



Make It Yours.

Cooler Master G700 Gold

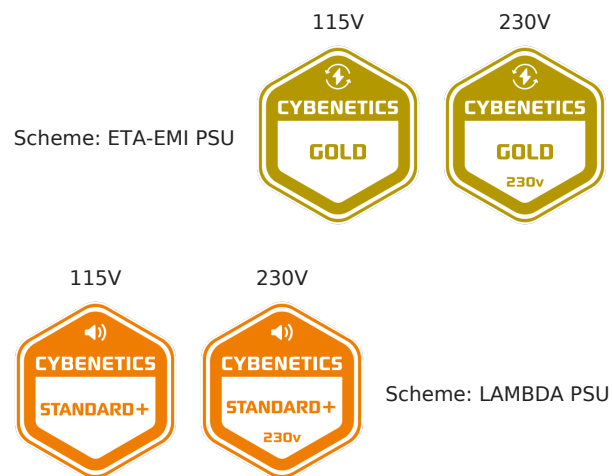


Lab ID CM70001880

Certification ID 251880

Test Result Report ID: 21PS1880A

Certificate Issue Date: Jul 29, 2021



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	Cooler Master
Model	G700 Gold
OEM/ODM	Xin Hui Yuan Tech (Fusion Power)
Serial Number	
Product Specifications	
Manufacturer-Provided Information	
□□□□ (Vrms)	100-240
□□□□ (Arms)	10-5
□□□□ (Hz)	50-60

□□□□ (W)	700
Operating Temperature (Continuous Full Load) (°C)	
□□	ATX12V
□□□□	Fixed cables
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
□□	120mm Rifle Bearing Fan (EFS-12E12M)
□□□□	X
Cybenetics Testing Information	
Lab ID	CM70001880
Date of receipt	Jul 21, 2021
Testing Date	Jul 28, 2021
Report Issued Date	Jul 29, 2021
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

□□□□ **(Non-accredited measurements)**

□□□□				
□□	□□□□	□□□□□	Gauge	In Cable Capacitors
ATX □□ 20+4 pin (560mm)	1	1	18-22AWG	□
8 pin EPS 12V □□ (630mm)/ 4+4 pin EPS 12V □□ (+125mm)	1	1 / 1	18AWG	□
6+2pin PCIe□□ (590mm+125mm)	2	4	18AWG	□
SATA□□ (530mm+120mm+120mm)	2	6	18AWG	□
4-pin Molex (500mm+120mm+120mm)	1	3	18AWG	□
□□□□				
AC Power Cord (1400mm) - C13 coupler	1	1	17AWG	-



□		3.3V	5V	12V	5VSB	-12V
□□□□	□□	20	20	58.3	3	0.3
	□	100		699.6	15	3.6
□□□□ (W)		700				

Parts Description

General Data	
Manufacturer (OEM)	Xin Hui Yuan Tech (Fusion Power)
PCB Type	Double Sided
Primary Side	
Transient Filter	4x Y caps, 2x X caps, 2x CM chokes, 1x MOV
Inrush Protection	1x NTC Thermistor MF72-5D15 (5 Ohm) & Relay
Bridge Rectifier(s)	2x GBU1006 (600V, 10A @ 100°C)
APFC MOSFETs	2x NCE Power NCE65T180F (650V, 13.2A @ 100°C, Rds(on): 0.18Ohm)
APFC Boost Diode	1x Dongguan Hoen Semiconductor CH3D08065I (650V, 8A @ 150°C)
Bulk Cap(s)	1x Elite (400V, 470uF, 2,000h @ 105°C, PL)
Main Switchers	4x Great Power GPT10N50AD (500V, 9.7A @ 100°C, Rds(on): 0.7Ohm)
APFC Controller	Champion CM6500UNX
Resonant Controller	Champion CM6901T6X
Topology	Primary side:APFC, Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	
+12V MOSFETs	4x Excelliance MOS EMP16N04HS (40V, 100A @ 100°C, Rds(on): 1.6mOhm)
5V & 3.3V	DC-DC Converters: 4x Excelliance MOS EMB04N03A (30V, 55A @ 100°C, Rds(on): 4mOhm) PWM Controller(s): 2x Excelliance MOS EM5301F
Filtering Capacitors	Electrolytic: 5x Chengx (2-4,000h @ 105°C, GR), 2x Elite (4-10,000h @ 105°C, EY), 5x (105°C, WE) Polymer: 7x FPCAP, 2x Elite
Supervisor IC	IN1S313I-SAG
Fan Model	Ever Cool EFS-12E12M (120mm, 12V, 0.25A, Rifle Bearing Fan)
5VSB Circuit	

Rectifier	1x 45R10C
Standby PWM Controller	Excelliance MOS Corp EM8569C

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	✓

Performance Summary

115V

Accredited	
□□□□ (>1450 load combinations)	88.145%
Average Noise Output (>1450 Load Combinations)	37.67dBA
PF□□□ (>1450 Load Combinations)	0.977
Efficiency With 10W (≤500W) or 2% (>500W) Load	60.920%
□□□□□	0.0514W
Non-Accredited	
12V Ripple (Full Load)	48.70mV
5V Ripple (Full Load)	31.83mV
3.3V Ripple (Full Load)	39.72mV
5VSB Ripple (Full Load)	13.66mV
12V Load Regulation	0.35%
5V Load Regulation	2.16%
3.3V Load Regulation	3.96%
5VSB Load Regulation	3.80%
Inrush Current	77.020A

