SILVERSTONE

SilverStone GM1000 2U Gold

Serial Number DXGMK02G21340010

Lab ID SL10001935

Certification ID 251935

Test Result Report ID: 21PS1935A

Certificate Issue Date: Nov 19, 2021

230V

Scheme: ETA-EMI PSU





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	SilverStone
Model	GM1000 2U Gold
OEM/ODM	TC Sure Star Computer Co.
Serial Number	DXGMK02G21340010
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	13-6
Rated Frequency (Hz)	47-63

Rated Power (W)	1000
Operating Temperature (Continuous Full Load) (°C)	
Type	2U
Cable Design	Fixed cables
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	40mm Double Ball Bearing Fan (04028DA-12S-AUG)
Semi-Passive Operation	✗
Cybenetics Testing Information	
Lab ID	SL10001935
Date of receipt	Sep 17, 2021
Testing Date	Nov 9, 2021
Report Issued Date	Nov 19, 2021
DUT Notes	SST-2M1000FCGD-A
Engineer Name	-
Authorized By the Laboratory Technical Manager	Aristeidis Bitziopoulos
Signature	

Power Specifications

Rail		12V	5VSB
Max. Power	Amps	83	3.5
	Watts	996	17.5
Total Max. Power (W)		1000	

Test Results

Temperature & Compliance Info

Temperature Range (°C /°F)	28-32 / 82.4-89.6

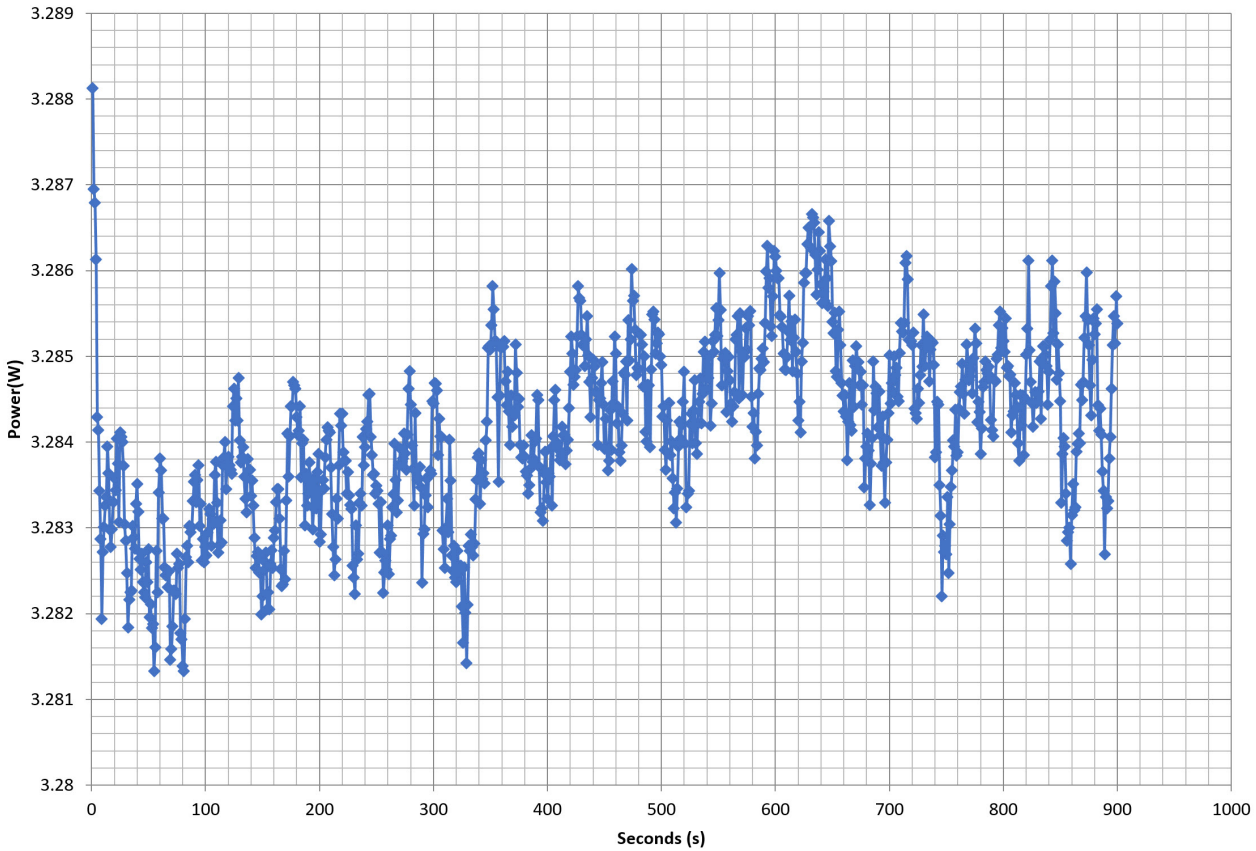
Performance Summary 230V

Accredited		
Average Efficiency (>1450 load combinations)		89.636%
Average PF (>1450 Load Combinations)		0.934
Efficiency With 10W (≤500W) or 2% (>500W) Load		-
Standby Power Consumption		3.2854W
Non-Accredited		
12V Ripple (Full Load)		498.60mV
5VSB Ripple (Full Load)		67.10mV
12V Load Regulation		4.14%
5VSB Load Regulation		6.91%
Inrush Current		93.860A
Hold-Up Time & PWR_OK Signal		2.00ms
AC Loss to PWR_OK Hold Up Time		13.20ms
PWR_OK Inactive to DC Loss Delay		-11.20ms
PSU Timings: T1 (20% / 100%)	186.0ms	186.0ms
PSU Timings: T3 (20% / 100%)	258.0ms	257.0ms

Hold-Up Time & PWR_OK Signal

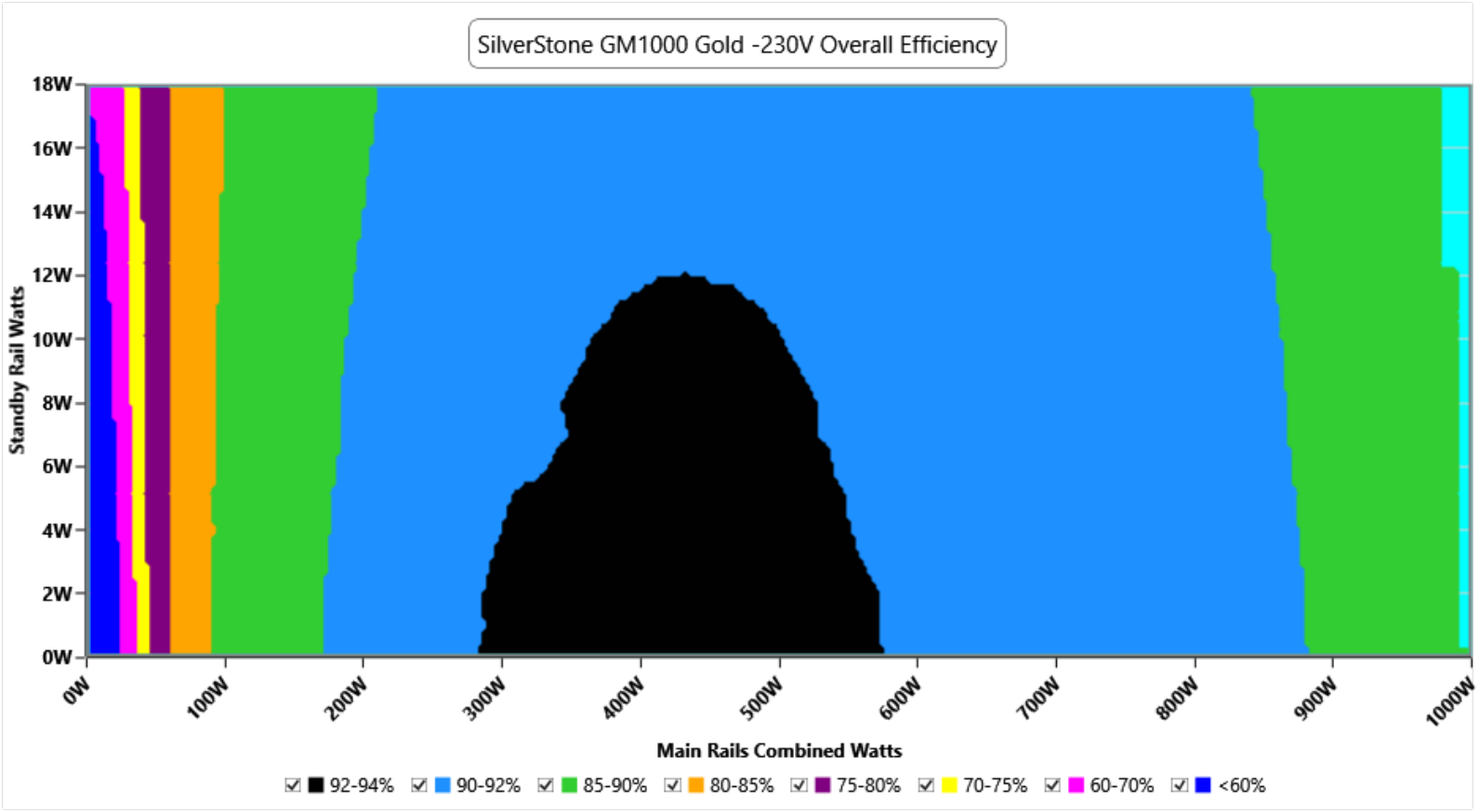
Hold-Up Time (ms)	2
AC Loss to PWR_OK Hold Up Time (ms)	13.2
PWR_OK Inactive to DC Loss Delay (ms)	-11.2

