



Enermax PlatiGemini 1200W

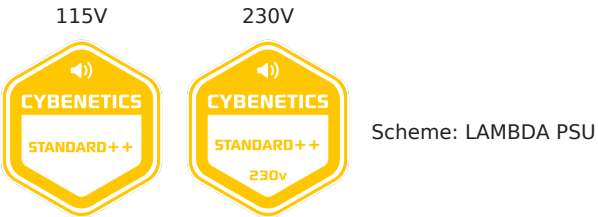
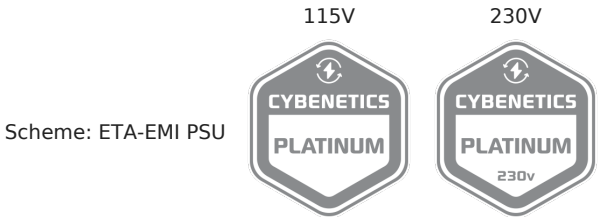
□ 2413010030005

Lab ID EM12002385

Certification ID 252385

Test Result Report ID: 24PS2385A

Certificate Issue Date: Mar 14, 2024



Outside Validation Scope

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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	Enermax
Model	PlatiGemini 1200W
OEM/ODM	RSY
Serial Number	2413010030005
Product Specifications	
Manufacturer-Provided Information	
(Vrms)	100-240
(Arms)	15-8

□□□□ (Hz)	50-60
□□□□ (W)	1200
Operating Temperature (Continuous Full Load) (°C)	
□□	ATX12V
□□□□	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
□□	135mm Double Ball Bearing Fan (ZFB132512H)
□□□□	✓
Cybenetics Testing Information	
Lab ID	EM12002385
Date of receipt	Feb 27, 2024
Testing Date	Mar 12, 2024
Report Issued Date	Mar 14, 2024
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

□□□□ (Non-accredited measurements)

□□□□				
□□	□□□□	□□□□□	Gauge	In Cable Capacitors
ATX □□ 20+4 pin (600mm)	1	1	16-22AWG	□
4+4 pin EPS 12V □□ (700mm)	2	2	16AWG	□
6+2pin PCIe□□ (600mm)	3	3	16-18AWG	□
12+4 pin PCIe (600mm) (600W)	1	1	16-24AWG	□
SATA□□ (450mm+150mm+150mm+150mm)	2	8	18AWG	□
4-pin Molex (450mm+150mm+150mm+150mm)	1	4	18AWG	□
AC Power Cord (1400mm) - C13 coupler	1	1	14AWG	-

12V Only				
ATX 10 pin (600mm)	1	1	18AWG	

		3.3V	5V	12V	5VSB	-12V
		20	20	100	3	0.4
		100		1200	15	4.8
(W)		1200				

Parts Description

General Data	
Manufacturer (OEM)	RSY
PCB Type	Double-Sided
Primary Side	
Transient Filter	2x Y caps, 1x X caps, 2x CM chokes, 1x MOV
Inrush Protection	1x NTC Thermistor SCK-0512 (5 Ohm @25°C) & Relay
Bridge Rectifier(s)	2x
APFC MOSFETs	4x Infineon IPB50R140CP (550V, 15A @ 100°C, Rds(on): 0.14Ohm)
APFC Boost Diode	3x CREE C3D06060A (600V, 6A @ 152°C)
Bulk Cap(s)	2x Nippon Chemi-Con (420V, 560uFeach or 1320both, 2000h @ 105°C, KHE)
Main Switchers	4x Infineon IPB50R140CP (550V, 15A @ 100°C, Rds(on): 0.14Ohm)
APFC Controller	1x Texas Instrument UCC28180 & 1x Champion CM03X
Topology	Primary side: APFC, Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	8x Infineon BSC014N04LS (40V, 100A @ 100°C, Rds(on): 1.4mOhm)
5V & 3.3V	DC-DC Converters: 6x Infineon BSC0906NS (30V, 40A @ 100°C, Rds(on): 4.5mOhm) PWM Controller(s): 2x ANPEC APW7160A
Filtering Capacitors	Electrolytic: 2x Rubycon (3-6,000 @ 105°C, YXS), 6x Rubycon (6-10000 @ 105°C, ZLH), Polymer: 10x FPCAP , 28x United Chemi-Con ,13x Unicon

Supervisor IC	1S313I-SAG
Fan Model	ZIC ZFB132512H (135mm, 12V, 0.45A, Double Ball Bearing Fan)
5VSB/12VSB Circuit	
High Side Rectifier	1x Shenzhen Foster Semiconductor FIR4N70BLG (700V, 2.5A @ 100°C, Rds(on):3mOhm)
Low Side Rectifier	[5VSB] 1x PFR20L100CT (20A, 100V), [12VSB] 1x MBR20150GCT (20A, 150V)
Standby PWM Controller	INFSitronix IN2P070C

Test Results

Temperature & Compliance Info

□□□□ (°C /°F)	28-32 / 82.4-89.6
□□ ErP Lot3/6□□	✓
□□ (EU) No 617/2013□□	✓
ALPM (Alternative Low Power Mode) compatible	✓
ATX v3.1 PSU Power Excursion	✓

Performance Summary

115V

Accredited	
□□□□ (>1450 load combinations)	90.744%
Average Noise Output (>1450 Load Combinations)	34.51dBA
PF□□□ (>1450 Load Combinations)	0.989
Efficiency With 10W (≤500W) or 2% (>500W) Load	73.421%
□□□□□	0.0763W
Non-Accredited	
12V Ripple (Full Load)	12.96mV
5V Ripple (Full Load)	10.19mV
3.3V Ripple (Full Load)	21.64mV
5VSB Ripple (Full Load)	25.37mV
12V Load Regulation	0.20%

