



FLEXLINE™ 200 SERIES AND 300 SERIES

STORAGE SYSTEMS

Key benefits

Save money

Leverage your existing investments with feature enhancements built on existing platforms.

Eliminate downtime costs

Increase access to business data via redundant hot-swappable components, path failover features and on-the-fly capacity upgrades.

Reduce training costs

Centralize management and reduce the need for multiple management tools and corresponding training resources.

Reduce capital expenses

Add capacity when you need it through easy scalability. Position your organization to take advantage of future cost erosions.

Increase productivity

Manage your storage system from anywhere on the network, using the SANtricity software suite for FlexLine 200 Series and 300 Series storage systems.



FLX380 and FLX280 enterprise storage systems

FlexLine™ 200 Series and 300 Series storage systems

In transaction-intensive environments, fast access to data is essential. The speed at which information is delivered and stored can make or break your business.

Fast access is at the heart of StorageTek's FlexLine™ 200 Series and 300 Series storage systems. These flexible, modular systems are built for transaction-intensive operations that require both high performance and top value for a wide variety of applications.

While delivering stepped-up performance, 200 Series and 300 Series storage systems also enable improved efficiencies, lower total cost of ownership and a higher return on investment.

Meet your precise needs

Simplicity and flexibility define the 200 Series and 300 Series storage systems. Streamlined hardware offerings allow you to choose controllers based on your specific performance requirements and business needs, independent from the type of disk. With a broad range of compatible disk arrays and software, you can create a FlexLine system to meet your precise needs.



FlexLine™ storage system with FlexLine™ FLC250 disk arrays

Storage systems

FlexLine 200 Series and 300 Series storage systems are available in three tiers. Offerings range from the high-performance FlexLine™ FLX380 and FLX280 enterprise storage systems to the fully featured FlexLine™ FLX240 mid-range storage system to the highly affordable FlexLine™ FLX210 entry-level storage system.

FlexLine™ FLX380 enterprise storage system

The FLX380 storage system is the newest addition to StorageTek's FlexLine™ family, providing unprecedented performance in a family of industry-leading technology. The FLX380 storage system integrates 4-gigabit-per-second Fibre Channel (FC) connectivity, high-performance FC or high-capacity Serial ATA (SATA) disk drives and powerful storage management to produce StorageTek's highest performing solution.

The FLX380 storage system continues FlexLine's storage heritage of a modular, building block design enabling lower acquisition and expansion costs, while maintaining maximum flexibility. The FLX380 controller houses the dual-active, intelligent RAID controllers, provides eight 4-gigabit-per-second host connections and supports up to 224 Fibre Channel or SATA disk drives. Redundant controllers and a host-based failover driver provides automated I/O path protection and gives continued data access.

FlexLine FLX280 enterprise storage system

The FLX280 is an enterprise-class, open systems storage solution that satisfies the most demanding requirements for throughput and transaction processing applications. This is an ideal controller for high I/O applications, such as ERP, OLTP and general databases. The FLX280 storage system also excels in bandwidth-intensive applications, such as video streaming, imaging and seismic processing.

The FLX280 storage system is a full, end-to-end 2-gigabit Fibre Channel storage solution that can support up to 16 arrays. Leveraging the power and flexibility of SANtricity® software suite for FlexLine™ 200 Series and 300 Series storage systems, the FLX280 can be configured in any combination of high-performance Fibre Channel or high-density ATA drives and is supported in all major Windows and UNIX environments.

Additionally, SANtricity software suite enables mission-critical data protection with Remote Volume Mirror (RVM) software, improved data availability with SnapShot Copy software and Internal Volume Copy (IVC) software and server consolidation with SANshare Storage Partitioning software.

FLEXLINE™ 200 SERIES AND 300 SERIES

STORAGE SYSTEMS

FlexLine FLX240 mid-range storage system

The mid-range FLX240 storage system provides robust features, scalability and solid performance to meet the requirements of online applications in a cost-efficient manner.

The FLX240 is a full, end-to-end 2-gigabit Fibre Channel storage solution that supports all major Windows and UNIX environments. In addition, it has the business continuity features necessary to securely manage and protect data.

