



Technical Documentation for EU Regulation 2019/424 laying down ecodesign requirements for servers and data storage product pursuant to Directive 2009/125/EC

December 18, 2020

The following information is based on IBM's knowledge as of the date of this document, which may be based on its records and information from third parties. This documentation applies to finished products that IBM newly puts on the market in the European Union and other jurisdictions which require this Technical Documentation as of the above date.

Product Information			
Machine Type(s)	Model(s)	Part Number	Product Type
9223	22S	-	2-socket, rack mount, resilient server

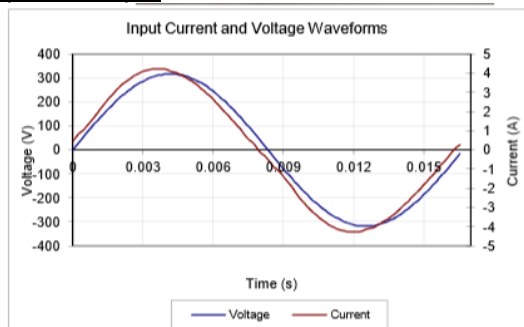
Manufacturer's name, registered trade name and registered trade address:



Year of manufacture
2020

Power Supply Unit (PSU) efficiency, power factor and rated power output:

Ecos ID #	SO-542
Manufacturer	IBM
Model Number	7001692-XXXX
Serial Number	11S94Y8090YK10812AZ003
Year	2012
Type	1U
Test Date	04/25/13



Rated Specifications	Value	Units
Input Voltage	100-127 200-240	Volts
Input Current	10-8	Amps
Input Frequency	50/60	Hz
Rated Output Power	1,400	Watts

Note: All measurements were taken with input voltage at 230 V nominal and 60 Hz.

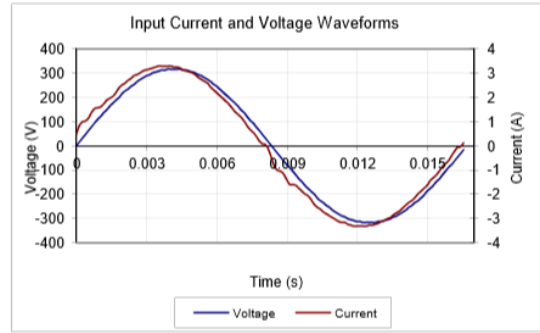
Input AC Current Waveform (ITHD = 3.91%, 50% Load)

I _{RMS} A	PF	I _{THD} (%)	Load (%)	Fraction of Load	Input Watts	External Fan (W)*	DC Terminal Voltage (V)/ DC Load Current (A)		Output Watts	Efficiency %
							12.2V	12Vsb		
0.78	0.86	16.03	10%	Low	155	0.84	12.28/11.25	12.24/0.25	141	90.93%
1.39	0.94	9.64	20%	Light	302	0.84	12.28/22.5	12.21/0.49	282	93.52%
3.30	0.99	3.91	50%	Typical	748	1.56	12.27/56.26	12.11/1.23	705	94.21%
6.71	0.99	3.75	100%	Full	1533	4.56	12.25/112.54	11.94/2.45	1408	91.85%

* Fan power is not included in the efficiency calculations



Ecos ID #	SO-732
Manufacturer	IBM Corporation
Model Number	MPS1025
Serial Number	YL10KFF23034
Year	2014
Type	CUSTOM
Test Date	04/17/14



Input AC Current Waveform (ITHD = 3.03%, 50% Load)

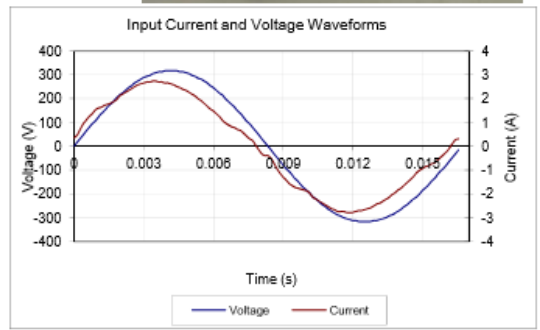
Rated Specifications	Value	Units
Input Voltage	100-127 / 200-240	Volts
Input Current	12-7	Amps
Input Frequency	50/60	Hz
Rated Output Power	1,025	Watts

Note: All measurements were taken with input voltage at 230 V nominal and 60 Hz.

