



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

2019-12-24

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Product Information			
Machine Type(s)	Model(s)	Part Number	Product Type
5331, 5332, 5333, 5334	993, 994, 996, E96	-	Server or Online Data Storage
			Online Data Storage

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



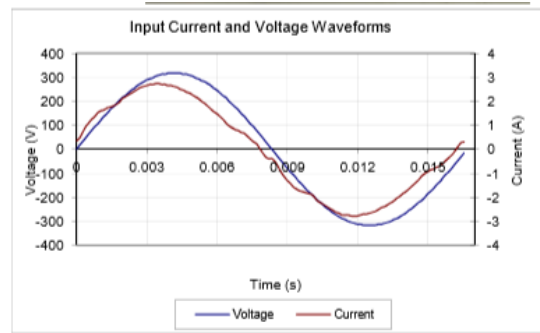
Year of manufacture: – 2019

Power Supply Unit (PSU) efficiency and power factor:

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

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.



Input AC Current Waveform (ITHD = 5.39%, 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		
0.58	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%

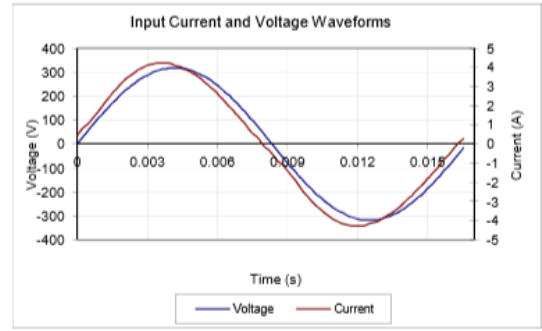
* Fan power is not included in the efficiency calculations



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)

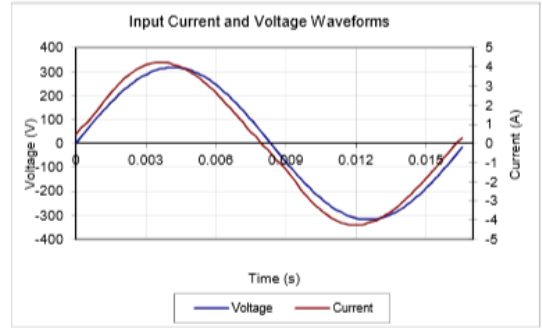
I _{RMS} A	PF	I _{THD} (%)	Load (%)	Fraction of Load	Input Watts	External Fan (W)*	DC Terminal Voltage (V)/ DC Load Current (A)		Output Watts	Efficiency %
							12.2V	12Vsb		
0.78	0.86	16.03	10%	Low	155	0.84	12.28/11.25	12.24/0.25	141	90.93%
1.39	0.94	9.64	20%	Light	302	0.84	12.28/22.5	12.21/0.49	282	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-542.1
Manufacturer	IBM
Model Number	700-013875-0000
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%

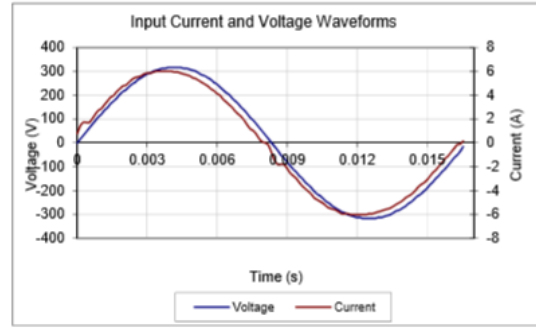
* Fan power is not included in the efficiency calculations



Ecos ID #	SO-1097
Manufacturer	IBM
Model Number	700-014245-0000
Serial Number	11S00LP861YL10KY64B03L
Year	2016
Type	1U
Test Date	05/05/16

Rated Specifications		Value	Units
Input Voltage		100-127, 200-240	Volts
Input Current		11.1, 11.5	Amps
Input Frequency		50/60	Hz
Rated Output Power		2,000	Watts

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



Input AC Current Waveform (ITHD = 2.67%, 50% Load)

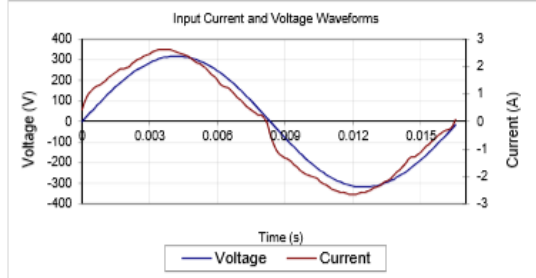
I _{RMS} A	PF	I _{THD} (%)	Load (%)	Fraction of Load	Input Watts	External Fan (W)*	DC Terminal Voltage (V)/ DC Load Current (A)			Output Watts	Efficiency %
							12.2V	12.2Vsb			
1.01	0.94	11.13	10%	Low	217	8.52	12.2/16.21	12.19/0.25	201	92.31%	
1.90	0.97	7.30	20%	Light	425	8.52	12.2/32.44	12.19/0.49	402	94.60%	
4.62	0.99	2.67	50%	Typical	1057	8.52	12.19/81.05	12.17/1.23	1003	94.89%	
9.45	1.00	2.11	100%	Full	2171	8.59	12.17/162.03	12.14/2.46	2002	92.24%	

