

Lab ID#: SL20501928
Receipt Date: Oct 26, 2021
Test Date: Nov 1, 2021

Report: 21PS1928A

Report Date: Nov 2, 2021

DUT INFORMATION	
Brand	SilverStone
Manufacturer (OEM)	Enhance Electronics
Series	Hela Platinum
Model Number	SST-AX2050MCPT-A
Serial Number	DBHA2K50PT21390099
DUT Notes	

DUT SPECIFICATIONS	
Rated Voltage (Vrms)	200-240
Rated Current (Arms)	13
Rated Frequency (Hz)	50
Rated Power (W)	2050
Type	ATX12V
Cooling	135mm Double Ball Bearing Fan (RL4Z B1352512EH-3M)
Semi-Passive Operation	✓ (selectable)
Cable Design	Fully Modular

TEST EQUIPMENT	
Electronic Loads	Chroma 63601-5 x4 Chroma 63600-2 x2 63640-80-80 x20 63610-80-20 x2
AC Sources	Chroma 6530, Keysight AC6804B
Power Analyzers	N4L PPA1530 x2
Sound Analyzer	Bruel & Kjaer 2270 G4
Microphone	Bruel & Kjaer Type 4955-A
Data Loggers	Picoscope TC-08 x2, Labjack U3-HV x2
Tachometer	UNI-T UT372 x2
Digital Multimeter	Keysight U1273AX, Fluke 289, Keithley 2015 - THD
UPS	CyberPower OLS3000E 3kVA x2
Transformer	3kVA x2

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RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6 (+-2°C / +- 3.6°F)
ErP Lot 3/6 Ready	✓
(EU) No 617/2013 Compliance	✓

230V

Average Efficiency	92.084%
Average Efficiency 5VSB	82.969%
Standby Power Consumption (W)	0.1439850
Average PF	0.957
Avg Noise Output	42.32 dB(A)
Efficiency Rating (ETA)	PLATINUM
Noise Rating (LAMBDA)	Standard

POWER SPECIFICATIONS

Rail		3.3V	5V	12V	5VSB	-12V
Max. Power	Amps	25	22	170	3	0.3
	Watts	120		2040	15	3.6
Total Max. Power (W)		2050				

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CABLES AND CONNECTORS

Modular Cables

Description	Cable Count	Connector Count (Total)	Gauge	In Cable Capacitors
ATX connector 20+4 pin (600mm)	1	1	16-22AWG	No
4+4 pin EPS12V (700mm)	2	2	16AWG	No
12 pin PCIe (560mm)	1	1	16AWG	No
6+2 pin PCIe (560mm)	4	4	16AWG	No
6+2 pin PCIe (560mm+150mm)	7	14	16-18AWG	No
SATA (500mm+125mm+125mm+125mm)	3	12	18AWG	No
4-pin Molex (500mm+125mm+125mm) / FDD (+120mm)	1	3 / 1	18-22AWG	No

