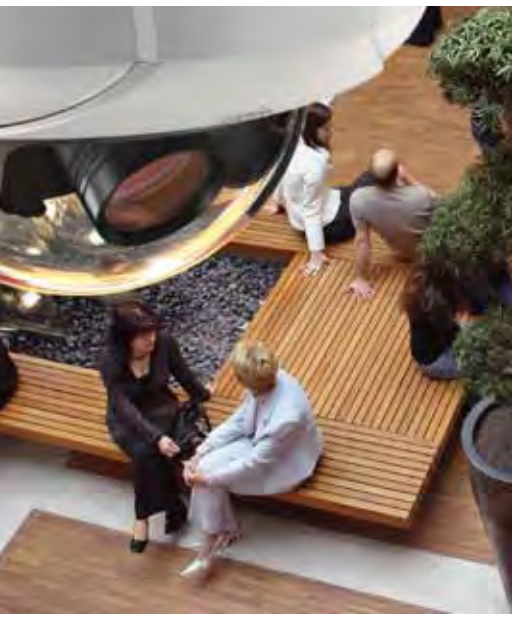
PELCO

by Schneider Electric

Leading Innovation in Video Surveillance

Pelco Product Specifications | APAC Version | December 2010



Pelco, a proud member of the Schneider Electric family of businesses, is a world leader in the design, development and manufacture of video security systems and equipment ideal for any industry. With a long and prestigious history of offering high-quality products and exceptional customer service, Pelco has become the most sought-after product supplier in the security industry.

Pelco produces the most respected offering of discreet camera domes and enclosures, megapixel IP and HD cameras, video matrix systems, next generation digital video recorders, software-only video management solutions, and complete IP/HD end-to-end solutions – all in the never-ending pursuit of achieving 100-percent customer satisfaction.

Respected as a major product innovator, Pelco also manufactures a large number of special equipment items, including explosion-proof and pressurized camera enclosures, high-security housings, and thermal imaging pan-tilt-zoom positioning systems. Pelco produces the industry-acclaimed Spectra®, Sarix®, Esprit®, Camclosure®, Endura®, and Digital Sentry® product lines.

In addition, Pelco demonstrates its commitment to being an open systems provider with successful integrations and partnerships in such areas as Electronic Access Control, Video Analytics, Central Station Alarm Monitoring and Video Monitoring, Cellular Phone-Video Monitoring, Command and Control, Mobile Digital Video Recording, Point of Sale and Loss Prevention Systems.

From its impressive manufacturing facility located in Central California and through a responsive global network of professional sales representatives, Pelco continues to offer new technologies, products, and services that constantly confirm the company's position as the premier security systems and equipment manufacturer in the video security market.

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IE30 Series Sarix™ Integrated Rugged Fixed Dome

INDOOR/OUTDOOR, NETWORK, 3.1 MEGAPIXEL HIGH DEFINITION DIGITAL CAMERA

Product Features

- Up to 3.1 Megapixel Resolution (2048 x 1536)
- Up to 30 Images per Second (ips) at 1280 x 720
- Interchangeable CS-Mount Lenses (Optional)
- Auto Back Focus for High Precision Focusing
- H.264 and MJPEG Compression
- Day/Night Capability
- Sensitivity Down to 0.03 lux
- Power over Ethernet (IEEE 802.3af) or 24 VAC
- Focus Button with Delay Enables Precision Focus Through Bubble
- Web Viewing, up to 16 Cameras Simultaneously
- Up to 2 Simultaneous Video Streams
- Local Storage (Micro SD) for Alarm Capture
- Bi-directional Half-Duplex Audio

(SHOWN WITH OPTIONAL IE-S SURFACE MOUNT ADAPTER)

- Open IP Standards
- Motion Detection

The **IE30 Series with Sarix™ technology** is a 3.1 megapixel (MPx) network indoor/outdoor rugged fixed dome camera designed with industry-leading image quality and high performance processing power. Its sturdy metal design is vandal and tamper resistant and is designed for worry-free use in a wide range of environmental operating conditions.

The **IE30 Series** is perfect for use in environmental air handling spaces. The back box is plenum rated per 2008 NEC article 300.22(C)(2).

Sarix technology defines the next generation of video security imaging performance, delivering high definition (HD) resolution, advanced low-light capabilities, consistent color science, and fast processing power. The H.264 compression video files are considerably smaller making high definition video more affordable.

Fixed Dome Camera

The **IE30 Series** are day/night cameras that can be ordered with or without lenses installed. All models include advanced low-light technology and a camera in an outdoor enclosure that is ready to install. These day/night models have a mechanical IR cut filter for increased sensitivity in low-light installations. These cameras accept a wide range of megapixel varifocal CS-mount lenses.

The **IE30 Series** supports two simultaneous video streams. The two streams can be compressed in MJPEG and H.264 formats across several resolution configurations. The streams can be configured in a variety of frame rates, bit rates, and group of pictures (GOP) structures for additional bandwidth administration.

Built-In Analytics

The **Pelco Camera Sabotage** behavior is a standard feature of the IE30 Series. This behavior detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or covered with a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.

Web Interface

The **IE30 Series** uses a standard Web browser for powerful remote setup and administration. Up to 16 cameras can be viewed on the same network.

Window Blanking

Window blanking is used to conceal user-defined privacy areas that cannot be viewed by an operator. The **IE30 Series** supports up to four blanked windows. A blanked area will appear on the screen as a solid gray window.

Video Systemization

The **IE30 Series** easily connects to Pelco IP and hybrid systems such as Endura® version 2.0 (or later) and Digital Sentry® version 4.3 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) that enables third-party systems to interface with Pelco's network cameras.

TECHNICAL SPECIFICATIONS

GENERAL

Imaging Device	1/3-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	2048 x 1536
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2850°K; SNR >24 dB
Color (1x/33 ms)	0.5 lux
Color SENS (15x/500 ms)	0.12 lux
Mono (1x/33 ms)	0.25 lux
Mono SENS (15x/500 ms)	0.03 lux
Dome Attenuation	
Clear	Zero light loss
Smoked	f/1.0 light loss
Construction	Cast aluminum body with polycarbonate bubble
Finish	Light gray powder coated
Weight (without lens)	
Unit	3.3 lb (1.5 kg)
Shipping	5.0 lb (2.3 kg)
Available Languages	Chinese, English, French, German, Italian, Portuguese, Russian, Spanish, and Turkish

ELECTRICAL

Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cable Type	Cat5 or better for 100Base-TX
Power Input	18 to 30 VAC; 24 VAC nominal or PoE (IEEE 802.3af class 3)
Power Consumption*	<7W; <40 W with heater operation
Current Consumption	
PoE	<140 mA maximum
24 VAC†	<510 mA without heater operation; <2.5 A maximum with heater operation
Local Storage	Micro SD
Alarm Input	10 VDC maximum, 5 mA maximum
Alarm Output	0 to 15 VDC maximum, 75 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output
Accessory Port	Connects Pelco accessories
Audio	Bi-directional: half duplex Line level/external microphone input; 600 Ohm differential, 1 Vp-p max signal level
Compression	G.711 PCM 64 kbit/s

*Does not include optional devices connected to the accessory port.

†Required for heater operation.

MECHANICAL

Lens Mount	CS mount, adjustable
Pan/Tilt Adjustment	
Pan	368°
Tilt	160° (10° to 170°)
Rotate	355°

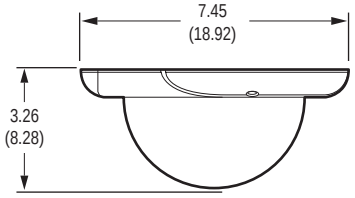
ENVIRONMENTAL

Operational Temperature	–22° to 122°F (–30° to 50°C); PoE operates between 32° to 122°F (0° to 50°C), 24 VAC power is required for heater operation below 32°F (0°C)
Thermostat Operation	Heater thermostatically controlled to operate below <41°F (<5°C)
Operational Humidity	20% to 80%, noncondensing

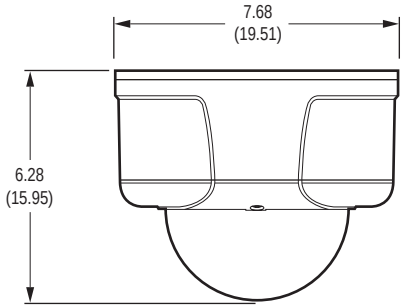
IMPACT RESISTANCE

Impact Resistance	IK10++ per EN62262 (70J)

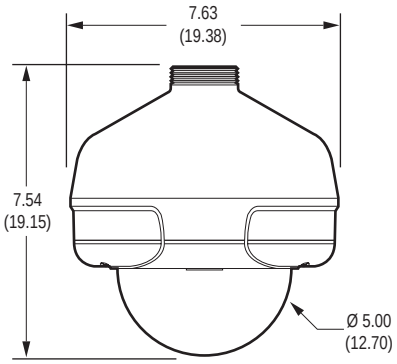
IN-CEILING



SURFACE MOUNT
(Mounting Ring Is Available as an Accessory)



PENDANT
(Mount Is Available as an Accessory)



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 base profile and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				MJPEG		H.264 Base Profile	
MPx	Width	Height	Aspect Ratio	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
3.1	2048	1536	4:3	12.0 ips	10.0 Mbps	3.0 ips	2.6 Mbps
2.1	1920	1080	16:9	15.0 ips	10.0 Mbps	5.0 ips	2.7 Mbps
1.9	1600	1200	4:3	15.0 ips	10.0 Mbps	6.0 ips	2.6 Mbps
1.3	1280	1024	5:4	20.0 ips	10.0 Mbps	8.0 ips	2.5 Mbps
1.2	1280	960	4:3	20.0 ips	9.8 Mbps	8.0 ips	2.4 Mbps
0.9	1280	720	16:9	30.0 ips	10.0 Mbps	12.5 ips	2.5 Mbps
0.5	800	600	4:3	30.0 ips	5.8 Mbps	25.0 ips	2.0 Mbps
0.3	640	480	4:3	30.0 ips	3.7 Mbps	30.0 ips	1.6 Mbps
0.1	320	240	4:3	30.0 ips	0.9 Mbps	30.0 ips	0.4 Mbps

Additional Resolutions	640 x 512, 640 x 352, 480 x 368, 480 x 272, 320 x 256, and 320 x 176
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 2.0 (or later) or Digital Sentry 4.3 (or later)
Open IP Integration	Pelco IP camera API
Minimum System Requirements	
Processor	Intel® Pentium® 4 microprocessor, 1.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	512 MB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.5 (or later); Internet Explorer® 8.0 (or later) is recommended for configuring analytics
Media Player†	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

TECHNICAL SPECIFICATIONS

MODELS

IE30DN-1	Sarix outdoor fixed dome network camera, 3.1 megapixel, day/night, no lens, clear dome
IE30DN8-1	Sarix outdoor fixed dome network camera, 3.1 megapixel, day/night, 2.8 ~ 8 mm varifocal megapixel lens, clear dome
IE30DN-0	Sarix outdoor fixed dome network camera, 3.1 megapixel, day/night, no lens, smoked dome

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick
- Meets IP66 standards

OPTIONAL ACCESSORIES

IX-SC	4-foot service/monitor cable, compatible with any standard monitor BNC connector
POE20U560G	Single port PoE injector

RECOMMENDED MOUNTS

IE-P	Pendant mount adapter, light gray
IE-S	Surface mount adapter, light gray
SWM-SR, IWM-SR*	Wall mounts, light gray
IWM24-SR*	Wall mount with cable feedthrough; includes integral 24 VAC, 100 VA transformer; light gray finish
PP350*	Parapet mount, gray
PP351*	Rooftop or horizontal surface mount, gray

*Requires the IE-P pendant mount adapter.

RECOMMENDED LENSES

13M2.2-6	Megapixel lens, varifocal, 2.2 ~ 6.0 mm, f/1.3 ~ 2.0
13M2.8-8	Megapixel lens, varifocal, 2.8 ~ 8.0 mm, f/1.2 ~ 1.9
13M2.8-12	Megapixel lens, varifocal, 2.8 ~ 12.0 mm, f/1.4 ~ 2.7
13M15-50	Megapixel lens, varifocal, 15.0 ~ 50.0 mm, f/1.5 ~ 2.1

Pelco megapixel lenses have been designed and tested to deliver optimal image quality for the IE30 Series dome. The use of standard definition lenses on IE30 Series megapixel cameras will limit the resolution of the camera, creating poor image quality.

Field of View in Degrees		High Resolution Streams (> 800 x 600) Aspect Ratio		
		16:9	4:3	5:4
2.2 mm	Horizontal	109	109	109
	Vertical	63	83	89
2.8 mm	Horizontal	89	89	89
	Vertical	48	66	70
6.0 mm	Horizontal	42	42	42
	Vertical	24	32	34
8.0 mm	Horizontal	32	32	32
	Vertical	18	24	25
12.0 mm	Horizontal	21	21	21
	Vertical	12	16	17
15.0 mm	Horizontal	16	16	16
	Vertical	9	12	13
50.0 mm	Horizontal	5	5	5
	Vertical	3	4	4

Note: For 800 x 600 (or lower) resolutions in 4:3 or 5:4 aspect ratios, the field of view is smaller than listed above. Refer to the Installation/Operation manual for details.

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IEE20 Series Sarix™ EP Integrated Rugged Fixed Dome

INDOOR/OUTDOOR, NETWORK, 2.1 MPX HIGH DEFINITION DIGITAL CAMERA

Product Features

- Up to 2.1 Megapixel Resolution (1920 x 1080)
- Up to 30 Images per Second (ips) at 1920 x 1080
- Optional CS-Mount Lenses
- Auto Back Focus for High Precision Focusing
- H.264 and MJPEG Compression
- Day/Night Capability
- Sensitivity Down to 0.03 lux
- Power over Ethernet (IEEE 802.3af) or 24 VAC
- Focus Button with Delay Enables Precision Focus Through Bubble
- Up to 2 Simultaneous Video Streams
- Local Storage (Micro SD) for Alarm Capture
- Bi-directional Half-Duplex Audio
- Built-in Analytics

(SHOWN WITH OPTIONAL IE-S SURFACE MOUNT ADAPTER)

- Open IP Standards
- Motion Detection

The **IEE20 Series extended platform (EP) camera with Sarix™ technology** is a 2.1 megapixel (MPx) network indoor/outdoor rugged fixed dome camera designed with industry-leading image quality and high performance processing power. The **IEE20 Series** is also equipped with a mechanical IR cut filter for superior performance in low-light conditions. Its sturdy metal construction is vandal and tamper resistant and is designed for worry-free use in a wide range of environmental operating conditions.

The **IEE20 Series** is perfect for use in environmental air handling spaces. The back box is plenum rated per 2008 NEC article 300.22(C)(2).

Sarix technology defines the next generation of video security imaging performance, delivering high definition (HD) resolution, advanced low-light capabilities, consistent color science, and fast processing power. The H.264 compression video files are considerably smaller making high definition video more affordable.

The **IEE20 Series** can be ordered with or without lenses. All models include a camera in an outdoor enclosure that can be recessed into a ceiling. Accessories are available to allow mounting directly to a surface or in pendant configuration. These cameras accept a wide range of megapixel varifocal CS-mount lenses.

The **IEE20 Series** supports two simultaneous video streams. The two streams can be compressed in MJPEG and H.264 formats across several resolution configurations. The extended platform gives real-time video (30 ips) with HD resolution using H.264 compression for optimized bandwidth and storage efficiency. The streams can be configured in a variety of frame rates, bit rates, and group of pictures (GOP) structures for additional bandwidth administration.

The **IEE20 Series** is simple to install, and the automatic back focus control feature makes sharp scene focus setup easy with the bubble on or off. A convenient video setup jack eliminates the need to use a laptop for viewing video when installing the camera.

Pelco® Analytics and ObjectVideo® (OV) Analytic Suites enhance the flexibility and performance of the IEE20 Series camera. Eight Pelco behaviors are preloaded and included as standard features of the IEE20DN models. Pelco behaviors can be configured and enabled using a standard Web browser, and they are compatible with Endura® or a third-party system that supports Pelco's Analytics API system.

Camera models are also available with preloaded **OV Analytic Suites**. These behaviors can be configured and enabled using a standard Web browser and are compatible with an OV ready-compliant system with an OV Ready™ video management system.

The **IEE20 Series** uses a standard Web browser for powerful remote setup and administration. Up to 16 cameras can be viewed on the same network.

The **IEE20 Series** supports up to four blanked windows. Window blanking is used to conceal user-defined privacy areas that cannot be viewed by an operator. A blanked area will appear on the screen as a solid gray window.

The **IEE20 Series** easily connects to Pelco IP and hybrid systems such as Endura version 2.0 (or later) and Digital Sentry® version 4.3 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an API that enables third-party systems to interface with Pelco's network cameras.

PELCO ANALYTICS

The IEE20 Series includes eight user-configurable behaviors. The camera is capable of running up to three behaviors at the same time; although, the number of behaviors is limited to the available processing power of the camera and the type of analytic being used.

Note: Available processing power is determined by the settings for compression standards, resolution, image rate, bit rate, and analytic configuration.

For each behavior, you can create several custom profiles that contain different camera settings. With these profiles, you can set up different scenarios for the behavior, which will automatically detect and trigger alarms when specific activity is detected.

Pelco Analytics are configured and enabled using a standard Web browser, and Pelco behaviors are compatible with Endura® or a third-party system that supports Pelco's Analytics API system. Multiple Pelco analytics can be scheduled to work during a certain time or condition. For example, during the day, a camera can be configured with Object Counting to count the number of people that enter a lobby door. At night, the operator can change the profile to Camera Sabotage to trigger an alarm if a camera is moved or obstructed. Each suite includes the following behaviors:

- **Abandoned Object:** Detects objects placed in a defined zone and triggers an alarm if the object remains in the zone longer than the user-defined time allows. An airport terminal is a typical installation for this behavior. This behavior can also detect objects left behind at an ATM, signaling possible card skimming.
- **Adaptive Motion:** Detects and tracks objects that enter a scene and then triggers an alarm when the objects enter a user-defined zone. This behavior is primarily used in outdoor environments with light traffic to reduce the number of false alarms caused by environmental changes.
- **Camera Sabotage:** Detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or covered with a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.
- **Directional Motion:** Generates an alarm in a high traffic area when a person or object moves in a specified direction. Typical installations for this behavior include an airport gate or tunnel where cameras can detect objects moving in the opposite direction of the normal flow of traffic or an individual entering through an exit door.
- **Loitering Detection:** Identifies when people or vehicles remain in a defined zone longer than the user-defined time allows. This behavior is effective in real-time notification of suspicious behavior around ATMs, stairwells, and school grounds.
- **Object Counting:** Counts the number of objects that enter a defined zone or cross a tripwire. This behavior might be used to count the number of people at a store entrance/exit or inside a store where the traffic is light. This behavior is based on tracking and does not count people in a crowded setting.
- **Object Removal:** Triggers an alarm if an object is removed from a defined zone. This behavior is ideal for customers who want to detect the removal of high value objects, such as a painting from a wall or a statue from a pedestal.
- **Stopped Vehicle:** Detects vehicles stopped near a sensitive area longer than the user-defined time allows. This behavior is ideal for airport curbside drop-offs, parking enforcement, suspicious parking, traffic lane breakdowns, and vehicles waiting at gates.

OBJECTVIDEO (OV) ANALYTIC SUITES

ObjectVideo Analytics Suites are preloaded on selected IEE20 Series cameras and require an OV Ready system to configure the behaviors for alarm notification.

OV Security Suite

The OV Security Suite is easy to use and includes Tripwire Detection, Inside Area Detection, and Camera Tamper Detection behaviors.

- Tripwire Detection identifies objects that cross a user-defined line drawn within the camera's field of view.
- Inside Area Detection identifies objects entering, appearing, or moving within a user-defined area.
- Camera Tamper Detection identifies significant contrast changes in the camera's field of view; for example, if the lens is obstructed by spray paint, a cloth, or a lens cap.

OV Security Suite Plus

The OV Security Suite Plus includes the behaviors of the OV Security Suite, plus Multi-Line Tripwire Detection, Loitering Detection, and Leave Behind Detection behaviors.

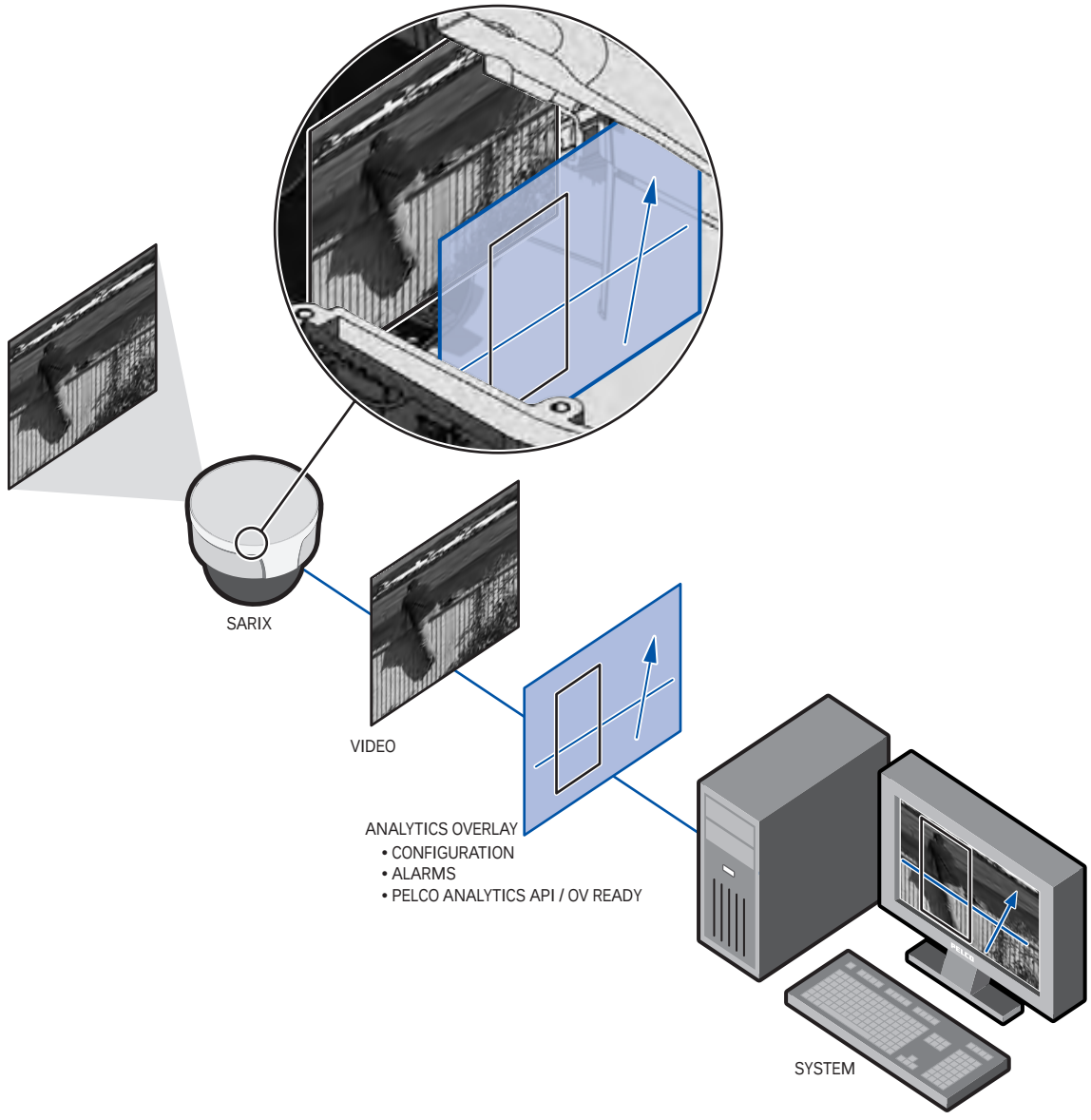
- Multi-Line Tripwire Detection identifies objects that cross two defined lines and generates an event based on defined parameters, including directionality. Defined parameters for this behavior include direction, sequential order, and time between crossing each tripwire.
- Loitering Detection identifies when people or vehicles remain within a user-defined area beyond a specified period of time. This behavior is effective for real-time notification of suspicious behavior around ATMs, stairwells, and school grounds.
- Leave Behind Detection detects objects placed in a defined zone and triggers an alarm if the object remains in the zone longer than the user-defined time allows.

OV Event Counting Suite

The OV Event Counting Suite uses advanced object calibration and additional features for schedules, parameters, and multiple rules. The suite includes behaviors for Tripwire Counting, Enters/Exits Counting, Loiter Counting, Occupancy Sensing, and Dwell-Time Monitoring.

- Tripwire Counting counts people or objects that cross a user-defined line.
- Enters/Exits Counting calculates the number of people that enter and exit an area without using a tripwire.
- Loiter Counting is useful in analyzing how frequently people stop in front of a product, display, or other area of interest. This feature is also useful in assessing promotion effectiveness and product interest.
- Occupancy Sensing counts people and generates a new value every time the occupancy level changes. Since each occupancy output is time-stamped, the data can be used to determine average occupancy levels or to correlate data to point-of-sale or other business scenarios.
- Dwell-Time Monitoring rules can be set up to record the length of time it takes an object to enter and exit an area. Along with queue size information, wait times can also be assessed. This behavior can be used to evaluate consumer interaction for a point-of-sale display or digital advertisement.

The following diagram illustrates how the camera system interprets streaming video when embedded analytics are configured and enabled.



IMPORTANT NOTE: PLEASE READ. The network implementation is shown as a general representation only and is not intended to show a detailed network topology. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the system as illustrated. Please contact your local Pelco Representative to discuss your specific requirements.

TECHNICAL SPECIFICATIONS

GENERAL

Imaging Device	1/3-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	1920 x 1080
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2850°K; SNR >24 dB
Color (1x/33 ms)	0.5 lux
Color SENS (15x/500 ms)	0.12 lux
Mono (1x/33 ms)	0.25 lux
Mono SENS (15x/500 ms)	0.03 lux
Dome Attenuation	
Clear	Zero light loss
Smoked	f/1.0 light loss
Construction	Cast aluminum body with polycarbonate bubble
Finish	Light gray powder coated
Weight (without lens)	
Unit	3.3 lb (1.5 kg)
Shipping	5.0 lb (2.3 kg)
Available Languages	Chinese, English, French, German, Italian, Portuguese, Russian, Spanish, and Turkish

ELECTRICAL

Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cable Type	Cat5 or better for 100Base-TX
Power Input	18 to 30 VAC; 24 VAC nominal or PoE (IEEE 802.3af class 3)
Power Consumption*	<7W; <40 W with heater operation
Current Consumption	
PoE	<140 mA maximum
24 VAC†	<510 mA without heater operation; <2.5 A maximum with heater operation
Local Storage	Micro SD
Alarm Input	10 VDC maximum, 5 mA maximum
Alarm Output	0 to 15 VDC maximum, 75 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output
Accessory Port	Connects Pelco accessories
Audio	Bi-directional: half duplex Line level/external microphone input; 600 Ohm differential, 1 Vp-p max signal level
Compression	G.711 PCM 64 kbit/s

*Does not include optional devices connected to the accessory port

†Required for heater operation

MECHANICAL

Lens Mount	CS mount, adjustable
Pan/Tilt Adjustment	
Pan	368°
Tilt	160° (10° to 170°)
Rotate	355°

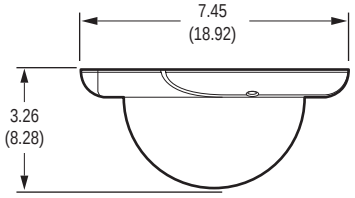
ENVIRONMENTAL

Operational Temperature	–22° to 122°F (–30° to 50°C); PoE operates between 32° to 122°F (0° to 50°C), 24 VAC power is required for heater operation below 32°F (0°C)
Thermostat Operation	Heater thermostatically controlled to operate below <41°F (<5°C)
Operational Humidity	20% to 80%, noncondensing

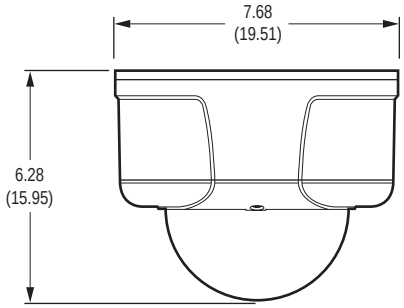
IMPACT RESISTANCE

Impact Resistance	IK10++ per EN62262 (70J)

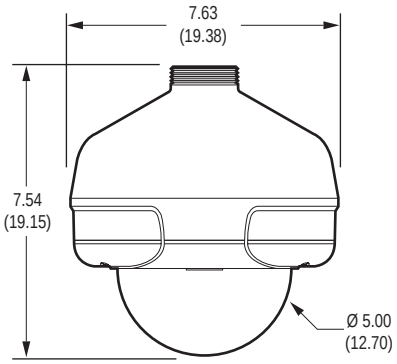
IN-CEILING



SURFACE MOUNT
(Mounting Ring Is Available as an Accessory)



PENDANT
(Mount Is Available as an Accessory)



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 high, main, or base profile and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				MJPEG		H.264 High Profile	
MPx	Width	Height	Aspect Ratio	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
2.1	1920	1080	16:9	30.0 ips	10.0 Mbps	30.0 ips	6.0 Mbps
1.9	1600	1200	4:3	20.0 ips	10.0 Mbps	20.0 ips	4.0 Mbps
1.3	1280	1024	5:4	20.0 ips	10.0 Mbps	20.0 ips	3.3 Mbps
1.2	1280	960	4:3	20.0 ips	10.0 Mbps	20.0 ips	3.0 Mbps
0.9	1280	720	16:9	30.0 ips	10.0 Mbps	30.0 ips	2.9 Mbps
0.5	800	600	4:3	30.0 ips	7.7 Mbps	30.0 ips	2.0 Mbps
0.3	640	480	4:3	30.0 ips	4.9 Mbps	30.0 ips	1.5 Mbps
0.1	320	240	4:3	30.0 ips	1.2 Mbps	30.0 ips	0.5 Mbps

Additional Resolutions	640 x 512, 640 x 352, 480 x 368, 480 x 272, 320 x 256, and 320 x 176
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 2.0 (or later) or Digital Sentry 4.2 (or later)
Open IP Integration	Pelco IP camera API
Minimum System Requirements	
Processor	Intel® Core® 2 Duo microprocessor, 2.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	2 GB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.5 (or later); Internet Explorer® 8.0 (or later) is recommended for configuring analytics
Media Player†	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

ANALYTICS

Required Systems for Pelco Analytics	
Pelco Interface	WS5200 Advanced System Management Software on an Endura 2.0 (or later) system
Open API	Pelco analytics allow streaming information to communicate though Pelco's API Guide for Video Analytics version 0.55.30 (or later), available at *Pelco.com/IP*
Required System for Object Video Suites	OV ready-compliant system with OV Ready video management system

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

TECHNICAL SPECIFICATIONS

MODELS

IEE20DN-0	Sarix outdoor fixed dome network camera, extended platform with built-in Pelco Analytics, 2.1 megapixel, day/night, no lens, smoked dome
IEE20DN-1	Sarix outdoor fixed dome network camera, extended platform with built-in Pelco Analytics, 2.1 megapixel, day/night, no lens, clear dome
IEE20DN8-1	Sarix outdoor fixed dome network camera, extended platform with built-in Pelco Analytics, 2.1 megapixel, day/night, 2.8 ~ 8 mm varifocal megapixel lens, clear dome
IEE20DN-OCP0	Sarix outdoor fixed dome network camera, extended platform, 2.1 megapixel, day/night, no lens, smoked dome, with built-in OV Event Counting Plus Suite
IEE20DN-OS0	Sarix outdoor fixed dome network camera, extended platform, 2.1 megapixel, day/night, no lens, smoked dome, with built-in OV Security Suite
IEE20DN-OSP0	Sarix outdoor fixed dome network camera, extended platform, 2.1 megapixel, day/night, no lens, smoked dome, with built-in OV Security Plus Suite
IEE20DN-OCP1	Sarix outdoor fixed dome network camera, extended platform, 2.1 megapixel, day/night, no lens, clear dome, with built-in OV Event Counting Plus Suite
IEE20DN-OS1	Sarix outdoor fixed dome network camera, extended platform, 2.1 megapixel, day/night, no lens, clear dome, with built-in OV Security Suite
IEE20DN-OSP1	Sarix outdoor fixed dome network camera, extended platform, 2.1 megapixel, day/night, no lens, clear dome, with built-in OV Security Plus Suite

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick
- Meets IP66 standards

OPTIONAL ACCESSORIES

IX-SC	4-foot service/monitor cable, compatible with any standard monitor BNC connector
POE20U560G	Single port PoE injector

RECOMMENDED MOUNTS

IE-P	Pendant mount adapter, light gray
IE-S	Surface mount adapter, light gray
SWM-SR, IWM-SR*	Wall mounts, light gray
IWM24-SR*	Wall mount with cable feedthrough; includes integral 24 VAC, 100 VA transformer; light gray finish
PP350*	Parapet mount, gray
PP351*	Rooftop or horizontal surface mount, gray

*Requires the IE-P pendant mount adapter.

RECOMMENDED LENSES

13M2.2-6	Megapixel lens, varifocal, 2.2 ~ 6.0 mm, f/1.3 ~ 2.0
13M2.8-8	Megapixel lens, varifocal, 2.8 ~ 8.0 mm, f/1.2 ~ 1.9
13M2.8-12	Megapixel lens, varifocal, 2.8 ~ 12.0 mm, f/1.4 ~ 2.7
13M15-50	Megapixel lens, varifocal, 15.0 ~ 50.0 mm, f/1.5 ~ 2.1

Pelco megapixel lenses have been designed and tested to deliver optimal image quality for the IEE20 Series dome. The use of standard definition lenses on IEE20 Series megapixel cameras will limit the resolution of the camera, creating poor image quality.

Field of View in Degrees		High Resolution Streams (> 800 x 600) Aspect Ratio		
		16:9	4:3	5:4
2.2 mm	Horizontal	109	109	109
	Vertical	63	83	89
2.8 mm	Horizontal	89	89	89
	Vertical	48	66	70
6.0 mm	Horizontal	42	42	42
	Vertical	24	32	34
8.0 mm	Horizontal	32	32	32
	Vertical	18	24	25
12.0 mm	Horizontal	21	21	21
	Vertical	12	16	17
15.0 mm	Horizontal	16	16	16
	Vertical	9	12	13
50.0 mm	Horizontal	5	5	5
	Vertical	3	4	4

Note: For 800 x 600 (or lower) resolutions in 4:3 or 5:4 aspect ratios, the field of view is smaller than listed above. Refer to the Installation/Operation manual for details.

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IEE10 Series Sarix™ EP Integrated Rugged Fixed Dome

INDOOR/OUTDOOR, NETWORK, 1.3 MEGAPIXEL HIGH DEFINITION DIGITAL CAMERA

Product Features

- Up to 1.3 Megapixel Resolution (1280 x 1024)
- Up to 30 Images per Second (ips) at 1280 x 720
- Interchangeable CS-Mount Lenses (Optional)
- Auto Back Focus for High Precision Focusing
- H.264 and MJPEG Compression
- Day/Night Capability
- Sensitivity Down to 0.03 lux
- Power over Ethernet (IEEE 802.3af) or 24 VAC
- Focus Button with Delay Enables Precision Focus Through Bubble
- Web Viewing, up to 16 Cameras Simultaneously
- Up to 2 Simultaneous Video Streams
- Local Storage (Micro SD) for Alarm Capture
- Bi-directional Half-Duplex Audio

(SHOWN WITH OPTIONAL IE-S SURFACE MOUNT ADAPTER)

- Built-in Analytics
- Open IP Standards
- Motion Detection

The **IEE10 Series extended platform (EP) camera with Sarix™ technology** is a 1.3 megapixel (MPx) network indoor/outdoor rugged fixed dome camera designed with industry-leading image quality and high performance processing power. Its sturdy metal design is vandal and tamper resistant and is designed for worry-free use in a wide range of environmental operating conditions.

The **IEE10 Series** is perfect for use in environmental air handling spaces. The back box is plenum rated per 2008 NEC article 300.22(C)(2).

Sarix technology defines the next generation of video security imaging performance, delivering high definition (HD) resolution, advanced low-light capabilities, consistent color science, and fast processing power. The H.264 compression video files are up to considerably smaller making high definition video more affordable.

Fixed Dome Camera

The **IEE10 Series** can be ordered with or without lenses. All models include a camera in an outdoor enclosure that is ready to install. These cameras accept a wide range of megapixel varifocal CS-mount lenses. This day/night model has a mechanical IR cut filter for increased sensitivity in low-light situations.

The **IEE10 Series** supports two simultaneous video streams. The two streams can be compressed in MJPEG and H.264 formats across several resolution configurations. The extended platform gives real-time video (30 ips) with HD resolution at 720p using H.264 compression for optimized bandwidth and storage efficiency. The streams can be configured in a variety of frame rates, bit rates, and group of pictures (GOP) structures for additional bandwidth administration.

Built-In Analytics

Pelco Analytics enhance the flexibility and performance of the IEE10 Series camera. Eight Pelco behaviors are preloaded and included as standard features of the IEE10DN models. Pelco behaviors can be configured and enabled using a standard Web browser, and they are compatible with Endura® or a third-party system that supports Pelco's Analytics API system.

Camera models are also available with preloaded **OV Analytic Suites**. These behaviors can be configured and enabled using a standard Web browser and are compatible with an OV ready-compliant system with an OV Ready™ video management system.

Web Interface

The **IEE10 Series** uses a standard Web browser for powerful remote setup and administration. Up to 16 cameras can be viewed on the same network.

Window Blanking

Window blanking is used to conceal user-defined privacy areas that cannot be viewed by an operator. The **IEE10 Series** supports up to four blanked windows. A blanked area will appear on the screen as a solid gray window.

Video Systemization

The **IEE10 Series** easily connects to Pelco IP and hybrid systems such as Endura® version 2.0 (or later) and Digital Sentry® version 4.3 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) that enables third-party systems to interface with Pelco's network cameras.

PELCO ANALYTICS

The IEE10 Series includes eight user-configurable behaviors. The camera is capable of running up to three behaviors at the same time; although, the number of behaviors is limited to the available processing power of the camera and the type of analytic being used.

Note: Available processing power is determined by the settings for compression standards, resolution, image rate, bit rate, and analytic configuration.

For each behavior, you can create several custom profiles that contain different camera settings. With these profiles, you can set up different scenarios for the behavior, which will automatically detect and trigger alarms when specific activity is detected.

Pelco Analytics are configured and enabled using a standard Web browser, and Pelco behaviors are compatible with Endura® or a third-party system that supports Pelco's Analytics API system. Multiple Pelco behaviors can be scheduled to work during a certain time or condition. For example, during the day, a camera can be configured with Object Counting to count the number of people that enter a lobby door. At night, the operator can change the profile to Camera Sabotage to trigger an alarm if a camera is moved or obstructed. Available Pelco behaviors include:

- **Abandoned Object:** Detects objects placed in a defined zone and triggers an alarm if the object remains in the zone longer than the user-defined time allows. An airport terminal is a typical installation for this behavior. This behavior can also detect objects left behind at an ATM, signaling possible card skimming.
- **Adaptive Motion:** Detects and tracks objects that enter a scene and then triggers an alarm when the objects enter a user-defined zone. This behavior is primarily used in outdoor environments with light traffic to reduce the number of false alarms caused by environmental changes.
- **Camera Sabotage:** Detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.
- **Directional Motion:** Generates an alarm in a high traffic area when a person or object moves in a specified direction. Typical installations for this behavior include an airport gate or tunnel where cameras can detect objects moving in the opposite direction of the normal flow of traffic or an individual entering through an exit door.
- **Loitering Detection:** Identifies when people or vehicles remain in a defined zone longer than the user-defined time allows. This behavior is effective in real-time notification of suspicious behavior around ATMs, stairwells, and school grounds.
- **Object Counting:** Counts the number of objects that enter a defined zone or cross a tripwire. This behavior might be used to count the number of people at a store entrance/exit or inside a store where the traffic is light. This behavior is based on tracking and does not count people in a crowded setting.
- **Object Removal:** Triggers an alarm if an object is removed from a defined zone. This behavior is ideal for customers who want to detect the removal of high value objects, such as a painting from a wall or a statue from a pedestal.
- **Stopped Vehicle:** Detects vehicles stopped near a sensitive area longer than the user-defined time allows. This behavior is ideal for airport curbside drop-offs, parking enforcement, suspicious parking, traffic lane breakdowns, and vehicles waiting at gates.

OBJECTVIDEO (OV) ANALYTIC SUITES

ObjectVideo Analytics Suites are preloaded on selected IEE10 Series cameras and require an OV Ready system to configure the behaviors for alarm notification.

OV Security Suite

The OV Security Suite is easy to use and includes Tripwire Detection, Inside Area Detection, and Camera Tamper Detection behaviors.

- Tripwire Detection identifies objects that cross a user-defined line drawn within the camera's field of view.
- Inside Area Detection identifies objects entering, appearing, or moving within a user-defined area.
- Camera Tamper Detection identifies significant contrast changes in the camera's field of view; for example, if the lens is obstructed by spray paint, a cloth, or a lens cap.

OV Security Suite Plus

The OV Security Suite Plus includes the behaviors of the OV Security Suite plus Multi-Line Tripwire Detection, Loitering Detection, and Leave Behind Detection behaviors.

- Multi-Line Tripwire Detection identifies objects that cross two defined lines and generates an event based on defined parameters, including directionality. Defined parameters for this behavior include direction, sequential order, and time between crossing each tripwire.
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- Loiter Counting is useful in analyzing how frequently people stop in front of a product, display, or other area of interest. This feature is also useful in assessing promotion effectiveness and product interest.
- Occupancy Sensing counts people and generates a new value every time the occupancy level changes. Since each occupancy output is time-stamped, the data can be used to determine average occupancy levels or to correlate data to point-of-sale or other business scenarios.
- Dwell-Time Monitoring rules can be set up to record the length of time it takes an object to enter and exit an area. Along with queue size information, wait times can also be assessed. This behavior can be used to evaluate consumer interaction for a point-of-sale display or digital advertisement.

