

ENERGY STAR® Power and Performance Data Sheet

HA8000 RS440xL : CL model



System Characteristics

Form Factor	4U
Available Processor Sockets	4
Available DIMM Slots / Max Memory Capacity	64slots(@ 4 Processor) / 512GB
ECC and/or Fully Buffered DIMMs	ECC DIMMs
Available Expansion Slots	9slots
Minimum and Maximum # of Hard Drives	Min 1, Max 8
Redundant Power Supply Capable?	Yes
Power Supply Make and Model	Delta Electronics DPS-850FBA
Power Supply Output Rating* (watts)	850
Minimum and Maximum # of Power Supplies	Min 2, Max 4
Input Power Range (AC or DC)	AC 100V/200V
Power Supply Efficiency at Specified Loadings*	80.24@10%, 89.17@20%, 92.27@50%, 90.60@100%
Power Supply Power Factor at Specified Loadings*	0.8988@10%, 0.9651@20%, 0.9945@50%, 0.9988@100%
Operating Systems Supported	Microsoft Windows Server® 2003, 2008 and 2008 R2, RedhatEnterpriseLinux
Installed Operating System for Testing	Microsoft Windows Server® 2008 R2 Enterprise

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

System Configurations

	Minimum	Typical	Maximum
Configuration ID	GQ*440CL-*****	GQ*440CL-*****	GQ*440CL-*****
Processor Information	E7-4830x4	E7-4830x4	E7-4830x4
Memory Information	1GBx8=8GB	1GBx16=16GB	8GBx64=512GB
Internal Storage	146GBx1	146GBx5	600GBx8
I/O Devices	On board 1G LAN x4port	On board 1G LAN x4port, Add-in card 1G LAN x2port x2, Fibre 8G x1port x1, SVP x1	On board LAN 1G x4port, Add-in card 1G LAN x2port x1, SAS 6G x4port x1, Fibre 8G x2port x4, SCSI x2, SVP x1, RMM3x1
Power Supply Number and Redundancy Configuration	2 / No redundancy	3 / Redundant	4 / Redundant
Management Controller or Service Processor Installed?	Yes	Yes	Yes
Other Hardware Features / Accessories	Internal SAS RAID x1, DVD-ROM	Internal SAS RAID x1, DVD-ROM	Internal SAS RAID x1, DVD-ROM, LTO5 HH

Power Data

	Minimum	Typical	Maximum
Idle Category (1S and 2S only)	N/A (3S or 4S)		
ENERGY STAR Idle Power Allowance (1S and 2S only)	N/A	N/A	N/A
Measured Idle Power (watts)	401.00 W	459.72 W	678.00 W
Power at Full Load* (watts)	640.51 W	693.82 W	914.50 W
Benchmark / Method Used for Full Load Test	Sandra 2011 Engineer		
Test Voltage and Frequency for Idle and Full Load Test	230V / 60Hz		
Range of Total Estimated Energy Usage ** (kWh/year)	7,026 to 11,222	8,054 to 12,156	11,879 to 16,022
Link to Detailed Power Calculator (if available)			

* 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

	Minimum	Typical	Maximum
Benchmark Used and Type of Workload	Sandra 2011 Engineer		
Avg. Power Measured During Benchmark Run	640.51 W	693.82 W	914.50 W
Benchmark Performance Score	139.79 MPixel/s	138.33 MPixel/s	140.00 MPixel/s
Power Performance Ratio (perf score/avg. power)			
Link to Full Benchmark Report (Where Available)	N/A	N/A	N/A

Power and Performance for Benchmark #2 (optional)

	Minimum	Typical	Maximum
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(C3)	
Power Capping		
Variable Speed Fan Control Based on Power or Thermal Readings	Yes	
Low Power Memory States		
Low Power I/O States		
Liquid Cooling Capability		
Other1:		
Other2:		
Other3:		
Other4:		

Power and Temperature Measurement and Reporting

Input Power Available & Accuracy?	Yes, +/-5% under the operating power range
Input Air Temp Available & Accuracy?	Yes, +/-3degC
Processor Utilization Available?	Yes
Other Data Measurements Available & Accuracy?	
Compatible Protocols for Data Collection	Yes, IPMI
Averaging method and time period	Using moving average method, Average values over about a 1 second interval

Thermal Information *

	Minimum	Typical	Maximum
Total Power Dissipation (watts)	640.51 W	693.82 W	914.50 W
Delta Temperature at Exhaust at Peak Temp. (°C)			
Airflow at Maximum Fan Speed (CFM) at Peak Temp.			
Airflow at Nominal Fan Speed (CFM) at Nominal Temp.			

* 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

1. SPECpower_ssj2008 is a registered trademark of the Standard Performance Evaluation Corporation (SPEC). Benchmark results stated above reflect results published on XX/XX/XX. For the latest SPECpower_ssj2008 benchmark results, visit http://www.spec.org/power_ssj2008.

ENERGY STAR Qualified Configurations

Include specific information on ENERGY STAR Qualified SKUs or configurations

All configurations of HA8000 RS440 CL model

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ENERGY STAR Qualified Configurations (Continued)

Include specific information on ENERGY STAR Qualified SKUs or configurations