SILVERSTONE

SilverStone Nightjar 520W

Serial Number R1602AA1C241119

Lab ID 53

Certification ID 2553

Test Result Report ID:

Certificate Issue Date: Feb 26, 2018

115V

Scheme: ETA-EMI PSU



115V



Scheme: LAMBDA 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	Nightjar 520W
OEM/ODM	Sea Sonic Electronics
Serial Number	R1602AA1C241119
Product Specifications	
Manufacturer-Provided Information	
Rated Voltage (Vrms)	100-240
Rated Current (Arms)	7-4
Rated Frequency (Hz)	50-60

Rated Power (W)	520
Operating Temperature (Continuous Full Load) (°C)	
Type	ATX12V
Cable Design	Fully Modular
Warranty	-
Cybenetics Measurements	
Dimensions (W x H x D)	
Weight	
Cooling	Passive
Semi-Passive Operation	
Cybenetics Testing Information	
Lab ID	53
Date of receipt	Feb 12, 2018
Testing Date	Feb 24, 2018
Report Issued Date	Feb 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	18-22AWG
4+4 pin EPS12V (650mm)	1	1	18AWG
6+2 pin PCIe (550mm+100mm)	2	4	18AWG
SATA (400mm+110mm+110mm+110mm)	1	4	18AWG
SATA (300mm+120mm)	1	2	18AWG
4 pin Molex (400mm+120mm+120mm)	1	3	18AWG
4 pin Molex (300mm+120mm)	1	2	18AWG
FDD Adapter (+105mm)	1	1	22AWG

Power Specifications

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	20	20	43	2.5	0.5
	Watts	100		516	12.5	6
Total Max. Power (W)		520				

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

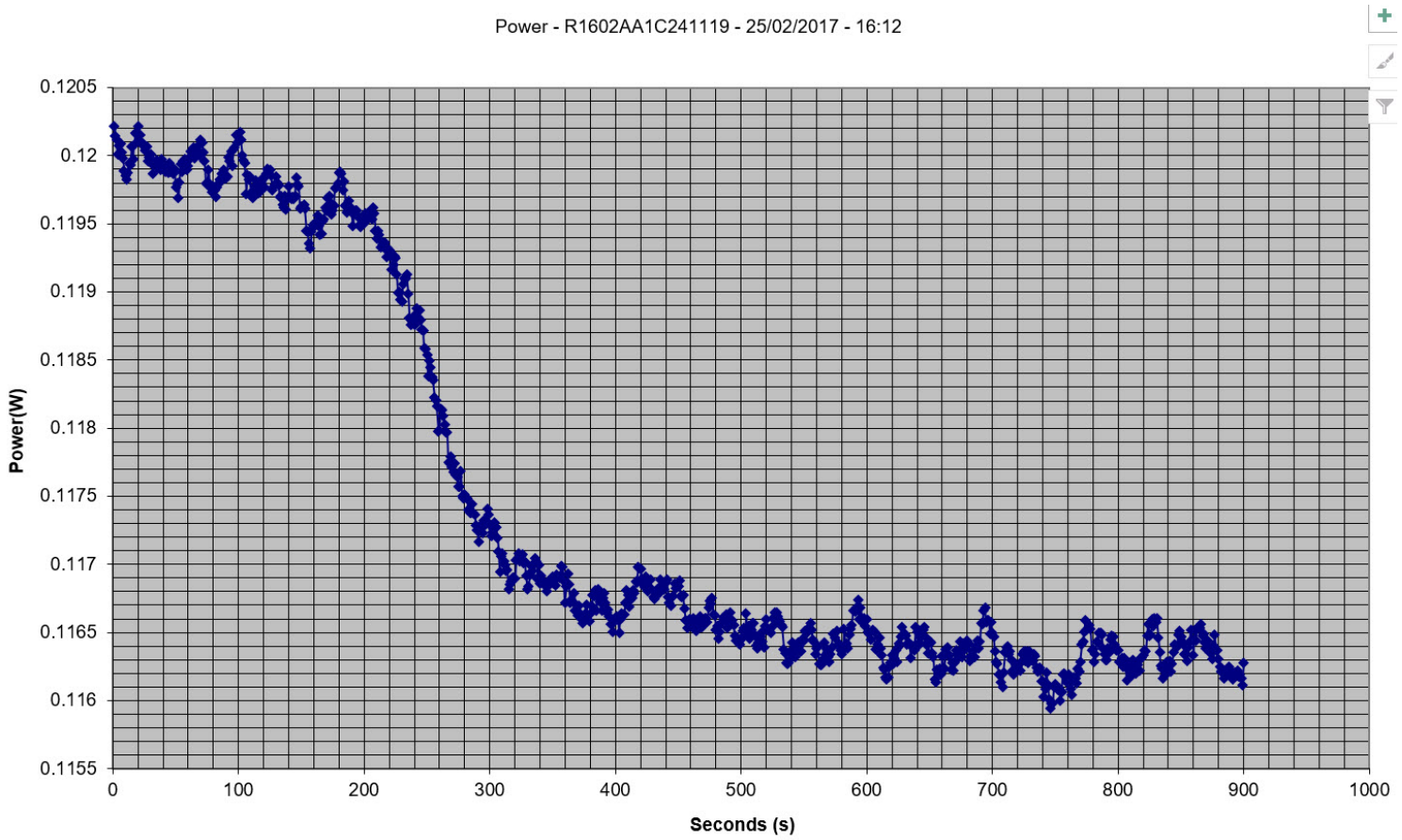
Accredited	
Average Efficiency (>1450 load combinations)	90.772%
Average Noise Output (>1450 Load Combinations)	6.00dBA
Average PF (>1450 Load Combinations)	0.987
Efficiency With 10W (≤500W) or 2% (>500W) Load	-
Standby Power Consumption	0.1163W
Non-Accredited	
12V Ripple (Full Load)	28.74mV
5V Ripple (Full Load)	16.49mV
3.3V Ripple (Full Load)	11.58mV
5VSB Ripple (Full Load)	7.40mV
12V Load Regulation	1.07%
5V Load Regulation	0.42%
3.3V Load Regulation	0.80%
5VSB Load Regulation	2.53%
Inrush Current	19.030A