The FLX240 storage system is available in two configuration options:

- The drive-limited FLX240 offers superior value and an attractive price point to serve remote office locations or file and print servers. It supports a maximum of 14 Fibre Channel drives.
- The fully-expandable FLX240 is the right choice for smaller database environments or e-mail servers. It can support up to 14 integrated Fibre Channel drives as well as 7 additional arrays — in any combination of Fibre Channel and ATA devices.

SANtricity 9.1 software suite also supports the FLX240. It offers a full spectrum of premium features for data protection and business continuity.

FlexLine FLX210 entry-level storage system

The affordable and cost-effective FlexLine FLX210 entry-level storage system provides scalable storage, a small footprint, advanced management features and entry-level pricing in a true enterprise-class disk system.

The FLX210 is a full, end-to-end 2-gigabit storage solution that supports all major Windows and UNIX environments. A scalable solution, the FLX210 integrates up to 14 SATA drives into the controller module and supports up to seven arrays. With StorageTek's drive intermix capability, these arrays can be either Fibre Channel or SATA.

The FLX210 is ideal for enabling real-time access to video, medical images, e-mail, documents and other digital assets.



*FlexLine™ FLX210/240 entry-level/mid-range storage system
(shown in a desk side configuration)*



Disk arrays

The FlexLine 200 Series and 300 Series product line gives you a choice of drive type: access-centric Fibre Channel arrays or capacity-centric ATA arrays.

FlexLine™ FLA300 access-centric disk array

The FLA300 disk array offers the ultimate in access-centric performance and high availability. Point-to-point connections within the array reduce loop latency and speed up the entire system. Also, by allowing the full isolation of drives, the embedded switch technology of the FLA300 eliminates the risk of a single drive disrupting the loop and causing other drives to fail.

The switched design of the FLA300 is ideal for the performance needs and stringent reliability requirements of the most demanding environments, including those associated with large database installations, high-performance computing and government projects. The 2-gigabit-per-second FLA300 supports up to 14 Fibre Channel drives.

FlexLine™ FLC200 capacity-centric disk array

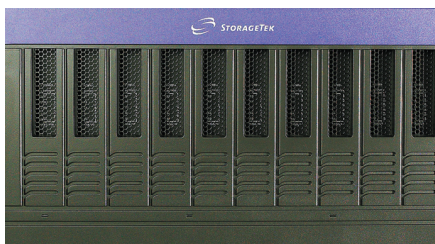
The FLC200 capacity-centric array is ideal for general purpose ATA applications. It meets the needs of organizations seeking a lower-cost online storage solution that offers better performance than tape or optical devices.

Support for industry-standard 2-gigabit-per-second speed and 14 single-drive, capacity-centric SATA drives allow for granular and scalable growth. Capacity grows only as needed.

FlexLine™ FLC250 capacity-centric disk array

The FLC250 is StorageTek's highest density disk array. It is a good match for disk-to-disk backup, online archive, data replication and fixed-content applications. The FLC250 is a cost-effective solution for high-capacity storage applications that do not require the random data access performance of the access-centric disk arrays.

The FLC250 bridges the gap between high-performance, access-centric disk and tape automation. It supports up to 10 blades and 2-gigabit-per-second throughput, so capacity can be added quickly and easily in increments of 1.25 terabytes.



FlexLine™ FLC250 capacity-centric disk array

FLEXLINE™ 200 SERIES AND 300 SERIES

STORAGE SYSTEMS

Software

SANtricity software suite for FlexLine 200 Series and 300 Series storage systems completes your storage management solution. It enhances the FlexLine 200 and 300 Series product line by providing powerful storage management functionality to help you maximize your storage investment.

Applications

Databases and online transaction processing. Meet the needs of performance-driven online transaction processing applications. Improve transaction rates and increase customer satisfaction. High-speed, balanced performance enables faster, more responsive applications. Keep data accessible and decrease risk of downtime-related revenue loss.

Mirroring and data replication. Replicate more data to your remote site, creating a business continuance and recovery strategy in the event of a disaster. Data can also be replicated locally to provide fast recovery options.

Centralized storage management. Manage multiple systems from anywhere on the network, saving costs on additional staff and training. Leverage valuable resources across a common management tool that scales from entry-level to enterprise requirements.