5V Load Regulation	0.42%
3.3V Load Regulation	1.31%
5VSB Load Regulation	0.85%
Inrush Current	34.090A

230V

Accredited		
η _{10W} (>1450 load combinations)	92.884%	
Average Noise Output (>1450 Load Combinations)	33.92dBA	
PF _{10W} (>1450 Load Combinations)	0.951	
Efficiency With 10W (≤500W) or 2% (>500W) Load	73.719%	
η _{2%}	0.1166W	
Non-Accredited		
12V Ripple (Full Load)	14.25mV	
5V Ripple (Full Load)	9.94mV	
3.3V Ripple (Full Load)	20.34mV	
5VSB Ripple (Full Load)	19.79mV	
12V Load Regulation	0.19%	
5V Load Regulation	0.42%	
3.3V Load Regulation	1.28%	
5VSB Load Regulation	0.79%	
Inrush Current	66.400A	
12V Transient Response (200%)	11.41V	
5V Transient Response (200%)	4.943V	
3.3V Transient Response (200%)	3.158V	
5VSB Transient Response (200%)	4.978V	
η _{10W} & PG _{10W}	23.90ms	
AC Loss to PWR_OK Hold Up Time	21.30ms	
PWR_OK Inactive to DC Loss Delay	2.60ms	
PSU Timings: T1 (20% / 100%)	112.0ms	113.0ms
PSU Timings: T3 (20% / 100%)	124.0ms	123.0ms
OPP (26.56°C / 43.64°C)	150.13%	150.13%

Hold-Up Time (ms)	23.9
AC Loss to PWR_OK Hold Up Time (ms)	21.3
PWR_OK Inactive to DC Loss Delay (ms)	2.6



Tables

115V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	115.17 V	115.12 V	113.85 V	115.18 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:	1.415	1.415	1.340	1.416	1.490	PASS
Mains Voltage THD:	0.13 %	0.11 %	N/A	0.15 %	2.00 %	PASS
Real Power:	0.076 W	0.021 W	N/A	0.103 W	N/A	N/A
Apparent Power:	13.593 W	13.589 W	N/A	13.598 W	N/A	N/A
Power Factor:	0.007	N/A	N/A	N/A	N/A	N/A