I _{RMS} A	PF	I _{THD} (%)	Load (%)	Fraction of Load	Input Watts	External Fan (W)*	DC Terminal Voltage (V)/ DC Load Current (A)		Output Watts	Efficiency %
							12.3V	12.3Vsb		
0.60	0.84	39.26	10%	Low	117	16.92	12.32/6.67	12.3/1.66	103	87.66%
1.02	0.96	27.40	20%	Light	226	16.92	12.32/13.4	12.3/3.32	206	91.22%
2.40	0.99	3.03	50%	Typical	548	16.92	12.33/33.47	12.29/8.29	515	94.00%
4.83	1.00	2.04	100%	Full	1110	16.92	12.34/66.97	12.27/16.58	1030	92.78%

* Fan power is not included in the efficiency calculations

Ecos ID #	SO-541
Manufacturer	IBM
Model Number	7001691-XXXX
Serial Number	11S94Y8092YK10812BA007
Year	2012
Type	1U
Test Date	04/25/13



Input AC Current Waveform (ITHD = 5.38%, 50% Load)

Rated Specifications	Value	Units
Input Voltage	100-127 / 200-240	Volts
Input Current	10.0/5.0	Amps
Input Frequency	50/60	Hz
Rated Output Power	900	Watts

Note: All measurements were taken with input voltage at 230 V nominal and 60 Hz.

I _{RMS} A	PF	I _{THD} (%)	Load (%)	Fraction of Load	Input Watts	External Fan (W)*	DC Terminal Voltage (V)/ DC Load Current (A)		Output Watts	Efficiency %
							12.2V	12Vsb		
0.58	0.76	15.36	10%	Low	102	0.84	12.28/7.15	12.07/0.25	91	88.92%
0.92	0.92	13.03	20%	Light	194	0.84	12.27/14.22	12.06/0.49	180	92.85%
2.13	0.98	5.39	50%	Typical	481	0.84	12.26/35.74	12.04/1.22	453	94.16%
4.29	0.99	6.74	100%	Full	978	2.88	12.26/71.5	11.99/2.43	905	92.57%

* Fan power is not included in the efficiency calculations

1 socket configuration

Idle State Power High End Configuration

216.4 Watts

Idle State Power Low End Configuration

182.4 Watts

List of extra components for additional idle power allowances (High End Configuration):

- CPU Performance : 1
- Additional PSU installed explicitly for power redundancy : 1
- HDD installed : 0
- SSD installed : 2
- Installed memory greater than 4 GB : 1044 GB
- Installed buffered DDR channels greater than 8 channels : 0
- Installed I/O devices greater than two ports of ≥ 1 Gbit, onboard Ethernet
 - = 1 Gb/s : 1
 - > 1 Gb/s and < 10 Gb/s : 0
 - ≥ 10 Gb/s and < 25Gb/s : 0



- ≥ 25 Gb/s and < 50Gb/s : 0
- ≥ 50 Gb/s : 0
- Other: 0

List of extra components for additional idle power allowances (Low End Configuration):

- CPU Performance : 1
- Additional PSU installed explicitly for power redundancy : 1
- HDD installed : 2
- SSD installed : 0
- Installed memory greater than 4 GB : 61 GB
- Installed buffered DDR channels greater than 8 channels : 0
- Installed I/O devices greater than two ports of ≥ 1 Gbit, onboard Ethernet
 - = 1 Gb/s : 1
 - > 1 Gb/s and < 10 Gb/s : 0
 - ≥ 10 Gb/s and < 25Gb/s : 0
 - ≥ 25 Gb/s and < 50Gb/s : 0
 - ≥ 50 Gb/s : 0
- Other: 0

Maximum power for high end configuration

463.4 Watts

Maximum power for low end configuration

254.9 Watts

Active state efficiency and performance in active state for high end configuration

14.6

Active state efficiency and performance in active state for low end configuration

7.2

Declared operating condition class for high end configuration

A2

Declared operating condition class for low end configuration

A2

This product has been tested in order to verify that it will function within the boundaries of the declared operating condition class.

Idle state power at the higher boundary temperature of the declared operating condition class (High End Configuration):

263.4 Watts

Idle state power at the higher boundary temperature of the declared operating condition class (Low End Configuration):

229.4 Watts

2 socket configuration

Idle State Power High End Configuration

321.4 Watts



Idle State Power Low End Configuration
251.1 Watts

List of extra components for additional idle power allowances (High End Configuration):

- CPU Performance : 2
- Additional PSU installed explicitly for power redundancy : 1
- HDD installed : 0
- SSD installed : 2
- Installed memory greater than 4 GB : 2094 GB
- Installed buffered DDR channels greater than 8 channels : 8
- Installed I/O devices greater than two ports of ≥ 1 Gbit, onboard Ethernet
 - = 1 Gb/s : 1
 - > 1 Gb/s and < 10 Gb/s : 0
 - ≥ 10 Gb/s and < 25Gb/s : 0
 - ≥ 25 Gb/s and < 50Gb/s : 0
 - ≥ 50 Gb/s : 0
- Other: 0

List of extra components for additional idle power allowances (Low End Configuration):

