

# EMC CLARiiON CX500 Networked Storage System

## Specifications

### RAID Levels

RAID 0: Data striped across three to 16 drives  
 RAID 1: Mirrored pairs of two drives  
 RAID 1/0: Data mirrored, then striped across four to 16 drives  
 RAID 3: Independent data access on five or nine drives (with dedicated parity disk)  
 RAID 5: Independent data access on three to 16 drives (with striped parity)  
 Any combination of these RAID levels can exist on a single CX500  
 RAID stripe depth configurable to 4, 16, 64, 128, or 256 sectors per disk  
 MetalLUNs: Storage virtualization via online LUN expansion through either striping or concatenation  
 Rebuild priority tuning: adjustment of minimum I/O reserved for server use during rebuild  
 Configurable global hot spares

### Front-End (Host) Connectivity

Two storage processors per CX500  
 Each storage processor has two 2 Gb Fibre Channel optical ports  
 FCP SCSI-3 protocol  
 Command tag queuing up to 256 tags  
 FC-AL and FC-SW support  
**Maximum Cable Length**  
 Shortwave Optical: 300 meters (2 Gb), 500 meters (1 Gb)

### Back-End (Disk) Connectivity

Each storage processor has two 2 Gb Fibre Channel Arbitrated Loops. Multiple RAID groups may be distributed across redundant loops to maximize bandwidth to disks. CX500 supports a maximum of 120 disk drives.

### Drive Interface

Failover from each storage processor to both Fibre Channel loops is possible

	36 GB (15,000)	73 GB (15,000)	73 GB (10,000)	146 GB (10,000)	250 GB ATA (5,400)
Formatted Capacity (520 bytes/sector, 1 MB = 1,000,000 bytes)	36.01 GB	72.67 GB	72.67 GB	145.78 GB	251 GB
Form Factor	3.5"	3.5"	3.5"	3.5"	3.5"
Height	1.0"	1.0"	1.0"	1.0"	1.0"
Rotational Speed	15,000 rpm	15,000 rpm	10,000 rpm	10,000 rpm	5,400 rpm
Interface	Fibre Channel	Fibre Channel	Fibre Channel	Fibre Channel	ATA
Data Buffer	16 MB	16 MB	16 MB	32 MB	2 MB
Transfer Rates					
Buffer to/from Media	51-69 MB/s	57-86 MB/s	26.7-40.2 MB/s	43-78 MB/s	26-50 MB/s
SP to/from Buffer	200 MB/s (max.)	200 MB/s (max.)	200 MB/s (max.)	200 MB/s (max.)	133 MB/s (max.)
Access Time					
Average Seek	3.6 ms Read 4.2 ms Write	3.6 ms Read 4.0 ms Write	5.2 ms Read 6.2 ms Write	4.7 ms Read 5.3 ms Write	12 ms Read 13 ms Write
Rotational Latency	2 ms	2 ms	2.99 ms	2.99 ms	5.5 ms

### Available Software\*

- SnapView™:** point-in-time view of information for nondisruptive backup and BCVs
- MirrorView™:** remote synchronous and asynchronous mirroring for disaster protection
- Nondisruptive Upgrade (NDU):** online upgrades of storage software and microcode
- Navisphere® Manager:** complete configuration, management, and event notification
- Navisphere Analyzer:** comprehensive performance, management, and trends analysis
- CLARAlert™:** constant system monitoring and remote diagnostics
- VisualSAN®/VisualSRM™:** data protection, shared storage access, SAN management
- StorageScope™:** storage asset management
- PowerPath®:** path failover for continuous data access and dynamic load balancing
- SAN Copy™:** Enables local or long distance data movement between various arrays (e.g., CLARiiON, Symmetrix®, StorageWorks HSG80)

\* Consult your EMC account manager for availability, software configuration, and compatibility information.

CLARiiON CX systems can be integral elements of a comprehensive information lifecycle management strategy—a strategy that helps your enterprise attain the maximum value from its information, at the lowest TCO, at every point in the information lifecycle. Information lifecycle management maps the right service level to the right application at the right cost—at the right time.



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## Dimensions (approximate)

### Rackmount Processor Chassis with Standby Power Supplies (standard NEMA 19-inch rack)

Height	Width	Depth	Weight
6.83 in. (17.36 cm), 4 EIA units	17.72 in. (45.0 cm)	23.75 in. (60.38 cm)	164.1 lb. (74.6 kg) max.

### Rackmount 2 Gbit Fibre Channel Disk Expansion Chassis with Dual Power Supplies

Height	Width	Depth	Weight
5.25 in. (13.33 cm), 3 EIA units	17.72 in (45.0 cm)	23.75 in. (60.38 cm)	88 lb. (40 kg) max. configuration

### Rackmount ATA Disk Expansion Chassis with Dual Power Supplies

Height	Width	Depth	Weight
5.25 in. (13.33 cm), 3 EIA units	17.72 in (45.0 cm)	23.75 in. (60.38 cm)	84 lb. (38 kg) max. configuration

### 40U Rack Enclosure

Height	Width	Depth	Weight
75.0 in. (190.8 cm)	24.0 in. (61.1 cm)	36.0 in. (91.6 cm)	Empty: 300 lb. (136 kg)

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## Power

	Processor Chassis	2Gbit Fibre Channel Disk Expansion Chassis	ATA Disk Expansion Chassis
Frequency	47-63 Hz	47-63 Hz	47-63 Hz
AC Voltage	90-264 Vrms, single phase	90-264 Vrms, single phase	90-264 Vrms, single phase
Power Factor	.98 (min)	.98 (min)	.98 (min)
Power Consumption (maximum)	650 VA, 618W	400 VA, 392W	300 VA, 294W
Heat Dissipation (maximum)	2,000 BTU/hour	1,340 BTU/hour	1,017 BTU/hour
<b>Protection</b>	Rackmount: 10 amps, fused	Rackmount: 10 amps, fused	Rackmount: 10 amps, fused
AC Circuits	Redundant, external AC circuits	Redundant, external AC circuits	Redundant, external AC circuits
Inlet Type	Dual Inlet Rackmount: IE320-C14 appliance coupler	Dual Inlet Rackmount: IE320-C14 appliance coupler	Dual Inlet Rackmount: IE320-C14 appliance coupler

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## AC Power Capability

### 40U Cabinet

Dual Inlets  
NEMA L6-30P or IEC309-332 P6 or IP-57 (Australia)  
200-240 VAC +/- 10%, Single Phase  
47-63 Hz  
4800 VA @ 200 V, 5760 VA @ 240 V  
30A, 2-pole circuit breaker

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## Operating Environment

Temperature: 50-104 degrees F (10-40 degrees C)  
Temperature Gradient: 10 degrees C/hr  
Relative Humidity: 20% to 80% (non-condensing)

### Altitude

8,000 ft. (2438.4 m) @ 104 degrees F (40 degrees C) max.  
10,000 ft. (3048 m) @ 98.6 degrees F (37 degrees C) max.

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## Electromagnetic Emissions and Immunity

FCC Class A EN5022 Class A  
CE Mark VCCI Class A (for Japan)  
ICES-003 Class A (for Canada) AS/NZS CISPR22  
EN55024 Immunity, ITEBSMI Class A (for Taiwan)

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## Quality and Safety Standards

UL 60950; CSAC 22.2-60950, FN 60950  
NEBS Level 3 Certification planned for April, 2004  
Manufactured under an ISO 9000-registered quality system



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Specification Sheet  
C1079