

ENERGY STAR® Power and Performance Data Sheet

Vendor A, Model 12345-A1



System Characteristics

Form Factor	1U
Available Processor Sockets	2
Available DIMM Slots / Max Memory Capacity	18/144GB
ECC and/or Fully Buffered DIMMs	Yes, ECC and Registered DIMM (RDIMM) memory
Available Expansion Slots	Up to 2 PCI-E and up to 1 PCI-X, not to exceed 2 total
Minimum and Maximum # of Hard Drives	0 and 8
Redundant Power Supply Capable?	Yes
Power Supply Make and Model	460W High Efficiency 503296-B21
Power Supply Output Rating* (watts)	460
Minimum and Maximum # of Power Supplies	1 and 2
Input Power Range (AC or DC)	100-240VAC
Power Supply Efficiency at Specified Loadings*	85.5%@10%, 90.1%@20%, 92.2%@50%, 91.6%@100%
Power Supply Power Factor at Specified Loadings*	0.816@10%, 0.923@20%, 0.956@50%, 0.982@100%
Operating Systems Supported	Microsoft Windows Server 2003 and 2008 Microsoft Windows Essential Business Server 2008 Microsoft Windows Small Business Server 2008 Red Hat Enterprise Linux 4 and 5 SUSE Linux Enterprise Server 10 and 11 Sun Solaris 10 x86 Platform Edition Citrix XenServer 5.x Oracle Enterprise Linux 5 VMware ESX Server 3.5 Novell NetWare 6.5
Installed Operating System for Testing	Windows Server 2008 Enterprise SP1, Build 6001

* Note: Power supply information is for a single power supply only

System Configurations

Processor Information	(2) Intel® Xeon® Processor X5550 (2.66 GHz, 8MB L3 Cache, 95 Watts, DDR3-1333, HT Turbo 2/2/3/3)
Memory Information	12 GB (6 x 2 GB) PC3-10600R (DDR3-1333) Registered DIMMs
Internal Storage	None ships standard
I/O Devices	Dual Port Multifunction Gigabit Server Adapter
Power Supply Number and Redundancy Configuration	2 Installed, Redundant
Management Controller or Service Processor Installed?	Yes
Other Hardware Features / Accessories	

Power Data

Idle Category (1S and 2S only)	Category B: Managed Single Installed Processor (1P) Servers
ENERGY STAR Idle Power Allowance (1S and 2S only)	186
Measured Idle Power (watts)	130.3
Power at Full Load* (watts)	270.8
Benchmark / Method Used for Full Load Test	SiSoftware Sandra Engineer2009 - .net multimedia - Double x1
Test Voltage and Frequency for Idle and Full Load Test	230V/50Hz
Range of Total Estimated Energy Usage ** (kWh/year)	2,283 to 4,744
Link to Detailed Power Calculator (if available)	http://www.vendora.com/powercalculator

* Note: Full load power represents the sustained, average power at 100% load of the given workload, and does not necessarily represent the absolute peak power or the highest average, sustained power possible for other workloads.

** Note: Estimated kWh/year gives the absolute range of energy use a user could expect from continuous operation (24x7x365) and ranges from 100% Idle usage to 100% full load operation. The calculation also includes typical data center overhead at a ratio of 1 watt of overhead to every 1 watt of IT load (corresponding to a PUE of 2.0). Closer approximations may be found by using established power calculators and specific information about the intended operating environment (e.g., average time at Idle, data center PUE, etc.).

Power and Performance for Benchmark #1

Benchmark #1	Benchmark Used and Type of Workload	SiSoftware Sandra Engineer2009 - .net multimedia - Double x1
	Avg. Power Measured During Benchmark Run	233 W
	Benchmark Performance Score	47.84 MPixel/s
	Power Performance Ratio (perf score/avg. power)	0.2 MPixel/s / watt
	Link to Full Benchmark Report (Where Available)	N/A

Power and Performance for Benchmark #2 (optional)

Benchmark #2	Benchmark Used and Type of Workload	
	Avg. Power Measured During Benchmark Run	
	Benchmark Performance Score	
	Power Performance Ratio (perf score/avg. power)	
	Link to Full Benchmark Report (Where Available)	

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Power Saving Features	Enabled on Shipment	End-User Enabling Required
Processor Dynamic Voltage and Frequency Scaling	Yes	
Processor or Core Reduced Power States	Yes	
Power Capping	No	Yes
Variable Speed Fan Control Based on Power or Thermal Readings	Yes	
Low Power Memory States	No	Yes
Low Power I/O States	N/A	
Liquid Cooling Capability	N/A	
Other1:		
Other2:		
Other3:		
Other4:		

Power and Temperature Measurement and Reporting

Input Power Available & Accuracy?	Yes, +/- 10% above 200W and +/-30W at or below 200W
Input Air Temp Available & Accuracy?	Yes, +/- 3 °C
Processor Utilization Available?	Yes
Other Data Measurements Available & Accuracy?	
Compatible Protocols for Data Collection	IPMI
Averaging method and time period	Linear Average

Thermal Information *

	Minimum	Typical	Maximum
Reference Configurations	1xL5520; 2x2GB PC10600E; 1x120GB 5400RPM SFF SATA, 1x460W PS	2xX5550; 6x2GB PC310600R; 1x120GB 5400RPM SFF SATA, 2x460W PS	2xX5570; 18x4GB PC310600R; 8x72GB 10000RPM SAS; 2 PCI- E; 2x750W PS
Total Power Dissipation (watts)	135.0	345.0	495.0
Delta Temperature at Exhaust at Peak Temp. (°C)	9.9	11.7	15.8
Airflow at Maximum Fan Speed (CFM) at Peak Temp.	24.6	53.1	56.3
Airflow at Nominal Fan Speed (CFM) at Nominal Temp.	5.0	8.1	15.3

* Thermal information is provided for the minimum, typical and maximum configurations for the model line
 References: ASHRAE Extended Environmental Envelope Final August 1, 2008
 Thermal Guidelines for Data Processing Environments, ASHRAE, 2004, ISBN 1-931862-43-5
 Peak temperature is defined as 35 °C, Nominal Temperature is defined as 18 - 27 °C

Notes