Hold-Up Time & PWR_OK Signal

Hold-Up Time (ms)	19.8
AC Loss to PWR_OK Hold Up Time (ms)	16.6
PWR_OK Inactive to DC Loss Delay (ms)	3.2

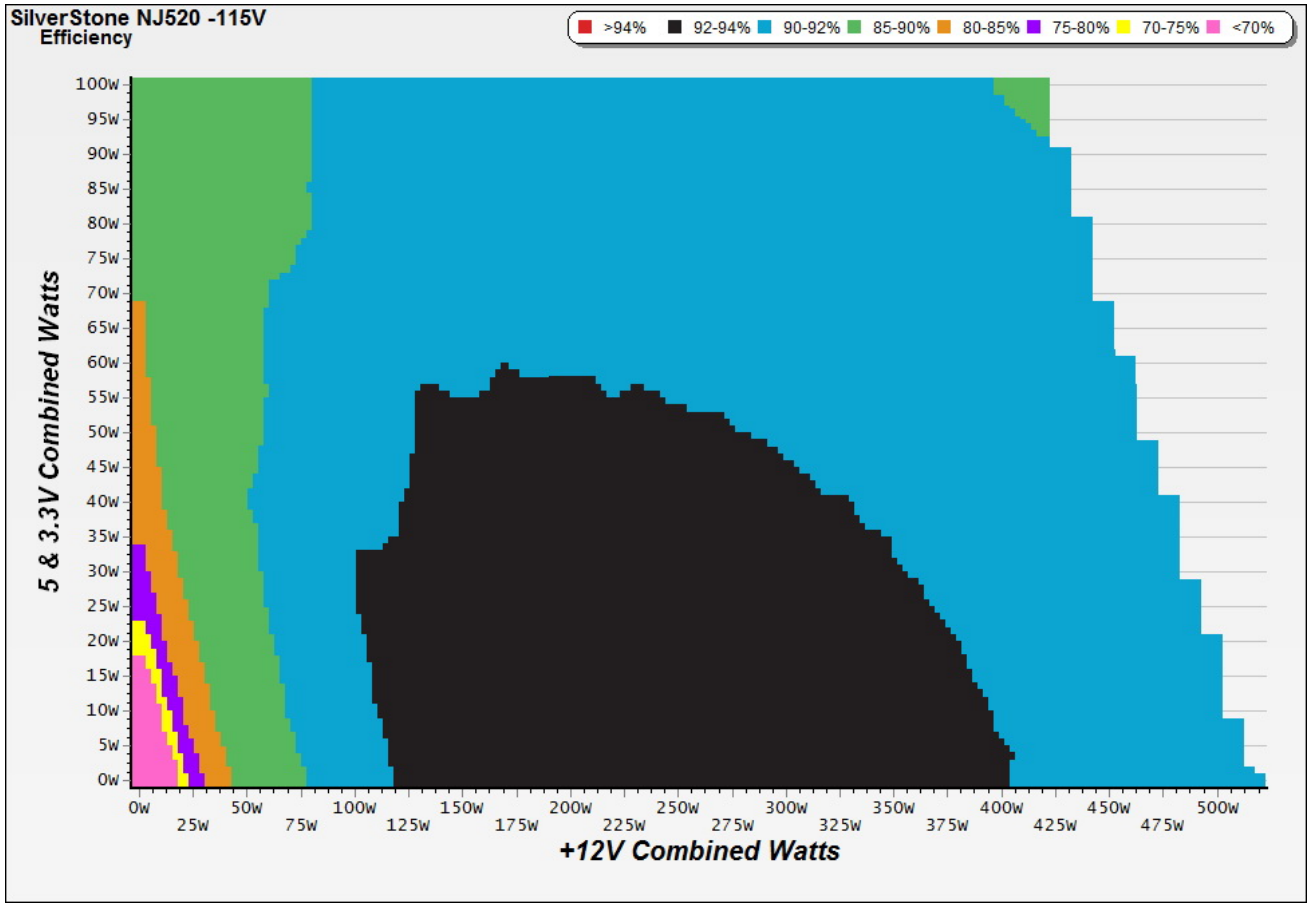
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Graphs 115V



