

# VideoXpert™

## SCALABLE VIDEO MANAGEMENT AND SURVEILLANCE SYSTEM

### Product Features

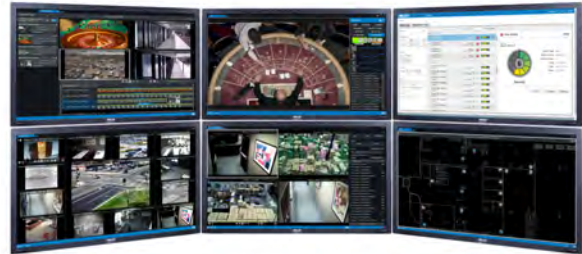
- Designed for reliability through fault-tolerant software, distributed architecture, and multiple levels of redundancy
- Provides scalability and modular expansion
- Provides migration paths for Endura® and Digital Sentry® systems
- Aggregate VMS networks and manage all video through a single system (VideoXpert Ultimate distributions)
- Available in hardware and software-only distributions, for measured performance or convenient migration of customer-owned hardware
- Microsoft® Windows®-based for easy setup and maintenance
- Browser-based administration interface provides management capabilities without a hard client
- Supports up to 6 monitors per workstation, each driven by independent CPUs, displaying up to 16 HD streams per monitor
- Workstations available with 3D mouse and programmable keyboard accessories to maximize operator control

VideoXpert is a video management solution designed for scalability, fitting the needs surveillance operations of any size. Whether your operation has 100 cameras or 10,000, VideoXpert presents a solution to display, record, and manage your video resources.

VideoXpert servers can be clustered to provide redundancy and scalability within a single environment, enabling the system to grow in tune with your surveillance needs. As you add cameras, users, or recording devices, you can add servers, enabling the system to support the additional resources and perform to your expectations.

Designed for Windows platforms, VideoXpert is easy to install, quick to setup, and should be familiar to most users. Simplified interfaces ensure that users can pick-up and use the system with relative ease. From the Web-based Admin Portal, you can configure the system, manage the database of devices, configure users and permissions, and assign cameras to recording devices. Through the Ops Center software, operators gain access to high quality video and powerful investigative tools.

VideoXpert Ultimate can also aggregate other VideoXpert systems, tying multiple video management systems into a single interface. Through aggregation, administrators can build and maintain a concerted video management system despite distributed resources across networks.



- Extensible through plug-ins including mapping, video information overlays (eConnect), and license plate recognition (PlateSmart)
- Create and assign tags, organizing network resources as you see fit
- Includes advanced search capabilities for cameras and recordings
- Investigation mode enables operators to synchronize video playback and export investigative playlists covering scenes of interest

Administrators can migrate current Endura and Digital Sentry hardware and environments to VideoXpert, re-purposing hardware and reusing current video management infrastructures while gaining the benefits of VideoXpert. VideoXpert can also utilize NSM5200 and Digital Sentry storage hardware as recording solutions, preserving the video stored on those devices while providing access to VideoXpert features.

As distributed systems, VideoXpert Ultimate and Enterprise architecture ensure that there is no single point of failure that would compromise the system or video recording services. The system is designed with multiple levels of redundancy – through both purpose-built hardware and sophisticated failover schemes – maximizing system uptime. The architecture also allows individual components to continue operating in the event of failures elsewhere in the system.

VideoXpert can integrate with other physical security systems and building systems to deliver situational awareness and control. Built around open standards, VideoXpert includes a complete application programming interface (API), software development kits (SDKs), and dedicated technical support, allowing other systems' manufacturers to develop interfaces leveraging VideoXpert's capabilities. VideoXpert also supports third-party IP cameras, allowing users to choose across hundreds of camera options from Pelco and third-party partners when configuring a system.



by Schneider Electric

International Standards  
Organization Registered Firm;  
ISO 9001 Quality System



C4016 / NEW 4-16-15

# TECHNICAL SPECIFICATIONS

VideoXpert consists of four major components: Core, Media Gateway, Ops Center, and storage manager. The Core performs central management operations, maintaining the system database, administering user rights and permissions, routing traffic, and other central operations. The Media Gateway handles all requests for video, ensuring that users at all levels of network access, LAN, WAN and even cellular, receive the right type of video for their application. The Ops Center Client is the operator console, providing an intuitive, but powerful interface from which users can access and investigate video throughout the system. The storage manager (VSM) records video and provides access to recordings.