230V

Accredited		
☐☐☐☐ (>1450 load combinations)	90.114%	
Average Noise Output (>1450 Load Combinations)	37.65dBA	
PF☐☐☐ (>1450 Load Combinations)	0.940	
Efficiency With 10W (≤500W) or 2% (>500W) Load	-	
☐☐☐☐☐☐	0.1075W	
Non-Accredited		
12V Ripple (Full Load)	51.84mV	
5V Ripple (Full Load)	30.85mV	
3.3V Ripple (Full Load)	39.43mV	
5VSB Ripple (Full Load)	13.22mV	
12V Load Regulation	0.35%	
5V Load Regulation	2.22%	
3.3V Load Regulation	4.02%	
5VSB Load Regulation	3.82%	
Inrush Current	63.570A	
☐☐☐☐ & PG☐☐	20.00ms	
AC Loss to PWR_OK Hold Up Time	17.60ms	
PWR_OK Inactive to DC Loss Delay	2.40ms	
PSU Timings: T1 (20% / 100%)	40.0ms	44.0ms
PSU Timings: T3 (20% / 100%)	134.0ms	132.0ms
OPP (28.91°C / 44.17°C)	121.27%	114.39%

□□□□ & PG□□

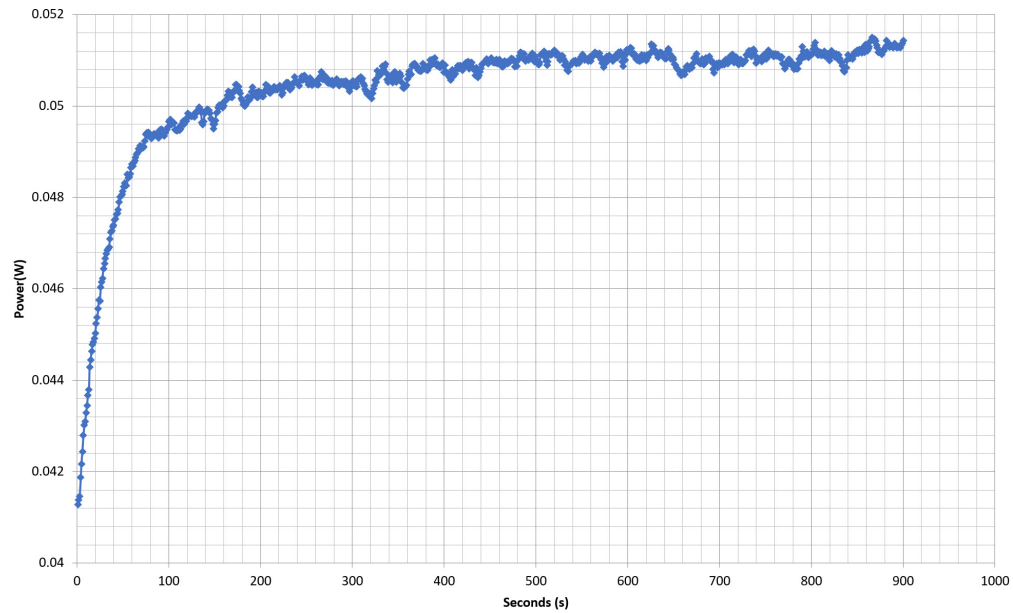
Hold-Up Time (ms)	20
AC Loss to PWR_OK Hold Up Time (ms)	17.6
PWR_OK Inactive to DC Loss Delay (ms)	2.4