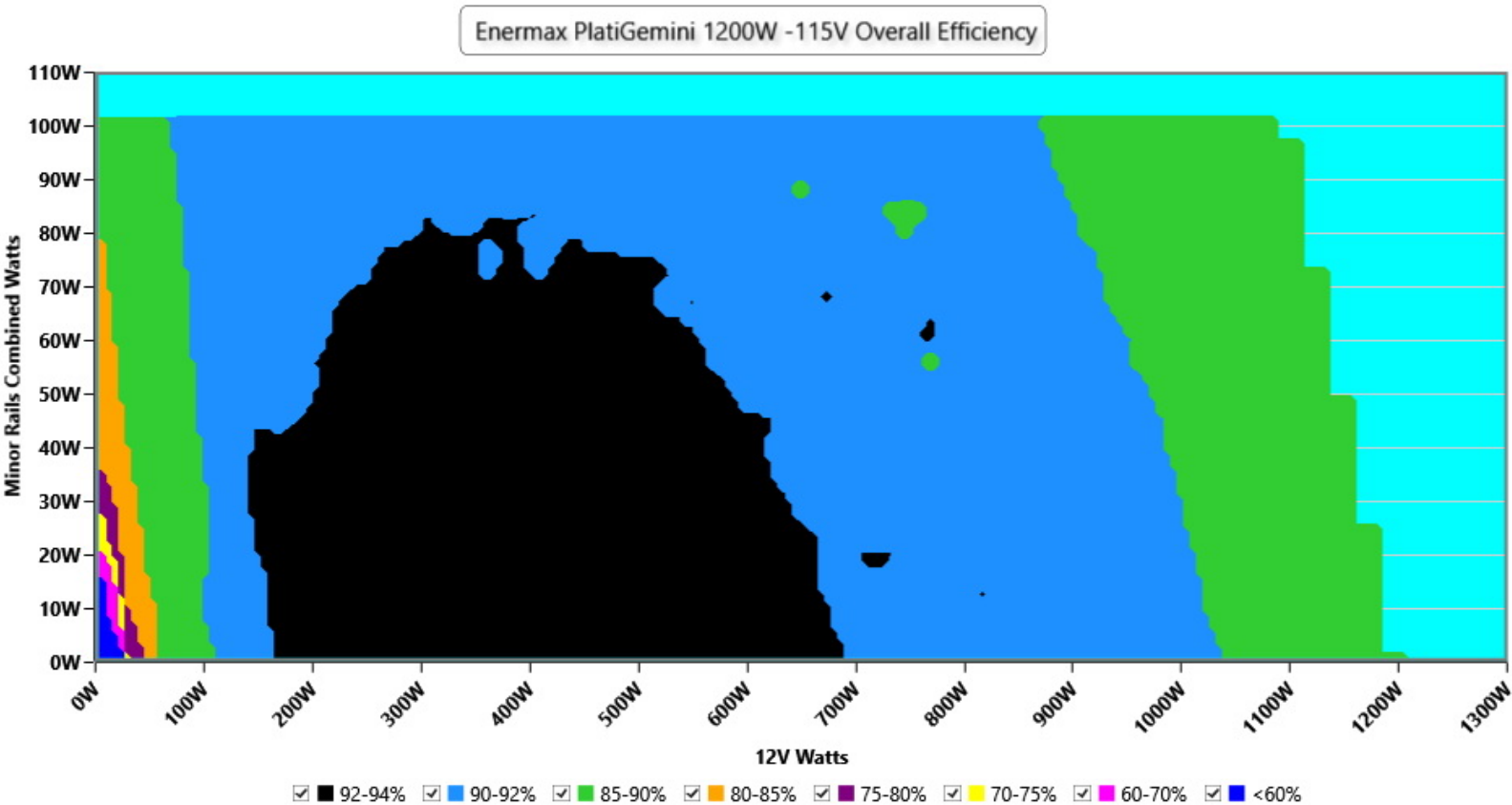
230V

Detailed Results						
	Average	Min	Limit Min	Max	Limit Max	Result
Mains Voltage RMS:	231.01 V	230.90 V	227.70 V	231.08 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:	1.417	1.416	1.340	1.419	1.490	PASS
Mains Voltage THD:	0.17 %	0.14 %	N/A	0.27 %	2.00 %	PASS
Real Power:	0.117 W	0.095 W	N/A	0.162 W	N/A	N/A
Apparent Power:	20.830 W	20.642 W	N/A	21.037 W	N/A	N/A

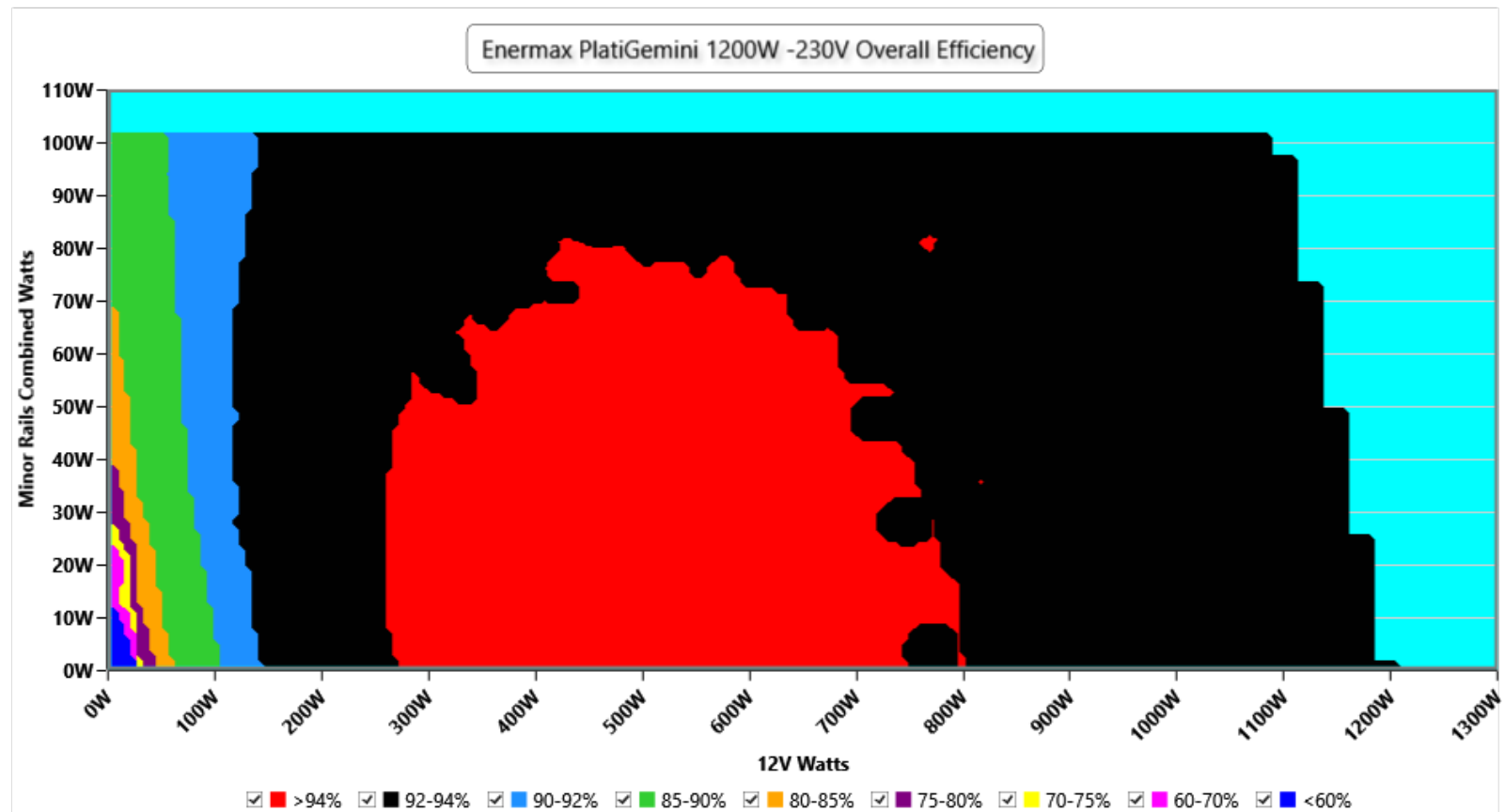
Power Factor:	0.005	N/A	N/A	N/A	N/A	N/A
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115V