FlexLine™ FLA300 access-centric disk array



FlexLine™ 200 Series and 300 Series storage systems specifications

	FLX380 STORAGE SYSTEM	FLX280 STORAGE SYSTEM	FLX240 STORAGE SYSTEM	FLX210 STORAGE SYSTEM
Performance				
Maximum burst I/O rate	550,000 I/O per sec	148,000 I/O per sec	77,500 I/O per sec	76,000 I/O per sec
Maximum sustained I/O rate (Fibre Channel)	79,000 I/O per sec	53,200 I/O per sec	25,000 I/O per sec	25,000 I/O per sec
Maximum sustained I/O rate (SATA)	XXX I/O per sec	6,000 I/O per sec	3,000 I/O per sec	3,000 I/O per sec
Maximum sustained I/O rate (Blade)		12,800 I/O per sec	6,500 I/O per sec	
Maximum sustained throughput	1600 MB/sec	795 MB/sec	395 MB/sec	485 MB/sec
Total cache size	4 GB (8 GB and 16 GB optional)	2 GB	2 GB	2 GB
Connectivity				
Host interface	4 Gb/sec	2 Gb/sec	2 Gb/sec	2 Gb/sec
Host connections	8 (point-to-point, arbitrated loop and switched fabric support)	8 FC-AL direct attach or 4 FC-SW SAN attach	4 FC-AL direct attach or 4 FC-SW SAN attach	4 FC-AL direct attach or 4 FC-SW SAN attach
Drive interface	4 Gb/sec	2 Gb/sec	2 Gb/sec	2 Gb/sec
Drive connections	8 Fibre Channel	4 Fibre Channel	2 Fibre Channel	2 Fibre Channel
Capacity				
Maximum number of drives	224	224 or 120 blades	112 or 60 blades	112
Compatible arrays	Fibre Channel: FLA200, FLA300	Fibre Channel: FLA200, FLA300	Fibre Channel: FLA200, FLA300	Fibre Channel: FLA200, FLA300
	SATA: FLC200	SATA: FLC200	SATA: FLC200	SATA: FLC200
Drive capacity		blade: FLC250	blade: FLC250	
	Fibre Channel: 36 GB, 73 GB, 146 GB or 300 GB	Fibre Channel: 36 GB, 73 GB, 146 GB or 300 GB	Fibre Channel: 36 GB, 73 GB, 146 GB or 300 GB	Fibre Channel: 36 GB, 73 GB, 146 GB or 300 GB
	SATA: 250 GB	SATA: 250 GB	SATA: 250 GB	
Maximum number of arrays	16	blade: 1.25 TB	blade: 1.25 TB	
		16 or 12 blade arrays	7 or 6 blade arrays	7
Availability				
Redundant components	Storage controllers, Fibre Channel drive loops, power supplies and cooling fans	Storage controllers, Fibre Channel drive loops, power supplies and cooling fans	Storage controllers, Fibre Channel drive loops, power supplies and cooling fans	Storage controllers, Fibre Channel drive loops, power supplies and cooling fans
Hot-swap components	Disk drives, storage controllers, power supplies, cooling fans and battery backup	Disk drives, storage controllers, power supplies, cooling fans and battery backup	Disk drives, storage controllers, power supplies, cooling fans and battery backup	Disk drives, storage controllers, power supplies, cooling fans and battery backup
High-availability features	Automatic drive failure detection and rebuild using global hot spare drives, cache battery backup	Automatic drive failure detection and rebuild using global hot spare drives, cache battery backup	Automatic drive failure detection and rebuild using global hot spare drives, cache battery backup	Automatic drive failure detection and rebuild using global hot spare drives, cache battery backup
RAID levels supported	0, 1, 3, 5 and 1+0	0, 1, 3, 5 and 1+0	0, 1, 3, 5 and 1+0	0, 1, 3, 5 and 1+0
Compatibility				
Supported operating systems	Windows Server 2003, Windows 2000, Solaris, HP-UX, IRIX, AIX, Linux, NetWare	Windows Server 2003, Windows 2000, Solaris, HP-UX, IRIX, AIX, Linux, NetWare	Windows Server 2003, Windows 2000, Solaris, HP-UX, IRIX, AIX, Linux, NetWare	Windows Server 2003, Windows 2000, Solaris, HP-UX, IRIX, AIX, Linux, NetWare