## CORE

The Core is the heart of the VideoXpert system. It maintains the database of cameras and recording devices, and provides a convenient Web interface called the Admin Portal, from which you can configure and manage the system. Through the Admin Portal, you can administer user accounts and permissions, determining the system functions and devices users can access. You can create and assign “tags” to quickly organize cameras and devices within the system. You can also configure and respond to events within the system.

Beyond simple device and user management, you can assign resources to recording pools through the Core’s Admin Portal interface. The browser also provides basic access to video streaming resources, ensuring that users with appropriate permissions can view video from the system even without a hard client.

The Core also stores video that operators elect to export from network storage devices for safe keeping. By exporting video, users can store video clips relevant to an investigation independent of standard recording devices. Other users can easily access and download exported playlists from the Core as necessary for distribution and investigative purposes.

## MEDIA GATEWAY

The Media Gateway routes video traffic to appropriate users as requested. When a user requests a video stream, the Core fields the request and determines whether the user possesses the appropriate permissions to view the video stream. If the user can view the stream, the Media Gateway connects the user with the appropriate device — camera, encoder, or recorder as necessary.

Like Core servers, Media Gateways can be added to VideoXpert modularly, allowing a system with 1000 cameras to support 20 users, or a system with 100 cameras to support 200 users. You can add Media Gateways to the system in tune with media delivery needs.

## CORE/MEDIA GATEWAY COMBINATION

While you can leverage separate Core and Media Gateway servers for systems of sufficient scale, most systems can easily support a single server acting as a combined, Core and Media Gateway for your VideoXpert server. The double-duty server provides the complete range of VideoXpert functionality that you would expect for systems with fewer than 2000 cameras and 100 simultaneous users.

## OPS CENTER

The Ops Center is a Windows-based application, providing an optimal environment from which users can watch live and recorded video. With the support of Enhanced Decoders, the Ops Center supports up to six monitors, each capable of displaying up to 16 video streams simultaneously. Through the Ops Center, users can configure and recall complete workspaces, enabling operators to quickly log in and get to work.

The application provides mechanisms to sort cameras by tags and other criteria, making it easy for users to find the cameras they need. Users can switch between live and recorded video on the fly, ensuring a seamless viewing experience. With appropriate permissions, users can also share views – window arrangements, camera selections, and so on – with other users, enabling easy collaboration within your surveillance operations.

The Ops Center also provides an Investigation Mode, through which users can create playlists from multiple video clips encompassing important scenes from an investigation. Users can export individual clips or entire playlists to the Core, storing clips relevant to their investigation independent of the system’s network video storage for evidentiary safe-keeping and quick access.

The Ops Center supports modular plug-ins, exposing additional functionality for operators as required by your surveillance operations. The **Mapping** plug-in enables operators to arrange and find cameras on maps. Through mapping, operators can find and the camera providing the view they need, when they need it. The **PlateSmart** plug-in exposes license plate numbers, to track vehicles as they come and go. The **eConnect** plug-in displays real-time gaming information as a video overlay.