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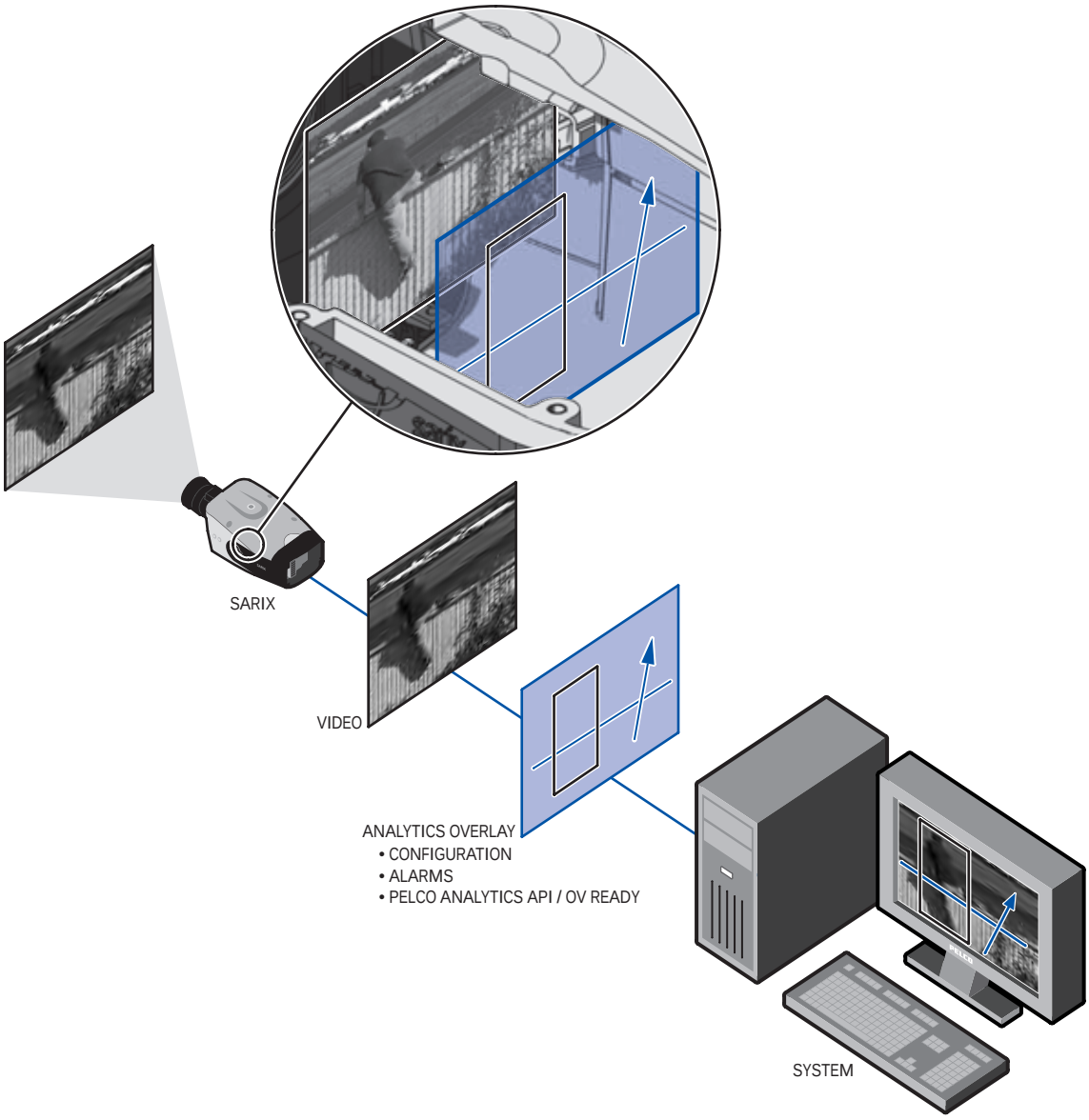

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TECHNICAL SPECIFICATIONS

GENERAL

Imaging Device	1/3-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	1280 x 1024
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2850°K; SNR >24 dB
Color (1x/33 ms)	0.5 lux
Color SENS (15x/500 ms)	0.12 lux
Mono (1x/33 ms)	0.25 lux
Mono SENS (15x/500 ms)	0.03 lux
Dome Attenuation	
Clear	Zero light loss
Smoked	f/1.0 light loss
Construction	Cast aluminum body with polycarbonate bubble
Finish	Light gray powder coated
Weight (without lens)	
Unit	3.3 lb (1.5 kg)
Shipping	5.0 lb (2.3 kg)
Available Languages	Chinese, English, French, German, Italian, Portuguese, Russian, Spanish, and Turkish

ELECTRICAL

Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cable Type	Cat5 or better for 100Base-TX
Power Input	18 to 30 VAC; 24 VAC nominal or PoE (IEEE 802.3af class 3)
Power Consumption*	<7 W; <40 W with heater operation
Current Consumption	
PoE	<140 mA maximum
24 VAC†	<510 mA without heater operation; <2.5 A maximum with heater operation
Local Storage	Micro SD
Alarm Input	10 VDC maximum, 5 mA maximum
Alarm Output	0 to 15 VDC maximum, 75 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output
Accessory Port	Connects Pelco accessories
Audio	Bi-directional: half duplex Line level/external microphone input; 600-ohm differential, 1 Vp-p max signal level
Compression	G.711 PCM 64 kbit/s

*Does not include optional devices connected to the accessory port.

†Required for heater operation.

MECHANICAL

Lens Mount	CS mount, adjustable
Pan/Tilt Adjustment	
Pan	368°
Tilt	160° (10° to 170°)
Rotate	355°

ENVIRONMENTAL

Operational Temperature	–22° to 122°F (–30° to 50°C); PoE operates between 32° to 122°F (0° to 50°C), 24 VAC power is required for heater operation below 32°F (0°C)
Thermostat Operation	Heater thermostatically controlled to operate below <41°F (<5°C)
Operational Humidity	20% to 80%, noncondensing

IMPACT RESISTANCE

Impact Resistance	IK10++ per EN62262 (70J)

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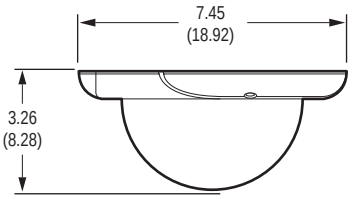
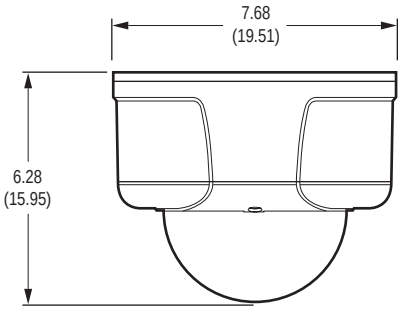
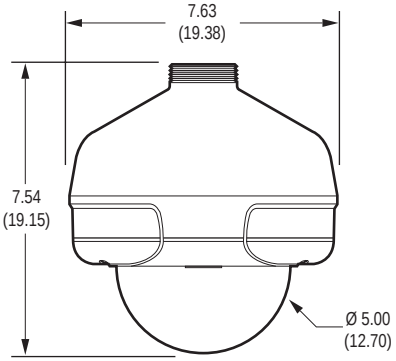


SURFACE MOUNT
(Mounting Ring Is Available as an Accessory)



PENDANT
(Mount Is Available as an Accessory)



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TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 high, main, or base profile and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				MJPEG		H.264 Base Profile	
MPx	Width	Height	Aspect Ratio	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
1.3	1280	1024	5:4	20.0 ips	10.0 Mbps	20.0 ips	3.4 Mbps
1.2	1280	960	4:3	20.0 ips	9.8 Mbps	20.0 ips	3.0 Mbps
0.9	1280	720	16:9	30.0 ips	10.0 Mbps	30.0 ips	2.9 Mbps
0.5	800	600	4:3	30.0 ips	7.7 Mbps	30.0 ips	2.0 Mbps
0.3	640	480	4:3	30.0 ips	4.9 Mbps	30.0 ips	1.5 Mbps
0.1	320	240	4:3	30.0 ips	1.2 Mbps	30.0 ips	0.5 Mbps

Additional Resolutions	640 x 512, 640 x 352, 480 x 368, 480 x 272, 320 x 256, and 320 x 176
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 2.0 (or later) or Digital Sentry 4.3 (or later)
Open IP Integration	Pelco IP camera API
Minimum System Requirements	
Processor	Intel® Core® 2 Duo microprocessor, 2.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	2 GB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.5 (or later); Internet Explorer® 8.0 (or later) is recommended for configuring analytics
Media Player†	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

ANALYTICS

Required Systems for Pelco Analytics	
Pelco Interface	WS5200 Advanced System Management Software on an Endura 2.0 (or later) system
Open API	Pelco analytics allow streaming information to communicate though Pelco's API Guide for Video Analytics version 0.55.30 (or later), available at *Pelco.com/IP*
Required System for Object Video Suites	OV ready-compliant system with OV Ready video management system

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

MODELS

IEE10DN-0	Sarix environmental network dome camera, extended platform, 1.3 megapixel, day/night, no lens, smoked dome, with built-in Pelco analytics
IEE10DN-1	Sarix environmental network dome camera, extended platform, 1.3 megapixel, day/night, no lens, clear dome, with built-in Pelco analytics
IEE10DN8-1	Sarix environmental network dome camera, extended platform, 1.3 megapixel, day/night, 2.8 ~ 8 mm varifocal megapixel lens, clear dome, with built-in Pelco analytics
IEE10DN-OCP1	Sarix environmental network dome camera, extended platform, 1.3 megapixel, day/night, no lens, clear dome, with built-in OV Event Counting Plus Suite
IEE10DN-OS1	Sarix environmental network dome camera, extended platform, 1.3 megapixel, day/night, no lens, clear dome, with built-in OV Security Suite
IEE10DN-OSP1	Sarix environmental network dome camera, extended platform, 1.3 megapixel, day/night, no lens, clear dome, with built-in OV Security Plus Suite

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick
- Meets IP66 standards

OPTIONAL ACCESSORIES

IX-SC	4-foot service/monitor cable, compatible with any standard monitor BNC connector
POE20U560G	Single port PoE injector

RECOMMENDED MOUNTS

IE-P	Pendant mount adapter, light gray
IE-S	Surface mount adapter, light gray
SWM-SR, IWM-SR*	Wall mounts, light gray
IWM24-SR*	Wall mount with cable feedthrough; includes integral 24 VAC, 100 VA transformer; light gray finish
PP350*	Parapet mount, gray
PP351*	Rooftop or horizontal surface mount, gray

*Requires the IE-P pendant mount adapter.

RECOMMENDED LENSES

13M2.2-6	Megapixel lens, varifocal, 2.2 ~ 6.0 mm, f/1.3 ~ 2.0
13M2.8-8	Megapixel lens, varifocal, 2.8 ~ 8.0 mm, f/1.2 ~ 1.9
13M2.8-12	Megapixel lens, varifocal, 2.8 ~ 12.0 mm, f/1.4 ~ 2.7
13M15-50	Megapixel lens, varifocal, 15.0 ~ 50.0 mm, f/1.5 ~ 2.1

Pelco megapixel lenses have been designed and tested to deliver optimal image quality for the IEE10 Series dome. The use of standard definition lenses on IEE10 Series megapixel cameras will limit the resolution of the camera, creating poor image quality.

Field of View in Degrees		High Resolution Streams (> 800 x 600) Aspect Ratio		
		16:9	4:3	5:4
2.2 mm	Horizontal	109	109	109
	Vertical	63	83	89
2.8 mm	Horizontal	89	89	89
	Vertical	48	66	70
6.0 mm	Horizontal	42	42	42
	Vertical	24	32	34
8.0 mm	Horizontal	32	32	32
	Vertical	18	24	25
12.0 mm	Horizontal	21	21	21
	Vertical	12	16	17
15.0 mm	Horizontal	16	16	16
	Vertical	9	12	13
50.0 mm	Horizontal	5	5	5
	Vertical	3	4	4

Note: For 800 x 600 (or lower) resolutions in 4:3 or 5:4 aspect ratios, the field of view is smaller than listed above. Refer to the Installation/Operation manual for details.

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IE10 Series Sarix™ Integrated Rugged Fixed Dome

INDOOR/OUTDOOR, NETWORK, 1.3 MEGAPIXEL HIGH DEFINITION DIGITAL CAMERA

Product Features

- Open IP Standards
- Up to 1.3 Megapixel Resolution (1280 X 1024)
- Up to 30 Images per Second (ips) at 1280 x 720
- Interchangeable CS-Mount Lenses (Optional)
- Auto Back Focus for High Precision Focusing
- H.264 and MJPEG Compression
- Day/Night Capability
- Video Setup Jack
- Sensitivity Down to 0.03 lux
- Power over Ethernet (IEEE 802.3af) or 24 VAC
- Focus Button with Delay Enables Precision Focus Through Bubble
- Up to 2 Simultaneous Video Streams
- Web Viewing, up to 16 Cameras Simultaneously

(SHOWN WITH OPTIONAL IE-S SURFACE MOUNT ADAPTER)

- Local Storage (Micro SD) for Alarm Capture
- Motion Detection
- Bi-directional Half-Duplex Audio

The **IE10 Series with Sarix™ technology** is a 1.3 megapixel (MPx) network indoor/outdoor rugged fixed dome camera designed with industry-leading image quality and high performance processing power. Its sturdy metal design is vandal and tamper resistant and is designed for worry-free use in a wide range of environmental operating conditions.

The **IE10 Series** is perfect for use in environmental air handling spaces. The back box is plenum rated per 2008 NEC article 300.22(C)(2).

Sarix technology defines the next generation of video security imaging performance, delivering high definition (HD) resolution, advanced low-light capabilities, consistent color science, and fast processing power. The H.264 compression video files are considerably smaller making high definition video more affordable.

Fixed Dome Camera

The **IE10 Series** can be ordered in either color or day/night models, with or without lenses installed. All models include advanced low-light technology and a camera in an outdoor enclosure that is ready to install. The day/night model has a mechanical IR cut filter for increased sensitivity in low-light installations. These cameras accept a wide range of megapixel varifocal CS-mount lenses.

The **IE10 Series** supports two simultaneous video streams. The two streams can be compressed in MJPEG and H.264 formats across several resolution configurations. The streams can be configured in a variety of frame rates, bit rates, and group of pictures (GOP) structures for additional bandwidth administration.

Built-In Analytics

The **Pelco Camera Sabotage** behavior is a standard feature of the IE10 Series. This behavior detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or covered with a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.

Web Interface

The **IE10 Series** uses a standard Web browser for powerful remote setup and administration. Up to 16 cameras can be viewed on the same network.

Window Blanking

Window blanking is used to conceal user-defined privacy areas that cannot be viewed by an operator. The **IE10 Series** supports up to four blanked windows. A blanked area will appear on the screen as a solid gray window.

Video Systemization

The **IE10 Series** easily connects to Pelco IP and hybrid systems such as Endura® version 2.0 (or later) and Digital Sentry® version 4.3 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) that enables third-party systems to interface with Pelco's network cameras.

TECHNICAL SPECIFICATIONS

GENERAL

Imaging Device	1/3-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	1280 x 1024
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2850°K; SNR >24 dB
Color (1x/33 ms)	0.5 lux
Color SENS (15x/500 ms)	0.12 lux
Mono (1x/33 ms)	0.25 lux
Mono SENS (15x/500 ms)	0.03 lux
Dome Attenuation	
Clear	Zero light loss
Smoked	f/1.0 light loss
Construction	Cast aluminum body with polycarbonate bubble
Finish	Light gray powder coated
Weight (without lens)	
Unit	3.3 lb (1.5 kg)
Shipping	5.0 lb (2.3 kg)
Available Languages	Chinese, English, French, German, Italian, Portuguese, Russian, Spanish, and Turkish

ELECTRICAL

Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cable Type	Cat5 or better for 100Base-TX
Power Input	18 to 30 VAC; 24 VAC nominal or PoE (IEEE 802.3af class 3)
Power Consumption*	<7W; <40 W with heater operation
Current Consumption	
PoE	<140 mA maximum
24 VAC†	<510 mA without heater operation; <2.5 A maximum with heater operation
Local Storage	Micro SD
Alarm Input	10 VDC maximum, 5 mA maximum
Alarm Output	0 to 15 VDC maximum, 75 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output
Accessory Port	Connects Pelco accessories
Audio	Bi-directional: half duplex Line level/external microphone input; 600 Ohm differential, 1 Vp-p max signal level
Compression	G.711 PCM 64 kbit/s

*Does not include optional devices connected to the accessory port

†Required for heater operation

MECHANICAL

Lens Mount	CS mount, adjustable
Pan/Tilt Adjustment	
Pan	368°
Tilt	160° (10° to 170°)
Rotate	355°

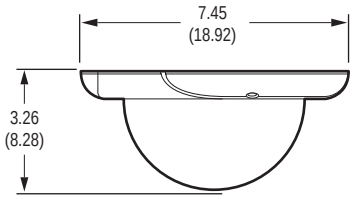
ENVIRONMENTAL

Operational Temperature	–22° to 122°F (–30° to 50°C); PoE operates between 32° to 122°F (0° to 50°C), 24 VAC power is required for heater operation below 32°F (0°C)
Thermostat Operation	Heater thermostatically controlled to operate below <41°F (<5°C)
Operational Humidity	20% to 80%, noncondensing

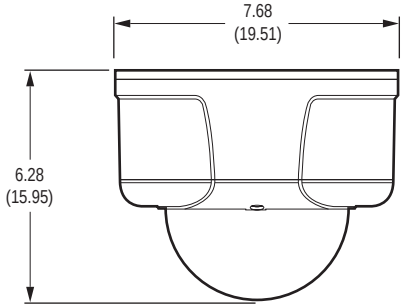
IMPACT RESISTANCE

Impact Resistance	IK10++ per EN62262 (70J)

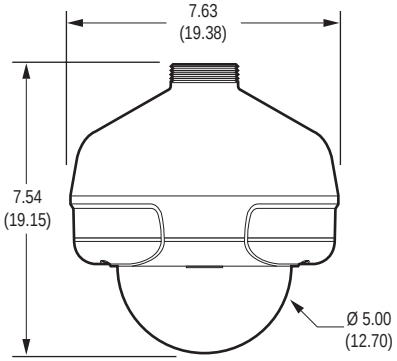
IN-CEILING



SURFACE MOUNT
(Mounting Ring Is Available as an Accessory)



PENDANT
(Mount Is Available as an Accessory)



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 base profile and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				MJPEG		H.264 Base Profile	
MPx	Width	Height	Aspect Ratio	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
1.3	1280	1024	5:4	20.0 ips	10.0 Mbps	8.0 ips	2.5 Mbps
1.2	1280	960	4:3	20.0 ips	9.8 Mbps	8.0 ips	2.4 Mbps
0.9	1280	720	16:9	30.0 ips	10.0 Mbps	12.5 ips	2.5 Mbps
0.5	800	600	4:3	30.0 ips	5.8 Mbps	25.0 ips	2.0 Mbps
0.3	640	480	4:3	30.0 ips	3.7 Mbps	30.0 ips	1.6 Mbps
0.1	320	240	4:3	30.0 ips	0.9 Mbps	30.0 ips	0.4 Mbps

Additional Resolutions	640 x 512, 640 x 352, 480 x 368, 480 x 272, 320 x 256, and 320 x 176
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 2.0 (or later) or Digital Sentry 4.3 (or later)
Open IP Integration	Pelco IP camera API
Minimum System Requirements	
Processor	Intel® Pentium® 4 microprocessor, 1.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	512 MB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.5 (or later); Internet Explorer 8.0 (or later) is recommended for configuring analytics
Media Player†	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

TECHNICAL SPECIFICATIONS

MODELS

IE10C8-1	Sarix outdoor fixed dome network camera, 1.3 megapixel, color, 2.8 ~ 8 mm varifocal megapixel lens, clear dome
IE10DN8-1	Sarix outdoor fixed dome network camera, 1.3 megapixel, day/night, 2.8 ~ 8 mm varifocal megapixel lens, clear dome
IE10C-0	Sarix outdoor fixed dome network camera, 1.3 megapixel, color, no lens, smoked dome
IE10C-1	Sarix outdoor fixed dome network camera, 1.3 megapixel, color, no lens, clear dome
IE10DN-0	Sarix outdoor fixed dome network camera, 1.3 megapixel, day/night, no lens, smoked dome
IE10DN-1	Sarix outdoor fixed dome network camera, 1.3 megapixel, day/night, no lens, clear dome

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick
- Meets IP66 standards

OPTIONAL ACCESSORIES

IX-SC	4-foot service/monitor cable, compatible with any standard monitor BNC connector
POE20U560G	Single port PoE injector

RECOMMENDED MOUNTS

IE-P	Pendant mount adapter, light gray
IE-S	Surface mount adapter, light gray
SWM-SR, IWM-SR*	Wall mounts, light gray
IWM24-SR*	Wall mount with cable feedthrough; includes integral 24 VAC, 100 VA transformer; light gray finish
PP350*	Parapet mount, gray
PP351*	Rooftop or horizontal surface mount, gray

*Requires the IE-P pendant mount adapter.

RECOMMENDED LENSES

13M2.2-6	Megapixel lens, varifocal, 2.2 ~ 6.0 mm, f/1.3 ~ 2.0
13M2.8-8	Megapixel lens, varifocal, 2.8 ~ 8.0 mm, f/1.2 ~ 1.9
13M2.8-12	Megapixel lens, varifocal, 2.8 ~ 12.0 mm, f/1.4 ~ 2.7
13M15-50	Megapixel lens, varifocal, 15.0 ~ 50.0 mm, f/1.5 ~ 2.1

Pelco megapixel lenses have been designed and tested to deliver optimal image quality for the IE10 Series dome. The use of standard definition lenses on IE10 Series megapixel cameras will limit the resolution of the camera, creating poor image quality.

Field of View in Degrees		High Resolution Streams (> 800 x 600) Aspect Ratio		
		16:9	4:3	5:4
2.2 mm	Horizontal	109	109	109
	Vertical	63	83	89
2.8 mm	Horizontal	89	89	89
	Vertical	48	66	70
6.0 mm	Horizontal	42	42	42
	Vertical	24	32	34
8.0 mm	Horizontal	32	32	32
	Vertical	18	24	25
12.0 mm	Horizontal	21	21	21
	Vertical	12	16	17
15.0 mm	Horizontal	16	16	16
	Vertical	9	12	13
50.0 mm	Horizontal	5	5	5
	Vertical	3	4	4

Note: For 800 x 600 (or lower) resolutions in 4:3 or 5:4 aspect ratios, the field of view is smaller than listed above. Refer to the Installation/Operation manual for details.

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IES0 Series Sarix™ Integrated Rugged Fixed Dome

INDOOR/OUTDOOR, NETWORK, 0.5 MPX STANDARD DEFINITION DIGITAL CAMERA

Product Features

- Up to SVGA Resolution (800 x 600)
- Up to 30 Images per Second (ips) at All Resolutions
- Auto Back Focus for High Precision Focusing
- H.264, MPEG4, and MJPEG Compression
- Day/Night Capability
- Sensitivity Down to 0.03 lux
- Power over Ethernet (IEEE 802.3af) or 24 VAC
- Focus Button with Delay Enables Precision Focus Through Bubble
- Up to 2 Simultaneous Video Streams
- Web Viewing, up to 16 Cameras Simultaneously
- Local Storage (Micro SD) for Alarm Capture
- Motion Detection

(SHOWN WITH OPTIONAL IE-S SURFACE MOUNT ADAPTER)

- Bi-directional Half-Duplex Audio
- Open IP Standards

The **IES0 Series with Sarix™ technology** is a standard definition network indoor/outdoor rugged fixed dome camera designed with industry-leading image quality and high performance processing power. Its sturdy metal design is vandal and tamper resistant and is designed for worry-free use in a wide range of environmental operating conditions.

The **IES0 Series** is perfect for use in environmental air handling spaces. The back box is plenum rated per 2008 NEC article 300.22(C)(2).

Sarix technology defines the next generation of video security imaging performance, delivering high definition (HD) resolution, advanced low-light capabilities, consistent color science, and fast processing power. The H.264 compression video files are considerably smaller making high definition video more affordable.

Fixed Dome Camera

The **IES0 Series** can be ordered in either color or day/night models, with or without lenses installed. All models include advanced low-light technology and a camera in an outdoor enclosure that is ready to install. The day/night model has a mechanical IR cut filter for increased sensitivity in low-light installations. These cameras accept a wide range of varifocal CS-mount lenses.

The **IES0 Series** supports two simultaneous video streams. The two streams can be compressed in MJPEG, MPEG-4, and H.264 formats across several resolution configurations. The streams can be configured in a variety of frame rates, bit rates, and group of pictures (GOP) structures for additional bandwidth administration.

Built-In Analytics

The **Pelco Camera Sabotage** behavior is a standard feature of the IES0 Series. This behavior detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or covered with a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.

Web Interface

The **IES0 Series** uses a standard Web browser for powerful remote setup and administration. Up to 16 cameras can be viewed on the same network.

Window Blanking

Window blanking is used to conceal user-defined privacy areas that cannot be viewed by an operator. The **IES0 Series** supports up to four blanked windows. A blanked area will appear on the screen as a solid gray window.

Systemization

The **IES0 Series** easily connects to Pelco IP and hybrid systems such as Endura® version 1.5 (or later), MPEG-4; Endura version 2.0 (or later), H.264; Digital Sentry® version 4.3 (or later); DX8100 version 2.0 (or later); and DVR5100 version 1.5.4 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) for interfacing to Pelco's network cameras.

TECHNICAL SPECIFICATIONS

GENERAL

Imaging Device	1/3-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	800 x 600
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2,850°K; SNR >24 dB
Color (1x/33 ms)	0.5 lux
Color SENS (15x/500 ms)	0.12 lux
Mono (1x/33 ms)	0.25 lux
Mono SENS (15x/500 ms)	0.03 lux
Dome Attenuation	
Clear	Zero light loss
Smoked	f/1.0 light loss
Construction	Cast aluminum body with polycarbonate bubble
Finish	Light gray powder coated
Weight (without lens)	
Unit	3.3 lb (1.5 kg)
Shipping	5.0 lb (2.3 kg)
Available Languages	Chinese, English, French, German, Italian, Portuguese, Russian, Spanish, and Turkish

ELECTRICAL

Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cable Type	Cat5 or better for 100Base-TX
Power Input	18 to 30 VAC; 24 VAC nominal or PoE (IEEE 802.3af class 3)
Power Consumption*	<7 W, < 40 W with heater operation
Current Consumption	
PoE	<140 mA maximum
24 VAC†	<510 mA without heater operation; <2.5 A maximum with heater operation
Local Storage	Micro SD
Alarm Input	10 VDC maximum, 5 mA maximum
Alarm Output	0 to 15 VDC maximum, 75 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output
Accessory Port	Connects Pelco accessories
Audio	Bi-directional: half duplex; line level/external microphone input; 600-ohm differential; 1 Vp-p max signal level
Compression	G.711 PCM 64 kbit/s

*Doesn't include optional devices connected to the accessory port.
†24 VAC is required for heater operation.

MECHANICAL

Lens Mount	CS mount, adjustable
Pan/Tilt Adjustment	
Pan	368°
Tilt	160° (10° to 170°)
Rotate	355°

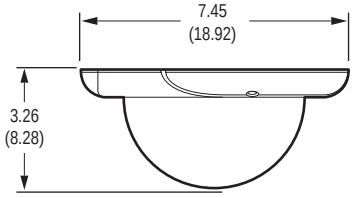
ENVIRONMENTAL

Operational Temperature	–22° to 122°F (–30° to 50°C); PoE operates between 32° to 122°F (0° to 50°C), 24 VAC power is required for heater operation below 32°F (0°C)
Thermostat Operation	Heater thermostatically controlled to operate below 41°F (5°C)
Operational Humidity	20% to 80%, noncondensing

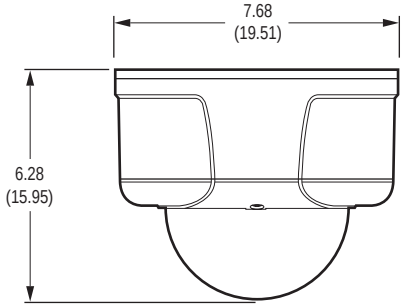
IMPACT RESISTANCE

Impact Resistance	IK10++ per EN62262 (70J)

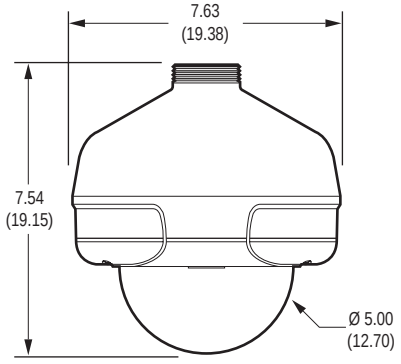
IN-CEILING



SURFACE MOUNT
(Mount Is Available as an Accessory)



PENDANT
(Mount Is Available as an Accessory)



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 base profile, MPEG-4, and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				MJPEG		H.264 Base Profile		MPEG-4	
MPx	Width	Height	Aspect Ratio	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
0.5	800	600	4:3	30 ips	5.8 Mbps	25 ips	2.0 Mbps	N/A	N/A
0.3	640	480	4:3	30 ips	3.7 Mbps	30 ips	1.6 Mbps	30 ips	1.7 Mbps
0.1	320	240	4:3	30 ips	0.9 Mbps	30 ips	0.4 Mbps	30 ips	0.4 Mbps

Additional Resolutions	640 x 512, 640 x 352, 480 x 368, 480 x 272, 320 x 256, 320 x 176, 4CIF (704 x 489 and 704 x 576), and CIF (352 x 240 and 352 x 288)
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 2.0 (or later) or Digital Sentry 4.3 (or later)
Open IP Integration	Pelco IP camera API
Minimum System Requirements	
Processor	Intel®, Pentium® 4 microprocessor, 1.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	512 MB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.5 (or later); Internet Explorer 8.0 (or later) is recommended for configuring analytics
Media Player†	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

TECHNICAL SPECIFICATIONS

MODELS

IES0C12-1	Sarix outdoor fixed dome network camera, 0.5 megapixel, color, 2.8 ~ 12 mm varifocal lens, clear dome
IES0DN12-1	Sarix outdoor fixed dome network camera, 0.5 megapixel, day/night, 2.8 ~ 12 mm varifocal lens, clear dome
IES0C-0	Sarix outdoor fixed dome network camera, 0.5 megapixel, color, no lens, smoked dome
IES0C-1	Sarix outdoor fixed dome network camera, 0.5 megapixel, color, no lens, clear dome
IES0DN-0	Sarix outdoor fixed dome network camera, 0.5 megapixel, day/night, no lens, smoked dome
IES0DN-1	Sarix outdoor fixed dome network camera, 0.5 megapixel, day/night, no lens, clear dome

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick
- Meets IP66 standards

OPTIONAL ACCESSORIES

IX-SC	4-foot service/monitor cable, compatible with any standard monitor BNC connector
POE20U560G	Single port PoE injector

RECOMMENDED MOUNTS

IE-P	Pendant mount adapter, light gray
IE-S	Surface mount adapter, light gray
SWM-SR, IWM-SR*	Wall mounts, light gray
IWM24-SR*	Wall mount with cable feedthrough; includes integral 24 VAC, 100 VA transformer; light gray finish
PP350*	Parapet mount, gray
PP351*	Rooftop or horizontal surface mount, gray

*Requires the IE-P pendant mount adapter.

RECOMMENDED LENSES

13VD2.5-6	Varifocal lens, 2.5 ~ 6.0 mm, f/1.4 ~ 2.1
13VD2.8-12	Varifocal lens, 2.8 ~ 12.0 mm, f/1.4 ~ 2.9
13VD5-50	Varifocal lens, 5.0 ~ 50.0 mm, f/1.4 ~ 2.9

Field of View in Degrees		Aspect Ratio		
		16:9	4:3	5:4
2.5 mm	Horizontal	98	83	80
	Vertical	55	63	64
2.8 mm	Horizontal	89	74	71
	Vertical	48	55	56
5.0 mm	Horizontal	50	42	40
	Vertical	28	32	32
6.0 mm	Horizontal	42	36	34
	Vertical	24	27	28
8.0 mm	Horizontal	32	27	26
	Vertical	18	20	20
12.0 mm	Horizontal	21	18	17
	Vertical	12	13	14
50.0 mm	Horizontal	5	4	4
	Vertical	3	3	3

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IX30 Series Sarix™ Network Camera

3.1 MEGAPIXEL HIGH DEFINITION DIGITAL CAMERAS

Product Features

- Open IP Standards
- Up to 3.1 Megapixel Resolution (2048 x 1536)
- Up to 30 Images per Second (ips) at 1280 x 720
- Auto Back Focus
- H.264 and MJPEG Compression Capability
- Color and Day/Night Models
- Video Setup Jack
- Sensitivity Down to 0.03 lux
- Power over Ethernet (IEEE 802.3af) or 24 VAC
- Up to 2 Simultaneous Video Streams
- Web Viewing, up to 16 Cameras Simultaneously
- Local Storage (Mini SD) for Alarm Capture
- Motion Detection
- Audio Accessory Available

(LENS NOT SUPPLIED WITH CAMERA)

The **IX30 Series with Sarix™ technology** is a 3.1 megapixel (MPx) network camera designed with industry-leading image quality and high performance;ht capabilities, consistent color science, and fast processing power. The H.264 compression video files are up to 20 times smaller making high definition video more affordable.

Camera

The **IX30 Series** has two 3.1 megapixel models: color and day/night. Both models feature advanced low light technology capabilities. The day/night model has a mechanical IR cut filter for increased sensitivity in low light installations.

The **IX30 Series** can support two simultaneous video streams. The two streams can be compressed in MJPEG and H.264 formats across several resolution configurations. The streams can be configured to a variety of frame rates, bit rates, and GOP (group of pictures) structures for additional bandwidth administration.

The **IX30 Series** is simple to install, and the automatic back focus control feature makes sharp scene focus setup easy. A convenient video setup jack eliminates the need to use a laptop for viewing video when installing the camera.

The **IX30 Series** features built-in Power over Ethernet (PoE) IEEE 802.3af, which supplies power to the camera over the network, eliminating the need for a separate power supply. If PoE is not available, 24 VAC can be used to power the camera.

Built-In Analytics

The **Pelco Camera Sabotage** behavior is a standard feature of the IX30 Series. This behavior detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or covered with a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.

Web Interface

The **IX30 Series** uses a standard Web browser for powerful remote setup and administration. Up to 16 cameras can be viewed on the same network.

Window Blanking

Window blanking is used to conceal user-defined privacy areas that cannot be viewed by an operator. The **IX30 Series** supports up to four blanked windows. A blanked area will appear on the screen as a solid gray window.

Systemization

The **IX30 Series** easily connects to Pelco IP and hybrid systems such as Endura® version 2.0 (or later) and Digital Sentry® version 4.2 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) for interfacing with Pelco's network cameras

TECHNICAL SPECIFICATIONS

GENERAL

Imaging Device	1/3-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	2048 x 1536
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2,850°K; SNR >24 dB
Color (33 ms)	0.50 lux
Color SENS (500 ms)	0.12 lux
Mono (33 ms)	0.25 lux
Mono SENS (500 ms)	0.03 lux
Weight (without lens)	1.11 lb (0.50 kg)
Shipping Weight	2.00 lb (0.90 kg)

ELECTRICAL

Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cabling Type	Cat5 or better for 100Base-TX
Power Input	22 to 34 VAC; 24 VAC nominal or PoE (IEEE 802.3af class 3)
Power Consumption	<6 W
Current Consumption	
PoE	<200 mA maximum
24 VAC	<295 mA nominal; <390 mA maximum
Local Storage	Mini SD
Alarm Input	10 VDC maximum, 5 mA maximum
Alarm Output	0 to 15 VDC maximum, 75 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output

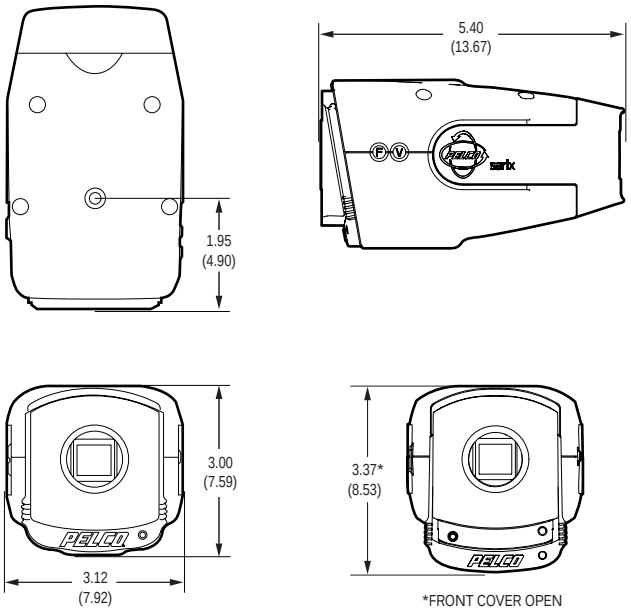
MECHANICAL

Lens Mount	CS mount, adjustable
Camera Mount	0.25-inch (0.64 cm) UNC-20 screw, top and bottom of camera housing

ENVIRONMENTAL

Operational Temperature	14° to 122°F (–10° to 50°C)
Storage Temperature	14° to 158°F (–10° to 70°C)
Storage Humidity	20% to 90%, noncondensing

FRONT VIEW, CAMERA ONLY
(OPENED TO EXPOSE SERVICE PORT)



REAR VIEW

NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 base profile and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2.5, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				MJPEG		H.264 Base Profile	
MPx	Width	Height	Aspect Ratio	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
3.1	2048	1536	4:3	12.0 ips	10.0 Mbps	3.0 ips	2.6 Mbps
2.1	1920	1080	16:9	15.0 ips	10.0 Mbps	5.0 ips	2.7 Mbps
1.9	1600	1200	4:3	15.0 ips	10.0 Mbps	6.0 ips	2.6 Mbps
1.3	1280	1024	5:4	20.0 ips	10.0 Mbps	8.0 ips	2.5 Mbps
1.2	1280	960	4:3	20.0 ips	9.8 Mbps	8.0 ips	2.4 Mbps
0.9	1280	720	16:9	30.0 ips	10.0 Mbps	12.5 ips	2.5 Mbps
0.5	800	600	4:3	30.0 ips	5.8 Mbps	25.0 ips	2.0 Mbps
0.3	640	480	4:3	30.0 ips	3.7 Mbps	30.0 ips	1.6 Mbps
0.1	320	240	4:3	30.0 ips	0.9 Mbps	30.0 ips	0.4 Mbps

Additional Resolutions	640 x 512, 640 x 352, 480 x 368, 480 x 272, 320 x 256, and 320 x 176
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 2.0 (or later) or Digital Sentry 4.2 (or later)
Open IP Integration	Pelco IP camera API
Minimum System Requirements	
Processor	Intel® Pentium® 4 microprocessor, 1.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	512 MB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.5 (or later); Internet Explorer® 8.0 (or later) is recommended for configuring analytics
Media Player†	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

TECHNICAL SPECIFICATIONS

MODELS

IX30C	Sarix 3.1 megapixel network color camera
IX30DN	Sarix 3.1 megapixel network day/night camera

CERTIFICATIONS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick

ACCESSORIES

IX-SC	4-foot Sarix service cable; compatible with standard BNC connectors
IA-A	Audio accessory; supplied with two USB extension cables: 1 ft (0.3 m) and 3 ft (0.9 m)

RECOMMENDED MOUNTS

C10-UM	Universal camera mount

RECOMMENDED ENCLOSURES

EH1512	Indoor/outdoor enclosure
EH3512	Outdoor enclosure
DF8	8-inch fixed mount dome

RECOMMENDED LENSES

13M2.2-6	Megapixel lens, varifocal, 2.2 ~ 6.0 mm, f/1.3 ~ 2.0
13M2.8-8	Megapixel lens, varifocal, 2.8 ~ 8.0 mm, f/1.2 ~ 1.9
13M2.8-12	Megapixel lens, varifocal, 2.8 ~ 12.0 mm, f/1.4 ~ 2.7
13M15-50	Megapixel lens, varifocal, 15.0 ~ 50.0 mm, f/1.5 ~ 2.1

Pelco lenses have been designed and tested to deliver optimal image quality for the IX30 Series camera. The use of standard definition lenses on IX30 Series megapixel camera will limit the resolution of the camera, creating poor image quality.

Field of View in Degrees		Aspect Ratio		
		16:9	4:3	5:4
2.2 mm	Horizontal	109	109	109
	Vertical	63	83	89
2.8 mm	Horizontal	89	89	89
	Vertical	48	66	70
6.0 mm	Horizontal	42	42	42
	Vertical	24	32	34
8.0 mm	Horizontal	32	32	32
	Vertical	18	24	25
12.0 mm	Horizontal	21	21	21
	Vertical	12	16	17
15.0 mm	Horizontal	16	16	16
	Vertical	9	12	13
50.0 mm	Horizontal	5	5	5
	Vertical	3	4	4

Note: For 800 x 600 (or lower) resolutions in 4:3 or 5:4 aspect ratios, the field of view is smaller than listed above. Refer to the Installation/Operation manual for details.

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IXE20 Series Sarix™ EP Network Camera

2.1 MEGAPIXEL EXTENDED PLATFORM HIGH DEFINITION DIGITAL CAMERAS

Product Features

- Open IP Standards
- Up to 2.1 Megapixel Resolution (1920 x 1080)
- Up to 30 Images per Second (ips) at 1920 x 1080
- Auto Back Focus
- H.264 and MJPEG Compression Capability
- Color and Day/Night Models
- Video Setup Jack
- Sensitivity Down to 0.03 Lux
- Power over Ethernet (IEEE 802.3af) or 24 VAC
- Up to 2 Simultaneous Video Streams
- Built-in Analytics
- Local Storage (Mini SD) for Alarm Capture

(LENS NOT SUPPLIED WITH CAMERA)

- Motion Detection
- Audio Accessory Available

The **IXE20 Series extended platform (EP) camera with Sarix™ technology** is a 2.1 megapixel (MPx) network camera designed with industry-leading image quality and high performance processing power. Designed to install quickly, the camera includes automatic back focus control, built-in analytics, and other advanced features needed for demanding security applications.

Sarix technology defines the next generation of video security imaging performance, delivering high definition (HD) resolution, advanced low-light capabilities, consistent color science, and fast processing power. The H.264 compression video files are up to 20 times smaller making high definition video more affordable.

Camera

The **IXE20 Series** has two 2.1 megapixel models: color and day/night. Both models feature advanced low-light technology capabilities. The day/night model has a mechanical IR cut filter for increased sensitivity in low-light installations.

The **IXE20 Series** can support two simultaneous video streams. The two streams can be compressed in MJPEG and H.264 formats across several resolution configurations. The extended platform gives real-time video (30 ips) with HD resolution using H.264 compression for optimized bandwidth and storage efficiency. The streams can be configured to a variety of frame rates, bit rates, and GOP (group of pictures) structures for additional bandwidth administration.

Built-in Analytics

Pelco Analytics enhance the flexibility and performance of the IXE20 Series camera. Eight Pelco behaviors are preloaded and included as standard features of the IXE20C and IXE20DN models. Pelco behaviors can be configured and enabled using a standard Web browser, and they are compatible with Endura® or a third-party system that supports Pelco's Analytics API system.

Camera models are also available with preloaded **OV Analytic Suites.** These behaviors can be configured and enabled using a standard Web browser and are compatible with an OV ready-compliant system with an OV Ready™ video management system.

Web Interface

The **IXE20 Series** uses a standard Web browser for powerful remote setup and administration. Up to 16 cameras can be viewed on the same network.

Window Blanking

Window blanking is used to conceal user-defined privacy areas that cannot be viewed by an operator. The **IXE20 Series** supports up to four blanked windows. A blanked area will appear on the screen as a solid gray window.

Video Systemization

The **IXE20 Series** easily connects to Pelco IP and hybrid systems such as Endura version 2.0 (or later) and Digital Sentry® version 4.2 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an API for interfacing with Pelco's network cameras.

PELCO ANALYTICS

The IXE20 series includes eight user-configurable behaviors. The camera is capable of running up to three behaviors at the same time; although, the number of behaviors is limited to the available processing power of the camera and the type of analytic being used.

Note: Available processing power is determined by the settings for compression standards, resolution, image rate, bit rate, and analytic configuration.

For each behavior, you can create several custom profiles that contain different camera settings. With these profiles, you can set up different scenarios for the behavior, which will automatically detect and trigger alarms when specific activity is detected.