FLEXLINE™ 200 SERIES AND 300 SERIES

STORAGE SYSTEMS

	FLX380 STORAGE SYSTEM	FLX280 STORAGE SYSTEM	FLX240 STORAGE SYSTEM	FLX210 STORAGE SYSTEM
Management				
Storage management software	SANtricity Storage Manager v9.14	SANtricity 9.1 Storage Manager	SANtricity 9.12 Storage Manager	SANtricity 9.1 Storage Manager
Standard features	Drive intermix capability	Drive intermix capability	Drive intermix capability	Drive intermix capability
	Online storage management	Online storage management	Online storage management	Online storage management
	Dynamic volume expansion	Dynamic volume expansion	Dynamic volume expansion	Dynamic volume expansion
	Dynamic capacity expansion	Dynamic capacity expansion	Dynamic capacity expansion	Dynamic capacity expansion
	Dynamic drive configuration and migration	Dynamic drive configuration and migration	Dynamic drive configuration and migration	Dynamic drive configuration and migration
Premium features	SANshare Storage Partitioning (up to 64 partitions)	SANshare Storage Partitioning (up to 64 partitions)	SANshare Storage Partitioning (up to 64 partitions)	SANshare Storage Partitioning (up to 64 partitions)
	SnapShot Copy	SnapShot Copy	SnapShot Copy	SnapShot Copy
	Internal Volume Copy	Internal Volume Copy	Internal Volume Copy	Internal Volume Copy
	Remote Volume Mirror	Remote Volume Mirror	Remote Volume Mirror	Remote Volume Mirror
Mechanical				
Height	6.9 in (17.5 cm)	6.9 in (17.5 cm)	5.1 in (12.9 cm)	5.1 in (12.9 cm)
Depth	24.8 in (63.0 cm)	24.8 in (63.0 cm)	22.1 in (56.1 cm)	22.1 in (56.1 cm)
Width	19.0 in (48.3 cm)	19.0 in (48.3 cm)	17.6 in (44.7 cm)	17.6 in (44.7 cm)
Unit height	4u*	4u*	3u*	3u*
Weight	80.5 lb (36.5 kg)	89.0 lb (40.4 kg)	62 lb (28 kg)	62 lb (28 kg)
Environmental				
Temperature	+50° to +104° F (+10° to +40° C)	+50° to +104° F (+10° to +40° C)	+50° to +104° F (+10° to +40° C)	+50° to +104° F (+10° to +40° C)
Heat dissipation	2,904 Btu/hr (based on 1.12 kVA or 851 W power consumption)	2,904 Btu/hr (based on 1.12 kVA or 851 W power consumption)	2,904 Btu/hr (based on 1.12 kVA or 851 W power consumption)	2,904 Btu/hr (based on 1.12 kVA or 851 W power consumption)
Power				
International	230 V, 10 A, power connection as required	230 V, 10 A, power connection as required	230 V, 10 A, power connection as required	230 V, 10 A, power connection as required
U.S. and Japan	115 V, 15 A, NEMA 5–15	115 V, 15 A, NEMA 5–15	115 V, 15 A, NEMA 5–15	115 V, 15 A, NEMA 5–15
Regulatory compliance				
Electromagnetic compliance	FCC (47 CFR 15, Subpart B) Class A	FCC (47 CFR 15, Subpart B) Class A	FCC (47 CFR 15, Subpart B) Class A	FCC (47 CFR 15, Subpart B) Class A
	CE (EN55022 Class A, EN55024, EN61000-3-2, EN61000-3-3)	CE (EN55022 Class A, EN55024, EN61000-3-2, EN61000-3-3)	CE (EN55022 Class A, EN55024, EN61000-3-2, EN61000-3-3)	CE (EN55022 Class A, EN55024, EN61000-3-2, EN61000-3-3)
	VCCI (CISPR 22) Class A	VCCI (CISPR 22) Class A	VCCI (CISPR 22) Class A	VCCI (CISPR 22) Class A
	Canada (ICES-003) Class A	Canada (ICES-003) Class A	Canada (ICES-003) Class A	Canada (ICES-003) Class A
Safety	UL 1950	UL 1950	UL 1950	UL 1950
	CAN/CSA 22.2 No. 950 EN 60950	CAN/CSA 22.2 No. 950 EN 60950	CAN/CSA 22.2 No. 950 EN 60950	CAN/CSA 22.2 No. 950 EN 60950

*Rack space is measured in height and expressed as a “u.” One u is 1.75 in (4.45 cm) in height.