Graphs

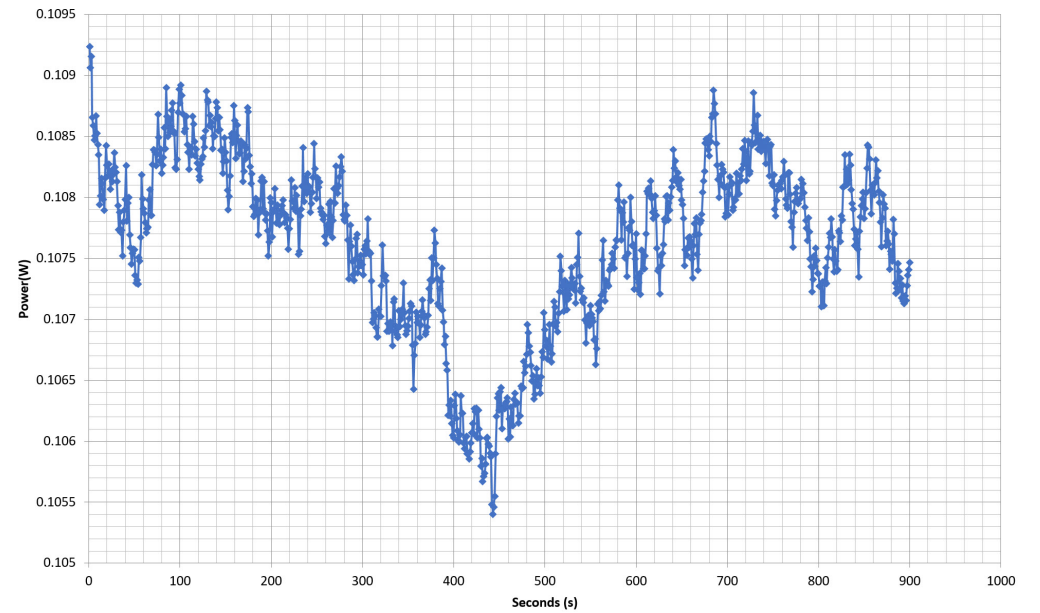
115V

Power - 26/07/2021 - 12:49



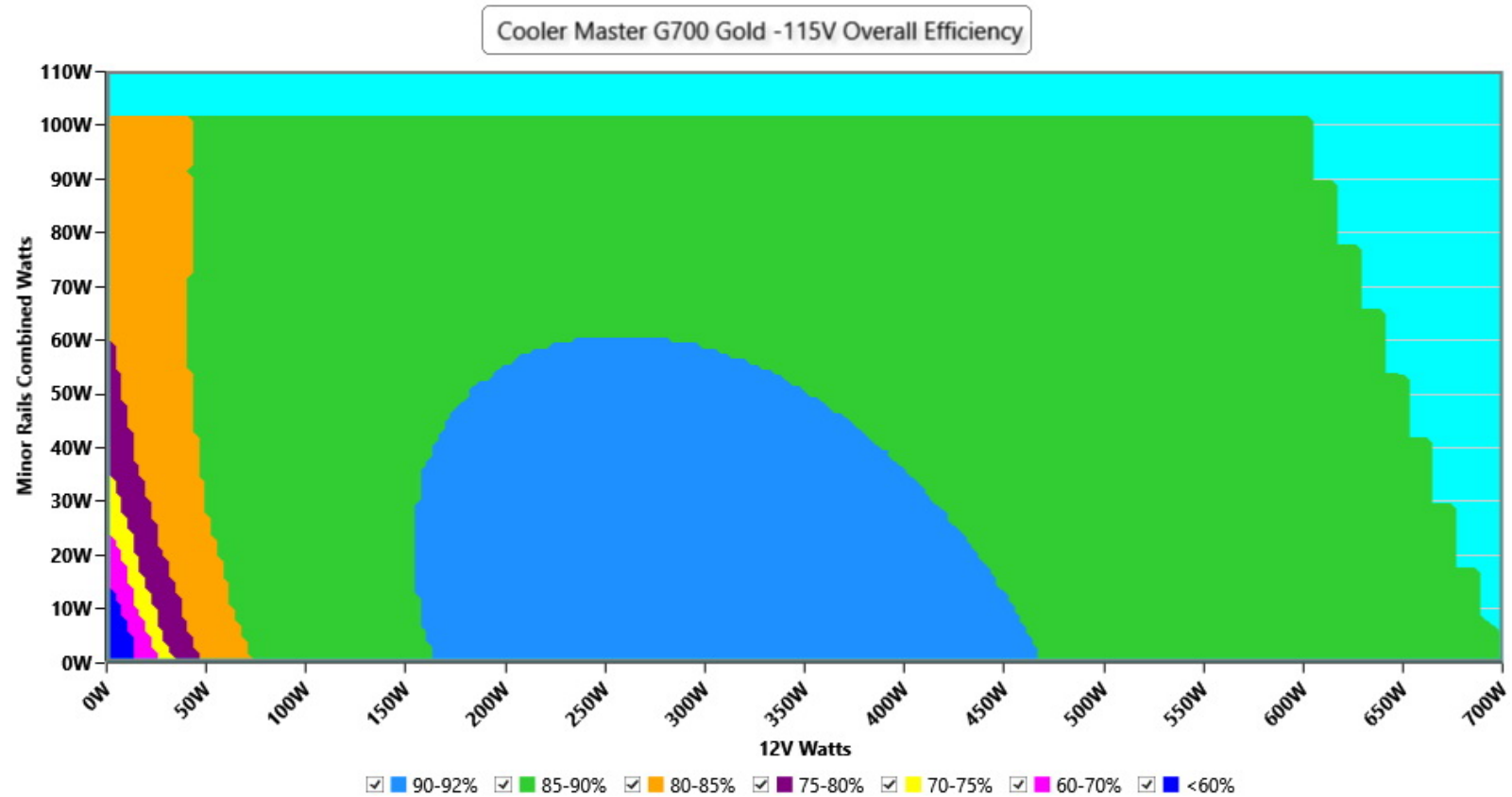
230V

Power - 26/07/2021 - 12:49