Pelco Analytics are configured and enabled using a standard Web browser, and Pelco behaviors are compatible with Endura® or a third-party system that supports Pelco's Analytics API system. Multiple Pelco behaviors can be scheduled to work during a certain time or condition. For example, during the day, a camera can be configured with Object Counting to count the number of people that enter a lobby door. At night, the operator can change the profile to Camera Sabotage to trigger an alarm if a camera is moved or obstructed. Available Pelco behaviors include:

- **Abandoned Object:** Detects objects placed in a defined zone and triggers an alarm if the object remains in the zone longer than the user-defined time allows. An airport terminal is a typical installation for this behavior. This behavior can also detect objects left behind at an ATM, signaling possible card skimming.
- **Adaptive Motion:** Detects and tracks objects that enter a scene and then triggers an alarm when the objects enter a user-defined zone. This behavior is primarily used in outdoor environments with light traffic to reduce the number of false alarms caused by environmental changes.
- **Camera Sabotage:** Detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.
- **Directional Motion:** Generates an alarm in a high traffic area when a person or object moves in a specified direction. Typical installations for this behavior include an airport gate or tunnel where cameras can detect objects moving in the opposite direction of the normal flow of traffic or an individual entering through an exit door.
- **Loitering Detection:** Identifies when people or vehicles remain in a defined zone longer than the user-defined time allows. This behavior is effective in real-time notification of suspicious behavior around ATMs, stairwells, and school grounds.
- **Object Counting:** Counts the number of objects that enter a defined zone or cross a tripwire. This behavior might be used to count the number of people at a store entrance/exit or inside a store where the traffic is light. This behavior is based on tracking and does not count people in a crowded setting.
- **Object Removal:** Triggers an alarm if an object is removed from a defined zone. This behavior is ideal for customers who want to detect the removal of high value objects, such as a painting from a wall or a statue from a pedestal.
- **Stopped Vehicle:** Detects vehicles stopped near a sensitive area longer than the user-defined time allows. This behavior is ideal for airport curbside drop-offs, parking enforcement, suspicious parking, traffic lane breakdowns, and vehicles waiting at gates.

OBJECTVIDEO (OV) ANALYTIC SUITES

ObjectVideo Analytics Suites are preloaded on selected IXE20 Series cameras and require an OV Ready system to configure the behaviors for alarm notification.

OV Security Suite

The OV Security Suite is easy to use and includes Tripwire Detection, Inside Area Detection, and Camera Tamper Detection behaviors.

- Tripwire Detection identifies objects that cross a user-defined line drawn within the camera's field of view.
- Inside Area Detection identifies objects entering, appearing, or moving within a user-defined area.
- Camera Tamper Detection identifies significant contrast changes in the camera's field of view; for example, if the lens is obstructed by spray paint, a cloth, or a lens cap.

OV Security Suite Plus

The OV Security Suite Plus includes the behaviors of the OV Security Suite plus Multi-Line Tripwire Detection, Loitering Detection, and Leave Behind Detection behaviors.

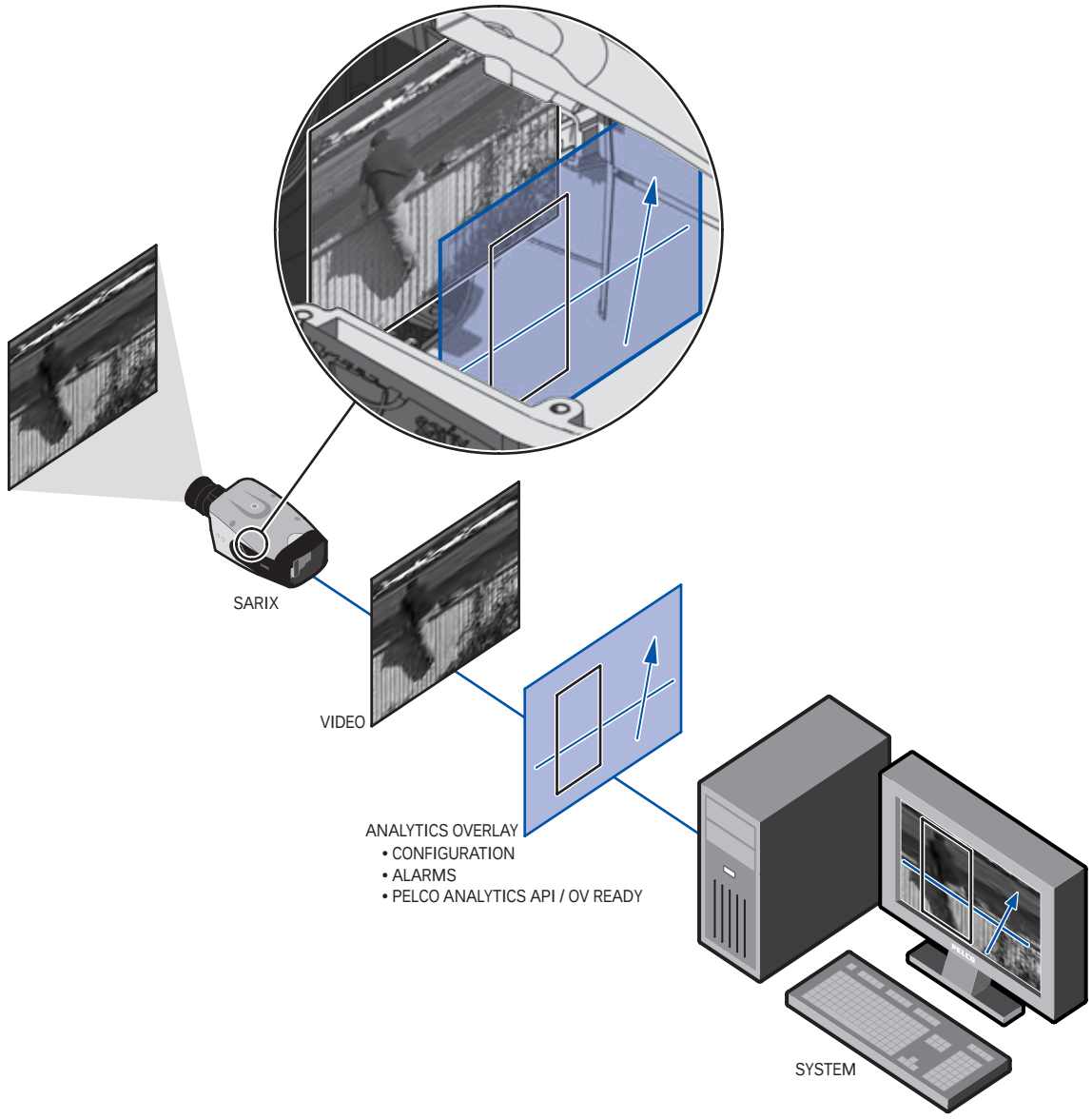
- Multi-Line Tripwire Detection identifies objects that cross two defined lines and generates an event based on defined parameters, including directionality. Defined parameters for this behavior include direction, sequential order, and time between crossing each tripwire.
- Loitering Detection identifies when people or vehicles remain within a user-defined area beyond a specified period of time. This behavior is effective for real-time notification of suspicious behavior around ATMs, stairwells, and school grounds.
- Leave Behind Detection detects objects placed in a defined zone and triggers an alarm if the object remains in the zone longer than the user-defined time allows.

OV Event Counting Suite

The OV Event Counting Suite uses advanced object calibration and additional features for schedules, parameters, and multiple rules. The suite includes behaviors for Tripwire Counting, Enters/Exits Counting, Loiter Counting, Occupancy Sensing, and Dwell-Time Monitoring.

- Tripwire Counting counts people or objects that cross a user-defined line.
- Enters/Exits Counting calculates the number of people that enter and exit an area without using a tripwire.
- Loiter Counting is useful in analyzing how frequently people stop in front of a product, display, or other area of interest. This feature is also useful in assessing promotion effectiveness and product interest.
- Occupancy Sensing counts people and generates a new value every time the occupancy level changes. Since each occupancy output is time-stamped, the data can be used to determine average occupancy levels or to correlate data to point-of-sale or other business scenarios.
- Dwell-Time Monitoring rules can be set up to record the length of time it takes an object to enter and exit an area. Along with queue size information, wait times can also be assessed. This behavior can be used to evaluate consumer interaction for a point-of-sale display or digital advertisement.

The following diagram illustrates how the camera system interprets streaming video when embedded analytics are configured and enabled.



IMPORTANT NOTE: PLEASE READ. The network implementation is shown as a general representation only and is not intended to show a detailed network topology. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the system as illustrated. Please contact your local Pelco Representative to discuss your specific requirements.

TECHNICAL SPECIFICATIONS

GENERAL

Imaging Device	1/3-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	1920 x 1080
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2,850°K; SNR >24 dB
Color (33 ms)	0.50 lux
Color SENS (500 ms)	0.12 lux
Mono (33 ms)	0.25 lux
Mono SENS (500 ms)	0.03 lux
Weight (without lens)	1.14 lb (0.51 kg)
Shipping Weight	2.00 lb (0.90 kg)

ELECTRICAL

Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cabling Type	Cat5 or better for 100Base-TX
Power Input	22 to 34 VAC; 24 VAC nominal or PoE (IEEE 802.3af class 3)
Power Consumption	<7 W
Current Consumption	
PoE	<200 mA maximum
24 VAC	<295 mA nominal; <390 mA maximum
Local Storage	Mini SD
Alarm Input	10 VDC maximum, 5 mA maximum
Alarm Output	0 to 15 VDC maximum, 75 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output

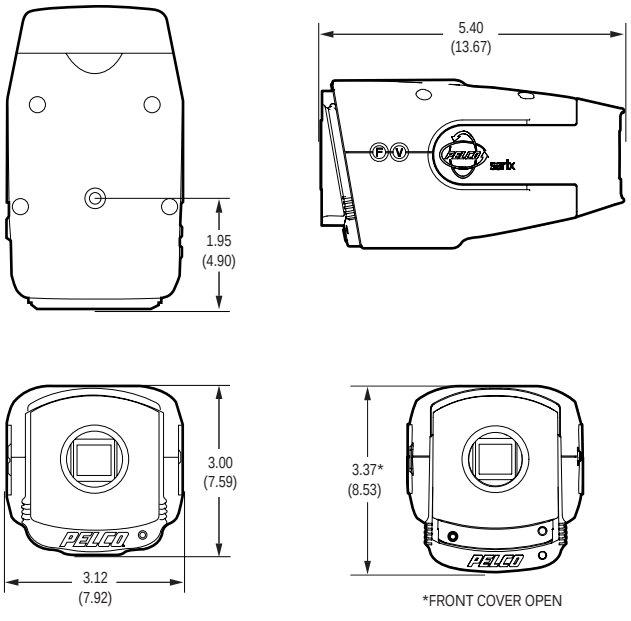
MECHANICAL

Lens Mount	CS mount, adjustable
Camera Mount	0.25-inch (0.64 cm) UNC-20 screw, top and bottom of camera housing

ENVIRONMENTAL

Operational Temperature	14° to 122°F (–10° to 50°C)
Storage Temperature	14° to 158°F (–10° to 70°C)
Storage Humidity	20% to 90%, noncondensing

FRONT VIEW, CAMERA ONLY
(OPENED TO EXPOSE SERVICE PORT)



*FRONT COVER OPEN

REAR VIEW

NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 high, main, or base profile and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2.5, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				MJPEG		H.264 High Profile	
MPx	Width	Height	Aspect Ratio	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
2.1	1920	1080	16:9	30.0 ips	10.0 Mbps	30.0 ips	6.0 Mbps
1.9	1600	1200	4:3	20.0 ips	10.0 Mbps	20.0 ips	4.0 Mbps
1.3	1280	1024	5:4	20.0 ips	10.0 Mbps	20.0 ips	3.4 Mbps
1.2	1280	960	4:3	20.0 ips	10.0 Mbps	20.0 ips	3.0 Mbps
0.9	1280	720	16:9	30.0 ips	10.0 Mbps	30.0 ips	2.9 Mbps
0.5	800	600	4:3	30.0 ips	7.7 Mbps	30.0 ips	2.0 Mbps
0.3	640	480	4:3	30.0 ips	4.9 Mbps	30.0 ips	1.5 Mbps
0.1	320	240	4:3	30.0 ips	1.2 Mbps	30.0 ips	0.5 Mbps

Additional Resolutions	640 x 512, 640 x 352, 480 x 368, 480 x 272, 320 x 256, and 320 x 176
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 2.0 (or later) Digital Sentry 4.2 (or later)
Open IP Integration	Pelco IP camera API
Minimum System Requirements	
Processor	Intel® Core® 2 Duo microprocessor, 2.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	2 GB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.5 (or later); Internet Explorer® 8.0 (or later) is recommended for configuring analytics
Media Player†	Pelco's Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

ANALYTICS

Required Systems for Pelco Analytics	
Pelco Interface	WS5200 Advanced System Management Software on an Endura 2.0 (or later) system
Open API	Pelco analytics allow streaming information to communicate though Pelco's API Guide for Video Analytics version 0.55.30 (or later), available at *Pelco.com/IP*
Required System for Object Video Suites	OV ready-compliant system with OV Ready video management system

TECHNICAL SPECIFICATIONS

MODELS

IXE20C	Sarix 2.1 megapixel EP network color camera with built-in Pelco Analytics
IXE20DN	Sarix 2.1 megapixel EP network day/night camera with built-in Pelco Analytics
IXE20C-OS	Sarix 2.1 megapixel EP network color camera with built-in OV Security Suite
IXE20DN-OS	Sarix 2.1 megapixel EP network day/night camera with built-in OV Security Suite
IXE20C-OSP	Sarix 2.1 megapixel EP network color camera with built-in OV Security Suite Plus
IXE20DN-OSP	Sarix 2.1 megapixel EP network day/night camera with built-in OV Security Suite Plus
IXE20C-OCP	Sarix 2.1 megapixel EP network color camera with built-in OV Event Counting Suite
IXE20DN-OCP	Sarix 2.1 megapixel EP network day/night camera with built-in OV Event Counting Suite

CERTIFICATIONS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick

ACCESSORIES

IX-SC	4-foot Sarix service cable; compatible with standard BNC connectors
IA-A	Audio adapter compatible with a USB 2.0 A to 5-pin mini-B cable; supplied with two USB extension cables: 1 ft (0.3 m) and 3 ft (0.9 m)

RECOMMENDED MOUNTS

C10-UM	Universal camera mount

RECOMMENDED ENCLOSURES

EH1512	Indoor/outdoor enclosure
EH3512	Outdoor enclosure
DF8	8-inch fixed mount dome

RECOMMENDED LENSES

13M2.2-6	Megapixel lens, varifocal, 2.2 ~ 6.0 mm, f/1.3 ~ 2.0
13M2.8-8	Megapixel lens, varifocal, 2.8 ~ 8.0 mm, f/1.2 ~ 1.9
13M2.8-12	Megapixel lens, varifocal, 2.8 ~ 12.0 mm, f/1.4 ~ 2.7
13M15-50	Megapixel lens, varifocal, 15.0 ~ 50.0 mm, f/1.5 ~ 2.1

Pelco megapixel lenses have been designed and tested to deliver optimal image quality for the IXE20 Series camera. The use of standard definition lenses on IXE20 Series megapixel cameras will limit the resolution of the camera, creating poor image quality.

Field of View in Degrees		Aspect Ratio		
		16:9	4:3	5:4
2.2 mm	Horizontal	109	109	109
	Vertical	63	83	89
2.8 mm	Horizontal	89	89	89
	Vertical	48	66	70
6.0 mm	Horizontal	42	42	42
	Vertical	24	32	34
8.0 mm	Horizontal	32	32	32
	Vertical	18	24	25
12.0 mm	Horizontal	21	21	21
	Vertical	12	16	17
15.0 mm	Horizontal	16	16	16
	Vertical	9	12	13
50.0 mm	Horizontal	5	5	5
	Vertical	3	4	4

Note: For 800 x 600 (or lower) resolutions in 4:3 or 5:4 aspect ratios, the field of view is smaller than listed above. Refer to the Installation/Operation manual for details.

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IXE10 Series Sarix™ EP Network Camera

1.3 MEGAPIXEL EXTENDED PLATFORM HIGH DEFINITION DIGITAL CAMERAS

Product Features

- Open IP Standards
- Up to 1.3 Megapixel Resolution (1280 x 1024)
- Up to 30 Images per Second (ips) at 1280 x 720
- Auto Back Focus
- H.264 and MJPEG Compression Capability
- Color and Day/ Night Models
- Video Setup Jack
- Sensitivity Down to 0.03 Lux
- Power over Ethernet (IEEE 802.3af) or 24 VAC
- Up to 2 Simultaneous Video Streams
- Built-In Analytics
- Local Storage (Mini SD) for Alarm Capture

(LENS NOT SUPPLIED WITH CAMERA)

- Motion Detection
- Audio Accessory Available

The **IXE10 Series extended platform (EP) camera with Sarix™ technology** is a 1.3 megapixel (MPx) network camera designed with industry-leading image quality and high performance processing power. Designed to install quickly, the camera includes automatic back focus control, built-in analytics, and other advanced features needed for demanding security applications.

Sarix technology defines the next generation of video security imaging performance, delivering high definition (HD) resolution, advanced low-light capabilities, consistent color science, and fast processing power. The H.264 compression video files are up to 20 times smaller making high definition video more affordable.

Camera

The **IXE10 Series** has two 1.3 megapixel models: color and day/night. Both models feature advanced low-light technology capabilities. The day/night model has a mechanical IR cut filter for increased sensitivity in low-light installations.

The **IXE10 Series** can support two simultaneous video streams. The two streams can be compressed in MJPEG and H.264 formats across several resolution configurations. The extended platform gives real time video (30 ips) with HD resolution using H.264 compression for optimized bandwidth and storage efficiency. The streams can be configured to a variety of frame rates, bit rates, and GOP (group of pictures) structures for additional bandwidth administration.

Built-In Analytics

Pelco Analytics enhance the flexibility and performance of the IXE10 Series camera. Eight Pelco behaviors are preloaded and included as standard features of the IXE10C and IXE10DN models. Pelco behaviors can be configured and enabled using a standard Web browser, and they are compatible with Endura® or a third-party system that supports Pelco's Analytics API system.

Camera models are also available with preloaded **OV Analytic Suites**. These behaviors can be configured and enabled using a standard Web browser and are compatible with an OV-ready compliant system with an OV Ready™ video management system.

Web Interface

The **IXE10 Series** uses a standard Web browser for powerful remote setup and administration. Up to 16 cameras can be viewed on the same network.

Window Blanking

Window blanking is used to conceal user-defined privacy areas that cannot be viewed by an operator. The **IXE10 Series** supports up to four blanked windows. A blanked area will appear on the screen as a solid gray window.

Video Systemization

The **IXE10 Series** easily connects to Pelco IP and hybrid systems such as Endura version 2.0 (or later) and Digital Sentry® version 4.2 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) for interfacing with Pelco's network cameras.

PELCO ANALYTICS

The IXE10 Series includes eight user-configurable behaviors. The camera is capable of running up to three behaviors at the same time; although, the number of behaviors is limited to the available processing power of the camera and the type of analytic being used.

Note: Available processing power is determined by the settings for compression standards, resolution, image rate, bit rate, and analytic configuration.

For each behavior, you can create several custom profiles that contain different camera settings. With these profiles, you can set up different scenarios for the behavior, which will automatically detect and trigger alarms when specific activity is detected.

Pelco Analytics are configured and enabled using a standard Web browser, and Pelco behaviors are compatible with Endura® or a third-party system that supports Pelco's Analytics API system. Multiple Pelco behaviors can be scheduled to work during a certain time or condition. For example, during the day, a camera can be configured with Object Counting to count the number of people that enter a lobby door. At night, the operator can change the profile to Camera Sabotage to trigger an alarm if a camera is moved or obstructed. Available Pelco behaviors include:

- **Abandoned Object:** Detects objects placed in a defined zone and triggers an alarm if the object remains in the zone longer than the user-defined time allows. An airport terminal is a typical installation for this behavior. This behavior can also detect objects left behind at an ATM, signaling possible card skimming.
- **Adaptive Motion:** Detects and tracks objects that enter a scene and then triggers an alarm when the objects enter a user-defined zone. This behavior is primarily used in outdoor environments with light traffic to reduce the number of false alarms caused by environmental changes.
- **Camera Sabotage:** Detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.
- **Directional Motion:** Generates an alarm in a high traffic area when a person or object moves in a specified direction. Typical installations for this behavior include an airport gate or tunnel where cameras can detect objects moving in the opposite direction of the normal flow of traffic or an individual entering through an exit door.
- **Loitering Detection:** Identifies when people or vehicles remain in a defined zone longer than the user-defined time allows. This behavior is effective in real-time notification of suspicious behavior around ATMs, stairwells, and school grounds.
- **Object Counting:** Counts the number of objects that enter a defined zone or cross a tripwire. This behavior might be used to count the number of people at a store entrance/exit or inside a store where the traffic is light. This behavior is based on tracking and does not count people in a crowded setting.
- **Object Removal:** Triggers an alarm if an object is removed from a defined zone. This behavior is ideal for customers who want to detect the removal of high value objects, such as a painting from a wall or a statue from a pedestal.
- **Stopped Vehicle:** Detects vehicles stopped near a sensitive area longer than the user-defined time allows. This behavior is ideal for airport curbside drop-offs, parking enforcement, suspicious parking, traffic lane breakdowns, and vehicles waiting at gates.

OBJECTVIDEO (OV) ANALYTIC SUITES

ObjectVideo Analytics Suites are preloaded on selected IXE10 Series cameras and require an OV Ready system to configure the behaviors for alarm notification.

OV Security Suite

The OV Security Suite is easy to use and includes Tripwire Detection, Inside Area Detection, and Camera Tamper Detection behaviors.

- Tripwire Detection identifies objects that cross a user-defined line drawn within the camera's field of view.
- Inside Area Detection identifies objects entering, appearing, or moving within a user-defined area.
- Camera Tamper Detection identifies significant contrast changes in the camera's field of view; for example, if the lens is obstructed by spray paint, a cloth, or a lens cap.

OV Security Suite Plus

The OV Security Suite Plus includes the behaviors of the OV Security Suite plus Multi-Line Tripwire Detection, Loitering Detection, and Leave Behind Detection behaviors.

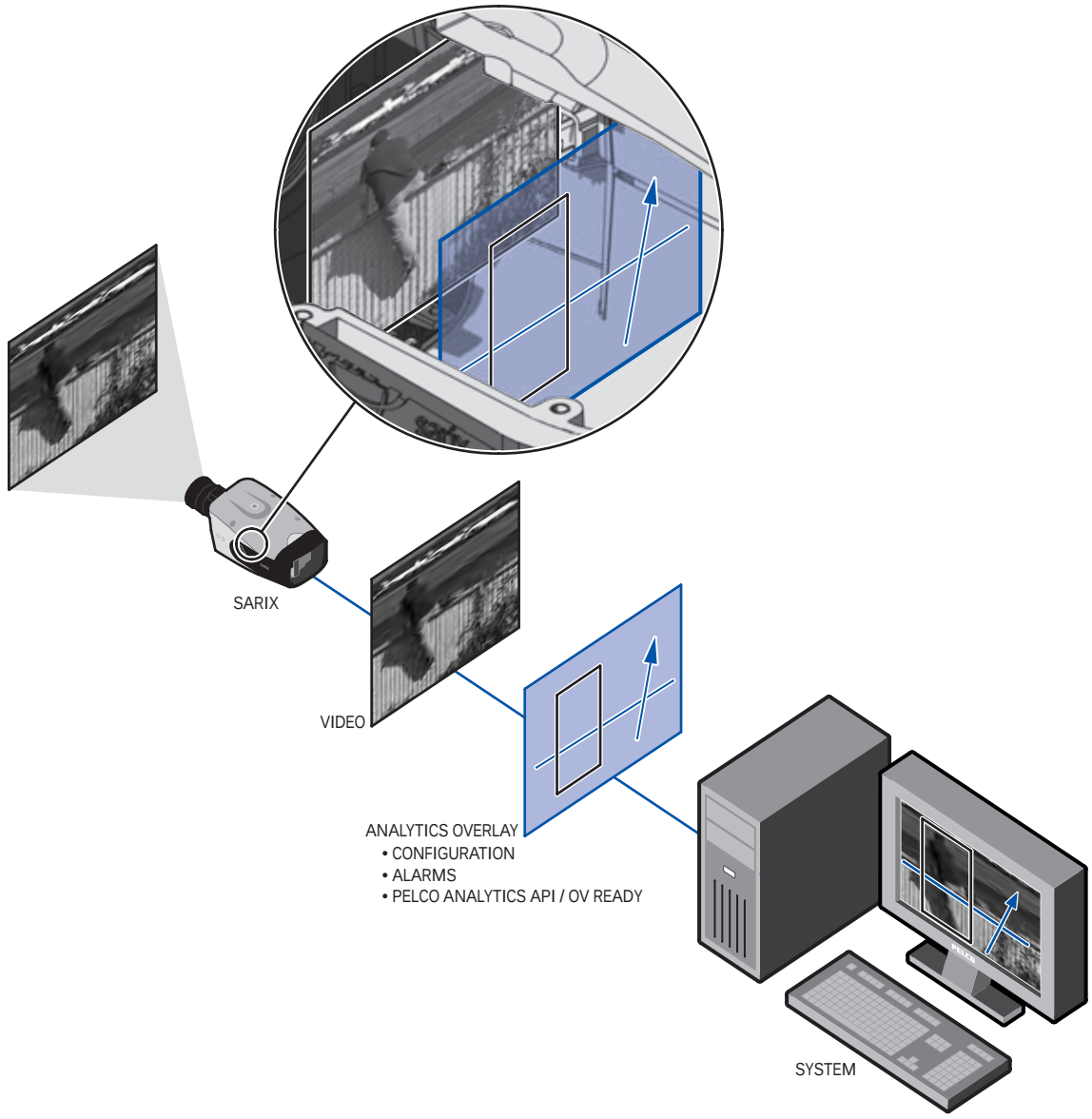
- Multi-Line Tripwire Detection identifies objects that cross two defined lines and generates an event based on defined parameters, including directionality. Defined parameters for this behavior include direction, sequential order, and time between crossing each tripwire.
- Loitering Detection identifies when people or vehicles remain within a user-defined area beyond a specified period of time. This behavior is effective for real-time notification of suspicious behavior around ATMs, stairwells, and school grounds.
- Leave Behind Detection detects objects placed in a defined zone and triggers an alarm if the object remains in the zone longer than the user-defined time allows.

OV Event Counting Suite

The OV Event Counting Suite uses advanced object calibration and additional features for schedules, parameters, and multiple rules. The suite includes behaviors for Tripwire Counting, Enters/Exits Counting, Loiter Counting, Occupancy Sensing, and Dwell-Time Monitoring.

- Tripwire Counting counts people or objects that cross a user-defined line.
- Enters/Exits Counting calculates the number of people that enter and exit an area without using a tripwire.
- Loiter Counting is useful in analyzing how frequently people stop in front of a product, display, or other area of interest. This feature is also useful in assessing promotion effectiveness and product interest.
- Occupancy Sensing counts people and generates a new value every time the occupancy level changes. Since each occupancy output is time-stamped, the data can be used to determine average occupancy levels or to correlate data to point-of-sale or other business scenarios.
- Dwell-Time Monitoring rules can be set up to record the length of time it takes an object to enter and exit an area. Along with queue size information, wait times can also be assessed. This behavior can be used to evaluate consumer interaction for a point-of-sale display or digital advertisement.

The following diagram illustrates how the camera system interprets streaming video when embedded analytics are configured and enabled.



IMPORTANT NOTE: PLEASE READ. The network implementation is shown as a general representation only and is not intended to show a detailed network topology. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the system as illustrated. Please contact your local Pelco Representative to discuss your specific requirements

TECHNICAL SPECIFICATIONS

GENERAL

Imaging Device	1/3-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	1280 x 1024
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2,850°K; SNR >24 dB
Color (33 ms)	0.50 lux
Color SENS (500 ms)	0.12 lux
Mono (33 ms)	0.25 lux
Mono SENS (500 ms)	0.03 lux
Weight (without lens)	1.14 lb (0.51 kg)
Shipping Weight	2.00 lb (0.90 kg)

ELECTRICAL

Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cabling Type	Cat5 or better for 100Base-TX
Power Input	22 to 34 VAC; 24 VAC nominal or PoE (IEEE 802.3af class 3)
Power Consumption	<7 W
Current Consumption	
PoE	<200 mA maximum
24 VAC	<295 mA nominal; <390 mA maximum
Local Storage	Mini SD
Alarm Input	10 VDC maximum, 5 mA maximum
Alarm Output	0 to 15 VDC maximum, 75 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output.

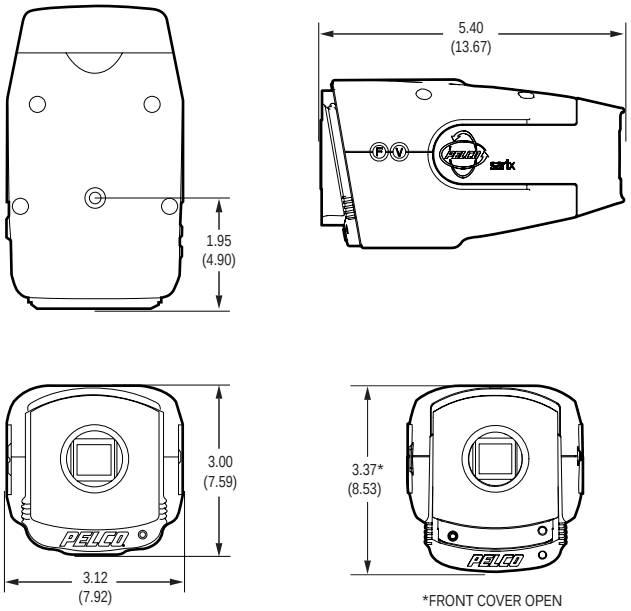
MECHANICAL

Lens Mount	CS mount, adjustable
Camera Mount	0.25-inch (0.64 cm) UNC-20 screw, top and bottom of camera housing

ENVIRONMENTAL

Operational Temperature	14° to 122°F (–10° to 50°C)
Storage Temperature	14° to 158°F (–10° to 70°C)
Storage Humidity	20% to 90%, noncondensing

FRONT VIEW, CAMERA ONLY
(OPENED TO EXPOSE SERVICE PORT)



*FRONT COVER OPEN

NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

REAR VIEW

TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 high, main, or base profile and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 10, 8, 7.5, 6, 5, 4, 3, 2.5, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				MJPEG		H.264 High Profile	
MPx	Width	Height	Aspect Ratio	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
1.3	1280	1024	5:4	20.0 ips	10.0 Mbps	20.0 ips	3.4 Mbps
1.2	1280	960	4:3	20.0 ips	10.0 Mbps	20.0 ips	3.0 Mbps
0.9	1280	720	16:9	30.0 ips	10.0 Mbps	30.0 ips	2.9 Mbps
0.5	800	600	4:3	30.0 ips	7.7 Mbps	30.0 ips	2.0 Mbps
0.3	640	480	4:3	30.0 ips	4.9 Mbps	30.0 ips	1.5 Mbps
0.1	320	240	4:3	30.0 ips	1.2 Mbps	30.0 ips	0.5 Mbps

Additional Resolutions	640 x 512, 640 x 352, 480 x 368, 480 x 272, 320 x 256, and 320 x 176
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco system Integration	Endura 2.0 (or later) Digital Sentry 4.2 (or later)
Open IP Integration	Pelco IP camera API
Minimum System Requirements	
Processor	Intel® Core®2 Duo microprocessor, 2.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	2 GB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.5 (or later); Internet Explorer® 8.0 (or later) is recommended for configuring analytics
Media Player†	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

ANALYTICS

Required Systems for Pelco Analytics	
Pelco Interface	WS5200 Advanced System Management Software on an Endura 2.0 (or later) system
Open API	Pelco analytics allow streaming information to communicate though Pelco's API Guide for Video Analytics version 0.55.30 (or later), available at *Pelco.com/IP*
Required System for Object Video Suites	OV ready-compliant system with OV Ready video management system

TECHNICAL SPECIFICATIONS

MODELS

IXE10C	Sarix 1.3 megapixel EP network color camera with built-in Pelco analytics
IXE10DN	Sarix 1.3 megapixel EP network day/night camera with built-in Pelco analytics
IXE10C-OS	Sarix 1.3 megapixel EP network color camera with built-in OV Security Suite
IXE10DN-OS	Sarix 1.3 megapixel EP network day/night camera with built-in OV Security Suite
IXE10C-OSP	Sarix 1.3 megapixel EP network color camera with built-in OV Security Suite Plus
IXE10DN-OSP	Sarix 1.3 megapixel EP network day/night camera with built-in OV Security Suite Plus
IXE10C-OCP	Sarix 1.3 megapixel EP network color camera with built-in OV Event Counting Suite
IXE10DN-OCP	Sarix 1.3 megapixel EP network day/night camera with built-in OV Event Counting Suite

CERTIFICATIONS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick

ACCESSORIES

IX-SC	4-foot Sarix service cable; compatible with standard BNC connectors
IA-A	Audio adapter compatible with a USB 2.0 A to 5-pin mini-B cable; supplied with two USB extension cables: 1 ft (0.3 m) and 3 ft (0.9 m)

RECOMMENDED MOUNTS

C10-UM	Universal camera mount

RECOMMENDED ENCLOSURES

EH1512	Indoor/outdoor enclosure
EH3512	Outdoor enclosure
DF8	8-inch fixed mount dome

RECOMMENDED LENSES

13M2.2-6	Megapixel lens, varifocal, 2.2 ~ 6.0 mm, f/1.3 ~ 2.0
13M2.8-8	Megapixel lens, varifocal, 2.8 ~ 8.0 mm, f/1.2 ~ 1.9
13M2.8-12	Megapixel lens, varifocal, 2.8 ~ 12.0 mm, f/1.4 ~ 2.7
13M15-50	Megapixel lens, varifocal, 15.0 ~ 50.0 mm, f/1.5 ~ 2.1

Pelco megapixel lenses have been designed and tested to deliver optimal image quality for the IXE10 Series camera. The use of standard definition lenses on IXE10 Series megapixel cameras will limit the resolution of the camera, creating poor image quality.

Field of View in Degrees		Aspect Ratio		
		16:9	4:3	5:4
2.2 mm	Horizontal	109	109	109
	Vertical	63	83	89
2.8 mm	Horizontal	89	89	89
	Vertical	48	66	70
6.0 mm	Horizontal	42	42	42
	Vertical	24	32	34
8.0 mm	Horizontal	32	32	32
	Vertical	18	24	25
12.0 mm	Horizontal	21	21	21
	Vertical	12	16	17
15.0 mm	Horizontal	16	16	16
	Vertical	9	12	13
50.0 mm	Horizontal	5	5	5
	Vertical	3	4	4

Note: For 800 x 600 (or lower) resolutions in 4:3 or 5:4 aspect ratios, the field of view is smaller than listed above. Refer to the Installation/Operation manual for details.

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IX10 Series Sarix™ Network Camera

1.3 MEGAPIXEL HIGH DEFINITION DIGITAL CAMERAS

Product Features

- Open IP Standards
- Up to 1.3 Megapixel Resolution (1280 x 1024)
- Up to 30 Images per Second (ips) at 1280 x 720
- Auto Back Focus
- H.264 and MJPEG Compression Capability
- Color and Day/Night Models
- Video Setup Jack
- Sensitivity Down to 0.03 lux
- Power over Ethernet (IEEE 802.3af) or 24 VAC
- Up to 2 Simultaneous Video Streams
- Web Viewing, up to 16 Cameras Simultaneously
- Local Storage (Mini SD) for Alarm Capture

(LENS NOT SUPPLIED WITH CAMERA)

- Motion Detection
- Audio Accessory Available

The **IX10 Series with Sarix™ technology** is a 1.3 megapixel (MPx) network camera designed with industry-leading image quality and high performance processing power. Designed to install quickly, the camera comes equipped with the advanced features needed for demanding security applications.

Sarix technology defines the next generation of video security imaging performance, delivering high definition (HD) resolution, advanced low light capabilities, consistent color science, and fast processing power. The H.264 compression video files are up to 20 times smaller making high definition video more affordable.

Camera

The **IX10 Series** has two 1.3 megapixel models: color and day/night. Both models feature advanced low light technology capabilities. The day/night model has a mechanical IR cut filter for increased sensitivity in low light installations.

The **IX10 Series** can support two simultaneous video streams. The two streams can be compressed in MJPEG and H.264 formats across several resolution configurations. The streams can be configured to a variety of frame rates, bit rates, and GOP (group of pictures) structures for additional bandwidth administration.

The **IX10 Series** is simple to install, and the automatic back focus control feature makes sharp scene focus setup easy. A convenient video setup jack eliminates the need to use a laptop for viewing video when installing the camera.

The **Sarix IX10 Series** features built-in Power over Ethernet (PoE) IEEE 802.3af, which supplies power to the camera over the network, eliminating the need for a separate power supply. If PoE is not available, 24 VAC can be used to power the camera.

Built-In Analytics

The **Pelco Camera Sabotage** behavior is a standard feature of the IX10 Series. This behavior detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or covered with a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.

Web Interface

The **IX10 Series** uses a standard Web browser for powerful remote setup and administration. Up to 16 cameras can be viewed on the same network.

Window Blanking

Window blanking is used to conceal user-defined privacy areas that cannot be viewed by an operator. The **IX10 Series** supports up to four blanked windows. A blanked area will appear on the screen as a solid gray window.

Systemization

The **IX10 Series** easily connects to Pelco IP and hybrid systems such as Endura® version 2.0 (or later) and Digital Sentry® version 4.2 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) for interfacing with Pelco's network cameras

TECHNICAL SPECIFICATIONS

GENERAL

Imaging Device	1/3-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	1280 x 1024
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2,850°K; SNR >24 dB
Color (33 ms)	0.50 lux
Color SENS (500 ms)	0.12 lux
Mono (33 ms)	0.25 lux
Mono SENS (500 ms)	0.03 lux
Weight (without lens)	1.11 lb (0.50 kg)
Shipping Weight	2.00 lb (0.90 kg)

ELECTRICAL

Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cabling Type	Cat5 or better for 100Base-TX
Power Input	22 to 34 VAC; 24 VAC nominal or PoE (IEEE 802.3af class 3)
Power Consumption	<6 W
Current Consumption	
PoE	<200 mA maximum
24 VAC	<295 mA nominal; <390 mA maximum
Local Storage	Mini SD
Alarm Input	10 VDC maximum, 5 mA maximum
Alarm Output	0 to 15 VDC maximum, 75 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output

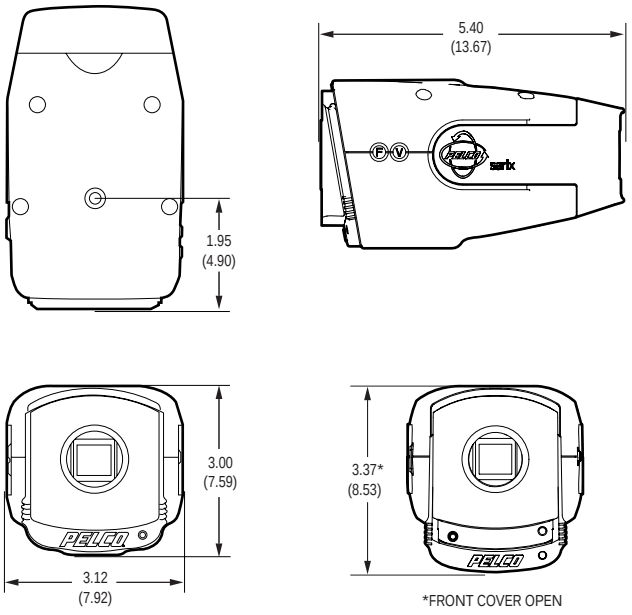
MECHANICAL

Lens Mount	CS mount, adjustable
Camera Mount	0.25-inch (0.64 cm) UNC-20 screw, top and bottom of camera housing

ENVIRONMENTAL

Operational Temperature	14° to 122°F (-10° to 50°C)
Storage Temperature	14° to 158°F (-10° to 70°C)
Storage Humidity	20% to 90%, noncondensing

FRONT VIEW, CAMERA ONLY
(OPENED TO EXPOSE SERVICE PORT)



*FRONT COVER OPEN

REAR VIEW

NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 base profile and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2.5, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				MJPEG		H.264 Base Profile	
MPx	Width	Height	Aspect Ratio	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
1.3	1280	1024	5:4	20.0 ips	10.0 Mbps	8.0 ips	2.5 Mbps
1.2	1280	960	4:3	20.0 ips	9.8 Mbps	8.0 ips	2.4 Mbps
0.9	1280	720	16:9	30.0 ips	10.0 Mbps	12.5 ips	2.5 Mbps
0.5	800	600	4:3	30.0 ips	5.8 Mbps	25.0 ips	2.0 Mbps
0.3	640	480	4:3	30.0 ips	3.7 Mbps	30.0 ips	1.6 Mbps
0.1	320	240	4:3	30.0 ips	0.9 Mbps	30.0 ips	0.4 Mbps

Additional Resolutions	640 x 512, 640 x 352, 480 x 368, 480 x 272, 320 x 256, and 320 x 176
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 2.0 (or later) Digital Sentry 4.2 (or later)
Open IP Integration	Pelco IP camera API
Minimum System Requirements	
Processor	Intel® Pentium® 4 microprocessor, 1.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	512 MB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.5 (or later); Internet Explorer® 8.0 (or later) is recommended for configuring analytics
Media Player†	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

MODELS

IX10C	Sarix 1.3 megapixel network color camera
IX10DN	Sarix 1.3 megapixel network day/night camera

CERTIFICATIONS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick

ACCESSORIES

IX-SC	4-foot Sarix service cable; compatible with standard BNC connectors
IA-A	Audio accessory; supplied with two USB extension cables: 1 ft (0.3 m) and 3 ft (0.9 m)

RECOMMENDED MOUNTS

C10-UM	Universal camera mount

RECOMMENDED ENCLOSURES

EH1512	Indoor/outdoor enclosure
EH3512	Outdoor enclosure
DF8	8-inch fixed mount dome

RECOMMENDED LENSES

13M2.2-6	Megapixel lens, varifocal, 2.2 ~ 6.0 mm, f/1.3 ~ 2.0
13M2.8-8	Megapixel lens, varifocal, 2.8 ~ 8.0 mm, f/1.2 ~ 1.9
13M2.8-12	Megapixel lens, varifocal, 2.8 ~ 12.0 mm, f/1.4 ~ 2.7
13M15-50	Megapixel lens, varifocal, 15.0 ~ 50.0 mm, f/1.5 ~ 2.1

Pelco lenses have been designed and tested to deliver optimal image quality for the IX10 Series camera. The use of standard definition lenses on IX10 Series megapixel camera will limit the resolution of the camera, creating poor image quality.

Field of View in Degrees		Aspect Ratio		
		16:9	4:3	5:4
2.2 mm	Horizontal	109	109	109
	Vertical	63	83	89
2.8 mm	Horizontal	89	89	89
	Vertical	48	66	70
6.0 mm	Horizontal	42	42	42
	Vertical	24	32	34
8.0 mm	Horizontal	32	32	32
	Vertical	18	24	25
12.0 mm	Horizontal	21	21	21
	Vertical	12	16	17
15.0 mm	Horizontal	16	16	16
	Vertical	9	12	13
50.0 mm	Horizontal	5	5	5
	Vertical	3	4	4

Note: For 800 x 600 (or lower) resolutions in 4:3 or 5:4 aspect ratios, the field of view is smaller than listed above. Refer to the Installation/Operation manual for details.

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IXS0 Series Sarix™ Network Camera

0.5 MEGAPIXEL STANDARD DEFINITION DIGITAL CAMERAS

Product Features

- Open IP Standards
- Up to SVGA Resolution (800 x 600)
- Up to 30 Images per Second (ips) at All Resolutions
- Auto Back Focus
- H.264, MJPEG, and MPEG-4 Compression Capability
- Color and Day/Night Models
- Video Setup Jack
- Sensitivity Down to 0.03 lux
- Power over Ethernet (IEEE 802.3af) or 24 VAC
- Up to 2 Simultaneous Video Streams
- Web Viewing, up to 16 Cameras Simultaneously
- Local Storage (Mini SD) for Alarm Capture

(LENS NOT SUPPLIED WITH CAMERA)

- Motion Detection
- Audio Accessory Available

The **IXS0 Series with Sarix™ technology** is a standard definition network camera designed with industry-leading image quality and high performance processing power. Designed to install quickly, the camera comes equipped with the advanced features needed for demanding security applications.