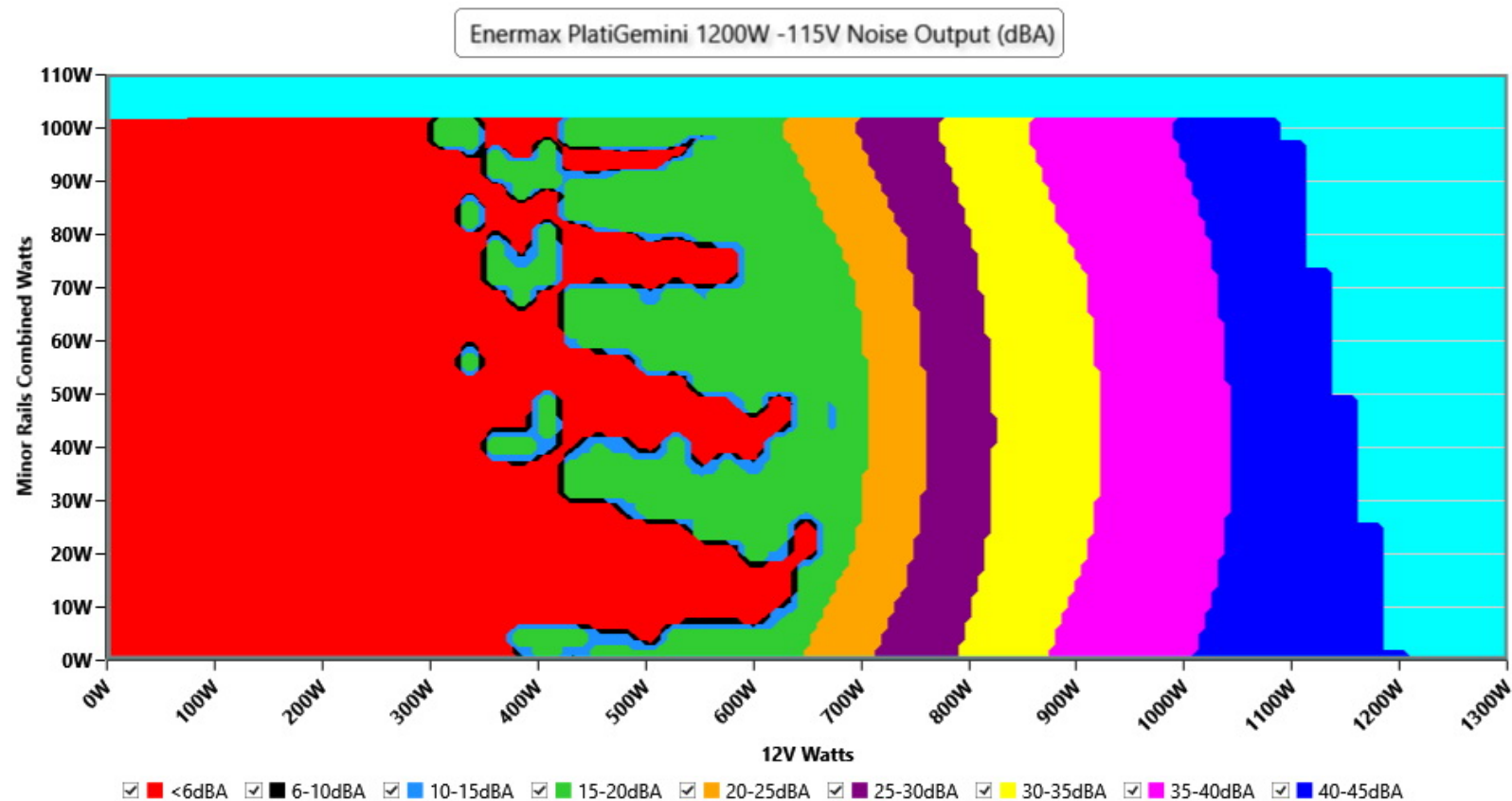
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