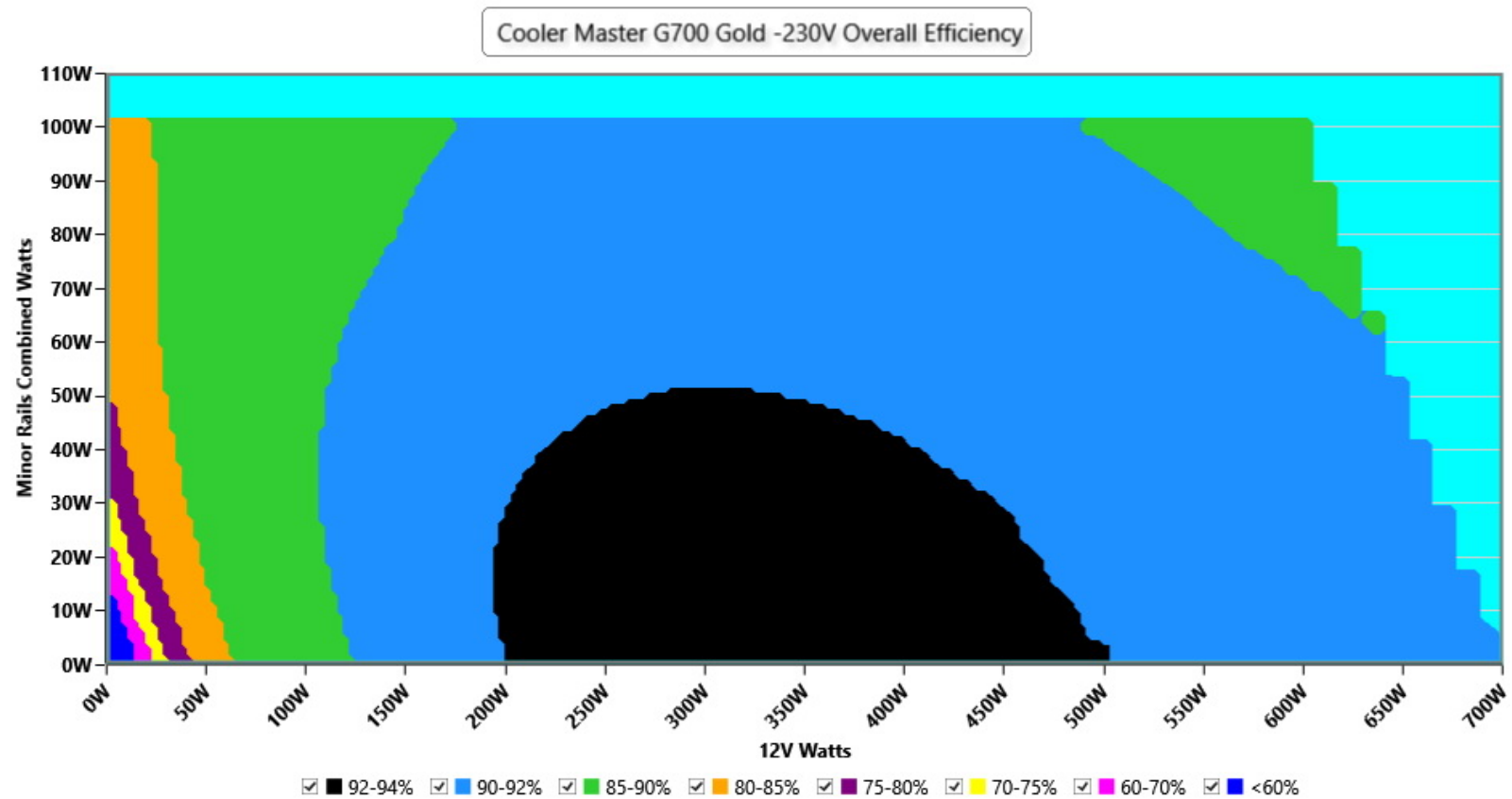




115V



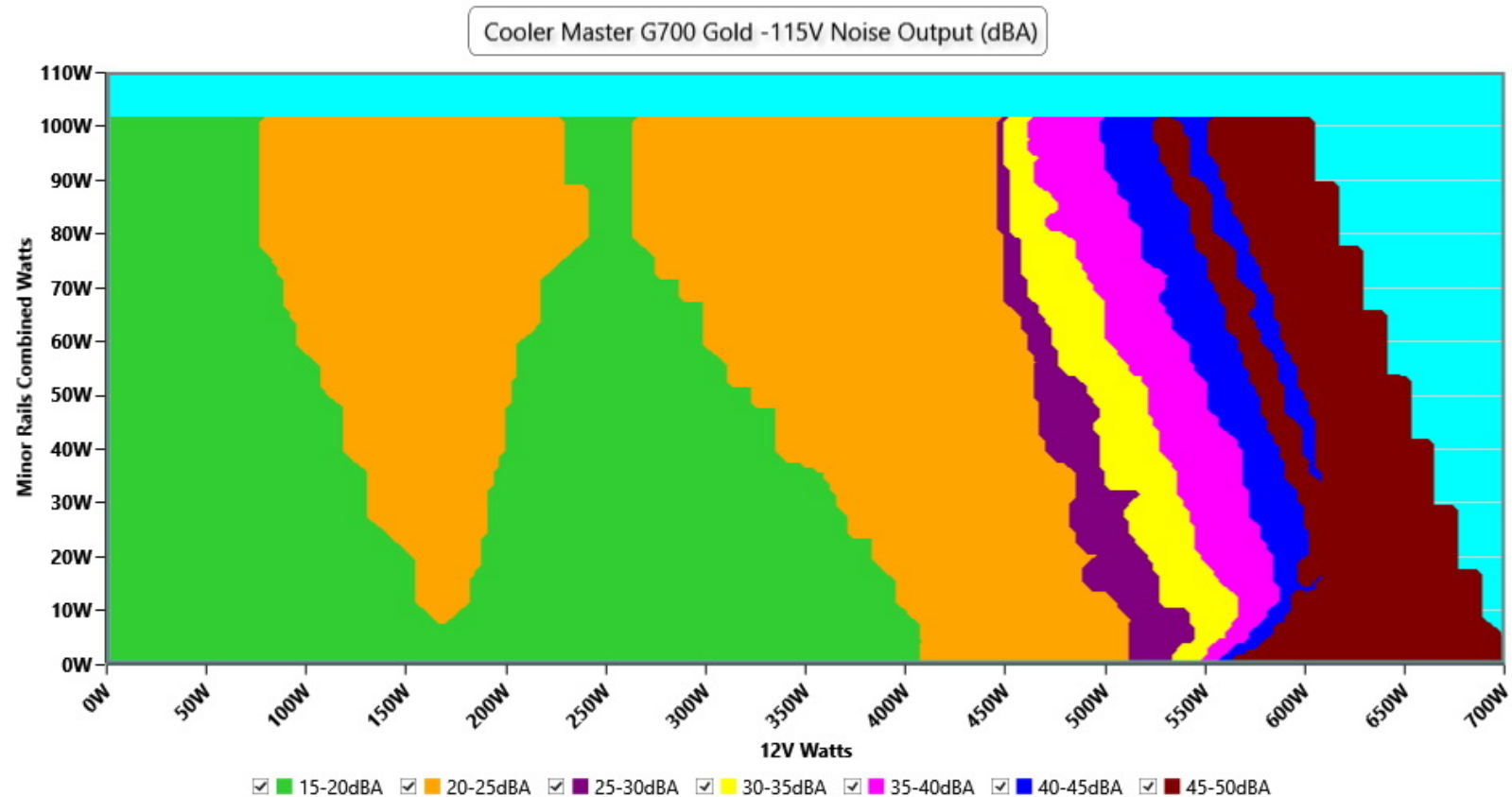
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



