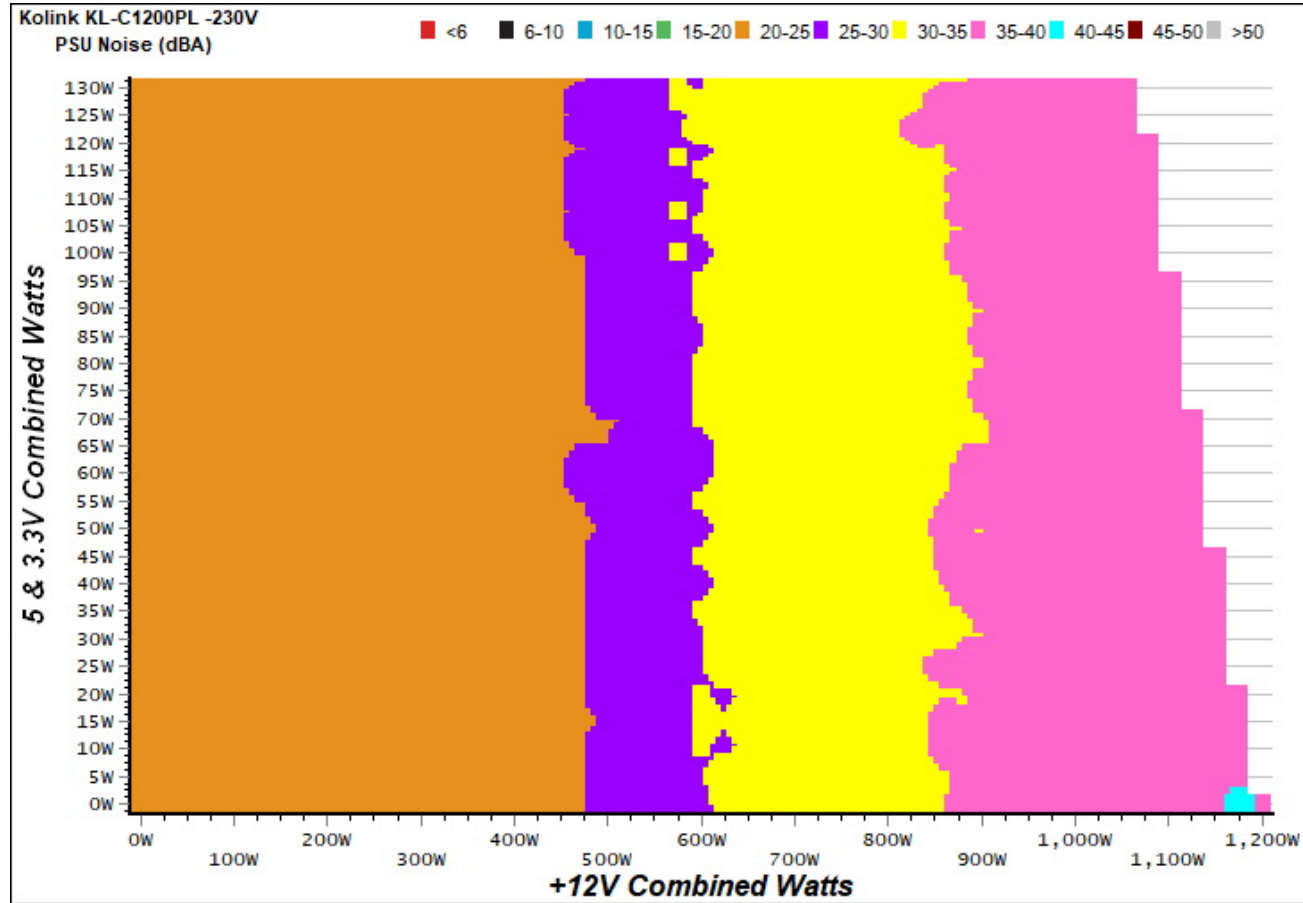
115V



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