Sarix technology defines the next generation of video security imaging performance, delivering high resolution, advanced lowlight capabilities, consistent color science, and fast processing power. The H.264 compression video files are up to 20 times smaller making network video storage more affordable.

Camera

The **IXS0 Series** has two standard definition models: color and day/night. Both models feature advanced low light technology capabilities. The day/night model has a mechanical IR cut filter for increased sensitivity in low light installations.

The **IXS0 Series** can support two simultaneous video streams. The two streams can be compressed in MJPEG, MPEG-4, and H.264 formats across several resolution configurations. The streams can be configured to a variety of frame rates, bit rates, and GOP (group of pictures) structures for additional bandwidth administration.

The **IXS0 Series** is simple to install, and the automatic back focus control feature makes sharp scene focus setup easy. A convenient video setup jack eliminates the need to use a laptop for viewing video when installing the camera.

The **IXS0 Series** features built-in Power over Ethernet (PoE) IEEE 802.3af, which supplies power to the camera over the network, eliminating the need for a separate power supply. If PoE is not available, 24 VAC can be used to power the camera.

Built-In Analytics

The **Pelco Camera Sabotage** behavior is a standard feature of the IXS0 Series. The behavior detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or covered with a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.

Web Interface

The **IXS0 Series** uses a standard Web browser for powerful remote setup and administration. Up to 16 cameras can be viewed on the same network.

Window Blanking

Window blanking is used to conceal user-defined privacy areas that cannot be viewed by an operator. The **IXS0 Series** supports up to four blanked windows. A blanked area will appear on the screen as a solid gray window.

Systemization

The **IXS0 Series** easily connects to Pelco IP and hybrid systems such as Endura® version 1.5 (or later), MPEG-4; Endura version 2.0 (or later), H.264; Digital Sentry® version 4.2 (or later); DX8100 version 2.0 (or later); and DVR5100 version 1.5.4 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) for interfacing to Pelco's network cameras.

TECHNICAL SPECIFICATIONS

GENERAL

Imaging Device	
16:9 Aspect Ratio	1/3-inch (effective)
4:3 and 5:4 Aspect Ratio	1/4-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	800 x 600
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2,850°K; SNR >24 dB
Color (33 ms)	0.50 lux
Color SENS (500 ms)	0.12 lux
Mono (33 ms)	0.25 lux
Mono SENS (500 ms)	0.03 lux
Weight (without lens)	1.11 lb (0.5 kg)
Shipping Weight	2.00 lb (0.9 kg)

ELECTRICAL

Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cabling Type	Cat5 or better for 100Base-TX
Power Input	22 to 34 VAC; 24 VAC nominal or PoE (IEEE 802.3af class 3)
Power Consumption	<6 W
Current Consumption	
PoE	<200 mA maximum
24 VAC	<295 mA nominal; <390 mA maximum
Local Storage	Mini SD
Alarm Input	10 VDC maximum, 5 mA maximum
Alarm Output	0 to 15 VDC maximum, 75 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output

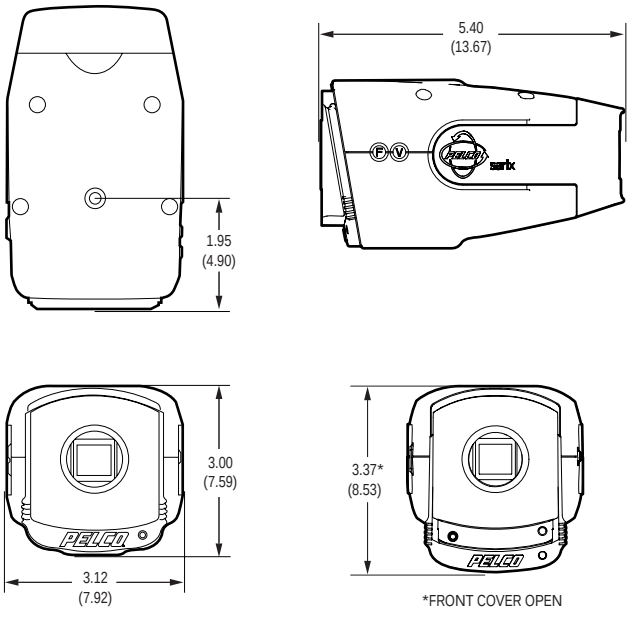
MECHANICAL

Lens Mount	CS mount, adjustable
Camera Mount	0.25-inch (0.64 cm) UNC-20 screw, top and bottom of camera housing

ENVIRONMENTAL

Operational Temperature	14° to 122°F (–10° to 50°C)
Storage Temperature	14° to 158°F (–10° to 70°C)
Storage Humidity	20% to 90%, noncondensing

FRONT VIEW, CAMERA ONLY
(OPENED TO EXPOSE SERVICE PORT)



*FRONT COVER OPEN

REAR VIEW

NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 base profile, MPEG-4, MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2.5, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				MJPEG		H.264 Base Profile		MPEG-4	
MPx	Width	Height	Aspect Ratio	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
0.5	800	600	4:3	30 ips	5.8 Mbps	25 ips	2.0 Mbps	N/A	N/A
0.3	640	480	4:3	30 ips	3.7 Mbps	30 ips	1.6 Mbps	30 ips	1.7 Mbps
0.1	320	240	4:3	30 ips	0.9 Mbps	30 ips	0.4 Mbps	30 ips	0.4 Mbps

Additional Resolutions	640 x 512, 640 x 352, 480 x 368, 480 x 272, 320 x 256, 320 x 176, 4CIF (704 x 480 and 704 x 576), and CIF (352 x 240 and 352 x 288)
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264 or MPEG-4
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 1.5 (or later), MPEG-4 or Endura 2.0 (or later), H.264 Digital Sentry 4.2 (or later) DX8100 Series 2.0 (or later) DVR5100 Series 1.5.4 (or later)
Open IP Integration	Pelco IP camera API
Minimum System Requirements	
Processor	Intel® Pentium® 4 microprocessor, 1.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	512 MB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.5 (or later); Internet Explorer® 8.0 (or later) is recommended for configuring analytics
Media Player†	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

TECHNICAL SPECIFICATIONS

MODELS

IXS0C	Sarix SVGA 0.5 megapixel network color camera
IXS0DN	Sarix SVGA 0.5 megapixel network day/night camera

CERTIFICATIONS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick

ACCESSORIES

IX-SC	4-foot Sarix service cable; compatible with standard BNC connectors
IA-A	Audio accessory; supplied with two USB extension cables: 1 ft (0.3 m) and 3 ft (0.9 m)

RECOMMENDED MOUNTS

C10-UM	Universal camera mount

RECOMMENDED ENCLOSURES

EH1512	Indoor/outdoor enclosure
EH3512	Outdoor enclosure
DF8	8-inch fixed mount dome

RECOMMENDED LENSES

13VD2.5-6	Varifocal lens, 2.5 ~ 6.0 mm, f/1.4 ~ 2.1
13VD2.8-12	Varifocal lens, 2.8 ~ 12.0 mm, f/1.4 ~ 2.9
13VD5-50	Varifocal lens, 5.0 ~ 50.0 mm, f/1.4 ~ 2.9

Field of View in Degrees		Aspect Ratio		
		16:9	4:3	5:4
2.5 mm	Horizontal	98	83	80
	Vertical	55	63	64
2.8 mm	Horizontal	89	74	71
	Vertical	48	55	56
3.0 mm	Horizontal	82	69	67
	Vertical	46	52	53
5.0 mm	Horizontal	50	42	40
	Vertical	28	32	32
6.0 mm	Horizontal	42	36	34
	Vertical	24	27	28
8.0 mm	Horizontal	32	27	26
	Vertical	18	20	20
12.0 mm	Horizontal	21	18	17
	Vertical	12	13	14
50.0 mm	Horizontal	5	4	4
	Vertical	3	3	3

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ID30 Series Sarix™ Network Indoor Fixed Dome

3.1 MEGAPIXEL HIGH DEFINITION INTEGRATED CAMERA

Product Features

- Up to 3.1 Megapixel Resolution (2048 x 1536)
- Up to 30 Images per Second (ips) at 1280 x 720
- Optional CS-Mount Lenses
- Auto Back Focus for High Precision Focusing
- Easy, Quick, One-Handed Installation
- H.264 and MJPEG Compression
- Day/Night Capability
- Sensitivity Down to 0.03 lux
- Power over Ethernet (IEEE 802.3af) or 24 VAC
- Video Setup Jack and Focus Button Accessible with Dome Closed
- Up to 2 Simultaneous Video Streams
- Web Viewing, up to 16 Cameras Simultaneously
- Local Storage (Micro SD) for Alarm Capture

- Open IP Standards
- Motion Detection
- Audio Accessory Available

The **ID30 Series with Sarix™ technology** is a 3.1 megapixel (MPx) network indoor fixed dome camera designed with industry-leading image quality and high performance processing power. Designed to install quickly and easily, all of the post back-box installation and setup can be done with one hand.

Sarix technology defines the next generation of video security imaging performance, delivering high definition (HD) resolution, advanced low-light capabilities, consistent color science, and fast processing power. The H.264 compression video files are up to 20 times smaller making high definition video more affordable.

Fixed Dome Camera

The **ID30 Series** can be ordered with or without lenses. All models include advance low-light technology and a camera in an indoor enclosure that is ready to install. The day/night model has a mechanical IR cut filter for increased sensitivity in low-light installations. These cameras accept a wide range of megapixel varifocal CS-mount lenses.

The **ID30 Series** supports two simultaneous video streams. The two streams can be compressed in MJPEG and H.264 formats across several resolution configurations. The streams can be configured in a variety of frame rates, bit rates, and group of pictures (GOP) structures for additional bandwidth administration.

Built-In Analytics

The **Pelco Camera Sabotage** behavior is a standard feature of the ID30 Series. This behavior detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or covered with a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.

Web Interface

The **ID30 Series** uses a standard Web browser for powerful remote setup and administration. Up to 16 cameras can be viewed on the same network.

Window Blanking

Window blanking is used to conceal user-defined privacy areas that cannot be viewed by an operator. The **ID30 Series** supports up to four blanked windows. A blanked area will appear on the screen as a solid gray window.

Video Systemization

The **ID30 Series** easily connects to Pelco IP and hybrid systems such as Endura® version 2.0 (or later) and Digital Sentry® version 4.3 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) that enables third-party systems to interface with Pelco's network cameras.

PELCO

by Schneider Electric

International Standards Organization Registered Firm; ISO 9001 Quality System

ISO 9001 CERTIFIED

C2963/ REVISED 9-3-10

TECHNICAL SPECIFICATIONS

GENERAL

Imaging Device	1/3-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	2048 x 1536
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2,850°K; SNR >24 dB
Color (1x/33 ms)	0.5 lux
Color SENS (15x/500 ms)	0.12 lux
Mono (1x/33 ms)	0.25 lux
Mono SENS (15x/500 ms)	0.03 lux
Dome Attenuation	
Clear	Zero light loss
Smoked	f/1.0 light loss
Construction	
Back Box	Cast aluminum
Trim Ring	Polycarbonate plastic
Bubble	Acrylic plastic
Finish	White
Weight (without lens)	
Unit	2.0 lb (0.9 kg)
Shipping	6.0 lb (2.7 kg)
Available Languages	Chinese, English, French, German, Italian, Portuguese, Russian, Spanish, and Turkish

ELECTRICAL

Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cable Type	Cat5 or better for 100Base-TX
Power Input	18 to 34 VAC; 24 VAC nominal or PoE (IEEE 802.3af class 3)
Power Consumption	<6 W
Current Consumption	
PoE	<200 mA maximum
24 VAC	<295 mA nominal; <390 mA maximum
Local Storage	Micro SD
Alarm Input	10 VDC maximum, 5 mA maximum
Alarm Output	0 to 15 VDC maximum, 75 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output
Accessory Port	Connects Pelco accessories

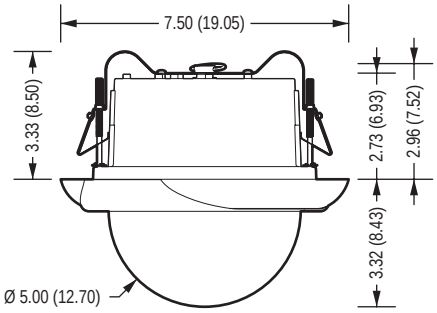
MECHANICAL

Lens Mount	CS mount, adjustable
Pan/Tilt Adjustment	
Pan	368°
Tilt	160° (10° to 170°)
Rotate	355°

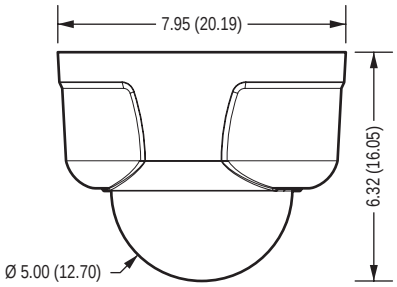
ENVIRONMENTAL

Operational Temperature	32° to 122°F (0° to 50°C)
Operational Humidity	20% to 80%, noncondensing

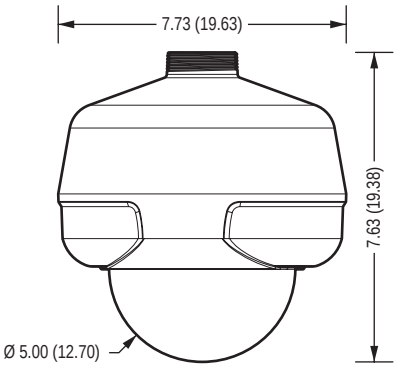
IN-CEILING



SURFACE MOUNT
(Mounting Ring Included)



PENDANT
(Mount Available as Accessory)



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 base profile and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				MJPEG		H.264 Base Profile	
MPx	Width	Height	Aspect Ratio	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
3.1	2048	1536	4:3	12.0 ips	10.0 Mbps	3.0 ips	2.6 Mbps
2.1	1920	1080	16:9	15.0 ips	10.0 Mbps	5.0 ips	2.7 Mbps
1.9	1600	1200	4:3	15.0 ips	10.0 Mbps	6.0 ips	2.6 Mbps
1.3	1280	1024	5:4	20.0 ips	10.0 Mbps	8.0 ips	2.5 Mbps
1.2	1280	960	4:3	20.0 ips	9.8 Mbps	8.0 ips	2.4 Mbps
0.9	1280	720	16:9	30.0 ips	10.0 Mbps	12.5 ips	2.5 Mbps
0.5	800	600	4:3	30.0 ips	5.8 Mbps	25.0 ips	2.0 Mbps
0.3	640	480	4:3	30.0 ips	3.7 Mbps	30.0 ips	1.6 Mbps
0.1	320	240	4:3	30.0 ips	0.9 Mbps	30.0 ips	0.4 Mbps

Additional Resolutions	640 x 512, 640 x 352, 480 x 368, 480 x 272, 320 x 256, and 320 x 176
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 2.0 (or later) or Digital Sentry 4.3 (or later)
Open IP Integration	Pelco IP camera API
Minimum System Requirements	
Processor	Intel® Pentium® 4 microprocessor, 1.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	512 MB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.5 (or later); Internet Explorer® 8.0 (or later) is recommended for configuring analytics
Media Player†	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

MODELS

ID30DN-1	Sarix indoor fixed dome network camera, 3.1 megapixel, day/night, no lens, clear dome
ID30DN8-1	Sarix indoor fixed dome network camera, 3.1 megapixel, day/night, 2.8 ~ 8 mm varifocal megapixel lens, clear dome
ID30DN-0	Sarix indoor fixed dome network camera, 3.1 megapixel, day/night, no lens, smoked dome

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- Patents Pending

ACCESSORIES

IX-SC	4-foot Sarix service cable; compatible with standard BNC connectors
IA-A	Audio adapter compatible with a USB 2.0 A to 5-pin mini-B cable; supplied with two USB extension cables: 1 ft (0.3 m) and 3 ft (0.9 m)
POE20U560G	Single port PoE injector

RECOMMENDED MOUNTS

ID-P	Pendant mount
ID-DF5	DF5 Series adapter kit
ID-CB	Conduit box for in-ceiling installations
ID-PCB	2 x 2 ft (61 x 61 cm) ceiling panel with conduit box
SWM-WT	Wall mount for pendant
SWM-CAWT	Corner adapter for wall mount
SWM-PAWT	Pole adapter for wall mount

RECOMMENDED LENSES

13M2.2-6	Megapixel lens, varifocal, 2.2 ~ 6.0 mm, f/1.3 ~ 2.0
13M2.8-8	Megapixel lens, varifocal, 2.8 ~ 8.0 mm, f/1.2 ~ 1.9
13M2.8-12	Megapixel lens, varifocal, 2.8 ~ 12.0 mm, f/1.4 ~ 2.7
13M15-50	Megapixel lens, varifocal, 15.0 ~ 50.0 mm, f/1.5 ~ 2.1

Pelco lenses have been designed and tested to deliver optimal image quality for the ID30 Series megapixel camera. The use of standard definition lenses on the ID30 Series will limit the resolution of the camera, creating poor image quality.

Field of View in Degrees		Aspect Ratio		
		16:9	4:3	5:4
2.2 mm	Horizontal	109	109	109
	Vertical	63	83	89
2.8 mm	Horizontal	89	89	89
	Vertical	48	66	70
6.0 mm	Horizontal	42	42	42
	Vertical	24	32	34
8.0 mm	Horizontal	32	32	32
	Vertical	18	24	25
12.0 mm	Horizontal	21	21	21
	Vertical	12	16	17
15.0 mm	Horizontal	16	16	16
	Vertical	9	12	13
50.0 mm	Horizontal	5	5	5
	Vertical	3	4	4

Note: For 800 x 600 (or lower) resolutions in 4:3 or 5:4 aspect ratios, the field of view is smaller than listed above. Refer to the Installation/Operation manual for details.

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IDE20 Series Sarix™ EP Network Indoor Fixed Dome

2.1 MEGAPIXEL EXTENDED PLATFORM HIGH DEFINITION INTEGRATED CAMERA

Product Features

- Up to 2.1 Megapixel Resolution (1920 x 1080)
- Up to 30 Images per Second (ips) at 1920 x 1080
- Optional CS-Mount Lenses
- Auto Back Focus for High Precision Focusing
- Easy, Quick, One-Handed Installation
- H.264 and MJPEG Compression
- Day/Night Capability
- Sensitivity Down to 0.03 lux
- Power over Ethernet (IEEE 802.3af) or 24 VAC
- Video Setup Jack and Focus Button Accessible with Dome Closed
- Up to 2 Simultaneous Video Streams
- Built-in Analytics

- Local Storage (Micro SD) for Alarm Capture
- Motion Detection
- Audio Accessory Available

The **IDE20 Series extended platform (EP) camera with Sarix™ technology** is a 2.1 megapixel (MPx) network indoor fixed dome camera designed with industry-leading image quality and high performance processing power. Designed to install quickly and easily, all of the post back-box installation and setup can be done with one hand.

Sarix technology defines the next generation of video security imaging performance, delivering high definition (HD) resolution, advanced low-light capabilities, consistent color science, and fast processing power. The H.264 compression video files are up to 20 times smaller making high definition video more affordable.

Fixed Dome Camera

The **IDE20 Series** can be ordered with or without lenses. All models include advanced low-light technology and a camera in an indoor enclosure that is ready to install. The day/night model has a mechanical IR cut filter for increased sensitivity in low-light installations. These cameras accept a wide range of megapixel varifocal CS-mount lenses.

The **IDE20 Series** supports two simultaneous video streams. The two streams can be compressed in MJPEG and H.264 formats across several resolution configurations. The extended platform gives real-time video (30 ips) with full HD resolution using H.264 compression for optimized bandwidth and storage efficiency. The streams can be configured in a variety of frame rates, bit rates, and group of pictures (GOP) structures for additional bandwidth administration.

The **IDE20 Series** is simple to install, and the automatic back focus control feature makes sharp scene focus setup easy. A convenient video setup jack eliminates the need to use a laptop for viewing video when installing the camera.

Built-In Analytics

Pelco Analytics enhance the flexibility and performance of the IDE20 Series camera. Eight Pelco behaviors are preloaded and included as standard features of the IDE20DN models. Pelco behaviors can be configured and enabled using a standard Web browser, and they are compatible with Endura® or a third-party system that supports Pelco's Analytics API system.

Camera models are also available with preloaded **OV Analytic Suites**. These behaviors can be configured and enabled using a standard Web browser and are compatible with an OV ready-compliant system with an OV Ready™ video management system.

Web Interface

The **IDE20 Series** uses a standard Web browser for powerful remote setup and administration. Up to 16 cameras can be viewed on the same network.

Window Blanking

Window blanking is used to conceal user-defined privacy areas that cannot be viewed by an operator. The **IDE20 Series** supports up to four blanked windows. A blanked area will appear on the screen as a solid gray window.

Video Systemization

The **IDE20 Series** easily connects to Pelco IP and hybrid systems such as Endura version 2.0 (or later) and Digital Sentry® version 4.3 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) that enables third-party systems to interface with Pelco's network cameras.

PELCO ANALYTICS

The **IDE20 Series** includes eight user-configurable behaviors. The camera is capable of running up to three behaviors at the same time; although, the number of behaviors is limited to the available processing power of the camera and the type of analytic being used.

Note: Available processing power is determined by the settings for compression standards, resolution, image rate, bit rate, and analytic configuration.

For each behavior, you can create several custom profiles that contain different camera settings. With these profiles, you can set up different scenarios for the behavior, which will automatically detect and trigger alarms when specific activity is detected.

Pelco Analytics are configured and enabled using a standard Web browser, and Pelco behaviors are compatible with Endura® or a third-party system that supports Pelco's Analytics API system. Multiple Pelco analytics can be scheduled to work during a certain time or condition. For example, during the day, a camera can be configured with Object Counting to count the number of people that enter a lobby door. At night, the operator can change the profile to Camera Sabotage to trigger an alarm if a camera is moved or obstructed. Available Pelco behaviors include:

- **Abandoned Object:** Detects objects placed in a defined zone and triggers an alarm if the object remains in the zone longer than the user-defined time allows. An airport terminal is a typical installation for this behavior. This behavior can also detect objects left behind at an ATM, signaling possible card skimming.
- **Adaptive Motion:** Detects and tracks objects that enter a scene and then triggers an alarm when the objects enter a user-defined zone. This behavior is primarily used in outdoor environments with light traffic to reduce the number of false alarms caused by environmental changes.
- **Camera Sabotage:** Detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or covered with a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.
- **Directional Motion:** Generates an alarm in a high traffic area when a person or object moves in a specified direction. Typical installations for this behavior include an airport gate or tunnel where cameras can detect objects moving in the opposite direction of the normal flow of traffic or an individual entering through an exit door.
- **Loitering Detection:** Identifies when people or vehicles remain in a defined zone longer than the user-defined time allows. This behavior is effective in real-time notification of suspicious behavior around ATMs, stairwells, and school grounds.
- **Object Counting:** Counts the number of objects that enter a defined zone or cross a tripwire. This behavior might be used to count the number of people at a store entrance/exit or inside a store where the traffic is light. This behavior is based on tracking and does not count people in a crowded setting.
- **Object Removal:** Triggers an alarm if an object is removed from a defined zone. This behavior is ideal for customers who want to detect the removal of high value objects, such as a painting from a wall or a statue from a pedestal.
- **Stopped Vehicle:** Detects vehicles stopped near a sensitive area longer than the user-defined time allows. This behavior is ideal for airport curbside drop-offs, parking enforcement, suspicious parking, traffic lane breakdowns, and vehicles waiting at gates.

OBJECTVIDEO (OV) ANALYTIC SUITES

ObjectVideo Analytics Suites are preloaded on selected IDE20 Series cameras and require an OV Ready system to configure the behaviors for alarm notification.

OV Security Suite

The OV Security Suite is easy to use and includes Tripwire Detection, Inside Area Detection, and Camera Tamper Detection behaviors.

- Tripwire Detection identifies objects that cross a user-defined line drawn within the camera's field of view.
- Inside Area Detection identifies objects entering, appearing, or moving within a user-defined area.
- Camera Tamper Detection identifies significant contrast changes in the camera's field of view; for example, if the lens is obstructed by spray paint, a cloth, or a lens cap.

OV Security Suite Plus

The OV Security Suite Plus includes the behaviors of the OV Security Suite, plus Multi-Line Tripwire Detection, Loitering Detection, and Leave Behind Detection behaviors.

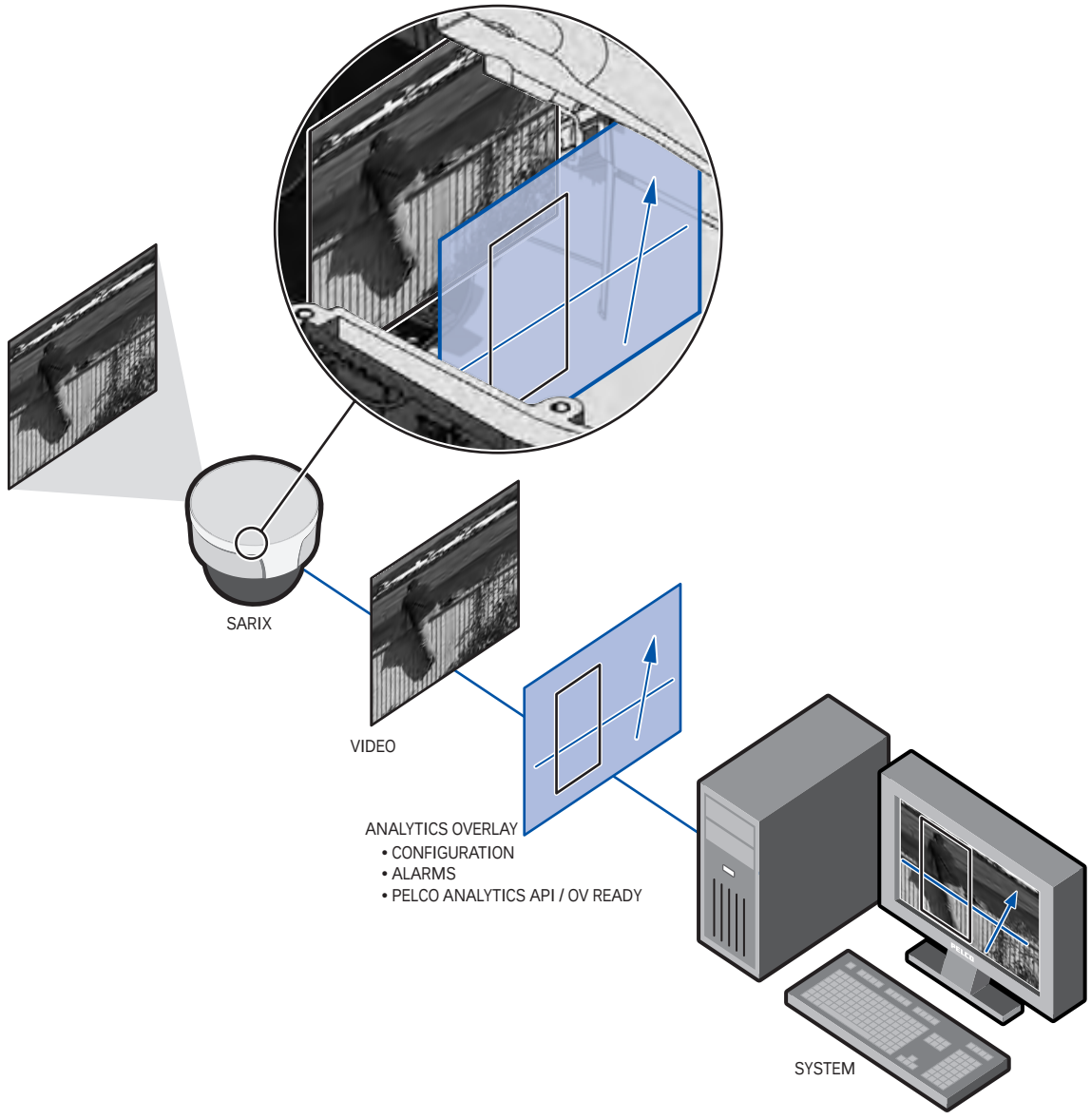
- Multi-Line Tripwire Detection identifies objects that cross two defined lines and generates an event based on defined parameters, including directionality. Defined parameters for this behavior include direction, sequential order, and time between crossing each tripwire.
- Loitering Detection identifies when people or vehicles remain within a user-defined area beyond a specified period of time. This behavior is effective for real-time notification of suspicious behavior around ATMs, stairwells, and school grounds.
- Leave Behind Detection detects objects placed in a defined zone and triggers an alarm if the object remains in the zone longer than the user-defined time allows.

OV Event Counting Suite

The OV Event Counting Suite uses advanced object calibration and additional features for schedules, parameters, and multiple rules. The suite includes behaviors for Tripwire Counting, Enters/Exits Counting, Loiter Counting, Occupancy Sensing, and Dwell-Time Monitoring.

- Tripwire Counting counts people or objects that cross a user-defined line.
- Enters/Exits Counting calculates the number of people that enter and exit an area without using a tripwire.
- Loiter Counting is useful in analyzing how frequently people stop in front of a product, display, or other area of interest. This feature is also useful in assessing promotion effectiveness and product interest.
- Occupancy Sensing counts people and generates a new value every time the occupancy level changes. Since each occupancy output is timestamped, the data can be used to determine average occupancy levels or to correlate data to point-of-sale or other business scenarios.
- Dwell-Time Monitoring rules can be set up to record the length of time it takes an object to enter and exit an area. Along with queue size information, wait times can also be assessed. This behavior can be used to evaluate consumer interaction for a point-of-sale display or digital advertisement.

The following diagram illustrates how the camera system interprets streaming video when embedded analytics are configured and enabled.



IMPORTANT NOTE: PLEASE READ. The network implementation is shown as a general representation only and is not intended to show a detailed network topology. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the system as illustrated. Please contact your local Pelco Representative to discuss your specific requirements.

TECHNICAL SPECIFICATIONS

GENERAL

Imaging Device	1/3-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	1920 x 1080
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2,850°K; SNR >24 dB
Color (1x/33 ms)	0.5 lux
Color SENS (15x/500 ms)	0.12 lux
Mono (1x/33 ms)	0.25 lux
Mono SENS (15x/500 ms)	0.03 lux
Dome Attenuation	
Clear	Zero light loss
Smoked	f/1.0 light loss
Construction	
Back Box	Cast aluminum
Trim Ring	Polycarbonate plastic
Bubble	Acrylic plastic
Finish	White
Weight (without lens)	
Unit	2.0 lb (0.9 kg)
Shipping	6.0 lb (2.7 kg)
Available Languages	Chinese, English, French, German, Italian, Portuguese, Russian, Spanish, and Turkish

ELECTRICAL

Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cable Type	Cat5 or better for 100Base-TX
Power Input	18 to 34 VAC; 24 VAC nominal or PoE (IEEE 802.3af class 3)
Power Consumption	<6 W
Current Consumption	
PoE	<200 mA maximum
24 VAC	<295 mA nominal; <390 mA maximum
Local Storage	Micro SD
Alarm Input	10 VDC maximum, 5 mA maximum
Alarm Output	0 to 15 VDC maximum, 75 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output
Accessory Port	Connects Pelco accessories

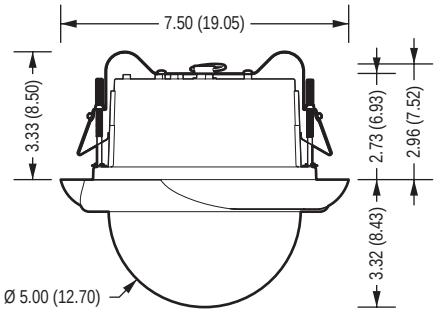
MECHANICAL

Lens Mount	CS mount, adjustable
Pan/Tilt Adjustment	
Pan	368°
Tilt	160° (10° to 170°)
Rotate	355°

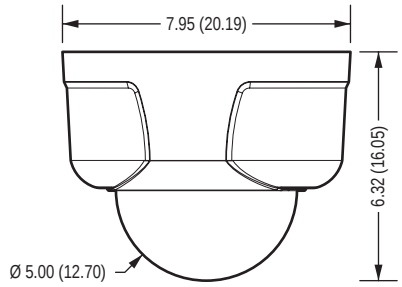
ENVIRONMENTAL

Operational Temperature	32° to 122°F (0° to 50°C)
Operational Humidity	20% to 80%, noncondensing

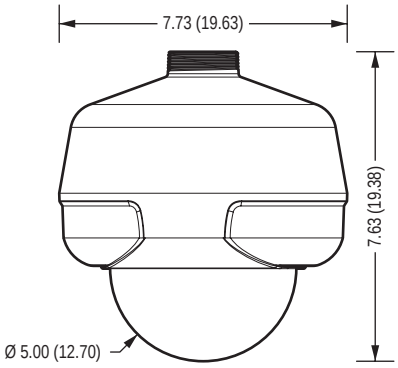
IN-CEILING



SURFACE MOUNT
(Mounting Ring Included)



PENDANT
(Mount Available as Accessory)



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES

TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 high, main, or base profile and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				MJPEG		H.264 High Profile	
MPx	Width	Height	Aspect Ratio	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
2.1	1920	1080	16:9	30.0 ips	10.0 Mbps	30.0 ips	6.0 Mbps
1.9	1600	1200	4:3	20.0 ips	10.0 Mbps	20.0 ips	4.0 Mbps
1.3	1280	1024	5:4	20.0 ips	10.0 Mbps	20.0 ips	3.3 Mbps
1.2	1280	960	4:3	20.0 ips	10.0 Mbps	20.0 ips	3.0 Mbps
0.9	1280	720	16:9	30.0 ips	10.0 Mbps	30.0 ips	2.9 Mbps
0.5	800	600	4:3	30.0 ips	7.7 Mbps	30.0 ips	2.0 Mbps
0.3	640	480	4:3	30.0 ips	4.9 Mbps	30.0 ips	1.5 Mbps
0.1	320	240	4:3	30.0 ips	1.2 Mbps	30.0 ips	0.5 Mbps

Additional Resolutions	640 x 512, 640 x 352, 480 x 368, 480 x 272, 320 x 256, and 320 x 176
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 2.0 (or later) or Digital Sentry 4.3 (or later)
Open IP Integration	Pelco IP camera API
Minimum System Requirements	
Processor	Intel® Core® 2 Duo microprocessor, 2.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	2 GB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.5 (or later); Internet Explorer® 8.0 (or later) is recommended for configuring analytics
Media Player†	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

ANALYTICS

Required Systems for Pelco Analytics	
Pelco Interface	WS5200 Advanced System Management Software on an Endura 2.0 (or later) system
Open API	Pelco analytics allow streaming information to communicate though Pelco's API Guide for Video Analytics version 0.55.30 (or later), available at *Pelco.com/IP*
Required System for Object Video Suites	OV ready-compliant system with OV Ready video management system

MODELS

IDE20DN-0	Sarix indoor fixed dome network camera, extended platform with built-in Pelco Analytics, 2.1 megapixel, day/night, no lens, smoked dome
IDE20DN-1	Sarix indoor fixed dome network camera, extended platform with built-in Pelco Analytics, 2.1 megapixel, day/night, no lens, clear dome
IDE20DN8-1	Sarix indoor fixed dome network camera, extended platform with built-in Pelco Analytics, 2.1 megapixel, day/night, 2.8 ~ 8 mm varifocal megapixel lens, clear dome
IDE20DN-OCP0	Sarix indoor fixed dome network camera, extended platform, 2.1 megapixel, day/night, no lens, smoked dome, with built-in OV Event Counting Plus Suite
IDE20DN-OS0	Sarix indoor fixed dome network camera, extended platform, 2.1 megapixel, day/night, no lens, smoked dome, with built-in OV Security Suite
IDE20DN-OSP0	Sarix indoor fixed dome network camera, extended platform, 2.1 megapixel, day/night, no lens, smoked dome, with built-in OV Security Plus Suite
IDE20DN-OCP1	Sarix indoor fixed dome network camera, extended platform, 2.1 megapixel, day/night, no lens, clear dome, with built-in OV Event Counting Plus Suite
IDE20DN-OS1	Sarix indoor fixed dome network camera, extended platform, 2.1 megapixel, day/night, no lens, clear dome, with built-in OV Security Suite
IDE20DN-OSP1	Sarix indoor fixed dome network camera, extended platform, 2.1 megapixel, day/night, no lens, clear dome, with built-in OV Security Plus Suite

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- Patents Pending

ACCESSORIES

IX-SC	4-foot Sarix service cable; compatible with standard BNC connectors
IA-A	Audio adapter compatible with a USB 2.0 A to 5-pin mini-B cable; supplied with two USB extension cables: 1 ft (0.3 m) and 3 ft (0.9 m)
POE20U560G	Single port PoE injector

RECOMMENDED MOUNTS

ID-P	Pendant mount
ID-DF5	DF5 Series adapter kit
ID-CB	Conduit box for in-ceiling installations
ID-PCB	2 x 2 ft (61 x 61 cm) ceiling panel with conduit box
SWM-WT	Wall mount for pendant
SWM-CAWT	Corner adapter for wall mount
SWM-PAWT	Pole adapter for wall mount

RECOMMENDED LENSES

13M2.2-6	Megapixel lens, varifocal, 2.2 ~ 6.0 mm, f/1.3 ~ 2.0
13M2.8-8	Megapixel lens, varifocal, 2.8 ~ 8.0 mm, f/1.2 ~ 1.9
13M2.8-12	Megapixel lens, varifocal, 2.8 ~ 12.0 mm, f/1.4 ~ 2.7
13M15-50	Megapixel lens, varifocal, 15.0 ~ 50.0 mm, f/1.5 ~ 2.1

Pelco lenses have been designed and tested to deliver optimal image quality for the IDE20 Series megapixel camera. The use of standard definition lenses on IDE20 Series will limit the resolution of the camera, creating poor image quality.

Field of View in Degrees		Aspect Ratio		
		16:9	4:3	5:4
2.2 mm	Horizontal	109	109	109
	Vertical	63	83	89
2.8 mm	Horizontal	89	89	89
	Vertical	48	66	70
6.0 mm	Horizontal	42	42	42
	Vertical	24	32	34
8.0 mm	Horizontal	32	32	32
	Vertical	18	24	25
12.0 mm	Horizontal	21	21	21
	Vertical	12	16	17
15.0 mm	Horizontal	16	16	16
	Vertical	9	12	13
50.0 mm	Horizontal	5	5	5
	Vertical	3	4	4

Note: For 800 x 600 (or lower) resolutions in 4:3 or 5:4 aspect ratios, the field of view is smaller than listed above. Refer to the Installation/Operation manual for details.

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IDE10 Series Sarix™ EP Network Indoor Fixed Dome

1.3 MEGAPIXEL EXTENDED PLATFORM HIGH DEFINITION DIGITAL CAMERAS

Product Features

- Up to 1.3 Megapixel Resolution (1280 x 1024)
- Up to 30 Images per Second (ips) at 1280 x 720
- Optional CS-Mount Lenses
- Auto Back Focus for High Precision Focusing
- Easy, Quick, One-Handed Installation
- H.264 and MJPEG Compression
- Day/Night Capability
- Sensitivity Down to 0.03 lux
- Power over Ethernet (IEEE 802.3af) or 24 VAC
- Video Setup Jack and Focus Button Accessible with Dome Closed
- Up to 2 Simultaneous Video Streams
- Built-in Analytics

- Local Storage (Micro SD) for Alarm Capture
- Motion Detection
- Audio Accessory Available.

The **IDE10 Series extended platform (EP) camera with Sarix™ technology** is a 1.3 megapixel (MPx) network indoor fixed dome camera designed with industry-leading image quality and high performance processing power. Designed to install quickly and easily, all of the post back-box installation and setup can be done with one hand.

Sarix technology defines the next generation of video security imaging performance, delivering high definition (HD) resolution, advanced low-light capabilities, consistent color science, and fast processing power. The H.264 compression video files are up to 20 times smaller making high definition video more affordable.

Fixed Dome Camera

The **IDE10 Series** can be ordered with or without lenses.All models include advance low-light technology and a camera in an indoor enclosure that is ready to install. The day/night model has a mechanical IR cut filter for increased sensitivity in low-light installations. These cameras accept a wide range of megapixel varifocal CS-mount lenses.

The **IDE10 Series** supports two simultaneous video streams. The two streams can be compressed in MJPEG and H.264 formats across several resolution configurations. The extended platform gives real-time video (30 ips) with full HD resolution using H.264 compression for optimized bandwidth and storage efficiency. The streams can be configured in a variety of frame rates, bit rates, and group of pictures (GOP) structures for additional bandwidth administration.

The **IDE10 Series** is simple to install, and the automatic back focus control feature makes sharp scene focus setup easy. A convenient video setup jack eliminates the need to use a laptop for viewing video when installing the camera.

Built-In Analytics

Pelco Analytics enhance the flexibility and performance of the IDE10 Series camera. Eight Pelco behaviors are preloaded and included as standard features of the IDE10DN models. Pelco behaviors can be configured and enabled using a standard Web browser, and they are compatible with Endura® or a third-party system that supports Pelco's Analytics API system.

Camera models are also available with preloaded **OV Analytic Suites**. These behaviors can be configured and enabled using a standard Web browser and are compatible with an OV ready compliant system with an OV Ready™ video management system.

Web Interface

The **IDE10 Series** uses a standard Web browser for powerful remote setup and administration. Up to 16 cameras can be viewed on the same network.

Window Blanking

Window blanking is used to conceal user-defined privacy areas that cannot be viewed by an operator. The **IDE10 Series** supports up to four blanked windows. A blanked area will appear on the screen as a solid gray window.

Video Systemization

The **IDE10 Series** easily connects to Pelco IP and hybrid systems such as Endura® version 2.0 (or later) and Digital Sentry® version 4.3 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) for interfacing with Pelco's network cameras.

PELCO ANALYTICS

The IDE10 Series includes eight user-configurable behaviors. The camera is capable of running up to three behaviors at the same time; although, the number of behaviors is limited to the available processing power of the camera and the type of analytic being used.

Note: Available processing power is determined by the settings for compression standards, resolution, image rate, bit rate, and analytic configuration.

For each behavior, you can create several custom profiles that contain different camera settings. With these profiles, you can set up different scenarios for the behavior, which will automatically detect and trigger alarms when specific activity is detected.

Pelco Analytics are configured and enabled using a standard Web browser, and Pelco behaviors are compatible with Endura® or a third-party system that supports Pelco's Analytics API system. Multiple Pelco behaviors can be scheduled to work during a certain time or condition. For example, during the day, a camera can be configured with Object Counting to count the number of people that enter a lobby door. At night, the operator can change the profile to Camera Sabotage to trigger an alarm if a camera is moved or obstructed. Available Pelco behaviors include:

- **Abandoned Object:** Detects objects placed in a defined zone and triggers an alarm if the object remains in the zone longer than the user-defined time allows. An airport terminal is a typical installation for this behavior. This behavior can also detect objects left behind at an ATM, signaling possible card skimming.
- **Adaptive Motion:** Detects and tracks objects that enter a scene and then triggers an alarm when the objects enter a user-defined zone. This behavior is primarily used in outdoor environments with light traffic to reduce the number of false alarms caused by environmental changes.
- **Camera Sabotage:** Detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.
- **Directional Motion:** Generates an alarm in a high traffic area when a person or object moves in a specified direction. Typical installations for this behavior include an airport gate or tunnel where cameras can detect objects moving in the opposite direction of the normal flow of traffic or an individual entering through an exit door.
- **Loitering Detection:** Identifies when people or vehicles remain in a defined zone longer than the user-defined time allows. This behavior is effective in real-time notification of suspicious behavior around ATMs, stairwells, and school grounds.
- **Object Counting:** Counts the number of objects that enter a defined zone or cross a tripwire. This behavior might be used to count the number of people at a store entrance/exit or inside a store where the traffic is light. This behavior is based on tracking and does not count people in a crowded setting.
- **Object Removal:** Triggers an alarm if an object is removed from a defined zone. This behavior is ideal for customers who want to detect the removal of high value objects, such as a painting from a wall or a statue from a pedestal.
- **Stopped Vehicle:** Detects vehicles stopped near a sensitive area longer than the user-defined time allows. This behavior is ideal for airport curbside drop-offs, parking enforcement, suspicious parking, traffic lane breakdowns, and vehicles waiting at gates.