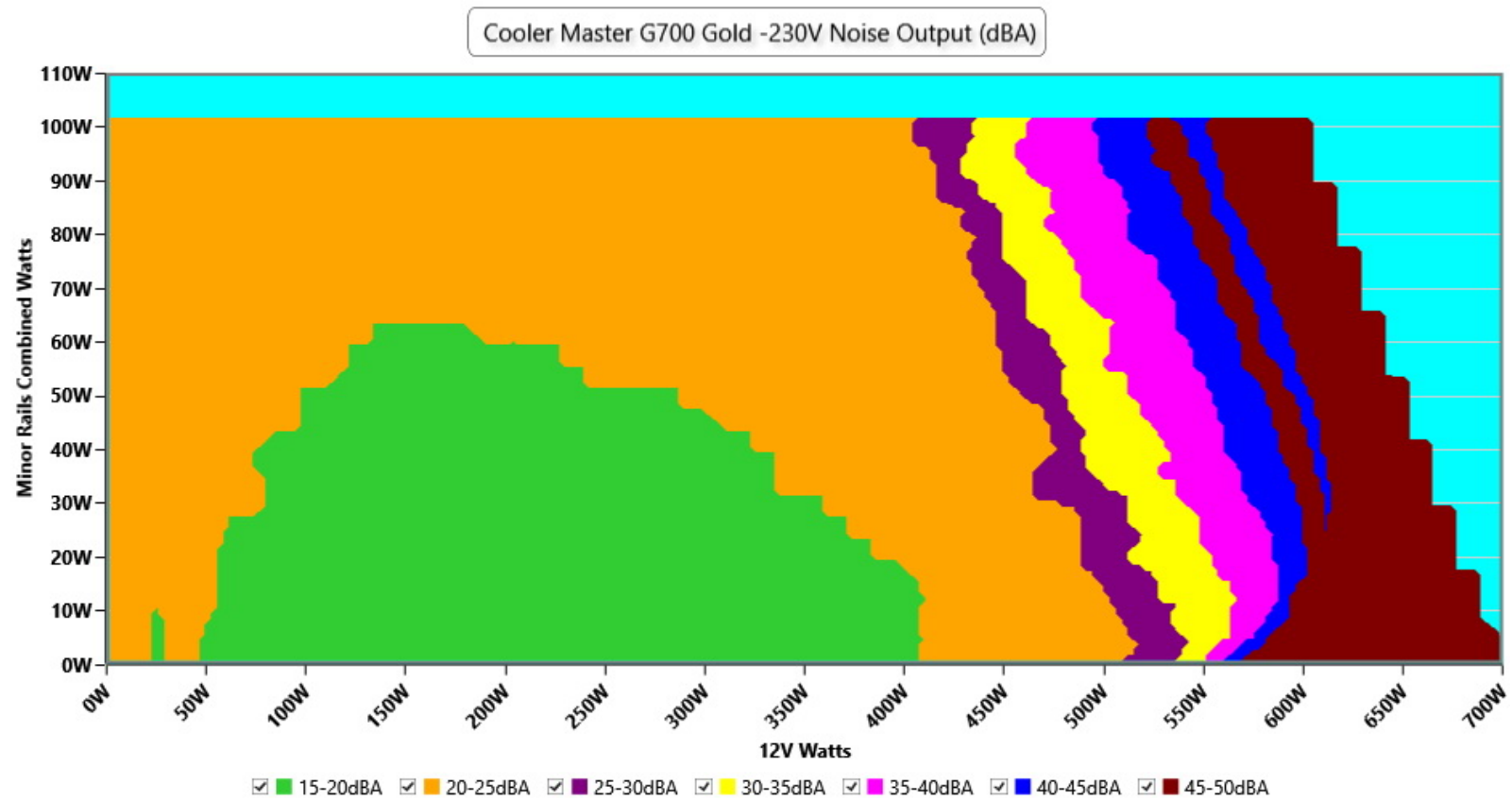
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



115V

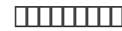


The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails



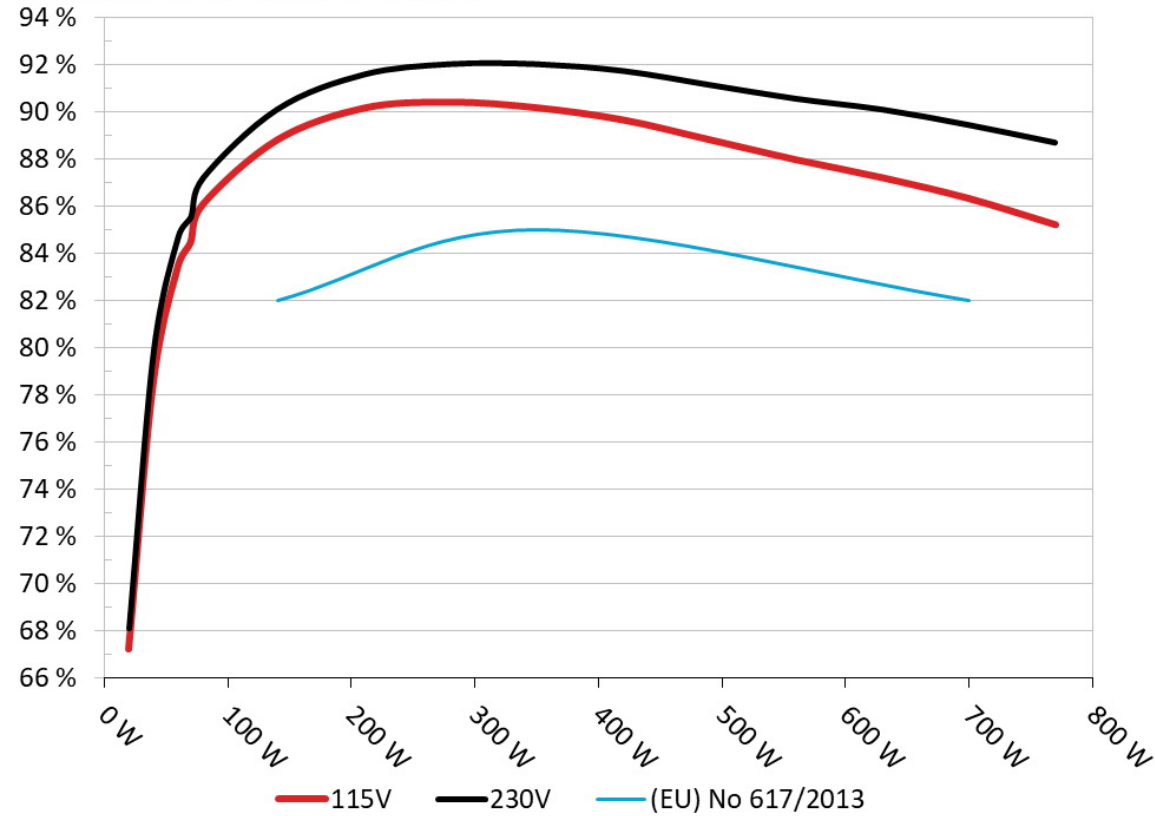
The PSU's noise in its entire operational range and under 30-32 °C ambient is depicted in this graph. The X axis represents the load on the +12V rail(s) while the Y axis is the load on the minor rails