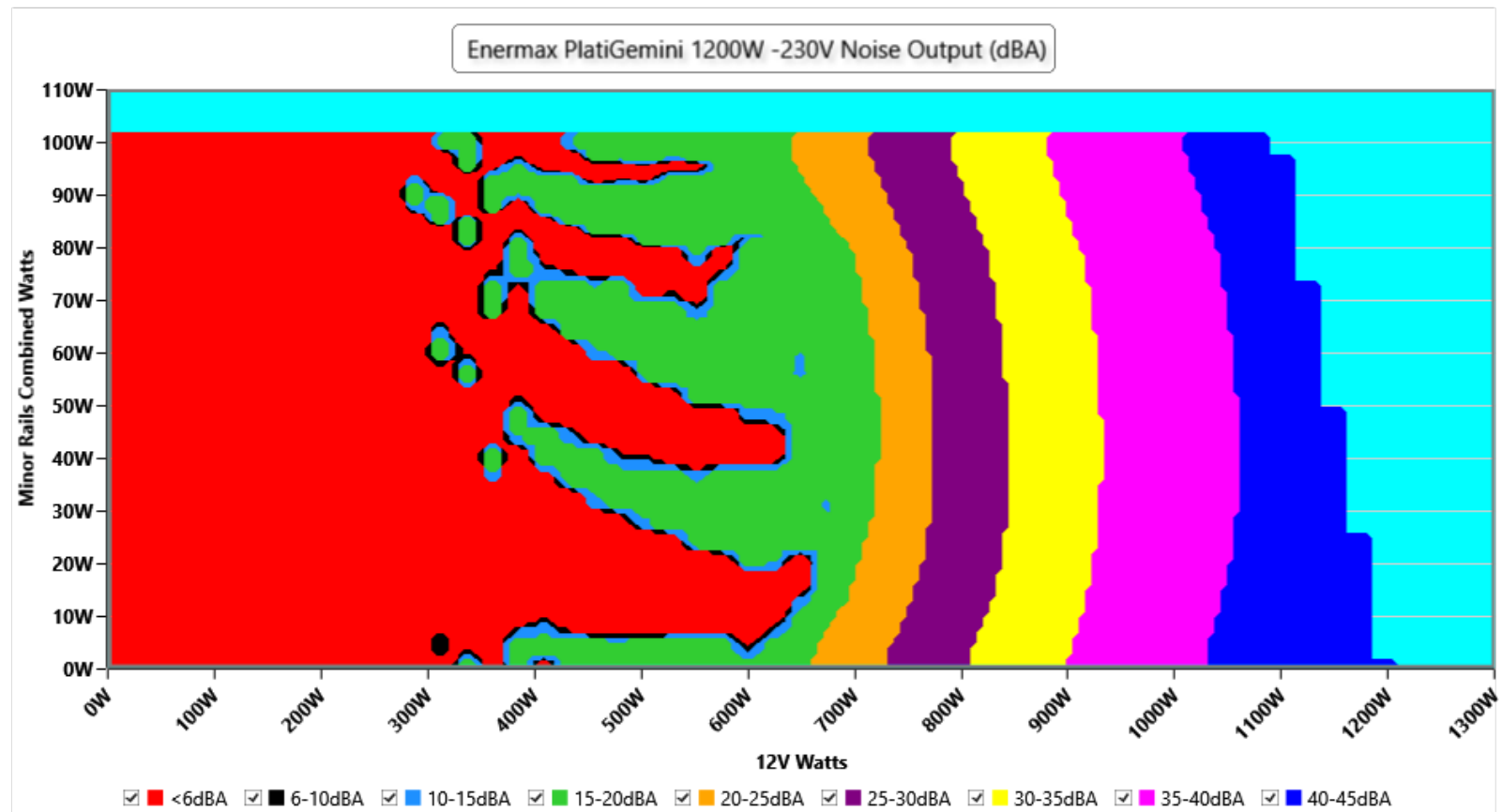
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



115V

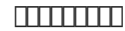


The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails



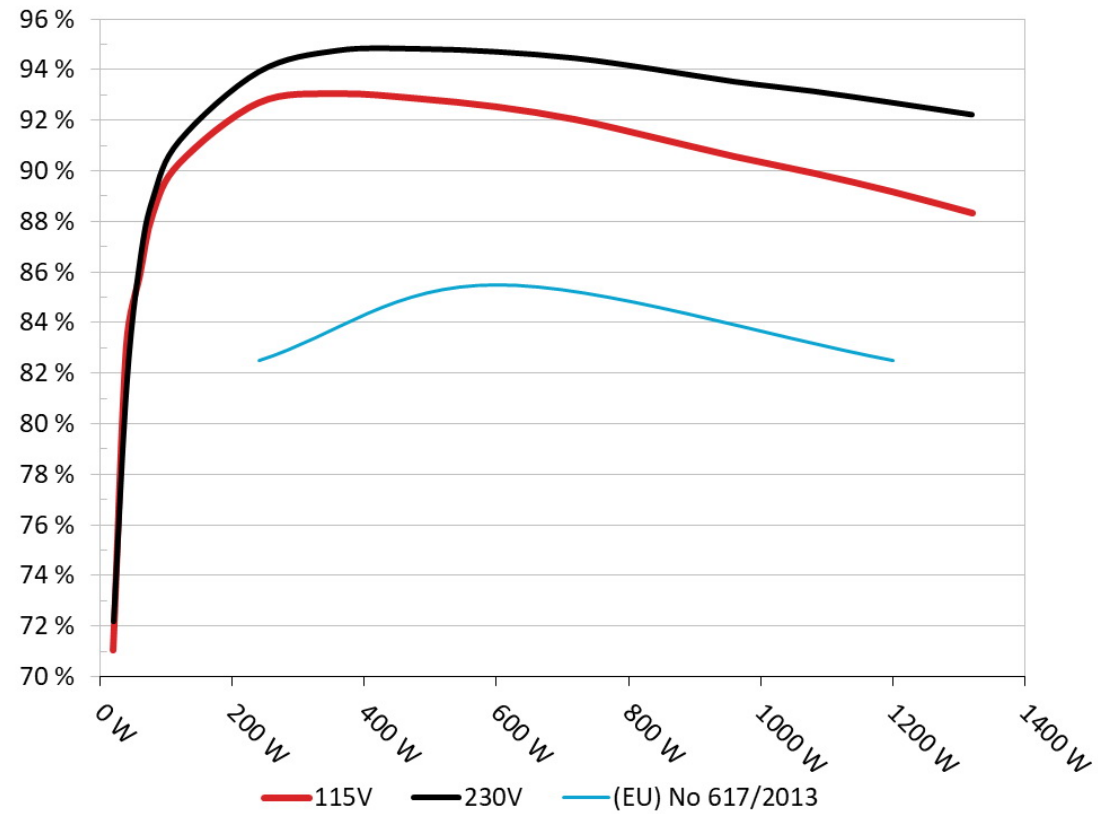
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance



