Anex

SilverStone HELA 2050 Platinum

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

All data and graphs included in this test report can be used by any individual on the following conditions:
› It should be mentioned that the test results are provided by Cybenetics
› The link to the original test results document should be provided in any case

Cybenetics offers the ETA and Lambda voluntary certification programs, through which the efficient and silent power supplies are promoted

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD. 15, Elpinikis Str. 4100 Agios Athanasios, Limassol, Cyprus

Anex

SilverStone HELA 2050 Platinum

RESULTS

Temperature Range (°C /°F)	30-32 / 86-89.6
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				

HOLD-UP TIME & POWER OK SIGNAL (230V)

Hold-Up Time (ms)	11.4
AC Loss to PWR_OK Hold Up Time (ms)	10.2
PWR_OK Inactive to DC Loss Delay (ms)	1.2

All data and graphs included in this test report can be used by any individual on the following conditions:
› It should be mentioned that the test results are provided by Cybenetics
› The link to the original test results document should be provided in any case

Cybenetics offers the ETA and Lambda voluntary certification programs, through which the efficient and silent power supplies are promoted

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD. 15, Elpinikis Str. 4100 Agios Athanasios, Limassol, Cyprus

Anex

SilverStone HELA 2050 Platinum

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

All data and graphs included in this test report can be used by any individual on the following conditions:
› It should be mentioned that the test results are provided by Cybenetics
› The link to the original test results document should be provided in any case

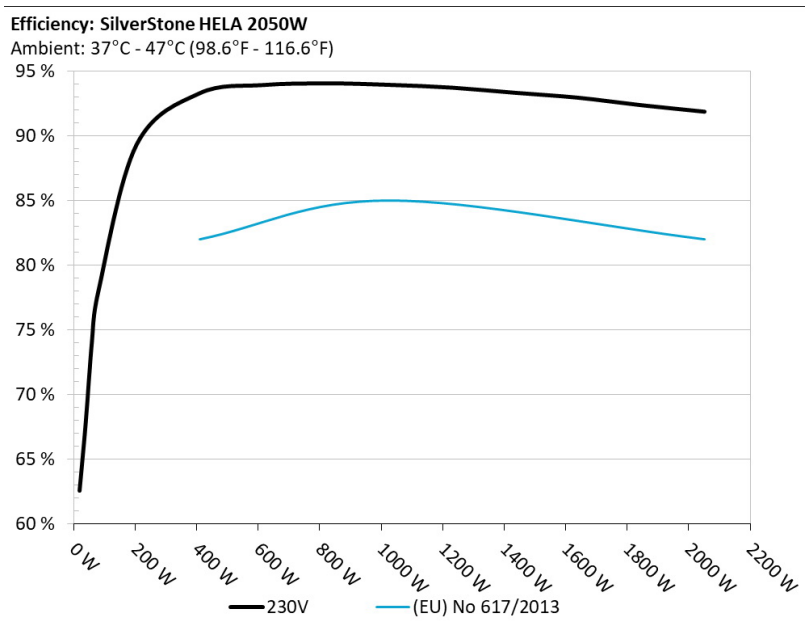
Cybenetics offers the ETA and Lambda voluntary certification programs, through which the efficient and silent power supplies are promoted

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD. 15, Elpinikis Str. 4100 Agios Athanasios, Limassol, Cyprus

