EE500 Series EnduraXpress™

INTEGRATED RECORDING AND MANAGEMENT PLATFORM, 32 OR 64 IP, 6 TO 36 TB

Product Features

- Recording Throughput up to 250 Mbps Meets Demanding Performance Requirements for Write-Intensive Applications

- Hardware Designed to Eliminate Single Points of Failure, Including Redundant Fans, Power Supplies, and RAID 6 Storage for Optimum Reliability

- Built-in EnduraStor™ Storage Management Increases Storage Efficiency by Grooming Recorded Streams Based on Age and Priority

- Ability to Serve 32 Simultaneous Playback Streams

- Performance Levels Maintained in Normal and RAID Error Conditions

- Built-in Diagnostic Monitoring Provides Preventative Maintenance and SNMP Monitoring

- Ships with Two Endura® WS5200 Software Licenses

- Software Runs on a Standard PC with Microsoft® Windows® XP Professional and 32-Bit Version of Windows Vista® Business and Windows Vista Ultimate

- Support for Standard Resolution and Megapixel Resolution Cameras

- Support for MPEG-4, H.264 Baseline, Main, and High-Profile Codecs

- Zone of Interest™ Allows Independent View and Management of Specified Areas Within a Camera's Field of View in Live or Playback Views

- Digital Zoom in Live or Playback Views

- Convenient Tear-Off Options to Customize Display

- EnduraView™ Technology Mitigates CPU Processing Requirements and Network Bandwidth Consumption for Multiscreen Configurations

- Integrated Configuration and Administration Interface Provides Full-Management Capability for All Components

- On-Screen Pan/Tilt/Zoom (PTZ) Controls Including Click to Center and PTZ to Selected Area

- Advanced Search Capabilities Including Motion, Alarm, Event, and Camera

- Integrated Event and Alarm Monitoring and Management Interface

- Supports Expandability and Scalability Through Integration with the Endura® IP Video Management System (VMS)

The **EE500 Series EnduraXpress™** combines the performance, reliability, and robustness of an enterprise-class, mission-critical storage management system. It offers ease of installation and management that is critical for delivering a cost-effective solution to small-scale installations.

Hardware Built for Performance and Reliability

The demands of surveillance applications place unique strains on storage subsystems. Storage systems require the bandwidth and capacity to keep up with incoming streams. They must also simultaneously manage all other common disk and RAID functions. Additionally, physical security applications are typically mission critical. Any downtime, degraded performance for routine maintenance, or loss of recorded footage is extremely disruptive to the organization's physical security mission.

The **EE500 Series** is engineered to meet these unique performance and reliability demands. Custom hardware components have been specifically designed to deliver sustained high throughput for recording and playback. The **EE500 Series** can handle a maximum of 250 Mbps of sustained write throughput across 32 or 64 streams and an additional 32 simultaneous playback streams. This performance is maintained whether the system is operating under normal conditions, dealing with disk drive errors, or rebuilding the RAID array.

The **EE500 Series** improves the total cost of ownership and energy efficiency by consolidating disparate components into a single chassis. The integration of the recording server, recording software, and storage array into a highly optimized chassis can easily support standard resolution and megapixel camera recording workloads. The purpose-built, highly optimized design reduces annual operating costs by eliminating the cost of additional servers and the associated heating, ventilation, and cooling requirements they introduce.

Reliability is enhanced through the use of redundancy at all common failure points. A CompactFlash card hosts the operating system for higher reliability over traditional hard disk drives. To mitigate any downtime resulting from CompactFlash errors, the database is striped across the storage array. The RAID 6 storage configuration provides double parity protection of recorded data. The hard drive bay is cooled through the use of high capacity, redundant fans to ensure that the drives are kept at an optimum operating temperature. Finally, fully redundant power supplies guard against any power supply failure.

As with any other system, maintenance is an important and vital part of sustained operation. The **EE500 Series** incorporates various innovations to make maintenance more efficient and to allow the system to continue operating at peak performance levels. Easy access to hard disk drives and the CompactFlash card is available from the front panel. A unique rail system allows access to a failed fan should it need to be replaced. Temperature sensors throughout the chassis detect possible airflow obstruction or clogged intake filters. The use of enterprise-class SAS® technology provides advanced enclosure management and monitoring. Notifications of potential or actual issues are transmitted to the specified user interfaces for action through Simple Network Management Protocol (SNMP) messages and traps.

If additional storage capacity is required, the capacity can be expanded using third-party storage arrays with an optional fibre channel interface.

Software Built for Flexibility, Reliability, and Cost Optimization

The **EE500 Series** incorporates a wizard-driven installation procedure that guides the integrator through a step-by-step installation, which automates most processes. The integrated Dynamic Host Configuration Protocol (DHCP) server provides DHCP addresses to IP cameras or client workstations. The integrated network time protocol manager can be directed at a network time server, or it can act as the time source for all cameras and client workstations on the network. The deterministic performance of the hardware and software combination allows integrators to easily estimate, size, and configure the system to meet their storage and performance requirements.

Cameras from the **EE500 Series** are viewed through a PC running the supplied Endura® workstation client software. The software provides access to all operation and configuration features in a unified, intuitive graphical user interface. The interface utilizes drag and drop operations, keyboard shortcuts, built-in ToolTips, and online Help to enable the most direct, intuitive interactions with cameras and components distributed across the network. In addition, operators can add Endura viewing devices such as the VCD5202 for virtual-matrix style control and network decoders to build out a monitor wall for surveillance operations. Finally, the optional mapping interface allows for a comprehensive view of the entire facility with integrated alarm monitoring and visual verification capabilities.