Efficiency: Enermax PlatiGemini 1200W

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

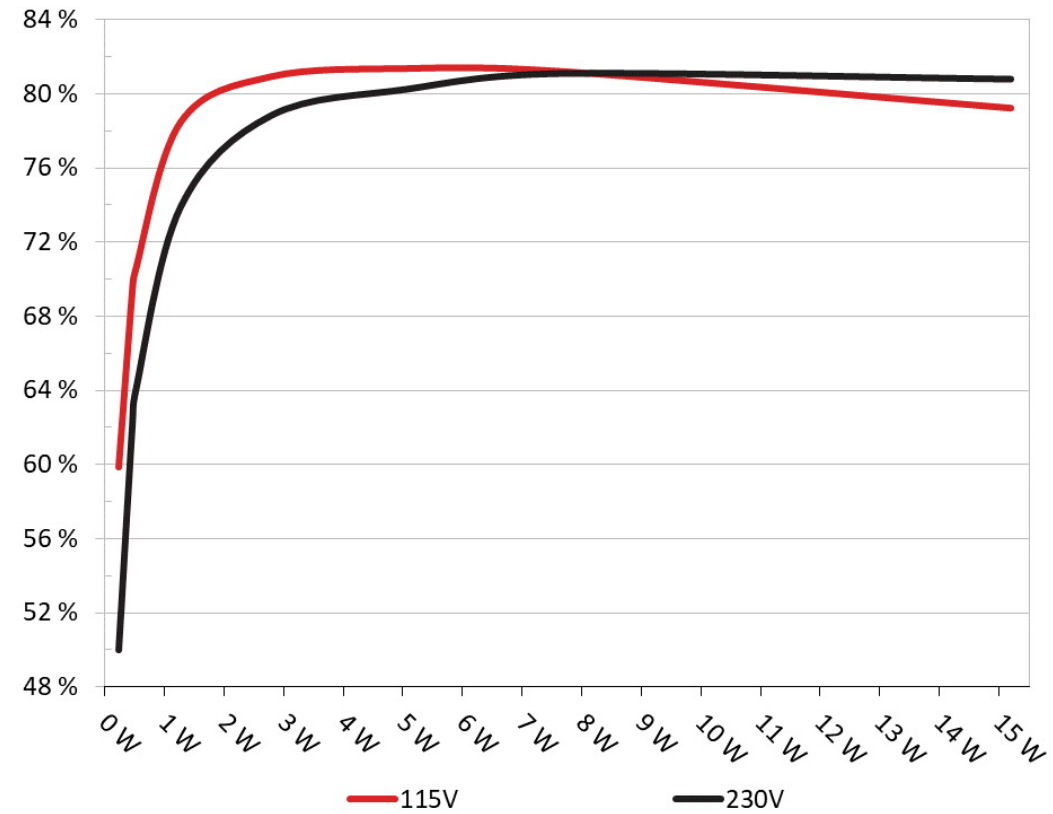


The PSU's efficiency under high ambient temperatures with 115V and 230V input. For this graph the results of the 10-110% load regulation table are used

5Vsb□□□

5VSB Efficiency: Enermax PlatiGemini 1200W

Ambient: 34°C - 36°C (93.2°F - 96.8°F)



□□

This graph depicts the efficiency levels of the 5VSB rail with 115V and 230V input

5Vsb (ErP Lot3/6 & CEC)

115V

#	5VSB	DC/AC ()		PF/AC
1	0.045A	0.228W	59.888%	0.028
	5.068V	0.381W		115.15V
2	0.09A	0.456W	69.389%	0.048
	5.068V	0.657W		115.15V
3	0.55A	2.788W	80.912%	0.216
	5.067V	3.446W		115.15V
4	1A	5.069W	81.349%	0.32
	5.067V	6.231W		115.16V
5	1.5A	7.604W	81.203%	0.385
	5.068V	9.364W		115.16V
6	3A	15.204W	79.219%	0.475
	5.067V	19.192W		115.15V

230V

#	5VSB	DC/AC ()		PF/AC
1	0.045A	0.228W	49.986%	0.01
	5.069V	0.457W		230.39V
2	0.09A	0.456W	62.109%	0.016
	5.069V	0.734W		230.39V
3	0.55A	2.788W	78.823%	0.076
	5.068V	3.536W		230.39V
4	1A	5.069W	80.24%	0.129
	5.068V	6.317W		230.39V
5	1.5A	7.604W	81.082%	0.181
	5.068V	9.379W		230.4V
6	3A	15.205W	80.78%	0.292
	5.068V	18.824W		230.39V

Supplementary Tests (For Reference)