Graphs 230V


Power - DXGMK02G21340010 - 05/11/2021 - 12:42
Power(W)
3.289
3.288
3.287
3.286
3.285
3.284
3.283
3.282
3.281
3.28
0
100
200
300
400
500
600
700
800
900
1000
Seconds (s)

Efficiency Graph

230V

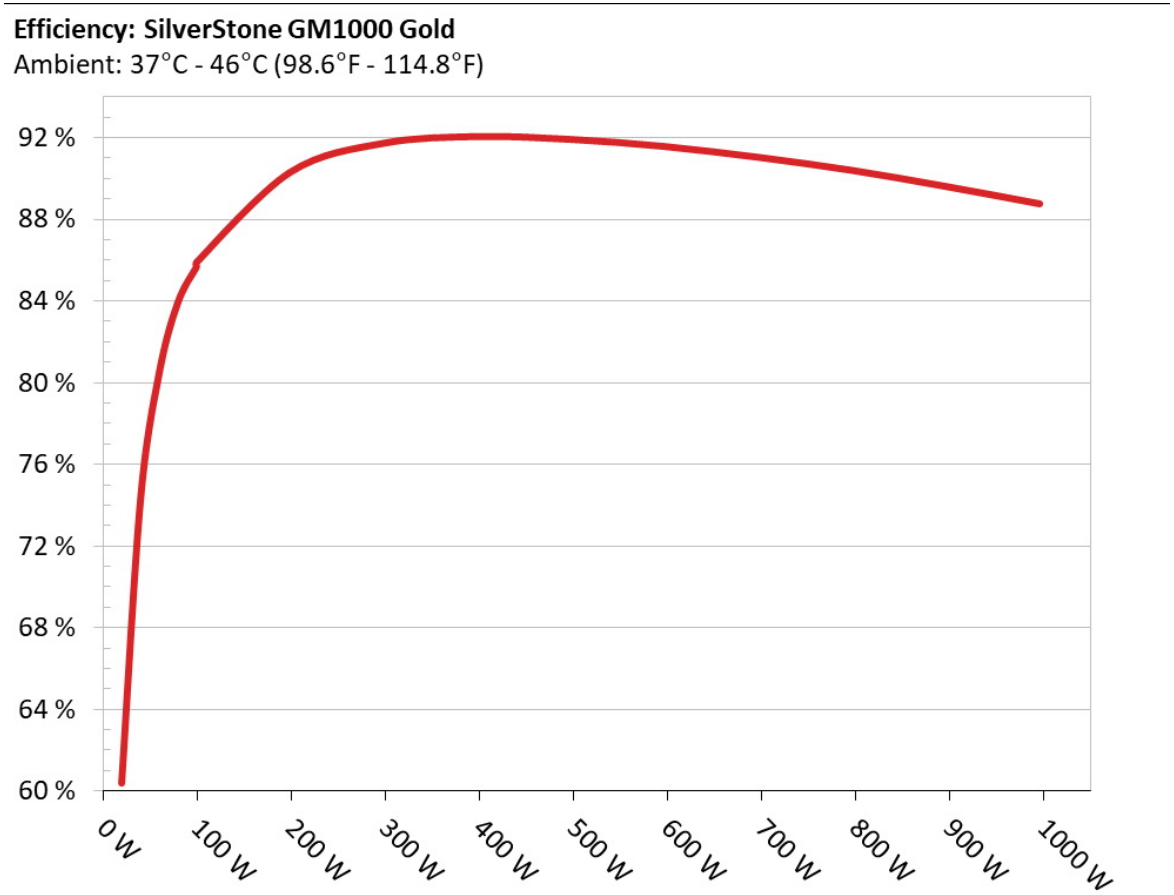


INFO

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

Indicative Performance

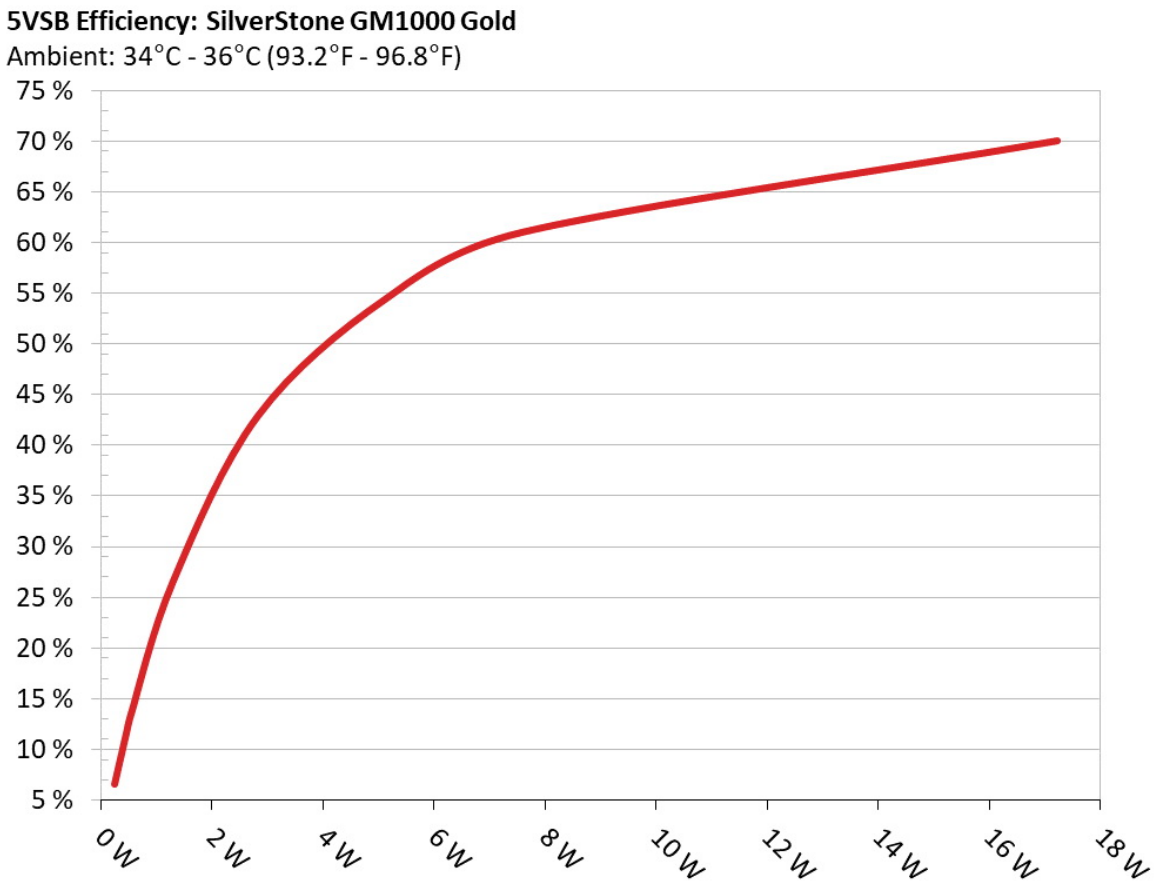
Efficiency under high ambient temperature



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



INFO

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

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

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.234W	6.547%	0.086
	5.202V	3.574W		230.28V

2	0.09A	0.466W	12.108%	0.091
	5.181V	3.849W		230.28V
3	0.55A	2.813W	42.881%	0.142
	5.116V	6.56W		230.28V
4	1A	5.081W	54.308%	0.181
	5.082V	9.356W		230.28V
5	1.5A	7.584W	61.023%	0.212
	5.057V	12.429W		230.28V