Anex

SilverStone HELA 2050 Platinum

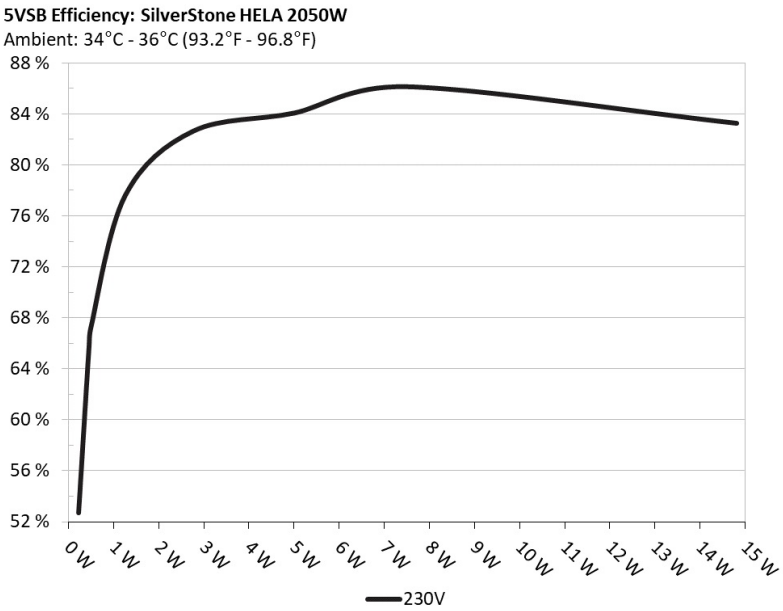
EFFICIENCY UNDER HIGH AMBIENT TEMPERATURE



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

All data and graphs included in this test report can be used by any individual on the following conditions:
› It should be mentioned that the test results are provided by Cybenetics
› The link to the original test results document should be provided in any case

Cybenetics offers the ETA and Lambda voluntary certification programs, through which the efficient and silent power supplies are promoted

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD. 15, Elpinikis Str. 4100 Agios Athanasios, Limassol, Cyprus

Anex

SilverStone HELA 2050 Platinum

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

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

All data and graphs included in this test report can be used by any individual on the following conditions:
› It should be mentioned that the test results are provided by Cybenetics
› The link to the original test results document should be provided in any case

Cybenetics offers the ETA and Lambda voluntary certification programs, through which the efficient and silent power supplies are promoted

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD. 15, Elpinikis Str. 4100 Agios Athanasios, Limassol, Cyprus

Anex

SilverStone HELA 2050 Platinum

230V

All data and graphs included in this test report can be used by any individual on the following conditions:
› It should be mentioned that the test results are provided by Cybenetics
› The link to the original test results document should be provided in any case

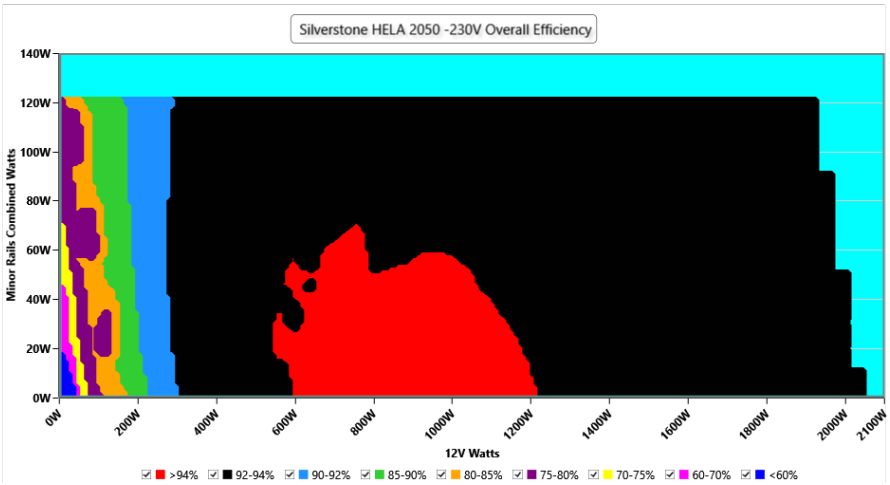
Cybenetics offers the ETA and Lambda voluntary certification programs, through which the efficient and silent power supplies are promoted

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD. 15, Elpinikis Str. 4100 Agios Athanasios, Limassol, Cyprus

