

EMC CLARiiON CX3 Model 20 Networked Storage System



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.

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)
- RAID 6: Dual parity distributed across four to 16 drives
- Any combination of these RAID levels can exist on a single CX3 model 20
- 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 20

	CX3-20 FC	CX3-20 FC/iSCSI
Each storage processor has	Six 4 Gb Fibre Channel optical ports FCP SCSI-3 protocol FC-AL and FC-SW support	Four 1 Gb Ethernet copper ports with full iSCSI off-load iSCSI protocol Two 4 Gb Fibre Channel optical ports
Maximum Cable Length	Shortwave Optical: 100 meters (4 Gb), 300 meters (2 Gb), 500 meters (1 Gb)	CAT5E and CAT6 copper 100 meters (1 Gb)
Command tag queuing up to 256 tags		

Back-End (Disk) Connectivity

Each storage processor has one 4 Gb Fibre Channel Arbitrated Loop. CX3 model 20 supports a maximum of 120 disk drives.

Drive Interface

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

Nominal Capacity	146 GB 2 Gb/s (10,000)	300 GB 4 Gb/s (10,000)	400 GB 4 Gb/s (10,000)	73 GB 4 Gb/s (15,000)	146 GB 4 Gb/s (15,000)	300 GB 4 Gb/s (15,000)	500 GB 2/Gb/s (7,200)	750 GB 4 Gb/s (7,200)	1 TB 4 Gb/s (7,200)
Formatted Capacity* (520 bytes/sector, 1 MB = 1,048,576 bytes)	135 GB	272 GB	372.5 GB	67.7 GB	135 GB	272 GB	465 GB	698 GB	931.5 GB
Form Factor	3.5"	3.5"	3.5"	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"	1.0"	1.0"	1.0"
Rotational Speed	10,000 rpm	10,000 rpm	10,000 rpm	15,000 rpm	15,000 rpm	15,000 rpm	7,200 rpm	7,200 rpm	7,200 rpm
Interface	Fibre Channel	Fibre Channel	Fibre Channel	Fibre Channel	Fibre Channel	Fibre Channel	Fibre Channel	SATA	SATA
Data Buffer	32 MB	16 MB	16 MB	32 MB	32 MB	16 MB	32 MB	16 MB	32 MB
Transfer Rates									
Buffer to/from Media	59–118 MB/s	97 MB/s max.	97 MB/s max.	93 MB/s max.	93 MB/s max.	120–201 MB/s	33–66 MB/s	72–78 MB/s	42–85 MB/s
SP to/from Buffer (max.)	400 MB/s	400 MB/s	400 MB/s	400 MB/s	400 MB/s	400 MB/s	400 MB/s	300 MB/s	300 MB/s
Access Time									
Average Seek	4.7 ms Read 5.4 ms Write	3.9 ms Read 4.2 ms Write	3.9 ms Read 4.2 ms Write	3.6 ms Read 4.1 ms Write	3.7 ms Read 4.2 ms Write	3.5 ms Read 4.0 ms Write	8.5 ms Read 9.5 ms Write	8.5 ms Read 10 ms Write	8.2 ms Read 9.2 ms Write
Rotational Latency	3.00 ms	2.98 ms	2.98 ms	2 ms	2 ms	2.0 ms	4.17 ms	4.16 ms	4.17 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 replication for disaster protection

RecoverPoint/SE: remote asynchronous replication 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

Navisphere Quality of Service Manager: application service-level monitoring and management

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.

System Memory

Two Storage Processors per CX3 model 20

2 GB of Memory per Storage Processor

Dimensions (approximate)

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

Height	Width	Depth	Weight
3.29 in. (8.36 cm), 2 EIA units	18.92 in. (48.06 cm)	31.58 in. (80.21 cm)	90.0 lb. (41.0 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)

Power

	Processor Chassis	4 Gb Fibre Channel Point-to-Point Disk Expansion Chassis
AC Voltage*	100–240 VAC ±10%, single phase	100–240 VAC ±10%, single phase
Frequency	47–63 Hz	47–63 Hz
Power Factor	.95 (min)	.98 (min)
Power Consumption	240 VA (230 W) max.	440 VA (425 W) max.
Heat Dissipation (maximum)	785 Btu/hour	1,450 Btu/hour
Protection	Rackmount: 6.3 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

*DC-powered systems available, see EMC CLARiiON CX3 model 20 DC-Powered system specification sheet on www.EMC.com for more information.

40U Cabinet (optional) AC Power Capability

AC Voltage	200–240 VAC +/- 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	30A circuit breakers internally on each power branch

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.

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, ITE BSMI Class A (for Taiwan)

Quality and Safety Standards

UL 60950; CSAC 22.2-60950, FN 60950

NEBS Level 3 Certification

ETSI EN 300 386

Manufactured under an ISO 9000-registered quality system

Warranty and Support Options

Standard three-year Enhanced Warranty: 5x9 NBD, 7x24 remote support, customer installation of replacement disk drives, power supplies, fans, and small form-factor-pluggable optical transceivers.

Optional Premium Maintenance upgrade: 7x24 onsite support, 4-hour response time commitment, Critical Problem Escalation management, and EMC installation of replacement parts.



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