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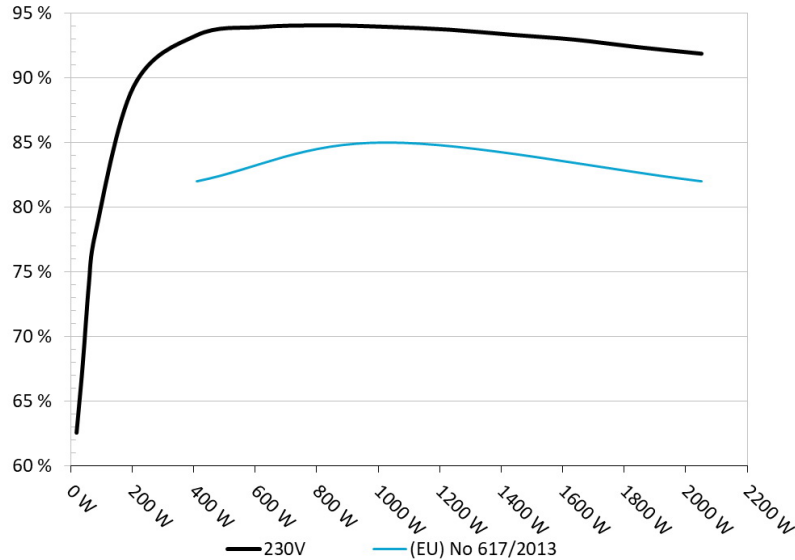
General Data	-
Manufacturer (OEM)	Enhance Electronics
PCB Type	Double Sided
Primary Side	-
Transient Filter	6x Y caps, 4x X caps, 2x CM chokes, 1x MOV
Inrush Protection	NTC Thermistor MF72-12D20 (12 Ohm) & Relay
Bridge Rectifier(s)	2x
APFC MOSFETs	2x Oriental Semiconductor OSG55R070HF (550V, 30A @ 100°C, Rds(on): 0.070Ohm)
APFC Boost Diode	2x CREE C3D10060A (600V, 10A @ 153°C)
Bulk Cap(s)	3x Nippon Chemi-Con (450V, 680uF each or 2,040uF, 2,000h @ 105°C, KMZ)
Main Switchers	4x Oriental Semiconductor OSG60R074FSZF (600V, 30A @ 100°C, Rds(on): 0.074Ohm)
IC Driver(s)	2x Silicon Labs Si8230BD
APFC Controller	ATK AT6201ZSPF
Resonant Controller	ATK AT6301ZTSF
Topology	Primary side: Interleaved PFC, Full-Bridge & LLC converter Secondary side: Synchronous Rectification & DC-DC converters
Secondary Side	-
+12V MOSFETs	no info
5V & 3.3V	DC-DC Converters
Filtering Capacitors	Electrolytic: 5x Unicon (2,000h @ 125°C, UPL), 1x Rubycon (3-6,000h @ 105°C, YXG), 2x Rubycon (4-10,000h @ 105°C, YXF) Polymer: 21x Unicon
Supervisor IC	Weltrend WT7527RA (OCP, OVP, UVP, SCP, PG)
Fan Controller	ATK AT1051ZSP8
Fan Model	Globe Fan RL4Z B1352512EH-3M (135mm, 12V, 0.50A, Double Ball Bearing Fan)
5VSB Circuit	-
Rectifier	1x 45R10S SBR
Standby PWM Controller	ATK AT6002H

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EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE

Efficiency: SilverStone HELA 2050W
Ambient: 37°C - 47°C (98.6°F - 116.6°F)

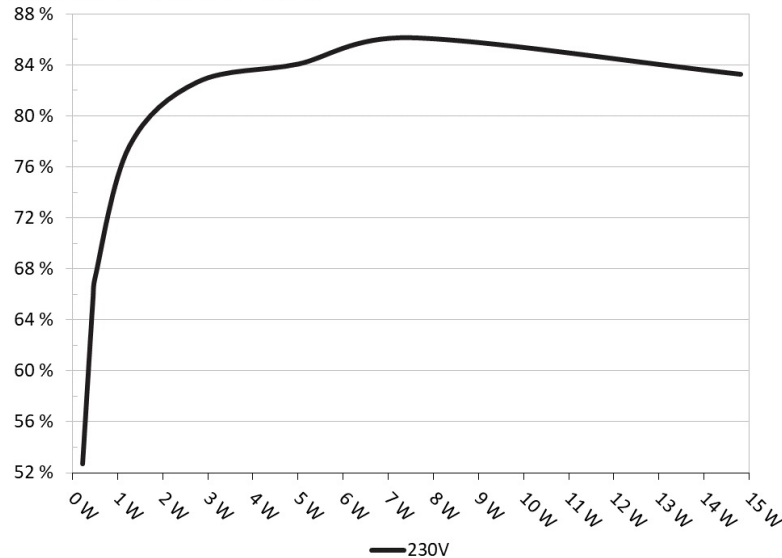


INFO

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: SilverStone HELA 2050W
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