Anex

SilverStone HELA 2050 Platinum

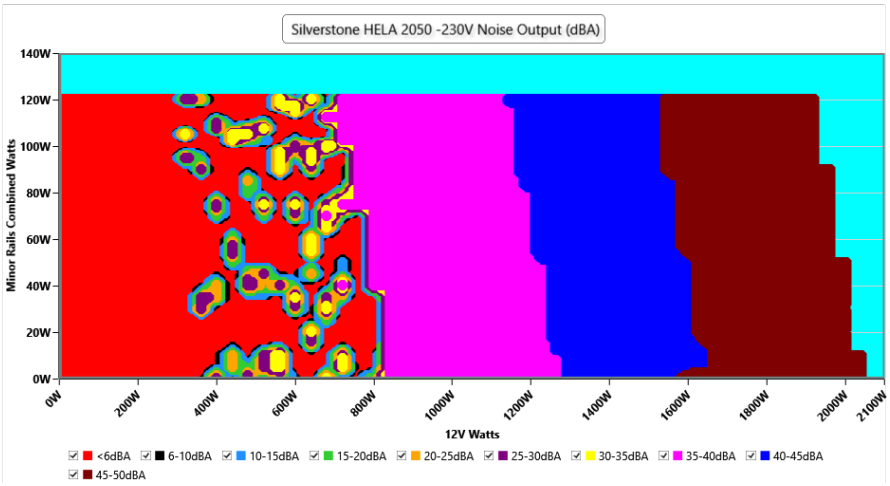
EFFICIENCY GRAPH 230V



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 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

All data and graphs included in this test report can be used by any individual on the following conditions:
› It should be mentioned that the test results are provided by Cybenetics
› The link to the original test results document should be provided in any case

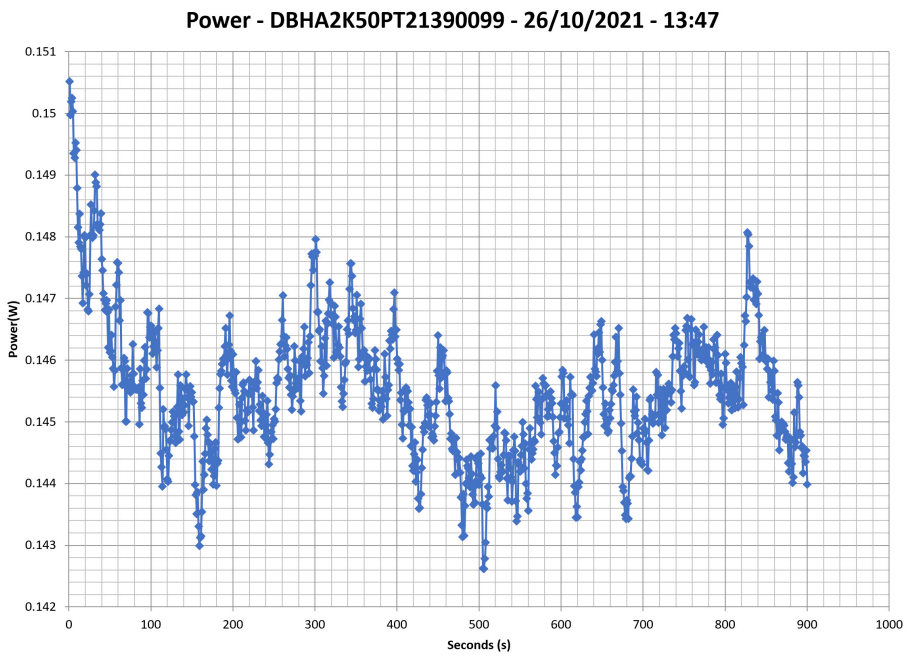
Cybenetics offers the ETA and Lambda voluntary certification programs, through which the efficient and silent power supplies are promoted

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD. 15, Elpinikis Str. 4100 Agios Athanasios, Limassol, Cyprus

Anex

SilverStone HELA 2050 Platinum

VAMPIRE POWER -230V



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

All data and graphs included in this test report can be used by any individual on the following conditions:
› It should be mentioned that the test results are provided by Cybenetics
› The link to the original test results document should be provided in any case

Cybenetics offers the ETA and Lambda voluntary certification programs, through which the efficient and silent power supplies are promoted