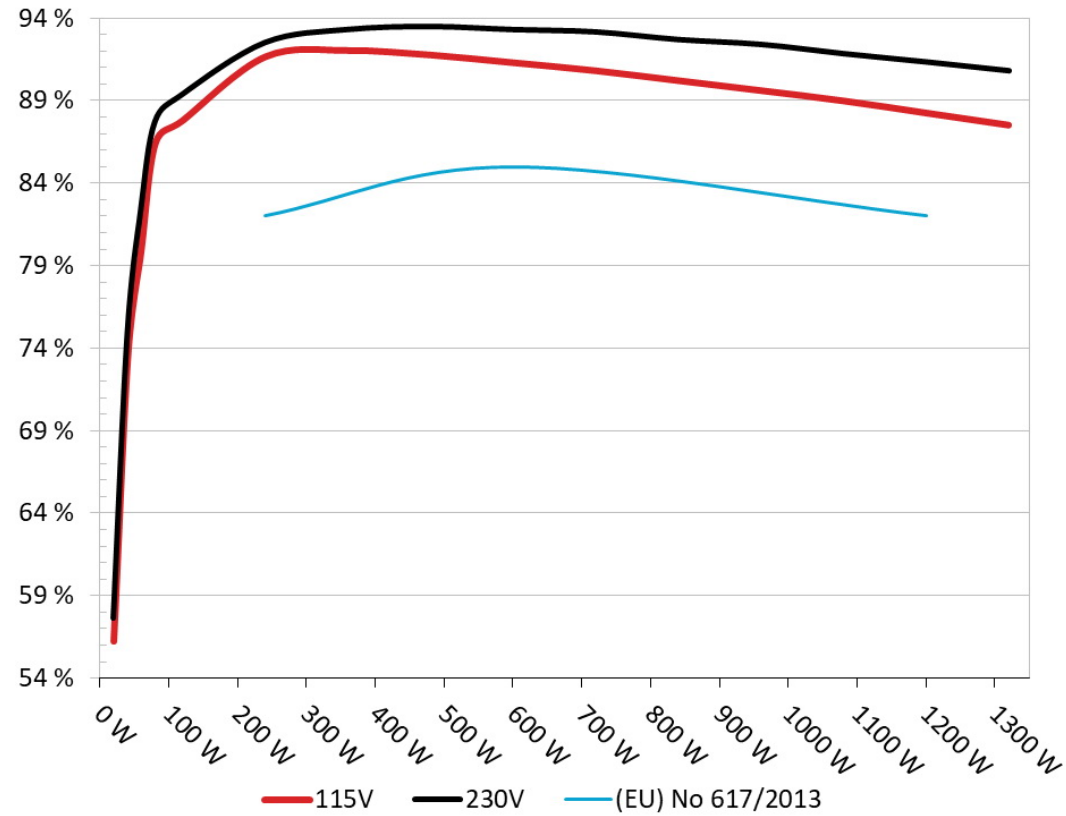
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails.