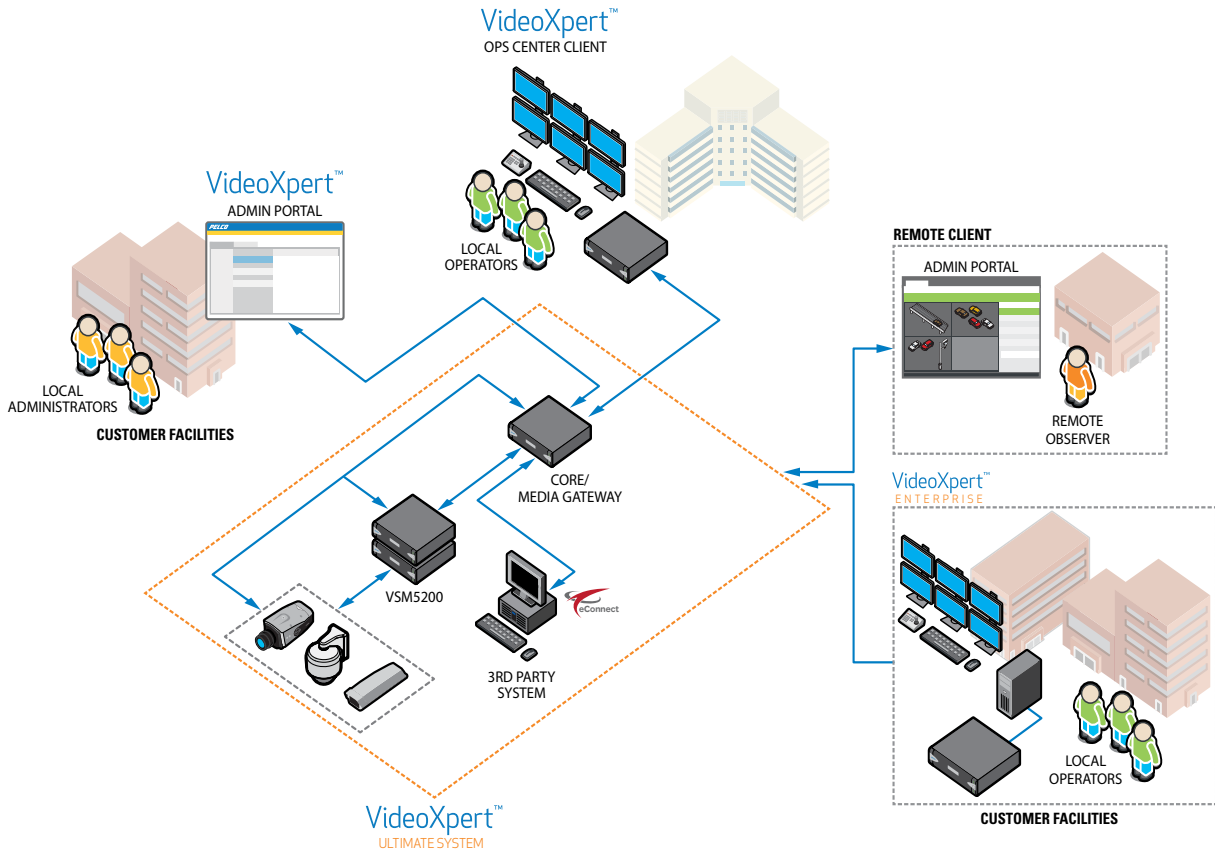
## VIDEOXPERT STORAGE

The VideoXpert Storage Manager (VSM) captures recorded video for your VideoXpert system. You can create pools of up to six storage servers with failover and redundant recording services, maximizing recording availability and preventing recording gaps. The VSM is also compatible with Endura systems, providing a migration path from Endura to VideoXpert.

# TECHNICAL SPECIFICATIONS

## SYSTEM TOPOLOGY

VideoXpert Ultimate allows for expansion at any level of your security environment. Your system can begin with a single server, hosting both the Core and Media Gateway. As your surveillance needs grow, you can add servers to expand modularly within a single environment, or you can aggregate multiple VideoXpert systems to provide a single point of access for distributed video management networks.