6	3.499A	17.213W	70.038%	0.276
	4.92V	24.577W		230.29V

Supplementary Tests (For Reference)

Typical Load Tests 230V

Test	Main Rail	Standby Rail	DC/AC (Watts)	Efficiency	Temps (In/Out)	PF/AC Volts
10%	7.784A	0.988A	99.543	85.699%	40.85°C	0.84
	12.146V	5.058V	116.154		39.17°C	230.33V
20%	15.942A	1.191A	199.192	90.331%	41.27°C	0.903
	12.119V	5.035V	220.512		43.75°C	230.33V
30%	24.125A	1.391A	298.761	91.755%	41.86°C	0.93
	12.093V	5.033V	325.608		44.92°C	230.34V
40%	32.326A	1.597A	398.264	92.082%	42.16°C	0.949
	12.073V	5.009V	432.512		45.19°C	230.33V
50%	40.614A	1.805A	497.699	91.942%	42.76°C	0.958
	12.033V	4.987V	541.317		47.82°C	230.33V
60%	49.026A	2A	597.075	91.597%	43.16°C	0.966
	11.976V	4.964V	651.849		48.57°C	230.34V
70%	57.569A	2.226A	696.607	91.067%	43.77°C	0.973
	11.909V	4.94V	764.936		49.38°C	230.34V
80%	66.313A	2.334A	796.396	90.429%	44.39°C	0.978
	11.836V	4.926V	880.692		51.62°C	230.34V