Efficiency Graph

115V

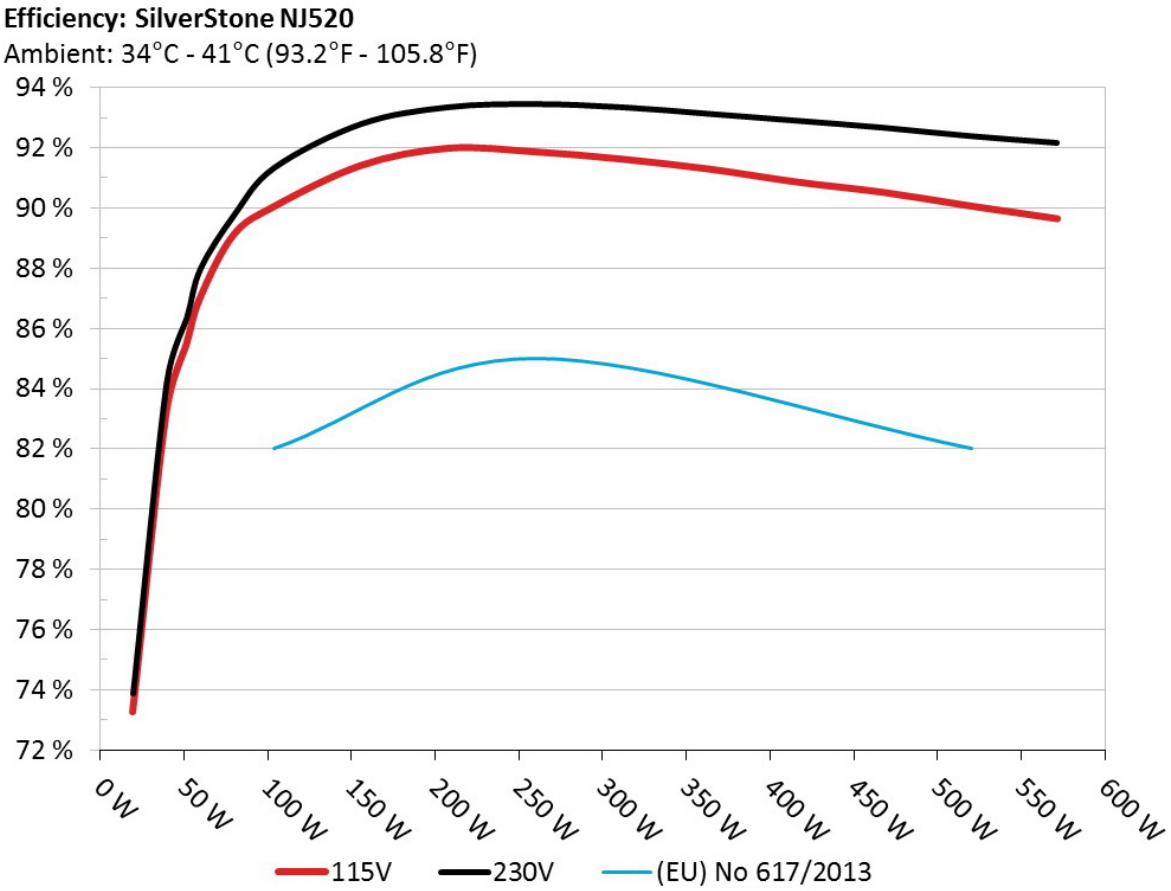


INFO

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.