Indicative Performance

Efficiency under high ambient temperature

Efficiency: Kolink KL-C1200PL

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



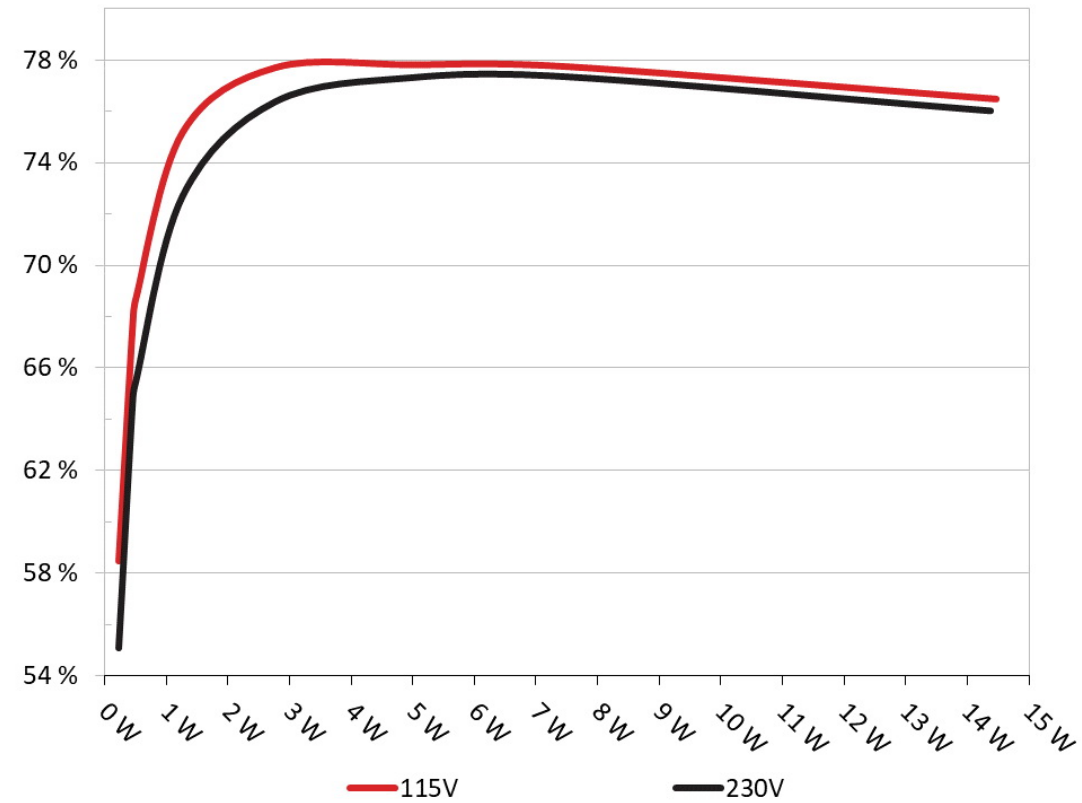
INFO

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: Kolink KL-C1200PL

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	0.228	58.462%	0.039
	5.066V	0.390		115.38V
2	0.090A	0.456	67.756%	0.066
	5.062V	0.673		115.39V
3	0.550A	2.767	77.703%	0.243
	5.029V	3.561		115.38V
4	1.000A	4.999	77.818%	0.309
	4.998V	6.424		115.38V
5	1.500A	7.441	77.753%	0.344
	4.960V	9.570		115.38V
6	2.998A	14.463	76.483%	0.390
	4.824V	18.910		115.36V

230V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.228	55.072%	0.014
	5.066V	0.414		230.68V
2	0.090A	0.456	64.773%	0.024
	5.062V	0.704		230.85V
3	0.550A	2.766	76.346%	0.113
	5.028V	3.623		230.85V
4	1.000A	4.996	77.290%	0.181
	4.995V	6.464		230.85V
5	1.500A	7.437	77.332%	0.234
	4.957V	9.617		230.84V
6	2.993A	14.379	75.995%	0.314
	4.804V	18.921		230.84V

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	7.946A	1.948A	1.957A	0.989A	120.039	87.816%	960	27.3	38.32°C	0.956
	12.388V	5.134V	3.373V	5.058V	136.694				45.62°C	115.22V
2	16.878A	2.924A	2.941A	1.191A	239.765	91.666%	1010	28.5	38.62°C	0.972
	12.375V	5.129V	3.367V	5.038V	261.563				50.61°C	115.07V
3	26.153A	3.416A	3.422A	1.396A	359.289	92.047%	1023	28.7	39.16°C	0.980
	12.361V	5.124V	3.362V	5.016V	390.331				56.08°C	115.02V
4	35.516A	3.908A	3.932A	1.605A	479.729	91.776%	1125	31.9	39.40°C	0.981
	12.347V	5.120V	3.357V	4.987V	522.718				61.53°C	114.86V
5	44.545A	4.890A	4.923A	1.819A	599.878	91.310%	1215	34.2	40.07°C	0.983
	12.333V	5.114V	3.351V	4.948V	656.965				66.77°C	114.79V
6	53.593A	5.874A	5.922A	2.034A	720.033	90.820%	1320	36.0	41.21°C	0.985
	12.319V	5.109V	3.345V	4.917V	792.817				72.27°C	114.63V
7	62.629A	6.860A	6.921A	2.272A	839.776	90.224%	1465	39.3	42.31°C	0.988
	12.305V	5.104V	3.339V	4.843V	930.766				75.95°C	114.54V
8	71.744A	7.848A	7.921A	2.491A	960.245	89.620%	1500	40.0	43.28°C	0.990
	12.291V	5.100V	3.334V	4.820V	1071.466				80.08°C	114.46V
9	81.214A	8.344A	8.412A	2.493A	1079.576	88.998%	1515	40.5	45.05°C	0.991
	12.277V	5.095V	3.328V	4.815V	1213.037				85.23°C	114.27V
10	90.550A	8.844A	8.941A	3.148A	1199.957	88.265%	1515	40.5	45.42°C	0.992
	12.261V	5.090V	3.322V	4.767V	1359.489				91.02°C	114.18V
11	100.455A	8.851A	8.956A	3.145A	1320.000	87.528%	1515	40.5	47.30°C	0.993
	12.247V	5.086V	3.317V	4.771V	1508.088				95.98°C	113.99V
CL1	0.166A	16.005A	16.003A	0.000A	137.852	82.415%	1480	39.7	45.00°C	0.962
	12.392V	5.123V	3.362V	5.166V	167.266				63.84°C	115.16V