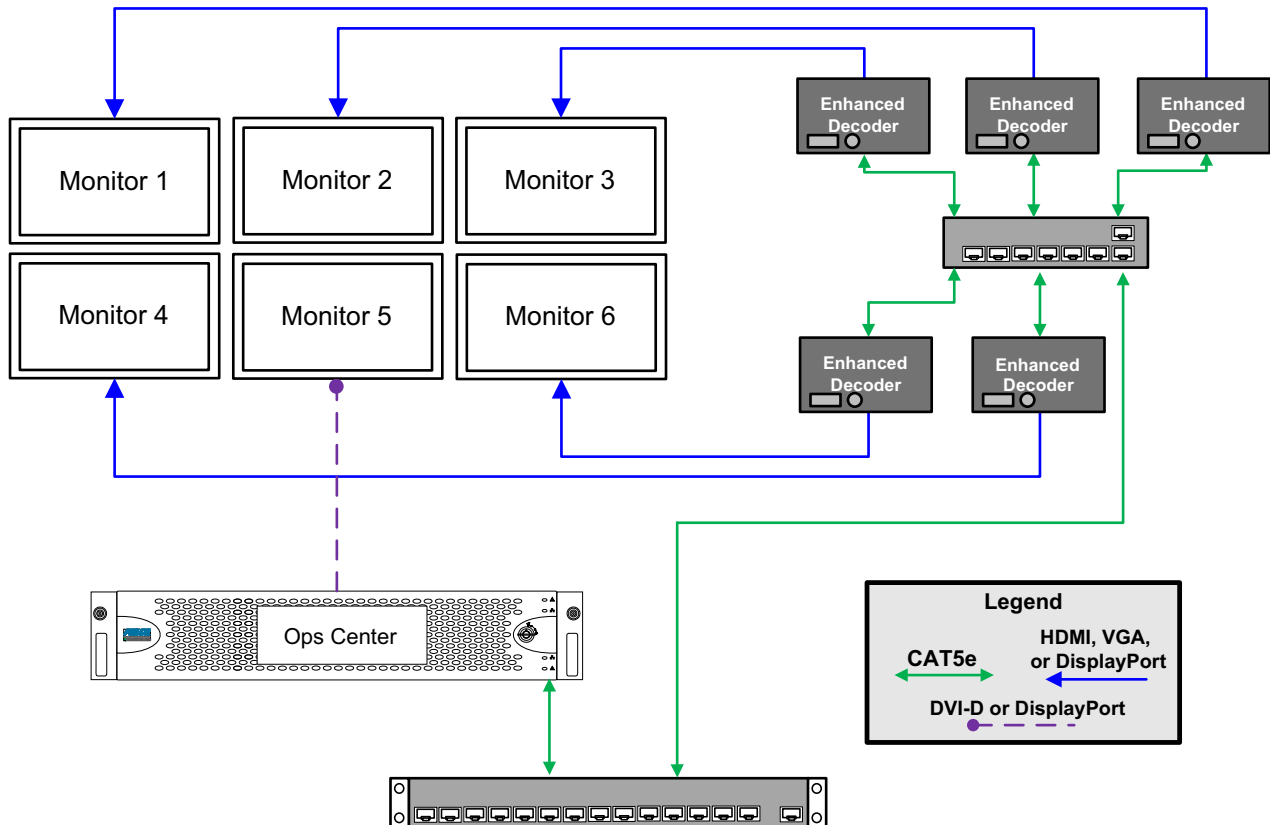


# TECHNICAL SPECIFICATIONS

## OPERATOR WORKSPACE TOPOLOGY

The Ops Center supports up to six monitors: one connected directly to the workstation itself, and the other five driven independently by Enhanced Decoders. The Enhanced Decoders enable each monitor connected through a workstation to display up to 16 high definition video streams or independent plug-ins while maintaining a seamless user experience.

Enhanced Decoder-driven monitors operate just like native monitors; users can move windows across monitors seamlessly. But, when the user requests a video stream or plug-in, the Enhanced Decoder communicates directly with VideoXpert servers to get and decode video. This enables operators to maximize the display-capabilities of the Ops Center without complicating the user experience.