FlexLine™ 200 Series and 300 Series storage systems specifications *(continued)*

	FLA300 ACCESS-CENTRIC DISK ARRAY	FLC200 CAPACITY-CENTRIC DISK ARRAY	FLC250 CAPACITY-CENTRIC DISK ARRAY
Capacity			
Maximum number of drives	14	14	50 (10 blades)
Drive capacity	36 GB (15,000 rpm) 73 GB (10,000 rpm or 15,000 rpm) 146 GB (10,000 rpm)	250 GB (7,200 rpm)	250 GB (5400 rpm) 5 drives per blade
Blade capacity	300 GB (10,000 rpm)		1.25 TB
Mechanical			
Height	5.2 in (13.1 cm)	5.2 in (13.1 cm)	10.2 in (25.9 cm)
Depth	22.8 in (57.9 cm)	22.8 in (57.9 cm)	31.9 in (81.0 cm)
Width	19.0 in (48.2 cm)	19.0 in (48.2 cm)	18.9 in (48.0 cm)
Unit height	3u*	3u*	6u*
Weight	88 lb (40 kg) with 14 drives	88 lb (40 kg) with 14 drives	160 lb (72.7 kg)
Optical cable length (maximum)	20 m external to array 10 m drive array to drive array	20 m external to array 10 m drive array to drive array	20 m external to array 10 m drive array to drive array
Environmental			
Temperature	+50° to +104° F (+10° to +40° C)	+50° to +104° F (+10° to +40° C)	+50° to +104° F (+10° to +40° C)
Heat dissipation			
Relative humidity (non-condensing)	20% to 80%	20% to 80%	20% to 80%
Altitude	Maximum 8,000 ft (2,438.4 m) @ 104° F (40° C) Maximum 10,000 ft (3,048 m) @ 98.6° F (37° C)	Maximum 8,000 ft (2,438.4 m) @ +104° F (+40° C) Maximum 10,000 ft (3,048 m) @ +98.6° F (+37° C)	Maximum 8,000 ft (2,438.4 m) @ +104° F (+40° C) Maximum 10,000 ft (3,048 m) @ +98.6° F (+37° C)
Temperature gradient	10° C/hr	10° C/hr	10° C/hr
Power			
Input requirements	47–63 Hz, 90–264 Vrms, single phase	47–63 Hz, 90–264 Vrms, single phase	47–63 Hz, 90–264 Vrms, single phase
Power factor	0.95 minimum	0.95 minimum	0.95 minimum
Regulatory compliance			
Electromagnetic compliance	FCC (47 CFR 15, Subpart B) Class A CE (EN55022 Class A, EN55024, EN61000-3-2, EN61000-3-3) VCCI (CISPR 22) Class A Canada (ICES-003) Class A	FCC (47 CFR 15, Subpart B) Class A CE (EN55022 Class A, EN55024, EN61000-3-2, EN61000-3-3) VCCI (CISPR 22) Class A Canada (ICES-003) Class A	FCC (47 CFR 15, Subpart B) Class A CE (EN55022 Class A, EN55024, EN61000-3-2, EN61000-3-3) VCCI (CISPR 22) Class A Canada (ICES-003) Class A
Safety	UL 1950 CAN/CSA 22.2 No. 950 EN 60950	UL 1950 CAN/CSA 22.2 No. 950 EN 60950	UL 1950 CAN/CSA 22.2 No. 950 EN 60950

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ABOUT STORAGETEK®

Storage Technology Corporation (NYSE: STK) is a \$2 billion global company that enables businesses, through its information lifecycle management strategy, to align the cost of storage with the value of information. The company's innovative storage solutions manage the complexity and growth of information, lower costs, improve efficiency and protect investments. For more information, visit www.storagetek.com, or call 1.800.275.4785 or 01.303.673.2800.

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