Indicative Performance



Efficiency: Cooler Master G700 Gold

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

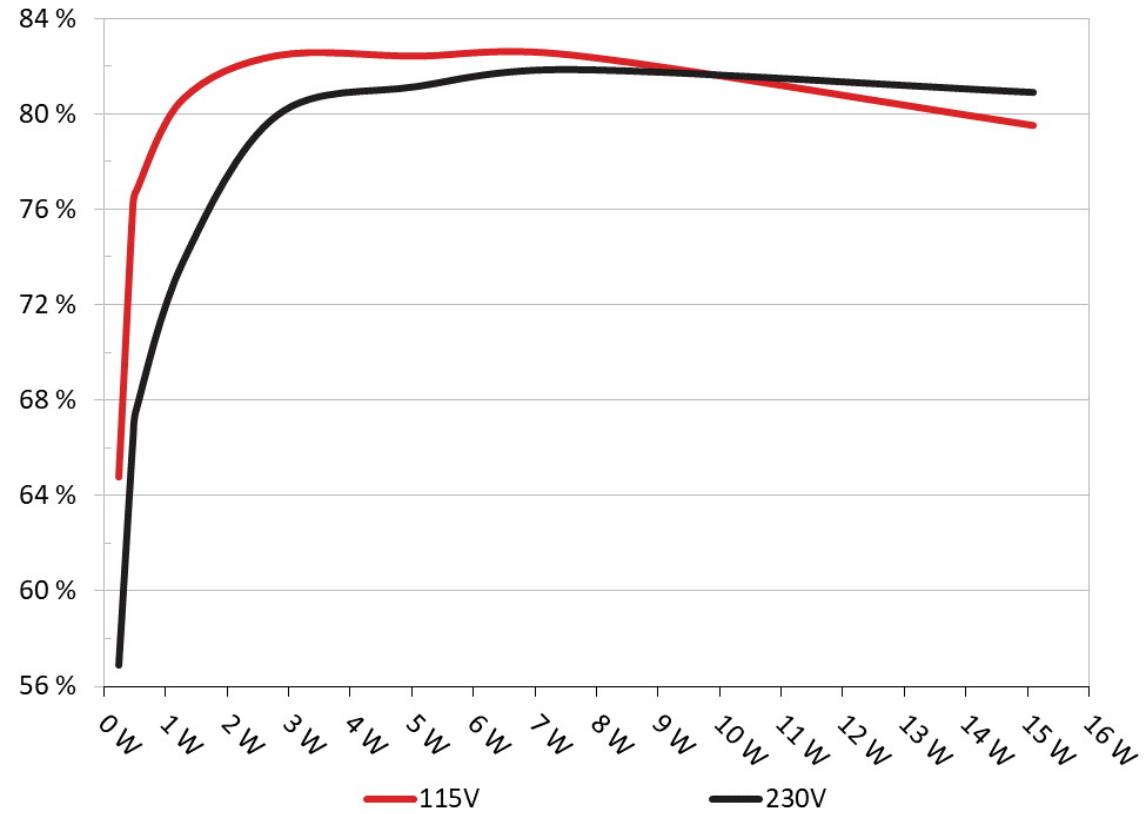


The PSU's efficiency under high ambient temperatures with 115V and 230V input. For this graph the results of the 10-110% load regulation table are used

5Vsb

5VSB Efficiency: Cooler Master G700 Gold

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	0.23W	64.804%	0.047
	5.117V	0.294W		115.13V
2	0.09A	0.461W	76.274%	0.094
	5.116V	0.604W		115.13V
3	0.55A	2.807W	82.466%	0.307
	5.102V	3.404W		115.13V
4	1A	5.091W	82.44%	0.389
	5.09V	6.175W		115.13V
5	1.5A	7.615W	82.481%	0.432
	5.076V	9.232W		115.13V
6	3.001A	15.097W	79.535%	0.485
	5.031V	18.981W		115.13V

230V

#	5VSB	DC/AC ()		PF/AC
1	0.045A	0.231W	56.874%	0.02
	5.118V	0.406W		230.27V
2	0.09A	0.461W	66.361%	0.034
	5.116V	0.695W		230.27V
3	0.55A	2.807W	79.963%	0.152
	5.102V	3.51W		230.27V
4	1A	5.091W	81.171%	0.224
	5.09V	6.271W		230.27V
5	1.5A	7.614W	81.88%	0.281
	5.075V	9.299W		230.27V
6	3.001A	15.1W	80.922%	0.367
	5.032V	18.66W		230.27V

Supplementary Tests (For Reference)