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Test #	5VSB	DC/AC (Watts)	Efficiency	PF/AC Volts
1	0.045A	0.227W	52.676%	0.007
	5.049V	0.431W		230.24V
2	0.09A	0.454W	65.499%	0.012
	5.047V	0.693W		230.25V
3	0.55A	2.767W	82.648%	0.057
	5.03V	3.348W		230.25V
4	1A	5.014W	84.075%	0.1
	5.013V	5.964W		230.24V
5	1.5A	7.493W	86.139%	0.142
	4.994V	8.698W		230.24V
6	3A	14.816W	83.269%	0.256
	4.938V	17.792W		230.24V

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230V

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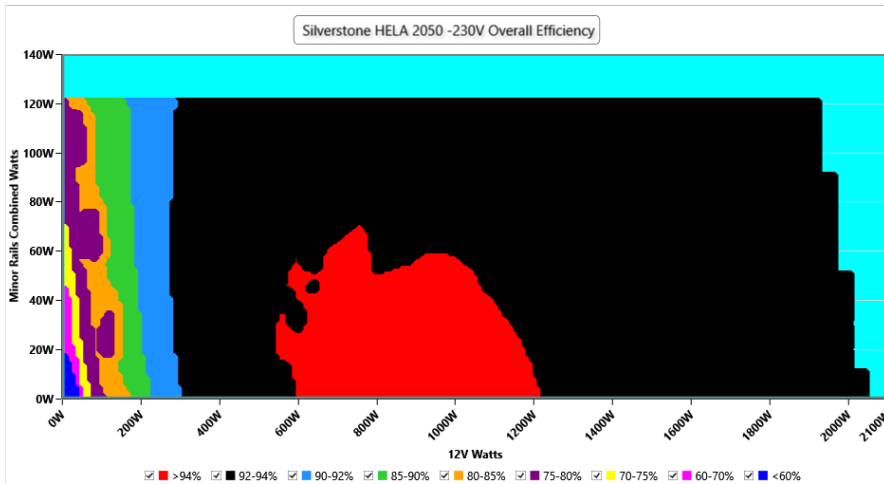
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EFFICIENCY GRAPH 230V

INFO

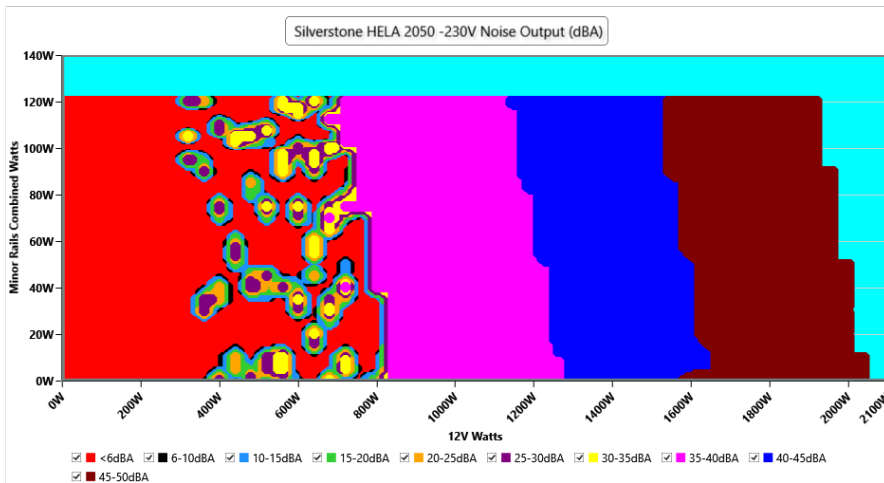
This graph depicts the PSU's efficiency throughout its entire operational range. For the generation of the efficiency and noise graphs we set our loaders to auto mode through our custom-made software before trying thousands of possible load combinations



NOISE GRAPH 230V

INFO

The PSU's noise in its entire operational range and under 30-32 °C (+2 °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