- CPU Performance : 2
- Additional PSU installed explicitly for power redundancy : 1
- HDD installed : 2
- SSD installed : 0
- Installed memory greater than 4 GB : 127 GB
- Installed buffered DDR channels greater than 8 channels : 8
- Installed I/O devices greater than two ports of ≥ 1 Gbit, onboard Ethernet
 - = 1 Gb/s : 1
 - > 1 Gb/s and < 10 Gb/s : 0
 - ≥ 10 Gb/s and < 25Gb/s : 0
 - ≥ 25 Gb/s and < 50Gb/s : 0
 - ≥ 50 Gb/s : 0
- Other: 0

Maximum power for high end configuration
832.2 Watts

Maximum power for low end configuration
389.8 Watts

Active state efficiency and performance in active state for high end configuration
16.5

Active state efficiency and performance in active state for low end configuration
9.5

Declared operating condition class for high end configuration
A2

Declared operating condition class for low end configuration
A2

This product has been tested in order to verify that it will function within the boundaries of the declared operating condition class.



Idle state power at the higher boundary temperature of the declared operating condition class (High End Configuration):
368.4 Watts

Idle state power at the higher boundary temperature of the declared operating condition class (Low End Configuration):
298.1 Watts

Secure data functionality:

http://www.ibm.com/support/knowledgecenter/POWER9/p9eah/p9eah_secure_data_deletion.htm

http://www.ibm.com/support/knowledgecenter/en/linuxonibm/liaau/Linux_secure_delete.html

IBM maintains a product environmental specification, IBM Engineering Specification 46G3772 - Baseline Environmental Requirements for Supplier Deliverables to IBM which mandates part and product compliance to relevant worldwide regulations, including EU Regulation 2019/424. The specifications are located for supplier access at: <http://www.ibm.com/ibm/environment/products/> and <http://www-03.ibm.com/procurement/proweb.nsf/ContentDocsByTitle/United+States~Information+for+suppliers>.

Suppliers are required to certify compliance to IBM product environmental specifications by completing the IBM Product Content Declaration (PCD), located at: <http://www.ibm.com/ibm/environment/products/>. Once completed, the PCD form is submitted to IBM, loaded into product management databases and accessed for compliance review by product. IBM's Product Environmental Profile process and tool documents and reviews product compliance prior to release to the market. The documentation presented here is a result of this review and process.

In 1997, IBM became the world's first major multinational corporation to have earned a single worldwide registration to the ISO 14001 Environmental Management System (EMS) standard. The registration covers IBM's manufacturing, product design and hardware development operations across its business units worldwide. IBM was able to earn its single worldwide registration to ISO 14001 because of its longstanding global EMS. ISO 14001 EMS standard is a voluntary international standard that identifies the elements of an EMS needed for an organization to effectively manage its impact on the environment. Its objective is to integrate the EMS with overall business management processes so that environmental considerations are a standard part of business decisions. Applied to all its manufacturing and hardware development operations globally, IBM's EMS fosters common solutions, continual improvement and worldwide consistency. The result is a more effective and efficient EMS. The single registration also ensures that IBM executes the same EMS no matter where in the world it does business. Under IBM's single global registration, approximately 20 sites or registered entities are audited annually on a sampling or rolling basis by Bureau Veritas Certification North America, IBM's ISO 14001 registrar. These audits of IBM's EMS include sampling and verification of the implementation of IBM's internal requirements, monitoring and measurement as reported through the self assessment program, energy master plans, and in the Environmental Performance Database, and other tools used to provide the information for IBM's annual environmental and corporate responsibility reporting and for management review. The IBM ISO 14001 certification is located at <http://www.ibm.com/ibm/environment/iso14001/>.

More information on IBM's product stewardship program and / or environmental policies is located at: <http://www.ibm.com/ibm/environment/>

Limitations for Customers: The Product information provided in this Technical Documentation ("Documentation") is provided "AS IS", without any express or implied warranty of any kind. This information is subject to change without notice; provided, however, that IBM reserves the right, in its



discretion, to issue an update or modification to this Documentation if it believes it is appropriate to do so. The contents of this Documentation do not constitute either: (1) legal advice; (2) a legal opinion; or (3) any representation, warranty, or guarantee regarding a person's ability to comply with applicable legal requirements. This Documentation in no way modifies any agreements entered into by IBM. The information here is based on IBM's knowledge as of the date of this document, which may be based on its records and information from third parties. This documentation applies to finished products that IBM newly puts on the market in the European Union and other jurisdictions which require this Declaration of Conformity as of the date above. CE Mark applies only to those new products put on the market in the EU and the European Free Trade Association jurisdictions by IBM.

The following are trademarks of International Business Machines Corporation in the United States, or other countries, or both: IBM IBM Logo.