Indicative Performance

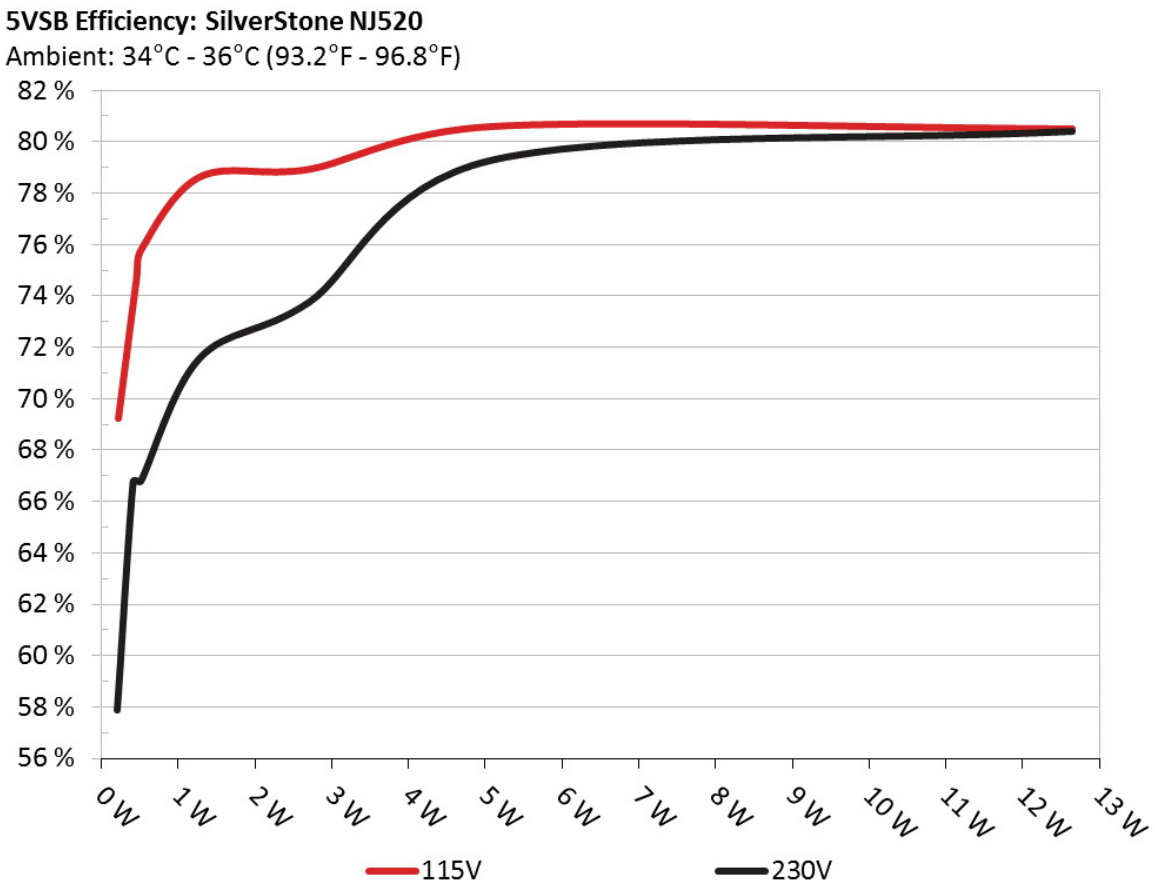
Efficiency under high ambient temperature



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) 115V

Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.042A	0.214	69.256%	0.049
	5.110V	0.309		115.11V

2	0.087A	0.446	74.582%	0.093
	5.109V	0.598		115.11V
3	0.532A	2.712	78.929%	0.330
	5.098V	3.436		115.11V
4	2.502A	12.638	80.272%	0.493
	5.052V	15.744		115.11V

Supplementary Tests (For Reference)