10-110%

115V

	12V	5V	3.3V	5VSB	DC/AC ()		(RPM)	(dB[A])	(/)	PF/AC
10%	8.083A	1.979A	1.995A	0.986A	120.036	89.784%	0	<6.0	44.1°C	0.971
	12.177V	5.054V	3.308V	5.072V	133.694				40.07°C	115.16V
20%	17.174A	2.969A	2.997A	1.184A	240.006	92.171%	0	<6.0	44.98°C	0.985
	12.175V	5.053V	3.304V	5.069V	260.394				40.65°C	115.12V
30%	26.567A	3.465A	3.5A	1.382A	359.49	92.533%	0	<6.0	45.98°C	0.99
	12.174V	5.052V	3.301V	5.065V	388.494				41.21°C	115.1V
40%	36.042A	3.963A	4.005A	1.581A	479.853	92.343%	731	18.9	41.85°C	0.993
	12.170V	5.048V	3.296V	5.061V	519.639				47.01°C	115.07V
50%	45.130A	4.958A	5.013A	1.781A	599.627	92.016%	1000	29.1	42.17°C	0.994
	12.167V	5.044V	3.292V	5.056V	651.659				47.71°C	115.03V
60%	54.282A	5.953A	6.025A	1.98A	720.173	91.509%	1293	36.8	42.79°C	0.995
	12.165V	5.042V	3.287V	5.052V	786.992				49.01°C	115V
70%	63.369A	6.947A	7.038A	2.18A	839.911	90.792%	1627	43.5	43.11°C	0.996
	12.164V	5.04V	3.283V	5.048V	925.087				50.18°C	114.97V
80%	72.532A	7.942A	8.054A	2.281A	959.908	90.051%	1775	45.5	43.67°C	0.996
	12.160V	5.038V	3.278V	5.043V	1065.966				52.03°C	114.93V
90%	82.023A	8.442A	8.553A	2.382A	1079.745	89.392%	1774	45.5	44.9°C	0.996
	12.157V	5.036V	3.274V	5.039V	1207.879				54.01°C	114.89V
100%	91.320A	8.939A	9.084A	2.98A	1199.78	88.655%	1771	45.4	45.28°C	0.996
	12.156V	5.035V	3.27V	5.034V	1353.316				55.29°C	114.84V
110%	100.560A	9.936A	10.199A	2.983A	1320.394	87.815%	1772	45.4	46.89°C	0.996
	12.153V	5.033V	3.265V	5.03V	1503.613				57.85°C	114.8V
CL1	0.115A	11.919A	12.025A	0A	101.303	86.346%	737	19.2	40.51°C	0.969
	12.182V	5.051V	3.301V	5.074V	117.323				46.01°C	115.16V

CL2	0.115A	19.814A	0A	0A	101.397	84.999%	634	12.8	40.18°C	0.969
	12.183V	5.047V	3.312V	5.077V	119.295				47.25°C	115.16V
CL3	0.115A	0A	20.033A	0A	67.398	79.849%	736	19.2	40.2°C	0.946
	12.179V	5.058V	3.294V	5.072V	84.408				49.27°C	115.16V
CL4	98.788A	0A	0A	0A	1200.144	89.324%	1785	45.6	45.32°C	0.996
	12.148V	5.041V	3.278V	5.04V	1343.591				56.3°C	114.85V

The results above are not used in the certification process

230V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□ (RPM)	□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
10%	8.080A	1.978A	1.994A	0.986A	120.006	90.693%	0	<6.0	44.38°C	0.817
	12.179V	5.056V	3.309V	5.073V	132.329				40.35°C	230.36V
20%	17.169A	2.968A	2.996A	1.184A	239.962	93.407%	0	<6.0	44.94°C	0.938
	12.176V	5.054V	3.305V	5.069V	256.893				40.58°C	230.36V
30%	26.551A	3.464A	3.499A	1.382A	359.321	94.248%	0	<6.0	45.98°C	0.962
	12.175V	5.053V	3.301V	5.065V	381.25				41.23°C	230.36V
40%	36.025A	3.961A	4.004A	1.581A	479.705	94.315%	738	19.2	41.85°C	0.971
	12.172V	5.05V	3.297V	5.061V	508.622				46.88°C	230.35V
50%	45.116A	4.956A	5.012A	1.78A	599.489	94.196%	966	28	42.4°C	0.98
	12.168V	5.045V	3.292V	5.057V	636.421				47.89°C	230.34V
60%	54.266A	5.95A	6.023A	1.98A	720.036	93.939%	1270	36.2	42.75°C	0.983
	12.166V	5.043V	3.288V	5.052V	766.538				48.82°C	230.32V
70%	63.353A	6.945A	7.036A	2.179A	839.765	93.506%	1592	42.7	43.38°C	0.983
	12.164V	5.041V	3.283V	5.048V	898.093				50.47°C	230.31V
80%	72.514A	7.94A	8.051A	2.28A	959.756	93.017%	1779	45.6	43.91°C	0.982
	12.162V	5.038V	3.279V	5.044V	1031.811				52.11°C	230.29V
90%	82.004A	8.439A	8.55A	2.381A	1079.577	92.637%	1774	45.5	44.64°C	0.981
	12.159V	5.037V	3.275V	5.04V	1165.389				53.67°C	230.27V
100%	91.301A	8.937A	9.081A	2.98A	1199.626	92.185%	1775	45.5	45.66°C	0.98
	12.157V	5.035V	3.27V	5.035V	1301.304				56.01°C	230.26V

110%	100.541A	9.933A	10.196A	2.982A	1320.255	91.71%	1773	45.5	46.98°C	0.98
	12.154V	5.034V	3.266V	5.031V	1439.608				57.96°C	230.24V
CL1	0.115A	11.932A	12.028A	0A	101.304	85.677%	737	19.2	40.34°C	0.794
	12.177V	5.045V	3.3V	5.072V	118.26				45.84°C	230.37V
CL2	0.115A	19.819A	0A	0A	101.395	85.174%	733	19	40.63°C	0.795
	12.182V	5.045V	3.312V	5.077V	119.06				47.72°C	230.37V
CL3	0.115A	0A	20.029A	0A	67.39	80.674%	738	19.2	40.7°C	0.728
	12.180V	5.061V	3.295V	5.072V	83.539				49.79°C	230.37V
CL4	98.777A	0A	0A	0A	1200.1	92.662%	1785	45.6	45.78°C	0.98
	12.149V	5.041V	3.279V	5.041V	1295.152				56.75°C	230.26V