90%	75.188A	2.442A	896.166	89.639%	44.98°C	0.982
	11.760V	4.912V	999.755		53.44°C	230.34V
100%	83.777A	3.631A	996.199	88.787%	45.93°C	0.985
	11.682V	4.819V	1122.007		53.54°C	230.34V

The results above are not used in the certification process

Light Load Tests 230V

Test	Main Rail	Standby Rail	DC/AC (Watts)	Efficiency	Temps (In/Out)	PF/AC Volts
10W	1.561A	0.194A	19.995	60.403%	37.23°C	0.548
	12.166V	5.152V	33.102		38.77°C	230.32V
20W	3.166A	0.292A	39.997	74.273%	38.44°C	0.692
	12.159V	5.135V	53.851		40.41°C	230.32V
30W	4.771A	0.391A	59.994	80.512%	38.95°C	0.772
	12.155V	5.117V	74.515		41.61°C	230.32V
40W	6.372A	0.489A	79.926	83.969%	39.38°C	0.813
	12.151V	5.11V	95.185		42.42°C	230.33V

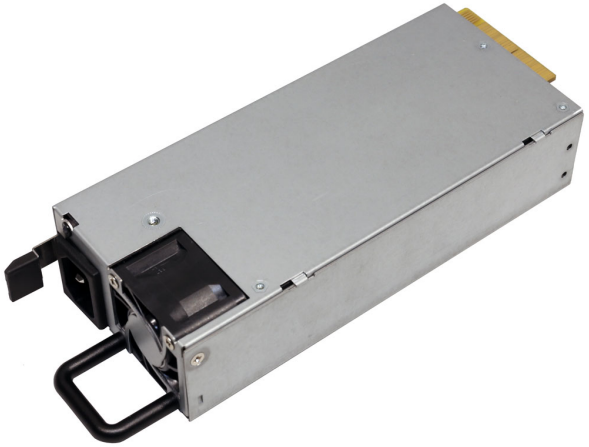
The results above are not used in the certification process

Ripple Measurements 230V

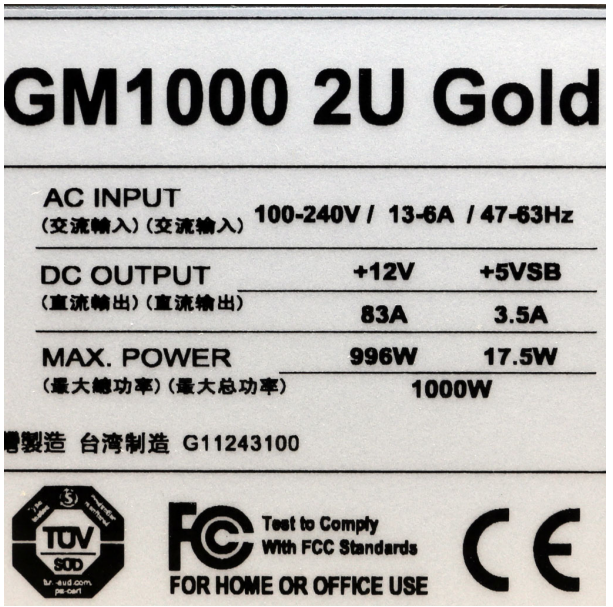
Test	Main Rail	Standby Rail	Pass/Fail
10% Load	25.9 mV	16.1 mV	Pass
20% Load	36.8 mV	16.7 mV	Pass
30% Load	53.6 mV	36.4 mV	Pass
40% Load	82.6 mV	38.1 mV	Pass
50% Load	159.6 mV	40.0 mV	Fail
60% Load	200.0 mV	42.9 mV	Fail
70% Load	200.0 mV	48.8 mV	Fail
80% Load	200.0 mV	51.9 mV	Fail
90% Load	200.0 mV	53.1 mV	Fail
100% Load	498.6 mV	67.1 mV	Fail

The results above are not used in the certification process

SilverStone GM1000 2U Gold



Top side



Power specifications label