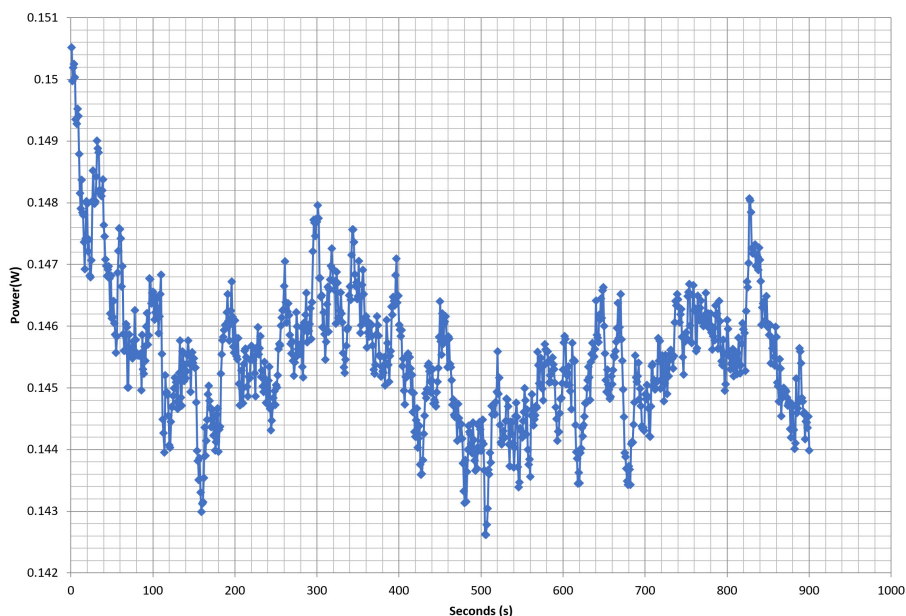


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VAMPIRE POWER -230V

Power - DBHA2K50PT21390099 - 26/10/2021 - 13:47



INFO

This graph is generated by the PPA Standby Power Analysis software which takes full control of the power analyzer during the whole procedure. This application features all of the EN50564 & IEC62301 test limits for standby power software testing

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COMMISSION REGULATION (EU) NO 617/2013 TESTING 230V

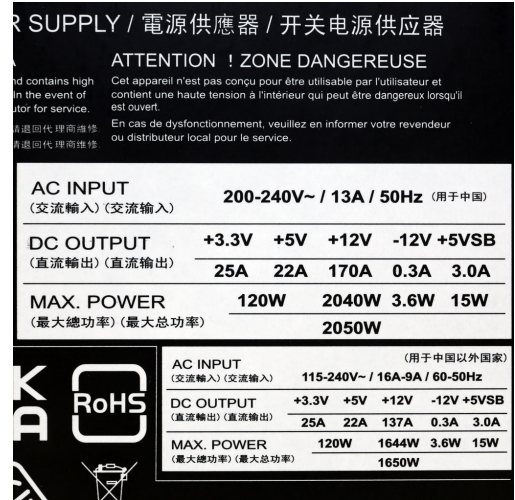
Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
10%	15.293A	2.001A	1.963A	1A	204.999	89.314%	0	<6.0	45.84°C	0.881
	11.992V	4.997V	3.362V	5.002V	229.525				40.27°C	230.24V
20%	31.613A	3.009A	2.955A	1.204A	409.439	93.295%	0	<6.0	46.88°C	0.964
	11.974V	4.985V	3.35V	4.983V	438.863				40.97°C	230.24V
50%	81.748A	5.051A	4.975A	1.828A	1025.107	93.951%	1255	37.8	42.13°C	0.973
	11.922V	4.95V	3.317V	4.924V	1091.113				49.46°C	230.24V
100%	165.822A	9.202A	9.125A	3.118A	2050.125	91.875%	2144	52.5	45.71°C	0.978
	11.822V	4.892V	3.255V	4.811V	2231.431				55.75°C	230.25V

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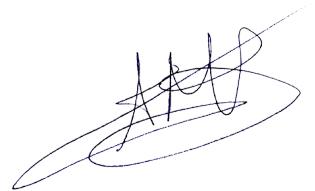
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Top side



Power specifications label



Aris Mpitsiopoulos
Lab Director

CERTIFICATIONS 230V



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