# TECHNICAL SPECIFICATIONS

**NOTE:** All specifications currently subject to change.

## HARDWARE

|                  |                    | Core/CMG                        | Media Gateway     | Ops Center             | VSM                                  | Enhanced Decoder (D09U-A1-DEC) |
|------------------|--------------------|---------------------------------|-------------------|------------------------|--------------------------------------|--------------------------------|
| Processor        |                    | Intel® Xeon® E3-1275 v3         |                   |                        | –                                    | Intel® Core™ i7-4785T          |
| Memory           |                    | 32 GB DDR3 RAM ECC              | 8 GB DDR3 Non-ECC |                        | –                                    | 4 GB DDR3                      |
| Operating System |                    | Microsoft® Windows® 2012 Server |                   | Windows 7 Ultimate SP3 | Linux®                               | –                              |
| SSD Storage      |                    | 480 GB                          | 120 GB            | 120 GB                 | N/A                                  | 128 GB                         |
| HDD              | Storage            | 1 TB                            | N/A               |                        | Max 48 TB                            | N/A                            |
|                  | RAID Level         | N/A                             |                   | RAID 6                 |                                      |                                |
|                  | Effective Capacity | TBD                             | N/A               |                        | VSM-36: 26.66 TB<br>VSM-48: 35.50 TB |                                |
| Optical Drive    |                    | N/A                             |                   | DVD±RW                 | N/A                                  |                                |
| USB Ports        | USB 2.0            | 1 front, 2 rear                 |                   |                        |                                      | 1 internal                     |
|                  | USB 3.0            | 2 rear                          |                   |                        | N/A                                  | 2 front, 4 rear                |

## MINIMUM SYSTEM REQUIREMENTS<sup>1</sup>

|                  |  | Core/CMG <sup>2</sup> | Media Gateway <sup>2</sup> | Ops Center                               | VSM   | Enhanced Decoder   |
|------------------|--|-----------------------|----------------------------|--|---|--|
| Processor        |  | Intel i7              | Intel i7                   | 64-bit CPU                               | The VSM is not available as a software distribution | The Enhanced Decoder is not available as a software distribution |
| Memory           |  | 16 GB                 | 8 GB                       | 8 GB (2x 4 GB dual-channel) <sup>3</sup> |   |  |
| Operating System |  | Windows 7 SP3         | Windows 7 SP3              | Windows 7 SP3 64-bit                     |   |  |

<sup>1</sup> Software distributions tested without antivirus software installed.

<sup>2</sup> Core and Media Gateway servers were also tested in VirtualBox and ESXi 5.1 virtual environments, each with 8 GB memory.

<sup>3</sup> Failing to use dual-channel memory may result in lowered performance when viewing video on local monitors.

## VIDEO

|                 |               | Core/CMG                   | Media Gateway | Ops Center  | VSM Storage   | Enhanced Decoder       |
|-----------------|---------------|----------------------------|---------------|---|---|------------------------|
| Video System    |               | Intel HD Graphics P4700    |               | Intel HD Graphics P4700; supports optional upgrade                | VGA interface; VSM models are designed to be configured remotely through web interface. | Intel HD               |
| Memory          |               | Shared                     |               | Shared; 1 GB for OPS-WKS6   |   | Shared                 |
| Video Outputs   |               | 2x DisplayPort, DVI-D, VGA |               | 2x DisplayPort, DVI-D, VGA; Supports up to 6 outputs for OPS-WKS6 |   | DisplayPort, HDMI, VGA |
| Max Resolution  | DisplayPort   | 3840 x 2160 at 60 hz       |               |   |   | 3840 x 2160 at 60 hz   |
|                 | DVI-D and VGA | 1920 x 1200 at 60 hz       |               |   |   | 1920 x 1200 at 60 hz   |
| Video Standards | NTSC          | 60 Hz                      |               |   |   | 60 Hz                  |
|                 | PAL           | 75 Hz                      |               |   |   | 50 Hz                  |