10-110%□□□

115V

□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□ (RPM)	□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
10%	4.000A	1.982A	1.971A	0.984A	70.016	84.452%	661	20.9	40.11°C	0.963
	12.104V	5.046V	3.348V	5.08V	82.906				44.68°C	115.14V
20%	9.012A	2.98A	2.968A	1.185A	139.976	88.815%	667	21.7	40.66°C	0.968
	12.102V	5.035V	3.335V	5.064V	157.604				45.89°C	115.14V
30%	14.380A	3.483A	3.475A	1.387A	210.029	90.168%	672	20.6	41.44°C	0.969
	12.099V	5.025V	3.324V	5.049V	232.931				47.41°C	115.14V
40%	19.749A	3.989A	3.985A	1.59A	280.09	90.426%	675	20.0	41.8°C	0.974
	12.096V	5.015V	3.313V	5.033V	309.744				48.36°C	115.13V
50%	24.773A	4.997A	5.002A	1.795A	350.06	90.189%	677	20.1	42.36°C	0.979
	12.092V	5.004V	3.299V	5.016V	388.141				49.59°C	115.13V
60%	29.801A	6.011A	6.027A	2A	420.062	89.669%	716	20.9	43.02°C	0.982
	12.088V	4.992V	3.285V	4.999V	468.457				50.88°C	115.13V
70%	34.850A	7.029A	7.062A	2.209A	490.193	88.827%	1279	37.6	43.24°C	0.984
	12.082V	4.981V	3.272V	4.982V	551.849				51.56°C	115.12V
80%	39.910A	8.004A	8.105A	2.316A	559.587	87.982%	1767	46.9	43.77°C	0.986
	12.075V	4.97V	3.258V	4.967V	636.028				52.97°C	115.12V
90%	45.362A	8.573A	8.628A	2.424A	630.036	87.211%	1782	47.5	44.36°C	0.987
	12.070V	4.959V	3.245V	4.953V	722.431				54.08°C	115.11V
100%	50.565A	9.098A	9.188A	3.047A	699.648	86.334%	1792	47.0	45.59°C	0.988
	12.062V	4.948V	3.233V	4.924V	810.402				55.58°C	115.11V
110%	55.689A	10.135A	10.351A	3.056A	769.868	85.218%	1799	46.4	46.78°C	0.989
	12.059V	4.935V	3.217V	4.91V	903.414				57.56°C	115.11V
CL1	0.116A	11.992A	12.017A	0A	101.322	82.409%	693	22.2	42.67°C	0.975
	12.112V	5.022V	3.304V	5.085V	122.951				49.74°C	115.14V

CL2	0.116A	19.858A	0A	0A	101.429	80.282%	671	20.6	43.67°C	0.973
	12.114V	5.037V	3.327V	5.092V	126.343				51.81°C	115.14V
CL3	0.115A	0A	19.988A	0A	67.393	73.594%	689	21.9	44.92°C	0.97
	12.116V	5.016V	3.302V	5.089V	91.575				54.6°C	115.14V
CL4	58.023A	0.001A	0.001A	0A	700.195	87.42%	1787	47.6	45.37°C	0.988
	12.067V	4.97V	3.275V	5.031V	800.959				55.51°C	115.11V

The results above are not used in the certification process

230V										
□□	12V	5V	3.3V	5VSB	DC/AC (□)	□□	□□□□ (RPM)	□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
10%	4.000A	1.983A	1.971A	0.984A	70.018	85.544%	662	21.1	40.31°C	0.82
	12.104V	5.045V	3.348V	5.08V	81.85				44.87°C	230.28V
20%	9.014A	2.98A	2.969A	1.185A	139.982	90.112%	663	21.7	40.56°C	0.909
	12.100V	5.034V	3.335V	5.064V	155.343				45.77°C	230.28V
30%	14.383A	3.484A	3.475A	1.387A	210.035	91.584%	666	21.8	41.68°C	0.938
	12.096V	5.024V	3.324V	5.048V	229.335				47.63°C	230.28V
40%	19.754A	3.99A	3.985A	1.59A	280.095	92.028%	669	21.2	42.5°C	0.948
	12.093V	5.014V	3.312V	5.032V	304.358				48.74°C	230.28V
50%	24.777A	5A	5.003A	1.795A	350.069	92.026%	673	20.0	42.81°C	0.957
	12.090V	5.002V	3.299V	5.016V	380.403				49.86°C	230.28V
60%	29.809A	6.013A	6.029A	2A	420.082	91.737%	677	20.1	43.43°C	0.961
	12.086V	4.99V	3.285V	4.998V	457.921				51.26°C	230.28V
70%	34.859A	7.032A	7.065A	2.209A	490.21	91.145%	1328	38.6	43.67°C	0.964
	12.080V	4.979V	3.271V	4.981V	537.835				51.89°C	230.28V
80%	39.917A	8.004A	8.108A	2.317A	559.587	90.563%	1769	47.2	43.84°C	0.967
	12.073V	4.968V	3.257V	4.966V	617.901				52.78°C	230.28V
90%	45.374A	8.578A	8.631A	2.424A	630.066	90.098%	1780	47.8	44.7°C	0.971
	12.067V	4.957V	3.244V	4.952V	699.314				53.98°C	230.28V
100%	50.568A	9.104A	9.192A	3.048A	699.684	89.45%	1793	47.0	45.47°C	0.973
	12.062V	4.945V	3.231V	4.923V	782.21				55.61°C	230.28V

110%	55.694A	10.142A	10.353A	3.056A	769.897	88.7%	1803	46.4	47.16°C	0.974
	12.058V	4.932V	3.216V	4.91V	867.979				57.84°C	230.28V
CL1	0.116A	12A	12.02A	0A	101.33	83.644%	699	22.4	42.67°C	0.884
	12.112V	5.018V	3.303V	5.085V	121.144				50.21°C	230.28V
CL2	0.116A	19.876A	0A	0A	101.434	81.285%	676	20.0	43.28°C	0.888
	12.115V	5.033V	3.326V	5.092V	124.789				51.85°C	230.28V
CL3	0.116A	0A	19.992A	0A	67.396	74.437%	694	22.3	44.46°C	0.838
	12.117V	5.015V	3.301V	5.089V	90.541				53.68°C	230.28V
CL4	58.035A	0.001A	0.001A	0A	700.268	90.346%	1787	47.6	45.85°C	0.972
	12.066V	4.968V	3.274V	5.031V	775.098				55.98°C	230.27V