* Fan power is not included in the efficiency calculations

Ecos ID #	SO-1003
Manufacturer	IBM
Model Number	TDPS-800FB A
Serial Number	CCQT1538000260
Year	2015
Type	1U
Test Date	9/28/15

Rated Specifications		Value	Units
Input Voltage		100-240	Volts
Input Current		9.4	Amps
Input Frequency		47-63	Hz
Rated Output Power		800	Watts

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



Input AC Current Waveform (ITHD = 6.86%, 50% Load)

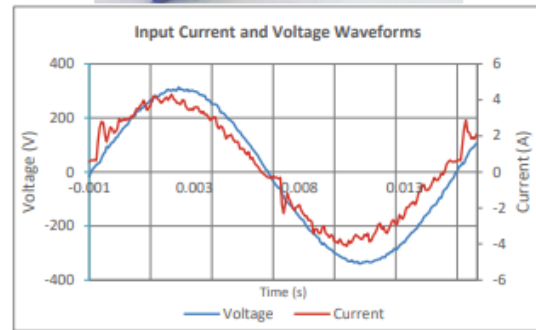
I _{RMS} A	PF	I _{THD} (%)	Load (%)	Input Watts	External Fan (W)*	DC Terminal Voltage (V)/ DC Load Current (A)			Output Watts	Efficiency %
						12V	5V	5Vsb		
0.82	0.85	11.85%	10%	92.45	40.43	12.01/5.21	5.01/3.34	5.01/0.21	80.34	86.91%
0.89	0.88	11.32%	20%	174.24	40.43	12/10.39	5/6.87	5/0.42	160.16	91.92%
1.91	0.97	6.89%	50%	424.30	40.43	11.99/28	4.99/16.64	4.99/1.05	399.93	94.26%
3.78	0.99	6.38%	100%	858.90	40.43	11.96/51.92	4.97/33.18	4.96/2.09	796.36	92.72%

* Fan power is not included in the efficiency calculations

ID Number	SO-2021
Manufacturer	IBM
Model Number	AWF2DC1200W-E
Serial Number	03FP726YL30NH1C7133
Year	2022
Type	1U
Test Date	04/18/22

Rated Specifications		Value	Units
Input Voltage		100-127/200-240	Volts
Input Current		12/7.5	Amps
Input Frequency		50/60	Hz
Rated Output Power		1,200	Watts

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



Input AC Current Waveform (ITHD = 7.107%, 50% Load)

I _{RMS}	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		
0.677	0.8473	42.10%	10%	Low	131.97	2.04	12.18/9.24	12.14/0.55	119.18	90.31%
1.149	0.9541	16.84%	20%	Light	252.12	2.04	12.16/18.47	12.1/1.11	238.06	94.42%
2.747	0.9778	7.11%	50%	Typical	617.67	2.04	12.13/46.16	12.04/2.78	593.29	96.05%
5.404	0.9930	4.86%	100%	Full	1234.64	8.52	12.07/92.32	11.94/5.55	1180.98	95.65%

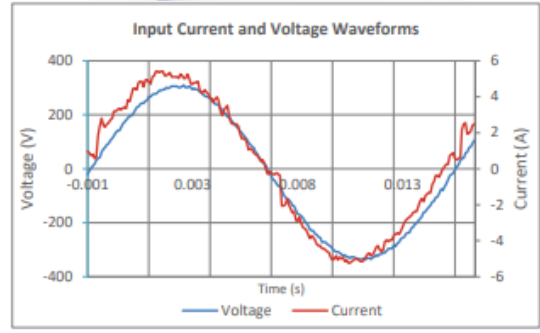
* Fan power is not included in the efficiency calculations



ID Number	SO-2020.1
Manufacturer	IBM
Model Number	AWF2DC1600W-I
Serial Number	02PX119YL30NH22R186
Year	2022
Type	1U
Test Date	04/18/22

Rated Specifications	Value	Units
Input Voltage	100-127/200-240	Volts
Input Current	12/9	Amps
Input Frequency	50/60	Hz
Rated Output Power	1,600	Watts

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



Input AC Current Waveform (ITHD = 5.052%, 50% Load)

I _{RMS}	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		
0.822	0.9224	21.08%	10%	Low	174.44	1.92	12.27/12.48	12.25/0.57	160.15	91.80%
1.531	0.9597	9.13%	20%	Light	338.06	1.80	12.26/24.95	12.21/1.15	319.96	94.65%
3.643	0.9900	5.05%	50%	Typical	829.42	1.92	12.22/62.39	12.15/2.86	797.46	96.15%
7.277	0.9969	4.13%	100%	Full	1668.89	8.52	12.16/124.77	12.05/5.73	1586.12	95.04%

* Fan power is not included in the efficiency calculations

Declared operating condition class:

Ensure that your declared operating condition class falls within the ASHRAE class A1 environment.

See link for detailed environment requirements: [Operating environment requirements](#)

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

Secure data functionality:

https://www.ibm.com/support/knowledgecenter/SSHGBU_9.0.0/com.ibm.storage.ssic.help.doc/f2c_ekmtklm_3ekm3r.html

IBM Security Key Lifecycle Manager:

https://www.ibm.com/support/knowledgecenter/SSWPVP_3.0.1/com.ibm.skim.doc/overview/top/landing-overview.html

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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



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