## AUDIO

|                  |                  | Core/CMG   | Media Gateway | Ops Center | VSM                | Enhanced Decoder          |
|------------------|------------------|--|---------------|------------|--------------------|---------------------------|
| Audio Decoding   |                  | G.711 speech codec                               |               |            | N/A                | Realtek HDA Codec ALC3234 |
| Audio Bitrate    |                  | 64 kbps  |               |            |                    | TBD                       |
| Audio Levels     | Input            | Electret microphone                              |               |            |                    |                           |
|                  | Output           | Up to 3 Vp-p, adjustable, minimum load of 8 ohms |               |            |                    |                           |
| Audio Connectors | Connector Tip    | 3.5 mm stereo jacks (2x)                         |               |            |                    |                           |
|                  | Connector Ring   | Signal left (input and output)                   |               |            |                    |                           |
|                  | Connector Sleeve | Common   |               |            |                    |                           |
| Audio Inputs     |                  |  |               |            | Microphone (front) |                           |

# TECHNICAL SPECIFICATIONS

## NETWORKING

|           | Core/CMG                                 | Media Gateway | Ops Center | VSM | Enhanced Decoder                        |
|-----------|--|---------------|------------|-----|---|
| Interface | Gigabit Ethernet (1000Base-T) ports (2x) |               |            |     | Gigabit Ethernet (1000Base-T) port (1x) |

## FRONT PANEL

|            | Core/CMG                   | Media Gateway                            | Ops Center | VSM                                     | Enhanced Decoder      |
|------------|----------------------------|--|------------|---|-----------------------|
| Buttons    | Power, configuration/reset |  |            |   | Power                 |
| Indicators | Unit Status                | Green, amber, red                        |            |   | White, flashing white |
|            | Primary Network            | Green, amber, red                        |            | Green, red, off                         | Green, orange, off    |
|            | Secondary Network          | Green, amber, red                        |            | Green, red, off                         | N/A                   |
|            | Software Status            | Green, amber, red (based on diagnostics) |            |   |                       |
|            | Hard Disk Status           | Green, red, off (behind bezel)           |            | Green, red, flashing red (behind bezel) | Flashing white        |

## POWER

|                   | Core/CMG                             | Media Gateway            | Ops Center | VSM                      | Enhanced Decoder |
|-------------------|--------------------------------------|--------------------------|------------|--------------------------|------------------|
| Power Input       | 100 to 240 VAC 50/60 Hz, autoranging |                          |            |                          |                  |
| Power Supply      | Internal                             |                          |            |                          | Internal, 65 W   |
| Power Consumption | 100 VAC                              | 160 W, 1.60 A, 547 BTU/H |            | 262 W, 2.65 A, 895 BTU/H | TBD              |
|                   | 115 VAC                              | 160 W, 1.39 A, 547 BTU/H |            | 263 W, 2.31 A, 895 BTU/H |                  |
|                   | 220 VAC                              | 160 W, 0.72 A, 547 BTU/H |            | 254 W, 1.25 A, 868 BTU/H |                  |

## ENVIRONMENTAL

|                           | Core/CMG  | Media Gateway | Ops Center | VSM | Enhanced Decoder         |
|---------------------------|---|---------------|------------|-----|--------------------------|
| Operating Temperature     | 10° to 35°C (50° to 95°F) at unit air intake (front of unit)  |               |            |     | 5° to 35°C (41° to 95°F) |
| Storage Temperature       | -40° to 65°C (-40° to 149°F)                                  |               |            |     |                          |
| Operating Humidity        | 20% to 80%, noncondensing                                     |               |            |     |                          |
| Maximum Humidity Gradient | 10% per hour  |               |            |     |                          |
| Operating Altitude        | -15 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 |               |            |     | 0.66 GRMS                |

**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 performance failure and unit damage, make sure the temperature at the unit is continuously within the operating temperature range.

