

# EMC CLARiiON CX3 Model 80 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 CX3 model 80
- RAID stripe depth configurable to 4, 16, 64, 128, or 256 sectors per disk
- MetaLUNs: Storage virtualization via online LUN expansion through either striping or concatenation
- Configurable global hot spares
- Rebuild priority tuning: adjustment of minimum I/O reserved for server use during rebuild

### Front-End (Host) Connectivity

- Two storage processors per CX3 model 80
- Each storage processor has four 4 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: 100 meters (4 Gb), 300 meters (2 Gb), 500 meters (1 Gb)

### Back-End (Disk) Connectivity

Each storage processor has four 4 Gb Fibre Channel Arbitrated Loops. Multiple RAID groups may be distributed across redundant loops to maximize bandwidth to disks. CX3 model 80 supports a maximum of 480 disk drives.

### Drive Interface

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

Nominal Capacity	73 GB (10,000)	146 GB (10,000)	300 GB (10,000)	500 GB (7,200)	73 GB 4 Gb/s (15,000)	146 GB 4 Gb/s (15,000)
<b>Formatted Capacity*</b>						
(520 bytes/sector, 1 MB = 1,048,576 bytes)	67.7 GB	135 GB	272 GB	465 GB	67.7 GB	135 GB
Form Factor	3.5"	3.5"	3.5"	3.5"	3.5"	3.5"
Height	1.0"	1.0"	1.0"	1.0"	1.0"	1.0"
Rotational Speed	10,000 rpm	10,000 rpm	10,000 rpm	7,200 rpm	15,000 rpm	15,000 rpm
Interface	Fibre Channel	Fibre Channel	Fibre Channel	Fiber Channel	Fibre Channel	Fibre Channel
Data Buffer	16 MB	32 MB	32 MB	16 MB	16 MB	32 MB
<b>Transfer Rates</b>						
Buffer to/from Media MB/s	26.7-40.2 MB/s	43-78 MB/s	59-118 MB/s	29-64 MB/s	57-86 MB/s	58-96 MB/s
SP to/from Buffer	200 MB/s (max.)	200 MB/s (max.)	200 MB/s (max.)	200 MB/s (max.)	400 MB/s (max.)	400 MB/s (max.)
<b>Access Time</b>						
Average Seek	5.2 ms Read 6.2 ms Write	4.7 ms Read 5.3 ms Write	4.7 ms Read 5.4 ms Write	8.5 ms Read 9.5 ms Write	3.6 ms Read 4.0 ms Write	3.5 ms Read 4.0 ms Write
Rotational Latency	2.99 ms	2.99 ms	3.00 ms	4.17 ms	2 ms	2 ms

\* Note: The FLARE® storage operating environment requires 33 GB of disk space on each of the first five drives.

### Available Software\*

- SnapView™:** point-in-time view of information for nondisruptive backup and clones
- MirrorView™:** remote synchronous and asynchronous mirroring for disaster protection
- Online Upgrade:** online upgrades of storage software and FLARE operating system
- Navisphere® Manager:** complete configuration, management, and event notification
- Navisphere Analyzer:** comprehensive performance, management, and trends analysis
- CLARAlert™:** constant system monitoring, call-home notification, and remote diagnostics
- 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®, HP StorageWorks)
- VisualSAN®/VisualSRM™:** data protection, shared storage access, SAN management
- Replication Manager Family:** manages the replication process (host and replication software) to integrate SnapView and MirrorView operations
- VMware®:** enables server consolidation with CLARiiON storage

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

EMC® CLARiiON® CX3 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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## System Memory

Two Storage Processors per CX3 model 80  
8 GB of Memory per Storage Processor

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## Dimensions (approximate)

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

Height	Width	Depth	Weight
10.25 in. (26.07 cm), 6 EIA units	18.98 in. (48.21 cm)	28.05 in. (71.25 cm)	235.0 lb. (106.6 kg) max.

### Rackmount 4 Gb Fibre Channel Point-to-Point 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)	14.00 in. (35.56 cm)	68 lb. (30.9 kg) max. configuration

### 40U Rack Enclosure

Height	Width	Depth	Weight
75.0 in. (190.8 cm)	24.0 in. (61.1 cm)	39.0 in. (99.2 cm)	Empty: 380 lb. (173 kg)

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## Power

	Processor Chassis	4 Gb Fibre Channel Point-to-Point Disk Expansion Chassis
AC Voltage	100-240 VAC $\pm$ 10%, single phase	100-240 VAC $\pm$ 10%, single phase
Frequency	47-63 Hz	47-63 Hz
Power Factor	.98 (min)	.98 (min)
Power Consumption	820 VA (800 W) max.	440 VA (425 W) max.
Heat Dissipation (maximum)	2,730 Btu/hour	1,450 Btu/hour
Protection	Rackmount: 20 amps, fused	Rackmount: 10 amps, fused
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

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## 40U Cabinet (optional) AC Power Capability

AC Voltage	200-240 VAC $\pm$ 10%, single phase
AC Frequency	47-63 Hz
Power Configuration	Two power domains (base and extended), each redundant
Power Inlet Count	Either two (for redundant base configuration), or four (for redundant extended configuration)
Plug Types	NEMA L6-30P or IEC309-332 P6 or IP57 (Australia)
Input Power Capacity	4,800 VA @ 200 VAC, 5,760 VA @ 240 VAC (each domain) 9,600 VA @ 200 VAC, 11,520 VA @ 240 VAC (total for both domains)
AC Protection	20A circuit breakers internally on each power branch

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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	EN55022 Class A
CE Mark	VCCI Class A (for Japan)
ICES-003 Class A (for Canada)	AS/NZS 3548 Class A (for Australia/New Zealand)
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 in Q3 2006)

ETSI EN 300 386 (planned in Q3 2006)

Manufactured under an ISO 9000-registered quality system



### EMC Corporation

Hopkinton  
Massachusetts  
01748-9103  
1-508-435-1000  
In North America 1-866-464-7381

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