OBJECTVIDEO (OV) ANALYTIC SUITES

ObjectVideo Analytics Suites are preloaded on selected IDE10 Series cameras and require an OV Ready system to configure the behaviors for alarm notification.

OV Security Suite

The OV Security Suite is easy to use and includes Tripwire Detection, Inside Area Detection, and Camera Tamper Detection behaviors.

- Tripwire Detection identifies objects that cross a user-defined line drawn within the camera's field of view.
- Inside Area Detection identifies objects entering, appearing, or moving within a user-defined area.
- Camera Tamper Detection identifies significant contrast changes in the camera's field of view; for example, if the lens is obstructed by spray paint, a cloth, or a lens cap.

OV Security Suite Plus

The OV Security Suite Plus includes the behaviors of the OV Security Suite plus Multi-Line Tripwire Detection, Loitering Detection, and Leave Behind Detection behaviors.

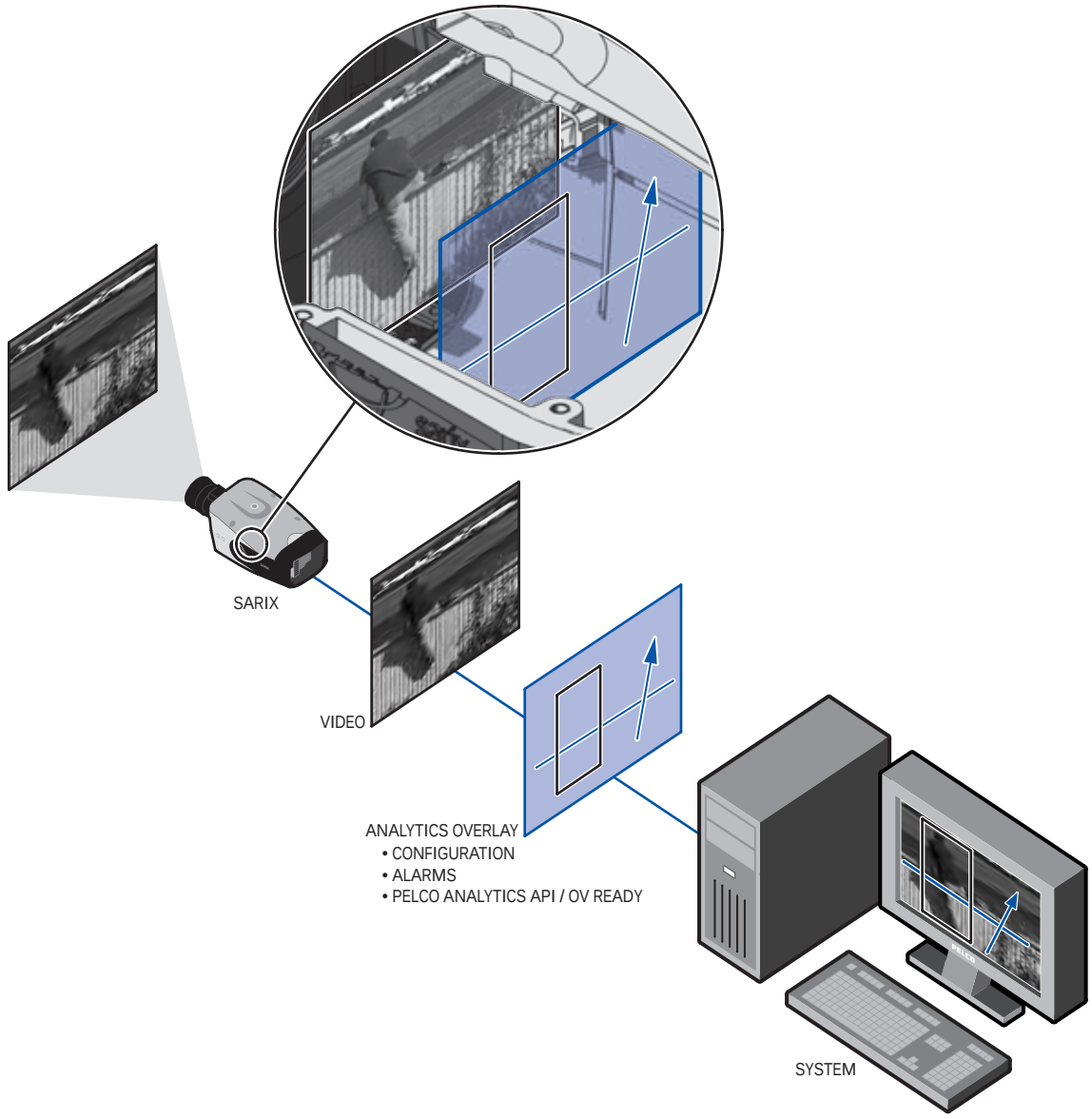
- Multi-Line Tripwire Detection identifies objects that cross two defined lines and generates an event based on defined parameters, including directionality. Defined parameters for this behavior include direction, sequential order, and time between crossing each tripwire.
- Loitering Detection identifies when people or vehicles remain within a user-defined area beyond a specified period of time. This behavior is effective for real-time notification of suspicious behavior around ATMs, stairwells, and school grounds.
- Leave Behind Detection detects objects placed in a defined zone and triggers an alarm if the object remains in the zone longer than the user-defined time allows.

OV Event Counting Suite

The OV Event Counting Suite uses advanced object calibration and additional features for schedules, parameters, and multiple rules. The suite includes behaviors for Tripwire Counting, Enters/Exits Counting, Loiter Counting, Occupancy Sensing, and Dwell-Time Monitoring.

- Tripwire Counting counts people or objects that cross a user-defined line.
- Enters/Exits Counting calculates the number of people that enter and exit an area without using a tripwire.
- Loiter Counting is useful in analyzing how frequently people stop in front of a product, display, or other area of interest. This feature is also useful in assessing promotion effectiveness and product interest.
- Occupancy Sensing counts people and generates a new value every time the occupancy level changes. Since each occupancy output is time-stamped, the data can be used to determine average occupancy levels or to correlate data to point-of-sale or other business scenarios.
- Dwell-Time Monitoring rules can be set up to record the length of time it takes an object to enter and exit an area. Along with queue size information, wait times can also be assessed. This behavior can be used to evaluate consumer interaction for a point-of-sale display or digital advertisement.

The following diagram illustrates how the camera system interprets streaming video when embedded analytics are configured and enabled.



IMPORTANT NOTE: PLEASE READ. The network implementation is shown as a general representation only and is not intended to show a detailed network topology. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the system as illustrated. Please contact your local Pelco Representative to discuss your specific requirements

TECHNICAL SPECIFICATIONS

GENERAL

Imaging Device	1/3-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	1280 x 1024
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2,850°K; SNR >24 dB
Color (1x/33 ms)	0.5 lux
Color SENS (15x/500 ms)	0.12 lux
Mono (1x/33 ms)	0.25 lux
Mono SENS (15x/500 ms)	0.03 lux
Dome Attenuation	
Clear	Zero light loss
Smoked	f/1.0 light loss
Construction	
Back Box	Cast aluminum
Trim Ring	Polycarbonate plastic
Bubble	Acrylic plastic
Finish	White
Weight (without lens)	
Unit	2.0 lb (0.9 kg)
Shipping	6.0 lb (2.7 kg)
Available Languages	Chinese, English, French, German, Italian, Portuguese, Russian, Spanish, and Turkish

ELECTRICAL

Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cable Type	Cat5 or better for 100Base-TX
Power Input	18 to 34 VAC; 24 VAC nominal or PoE (IEEE 802.3af class 3)
Power Consumption	<6 W
Current Consumption	
PoE	<200 mA maximum
24 VAC	<295 mA nominal; <390 mA maximum
Local Storage	Micro SD
Alarm Input	10 VDC maximum, 5 mA maximum
Alarm Output	0 to 15 VDC maximum, 75 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output
Accessory Port	Connects Pelco accessories

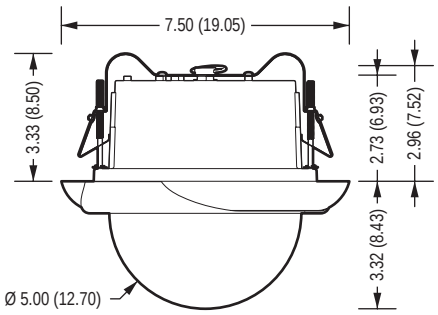
MECHANICAL

Lens Mount	CS mount, adjustable
Pan/Tilt Adjustment	
Pan	368°
Tilt	160° (10° to 170°)
Rotate	355°

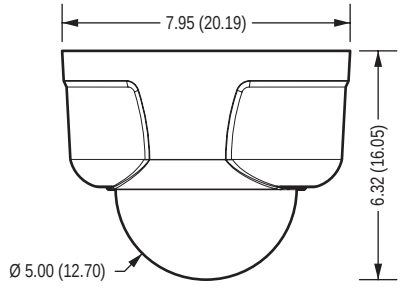
ENVIRONMENTAL

Operational Temperature	32° to 122°F (0° to 50°C)
Operational Humidity	20% to 80%, noncondensing

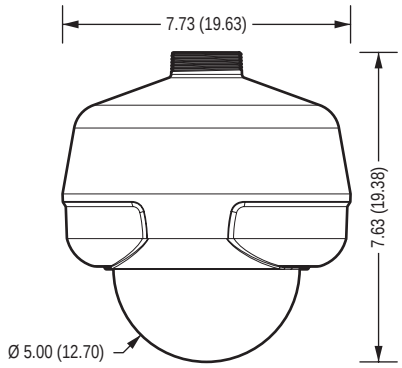
IN-CEILING



SURFACE MOUNT
(Mounting Ring Included)



PENDANT
(Mount Available as Accessory)



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES

TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 base profile and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				MJPEG		H.264 Base Profile	
MPx	Width	Height	Aspect Ratio	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
1.3	1280	1024	5:4	20.0 ips	10.0 Mbps	20.0 ips	3.4 Mbps
1.2	1280	960	4:3	20.0 ips	9.8 Mbps	20.0 ips	3.0 Mbps
0.9	1280	720	16:9	30.0 ips	10.0 Mbps	30.0 ips	2.9 Mbps
0.5	800	600	4:3	30.0 ips	7.7 Mbps	30.0 ips	2.0 Mbps
0.3	640	480	4:3	30.0 ips	4.9 Mbps	30.0 ips	1.5 Mbps
0.1	320	240	4:3	30.0 ips	1.2 Mbps	30.0 ips	0.5 Mbps

Additional Resolutions	640 x 512, 640 x 352, 480 x 368, 480 x 272, 320 x 256, and 320 x 176
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 2.0 (or later) or Digital Sentry 4.3 (or later)
Open IP Integration	Pelco IP camera API
Minimum System Requirements	
Processor	Intel® Core® 2 Duo microprocessor, 2.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	2 GB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.5 (or later); Internet Explorer® 8.0 (or later) is recommended for configuring analytics
Media Player†	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

ANALYTICS

Required Systems for Pelco Analytics	
Pelco Interface	WS5200 Advanced System Management Software on an Endura 2.0 (or later) system
Open API	Pelco analytics allow streaming information to communicate though Pelco's API Guide for Video Analytics version 0.55.30 (or later), available at *Pelco.com/IP*
Required System for Object Video Suites	OV ready-compliant system with OV Ready video management system

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

MODELS

IDE10DN-0	Sarix indoor fixed dome network camera, extended platform, 1.3 megapixel, day/night, no lens, smoked dome, with built-in Pelco analytics
IDE10DN-1	Sarix indoor fixed dome network camera, extended platform, 1.3 megapixel, day/night, no lens, clear dome, with built-in Pelco analytics
IDE10DN8-1	Sarix indoor fixed dome network camera, extended platform, 1.3 megapixel, day/night, 2.8 ~ 8 mm varifocal megapixel lens, clear dome, with built-in Pelco analytics
IDE10DN-OCP1	Sarix indoor fixed dome network camera, extended platform, 1.3 megapixel, day/night, no lens, clear dome, with built-in OV Event Counting Plus Suite
IDE10DN-OS1	Sarix indoor fixed dome network camera, extended platform, 1.3 megapixel, day/night, no lens, clear dome, with built-in OV Security Suite
IDE10DN-OSP1	Sarix indoor fixed dome network camera, extended platform, 1.3 megapixel, day/night, no lens, clear dome, with built-in OV Security Plus Suite

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- Meets IP66
- Patents Pending

OPTIONAL ACCESSORIES

IX-SC	4-foot service/monitor cable, compatible with any standard monitor BNC connector
IA-A	Audio adapter compatible with a USB 2.0 A to 5-pin mini-B cable; supplied with two USB extension cables: 1 ft (0.3 m) and 3 ft (0.9 m)
POE20U560G	Single port PoE injector

RECOMMENDED MOUNTS

ID-P	Pendant mount
ID-DF5	DF5 Series adapter kit
ID-CB	Conduit box for in-ceiling installations
ID-PCB	2 x 2 ft (61 x 61 cm) ceiling panel with conduit box
SWM-WT	Wall mount for pendant
SWM-CAWT	Corner adapter for wall mount
SWM-PAWT	Pole adapter for wall mount

RECOMMENDED LENSES

13M2.2-6	Megapixel lens, varifocal, 2.2 ~ 6.0 mm, f/1.3 ~ 2.0
13M2.8-8	Megapixel lens, varifocal, 2.8 ~ 8.0 mm, f/1.2 ~ 1.9
13M2.8-12	Megapixel lens, varifocal, 2.8 ~ 12.0 mm, f/1.4 ~ 2.7
13M15-50	Megapixel lens, varifocal, 15.0 ~ 50.0 mm, f/1.5 ~ 2.1

Pelco megapixel lenses have been designed and tested to deliver optimal image quality for the IDE10 Series dome. The use of standard definition lenses on IDE10 Series megapixel cameras will limit the resolution of the camera, creating poor image quality.

Field of View in Degrees		High Resolution Streams (>800 x 600) Aspect Ratio		
		16:9	4:3	5:4
2.2 mm	Horizontal	109	109	109
	Vertical	63	83	89
2.8 mm	Horizontal	89	89	89
	Vertical	48	66	70
6.0 mm	Horizontal	42	42	42
	Vertical	24	32	34
8.0 mm	Horizontal	32	32	32
	Vertical	18	24	25
12.0 mm	Horizontal	21	21	21
	Vertical	12	16	17
15.0 mm	Horizontal	16	16	16
	Vertical	9	12	13
50.0 mm	Horizontal	5	5	5
	Vertical	3	4	4

Note: For 800 x 600 (or lower) resolutions in 4:3 or 5:4 aspect ratios, the field of view is smaller than listed above. Refer to the Installation/Operation manual for details.

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ID10 Series Sarix™ Network Indoor Fixed Dome

1.3 MEGAPIXEL HIGH DEFINITION INTEGRATED CAMERA

Product Features

- Up to 1.3 Megapixel Resolution (1280 x 1024)
- Up to 30 Images per Second (ips) at 1280 x 720
- Optional CS-Mount Lenses
- Auto Back Focus for High Precision Focusing
- Easy, Quick, One-Handed Installation
- H.264 and MJPEG Compression
- Color and Day/Night Capability
- Sensitivity Down to 0.03 lux
- Power over Ethernet (IEEE 802.3af) or 24 VAC
- Video Setup Jack and Focus Button Accessible with Dome Closed
- Up to 2 Simultaneous Video Streams
- Web Viewing, up to 16 Cameras Simultaneously
- Local Storage (Micro SD) for Alarm Capture

- Open IP Standards
- Motion Detection
- Audio Accessory Available

The **ID10 Series with Sarix™ technology** is a 1.3 megapixel (MPx) network indoor fixed dome camera designed with industry-leading image quality and high performance processing power. Designed to install quickly and easily, all of the post back-box installation and setup can be done with one hand.

Sarix technology defines the next generation of video security imaging performance, delivering high definition (HD) resolution, advanced low-light capabilities, consistent color science, and fast processing power. The H.264 compression video files are up to 20 times smaller making high definition video more affordable.

Fixed Dome Camera

The **ID10 Series** can be ordered in either color or day/night models with or without lenses installed. All models include advance low-light technology and a camera in an indoor enclosure that is ready to install. The day/night model has a mechanical IR cut filter for increased sensitivity in low-light installations. These cameras accept a wide range of megapixel varifocal CS-mount lenses.

The **ID10 Series** supports two simultaneous video streams. The two streams can be compressed in MJPEG and H.264 formats across several resolution configurations. The streams can be configured in a variety of frame rates, bit rates, and group of pictures (GOP) structures for additional bandwidth administration.

Built-In Analytics

The **Pelco Camera Sabotage** behavior is a standard feature of the **ID10 Series**. This behavior detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or covered with a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.

Web Interface

The **ID10 Series** uses a standard Web browser for powerful remote setup and administration. Up to 16 cameras can be viewed on the same network.

Window Blanking

Window blanking is used to conceal user-defined privacy areas that cannot be viewed by an operator. The **ID10 Series** supports up to four blanked windows. A blanked area will appear on the screen as a solid gray window.

Video Systemization

The **ID10 Series** easily connects to Pelco IP and hybrid systems such as Endura® version 2.0 (or later) and Digital Sentry® version 4.3 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) that enables third-party systems to interface with Pelco's network cameras.

TECHNICAL SPECIFICATIONS

GENERAL

Imaging Device	1/3-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	1280 x 1024
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2,850°K; SNR >24 dB
Color (1x/33 ms)	0.5 lux
Color SENS (15x/500 ms)	0.12 lux
Mono (1x/33 ms)	0.25 lux
Mono SENS (15x/500 ms)	0.03 lux
Dome Attenuation	
Clear	Zero light loss
Smoked	f/1.0 light loss
Construction	
Back Box	Cast aluminum
Trim Ring	Polycarbonate plastic
Bubble	Acrylic plastic
Finish	White
Weight (without lens)	
Unit	2.0 lb (0.9 kg)
Shipping	6.0 lb (2.7 kg)
Available Languages	Chinese, English, French, German, Italian, Portuguese, Russian, Spanish, and Turkish

ELECTRICAL

Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cable Type	Cat5 or better for 100Base-TX
Power Input	18 to 34 VAC; 24 VAC nominal or PoE (IEEE 802.3af class 3)
Power Consumption	<6 W
Current Consumption	
PoE	<200 mA maximum
24 VAC	<295 mA nominal; <390 mA maximum
Local Storage	Micro SD
Alarm Input	10 VDC maximum, 5 mA maximum
Alarm Output	0 to 15 VDC maximum, 75 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output
Accessory Port	Connects Pelco accessories

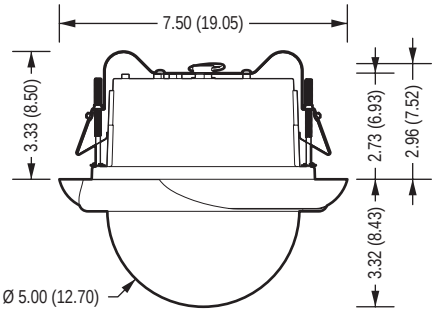
MECHANICAL

Lens Mount	CS mount, adjustable
Pan/Tilt Adjustment	
Pan	368°
Tilt	160° (10° to 170°)
Rotate	355°

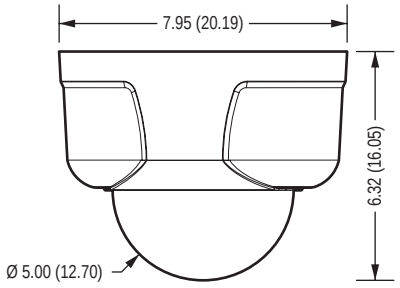
ENVIRONMENTAL

Operational Temperature	32° to 122°F (0° to 50°C)
Operational Humidity	20% to 80%, noncondensing

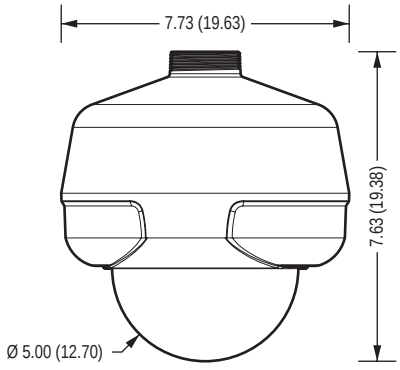
IN-CEILING



SURFACE MOUNT
(Mounting Ring Included)



PENDANT
(Mount Available as Accessory)



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES

TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 base profile and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				MJPEG		H.264 Base Profile	
MPx	Width	Height	Aspect Ratio	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
1.3	1280	1024	5:4	20.0 ips	10.0 Mbps	8.0 ips	2.5 Mbps
1.2	1280	960	4:3	20.0 ips	9.8 Mbps	8.0 ips	2.4 Mbps
0.9	1280	720	16:9	30.0 ips	10.0 Mbps	12.5 ips	2.5 Mbps
0.5	800	600	4:3	30.0 ips	5.8 Mbps	25.0 ips	2.0 Mbps
0.3	640	480	4:3	30.0 ips	3.7 Mbps	30.0 ips	1.6 Mbps
0.1	320	240	4:3	30.0 ips	0.9 Mbps	30.0 ips	0.4 Mbps

Additional Resolutions	640 x 512, 640 x 352, 480 x 368, 480 x 272, 320 x 256, and 320 x 176
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, and mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 2.0 (or later) or Digital Sentry 4.3 (or later)
Open IP Integration	Pelco IP camera API
Min. System Requirements	
Processor	Pentium® 4 microprocessor, 1.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	512 MB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.5 (or later); Internet Explorer® 8.0 (or later) is recommended for configuring analytics
Media Player†	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

MODELS

ID10C8-1	Sarix indoor fixed dome network camera, 1.3 megapixel, color, 2.8 ~ 8 mm varifocal megapixel lens, clear dome
ID10DN8-1	Sarix indoor fixed dome network camera, 1.3 megapixel, day/night, 2.8 ~ 8 mm varifocal megapixel lens, clear dome
ID10C-0	Sarix indoor fixed dome network camera, 1.3 megapixel, color, no lens, smoked dome
ID10C-1	Sarix indoor fixed dome network camera, 1.3 megapixel, color, no lens, clear dome
ID10DN-0	Sarix indoor fixed dome network camera, 1.3 megapixel, day/night, no lens, smoked dome
ID10DN-1	Sarix indoor fixed dome network camera, 1.3 megapixel, day/night, no lens, clear dome

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- Patents Pending

ACCESSORIES

IX-SC	4-foot Sarix service cable; compatible with standard BNC connectors
IA-A	Audio adapter compatible with a USB 2.0 A to 5-pin mini-B cable; supplied with two USB extension cables: 1 ft (0.3 m) and 3 ft (0.9 m)
POE20U560G	Single port PoE injector

RECOMMENDED MOUNTS

ID-P	Pendant mount
ID-DF5	DF5 Series adapter kit
ID-CB	Conduit box for in-ceiling installations
ID-PCB	2 x 2 ft (61 x 61 cm) ceiling panel with conduit box
SWM-WT	Wall mount for pendant
SWM-CAWT	Corner adapter for wall mount
SWM-PAWT	Pole adapter for wall mount

RECOMMENDED LENSES

13M2.2-6	Megapixel lens, varifocal, 2.2 ~ 6.0 mm, f/1.3 ~ 2.0
13M2.8-8	Megapixel lens, varifocal, 2.8 ~ 8.0 mm, f/1.2 ~ 1.9
13M2.8-12	Megapixel lens, varifocal, 2.8 ~ 12.0 mm, f/1.4 ~ 2.7
13M15-50	Megapixel lens, varifocal, 15.0 ~ 50.0 mm, f/1.5 ~ 2.1

Pelco lenses have been designed and tested to deliver optimal image quality for the ID10 Series megapixel camera. The use of standard definition lenses on the ID10 Series will limit the resolution of the camera, creating poor image quality.

Field of View in Degrees		Aspect Ratio		
		16:9	4:3	5:4
2.2 mm	Horizontal	109	109	109
	Vertical	63	83	89
2.8 mm	Horizontal	89	89	89
	Vertical	48	66	70
6.0 mm	Horizontal	42	42	42
	Vertical	24	32	34
8.0 mm	Horizontal	32	32	32
	Vertical	18	24	25
12.0 mm	Horizontal	21	21	21
	Vertical	12	16	17
15.0 mm	Horizontal	16	16	16
	Vertical	9	12	13
50.0 mm	Horizontal	5	5	5
	Vertical	3	4	4

Note: For 800 x 600 (or lower) resolutions in 4:3 or 5:4 aspect ratios, the field of view is smaller than listed above. Refer to the Installation/Operation manual for details.

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IDS0 Series Sarix™ Network Indoor Fixed Dome

0.5 MEGAPIXEL STANDARD DEFINITION INTEGRATED CAMERA

Product Features

- Up to SVGA Resolution (800 x 600)
- Up to 30 Images per Second (ips) at All Resolutions
- Optional CS-Mount Lenses
- Auto Back Focus for High Precision Focusing
- Easy, Quick, One-Handed Installation
- H.264, MPEG-4, and MJPEG Compression
- Color and Day/Night Capability
- Sensitivity Down to 0.03 lux
- Power over Ethernet (IEEE 802.3af) or 24 VAC
- Video Setup Jack and Focus Button Accessible with Dome Closed
- Up to 2 Simultaneous Video Streams
- Web Viewing, up to 16 Cameras Simultaneously
- Local Storage (Micro SD) for Alarm Capture
- Open IP Standards
- Motion Detection
- Audio Accessory Available

The **IDS0 Series with Sarix™ technology** is a standard definition network indoor fixed dome camera designed with industry-leading image quality and high performance processing power. Designed to install quickly and easily, all of the post back-box installation and setup can be done with one hand.

Sarix technology defines the next generation of video security imaging performance, delivering high definition (HD) resolution, advanced low-light capabilities, consistent color science, and fast processing power. The H.264 compression video files are up to 20 times smaller making high definition video more affordable.

Fixed Dome Camera

The **IDS0 Series** can be ordered in either color or day/night models with or without lenses installed. All models include advanced low-light technology and a camera in an indoor enclosure that is ready to install. The day/night model has a mechanical IR cut filter for increased sensitivity in low-light installations. These cameras accept a wide range of varifocal CS-mount lenses.

The **IDS0 Series** supports two simultaneous video streams. The two streams can be compressed in H.264, MPEG-4, and MJPEG formats across several resolution configurations. The streams can be configured in a variety of frame rates, bit rates, and group of pictures (GOP) structures for additional bandwidth administration.

Built-In Analytics

The **Pelco Camera Sabotage** behavior is a standard feature of the IDS0 Series. This behavior detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or covered with a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.

Web Interface

The **IDS0 Series** uses a standard Web browser for powerful remote setup and administration. Up to 16 cameras can be viewed on the same network.

Window Blanking

Window blanking is used to conceal user-defined privacy areas that cannot be viewed by an operator. The **IDS0 Series** supports up to four blanked windows. A blanked area will appear on the screen as a solid gray window.

Video Systemization

The **IDS0 Series** easily connects to Pelco IP and hybrid systems such as Endura® version 2.0 (or later) and Digital Sentry® version 4.3 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) that enables third-party systems to interface with Pelco's network cameras.

TECHNICAL SPECIFICATIONS

GENERAL

Imaging Device	1/3-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	800 x 600
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.2; 2,850°K; SNR >24 dB
Color (1x/33 ms)	0.5 lux
Color SENS (15x/500 ms)	0.12 lux
Mono (1x/33 ms)	0.25 lux
Mono SENS (15x/500 ms)	0.03 lux
Dome Attenuation	
Clear	Zero light loss
Smoked	f/1.0 light loss
Construction	
Back Box	Cast aluminum
Trim Ring	Polycarbonate plastic
Bubble	Acrylic plastic
Finish	White
Weight (without lens)	
Unit	2.0 lb (0.9 kg)
Shipping	6.0 lb (2.7 kg)
Available Languages	Chinese, English, French, German, Italian, Portuguese, Russian, Spanish, and Turkish

ELECTRICAL

Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cable Type	Cat5 or better for 100Base-TX
Power Input	18 to 34 VAC; 24 VAC nominal or PoE (IEEE 802.3af class 3)
Power Consumption	<6 W
Current Consumption	
PoE	<200 mA maximum
24 VAC	<295 mA nominal; <390 mA maximum
Local Storage	Micro SD
Alarm Input	10 VDC maximum, 5 mA maximum
Alarm Output	0 to 15 VDC maximum, 75 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output
Accessory Port	Connects Pelco accessories

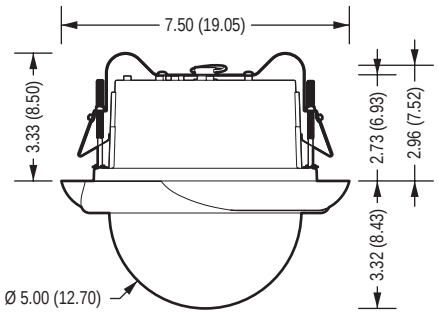
MECHANICAL

Lens Mount	CS mount, adjustable
Pan/Tilt Adjustment	
Pan	368°
Tilt	160° (10° to 170°)
Rotate	355°

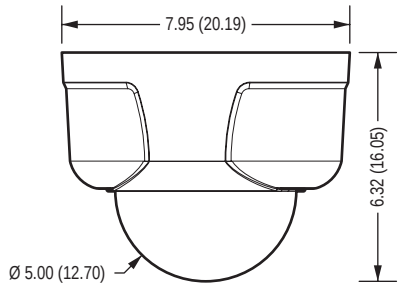
ENVIRONMENTAL

Operational Temperature	32° to 122°F (0° to 50°C)
Operational Humidity	20% to 80%, noncondensing

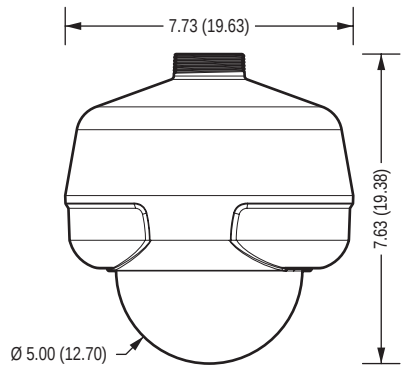
IN-CEILING



SURFACE MOUNT
(Mounting Ring Included)



PENDANT
(Mount Available as Accessory)



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES

TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 base profile, MPEG-4, and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				MJPEG		H.264 Base Profile		MPEG-4	
MPx	Width	Height	Aspect Ratio	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
0.5	800	600	4:3	30 ips	5.8 Mbps	25 ips	2.0 Mbps	N/A	N/A
0.3	640	480	4:3	30 ips	3.7 Mbps	30 ips	1.6 Mbps	30 ips	1.7 Mbps
0.1	320	240	4:3	30 ips	0.9 Mbps	30 ips	0.4 Mbps	30 ips	0.4 Mbps

Additional Resolutions	640 x 512, 640 x 352, 480 x 368, 480 x 272, 320 x 256, 320 x 176, 4CIF (704 x 489 and 704 x 576), and CIF (352 x 240 and 352 x 288)
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, and mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 2.0 (or later) or Digital Sentry 4.3 (or later)
Open IP Integration	Pelco IP camera API
Minimum System Requirements	
Processor	Intel® Pentium® 4 microprocessor, 1.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	512 MB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.5 (or later); Internet Explorer® 8.0 (or later) is recommended for configuring analytics
Media Player†	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

MODELS

IDS0C12-1	Sarix indoor fixed dome network camera, 0.5 megapixel, color, 2.8 ~ 12 mm varifocal lens, clear dome
IDS0DN12-1	Sarix indoor fixed dome network camera, 0.5 megapixel, day/night, 2.8 ~ 12 mm varifocal lens, clear dome
IDS0C-0	Sarix indoor fixed dome network camera, 0.5 megapixel, color, no lens, smoked dome
IDS0C-1	Sarix indoor fixed dome network camera, 0.5 megapixel, color, no lens, clear dome
IDS0DN-0	Sarix indoor fixed dome network camera, 0.5 megapixel, day/night, no lens, smoked dome
IDS0DN-1	Sarix indoor fixed dome network camera, 0.5 megapixel, day/night, no lens, clear dome

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- Patents Pending

ACCESSORIES

IX-SC	4-foot Sarix service cable; compatible with standard BNC connectors
IA-A	Audio adapter compatible with a USB 2.0 A to 5-pin mini-B cable; supplied with two USB extension cables: 1 ft (0.3 m) and 3 ft (0.9 m)
POE20U560G	Single port PoE injector

RECOMMENDED MOUNTS

ID-P	Pendant mount
ID-DF5	DF5 Series adapter kit
ID-CB	Conduit box for in-ceiling installations
ID-PCB	2 x 2 ft (61 x 61 cm) ceiling panel with conduit box
SWM-WT	Wall mount for pendant
SWM-CAWT	Corner adapter for wall mount
SWM-PAWT	Pole adapter for wall mount

RECOMMENDED LENSES

13VD2.5-6	Varifocal lens, 2.5 ~ 6.0 mm, f/1.4 ~ 2.1
13VD2.8-12	Varifocal lens, 2.8 ~ 12.0 mm, f/1.4 ~ 2.9
13VD5-50	Varifocal lens, 5.0 ~ 50.0 mm, f/1.4 ~ 2.9

Field of View in Degrees		Aspect Ratio		
		16:9	4:3	5:4
2.5 mm	Horizontal	98	83	80
	Vertical	55	63	64
2.8 mm	Horizontal	89	74	71
	Vertical	48	55	56
5.0 mm	Horizontal	50	42	40
	Vertical	28	32	32
6.0 mm	Horizontal	42	36	34
	Vertical	24	27	28
12.0 mm	Horizontal	21	18	17
	Vertical	12	13	14
50.0 mm	Horizontal	5	4	4
	Vertical	3	3	3

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IM10 Series Sarix™ Mini Indoor Fixed Dome

1.3 MEGAPIXEL HIGH DEFINITION INTEGRATED NETWORK CAMERA

Product Features

- Up to 1.3 Megapixel Resolution (1280 x 1024)
- Up to 30 Images per Second (ips) at 1280 x 720
- Compact Size with 3-inch Bubble
- Auto Focus Varifocal 2.8 ~ 10 mm Megapixel Lens
- Easy Installation
- H.264 and MJPEG Compression
- Sensitivity Down to 0.12 lux
- Line-in Audio and Built-in Microphone
- Power over Ethernet (PoE), IEEE 802.3af
- Video Setup Jack Accessible with Dome Installed
- Up to 2 Simultaneous Video Streams
- Web Viewing, up to 16 Cameras Simultaneously
- Open IP Standards

The **IM10 Series with Sarix™ technology** is a 1.3 megapixel (MPx) network indoor fixed dome camera designed with industry-leading image quality and high performance processing power. From back box wiring to focusing the lens, the **IM10 Series** is designed to install quickly and easily.

Sarix technology defines the next generation of video security imaging performance, delivering high definition (HD) resolution, advanced low-light capabilities, consistent color science, and fast processing power. The H.264 compression video files are up to 20 times smaller making HD video more affordable.

Fixed Dome Camera

The **IM10 Series** contains an integrated varifocal 2.8 ~ 10 mm megapixel lens. All models include a camera in a compact indoor enclosure that is ready to install.

The **IM10 Series** supports two simultaneous video streams. The two streams can be compressed in MJPEG and H.264 formats across several resolution configurations. The streams can be configured in a variety of frame rates, bit rates, and group of pictures (GOP) structures for additional bandwidth administration.

Built-In Analytics

The **Pelco Camera Sabotage** behavior is a standard feature of the IM10 Series. This behavior detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or covered with a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.

Web Interface

The **IM10 Series** uses a standard Web browser for powerful remote setup and administration. Up to 16 cameras can be viewed on the same network.

Window Blanking

Window blanking is used to conceal user-defined privacy areas that cannot be viewed by an operator. The **IM10 Series** supports up to four blanked windows. A blanked area will appear on the screen as a solid gray window.

Video Systemization

The **IM10 Series** easily connects to Pelco IP and hybrid systems such as Endura® version 2.0 (or later) and Digital Sentry® version 4.3 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) that enables third-party systems to interface with Pelco's network cameras.

TECHNICAL SPECIFICATIONS

GENERAL

Imaging Device	1/3-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	1280 x 1024
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.3; 2,850°K; SNR >24 dB
Color (1x/33 ms)	0.5 lux
Color SENS (15x/500 ms)	0.12 lux
Dome Attenuation	
Clear	Zero light loss
Smoked	f/1.0 light loss
Construction	
Back-box	Cast aluminum and polycarbonate plastic
Trim ring	Polycarbonate plastic
Bubble	Acrylic plastic
Finish	White/Black
Weight	
Unit	0.77 lb (0.35 kg)
Shipping	2.00 lb (0.91 kg)
Available Languages	Chinese, English, French, German, Italian, Portuguese, Russian, Spanish, and Turkish

ELECTRICAL

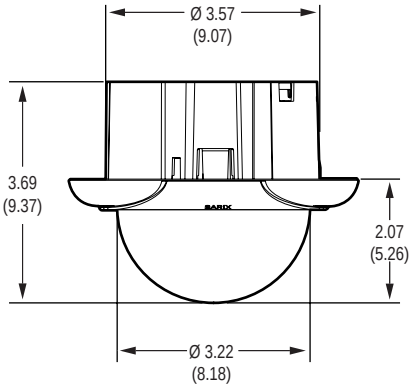
Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cable Type	Cat5 or better for 100Base-TX
Power Input	PoE (IEEE 802.3af class 3)
Power Consumption	<6 W
Current Consumption	
PoE	<200 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output
Accessory Port	Connects Pelco accessories
Audio	
Streaming	Bidirectional: full or half duplex
Input/Output	Line level/external microphone input; 600-ohm differential, 1 Vp-p max signal level; built-in microphone
Compression	G.711 PCM 8 bit, 8 kHz mono at 64 kbit/s

MECHANICAL

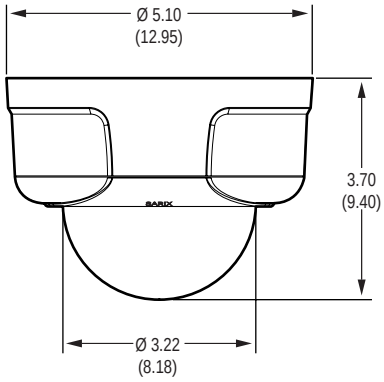
Pan/Tilt Adjustment	Manual
Pan	355°
Tilt	180°
Rotate	220°

ENVIRONMENTAL

Operational Temperature	32° to 122°F (0° to 50°C)
Operational Humidity	20% to 80%, noncondensing



IN-CEILING



SURFACE MOUNT (MOUNTING RING INCLUDED)

NOTE: VALUES IN PARENTHESIS ARE CENTIMETERS; ALL OTHERS ARE INCHES.

COMPACT SIZE. EASY TO INSTALL.

TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 base profile and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				MJPEG		H.264 Base Profile	
MPx	Width	Height	Aspect Ratio	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
1.3	1280	1024	5:4	20 ips	10.0 Mbps	8.0 ips	2.5 Mbps
1.2	1280	960	4:3	20 ips	9.8 Mbps	8.0 ips	2.4 Mbps
0.9	1280	720	16:9	30 ips	10.0 Mbps	12.5 ips	2.5 Mbps
0.5	800	600	4:3	30 ips	5.8 Mbps	25 ips	2.0 Mbps
0.3	640	480	4:3	30 ips	3.7 Mbps	30 ips	1.6 Mbps
0.1	320	240	4:3	30 ips	0.9 Mbps	30 ips	0.4 Mbps

Additional Resolutions	640 x 512, 640 x 352, 480 x 368, 480 x 272, 320 x 256, and 320 x 176
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 2.0 (or later) or Digital Sentry 4.3 (or later)
Open IP Integration	Pelco IP camera API
Minimum System Requirements	
Processor	Intel® Pentium® 4 microprocessor, 1.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	512 MB RAM
Network Interface Card	100 megabits, minimum
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.5 (or later); Internet Explorer® 8.0 (or later) is recommended for configuring analytics
Media Player†	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

LENS

Field of View in Degrees		High Resolution Streams (>800 x 600) Aspect Ratio		
		16:9	4:3	5:4
2.8 mm	Horizontal	91	91	91
	Vertical	50	67	72
10.0 mm	Horizontal	25	25	25
	Vertical	14	19	20

Note: For 800 x 600 (or lower) resolutions in 4:3 or 5:4 aspect ratios, the field of view is smaller than listed above. Refer to the installation/operation manual for details.

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

TECHNICAL SPECIFICATIONS

MODELS

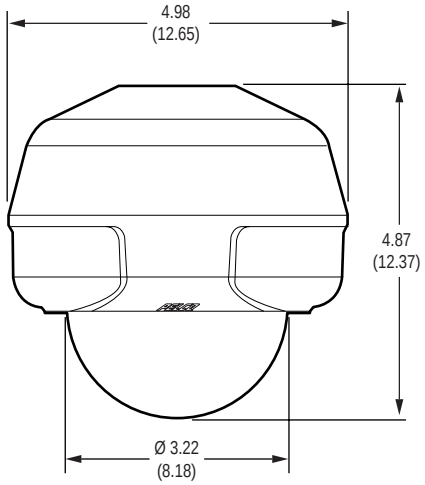
IM10C10-1	Sarix mini indoor fixed dome network camera, 1.3 megapixel, color, 2.8 ~ 10 mm varifocal megapixel lens, white trim ring, clear dome
IM10C10-B1	Sarix mini indoor fixed dome network camera, 1.3 megapixel, color, 2.8 ~ 10 mm varifocal megapixel lens, black trim ring, clear dome

CERTIFICATIONS/RATINGS/PATENTS

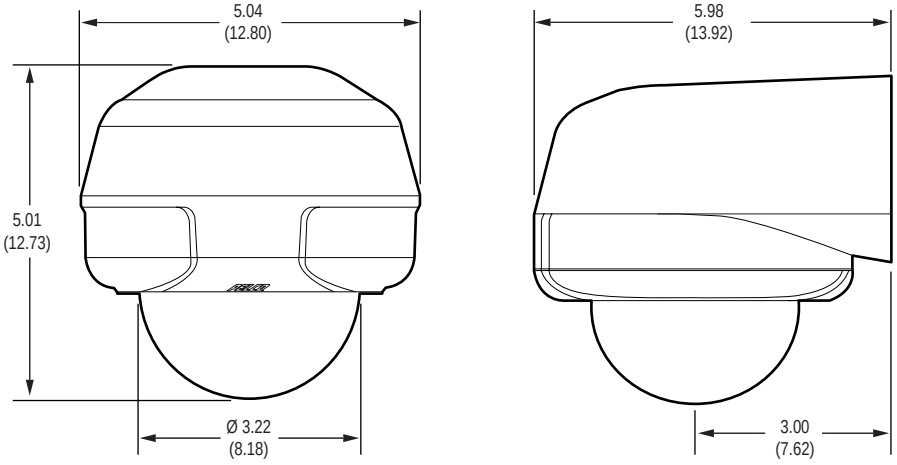
- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- Patents Pending

OPTIONAL ACCESSORIES

IM-PMWT	Pendant mount white
IM-PMBL	Pendant mount black
IM-WMWT	Integrated wall mount white
IM-WMBL	Integrated wall mount black
LDIM-0	White lower dome with smoked bubble
LDIM-B0	Black lower dome with smoked bubble
IX-SC	4-foot service/monitor cable, compatible with any standard monitor BNC connector
POE20U560G	Single port PoE injector



PENDANT (MOUNT AVAILABLE AS ACCESSORY)



INTEGRATED WALL MOUNT (AVAILABLE AS ACCESSORY)

NOTE: VALUES IN PARENTHESIS ARE CENTIMETERS; ALL OTHERS ARE INCHES.