CL2	100.021A	1.004A	1.001A	1.000A	1239.225	88.357%	1515	40.5	47.20°C	0.992
	12.255V	5.099V	3.329V	5.016V	1402.522				98.02°C	114.13V

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	7.958A	1.948A	1.958A	0.983A	120.203	89.212%	1010	28.5	40.06°C	0.861
	12.390V	5.133V	3.372V	5.088V	134.738				42.79°C	230.68V
2	16.889A	2.929A	2.944A	1.183A	239.925	92.446%	1055	29.6	40.50°C	0.912
	12.375V	5.126V	3.365V	5.075V	259.529				43.52°C	230.87V
3	26.161A	3.419A	3.425A	1.384A	359.397	93.294%	1105	31.2	40.86°C	0.938
	12.361V	5.121V	3.360V	5.061V	385.230				44.17°C	230.62V
4	35.524A	3.911A	3.938A	1.586A	479.795	93.387%	1220	34.4	42.01°C	0.949
	12.346V	5.115V	3.354V	5.046V	513.768				45.87°C	230.72V
5	44.551A	4.893A	4.928A	1.789A	599.903	93.185%	1360	36.8	43.03°C	0.956
	12.332V	5.109V	3.348V	5.032V	643.774				47.30°C	230.63V
6	53.597A	5.883A	5.923A	1.994A	720.030	93.062%	1420	38.7	43.89°C	0.962
	12.318V	5.103V	3.342V	5.018V	773.714				48.62°C	230.38V
7	62.641A	6.872A	6.926A	2.200A	839.739	92.561%	1500	40.0	44.27°C	0.965
	12.302V	5.096V	3.336V	5.002V	907.231				49.53°C	230.39V
8	71.767A	7.862A	7.930A	2.408A	960.222	92.095%	1515	40.5	44.98°C	0.969
	12.287V	5.090V	3.329V	4.985V	1042.641				50.81°C	230.47V
9	81.242A	8.363A	8.424A	2.412A	1079.525	91.553%	1515	40.5	45.28°C	0.972
	12.272V	5.084V	3.324V	4.977V	1179.130				51.94°C	230.37V
10	90.588A	8.865A	8.954A	3.129A	1199.975	90.969%	1515	40.5	46.21°C	0.974
	12.256V	5.078V	3.317V	4.798V	1319.096				53.43°C	230.28V
11	100.511A	8.874A	8.974A	3.165A	1319.982	90.545%	1515	40.5	46.78°C	0.975
	12.240V	5.073V	3.310V	4.741V	1457.815				54.71°C	230.12V
CL1	0.153A	16.006A	16.000A	0.000A	137.654	81.210%	1440	39.0	42.51°C	0.885
	12.391V	5.114V	3.369V	5.200V	169.503				47.61°C	230.90V

CL2	100.013A	1.003A	1.000A	1.000A	1238.600	91.388%	1515	40.5	46.09°C	0.974
	12.250V	5.090V	3.322V	5.014V	1355.326				53.08°C	230.27V