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	1.228A	0.495A	0.491A	0.196A	20.012	67.197%	638	18.8	37.08°C	0.869
	12.102V	5.055V	3.361V	5.111V	29.78				39.27°C	115.14V
40W	2.702A	0.693A	0.688A	0.294A	40.012	78.569%	646	20.0	37.73°C	0.939
	12.103V	5.053V	3.358V	5.106V	50.926				40.48°C	115.14V
60W	4.176A	0.891A	0.885A	0.392A	60.013	83.472%	651	20.3	38.37°C	0.963
	12.103V	5.049V	3.355V	5.1V	71.896				41.55°C	115.14V
80W	5.648A	1.09A	1.083A	0.491A	79.978	86.082%	653	20.2	39.12°C	0.971
	12.102V	5.047V	3.351V	5.095V	92.91				42.91°C	115.14V

The results above are not used in the certification process

230V

□□	12V	5V	3.3V	5VSB	DC/AC (□□)	□□	□□□□ (RPM)	□□□□□□ (dB[A])	□□ (□□ /□□)	PF/AC □□
20W	1.228A	0.495A	0.491A	0.196A	20.012	68.095%	641	19.3	37.02°C	0.581
	12.102V	5.055V	3.361V	5.111V	29.389				39.37°C	230.28V
40W	2.702A	0.693A	0.688A	0.294A	40.013	79.891%	652	20.2	37.89°C	0.726
	12.104V	5.052V	3.358V	5.105V	50.085				40.74°C	230.28V
60W	4.176A	0.891A	0.886A	0.392A	60.014	84.734%	654	20.3	38.85°C	0.789
	12.103V	5.049V	3.354V	5.1V	70.826				42.32°C	230.28V
80W	5.648A	1.09A	1.083A	0.491A	79.983	87.208%	656	20.3	39.64°C	0.84
	12.102V	5.046V	3.351V	5.094V	91.715				43.9°C	230.28V

The results above are not used in the certification process



115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	10.64mV	12.51mV	14.01mV	6.81mV	Pass
20% Load	14.48mV	14.61mV	27.77mV	7.21mV	Pass
30% Load	17.33mV	16.75mV	19.02mV	8.34mV	Pass
40% Load	17.79mV	17.98mV	21.07mV	8.14mV	Pass
50% Load	17.86mV	21.45mV	25.47mV	8.70mV	Pass
60% Load	19.29mV	23.85mV	27.51mV	9.01mV	Pass
70% Load	22.26mV	24.36mV	29.00mV	9.47mV	Pass
80% Load	24.20mV	26.10mV	33.44mV	10.85mV	Pass
90% Load	31.98mV	27.84mV	36.26mV	11.36mV	Pass
100% Load	48.70mV	31.83mV	39.72mV	13.66mV	Pass
110% Load	64.40mV	35.47mV	44.40mV	14.23mV	Pass
Crossload1	19.99mV	21.52mV	31.39mV	11.51mV	Pass
Crossload2	12.59mV	14.76mV	36.77mV	9.83mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
Crossload3	12.13mV	31.87mV	20.97mV	10.70mV	Pass
Crossload4	55.77mV	29.49mV	31.70mV	15.73mV	Pass

The results above are not used in the certification process

230V

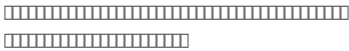
Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	10.59mV	12.72mV	14.27mV	6.76mV	Pass
20% Load	13.85mV	14.51mV	16.98mV	7.47mV	Pass
30% Load	17.73mV	16.55mV	21.12mV	7.78mV	Pass
40% Load	18.81mV	19.46mV	21.42mV	8.39mV	Pass
50% Load	18.22mV	22.06mV	23.88mV	8.49mV	Pass
60% Load	19.50mV	23.19mV	27.72mV	9.01mV	Pass
70% Load	22.62mV	25.43mV	29.66mV	9.57mV	Pass
80% Load	25.79mV	25.69mV	33.45mV	10.70mV	Pass
90% Load	32.34mV	27.68mV	36.87mV	11.15mV	Pass
100% Load	51.84mV	30.85mV	39.43mV	13.22mV	Pass
110% Load	62.09mV	32.30mV	42.97mV	13.98mV	Pass
Crossload1	18.27mV	20.58mV	31.40mV	11.40mV	Pass
Crossload2	11.72mV	14.76mV	31.60mV	9.47mV	Pass
Crossload3	11.00mV	27.68mV	20.81mV	10.59mV	Pass
Crossload4	56.72mV	26.30mV	29.62mV	15.35mV	Pass

The results above are not used in the certification process

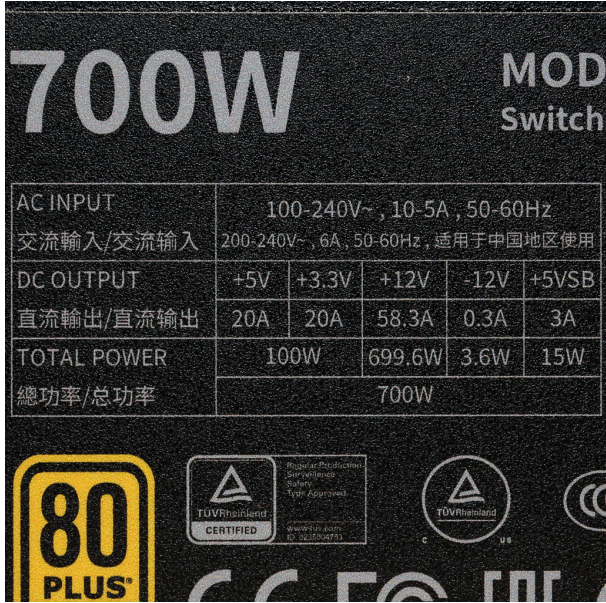
Cooler Master G700 Gold



Top side

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Power specifications label

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