## PHYSICAL

|                        | Core/CMG                                  | Media Gateway                     | Ops Center | VSM  | Enhanced Decoder                            |
|------------------------|---|-----------------------------------|------------|--|---|
| Construction           | Steel Cabinet                             |                                   |            |  | TBD   |
| Finish                 | Front Panel                               | Gray metallic with black end caps |            |  | TBD   |
|                        | Chassis                                   | Black matte finish                |            |  | TBD   |
| Dimensions (D x W x H) | 50.8 x 43.4 x 8.9 cm (20 x 17.1 x 3.5 in) |                                   |            | 61.8 x 43.2 x 13.2 cm (24.3" x 17.0" x 5.2") | 17.6 x 3.6 x 18.2 cm (6.93 x 1.4 x 7.17 in) |
| Mounting (RU)          | 2 RU                                      |                                   |            | 3 RU   | N/A (mount included)                        |
| Unit Weight            | 13.06 kg (28.8 lb)                        | TBD                               | TBD        | 30 kg (66.8 lb)                              | 1.28 kg (2.82 lb)                           |

# TECHNICAL SPECIFICATIONS

## SOFTWARE LICENSE, SERVER, AND WORKSTATION MODELS

Use the following table to create a model number for your VideoXpert hardware and/or software package. Your model number consists of the distribution you want to choose, the model, and the country-code (where applicable). Models ending in US and EUK include power cords for their respective regions; models without a country code do not. Power cords are available as separate accessories. For example, an Enterprise Core server for Europe is labeled E1-COR-SVR-EUK

Due to the complexity of network and system design for larger distributions, VideoXpert Ultimate either requires training certification, or that the system installation be performed by Pelco Professional Services. While not required for Enterprise distributions, it is strongly recommended that system installers and administrators be Pelco-certified.

| Distribution                     | Model    | Country Code (optional)                           | Description  |
|----------------------------------|----------|---|--|
| (Ultimate) U1<br>(Enterprise) E1 | CMG-SVR  | US = North America<br>EUK = Europe/United Kingdom | VideoXpert Core and Media Gateway all-in-one hardware with software licenses   |
|                                  | COR-SVR  |   | VideoXpert Core server hardware and software license   |
|                                  | MGW-SVR  |   | Media Gateway server hardware and software license   |
|                                  | OPS-WKS  |   | Ops Center workstation and software license  |
|                                  | OPS-WKS6 |   | Ops Center workstation with upgraded graphics card, enabling use of up to 6 monitors using Enhanced Decoders (D09U-ENH-DEC). |
|                                  |          | COR-SW  | Core software license  |
|                                  |          | MGW-SW  | Media Gateway software license   |
|                                  |          | NSM-1UP   | Upgrade license enabling NSM5200 models to support VideoXpert systems  |
|                                  |          | COR-SUP   | (Optional) Core software upgrade subscription; entitles users to upgrades for one year                                       |
|                                  |          | MGW-SUP   | (Optional) Media Gateway software upgrade subscription; entitles users to upgrades for one year                              |

## VSM MODELS

Use the table below to find the model number for your VideoXpert storage manager. The model number consists of the VideoXpert distribution, model, the amount of storage, and a and the country-code (where applicable). Models ending in US and EUK include power cords for their respective regions; models without a country code do not. For example, an Enterprise storage manager with 48 TB of storage for the US is labeled E1-VSM-48-US

| Distribution                     | Model | Storage | Country Code (optional)                           | Description   |
|----------------------------------|-------|---------|---|---|
| (Ultimate) U1<br>(Enterprise) E1 | VSM   | 36 TB   | US = North America<br>EUK = Europe/United Kingdom | VSM with 36 TB storage (25.66 TB effective storage) |
|                                  |       | 48 TB   |   | VSM with 48 TB storage (35.50 TB effective storage) |