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IMS0 Sarix™ Mini Indoor Fixed Dome

0.5 MEGAPIXEL STANDARD DEFINITION INTEGRATED CAMERA

Product Features

- Up to 0.5 Megapixel Resolution (800 x 600)
- Up to 30 Images per Second (ips) at All Resolutions
- Compact Size with 3-inch Bubble
- Varifocal 2.8 ~ 10 mm Lens
- Easy Installation
- H.264, MPEG-4 and MJPEG Compression
- Sensitivity Down to 0.12 lux
- Power over Ethernet (PoE), IEEE 802.3af
- Video Setup Jack Accessible with Dome Installed
- Up to 2 Simultaneous Video Streams
- Web Viewing, up to 16 Cameras Simultaneously
- Open IP Standards

The **IMS0 with Sarix™ technology** is a standard definition network indoor fixed dome camera designed with industry-leading image quality and high performance processing power. From back box wiring to focusing the lens, the **IMS0** is designed to install quickly and easily.

Sarix technology defines the next generation of video security imaging performance, delivering high definition (HD) resolution, advanced low-light capabilities, consistent color science, and fast processing power. The H.264 compression video files are up to 20 times smaller making HD video more affordable.

Fixed Dome Camera

The **IMS0** contains an integrated varifocal 2.8 ~ 10 mm lens. All models include a camera in a compact indoor enclosure that is ready to install.

The **IMS0** supports two simultaneous video streams. The two streams can be compressed in MJPEG, MPEG4, and H.264 formats across several resolution configurations. The streams can be configured in a variety of frame rates, bit rates, and group of pictures (GOP) structures for additional bandwidth administration.

Built-In Analytics

The **Pelco Camera Sabotage** behavior is a standard feature of the IMS0. This behavior detects contrast changes in the field of view. An alarm is triggered if the lens is obstructed with spray paint, a cloth, or covered with a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.

Web Interface

The **IMS0** uses a standard Web browser for powerful remote setup and administration. Up to 16 cameras can be viewed on the same network.

Window Blanking

Window blanking is used to conceal user-defined privacy areas that cannot be viewed by an operator. The **IMS0** supports up to four blanked windows. A blanked area will appear on the screen as a solid gray window.

Video Systemization

The **IMS0** easily connects to Pelco IP and hybrid systems such as Endura® version 2.0 (or later) and Digital Sentry® version 4.3 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) that enables third-party systems to interface with Pelco's network cameras.

TECHNICAL SPECIFICATIONS

GENERAL

Imaging Device	1/3-inch (effective)
Imager Type	CMOS
Imager Readout	Progressive scan
Maximum Resolution	800 x 600
Signal-to-Noise Ratio	50 dB
Auto Iris Lens Type	DC drive
Electronic Shutter Range	1 ~ 1/100,000 sec
Wide Dynamic Range	60 dB
White Balance Range	2,000° to 10,000°K
Sensitivity	f/1.3; 2,850°K; SNR >24 dB
Color (1x/33 ms)	0.5 lux
Color SENS (15x/500 ms)	0.12 lux
Dome Attenuation	
Clear	Zero light loss
Smoked	f/1.0 light loss
Construction	
Back-box	Cast aluminum and polycarbonate plastic
Trim ring	Polycarbonate plastic
Bubble	Acrylic plastic
Finish	White
Weight	
Unit	0.77 lb (0.35 kg)
Shipping	2.00 lb (0.91 kg)
Available Languages	Chinese, English, French, German, Italian, Portuguese, Russian, Spanish, and Turkish

ELECTRICAL

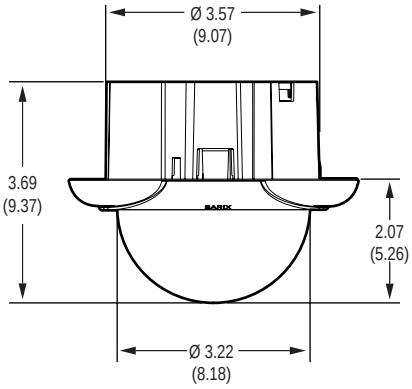
Port	RJ-45 connector for 100Base-TX Auto MDI/MDI-X
Cable Type	Cat5 or better for 100Base-TX
Power Input	PoE (IEEE 802.3af class 3)
Power Consumption	<6 W
Current Consumption	
PoE	<200 mA maximum
Service Port	External 3-connector, 2.5 mm provides NTSC/PAL video output
Accessory Port	Connects Pelco accessories

MECHANICAL

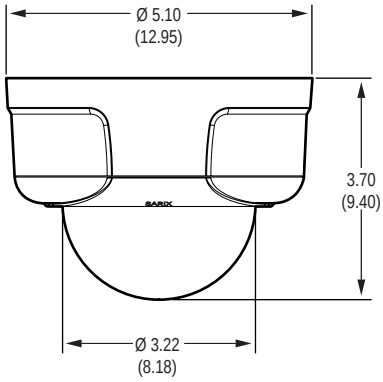
Pan/Tilt Adjustment	Manual
Pan	355°
Tilt	180°
Rotate	220°

ENVIRONMENTAL

Operational Temperature	32° to 122°F (0° to 50°C)
Operational Humidity	20% to 80%, noncondensing



IN-CEILING



SURFACE MOUNT (MOUNTING RING INCLUDED)

NOTE: VALUES IN PARENTHESIS ARE CENTIMETERS; ALL OTHERS ARE INCHES.

COMPACT SIZE. EASY TO INSTALL.

TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 base profile, MPEG-4, and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				MJPEG		H.264 Base Profile		MPEG-4	
MPx	Width	Height	Aspect Ratio	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
0.5	800	600	4:3	30 ips	5.8 Mbps	25 ips	2.0 Mbps	N/A	N/A
0.3	640	480	4:3	30 ips	3.7 Mbps	30 ips	1.6 Mbps	30 ips	1.7 Mbps
0.1	320	240	4:3	30 ips	0.9 Mbps	30 ips	0.4 Mbps	30 ips	0.4 Mbps

Additional Resolutions	640 x 512, 640 x 352, 480 x 368, 480 x 272, 320 x 256, 320 x 176, 4CIF (704 x 489 and 704 x 576), and CIF (352 x 240 and 352 x 288)
Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 2.0 (or later) or Digital Sentry 4.3 (or later)
Open IP Integration	Pelco IP camera API
Minimum System Requirements	
Processor	Intel® Pentium® 4 microprocessor, 1.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	512 MB RAM
Network Interface Card	100 megabits, minimum
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.5 (or later); Internet Explorer® 8.0 (or later) is recommended for configuring analytics
Media Player†	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

LENS

Field of View in Degrees		Aspect Ratio		
		16:9	4:3	5:4
2.8 mm	Horizontal	91	76	73
	Vertical	50	56	58
10.0 mm	Horizontal	25	21	20
	Vertical	14	16	16

MODEL

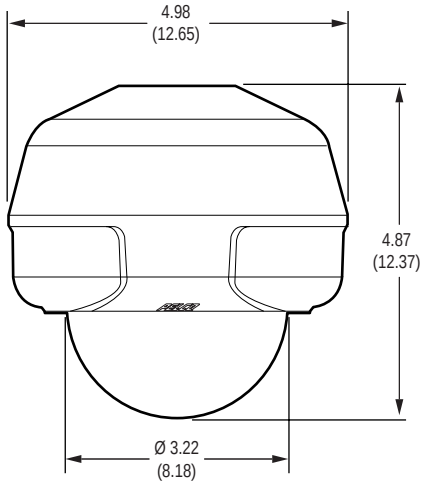
IMS0C10-1	Sarix mini indoor fixed dome network camera, 0.5 megapixel, color, 2.8 ~ 10 mm varifocal lens, white trim ring, clear dome

CERTIFICATIONS/RATINGS/PATENTS

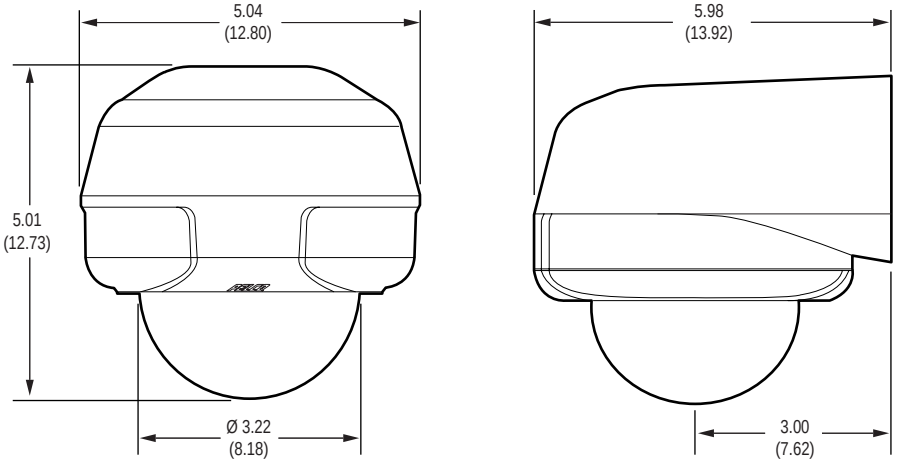
- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- Patents Pending

OPTIONAL ACCESSORIES

IM-PMWT	White pendant mount
IM-WMWT	White integrated wall mount
LDIM-0	White lower dome with smoked bubble
IX-SC	4-foot service/monitor cable, compatible with any standard monitor BNC connector
IA-A	Audio accessory; supplied with two USB extension cables: 1 ft (0.3 m) and 3 ft (0.9 m)
POE20U560G	Single port PoE injector



PENDANT (MOUNT AVAILABLE AS ACCESSORY)



INTEGRATED WALL MOUNT (AVAILABLE AS ACCESSORY)

NOTE: VALUES IN PARENTHESIS ARE CENTIMETERS; ALL OTHERS ARE INCHES.

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Spectra® HD Series Network Dome System

HIGH DEFINITION PAN/TILT/ZOOM HIGH-SPEED DOME

Product Features

- Up to 1280 x 960 Resolution
- 4:3 or 16:9 Aspect Ratio; 960p at 20 Images per Second (ips), 720p at 30 ips
- 1.3 Megapixel (MPx), 18X Optical, Wide Dynamic Range (WDR) Camera
- Ability to Control and Monitor Video Over IP Networks
- Autotracking and Adaptive Motion Detection
- 2 Simultaneous Video Streams: Dual H.264 and Scalable MJPEG
- 360° Continuous Pan Rotation at 400° per Second
- Supported Protocols: TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, NTP, and More
- Power over Ethernet (PoE) IEEE 802.3af
- USB Expansion Slots for Alarms and Audio Accessories
- 16 Preset Tours, 255 Dome Presets, 8 Privacy Zones

Pelco takes its industry-leading Spectra® Series dome into the world of high definition. **Spectra HD** delivers crystal-clear, live streaming images over the Internet using a standard Web browser (Microsoft® Internet Explorer® or Mozilla® Firefox®). With four times the resolution of standard definition domes, **Spectra HD** is an ideal solution to view details such as faces, license plates, tattoos, playing cards (in casinos), or other specific features.

Spectra HD supports High-Profile H.264 compression, a vast improvement in quality over MPEG-4 and 20 times more efficient than M-JPEG. The dome system features open architecture connectivity for third-party software recording solutions allowing integration into virtually any IP-based HD system. It is also compatible with Digital Sentry® video management systems. As with all Pelco IP camera solutions, **Spectra HD** is Endura Enabled™ to record, manage, configure, and view multiple live streams. When connected to an Endura® HD network-based video security system, the dome system has access to EnduraStor™ and EnduraView™ for optimized image quality and bandwidth efficiency.

Spectra HD features the same ease of installation and ease of maintenance that you have come to expect from Spectra. Each dome system consists of a back box, a dome drive, and a lower dome.

Spectra HD includes a choice of four back box models: in-ceiling, environmental in-ceiling, pendant, and environmental pendant. All environmental models meet NEMA Type 4X, IP66 when properly installed.

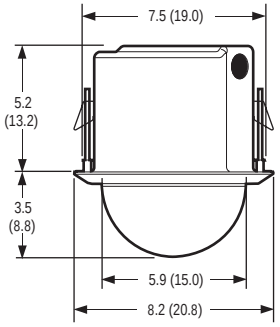
Spectra HD dome system includes many software enhancements that increase performance and make configuration and operation easy. An internal scheduling clock allows for the scheduling of presets and patterns. Window blanking enables a user to configure up to eight, four-sided, user-defined privacy areas. Password protection prevents unauthorized users from changing the system settings. Intuitive multilingual on-screen configuration can be displayed in English, Spanish, Portuguese, Italian, French, German, Russian, Polish, and Turkish.

Spectra HD features include variable speed capabilities, which range from a smooth, fast pan motion of 400 degrees per second to a smooth “creep” speed of 0.1 degree per second. The system is capable of continuous 360 degrees rotation, and it has an “auto flip” feature that allows the dome to rotate 180 degrees and reposition itself for uninterrupted viewing of any subject that passes directly beneath the dome.

SOFTWARE FEATURES

- 255 Presets
- 16 Tours
- ±0.1° Preset Accuracy
- Multilingual Menus (English, Spanish, Portuguese, Italian, German, French, Russian, Polish, and Turkish)
- Password Protection
- 400°/sec Pan Preset Speed and 200°/sec Tilt Preset Speed
- Rotating Discreet Liner with Sealed Fixed Bubble
- 8 Privacy Zones, Configurable in Size
- "Auto Flip" Feature Rotates Dome 180° at Bottom of Tilt Travel
- Configurable Park with Actions
- Proportional Pan/Tilt Continually Decreases Pan/Tilt Speeds in Proportion to Depth of Zoom

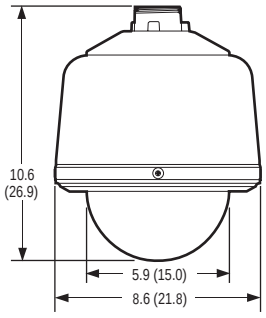
BACK BOX FEATURES



In-Ceiling (Indoor)

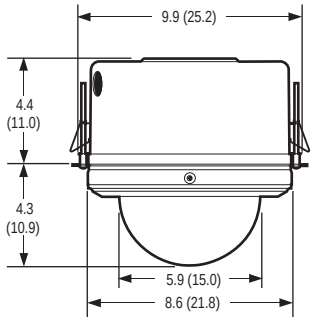
- Single Back Box for Suspended or Hard Ceiling Applications
- Requires 5.25-Inch Space Above Ceiling and 3.25 Inches Below
- Minimum Ceiling Thickness 0.5-Inch; Maximum 1.75 Inches
- Quick Disconnect to Dome Drive
- Aluminum Construction
- Suitable for Use in Environmental Air Handling Spaces

(ENVIRONMENTAL DOME WITH SUN SHROUD SHOWN)



Standard and Environmental Pendant

- Standard and Environmental Models
- Standard Pendant Available in Black or Gray Finish; Environmental Pendant Available in Gray Finish Only
- Quick Disconnect to Dome Drive
- Aluminum Construction
- Environmental Model Includes Sun Shield, Fan, and Heater



Environmental In-Ceiling

- Single Back Box for Hard Ceiling Applications
- Requires 4.4-Inch Space Above Ceiling and 4.3 Inches Below
- Includes Heater and Fan
- Minimum Ceiling Thickness 0.5-Inch; Maximum 1.75 Inches
- Quick Disconnect to Dome Drive
- Aluminum Construction

NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

CAMERA

Sensor Type	1/3-inch CCD
Optical Zoom	18X
Maximum Resolution	1280 x 960
Lens	f/1.6 (focal length, 4.7 ~ 84.6 mm optical)
Aspect Ratios	4:3 or 16:9
Light Sensitivity	f/1.6; 2,850°K; SNR >24dB
Color (33 ms)	0.70 lux
Color (250 ms)	0.07 lux
Mono (33 ms)	0.25 lux
Mono (250 ms)	0.02 lux
Day/Night Capabilities	Yes
IR Cut Filter	Yes
IR Trace	Curves 850 nm and 950 nm
Wide Dynamic Range	60 dB
Iris Control	Auto iris with manual override
Backlight Compensation	Yes

VIDEO

Video Encoding	H.264 high, main, or base profile and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2.5, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution				MJPEG		H.264 High Profile (IP GOP structure)	
MPx	Width	Height	Aspect Ratio	Maximum IPS	Recommended bitrate (Mbps)	Maximum IPS	Recommended bitrate (Mbps)
1.30	1280	960	4:3	20	12.00	20	3.00
0.92	1280	720	16:9	30	12.00	30	2.90
0.49	800	608	4:3	20	5.15	20	1.75
0.31	640	480	4:3	20	3.25	20	1.20
0.23	640	352	16:9	30	3.60	30	1.15
0.18	480	368	4:3	20	1.85	20	0.75
0.13	480	272	16:9	30	2.05	30	0.75
0.08	320	240	4:3	20	0.80	20	0.40
0.06	320	176	16:9	30	0.90	30	0.35

Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour®), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 2.0 (or later) Digital Sentry 4.2 (or later)
Open IP Integration	Pelco IP camera API
Minimum System Requirements	
Processor	Intel® Core™ 2 Duo microprocessor, 2.6 GHz
Operating System	Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	2 GB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer 7.0 (or later) or Firefox 3.5 (or later); Internet Explorer 8.0 (or later) is recommended for configuring analytics
Media Player†	Pelco Media Player‡ or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

‡Pelco Media Player is recommended for control, smoothness, and reduced latency as compared to QuickTime.

TECHNICAL SPECIFICATIONS

GENERAL

Construction		
Back Box	Aluminum	
Dome Drive	Aluminum, thermo plastic	
Lower Dome	Acrylic	
Light Attenuation		
Smoked	f/0.5 light loss	
Clear	Zero light loss	
Cable Entry (back box)		
In-Ceiling	0.75-inch conduit fitting	
Pendant	Through 1.5-inch NPT pendant mount	
Weight (approximate)	Unit	Shipping
In-Ceiling	5.2 lb (2.4 kg)	8 lb (3.6 kg)
Environmental In-Ceiling	6.2 lb (2.8 kg)	10 lb (4.5 kg)
Standard Pendant	6.5 lb (3.0 kg)	11 lb (5.0 kg)
Environmental Pendant	7.6 lb (3.5 kg)	12 lb (5.4 kg)
Environment		
In-Ceiling	Indoor	
Environmental In-Ceiling	Outdoor	
Pendant, Standard, and Environmental	Indoor/outdoor	
Operating Temperature		
In-Ceiling	32° to 122°F (0° to 50°C)	
Standard Pendant	(Assumes no wind chill factor)	
Maximum	113°F (45°C) absolute maximum; 95°F (35°C) sustained maximum	
Minimum	25°F (–4°C) sustained minimum	
Environmental In-Ceiling, Environmental Pendant	(Assumes no wind chill factor)	
Maximum	140°F (60°C) absolute maximum; 122°F (50°C) sustained maximum	
Minimum	–60°F (–51°C) absolute minimum; prevents icing at sustained minimum of –22°F (–30°C); de-ices 0.1 inch (2.5 mm) within 3 hours after power-up at –22°F (–30°C)	
Effective Projected Area (EPA)	20.5 square inches (without mount), 47 square inches (with IWM Series mount)	

MECHANICAL

(Dome Drive Only)

Variable Speed	0.1° to 400°
Preset Accuracy	±0.1°
Pan Movement	360° continuous pan rotation
Vertical Tilt	+0° to –90°
Manual Pan/Tilt Speeds	
Pan	0.1° to 80°/sec manual operation, 150°/sec Turbo
Tilt	0.1° to 40°/sec manual operation
Preset Speeds	
Pan	400°/sec
Tilt	160°/sec

ELECTRICAL

Ports	RJ-45 connector for 100Base-TX Auto MDI/MDI-X Autonegotiate/Manual setting
Cabling Type	Cat5 or better for 100Base-TX
Input Voltage	18 to 32 VAC; 24 VAC nominal 22 to 27 VDC; 24 VDC nominal
Input Power	
24 VAC	23 VA nominal (without heater); 73 VA nominal (with heater)
24 VDC	0.7 A nominal (without heater); 3 A nominal (with heater)
PoE	IEEE802.3af (without heater)
Fuse	1.25 A

MODEL NUMBERS

SYSTEM MODEL NUMBERS

Type	Back Box Color	Lower Dome	HD, 1.3 MPx, 18X Color
In-ceiling, indoor	Black with white trim ring	Smoked	S5118-FW0
		Clear	S5118-FW1
In-ceiling, environmental	Black with black trim ring	Smoked	S5118-YB0
		Clear	S5118-YB1
Pendant, standard	Gray	Smoked	S5118-PG0
		Clear	S5118-PG1
	Black	Smoked	S5118-PB0
		Clear	S5118-PB1
Pendant, environmental	Gray	Smoked	S5118-EG0
		Clear	S5118-EG1

COMPONENT MODEL NUMBERS

Back Box		Lower Dome		Dome Drive	
B5-F	HD, in-ceiling, gray	LDHQF-0	High-quality, smoked, in-ceiling	D5118	HD, 1.3 Mpx, 18X optical zoom
B5-F-E	HD, environmental in-ceiling, gray	LDHQF-1	High-quality, clear, in-ceiling		
B5-PG	HD, pendant, gray	LDHQPB-0	High-quality, smoked, pendant		
B5-PB	HD, pendant, black	LDHQPB-1	High-quality, clear, pendant		
B5-PG-E	HD, environmental pendant, gray				

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class A*
- FCC, Class A*
- UL/cUL Listed*
- C-Tick*
- U.S. Patents 5,931,432; 6,793,415 B2; 6,802,656 B2; 6,821,222 B2; 7,161,615 B2
- Meets NEMA Type 4X and IP66 standards when installed properly (B5-F-E and B5-PG-E)*

*As of the date of this publication, these certifications are pending. Please consult the factory, our Web site at *www.pelco.com*, or the most recent B.O.S.S.® update for the current status of certifications.

MODEL NUMBERS

RECOMMENDED MOUNTS

In-Ceiling Domes

SD5-P	2' x 2' drop ceiling panel, aluminum construction; replaces 2' x 2' ceiling tile
SCA1	Support rails for B5-F; for use in ceiling tile applications

Pendant Domes

BB5-PCA-BK	Pendant conduit adapter, black
BB5-PCA-GY	Pendant conduit adapter, gray
IWM Series	Wall mount, with or without integral 24 VAC, 100 VA transformer; black or gray finish; can be adapted for corner, parapet or pole application
MRCA	Ceiling mount, black
PP4348	Parapet roof mount
PP350/PP351	Parapet wall/roof mount
SWM Series	Compact wall mount, black or gray finish; can be adapted for corner or pole applications

RECOMMENDED POWER SUPPLIES

MCS Series	Indoor, 24 VAC power supply
WCS Series	Outdoor, 24 VAC power supply

Refer to individual power supply specifications for more information.

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Spectra® IV IP Series Network Dome System

H.264, DIGITAL PAN/TILT/ZOOM HIGH-SPEED DOME

Product Features

- Ability to Control and Monitor Video Over IP Networks
- Simultaneous IP and Analog Video and Control
- H.264, MPEG-4, and MJPEG Compression
- Supported Protocols: TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour®), and 802.1x (EAP)
- Multilevel Password Protection
- 3 Autofocus, High Resolution Integrated Camera/Optics Packages
- Horizontal Zone and Window Blanking
- Sensitivity Down to 0.00015 lux PAL (35X Models)
- On-Screen Compass and Tilt Display
- Up to 2 Simultaneous Video Streams
- Web Viewing, up to 16 Cameras Simultaneously

ENDURA ENABLED

- Open IP Standards
- Bidirectional Full-Duplex Audio

Spectra® IV IP dome systems incorporate all of the features and functions of Spectra IV (including analog), while allowing you to control and monitor video over an IP network from virtually anywhere in the world. Spectra IV IP is a high-speed dome with a built-in 100Base-TX network interface for live streaming to any network application.

Spectra IV IP supports two simultaneous video streams. The two streams can be compressed in MJPEG, MPEG-4, and H.264 formats across several resolution configurations. The streams can be configured in a variety of frame rates, bit rates, and group of pictures (GOP) structures for additional bandwidth administration. The H.264 compression video files are up to 20 times smaller than MJPEG, making network video storage more affordable.

Spectra IV IP allows you to view and control analog video while viewing, recording, and controlling network IP video. There is no need to abandon your current analog infrastructure if you are making the move to network video as a recording solution. Continue to monitor and control video in the analog domain while recording video in the network domain, and let Spectra IV IP's professional compression method do the work for you without the need for external encoders.

Spectra IV IP dome system consists of a back box, a dome drive, and a lower dome. These three system components are interchangeable with other Spectra IV IP dome systems, making retrofitting and application adjustments simple.

Spectra IV IP features several back box options. All back boxes feature built-in memory, which can be used to store camera and location-specific dome settings, including labels, presets, patterns, and zones.

All cameras in **Spectra IV IP** dome drives feature an EXview HAD™ imager for increased sensitivity and LowLight™ technology allowing the cameras to compensate for scenes where minimal light is present. Both the 27X and the 35X cameras feature built-in motion detection and advanced 128X wide dynamic range (WDR) that enables the system to compensate for scenes where dramatic contrasts in lighting are present. The 35X day/night camera's electronic image stabilization digitally reduces blurring of the camera image due to vibration caused by external sources, such as wind and traffic.

Web Interface

Spectra IV IP uses a standard Web browser for powerful remote setup and administration. Up to 16 cameras can be viewed on the same network.

Network protocols such as Secure Sockets Layer (SSL) configuration for security certificates, Secure Shell (SSH) for remote logon, and Quality of Service (QoS) for priority or guarantee data flow can be managed using a Web browser.

Systemization

Spectra IV IP easily connects to Pelco IP and hybrid systems such as Endura® version 1.5 (or later), MPEG-4; Endura version 2.0 (or later), H.264; Digital Sentry® version 4.2 (or later); DX8100 version 2.0 (or later); and DVR5100 version 1.5.4 (or later). The camera also features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) for interfacing to Pelco's network cameras.

CAMERA/OPTICS

	Day/Night (35X)	Day/Night (27X)	Day/Night (23X)
Signal Format	NTSC **(DD4CBW35)** PAL **(DD4CBW35-X)**	NTSC **(DD427)** PAL **(DD427-X)**	NTSC **(DD423)** PAL **(DD423-X)**
Scanning System	Interlace/Progressive selectable	Interlace/Progressive selectable	2:1 Interlace
Image Sensor Effective Pixels NTSC PAL	1/4-inch EXview HAD™ 768 (H) X 494 (V) 752 (H) X 582 (V)	1/4-inch EXview HAD 768 (H) X 494 (V) 752 (H) X 582 (V)	1/4-inch EXview HAD 768 (H) X 494 (V) 752 (H) X 582 (V)
Horizontal Resolution NTSC PAL	 >540 TV Lines >540 TV Lines	 >540 TV Lines >540 TV Lines	 540 TV Lines 540 TV Lines
Lens	f/1.4 (focal length, 3.4 ~ 119 mm)	f/1.4 (focal length, 3.4 ~ 91.8 mm)	f/1.6 (focal length, 3.6 ~ 82.8 mm)
Zoom	35X optical, 12X digital	27X optical, 12X digital	23X optical, 12X digital
Zoom Speed (optical range)	3.2/4.6/6.6 seconds	3.2/4.6/6.6 seconds	2.9/4.2/5.8 seconds
Horizontal Angle of view Focus	55.8° at 3.4 mm wide zoom; 1.7° at 119 mm telephoto zoom Automatic with manual override	55.8° at 3.4 mm wide zoom; 2.3° at 91.8 mm telephoto zoom Automatic with manual override	54° at 3.6 mm wide zoom; 2.5° at 82.8 mm telephoto zoom Automatic with manual override
Maximum Sensitivity at 35 IRE NTSC/EIA PAL/CCIR 	 0.55 lux at 1/60 sec **(color)** 0.018 lux at 1/2 sec **(color)** 0.00018 lux at 1/2 sec **(B-W)** 0.45 lux at 1/50 sec **(color)** 0.015 lux at 1/1.5 sec **(color)** 0.00015 lux at 1/1.5 sec **(B-W)**	 0.55 lux at 1/60 sec **(color)** 0.018 lux at 1/2 sec **(color)** 0.00018 lux at 1/2 sec **(B-W)** 0.45 lux at 1/50 sec **(color)** 0.015 lux at 1/1.5 sec **(color)** 0.00015 lux at 1/1.5 sec **(B-W)**	 0.65 lux at 1/60 sec **(color)** 0.15 lux at 1/60 sec **(B-W)** 0.55 lux at 1/50 sec **(color)** 0.12 lux at 1/50 sec **(B-W)**
Sync System	Internal/AC line lock, phase adjustable using remote control, V-Sync	Internal/AC line lock, phase adjustable using remote control, V-Sync	Internal/AC line lock, phase adjustable using remote control, V-Sync
White Balance	Automatic with manual override	Automatic with manual override	Automatic with manual override
Shutter Speed NTSC PAL	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000 1/1.5 ~ 1/30,000	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000 1/1.5 ~ 1/30,000	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000 1/1.5 ~ 1/30,000
Iris Control	Automatic iris control with manual override	Automatic iris control with manual override	Automatic iris control with manual override
Gain Control	Automatic/OFF	Automatic/OFF	Automatic/OFF
Video Output	1 Vp-p, 75 ohms	1 Vp-p, 75 ohms	1 Vp-p, 75 ohms
Video Signal-to-Noise	>50 dB	>50 dB	>50 dB
Wide Dynamic Range	128X	128X	—
Electronic Image Stabilization	Integrated/Selectable	—	—
Image Enhancement	Integrated/Selectable	—	—
Video Motion Detection	Integrated	Integrated	—

TECHNICAL SPECIFICATIONS

VIDEO

Video Encoding	H.264 base profile, MPEG-4, and MJPEG
Video Streams	Up to 2 simultaneous streams; the second stream is variable based on the setup of the primary stream
Frame Rate	Up to 30, 25, 24, 15, 12.5, 12, 10, 8, 7. 5, 6, 5, 4, 3, 2, 1 (dependent upon coding, resolution, and stream configuration)

Available Resolutions

Resolution			MJPEG		H.264 Base Profile		MPEG-4	
Width	Height	Format	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate	Maximum IPS	Recommended Bit Rate
704	480	NTSC	30 ips	5.4 Mbps	30 ips	1.9 Mbps	30 ips	2.0 Mbps
352	240	NTSC	30 ips	1.3 Mbps	30 ips	0.5 Mbps	30 ips	0.6 Mbps
704	576	PAL	25 ips	5.4 Mbps	25 ips	1.9 Mbps	25 ips	2.0 Mbps

Supported Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, mDNS (Bonjour), and 802.1x (EAP)
Users	
Unicast	Up to 20 simultaneous users depending on resolution settings (2 guaranteed streams)
Multicast	Unlimited users H.264 or MPEG-4
Security Access	Password protected
Software Interface	Web browser view and setup, up to 16 cameras
Pelco System Integration	Endura 1.5 or later (MPEG-4) or Endura 2.0 or later (H.264); Digital Sentry 4.2 IP bundle 3 or later; DX8100 Series 2.0 or later; and DVR5100 version 1.5.4 or later
Open IP Integration	Pelco IP camera API
Minimum System Requirements	
Processor	Intel® Pentium® 4 microprocessor, 1.6 GHz
Operating System	Microsoft® Windows® XP, Windows Vista®, or Mac® OS X 10.4 (or later)
Memory	512 MB RAM
Network Interface Card	100 megabits (or greater)
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
Web Browser*	Internet Explorer® 7.0 (or later) or Mozilla® Firefox® 3.0 (or later)
Media Player†	Pelco Media Player or QuickTime® 7.6.5 for Windows XP, Windows Vista, or QuickTime 7.6.4 for Mac OS X 10.4

*Internet Explorer is not supported by Mac OS X 10.4.

†This product is not compatible with QuickTime version 7.6.4 for Windows XP or Windows Vista. If you have this version installed on your PC, you will need to upgrade to QuickTime version 7.6.5.

DOME DRIVE FEATURES

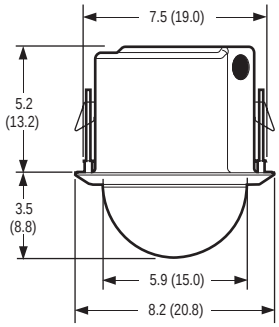
35X and 27X Models

- 256 Presets
- ±0.1° Preset Accuracy
- Electronic Image Stabilization (35X model)
- Image Enhancement (35X model)
- Multilingual Menus (English, Spanish, Portuguese, Italian, French, German, Russian, Polish, Turkish, and Czech)
- RJ-45 Data Port for Software Update and Setup
- On-Screen Compass, Tilt, and Zoom Display
- Password Protection
- 400°/sec Pan Preset Speed and 200°/sec Tilt Preset Speed
- Rotating Discreet Liner with Sealed Fixed Bubble
- Window Blanking: Up to 8, Four-Sided, User-Defined Shapes
- 8 Zones (configurable in size) Can Be Labeled with up to 20 Characters Each or Set to Output Blank Video
- 7 Alarm Inputs
- 1 Auxiliary (Form C) Relay Output and 1 Open Collector Auxiliary Output (can be alternately configured to operate upon alarm)
- Configurable Locations of Labels and On-Screen Displays
- Action on Alarm: Alarms Can Be Individually Configured for 3 Priority Levels, to Initiate a Stored Pattern, or to Go to an Associated Preset When Received
- Resume After Alarm: Allows the Dome to Return to a Previously Configured State After Alarm Acknowledgement or to its Previous Position Before Alarm
- Multiple Park and Power-Up Action
- Patterns: Up to 8, On-Screen, User-Defined Configurable Patterns; Includes Pan, Tilt, Zoom, and Preset Functions
- Proportional Pan/Tilt: Continually Decreases Pan/Tilt Speeds in Proportion to Depth of Zoom
- Variable Scan Speed: Scan Speed Can Be Configurable Between 1 to 40°/sec
- Pan Motion Allows 0.1° to 150°/sec Pan Speed
- Configurable Limit Stops for Auto/Random/Frame Scan Modes
- Autosensing Protocol (Coaxitron®, RS-422 Pelco P and Pelco D, Sensormatic®, Vicon®); Accepts Other Control Protocols with Optional Translator Card
- Digital Position and Zoom Control and Feedback Through Pelco D Protocol
- Built-in Menu System for Setup of Configurable Functions
- “Auto Flip” Rotates Dome 180° at Bottom of Tilt Travel
- Configurable Zoom Speeds
- Freeze Frame During Presets

23X Models

- 64 Presets
- ±0.1° Preset Accuracy
- Multilingual Menus (English, Spanish, Portuguese, Italian, French, German, Russian, Polish, Turkish, and Czech)
- RJ-45 Data Port for Software Update and Setup
- On-Screen Compass, Tilt, and Zoom Display
- Password Protection
- 400°/sec Pan Preset Speed and 200°/sec Tilt Preset Speed
- Rotating Discreet Liner with Sealed Fixed Bubble
- Window Blanking: Up to 4, Four-Sided, User-Defined Shapes
- 8 Zones (configurable in size) Can Be Labeled with up to 20 Characters Each or Set to Output Blank Video
- 1 Alarm Input
- 1 Auxiliary (Form C) Relay Output
- Configurable Locations of Labels and On-Screen Displays
- Patterns: 1 On-Screen, User-Defined Configurable Pattern; Includes Pan, Tilt, Zoom, and Preset Functions
- Proportional Pan/Tilt: Continually Decreases Pan/Tilt Speeds in Proportion to Depth of Zoom
- Variable Scan Speed: Scan Speed Can Be Configurable Between 1 to 40°/sec
- Pan Motion Allows 0.1° to 150°/sec Pan Speed
- Autosensing Protocol (Coaxitron, RS-422 Pelco P and Pelco D, Sensormatic, Vicon); Accepts Other Control Protocols with Optional Translator Card
- Digital Position and Zoom Control and Feedback through Pelco D Protocol
- Built-in Menu System for Setup of Configurable Functions
- “Auto Flip” Rotates Dome 180° at Bottom of Tilt Travel
- Freeze Frame During Presets

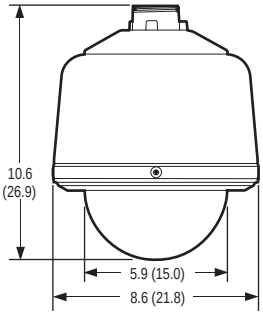
BACK BOX FEATURES



In-Ceiling (Indoor)

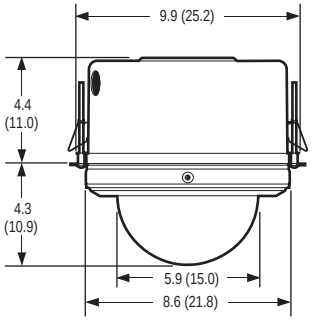
- Built-in Memory Stores Camera/Dome Settings
- Single Back Box for Suspended or Hard Ceiling Applications
- Requires 5.25-Inch Space Above Ceiling and 3.25 Inches Below
- Minimum Ceiling Thickness 0.5-Inch; Maximum 1.75 Inches
- Quick Disconnect to Dome Drive
- Aluminum Construction
- Suitable for Use in Environmental Air Handling Spaces

(ENVIRONMENTAL DOME WITH SUN SHROUD SHOWN)



Standard and Environmental Pendant

- Standard and Environmental Models
- Built-in Memory Stores Camera/Dome Settings
- Standard Pendant Available in Black or Gray Finish; Environmental Pendant Gray Finish Only
- Quick Disconnect to Dome Drive
- Aluminum Construction
- Environmental Model Includes Sun Shield, Fan, and Heater

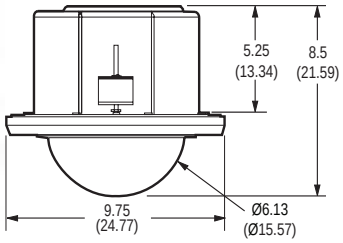


NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

Environmental In-Ceiling

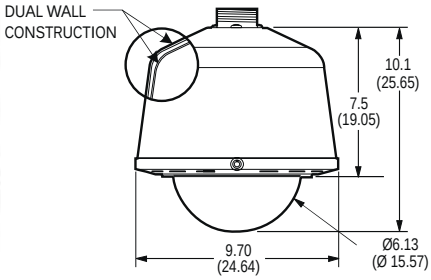
- Built-in Memory Stores Camera/Dome Settings
- Single Back Box for Hard Ceiling Applications
- Requires 4.4-Inch Space Above Ceiling and 4.3 Inches Below
- Includes Heater and Fan
- Minimum Ceiling Thickness 0.5-Inch; Maximum 1.75 Inches
- Quick Disconnect to Dome Drive
- Aluminum Construction

BACK BOX FEATURES



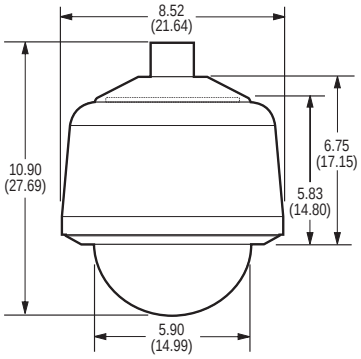
Heavy-Duty In-Ceiling (Indoor)
Available only with 27X and 35X models

- Built-in Memory Stores Camera/Dome Settings
- Single Back Box for Hard Ceiling Applications
- Requires 5.25-Inch Space Above Ceiling and 3.25 Inches Below
- Quick Disconnect to Dome Drive
- Reinforced Mounting System
- Heavy-Duty Polycarbonate Dome Bubble
- Aluminum Trim Ring with Barrel-Type Key Locks
- Optional Protective Cage



Heavy-Duty Pendant
Available only with 27X and 35X models

- Standard and Environmental Models
- Built-in Memory Stores Camera/Dome Settings
- Quick Disconnect to Dome Drive
- Dual Wall Construction
- Heavy-Duty Polycarbonate Dome Bubble
- Aluminum Trim Ring with Barrel-Type Key Locks
- Optional Protective Cage
- Environmental Model Includes Sun Shield, Fan, and Heater



NOTE: VALUES IN PARENTHESES ARE
CENTIMETERS; ALL OTHERS ARE INCHES.

Stainless Steel Pendant
Available only with 27X and 35X models

- Standard and Environmental Models
- Built-in Memory Stores Camera/Dome Settings
- Quick Disconnect to Dome Drive
- All Stainless Steel Construction
- Includes Sun Shield, Fan, and Heater

TECHNICAL SPECIFICATIONS

GENERAL

Construction		
Back Box		
In-Ceiling	Aluminum	
Pendant	Aluminum	
Heavy-Duty	Aluminum	
Stainless Steel	316 stainless steel; gray, polyurethane powder coated finish	
Dome Drive	Aluminum, thermo plastic	
Lower Dome		
In-Ceiling	Acrylic	
Pendant	Acrylic	
Heavy-Duty	Polycarbonate, 0.09-inch thick	
Stainless Steel	Acrylic	
Light Attenuation		
Smoked	f/0.5 light loss	
Clear	Zero light loss	
Chrome	f/2.0 light loss	
Gold	f/2.0 light loss	
Cable Entry (back box)		
In-Ceiling	0.75-inch conduit fitting	
Pendant	Through 1.5-inch NPT pendant mount	
Weight (approximate)	Unit	Shipping
In-Ceiling	5.2 lb (2.4 kg)	8 lb (3.6 kg)
Environmental In-Ceiling	6.2 lb (2.8 kg)	10 lb (4.5 kg)
Standard Pendant	6.5 lb (3.0 kg)	11 lb (5.0 kg)
Environmental Pendant	7.6 lb (3.5 kg)	12 lb (5.4 kg)
Heavy-Duty In-Ceiling*	7.3 lb (3.3 kg)	12 lb (5.4 kg)
Heavy-Duty Pendant*	9.8 lb (4.5 kg)	16 lb (7.3 kg)
Heavy-Duty Environmental Pendant*	9.8 lb (4.5 kg)	16 lb (7.3 kg)
Stainless Steel	10.1 lb (4.6 kg)	16 lb (7.3 kg)
Environment		
In-Ceiling	Indoor	
Environmental In-Ceiling	Outdoor	
Pendant, Standard and Environmental	Indoor/outdoor	
Heavy-Duty In-Ceiling	Indoor	
Heavy-Duty Pendant, Standard & Environmental	Indoor/outdoor	
Stainless Steel	Indoor/outdoor	
Operating Temperature		
In-Ceiling	32° to 122°F (0° to 50°C)	
Standard Pendant	(Assumes no wind chill factor)	
Maximum	113°F (45°C) absolute maximum; 95°F (35°C) sustained maximum	
Minimum	25°F (–4°C) sustained minimum	
Environmental In-Ceiling and Environmental Pendant	(Assumes no wind chill factor)	
Maximum	140°F (60°C) absolute maximum; 122°F (50°C) sustained maximum	
Minimum	–60°F (–51°C) absolute minimum; prevents icing at sustained minimum of –50°F (–45°C); de-ices 0.1 inch (2.5 mm) within 3 hours after power-up	
Heavy-Duty In-Ceiling	32° to 122°F (0° to 50°C)	
Heavy-Duty Pendant	32° to 122°F (0° to 50°C) absolute maximum; 32° to 122°F (0° to 50°C) sustained maximum	
Heavy-Duty Environmental Pendant	(Assumes no wind chill factor)	
Maximum	140°F (60°C) absolute maximum; 122°F (50°C) sustained maximum	
Minimum	–60°F (–51°C) absolute minimum; minimal icing at sustained minimum of –50°F (–45°C); prevents icing at sustained minimum of –40°F (–40°C); de-ices 0.1 inch (2.5 mm) within 3 hours after power-up	
Stainless Steel	(Assumes no wind chill factor)	
Maximum	140°F (60°C) absolute maximum; 122°F (50°C) sustained maximum	
Minimum	–60°F (–51°C) absolute minimum; minimal icing at sustained minimum of –50°F (–45°C); prevents icing at sustained minimum of –40°F (–40°C); de-ices 0.1 inch (2.5 mm) within 3 hours after power-up	
Effective Projected Area (EPA)	20.5 square inches (without mount); 47 square inches (with IWM Series mount)	

*Add 2 lb (0.90 kg) to the total weight if the system includes a lower dome cage.