The **EE500 Series** software easily accommodates standard resolution, high definition (HD), and megapixel camera sources; decodes MPEG-4 and H.264 (Baseline, Main, and High profiles); includes support for Zone of Interest™; direct PTZ control and digital zoom; alarm management; includes the option of utilizing camera sources with intelligent video content analysis at the edge; efficient search and export mechanisms; and a complete administration and configuration console.

The **EE500 Series** includes built-in support for Pelco IP cameras. Third-party cameras can be added using an optional UDI5000-CAM universal device interface. Additional user interfaces, including network decoders and virtual console displays, can be added to expand viewing capabilities into a full virtual matrix.

As the needs for the physical security system change over time, the **EE500 Series** can be integrated with an Endura system to provide unrestricted scalability and expandability to support more cameras with greater retention. When integrated with an Endura system, the EE500 functions as an independent 32- or 64-channel network video recorder (NVR). The Endura system can support multiple EE500s and NSM5200 Series recorders. NSM5200 devices can monitor individual EE500s for failover. NSM5200s provide the additional benefit of being configured in storage pools for N+N failover support in mission-critical applications.

TECHNICAL SPECIFICATIONS

SYSTEM

Operating System	Linux®
RAID Level	RAID 6
Effective Capacity	Up to 27.2 TB
Drive Interface	SAS/SATA

Recommended PC Requirements

Web Browser	Internet Explorer® 6.x (or later) with Adobe® Flash® Player 10 (or later)

NETWORK

Interface	2, 1 Gbps Ethernet RJ-45 ports (1000Base-T)
Auxiliary Interfaces	
USB 2.0	3 ports (2 rear, 1 front)

FRONT PANEL INDICATORS

Power	Blue Pelco badge
Software Status	Green, amber, red (based on diagnostics)
Ethernet Port 1	Green, red
Ethernet Port 2	Reserved
Hardware Status	Green, red
Hard Drive Status	Green, red

POWER

Power Input	100 to 240 VAC, 50/60 Hz, autoranging
Power Supply	Internal, dual-redundant, hot swappable
Power Consumption	Operating Average
100 VAC	262 W, 2.65 A, 895 BTU/H
115 VAC	263 W, 2.31 A, 895 BTU/H
220 VAC	254 W, 1.25 A, 868 BTU/H

ENVIRONMENTAL

Operating Temperature	10° to 35°C (50° to 95°F) at unit air intake
Storage Temperature	−40° to 65°C (−40° to 149°F)
Operating Humidity	20% to 80%, noncondensing
Maximum Humidity Gradient	10% per hour
Operating Altitude	−16 to 3,048 m (−50 to 10,000 ft)
Operating Vibration	0.25 G at 3 Hz to 200 Hz at a sweep rate of 0.5 octave/minute

Note: The temperature at the unit air intake can be significantly higher than room temperature. Temperature is affected by rack configuration, floor layout, air conditioning strategy, and other issues. To prevent hard disk drive failure and unit damage, make sure the temperature at the air intake of the unit is continuously within the operating temperature range.

PHYSICAL

Construction	Steel cabinet
Finish	
Bezel	Gray metallic with black end caps
Chassis	Black matte finish
Dimensions (without rails)	61.8 x 43.2 x 13.2 cm (24.3" D x 17.0" W x 5.2" H)
Unit Weight	
Empty (without drives)	21 kg (46.4 lb)
Loaded (with drives)	30 kg (66.8 lb)
Shipping Weight	35 kg (77.0 lb)
Mounting Options	Rack, 3 RU per unit (rack rails and hardware are supplied)

MODELS

The following table describes the EE500 model numbers. For example, the model number for an EE564, 24 TB, no fibre channel expansion module with United Kingdom power cords is EE564-24B-UK.

Note: Models shipped to China do not include power cords. A CCC approved power cord must be used to power the equipment when used in China.

Model	Storage	Country Code
EE532 or EE564 (no fibre channel expansion) EE532F or EE564F (fibre channel expansion)	6 TB	US = North America EU = Europe UK = United Kingdom CN = China AU = Australia AR = Argentina
	12 TB	
	24B TB	
	36 TB	

SUPPLIED ACCESSORIES

Power Cord — 2 power cords (based on country designation)

Note: Models shipped to China do not include power cords. A CCC approved power cord must be used to power the equipment when used in China.

Rack Mount Kit — Brackets, rails, and hardware

OPTIONAL ACCESSORIES

NSM5200-PS — Replacement power supply module
NSM5200-FAN — Replacement system fan (upper-middle)
NSM5200-FANB — Replacement rear-chassis (rear panel) fan
NSM5200-FC — Fibre channel expansion card
HD5200-500 — Replacement 500 GB drive and carrier
HD5200-1000 — Replacement 1 TB hard drive and carrier
HD5200-2T-72K — Replacement 2 TB hard drive and carrier
HD5200-3000 — Replacement 3 TB hard drive and carrier

CERTIFICATIONS/RATINGS

- CE, Class A; meets EN50130-4 standard requirements
- FCC, Class A
- UL/cUL Listed
- C-Tick
- S-Mark for Argentina
- CCC
- KCC

STANDARDS/ORGANIZATIONS

- Pelco is a member of the MPEG-4 Industry Forum.
- Pelco is a member of the Universal Plug and Play (UPnP) Forum.
- Pelco is a member of the Universal Serial Bus (USB) Implementers Forum.
- Pelco is a contributor to the International Standards for Organization/Electrotechnical Commission (ISO/IEC) Joint Technical Committee 1 (JTC1), "Information Technology," Subcommittee 29, Working Group 11.
- Compliant with ISO/IEC 14496 standard (also known as MPEG-4).
- Compliant with International Telecommunication Union (ITU) Recommendation G.711, "Pulse Code Modulations (PCM) of Voice Frequencies."