Typical Load Tests 115V

Load Regulation & Efficiency Tests
Nidus 500 PG-5001-BR -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	2.497A	1.985A	1.965A	0.981A	51.771	85.477%	0000	<6.0	41.62°C	0.946
	12.100V	5.030V	3.355V	5.076V	60.567				36.11°C	115.13V
2	6.030A	2.981A	2.953A	1.181A	103.754	90.035%	0000	<6.0	42.51°C	0.976
	12.087V	5.028V	3.352V	5.065V	115.238				36.68°C	115.12V
3	9.921A	3.489A	3.462A	1.385A	155.909	91.408%	0000	<6.0	43.39°C	0.986
	12.074V	5.025V	3.348V	5.053V	170.563				36.83°C	115.12V
4	13.811A	3.986A	3.944A	1.585A	207.779	91.979%	0000	<6.0	44.10°C	0.995
	12.061V	5.023V	3.345V	5.041V	225.898				36.98°C	115.11V
5	17.367A	4.977A	4.932A	1.788A	259.690	91.863%	0000	<6.0	45.24°C	0.990
	12.047V	5.021V	3.343V	5.029V	282.693				37.71°C	115.11V
6	20.936A	5.975A	5.927A	1.992A	311.698	91.619%	0000	<6.0	48.77°C	0.990
	12.033V	5.020V	3.339V	5.015V	340.212				38.99°C	115.11V
7	24.513A	6.980A	6.921A	2.198A	363.729	91.288%	0000	<6.0	49.35°C	0.992
	12.019V	5.018V	3.336V	5.001V	398.443				39.30°C	115.11V
8	28.095A	7.976A	7.918A	2.404A	415.679	90.861%	0000	<6.0	50.36°C	0.994
	12.005V	5.016V	3.334V	4.988V	457.487				39.72°C	115.11V
9	32.115A	8.475A	8.436A	2.407A	467.680	90.515%	0000	<6.0	51.07°C	0.994
	11.991V	5.014V	3.332V	4.980V	516.686				39.89°C	115.11V

10	36.103A	8.983A	8.920A	2.513A	519.543	90.064%	0000	<6.0	52.60°C	0.995
	11.975V	5.012V	3.329V	4.971V	576.859				40.09°C	115.16V
11	40.495A	8.987A	8.924A	2.516A	571.526	89.639%	0000	<6.0	55.13°C	0.995
	11.960V	5.010V	3.327V	4.964V	637.586				40.87°C	115.11V
CL1	0.099A	12.012A	12.005A	0.005A	101.667	86.347%	0000	<6.0	53.96°C	0.978
	12.074V	5.025V	3.339V	5.073V	117.743				40.50°C	115.12V
CL2	42.962A	1.003A	1.003A	1.002A	527.935	90.857%	0000	<6.0	54.67°C	0.995
	11.976V	5.019V	3.346V	5.021V	581.061				41.26°C	115.11V

The results above are not used in the certification process

Light Load Tests 115V

Efficiency at Low Loads Nidus 500 PG-5001-BR -115V									
Test #	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	PF/AC Volts
1	1.206A	0.492A	0.474A	0.196A	19.670	73.259%	0000	<6.0	0.851
	12.109V	5.031V	3.358V	5.100V	26.850				115.12V
2	2.436A	0.991A	0.980A	0.392A	39.759	83.225%	0000	<6.0	0.923
	12.104V	5.033V	3.356V	5.093V	47.773				115.12V
3	3.671A	1.488A	1.488A	0.586A	59.874	87.011%	0000	<6.0	0.949
	12.099V	5.031V	3.355V	5.085V	68.812				115.12V
4	4.893A	1.986A	1.965A	0.786A	79.745	89.094%	0000	<6.0	0.969
	12.094V	5.029V	3.354V	5.078V	89.507				115.12V

The results above are not used in the certification process

Ripple Measurements 115V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	10.6 mV	10.6 mV	6.1 mV	4.8 mV	Pass
20% Load	14.3 mV	11.8 mV	6.2 mV	5.1 mV	Pass
30% Load	19.0 mV	11.4 mV	6.8 mV	5.0 mV	Pass
40% Load	20.5 mV	11.7 mV	7.0 mV	5.4 mV	Pass

Test	12V	5V	3.3V	5VSB	Pass/Fail
50% Load	22.6 mV	12.0 mV	8.8 mV	5.5 mV	Pass
60% Load	23.4 mV	12.8 mV	8.5 mV	6.0 mV	Pass
70% Load	25.1 mV	13.0 mV	9.4 mV	6.3 mV	Pass
80% Load	25.9 mV	13.5 mV	9.5 mV	6.9 mV	Pass
90% Load	27.8 mV	14.5 mV	10.2 mV	7.1 mV	Pass
100% Load	28.7 mV	16.5 mV	11.6 mV	7.4 mV	Pass
110% Load	30.2 mV	16.7 mV	12.9 mV	7.7 mV	Pass
Crossload 1	15.1 mV	13.5 mV	8.3 mV	19.5 mV	Pass
Crossload 2	27.8 mV	14.6 mV	11.4 mV	7.1 mV	Pass

The results above are not used in the certification process

SilverStone Nightjar 520W



Top side



Power specifications label