MECHANICAL

(Dome Drive Only)

Pan Movement	360° continuous pan rotation
Vertical Tilt	Unobstructed +2° to –92°
Manual Pan/Tilt Speeds	
Pan	0.1° to 80°/sec manual operation, 150°/sec Turbo
Tilt	0.1° to 40°/sec manual operation
Preset Speeds	
Pan	400°/sec
Tilt	200°/sec For variable-speed operation, an appropriate controller is required. (With nonvariable speed control, Spectra IV IP pan/tilt speed is 20°/sec)

AUDIO

Streaming	Bidirectional: full or half duplex
Input/Output	Terminal block, analog for microphone and speaker; 600-ohm differential; 1 Vp-p maximum signal level
Compression	G.711 PCM 8 bit, 8 kHz mono at 64 kbit/s

ELECTRICAL

Ports	RJ-45 connector for 100Base-TX Auto MDI/MDI-X Autonegotiate/Manual setting
Cabling Type	Cat5 or better for 100Base-TX
Input Voltage	18 to 32 VAC; 24 VAC nominal 22 to 27 VDC; 24 VDC nominal
Input Power	
24 VAC	23 VA nominal (without heater); 73 VA nominal (with heater)
24 VDC	0.7 A nominal (without heater); 3 A nominal (with heater)
Fuse	1.25 A
Auxiliary Outputs	2
Alarm Inputs	7

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- U.S. Patents 5,931,432; 6,793,415 B2; 6,802,656 B2; 6,821,222 B2; 7,161,615 B2

Meets the following standards:

- NEMA Type 4X, IP66 when installed properly (BB4E-F-E, BB4E-PB, BB4E-PG, BB4E-PG-E, BB4EHD-PG, BB4EHD-PG-E, and BB4E-PSG-E)
- NEMA Type 1, IP40 (BB4E-F and BB4EHD-F)

RELATED PRODUCTS

OPTIONAL ACCESSORIES

HD-KEYS	1 set of keys for heavy-duty lower dome
IPS-CABLE	Remote monitor cable and software kit consisting of the Spectra IV remote monitor interface cable and necessary software for use with a PC; refer to *www.pelco.com* for a list of compatible devices
IPS-RDPE-2	Remote data port; 24 VAC, wall/pole mount video/data breakout box; allows ground-level control/configuration when used with the IPS-CABLE

RECOMMENDED MOUNTS

In-Ceiling Domes

SD5-P	2' x 2' drop ceiling panel, aluminum construction; replaces 2' x 2' ceiling tile
SCA1	Support rails for BB4N-F; for use in ceiling tile applications

Pendant Domes

BB5-PCA-BK	Pendant conduit adapter, black
BB5-PCA-GY	Pendant conduit adapter, gray
IWM Series	Wall mount, with or without integral 24 VAC, 100 VA transformer; black or gray finish; can be adapted for corner, parapet or pole application
MRCA	Ceiling mount, black
PP4348	Parapet roof mount
PP350/PP351	Parapet wall/roof mount
SWM Series	Compact wall mount, black or gray finish; can be adapted for corner or pole applications
IDM4012SS	Stainless steel wall mount with feedthrough capabilities

RECOMMENDED POWER SUPPLIES

MCS Series	Indoor, 24 VAC power supply
WCS Series	Outdoor, 24 VAC power supply

Refer to individual power supply specifications for more information.

SYSTEM MODEL NUMBERS

Type	Back Box Color	Lower Dome	Cage	35X Day/Night*	27X Day/Night*	23X Day/Night*
In-Ceiling, Indoor	Black	Smoked		SD4E35-F0	SD4E27-F0	SD4E23-F0
		Clear		SD4E35-F1	SD4E27-F1	SD4E23-F1
		Chrome		SD4E35-F2	SD4E27-F2	SD4E23-F2
		Gold		SD4E35-F3	SD4E27-F3	SD4E23-F3
In-Ceiling, Environmental†	Black	Smoked		SD4E35-F-E0	SD4E27-F-E0	SD4E23-F-E0
		Clear		SD4E35-F-E1	SD4E27-F-E1	SD4E23-F-E1
		Chrome		SD4E35-F-E2	SD4E27-F-E2	SD4E23-F-E2
		Gold		SD4E35-F-E3	SD4E27-F-E3	SD4E23-F-E3
Pendant, Standard	Black	Smoked		SD4E35-PB-0	SD4E27-PB-0	SD4E23-PB-0
		Clear		SD4E35-PB-1	SD4E27-PB-1	SD4E23-PB-1
		Chrome		SD4E35-PB-2	SD4E27-PB-2	SD4E23-PB-2
		Gold		SD4E35-PB-3	SD4E27-PB-3	SD4E23-PB-3
	Light Gray	Smoked		SD4E35-PG-0	SD4E27-PG-0	SD4E23-PG-0
		Clear		SD4E35-PG-1	SD4E27-PG-1	SD4E23-PG-1
		Chrome		SD4E35-PG-2	SD4E27-PG-2	SD4E23-PG-2
		Gold		SD4E35-PG-3	SD4E27-PG-3	SD4E23-PG-3
Pendant, Environmental†	Light Gray	Smoked		SD4E35-PG-E0	SD4E27-PG-E0	SD4E23-PG-E0
		Clear		SD4E35-PG-E1	SD4E27-PG-E1	SD4E23-PG-E1
Heavy-Duty In-Ceiling, Indoor	Light Gray	Smoked	No	SD4E35-HF0	SD4E27-HF0	
			Yes	SD4E35-HCF0	SD4E27-HCF0	
		Clear	No	SD4E35-HF1	SD4E27-HF1	
			Yes	SD4E35-HCF1	SD4E27-HCF1	
Heavy-Duty Pendant, Indoor		Smoked	No	SD4E35-HP0	SD4E27-HP0	
			Yes	SD4E35-HCP0	SD4E27-HCP0	
		Clear	No	SD4E35-HP1	SD4E27-HP1	
			Yes	SD4E35-HCP1	SD4E27-HCP1	
Heavy-Duty Pendant, Environmental†		Smoked	No	SD4E35-HPE0	SD4E27-HPE0	
			Yes	SD4E35-HCPE0	SD4E27-HCPE0	
		Clear	No	SD4E35-HPE1	SD4E27-HPE1	
			Yes	SD4E35-HCPE1	SD4E27-HCPE1	
Stainless Steel Pendant, Environmental†	Stainless Steel	Smoked		SD4E35-PSGE0	SD4E27-PSGE0	
		Clear		SD4E35-PSGE1	SD4E27-PSGE1	

*For PAL and CCIR models add “-X” suffix to part number (for example, BB4E-PG-E-X).

†Environmental dome systems include a heater, fan, and sun shield.

COMPONENT MODEL NUMBERS

Back Box*		Dome Drive*		Lower Dome‡	
BB4E-F	In-ceiling, black, with back box memory	DD423	Day/Night (NTSC) camera (23X)	LD5F-0	Smoked, in-ceiling
BB4E-F-E	In-ceiling, black, environmental, with back box memory	DD427	Day/Night (NTSC) camera (27X)	LD5F-1	Clear, in-ceiling
BB4E-PB	Pendant mount, black, standard, with back box memory	DD4CBW35	Day/Night (NTSC) camera (35X)	LD5F-2	Chrome, in-ceiling
BB4E-PG	Pendant mount, gray, standard, with back box memory			LD5F-3	Gold, in-ceiling
BB4E-PG-E†	Pendant mount, gray, environmental, with back box memory			LD53PB-0	Smoked, pendant, black
				LD53PB-1	Clear, pendant, black
				LD53PB-2	Chrome, pendant, black§
				LD53PB-3	Gold, pendant, black§
BB4EHD-F	Heavy-duty, in-ceiling, gray, with back box memory			LD53HDF-1	Clear, in-ceiling, heavy-duty
				LD53HDCF-1	Clear, in-ceiling, heavy-duty with cage
BB4EHD-PG	Heavy-duty, pendant, gray, with back box memory			LD53HDPB-1	Clear, pendant, heavy-duty
BB4EHD-PG-E†	Heavy-duty, environmental pendant, gray, with back box memory			LD53HDCPB-1	Clear, pendant, heavy-duty, with cage
BB4E-PSG-E†	Stainless steel, environmental pendant, gray 316 SS, with back box memory			LD53PSB-0	Smoked, pendant, black trim ring, 316 SS
				LD53PSB-1	Clear, pendant, black trim ring, 316 SS

Note: For environmental applications you must order an environmental back box.

*For PAL and CCIR models add "-X" suffix to part number (for example, BB4E-PG-E-X).
†Environmental dome systems include a heater, fan, and sun shield.
‡For environmental pendant back boxes, use the pendant lower domes.
§Not recommended for outdoor use due to possible light reflections.

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Spectra® IV IP Series Network Dome System

DIGITAL PAN/TILT/ZOOM HIGH-SPEED DOME

Product Features

- Ability to Control and Monitor Video Over IP Networks
- Simultaneous IP and Analog Video and Control
- 3 Simultaneous Video Streams: Dual MPEG-4 and MJPEG
- Supported Protocols: TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, and NTP
- Multilevel Password Protection
- 3 Autofocus, High Resolution Integrated Camera/Optics Packages
- Horizontal Zone and Window Blanking
- Sensitivity Down to 0.00018 Lux (35X Models)
- On-Screen Compass and Tilt Display
- Web Browser, Endura®, and Third-Party Network Interface
- Bidirectional Full-Duplex Audio

Spectra® IV IP dome systems incorporate all of the features and functions of Spectra IV (including analog), while allowing you to control and monitor video over an IP network from virtually anywhere in the world. **Spectra IV IP** is a high-speed dome with a built-in 100Base-TX network interface for live streaming to any network application. The dome system also features open architecture connectivity for third-party software recording solutions allowing integration into virtually any IP-based system. It is also compatible with Digital Sentry® video management systems. As with all Pelco IP camera solutions, **Spectra IV IP** is Endura Enabled™ to record, manage, configure, and view multiple live streams. When connected to an Endura® network-based video security system, the dome system has access to EnduraStor™ and EnduraView™ for optimized image quality and bandwidth efficiency.

Spectra IV IP is one of the only solutions on the market that allows you to view and control analog video while viewing, recording, and controlling network IP video. There is no need to abandon your current analog infrastructure if you are making the move to network video as a recording solution. Continue to monitor and control video in the analog domain while recording video in the network domain, and let **Spectra IV IP's** professional compression method do the work for you without the need for external encoders.

Spectra IV IP features the same ease of installation and ease of maintenance that you have come to expect from Spectra IV. Each dome system consists of a back box, a dome drive, and a lower dome. These three system components are interchangeable with other **Spectra IV IP** dome systems, making retrofitting and application adjustments simple.

As with all Spectra dome systems, **Spectra IV IP** features several back box options. All back boxes feature built-in memory, which can be used to store camera and location-specific dome settings, including labels, presets, patterns, and zones.

All cameras in **Spectra IV IP** dome drives feature an EXview HAD™ imager for increased sensitivity and LowLight™ technology allowing the cameras to compensate for scenes where minimal light is present. Both the 27X and the 35X cameras feature built-in motion detection and advanced 128X wide dynamic range (WDR) that enables the system to compensate for scenes where dramatic contrasts in lighting are present. The 35X day/night camera's electronic image stabilization digitally reduces blurring of the camera image due to vibration caused by external sources, such as wind and traffic.

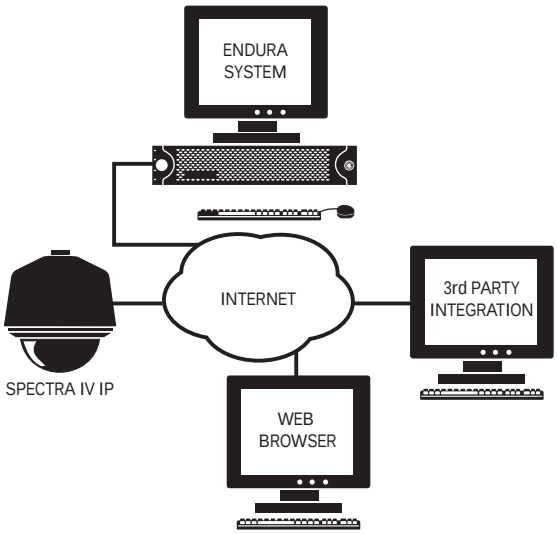
CAMERA/OPTICS

	Day/Night (35X)	Day/Night (27X)	Day/Night (23X)
Signal Format	NTSC **(DD4CBW35)** PAL **(DD4CBW35-X)**	NTSC **(DD427)** PAL **(DD427-X)**	NTSC **(DD423)** PAL **(DD423-X)**
Scanning System	Interlace/Progressive selectable	Interlace/Progressive selectable	2:1 Interlace
Image Sensor Effective Pixels NTSC PAL	1/4-inch EXview HAD™ 768 (H) X 494 (V) 752 (H) X 582 (V)	1/4-inch EXview HAD 768 (H) X 494 (V) 752 (H) X 582 (V)	1/4-inch EXview HAD 768 (H) X 494 (V) 752 (H) X 582 (V)
Horizontal Resolution NTSC PAL	 >540 TV Lines >540 TV Lines	 >540 TV Lines >540 TV Lines	 540 TV Lines 540 TV Lines
Lens	f/1.4 (focal length, 3.4 ~ 119 mm)	f/1.4 (focal length, 3.4 ~ 91.8 mm)	f/1.6 (focal length, 3.6 ~ 82.8 mm)
Zoom	35X optical, 12X digital	27X optical, 12X digital	23X optical, 12X digital
Zoom Speed (optical range)	3.2/4.6/6.6 seconds	3.2/4.6/6.6 seconds	2.9/4.2/5.8 seconds
Horizontal Angle of view Focus	55.8° at 3.4 mm wide zoom; 1.7° at 119 mm telephoto zoom Automatic with manual override	55.8° at 3.4 mm wide zoom; 2.3° at 91.8 mm telephoto zoom Automatic with manual override	54° at 3.6 mm wide zoom; 2.5° at 82.8 mm telephoto zoom Automatic with manual override
Maximum Sensitivity at 35 IRE NTSC/EIA PAL/CCIR	 0.55 lux at 1/60 sec **(color)** 0.018 lux at 1/2 sec **(color)** 0.00018 lux at 1/2 sec **(B-W)** 0.45 lux at 1/50 sec **(color)** 0.015 lux at 1/1.5 sec **(color)** 0.00015 lux at 1/1.5 sec **(B-W)**	 0.55 lux at 1/60 sec **(color)** 0.018 lux at 1/2 sec **(color)** 0.00018 lux at 1/2 sec **(B-W)** 0.45 lux at 1/50 sec **(color)** 0.015 lux at 1/1.5 sec **(color)** 0.00015 lux at 1/1.5 sec **(B-W)**	 0.65 lux at 1/60 sec **(color)** 0.15 lux at 1/60 sec **(B-W)** 0.55 lux at 1/50 sec **(color)** 0.12 lux at 1/50 sec **(B-W)**
Sync System	Internal/AC line lock, phase adjustable using remote control, V-Sync	Internal/AC line lock, phase adjustable using remote control, V-Sync	Internal/AC line lock, phase adjustable using remote control, V-Sync
White Balance	Automatic with manual override	Automatic with manual override	Automatic with manual override
Shutter Speed NTSC PAL	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000 1/1.5 ~ 1/30,000	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000 1/1.5 ~ 1/30,000	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000 1/1.5 ~ 1/30,000
Iris Control	Automatic iris control with manual override	Automatic iris control with manual override	Automatic iris control with manual override
Gain Control	Automatic/OFF	Automatic/OFF	Automatic/OFF
Video Output	1 Vp-p, 75 ohms	1 Vp-p, 75 ohms	1 Vp-p, 75 ohms
Video Signal-to-Noise	>50 dB	>50 dB	>50 dB
Wide Dynamic Range	128X	128X	—
Electronic Image Stabilization	Integrated/Selectable	—	—
Image Enhancement	Integrated/Selectable	—	—
Video Motion Detection	Integrated	Integrated	—

TECHNICAL SPECIFICATIONS

VIDEO

Analog	NTSC/PAL	
Digital Compression	MJPEG, MPEG-4 (available only with Microsoft® Internet Explorer®)	
Video Streams	3, simultaneous	
Video Resolutions	NTSC	PAL
4CIF	704 x 480	704 x 576
2CIF	704 x 240	704 x 288
CIF	352 x 240	352 x 288
QCIF	176 x 120	176 x 144
Bit Rate Configurable		
MPEG-4	30 ips, 2 Mbps for primary stream, 1 Mbps for secondary stream; implements EnduraView	
MJPEG	15 ips, 3 Mbps, MJPEG	
Web User Interface	Pelco Device Utility interface for viewing HTTP, requires Java Runtime Environment (JRE™)	
Users	5 simultaneous users MJPEG and/or MPEG-4 unicast; unlimited number of users using multicast (MPEG-4 only)	
Minimum System Requirements		
Processor	Intel® Pentium® 4 microprocessor, 1.6 GHz	
Operating System	Windows® 98, Windows 2000, Windows XP (or later), or Mac® OS X 10.3.9 (or later)	
Memory	512 MB RAM	
Network Interface Card	100 megabits	
Web Browser	Internet Explorer 5.5 (or later); Mozilla® Firefox® 1.5 (or later)	
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution	
Firmware Upgrade	Pelco Device Utility or Endura Application	
Supported Protocols	TCP/IP, UDP/IP (unicast, multicast IGMP), UPnP, DNS, DHCP, RTP, NTP	



IMPORTANT NOTE: PLEASE READ. The network implementation is shown as a general representation only and is not intended to show a detailed network topology. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the system as illustrated. Please contact your local Pelco Representative to discuss your specific requirements.

DOME DRIVE FEATURES

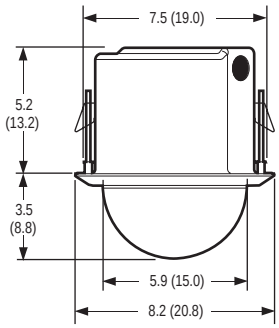
35X and 27X Models

- 256 Presets
- ±0.1° Preset Accuracy
- Electronic Image Stabilization (35X model)
- Image Enhancement (35X model)
- Multilingual Menus (English, Spanish, Portuguese, Italian, French, German, Russian, Polish, Turkish, and Czech)
- RJ-45 Data Port for Software Update and Setup
- On-Screen Compass, Tilt, and Zoom Display
- Password Protection
- 400°/sec Pan Preset Speed and 200°/sec Tilt Preset Speed
- Rotating Discreet Liner with Sealed Fixed Bubble
- Window Blanking: Up to 8, Four-Sided, User-Defined Shapes
- 8 Zones (configurable in size) Can Be Labeled with up to 20 Characters Each or Set to Output Blank Video
- 7 Alarm Inputs
- 1 Auxiliary (Form C) Relay Output and 1 Open Collector Auxiliary Output (can be alternately programmed to operate upon alarm)
- Configurable Locations of Labels and On-Screen Displays
- Action on Alarm: Alarms Can Be Individually Programmed for 3 Priority Levels, to Initiate a Stored Pattern, or to Go to an Associated Preset When Received
- Resume After Alarm: Allows the Dome to Return to a Previously Programmed State After Alarm Acknowledgement or to its Previous Position Before Alarm
- Multiple Park and Power-Up Action
- Patterns: Up to 8, On-Screen, User-Defined Configurable Patterns; Includes Pan, Tilt, Zoom, and Preset Functions
- Proportional Pan/Tilt: Continually Decreases Pan/Tilt Speeds in Proportion to Depth of Zoom
- Variable Scan Speed: Scan Speed Can Be Configurable Between 1-40°/sec
- Pan Motion Allows 0.1° to 150°/sec Pan Speed
- Configurable Limit Stops for Auto/Random/Frame Scan Modes
- Autosensing Protocol (Coaxitron®, RS-422 Pelco P and Pelco D, Sensormatic®, Vicon®); Accepts Other Control Protocols with Optional Translator Card
- Digital Position and Zoom Control and Feedback Through Pelco D Protocol
- Built-in Menu System for Setup of Configurable Functions
- “Auto Flip” Rotates Dome 180° at Bottom of Tilt Travel
- Configurable Zoom Speeds
- Freeze Frame During Presets
- Low Lux Noise Reduction

23X Models

- 64 Presets
- ±0.1° Preset Accuracy
- Multilingual Menus (English, Spanish, Portuguese, Italian, French, German, Russian, Polish, Turkish, and Czech)
- RJ-45 Data Port for Software Update and Setup
- On-Screen Compass, Tilt, and Zoom Display
- Password Protection
- 400°/sec Pan Preset Speed and 200°/sec Tilt Preset Speed
- Rotating Discreet Liner with Sealed Fixed Bubble
- Window Blanking: Up to 4, Four-Sided, User-Defined Shapes
- 8 Zones (configurable in size) Can Be Labeled with up to 20 Characters Each or Set to Output Blank Video
- 1 Alarm Input
- 1 Auxiliary (Form C) Relay Output
- Configurable Locations of Labels and On-Screen Displays
- Patterns: 1 On-Screen, User-Defined Configurable Pattern; Includes Pan, Tilt, Zoom, and Preset Functions
- Proportional Pan/Tilt: Continually Decreases Pan/Tilt Speeds in Proportion to Depth of Zoom
- Variable Scan Speed: Scan Speed Can Be Configurable Between 1-40°/sec
- Pan Motion Allows 0.1° to 150°/sec Pan Speed
- Autosensing Protocol (Coaxitron, RS-422 Pelco P and Pelco D, Sensormatic, Vicon); Accepts Other Control Protocols with Optional Translator Card
- Digital Position and Zoom Control and Feedback through Pelco D Protocol
- Built-in Menu System for Setup of Configurable Functions
- “Auto Flip” Rotates Dome 180° at Bottom of Tilt Travel
- Freeze Frame During Presets

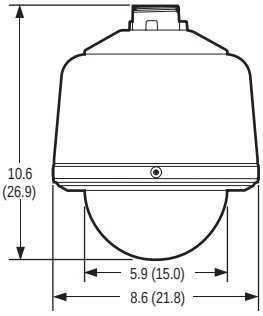
BACK BOX FEATURES



In-Ceiling (Indoor)

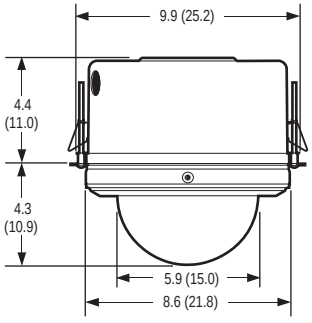
- Built-in Memory Stores Camera/Dome Settings
- Single Back Box for Suspended or Hard Ceiling Applications
- Requires 5.25-Inch Space Above Ceiling and 3.25 Inches Below
- Minimum Ceiling Thickness 0.5-Inch; Maximum 1.75 Inches
- Quick Disconnect to Dome Drive
- Aluminum Construction
- Suitable for Use in Environmental Air Handling Spaces

(ENVIRONMENTAL DOME WITH SUN SHROUD SHOWN)



Standard and Environmental Pendant

- Standard and Environmental Models
- Built-in Memory Stores Camera/Dome Settings
- Standard Pendant Available in Black or Gray Finish; Environmental Pendant Gray Finish Only
- Quick Disconnect to Dome Drive
- Aluminum Construction
- Environmental Model Includes Sun Shield, Fan, and Heater

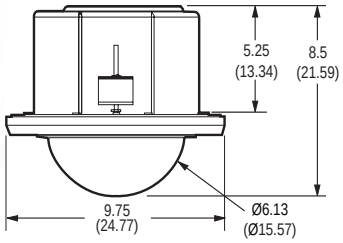


NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

Environmental In-Ceiling

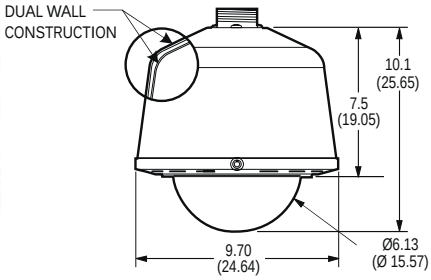
- Built-in Memory Stores Camera/Dome Settings
- Single Back Box for Hard Ceiling Applications
- Requires 4.4-Inch Space Above Ceiling and 4.3 Inches Below
- Includes Heater and Fan
- Minimum Ceiling Thickness 0.5-Inch; Maximum 1.75 Inches
- Quick Disconnect to Dome Drive
- Aluminum Construction

BACK BOX FEATURES



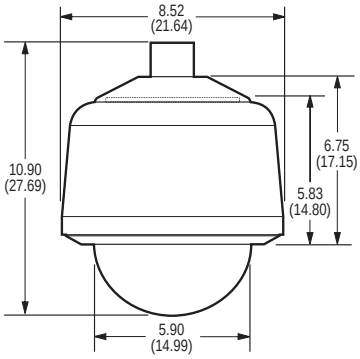
Heavy-Duty In-Ceiling (Indoor)
Available only with 27X and 35X models

- Built-in Memory Stores Camera/Dome Settings
- Single Back Box for Hard Ceiling Applications
- Requires 5.25-Inch Space Above Ceiling and 3.25 Inches Below
- Quick Disconnect to Dome Drive
- Reinforced Mounting System
- Heavy-Duty Polycarbonate Dome Bubble
- Aluminum Trim Ring with Barrel-Type Key Locks
- Optional Protective Cage



Heavy-Duty Pendant
Available only with 27X and 35X models

- Standard and Environmental Models
- Built-in Memory Stores Camera/Dome Settings
- Quick Disconnect to Dome Drive
- Dual Wall Construction
- Heavy-Duty Polycarbonate Dome Bubble
- Aluminum Trim Ring with Barrel-Type Key Locks
- Optional Protective Cage
- Environmental Model Includes Sun Shield, Fan, and Heater



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS;
ALL OTHERS ARE INCHES.

Stainless Steel Pendant
Available only with 27X and 35X models

- Standard and Environmental Models
- Built-in Memory Stores Camera/Dome Settings
- Quick Disconnect to Dome Drive
- All Stainless Steel Construction
- Includes Sun Shield, Fan, and Heater

TECHNICAL SPECIFICATIONS

GENERAL

Construction		
Back Box		
In-Ceiling	Aluminum	
Pendant	Aluminum	
Heavy-Duty	Aluminum	
Stainless Steel	316 stainless steel; gray, polyurethane powder coated finish	
Dome Drive	Aluminum, thermo plastic	
Lower Dome		
In-Ceiling	Acrylic	
Pendant	Acrylic	
Heavy-Duty	Polycarbonate, 0.09-inch thick	
Stainless Steel	Acrylic	
Light Attenuation		
Smoked	f/0.5 light loss	
Clear	Zero light loss	
Chrome	f/2.0 light loss	
Gold	f/2.0 light loss	
Cable Entry (back box)		
In-Ceiling	0.75-inch conduit fitting	
Pendant	Through 1.5-inch NPT pendant mount	
Weight (approximate)	Unit	Shipping
In-Ceiling	5.2 lb (2.4 kg)	8 lb (3.6 kg)
Environmental In-Ceiling	6.2 lb (2.8 kg)	10 lb (4.5 kg)
Standard Pendant	6.5 lb (3.0 kg)	11 lb (5.0 kg)
Environmental Pendant	7.6 lb (3.5 kg)	12 lb (5.4 kg)
Heavy-Duty In-Ceiling*	7.3 lb (3.3 kg)	12 lb (5.4 kg)
Heavy-Duty Pendant*	9.8 lb (4.5 kg)	16 lb (7.3 kg)
Heavy-Duty Environmental Pendant*	9.8 lb (4.5 kg)	16 lb (7.3 kg)
Stainless Steel	10.1 lb (4.6 kg)	16 lb (7.3 kg)
Environment		
In-Ceiling	Indoor	
Environmental In-Ceiling	Outdoor	
Pendant, Standard and Environmental	Indoor/outdoor	
Heavy-Duty In-Ceiling	Indoor	
Heavy-Duty Pendant, Standard & Environmental	Indoor/outdoor	
Stainless Steel	Indoor/outdoor	
Operating Temperature		
In-Ceiling	32° to 122°F (0° to 50°C)	
Standard Pendant	(Assumes no wind chill factor)	
Maximum	113°F (45°C) absolute maximum; 95°F (35°C) sustained maximum	
Minimum	25°F (–4°C) sustained minimum	
Environmental In-Ceiling and Environmental Pendant	(Assumes no wind chill factor)	
Maximum	140°F (60°C) absolute maximum; 122°F (50°C) sustained maximum	
Minimum	–60°F (–51°C) absolute minimum; prevents icing at sustained minimum of –50°F (–45°C); de-ices 0.1 inch (2.5 mm) within 3 hours after power-up	
Heavy-Duty In-Ceiling	32° to 122°F (0° to 50°C)	
Heavy-Duty Pendant	32° to 122°F (0° to 50°C) absolute maximum; 32° to 122°F (0° to 50°C) sustained maximum	
Heavy-Duty Environmental Pendant	(Assumes no wind chill factor)	
Maximum	140°F (60°C) absolute maximum; 122°F (50°C) sustained maximum	
Minimum	–60°F (–51°C) absolute minimum; minimal icing at sustained minimum of –50°F (–45°C); prevents icing at sustained minimum of –40°F (–40°C); de-ices 0.1 inch (2.5 mm) within 3 hours after power-up	
Stainless Steel	(Assumes no wind chill factor)	
Maximum	140°F (60°C) absolute maximum; 122°F (50°C) sustained maximum	
Minimum	–60°F (–51°C) absolute minimum; minimal icing at sustained minimum of –50°F (–45°C); prevents icing at sustained minimum of –40°F (–40°C); de-ices 0.1 inch (2.5 mm) within 3 hours after power-up	
Effective Projected Area (EPA)	20.5 square inches (without mount) 47 square inches (with IWM Series mount)	

*Add 2 lb (0.90 kg) to the total weight if the system includes a lower dome cage.

MECHANICAL

(Dome Drive Only)

Pan Movement	360° continuous pan rotation
Vertical Tilt	Unobstructed +2° to –92°
Manual Pan/Tilt Speeds	
Pan	0.1° to 80°/sec manual operation, 150°/sec Turbo
Tilt	0.1° to 40°/sec manual operation
Preset Speeds	
Pan	400°/sec
Tilt	200°/sec
	For variable-speed operation, an appropriate controller is required. (With nonvariable speed control, Spectra IV IP pan/tilt speed is 20°/sec)

AUDIO

Streaming	Bidirectional: full or half duplex
Input/Output	Terminal block, analog for microphone and speaker; 600-ohm differential; 1 Vp-p maximum signal level
Compression	G.711 PCM 8 bit, 8 kHz mono at 64 kbit/s

ELECTRICAL

Ports	RJ-45 connector for 100Base-TX Auto MDI/MDI-X Autonegotiate/Manual setting
Cabling Type	Cat5 or better for 100Base-TX
Input Voltage	18 to 32 VAC; 24 VAC nominal 22 to 27 VDC; 24 VDC nominal
Input Power	
24 VAC	23 VA nominal (without heater); 73 VA nominal (with heater)
24 VDC	0.7 A nominal (without heater); 3 A nominal (with heater)
Fuse	1.25 A
Auxiliary Outputs	2
Alarm Inputs	7

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- U.S. Patents 5,931,432; 6,793,415 B2; 6,802,656 B2; 6,821,222 B2; 7,161,615 B2

Meets the following standards:

- NEMA Type 4X, IP66 when installed properly (BB4N-F-E, BB4N-PB, BB4N-PG, BB4N-PG-E, BB4NHD-PG, BB4NHD-PG-E, and BB4N-PSG-E)
- NEMA Type 1, IP40 (BB4N-F and BB4NHD-F)

OPTIONAL ACCESSORIES

HD-KEYS	1 set of keys for heavy-duty lower dome
IPS-CABLE	Remote monitor cable and software kit consisting of the Spectra IV remote monitor interface cable and necessary software for use with a PC. Refer to *www.pelco.com* for a list of compatible devices.
IPS-RDPE-2	Remote data port. 24 VAC, wall/pole mount video/data breakout box. Allows ground-level control/programming when used with the IPS-CABLE.

RECOMMENDED MOUNTS

In-Ceiling Domes

SD5-P	2' x 2' drop ceiling panel, aluminum construction; replaces 2' x 2' ceiling tile
SCA1	Support rails for BB4N-F; for use in ceiling tile applications

Pendant Domes

BB5-PCA-BK	Pendant conduit adapter, black
BB5-PCA-GY	Pendant conduit adapter, gray
IWM Series	Wall mount, with or without integral 24 VAC, 100 VA transformer; black or gray finish; can be adapted for corner, parapet or pole application
MRCA	Ceiling mount, black
PP4348	Parapet roof mount
PP350/PP351	Parapet wall/roof mount
SWM Series	Compact wall mount, black or gray finish; can be adapted for corner or pole applications
IDM4012SS	Stainless steel wall mount with feedthrough capabilities

RECOMMENDED POWER SUPPLIES

MCS Series	Indoor, 24 VAC power supply
WCS Series	Outdoor, 24 VAC power supply

Refer to individual power supply specifications for more information.

SYSTEM MODEL NUMBERS

Type	Back Box Color	Lower Dome	Cage	35X Day/Night*	27X Day/Night*	23X Day/Night*
In-Ceiling, Indoor	Black	Smoked		SD4N35-F0	SD4N27-F0	SD4N23-F0
		Clear		SD4N35-F1	SD4N27-F1	SD4N23-F1
		Chrome		SD4N35-F2	SD4N27-F2	SD4N23-F2
		Gold		SD4N35-F3	SD4N27-F3	SD4N23-F3
In-Ceiling, Environmental†	Black	Smoked		SD4N35-F-E0	SD4N27-F-E0	SD4N23-F-E0
		Clear		SD4N35-F-E1	SD4N27-F-E1	SD4N23-F-E1
		Chrome		SD4N35-F-E2	SD4N27-F-E2	SD4N23-F-E2
		Gold		SD4N35-F-E3	SD4N27-F-E3	SD4N23-F-E3
Pendant, Standard	Black	Smoked		SD4N35-PB-0	SD4N27-PB-0	SD4N23-PB-0
		Clear		SD4N35-PB-1	SD4N27-PB-1	SD4N23-PB-1
		Chrome		SD4N35-PB-2	SD4N27-PB-2	SD4N23-PB-2
		Gold		SD4N35-PB-3	SD4N27-PB-3	SD4N23-PB-3
	Light Gray	Smoked		SD4N35-PG-0	SD4N27-PG-0	SD4N23-PG-0
		Clear		SD4N35-PG-1	SD4N27-PG-1	SD4N23-PG-1
		Chrome		SD4N35-PG-2	SD4N27-PG-2	SD4N23-PG-2
		Gold		SD4N35-PG-3	SD4N27-PG-3	SD4N23-PG-3
Pendant, Environmental†	Light Gray	Smoked		SD4N35-PG-E0	SD4N27-PG-E0	SD4N23-PG-E0
		Clear		SD4N35-PG-E1	SD4N27-PG-E1	SD4N23-PG-E1
Heavy-Duty In-Ceiling, Indoor	Light Gray	Smoked	No	SD4N35-HF0	SD4N27-HF0	
			Yes	SD4N35-HCF0	SD4N27-HCF0	
		Clear	No	SD4N35-HF1	SD4N27-HF1	
			Yes	SD4N35-HCF1	SD4N27-HCF1	
Heavy-Duty Pendant, Indoor		Smoked	No	SD4N35-HP0	SD4N27-HP0	
			Yes	SD4N35-HCP0	SD4N27-HCP0	
		Clear	No	SD4N35-HP1	SD4N27-HP1	
			Yes	SD4N35-HCP1	SD4N27-HCP1	
Heavy-Duty Pendant, Environmental†		Smoked	No	SD4N35-HPE0	SD4N27-HPE0	
			Yes	SD4N35-HCPE0	SD4N27-HCPE0	
		Clear	No	SD4N35-HPE1	SD4N27-HPE1	
			Yes	SD4N35-HCPE1	SD4N27-HCPE1	
Stainless Steel Pendant, Environmental†	Stainless Steel	Smoked		SD4N35-PSGE0	SD4N27-PSGE0	
		Clear		SD4N35-PSGE1	SD4N27-PSGE1	

*For PAL and CCIR models add "-X" suffix to part number (for example, BB4N-PG-E-X).
†Environmental dome systems include a heater, fan, and sun shield.

COMPONENT MODEL NUMBERS

Back Box*		Dome Drive*		Lower Dome‡	
BB4N-F	In-ceiling, black, with back box memory	DD423	Day/Night (NTSC) camera (23X)	LD5F-0	Smoked, in-ceiling
BB4N-F-E	In-ceiling, black, environmental, with back box memory	DD427	Day/Night (NTSC) camera (27X)	LD5F-1	Clear, in-ceiling
BB4N-PB	Pendant mount, black, standard, with back box memory	DD4CBW35	Day/Night (NTSC) camera (35X)	LD5F-2	Chrome, in-ceiling
BB4N-PG	Pendant mount, gray, standard, with back box memory			LD5F-3	Gold, in-ceiling
BB4N-PG-E†	Pendant mount, gray, environmental, with back box memory			LD53PB-0	Smoked, pendant, black
				LD53PB-1	Clear, pendant, black
				LD53PB-2	Chrome, pendant, black§
				LD53PB-3	Gold, pendant, black§
BB4NHD-F	Heavy-duty, in-ceiling, gray, with back box memory			LD53HDF-1	Clear, in-ceiling, heavy-duty
				LD53HDCF-1	Clear, in-ceiling, heavy-duty with cage
BB4NHD-PG	Heavy-duty, pendant, gray, with back box memory			LD53HDPB-1	Clear, pendant, heavy-duty
BB4NHD-PG-E†	Heavy-duty, environmental pendant, gray, with back box memory			LD53HDCPB-1	Clear, pendant, heavy-duty, with cage
BB4N-PSG-E†	Stainless steel, environmental pendant, gray 316 SS, with back box memory			LD53PSB-0	Smoked, pendant, black trim ring, 316 SS
				LD53PSB-1	Clear, pendant, black trim ring, 316 SS

Note: For environmental applications you must order an environmental back box.

*For PAL and CCIR models add "-X" suffix to part number (for example, BB4N-PG-E-X).
†Environmental dome systems include a heater, fan, and sun shield.
‡For environmental pendant back boxes, use the pendant lower domes.
§Not recommended for outdoor use due to possible light reflections.

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www.pelco.com

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Spectra® Mini IP Network Dome System

DIGITAL, INDOOR, SURFACE MOUNT/IN-CEILING

Product Features

- Ability to Control and Monitor Video Over IP Network
- 3 Simultaneous Video Streams
  - Dual MPEG-4 (30 ips)
  - Scalable MJPEG
- Supported Protocols: TCP/IP, UDP/IP (Unicast, Multicast IGMp), UPnP, DNS, DHCP, RTP, NTP
- Power over Ethernet (PoE) Compatible
- Single Model for Surface Mount and In-Ceiling Applications
- Autofocus, High Resolution Integrated Color Camera/Optics Package
- 80X Zoom (10X Optical, 8X Digital)
- Zone Blanking
- 64 Presets
- 0.5° Preset Accuracy
- 140°/Second Pan Speed
- 360° Continuous Pan
- Rotating Discreet Liner
- Bidirectional Full-Duplex Audio

SURFACE MOUNT APPLICATION

RECESSED CEILING APPLICATION

Spectra® Mini IP dome systems incorporate all of the features and functions of Spectra Mini, while allowing you to control and monitor video over an IP network from virtually anywhere in the world.

Spectra Mini IP is a miniature dome with a built-in 100Base-TX network interface for live streaming to a standard Web browser. The dome system features open architecture connectivity for third-party software recording solutions allowing integration into virtually any IP-based system.

The **Spectra Mini IP** is compatible with Integral Digital Sentry® video management systems. The dome system is also Endura Enabled™ to record, manage, configure, and view multiple live streams. When connected to an Endura® network-based video security system, the dome system has access to EnduraStor™ and EnduraView™ for optimized image quality and bandwidth efficiency.

Spectra Mini IP features the same ease of installation and ease of maintenance that you have come to expect from Spectra Mini. The easy-to-install dome system can be mounted to the surface of ceilings or recessed into hard ceilings and suspended tile ceilings. **Spectra Mini IP** is IEEE 802.3af PoE compatible, which supplies power to the dome system through the network. If PoE is not available, the unit is prewired for 24 VAC.

Variable speed capabilities of **Spectra Mini IP** range from a fast pan motion of 140 degrees per second to a smooth "creep" speed of 0.4 degrees per second. The system is capable of continuous 360 degrees rotation, and it has an autoflip feature that allows the dome to rotate 180 degrees and reposition itself for uninterrupted viewing of any subject that passes directly beneath the dome's location.

TECHNICAL SPECIFICATIONS

ADDITIONAL PRODUCT FEATURES

- 64 Presets: 53 User Definable and 11 Predefined
- Multilingual Menus (English, Spanish, Portuguese, Italian, French, and German)
- Alternate Language Files (includes Russian, Polish, Turkish, and Czech) Available as Optional Software Upload
- On-Screen Compass, Tilt, and Zoom Display
- Password Protection
- 140°/sec Pan Preset Speed and 80°/sec Tilt Preset Speed
- Rotating Discreet Liner
- 4 Zones (programmable in size) Can Be Labeled with up to 20 Characters Each or Set to Output Blank Video
- Programmable Locations of Labels and On-Screen Displays
- 1 On-Screen, User-Defined Programmable Pattern. Includes Pan, Tilt, Zoom, and Preset Functions
- 1 Programmable Window Blanking Area
- Proportional Pan and Tilt: Continually Decreases Pan/Tilt Speeds in Proportion to Depth of Zoom
- Variable Scan Speed: Scan Speed Can Be 3, 6, or 12°/sec
- Pan Motion Allows 0.4° to 140°/sec Pan Speed
- Programmable Limit Stops for Auto/Random/Frame Scan Modes
- Built-in Menu System for Setup of Programmable Functions
- Auto Flip Rotates Dome 180° at Bottom of Tilt Travel
- Programmable Zoom Speeds
- 1 Alarm Input
- 1 Auxiliary Relay Output

VIDEO

Digital Compression	MJPEG, MPEG-4 (available only with Microsoft® Internet Explorer®)	
Video Streams	3, simultaneous	
Video Resolutions	NTSC	PAL
4CIF	704 x 480	704 x 576
2CIF	704 x 240	704 x 288
CIF	352 x 240	352 x 288
QCIF	176 x 120	176 x 144
Bit Rate Configurable		
MPEG-4	30 ips, 2 Mbps for primary stream, 1 Mbps for secondary stream; implements EnduraView	
MJPEG	15 ips, 3 Mbps, MJPEG	
Web User Interface		
Pelco Device Utility	For viewing HTTP, requires Java Runtime Environment (JRE™)	
Internet Explorer	For viewing and control, requires ActiveX®	
Firefox®	For viewing and control	
Users	5 simultaneous users MJPEG or MPEG-4 unicast; unlimited number of users using multicast (MPEG-4 only)	
Minimum System Requirements		
Processor	Intel® Pentium® 4 microprocessor, 1.6 GHz	
Operating System	Microsoft® Windows® 98, Windows 2000, Windows XP (or later), or Mac® OS X 10.4 (or later)	
Memory	512 MB RAM	
Network Interface Card	100 megabits, minimum	
Monitor	Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution	
Web Browser	Internet Explorer® 5.5 (or later) or Mozilla® Firefox® 1.5 (or later)	
Firmware Upgrade	Pelco Device Utility or Endura Application	
Supported Protocols	TCP/IP, UDP/IP (unicast, multicast IGMP), UPnP, DNS, DHCP, RTP, NTP	

GENERAL

Construction	
Top Cap	Alodined cast aluminum
Dome Drive	ABS plastic
Trim Ring and Surface Mount Ring	ABS plastic
Bubble	Acrylic
Finish	White or black
Light Attenuation	
Smoked	f/0.5 light loss
Clear	Zero light loss
Cable Entry	RJ45-10 connector for PoE and 100Base-TX, auto MDI/MDI-X, autonegotiate; 2-position 24 VAC input terminal connector
Cable Type	Cat5 or better for 100Base-TX
Environment	Indoor
Operating Temperature	32° to 122°F (0° to 50°C)
Unit Weight	1.88 lb (0.85 kg)
Shipping Weight	4 lb (1.81 kg)

MECHANICAL

Pan Movement	360° continuous pan rotation
Vertical Tilt	Unobstructed +2° to -92°
Manual Pan/Tilt Speeds	
Pan	0.4° to 80°/sec manual operation, 100°/sec turbo
Tilt	0.7° to 40°/sec manual operation
Preset Speeds	
Pan	140°/sec
Tilt	80°/sec **Note:** For variable speed operation, an appropriate controller is required.