The results above are not used in the certification process

20-80

115V										
□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□ (RPM)	□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
20W	1.220A	0.495A	0.498A	0.197A	20.01	70.543%	0	<6.0	39.6°C	0.772
	12.179V	5.055V	3.313V	5.077V	28.363				36.56°C	115.17V
40W	2.684A	0.692A	0.697A	0.296A	40.007	82.558%	0	<6.0	41.19°C	0.891
	12.180V	5.056V	3.312V	5.076V	48.459				37.87°C	115.16V
60W	4.149A	0.89A	0.897A	0.394A	60.006	85.304%	0	<6.0	42.22°C	0.927
	12.180V	5.056V	3.311V	5.076V	70.345				38.45°C	115.16V
80W	5.610A	1.088A	1.097A	0.493A	79.97	87.791%	0	<6.0	43.5°C	0.952
	12.180V	5.056V	3.311V	5.075V	91.09				39.55°C	115.16V

The results above are not used in the certification process

230V

□□	12V	5V	3.3V	5VSB	DC/AC (□□)	□□	□□□□ (RPM)	□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
20W	1.220A	0.495A	0.498A	0.197A	19.999	71.676%	0	<6.0	39.58°C	0.447
	12.176V	5.053V	3.312V	5.075V	27.902				36.56°C	230.35V
40W	2.684A	0.693A	0.697A	0.296A	39.998	81.099%	0	<6.0	40.59°C	0.595
	12.176V	5.053V	3.312V	5.075V	49.328				37.31°C	230.35V
60W	4.150A	0.891A	0.897A	0.394A	59.998	85.936%	0	<6.0	41.7°C	0.686
	12.177V	5.054V	3.311V	5.074V	69.817				38.18°C	230.35V
80W	5.610A	1.088A	1.096A	0.493A	79.951	88.442%	0	<6.0	42.98°C	0.737
	12.177V	5.054V	3.31V	5.074V	90.4				39.15°C	230.35V

The results above are not used in the certification process

□□□□

115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	5.90mV	5.10mV	4.22mV	6.01mV	Pass
20% Load	6.01mV	5.00mV	5.09mV	8.46mV	Pass
30% Load	6.82mV	5.20mV	5.65mV	9.32mV	Pass
40% Load	7.02mV	5.40mV	6.41mV	12.18mV	Pass
50% Load	7.43mV	5.92mV	7.17mV	11.97mV	Pass
60% Load	7.63mV	6.58mV	9.16mV	13.81mV	Pass
70% Load	8.19mV	7.91mV	9.56mV	16.30mV	Pass
80% Load	9.06mV	7.70mV	13.93mV	16.96mV	Pass
90% Load	8.96mV	8.32mV	17.44mV	20.02mV	Pass
100% Load	12.96mV	10.19mV	21.64mV	25.37mV	Pass
110% Load	13.33mV	11.83mV	23.07mV	32.06mV	Pass
Crossload1	8.78mV	6.90mV	13.27mV	16.46mV	Pass
Crossload2	5.75mV	5.92mV	7.63mV	13.75mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	5.75mV	6.89mV	14.44mV	17.27mV	Pass
Crossload4	12.77mV	9.29mV	15.09mV	15.89mV	Pass

The results above are not used in the certification process

230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	5.71mV	4.08mV	3.97mV	6.52mV	Pass
20% Load	6.16mV	5.10mV	4.93mV	10.09mV	Pass
30% Load	6.87mV	5.36mV	5.75mV	9.17mV	Pass
40% Load	6.87mV	5.71mV	6.46mV	12.79mV	Pass
50% Load	7.83mV	6.17mV	7.37mV	12.13mV	Pass
60% Load	7.58mV	6.89mV	9.26mV	13.75mV	Pass
70% Load	7.94mV	7.14mV	10.83mV	16.05mV	Pass
80% Load	8.29mV	8.11mV	14.04mV	18.29mV	Pass
90% Load	8.75mV	8.41mV	16.28mV	17.37mV	Pass
100% Load	14.25mV	9.94mV	20.34mV	19.79mV	Pass
110% Load	13.44mV	10.77mV	22.31mV	20.56mV	Pass
Crossload1	10.25mV	7.01mV	13.49mV	16.27mV	Pass
Crossload2	7.07mV	5.92mV	7.98mV	14.26mV	Pass
Crossload3	8.65mV	6.99mV	15.01mV	17.07mV	Pass
Crossload4	13.28mV	9.18mV	16.93mV	16.09mV	Pass

The results above are not used in the certification process

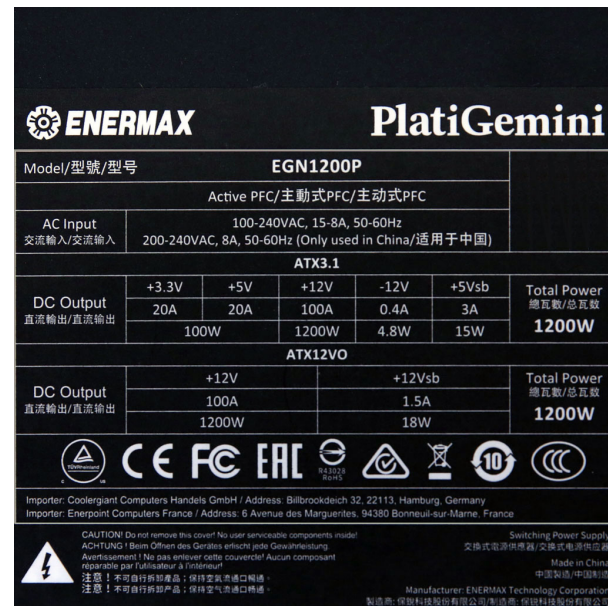
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Top side

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Power specifications label

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