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	1.161A	0.486A	0.473A	0.195A	19.500	56.262%	808	21.5	0.854
	12.407V	5.139V	3.379V	5.124V	34.659				115.34V
2	2.385A	0.973A	0.974A	0.392A	39.875	73.463%	866	23.5	0.923
	12.404V	5.138V	3.378V	5.109V	54.279				115.32V
3	3.548A	1.460A	1.449A	0.589A	59.383	79.979%	880	24.3	0.933
	12.399V	5.137V	3.376V	5.093V	74.248				115.30V
4	4.777A	1.946A	1.955A	0.788A	79.805	86.416%	894	24.4	0.934
	12.395V	5.136V	3.375V	5.077V	92.350				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	1.173A	0.488A	0.475A	0.195A	19.669	58.199%	837	22.5	0.519
	12.409V	5.139V	3.378V	5.130V	33.796				230.76V
2	2.399A	0.974A	0.978A	0.391A	40.068	75.187%	873	23.9	0.751
	12.405V	5.137V	3.377V	5.120V	53.291				230.90V
3	3.562A	1.462A	1.451A	0.587A	59.575	82.391%	894	24.4	0.798
	12.400V	5.136V	3.375V	5.110V	72.308				230.88V
4	4.789A	1.950A	1.957A	0.785A	79.982	87.696%	947	26.7	0.824
	12.396V	5.134V	3.374V	5.100V	91.204				230.71V

The results above are not used in the certification process

Ripple Measurements

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	28.0 mV	10.6 mV	9.0 mV	14.1 mV	Pass
20% Load	33.1 mV	12.0 mV	10.6 mV	14.1 mV	Pass
30% Load	37.4 mV	13.1 mV	11.3 mV	14.0 mV	Pass
40% Load	38.4 mV	14.3 mV	12.2 mV	14.4 mV	Pass
50% Load	41.3 mV	15.2 mV	11.7 mV	14.5 mV	Pass
60% Load	45.8 mV	18.9 mV	12.2 mV	15.8 mV	Pass
70% Load	51.0 mV	19.8 mV	13.0 mV	20.3 mV	Pass
80% Load	56.9 mV	22.2 mV	15.4 mV	15.9 mV	Pass
90% Load	63.1 mV	24.4 mV	16.9 mV	16.3 mV	Pass
100% Load	70.0 mV	27.3 mV	22.5 mV	35.0 mV	Pass
110% Load	78.6 mV	30.5 mV	21.4 mV	21.6 mV	Pass
Crossload 1	32.1 mV	15.7 mV	18.5 mV	14.3 mV	Pass
Crossload 2	69.0 mV	26.8 mV	16.4 mV	21.0 mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	30.9 mV	17.2 mV	12.3 mV	14.4 mV	Pass
20% Load	36.7 mV	17.0 mV	12.9 mV	14.1 mV	Pass
30% Load	39.2 mV	17.1 mV	12.7 mV	14.5 mV	Pass
40% Load	39.9 mV	17.6 mV	13.5 mV	15.1 mV	Pass
50% Load	44.5 mV	21.5 mV	14.6 mV	15.9 mV	Pass
60% Load	49.2 mV	25.1 mV	15.9 mV	17.1 mV	Pass
70% Load	53.9 mV	26.6 mV	16.8 mV	17.3 mV	Pass
80% Load	57.9 mV	27.7 mV	18.2 mV	18.5 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
90% Load	65.0 mV	29.1 mV	19.5 mV	19.9 mV	Pass
100% Load	69.6 mV	31.0 mV	21.8 mV	51.8 mV	Fail
110% Load	74.9 mV	30.9 mV	23.7 mV	40.9 mV	Pass
Crossload 1	36.8 mV	25.4 mV	30.8 mV	14.9 mV	Pass
Crossload 2	67.6 mV	29.5 mV	23.0 mV	21.9 mV	Pass

The results above are not used in the certification process

Kolink Continuum 1200W (#2)



Top side

CONTINUUM 1200W					
FULLY MODULAR HIGH PERFORMANCE PSU					
AC Input	100-240 V, 15A, 50-60 Hz				
DC Output	+3.3 V	+5 V	+12 V	-12 V	+5 VSB
Max. Current	25 A	25 A	100 A	0.3 A	3 A
Max. Power	130 W		1200 W	3.6 W	15 W
Rec. 24/7 Power	1200 W Continuous Power				
Total Power	1200 W (rated max. Output)				

Power specifications label

Cybenetics [REDACTED]

ETA [REDACTED]

LAMBDA [REDACTED]

SAFE [REDACTED]

DELTA [REDACTED]

PHI [REDACTED]

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