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD. 15, Elpinikis Str. 4100 Agios Athanasios, Limassol, Cyprus

Anex

SilverStone HELA 2050 Platinum

10-110% LOAD TESTS 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
30%	48.404A	3.519A	3.459A	1.41A	614.625	93.934%	1024	32.0	41.49°C	0.976
	11.953V	4.974V	3.339V	4.963V	654.317				47.88°C	230.24V
40%	65.227A	4.03A	3.966A	1.618A	819.802	94.067%	1140	35.1	41.89°C	0.974
	11.937V	4.963V	3.329V	4.944V	871.502				48.72°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
60%	98.287A	6.076A	5.993A	2A	1229.512	93.734%	1361	39.7	42.54°C	0.973
	11.902V	4.938V	3.304V	4.905V	1311.705				50.53°C	230.24V
70%	114.954A	7.107A	7.018A	2.253A	1435.017	93.336%	1459	41.8	43.2°C	0.973
	11.882V	4.926V	3.292V	4.883V	1537.466				51.54°C	230.24V
80%	131.674A	8.004A	8.05A	2.364A	1639.145	92.956%	1555	43.6	43.85°C	0.974
	11.862V	4.915V	3.279V	4.866V	1763.355				52.72°C	230.25V
90%	148.807A	8.671A	8.569A	2.475A	1845.271	92.373%	2156	52.5	44.62°C	0.976
	11.846V	4.903V	3.268V	4.85V	1997.62				54.25°C	230.25V
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
CL1	0.117A	14.558A	14.274A	0A	121.329	78.819%	896	27.7	42.08°C	0.829
	11.979V	4.961V	3.341V	5.036V	153.935				49.05°C	230.26V
CL2	0.117A	22.225A	0A	0A	111.431	77.315%	460	10.7	43.07°C	0.831
	11.988V	4.951V	3.36V	5.041V	144.13				50.39°C	230.25V
CL3	0.117A	0A	24.737A	0A	83.888	72.172%	518	12.8	44.35°C	0.794
	11.986V	5V	3.335V	5.036V	116.259				52.82°C	230.25V
CL4	173.101A	0A	0A	0A	2049.623	92.398%	2171	52.7	45.04°C	0.978
	11.841V	4.925V	3.276V	4.944V	2218.269				55.18°C	230.24V

All data and graphs included in this test report can be used by any individual on the following conditions:
› It should be mentioned that the test results are provided by Cybenetics
› The link to the original test results document should be provided in any case

Cybenetics offers the ETA and Lambda voluntary certification programs, through which the efficient and silent power supplies are promoted

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD. 15, Elpinikis Str. 4100 Agios Athanasios, Limassol, Cyprus

Anex

SilverStone HELA 2050 Platinum

20-80W LOAD TESTS 230V

Test	12V	5V	3.3V	5VSB	DC/AC (Watts)	Efficiency	Fan Speed (RPM)	PSU Noise (dB[A])	Temps (In/Out)	PF/AC Volts
20W	1.236A	0.499A	0.489A	0.198A	20.01	62.529%	0	<6.0	39.83°C	0.36
	12.026V	5.008V	3.373V	5.044V	32.033				36.63°C	230.24V
40W	2.722A	0.699A	0.685A	0.298A	40.008	67.793%	0	<6.0	41.27°C	0.551
	12.013V	5.007V	3.372V	5.038V	59.062				37.41°C	230.24V
60W	4.208A	0.899A	0.881A	0.397A	60.008	74.023%	0	<6.0	43.16°C	0.659
	12.009V	5.006V	3.371V	5.034V	81.116				38.95°C	230.24V
80W	5.692A	1.099A	1.077A	0.497A	79.967	77.847%	0	<6.0	44.12°C	0.757
	12.004V	5.005V	3.37V	5.028V	102.766				39.37°C	230.24V