# TECHNICAL SPECIFICATIONS

## SUPPLIED ACCESSORIES

Keyboard (Core, Media Gateway, CMG, and Ops Center models)  
 Mouse (Core, Media Gateway, CMG, and Ops Center models)  
 USB drive containing resource and recovery information  
 Rack mount kit  
 Power cord (for applicable models)

## OPTIONAL POWER ACCESSORIES

PWRCORD-S-AR Standard power cord, Argentina  
 PWRCORD-S-AU Standard power cord, Australia  
 PWRCORD-S-EU Standard power cord, Europe  
 PWRCORD-S-UK Standard power cord, United Kingdom  
 PWRCORD-S-US Standard power cord, United States  
 PWRCORD-R-AR Round power cord, Argentina  
 PWRCORD-R-AU Round power cord, Australia  
 PWRCORD-R-EU Round power cord, Europe  
 PWRCORD-R-UK Round power cord, United Kingdom  
 PWRCORD-R-US Round power cord, United States

## OPS CENTER CLIENT OPTIONAL ACCESSORIES

D09U-A1-DEC Enhanced Decoder and mount  
 D09U-A1-DEC-US Enhanced Decoder and mount with US power cord

D09U-A1-DEC-EUK Enhanced Decoder and mount with Europe/United Kingdom power cord  
 3DX-600-3DMOUSE Enhanced 3D Mouse and Joystick  
 Y-U0018-G710KBD Enhanced Keyboard  
 A1-KBD-3D-KIT Enhanced Keyboard and 3D Mouse Combination Kit

## VSM OPTIONAL ACCESSORIES

NSM5200-PS Replacement power supply module  
 NSM5200-FAN Replacement system fan (upper-middle)  
 NSM5200-FANB Replacement rear-chassis (rear panel) fan  
 HD5200-3000 Replacement 3 TB hard drive and carrier  
 DS-EN-4TB-HDD Replacement 4 TB hard drive and carrier

## STANDARDS/ORGANIZATIONS

- Pelco is a member of the MPEG-4 Industry Forum
- Pelco is a member of the Universal Plug and Play (UPnP) Forum, Steering Committee
- 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
- Compliance, ISO/IEC 14496 standard (also known as MPEG-4)
- Compliance, International Telecommunication Union (ITU) Recommendation G.711, "Pulse Code Modulation (PCM) of Voice

## CERTIFICATIONS

At the time of this publication, certifications for Class A products are pending. Consult the factory, our Web site ([www.pelco.com](http://www.pelco.com)), or the most recent B.O.S.S.® update for the current status of certifications.

|                      | Core/CMG | Media Gateway | Ops Center | VSM     | Enhanced Decoder<br>D09U-A1-DEC | Enhanced 3D<br>Mouse<br>3DX-600-3DMOUSE | Enhanced<br>Keyboard<br>Y-U0018-G710KBD |
|----------------------|----------|---------------|------------|---------|---------------------------------|---|---|
| <b>CE</b>            | Class A  | Class A       | Class A    | Class A | Class B                         | Class B                                 | Class B                                 |
| <b>FCC, Part 15</b>  |          |               |            |         |                                 |   |   |
| <b>ICES-003</b>      |          |               |            |         |                                 |   |   |
| <b>UL/cUL Listed</b> | ✓        | ✓             | ✓          | ✓       | ✓                               |   | ✓                                       |
| <b>C-Tick</b>        | ✓        | ✓             | ✓          | ✓       | ✓                               |   | ✓                                       |
| <b>CCC</b>           | ✓        | ✓             | ✓          | ✓       | ✓                               |   |   |
| <b>KC</b>            | ✓        | ✓             | ✓          | ✓       | ✓                               | ✓                                       | ✓                                       |
| <b>RCM</b>           |          |               |            |         |                                 | ✓                                       |   |

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