RIPPLE MEASUREMENTS 230V

Test	12V	5V	3.3V	5VSB	Pass/Fail
10% Load	10.54mV	13.53mV	14.16mV	5.22mV	Pass
20% Load	12.13mV	15.63mV	13.86mV	5.37mV	Pass
30% Load	15.45mV	14.71mV	14.68mV	5.83mV	Pass
40% Load	17.55mV	15.52mV	15.34mV	6.34mV	Pass
50% Load	20.78mV	15.83mV	14.93mV	6.24mV	Pass
60% Load	23.95mV	16.19mV	15.24mV	6.75mV	Pass
70% Load	29.94mV	17.26mV	16.57mV	8.49mV	Pass
80% Load	30.50mV	17.47mV	16.72mV	7.98mV	Pass
90% Load	34.70mV	17.26mV	17.23mV	8.29mV	Pass
100% Load	44.25mV	19.40mV	18.53mV	10.07mV	Pass
Crossload1	16.95mV	17.76mV	16.35mV	7.67mV	Pass
Crossload2	10.70mV	18.95mV	14.57mV	4.71mV	Pass
Crossload3	9.88mV	14.35mV	17.80mV	4.35mV	Pass
Crossload4	44.29mV	17.46mV	17.62mV	10.35mV	Pass

All data and graphs included in this test report can be used by any individual on the following conditions:
› It should be mentioned that the test results are provided by Cybenetics
› The link to the original test results document should be provided in any case

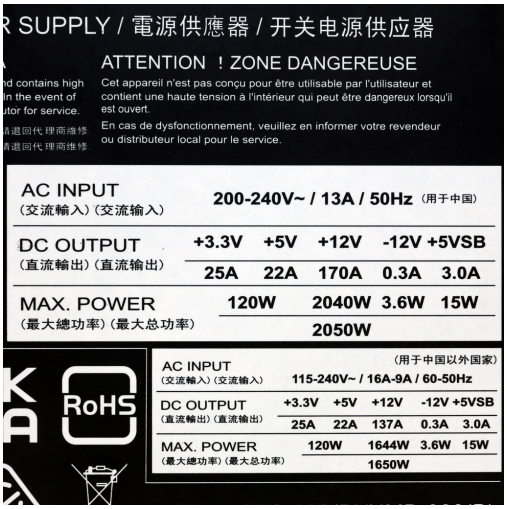
Cybenetics offers the ETA and Lambda voluntary certification programs, through which the efficient and silent power supplies are promoted

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD. 15, Elpinikis Str. 4100 Agios Athanasios, Limassol, Cyprus

Anex

SilverStone HELA 2050 Platinum

Top side



R SUPPLY / 電源供應器 / 开关电源供应器

ATTENTION ! ZONE DANGEREUSE

nd contains high
In the event of
utor for service.

Cet appareil n'est pas conçu pour être utilisable par l'utilisateur et contient une haute tension à l'intérieur qui peut être dangereux lorsqu'il est ouvert.

En cas de dysfonctionnement, veuillez en informer votre revendeur ou distributeur local pour le service.

AC INPUT (交流輸入)(交流输入)	200-240V~ / 13A / 50Hz (用于中国)				
DC OUTPUT (直流輸出)(直流输出)	+3.3V	+5V	+12V	-12V	+5VSB
	25A	22A	170A	0.3A	3.0A
MAX. POWER (最大總功率)(最大总功率)	120W	2040W	3.6W	15W	
	2050W				

AC INPUT (交流輸入)(交流输入)	(用于中国以外国家) 115-240V~ / 16A-9A / 60-50Hz				
DC OUTPUT (直流輸出)(直流输出)	+3.3V	+5V	+12V	-12V	+5VSB
	25A	22A	137A	0.3A	3.0A
MAX. POWER (最大總功率)(最大总功率)	120W	1644W	3.6W	15W	
	1650W				

RoHS

Power specifications label

CERTIFICATIONS 230V

All data and graphs included in this test report can be used by any individual on the following conditions:
› It should be mentioned that the test results are provided by Cybenetics
› The link to the original test results document should be provided in any case

www.cybenetics.com -info@cybenetics.com
CYBENETICS LTD. 15, Elpinikis Str. 4100 Agios Athanasios, Limassol, Cyprus