ELECTRICAL

Input Voltage/Amps	18 to 30 VAC, 24 VAC nominal; 0.75 A, 50/60 Hz nominal
Input Power	18 VA nominal
PoE	IEEE 802.3af class 3

AUDIO

Streaming	Bidirectional: full or half duplex
Input/Output	Terminal block, analog for microphone and speaker; 600-ohm differential; 1 Vp-p maximum signal level
Compression	G.711 PCM 8 bit, 8 kHz mono at 64 kbit/s

TECHNICAL SPECIFICATIONS

CAMERA

Signal Format	NTSC/PAL
Scanning System	2:1 interlace
Image Sensor	1/4-inch interline CCD
Effective Pixels	
NTSC	768 (H) x 494 (V)
PAL	752 (H) x 582 (V)
Minimum Illumination	3.0 lux
White Balance	Automatic with manual override
Shutter Speed	Automatic (electronic iris)/manual 1/60~/30,000
Gain Control	Automatic with manual override

LENS

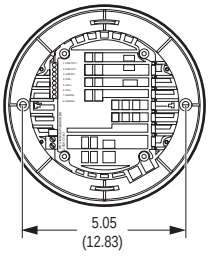
Lens	f/1.8 (f= 4.2~42 mm optical) 10X optical zoom, 8X digital zoom
Zoom Speed (optical range)	1.5/2.5/4.3 seconds
Horizontal Angle of View	46.4° wide zoom; 5.0° telephoto zoom
Focus	Automatic with manual override
Iris Control	Automatic with manual override

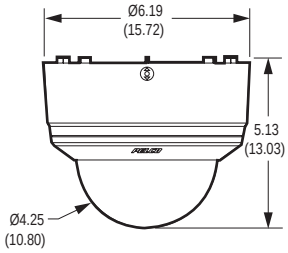
CERTIFICATIONS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick

MODELS

SD4N-B0	Indoor dome system, black, smoked bubble, NTSC
SD4N-B1	Indoor dome system, black, clear bubble, NTSC
SD4N-B0-X	Indoor dome system, black, smoked bubble, PAL
SD4N-B1-X	Indoor dome system, black, clear bubble, PAL
SD4N-W0	Indoor dome system, white, smoked bubble, NTSC
SD4N-W1	Indoor dome system, white, clear bubble, NTSC
SD4N-W0-X	Indoor dome system, white, smoked bubble, PAL
SD4N-W1-X	Indoor dome system, white, clear bubble, PAL





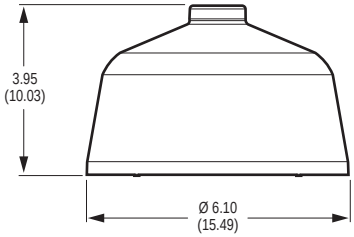
NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

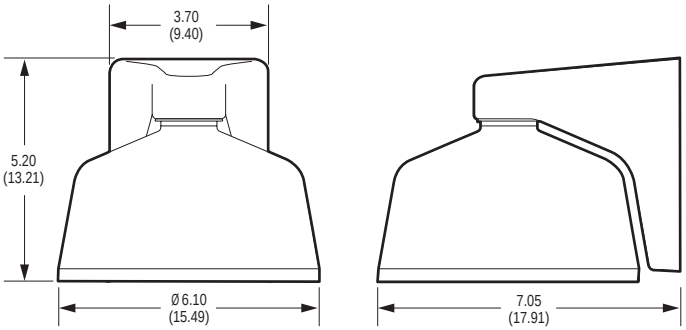
OPTIONAL MOUNTS

SPM4-W	Pendant mount, white
SPM4-B	Pendant mount, black
SWM4-W	Pendant-wall mount, white
SWM4-B	Pendant-wall mount, black

SPECTRA MINI DOME SHOWN WITH OPTIONAL SPM4-W PENDANT MOUNT

SPECTRA MINI DOME SHOWN WITH OPTIONAL SWM4-W PENDANT-WALL MOUNT





NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

SPM4-W/SPM4-B

Mounting Method	Attach mount to 0.75-inch NPT pipe or 20 mm threaded conduit; attach Spectra Mini IP dome with hardware supplied with mount
Construction	ABS plastic
Finish	
SPM4-W	White
SPM4-B	Black
Unit Weight	0.30 lb (0.14 kg)
Shipping Weight	2 lb (0.91 kg)

SWM4-W/SWM4-B

Mounting Method	Install adapter plate on wall or junction box using appropriate hardware; attach wall mount to adapter plate; attach Spectra Mini IP dome with hardware supplied with mount
Construction	ABS plastic, aluminum
Finish	
SWM4-W	White
SWM4-B	Black
Unit Weight	0.72 lb (0.33 kg)
Shipping Weight	2 lb (0.91 kg)

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IS20/IS21 Series Camclosure® 2 Camera System

INDOOR MINI DOME, SURFACE AND FLUSH MOUNT

Product Features

- Fully Integrated Indoor Enclosure with Camera and Lens
- 3 Camera Options
  - Day/Night Wide Dynamic Range (WDR)
  - Day/Night High Resolution
  - High Resolution Color
- Varifocal Lens
- Shipped Completely Assembled, Easy to Install
- 24 VAC or 12 VDC Operation, Autosensing
- Manual, 3-Axis (Pan/Tilt/Rotation) Positioning Allows Adjustment for Optimum Camera Rotation and Placement
- Service Connector for Video Output
- Available in Surface or Flush Mount Models with Smoked or Clear Domes

The **IS20/IS21 Series Camclosure® 2 Camera System** integrates a camera and lens package into a small, versatile indoor enclosure that can be mounted directly to, or recessed into, a ceiling or wall. The **IS20/IS21 Series** features a three-axis camera and lens positioning system that is capable of a wide variety of pan and tilt angles.

The **IS20/IS21 Series** offers three high resolution camera options suitable for a variety of indoor environments:

- **Day/night wide dynamic range (WDR):** Features a high resolution (650 TVL) color camera with auto iris, varifocal lens, and auto back focus. Application examples include environments with difficult lighting that require extremely high sensitivity and dynamic range.
- **True day/night:** Features a high resolution (540 TVL) color camera with auto iris and varifocal lens. Application examples include environments that require color images during the day but use monochrome images at night with or without supplemental IR lighting.
- **Color:** Features a high resolution (540 TVL) color camera with auto iris, simple day/night functions, and varifocal lens. For use in all general-purpose environments.

All cameras in the **IS20/IS21 Series** offer adaptive black stretch (ABS) to provide optimal image quality in dark areas by increasing the visibility in those areas without sacrificing the image quality in brighter areas. In addition, in some cameras the **IS20/IS21 Series** features technology, ensuring the best picture quality even in challenging environments. The day/night WDR camera is equipped with auto back focus (ABF) and intelligent motion detection. The ABF feature automatically adjusts the cameras CCD position when installing or changing from color to black-white mode, saving time during setup and optimizing focus. Using advanced motion analytics provides the ability to accurately detect motion within a targeted area. The analytics include three behaviors: motion detection, object abandonment/removal, and scene change detection.

The **IS20/IS21 Series** is shipped completely assembled, making installation fast and easy. To surface-mount the unit, remove it from the box, attach it to the mounting surface, and connect video and power. For recessed installations, use the supplied mounting bracket to install the unit inside a ceiling or wall.

The **IS20/IS21 Series** also features a complete line of optional mounting accessories. Optional pendant and wall mounts are available for all models, which allow the cameras to be adapted for a variety of installations. In addition, the flush mount kits allow surface mount cameras to be installed in a ceiling if the installation type should change after the original deployment.

CAMERA/OPTICS

	IS20/IS21-DWS Series Day/Night Wide Dynamic Range Models	IS20/IS21-DN Series True Day/Night Models	IS20/IS21-CH Series Color Models with Simple Day/Night
Image Sensor	1/3-inch interline transfer CCD	1/3-inch interline transfer CCD	1/3-inch interline transfer CCD
Effective Pixels NTSC PAL	 976 (H) x 494 (V) 976 (H) x 582 (V)	 768 (H) x 494 (V) 752 (H) x 582 (V)	 768 (H) x 494 (V) 752 (H) x 582 (V)
Scanning Area	0.19-inch (H) x 0.14-inch (V) (4.8 x 3.6 mm)	0.19-inch (H) x 0.15-inch (V) (4.9 x 3.7 mm)	0.19-inch (H) x 0.15-inch (V) (4.9 x 3.7 mm)
Scanning System	2:1 interlace	2:1 interlace	2:1 interlace
Scanning Lines NTSC PAL	 525 lines 625 lines	 525 lines 625 lines	 525 lines 625 lines
Scanning Frequency NTSC PAL	 Horizontal, 15.734 kHz Vertical, 59.94 Hz Horizontal, 15.625 kHz Vertical, 50.00 Hz	 Horizontal, 15.734 kHz Vertical, 59.94 Hz Horizontal, 15.625 kHz Vertical, 50.00 Hz	 Horizontal, 15.734 kHz Vertical, 59.94 Hz Horizontal, 15.625 kHz Vertical, 50.00 Hz
Synchronization	Internal LL (phase adjustable power supply synchronization)	Internal	Internal
Horizontal Resolution	650 TV lines, typical (color mode) 700 TV lines or more (B-W mode)	540 TV lines (color mode, at center) 570 TV lines (B-W mode)	540 TV lines (at center)
Minimum Illumination	0.1 lux (color mode) 0.003 lux (sensitivity up x32) 0.01 lux (B-W mode) 0.0003 lux (sensitivity up x32)	0.06 lux (color mode) 0.05 lux (B-W mode)	0.6 lux (color mode) 0.4 lux (B-W mode)
Dynamic Range	54 dB	Adaptive Black Stretch	Adaptive Black Stretch
Day/Night Type	IR filter removal	IR filter removal	Simple
Video Output	1.0 Vp-p, NTSC/PAL composite, 75 ohms, BNC connector	1.0 Vp-p, NTSC/PAL composite, 75 ohms, BNC connector	1.0 Vp-p, NTSC/PAL composite, 75 ohms, BNC connector
White Balance	Auto Tracking White Balance/ Automatic White Balance Control	Auto Tracking White Balance/ Automatic White Balance Control	Auto Tracking White Balance/ Automatic White Balance Control
Signal-to-Noise Ratio	50 dB (equivalent to AGC Off, weight On)	50 dB (equivalent to AGC Off, weight On)	50 dB (equivalent to AGC Off, weight On)
Lens	2X varifocal lens	3.6X varifocal lens	3.6X varifocal lens
Focal Length	3.8 ~ 8.0 mm	2.8 ~ 10.0 mm	2.8 ~ 10.0 mm
F-Number	f/1.4 (WIDE) to f/1.8 (TELE)	f/1.3 (WIDE) to f/3.1 (TELE)	f/1.3 (WIDE) to f/3.1 (TELE)
Focus Range	∞ to 3.9 ft (1.2 m)	∞ to 3.9 ft (1.2 m)	∞ to 3.9 ft (1.2 m)
Angle of View Horizontal Vertical	 73.6° wide zoom; 35.6° telephoto zoom 53.4° wide zoom; 26.6° telephoto zoom	 100° at 50 ft wide zoom; 27° at 39 ft telephoto zoom 73° at 51 ft wide zoom; 20° at 45 ft telephoto zoom	 100° at 18 ft wide zoom; 27° at 39 ft telephoto zoom 73° at 33 ft wide zoom; 20° at 45 ft telephoto zoom
Adjusting Angle Panning Range Tilting Range Rotation Range	 ±170° ±75° ±100°	 +180° to –140° ±75° ±100°	 +180° to –140° ±75° ±100°

TECHNICAL SPECIFICATIONS

GENERAL

Construction		
Enclosure	ABS plastic	
Bubble	Polycarbonate resin	
Finish	White	
Weight		
WDR Models	Unit	Shipping
Surface Mount	1.98 lb (0.9 kg)*	5 lb (1.85 kg)*
Flush Mount	3.53 lb (1.6 kg)†	10 lb (4.39 kg)†
Color and Day/Night Models		
Surface Mount	0.95 lb (0.43 kg)	2 lb (0.69 kg)
Flush Mount	1.57 lb (0.71 kg)	4 lb (1.78 kg)
Multilingual On-Screen Display	English, French, Spanish, German, Portuguese, Russian, Japanese	

*The total surface mount weight includes 0.22 lb (0.1 kg) for the camera attachment.

†The total flush mount weight includes 1.54 lb (0.7 kg) for ceiling mount bracket assembly.

ELECTRICAL

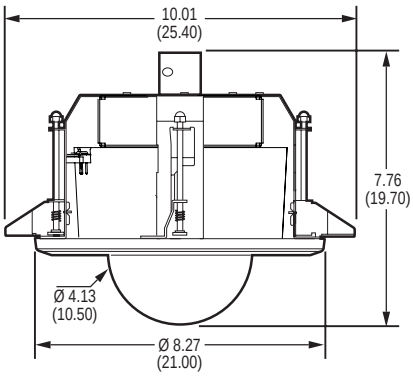
Power Source		
WDR Models	NTSC 24 VAC, 60 Hz 12 VDC, 280 mA	PAL 24 VAC, 50 Hz 12 VDC, 280 mA
Color and Day/Night Models	NTSC 24 VAC, 60 Hz 12 VDC, 220 mA	PAL 24 VAC, 50 Hz 12 VDC, 220 mA
Power Consumption		
WDR Models	NTSC 3.4 W	PAL 3.4 W
Color and Day/Night Models	NTSC 2.7 W	PAL 2.7 W

ENVIRONMENTAL

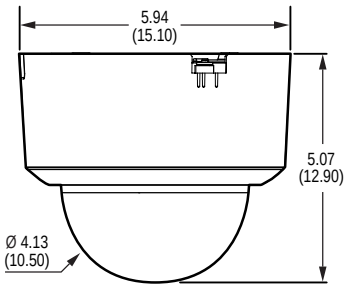
Environment	Indoor
Ambient Temperature	14° to 122°F (–10° to 50°C)
Ambient Humidity	Less than 90%

CERTIFICATIONS/RATINGS/PATENTS

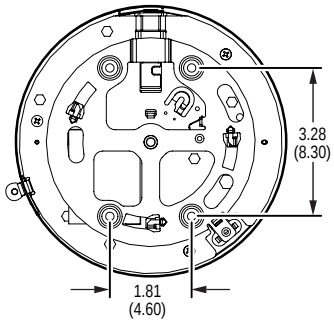
- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick



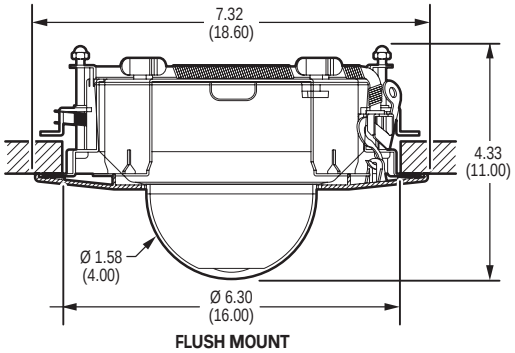
FLUSH MOUNT (WDR MODELS)



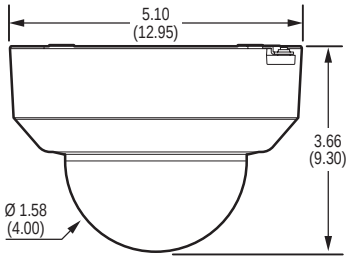
SURFACE MOUNT (WDR MODELS)



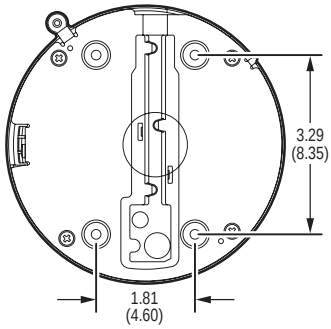
SURFACE MOUNT TOP VIEW (WDR MODELS)



FLUSH MOUNT (COLOR AND DAY/NIGHT MODELS)



SURFACE MOUNT (COLOR AND DAY/NIGHT MODELS)



SURFACE MOUNT TOP VIEW (COLOR AND DAY/NIGHT MODELS)

NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

MODELS

Camera Type	Mount Type	Bubble	NTSC	PAL
Day/Night WDR	Surface	Clear	IS21-DWSV8S	IS21-DWSV8SX
		Smoke	IS20-DWSV8S	IS20-DWSV8SX
	Flush	Clear	IS21-DWSV8F	IS21-DWSV8FX
		Smoke	IS20-DWSV8F	IS20-DWSV8FX
Day/Night	Surface	Clear	IS21-DNV10S	IS21-DNV10SX
		Smoke	IS20-DNV10S	IS20-DNV10SX
	Flush	Clear	IS21-DNV10F	IS21-DNV10FX
		Smoke	IS20-DNV10F	IS20-DNV10FX
Color	Surface	Clear	IS21-CHV10S	IS21-CHV10SX
		Smoke	IS20-CHV10S	IS20-CHV10SX
	Flush	Clear	IS21-CHV10F	IS21-CHV10FX
		Smoke	IS20-CHV10F	IS20-CHV10FX

RECOMMENDED MOUNTS

IS20-P	Pendant mount, indoor. Is compatible with Color and Day/Night models.
IS20-WM	Wall mount, indoor. Is compatible with Color and Day/Night models.
IS20DWS-P	Pendant mount, indoor. Is compatible with day/night WDR models.
IS20DWS-WM	Wall mount, indoor. Is compatible with day/night WDR models.
IS20-FK	Flush mount kit. Is compatible with surface mount color and day/night models.
IS20DWS-FK	Flush mount, indoor. Is compatible with day/night WDR models.

RECOMMENDED POWER SUPPLIES

TF2000	Power supply for one 24 VAC camera, 20 VA
MCS Series	Multiple 24 VAC camera power supply, indoor

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IS50/IS51 Series Camclosure® 2 Camera System

RUGGED OUTDOOR MINI DOME, SURFACE AND FLUSH MOUNT

Product Features

- Heavy Duty Outdoor Enclosure with Camera and Lens
- 3 Camera Options
  - Day/Night Wide Dynamic Range (WDR)
  - Day/Night High Resolution
  - High Resolution Color
- Varifocal Lens
- Shipped Completely Assembled, Easy to Install
- 24 VAC or 12 VDC Operation, Autosensing
- Manual, 3-Axis (Pan/Tilt/Rotation) Positioning Allows Adjustment for Optimum Camera Rotation and Placement
- Service Connector for Video Output
- Available in Surface or Flush Mount Models with Smoked or Clear Domes
- Built-in Heater for Outdoor Environments

The **IS50/IS51 Series Camclosure® 2 Camera System** integrates a camera and lens package into a small, versatile rugged enclosure that can be mounted directly to, or recessed into, a ceiling or wall. The **IS50/IS51 Series** features a three-axis camera and lens positioning system that is capable of a wide variety of pan and tilt angles.

The **IS50/IS51 Series** offers three high resolution camera options suitable for a variety of outdoor environments:

- **Day/night wide dynamic range (WDR):** Features a high resolution (650 TVL) color camera with auto iris, varifocal lens, and auto back focus. Application examples include environments with difficult lighting that require extremely high sensitivity and dynamic range.
- **True day/night:** Features a high resolution (540 TVL) color camera with auto iris and varifocal lens. Application examples include environments that require color images during the day but use monochrome images at night with or without supplemental IR lighting.
- **Color:** Features a high resolution (540 TVL) color camera with auto iris, simple day/night functions, and varifocal lens. For use in all general-purpose environments.

All cameras in the **IS50/IS51 Series** offer adaptive black stretch (ABS) to provide optimal image quality in dark areas by increasing the visibility in those areas without sacrificing the image quality in brighter areas. In addition, in some cameras the **IS50/IS51 Series** features WDR technology, ensuring the best picture quality even in challenging environments. The day/night WDR camera is equipped with auto back focus (ABF) and intelligent motion detection. The ABF feature automatically adjusts the cameras CCD position when installing or changing from color to black-white mode, saving time during setup and optimizing focus. The intelligent built-in video motion detector provides more efficient and reliable surveillance, while eliminating the loss of notification in vital scenes. Using advanced motion analytics provides the ability to accurately detect motion within a targeted area. The analytics include three behaviors: motion detection, object abandonment/removal, and scene change detection.

The **IS50/IS51 Series** is shipped completely assembled, making installation fast and easy. To surface-mount the unit, remove it from the box, attach it to the mounting surface, and connect video and power. For recessed installations, use the supplied mounting bracket to install the unit inside a ceiling or wall.

The **IS50/IS51 Series** also features a complete line of optional mounting accessories. The IS50-P pendant mount allows the IS50/IS51 surface mount cameras to be adapted for pendant installations. The IS50-P can also be combined with the SWM-SR compact wall mount for wall mount installations. In addition, the IS50-FK flush mount kit allows a surface mount unit to be installed in a ceiling if the installation type should change after the original deployment.

CAMERA/OPTICS

	IS50/IS51-DWS Series Day/Night Wide Dynamic Range Models	IS50/IS51-DN Series True Day/Night Models	IS50/IS51-CH Series Color Models with Simple Day/Night
Image Sensor	1/3-inch interline transfer CCD	1/3-inch interline transfer CCD	1/3-inch interline transfer CCD
Effective Pixels NTSC PAL	 976 (H) x 494 (V) 976 (H) x 582 (V)	 768 (H) x 494 (V) 752 (H) x 582 (V)	 768 (H) x 494 (V) 752 (H) x 582 (V)
Scanning Area	0.19-inch (H) x 0.14-inch (V) (4.8 x 3.6 mm)	0.19-inch (H) x 0.15-inch (V) (4.9 x 3.7 mm)	0.19-inch (H) x 0.15-inch (V) (4.9 x 3.7 mm)
Scanning System	2:1 interlace	2:1 interlace	2:1 interlace
Scanning Lines NTSC PAL	 525 lines 625 lines	 525 lines 625 lines	 525 lines 625 lines
Scanning Frequency NTSC PAL	 Horizontal, 15.734 kHz Vertical, 59.94 Hz Horizontal, 15.625 kHz Vertical, 50.00 Hz	 Horizontal, 15.734 kHz Vertical, 59.94 Hz Horizontal, 15.625 kHz Vertical, 50.00 Hz	 Horizontal, 15.734 kHz Vertical, 59.94 Hz Horizontal, 15.625 kHz Vertical, 50.00 Hz
Synchronization	Internal LL (phase adjustable power supply synchronization)	Internal	Internal
Horizontal Resolution	650 TV lines, typical (color mode) 700 TV lines or more (B-W mode)	540 TV lines (color mode, at center) 570 TV lines (B-W mode)	540 TV lines (at center)
Minimum Illumination	0.1 lux (color mode) 0.003 lux (sensitivity up x32) 0.01 lux (B-W mode) 0.0003 lux (sensitivity up x32)	0.06 lux (color mode) 0.05 lux (B-W mode)	0.6 lux (color mode) 0.4 lux (B-W mode)
Dynamic Range	54 dB	Adaptive Black Stretch	Adaptive Black Stretch
Day/Night Type	IR filter removal	IR filter removal	Simple
Video Output	1.0 Vp-p, NTSC/PAL composite, 75 ohms, BNC connector	1.0 Vp-p, NTSC/PAL composite, 75 ohms, BNC connector	1.0 Vp-p, NTSC/PAL composite, 75 ohms, BNC connector
White Balance	Auto Tracking White Balance/ Automatic White Balance Control	Auto Tracking White Balance/ Automatic White Balance Control	Auto Tracking White Balance/ Automatic White Balance Control
Signal-to-Noise Ratio	50 dB (equivalent to AGC Off, weight On)	50 dB (equivalent to AGC Off, weight On)	50 dB (equivalent to AGC Off, weight On)
Lens	2X varifocal lens	3.6X varifocal lens	3.6X varifocal lens
Focal Length	3.8 ~ 8.0 mm	2.8 ~ 10.0 mm	2.8 ~ 10.0 mm
F-Number	f/1.4 (WIDE) to f/1.8 (TELE)	f/1.3 (WIDE) to f/3.1 (TELE)	f/1.3 (WIDE) to f/3.1 (TELE)
Focus Range	∞ to 3.9 ft (1.2 m)	∞ to 3.9 ft (1.2 m)	∞ to 3.9 ft (1.2 m)
Angle of View Horizontal Vertical	 100° wide zoom; 35.6° telephoto zoom 53.4° wide zoom; 26.6° telephoto zoom	 100° at 50 ft wide zoom; 27° at 39 ft telephoto zoom 73° at 51 ft wide zoom; 20° at 45 ft telephoto zoom	 100° at 18 ft wide zoom; 27° at 39 ft telephoto zoom 73° at 33 ft wide zoom; 20° at 45 ft telephoto zoom
Adjusting Angle Panning Range Tilting Range Rotation Range	 ±170° ±75° ±100°	 +180° to –140° ±75° ±100°	 +180° to –140° ±75° ±100°

TECHNICAL SPECIFICATIONS

GENERAL

Construction		
Enclosure	Aluminum die cast	
Bubble	Polycarbonate resin	
Finish	Light gray	
Weight		
WDR Models	Unit	Shipping
Surface Mount	3.76 lb (1.71 kg)*	6 lb (2.70 kg)*
Flush Mount	4.53 lb (2.05 kg)†	11 lb (4.89 kg)†
Color and Day/Night Models		
Surface Mount	3.20 lb (1.45 kg)	6 lb (2.40 kg)
Flush Mount	3.97 lb (1.80 kg)	11 lb (4.59 kg)
Multilingual On-Screen Display	English, French, Spanish, German, Portuguese, Russian, Japanese	

ELECTRICAL

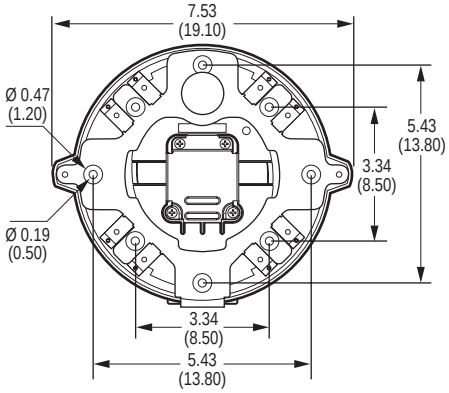
Power Source		
WDR Models	NTSC	PAL
	24 VAC, 60 Hz	24 VAC, 50 Hz
	12 VDC‡, 280 mA	12 VDC‡, 280 mA
Color and Day/Night Models	NTSC	PAL
	24 VAC, 60 Hz	24 VAC, 50 Hz
	12 VDC‡, 220 mA	12 VDC‡, 220 mA
Power Consumption		
WDR Models	NTSC	PAL
Without Heater	3.4 W	3.4 W
With Heater	14 W	14 W
Color and Day/Night Models	NTSC	PAL
Without Heater	2.7 W	2.7 W
With Heater	13.1 W	13.1 W

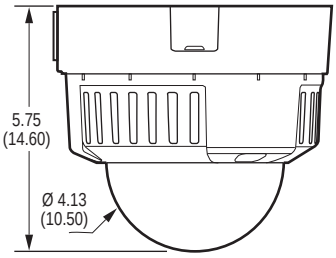
ENVIRONMENTAL

Environment	Outdoor
Ambient Temperature	
Without Heater	14° to 122°F (–10° to +50°C)
With Heater	–22° to 122°F (–30° to +50°C)
Ambient Humidity	Less than 90%

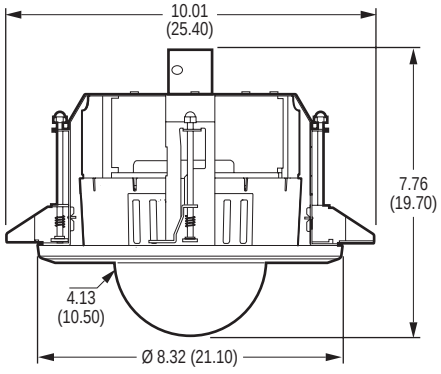
CERTIFICATIONS/RATINGS/PATENTS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick
- Meets IP66 standards





SURFACE MOUNT



FLUSH MOUNT

*The total surface mount weight includes 0.22 lb (0.1 kg) for the camera attachment.

†The total flush mount weight includes 1.54 lb (0.7 kg) for ceiling mount bracket assembly.

‡When using 12 VDC power supply, the heater is not available.

NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

MODELS

Camera Type	Mount Type	Bubble	NTSC	PAL
Day/Night WDR	Surface	Clear	IS51-DWSV8S	IS51-DWSV8SX
		Smoke	IS50-DWSV8S	IS50-DWSV8SX
	Flush	Clear	IS51-DWSV8F	IS51-DWSV8FX
		Smoke	IS50-DWSV8F	IS50-DWSV8FX
Day/Night	Surface	Clear	IS51-DNV10S	IS51-DNV10SX
		Smoke	IS50-DNV10S	IS50-DNV10SX
	Flush	Clear	IS51-DNV10F	IS51-DNV10FX
		Smoke	IS50-DNV10F	IS50-DNV10FX
Color	Surface	Clear	IS51-CHV10S	IS51-CHV10SX
		Smoke	IS50-CHV10S	IS50-CHV10SX
	Flush	Clear	IS51-CHV10F	IS51-CHV10FX
		Smoke	IS50-CHV10F	IS50-CHV10FX

RECOMMENDED MOUNTS

IS50-P	Pendant mount, outdoor. Is compatible with all models.
SWM-SR	Compact wall mount, light gray finish. Can be used with IS50-P for wall-mount installations. Can also be adapted for corner or pole applications.
IS50-FK	Flush mount kit. Is compatible with surface mount models only.

RECOMMENDED POWER SUPPLIES

TF2000	Power supply for one 24 VAC camera, 20 VA
MCS Series	Multiple 24 VAC camera power supply, indoor

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Camclosure® IS Series Indoor Mini Dome

IS90 SERIES SURFACE MOUNT/IN-CEILING, WDR, DAY/NIGHT, HIGH RESOLUTION

Product Features

- Fully-Integrated Indoor Enclosure with Camera and Lens
- Single Model for Surface Mount and Recessed Ceiling Applications with 4S Adapter Plate
- 4 Camera Options:
  - Day/Night Wide Dynamic Range (WDR): Pixel-Based Imager for Accurate Color Representation, Progressive Scan
  - Day/Night High Resolution: 540 TVL
  - Wide Dynamic Range (WDR): Pixel-Based Imager for Accurate Color Representation, Progressive Scan
  - High Resolution Color: 540 TVL
- Varifocal Lens Options: 3 mm to 9.5 mm, 9 mm to 22 mm
- Fixed Lens Options: 3 mm, 3.6 mm, 6 mm, 8 mm, 12 mm
- Includes Both Composite and Unshielded Twisted Pair (UTP) Outputs
- All Models Include 1 Smoked Bubble, 1 Clear Bubble, and 1 Liner
- Shipped Completely Assembled, Easy to Install
- 12 VDC or 24 VAC Operation, Autosensing
- Manual, 3-Axis (Pan/Tilt/Rotation) Positioning Allows Adjustment for Optimum Camera Rotation and Placement
- Housing Available in White or Black
- Service Connector for Video Output

IS90 SERIES DOME SHOWN WITH OPTIONAL PENDANT WALL MOUNT (IS90-PW)

NOTE: REMOVE THE SURFACE MOUNT RING FOR RECESSED INSTALLATIONS.

IS90 SERIES DOME SHOWN WITH SURFACE MOUNT RING

Camera Modules

The **IS90 Series Camclosure® Integrated Camera System** offers a large selection of camera and lens options. Available camera modules include the following:

- **Day/night wide dynamic range (WDR)** and **wide dynamic range:** Pelco's WDR uses a pixel-based imager that adjusts for lighting by pixel. Traditional CCD cameras adjust the entire image for lighting conditions that appear in a small portion of the image or that are not extreme. Different lighting problems occur at night. Car headlights and parking lot lights are good examples of problematic video images. Use Pelco's Day/Night WDR where you need the camera to adjust from extreme lighting to low light conditions.
- **Day/night high resolution (540 TVL)** color camera with auto iris, varifocal lens; Application examples include environments that require monochrome images at night and color images during the day.
- **High (540 TVL) resolution** color camera with auto iris, varifocal lens or fixed iris lens; application examples include all general-purpose environments.

Enclosure Modules

The **IS90 Series Camclosure Integrated Camera System** integrates a camera and lens package into a small, versatile indoor enclosure that can be mounted directly to, or recessed into, a ceiling or wall. The **IS90 Series** features a three-axis camera and lens positioning system that is capable of 360 degrees of tilt, and 360 degrees of rotation.

The **IS90 Series** is shipped completely assembled, making installation fast and easy. To surface-mount the unit, remove it from the box, attach it to the mounting surface, and connect video and power. For recessed installations, simply remove the surface mount ring (no tools required) and then install the unit inside a ceiling or wall. A 4S adapter plate is supplied with the unit for electrical box installations.

TECHNICAL SPECIFICATIONS

GENERAL

Pan/Tilt Adjustment	Manual
Pan	360°
Tilt	140° (20° to 160° range)
Rotation	360°
Construction	
Back Box and Surface Mount Ring	ABS plastic
Bubble	Polycarbonate
Finish	White or black
Light Attenuation	
Smoked	f/1.5 light loss
Clear	Zero light loss
Environment	Indoor
Operating Temperature	32° to 120°F (0° to 49°C)
Unit Weight	0.52 lb (0.24 kg)
Shipping Weight	2 lb (0.91 kg)

ELECTRICAL

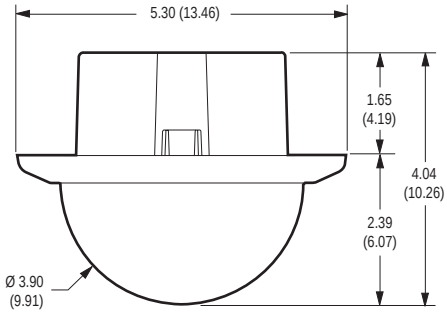
Input Voltage*	12 VDC or 24 VAC (±10%), autosensing
Synchronization	Internal or AC line lock
Power Consumption	<3 W (DW/CW models) <4 W (DN/CH/C models)

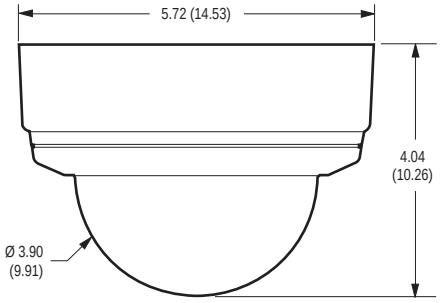
VIDEO

Signal System	NTSC or PAL
Video Output	
Composite	1 Vp-p, 75 ohms
UTP	1 Vp-p, 100 ohms
Video Connectors	1 composite BNC and 1 UTP
Service Connector	3-conductor, 2.5 mm connector for video output to optional IS-SC cable

CERTIFICATIONS/PATENTS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- U.S. Patents D497,927 S; 6,715,939 B2; 6,805,498 B2





NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

*24 VAC power is recommended when installing any Camclosure Integrated Camera System under fluorescent lighting conditions.

TECHNICAL SPECIFICATIONS

CAMERA SPECIFICATIONS

	Day/Night Wide Dynamic Range Varifocal, Auto Iris (DW Series)	Day/Night High Resolution Varifocal, Auto Iris (DN Series)	Wide Dynamic Range Varifocal, Auto Iris (CW Series)	High Resolution Varifocal, Auto Iris (CH Series)
Imaging Device	1/3-inch Pixel Based Imager	1/3-inch Interline Color CCD	1/3-inch Pixel Based Imager	1/3-inch Interline Color CCD
Picture Elements	720 (H) x 540 (V)	NTSC: 768 (H) x 494 (V) PAL: 752 (H) x 582 (V)	720 (H) x 540 (V)	NTSC: 768 (H) x 494 (V) PAL: 752 (H) x 582 (V)
Dynamic Range (DW/CW only)	102 dB typical 120 dB maximum	—	102 dB typical 120 dB maximum	—
Scanning System	2:1 Interlace/ Progressive (DIP switch)	2:1 Interlace	2:1 Interlace/ Progressive (DIP Switch)	2:1 Interlace
Horizontal Resolution	NTSC: 504 TV lines PAL: 504 TV lines	NTSC: 540 TV lines PAL: 540 TV lines	NTSC: 504 TV lines PAL: 504 TV lines	NTSC: 540 TV lines PAL: 540 TV lines
Signal-to-Noise Ratio	>53 dB	>50 dB	>53 dB	>50 dB
Minimum Illumination	Color (day): 0.8 lux SENS 8X: 0.2 lux B-W (night): 0.08 lux SENS 8X: 0.02 lux (f/1.0, 40 IRE, AGC on, 75% scene reflectance, 3.0 ~ 9.5 mm lens)	Color (day): 0.15 lux B-W (night): 0.015 lux (f/1.0, 40 IRE, AGC on, 75% scene reflectance, 3.0 ~ 9.5 mm lens)	Color (day): 0.8 lux SENS 8X: 0.2 lux (f/1.0, 40 IRE, AGC on, 75% scene reflectance, 3.0 ~ 9.5 mm lens)	0.3 lux (f/1.0, 40 IRE, AGC on, 75% scene reflectance, 3.0 ~ 9.5 mm lens)
Day/Night Operation				
Day	Infrared (IR) cut filter	Infrared (IR) cut filter and optical low pass filter	—	—
Night	No filter	Optical low pass filter		
Filter Switch Threshold	Dusk 4 lux Dark 1 lux	0.15 lux	—	—
Gain Control	Auto (36 dB maximum)	Auto/Manual (DIP switch)	Auto (36 dB maximum)	Auto/Manual (DIP switch)
Exposure	Auto (1/15 ~ 1/22,000)	Auto (1/60 ~ 1/100,000)	Auto (1/15 ~ 1/22,000)	Auto (1/60 ~ 1/100,000)
White Balance	Auto or manual (DIP switch), 2800°K to 7500°K	Auto or manual (DIP switch), 2500°K to 9500°K	Auto or manual (DIP switch), 2800°K to 7500°K	Auto or manual (DIP switch), 2500°K to 9500°K
Backlight Compensation	Auto	ON/OFF (DIP switch)	Auto	ON/OFF (DIP switch)

LENS SPECIFICATIONS

	Varifocal With Auto Iris				Fixed Focal Without Iris				
Series	DW/CW Series		DN/CH Series		CH Series				
Focal Length	3.0 mm ~ 9.5 mm	9.0 mm ~ 22.0 mm	3.0 mm ~ 9.5 mm	9.0 mm ~ 22.0 mm	3 mm	3.6 mm	6.0 mm	8.0 mm	12.0 mm
Format Size	1/3-inch	1/3-inch	1/3-inch	1/3-inch	1/3-inch	1/3-inch	1/3-inch	1/3-inch	1/3-inch
F-Number (f)	1.0 to 1.7	1.5 to 3.0	1.0 to 1.7	1.5 to 3.0	2.0	2.0	2.0	2.0	2.2
Operation									
Iris	Auto	Auto	Auto	Auto	N/A	N/A	N/A	N/A	N/A
Focus	Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual	Manual
Zoom	Manual	Manual	Manual	Manual	N/A	N/A	N/A	N/A	N/A
Angle of View*									
Horizontal	100.4° to 31.6°	32.4° to 13.6°	95.0° to 30.2°	30.6° to 13.0°	90.2°	72.9°	40.1°	31.5°	19.7°
Diagonal	131.6° to 39.6°	41.1° to 17.2°	123.6° to 37.6°	39.2° to 16.4°	120.0°	92.0°	53.0°	40.0°	28.0°
Vertical	72.8° to 23.8°	23.8° to 10.2°	69.0° to 22.6°	22.6° to 9.8°	65.4°	54.1°	30.4°	23.7°	15.0°

*Focal length specifications presume a 10% horizontal and 4% vertical monitor overscan.

MODEL NUMBERS

Dome Only

ICS-090HNU	IS90 Series indoor dome (no camera/lens), white housing; includes 1 smoked bubble, 1 clear bubble, and 1 liner.
ICS-090BHNU	IS90 Series indoor dome (no camera/lens), black housing; includes 1 smoked bubble, 1 clear bubble, and 1 liner.

System Numbers

Camera	Lens	White Finish		Black Finish	
		NTSC	PAL	NTSC	PAL
Day/Night WDR	3.0 ~ 9.5 mm with Auto Iris	IS90-DWV9		IS90B-DWV9	
	9.0 ~ 22.0 mm with Auto Iris	IS90-DWV22		IS90B-DWV22	
Day/Night	3.0 ~ 9.5 mm with Auto Iris	IS90-DNV9	IS90-DNV9X	IS90B-DNV9	IS90B-DNV9X
	9.0 ~ 22.0 mm with Auto Iris	IS90-DNV22	IS90-DNV22X	IS90B-DNV22	IS90B-DNV22X
WDR	3.0 ~ 9.5 mm with Auto Iris	IS90-CWV9		IS90B-CWV9	
	9.0 ~ 22.0 mm with Auto Iris	IS90-CWV22		IS90B-CWV22	
Color	3.0 mm	IS90-CH3	IS90-CH3X	IS90B-CH3	IS90B-CH3X
	3.6 mm	IS90-CH3.6	IS90-CH3.6X	IS90B-CH3.6	IS90B-CH3.6X
	6.0 mm	IS90-CH6	IS90-CH6X	IS90B-CH6	IS90B-CH6X
	8.0 mm	IS90-CH8	IS90-CH8X	IS90B-CH8	IS90B-CH8X
	12.0 mm	IS90-CH12	IS90-CH12X	IS90B-CH12	IS90B-CH12X
	3.0 ~ 9.5 mm with Auto Iris	IS90-CHV9	IS90-CHV9X	IS90B-CHV9	IS90B-CHV9X
	9.0 ~ 22.0 mm with Auto Iris	IS90-CHV22	IS90-CHV22X	IS90B-CHV22	IS90B-CHV22X

RECOMMENDED POWER SUPPLIES

TF2000	Power supply for one 24 VAC camera, 20 VA
MCS Series	Multiple 24 VAC camera power supply, indoor

OPTIONAL ACCESSORIES

IS-SC	4-foot service/monitor cable; compatible with any standard monitor BNC connector
IS90-P	White pendant mount adapter
IS90B-P	Black pendant mount adapter
IS90-PW	White pendant wall mount
IS90B-PW	Black pendant wall mount

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Camclosure® IS Series Rugged Mini Dome

IS110 SERIES SURFACE MOUNT, WDR, DAY/NIGHT, HIGH RESOLUTION

Product Features

- Fully-Integrated Enclosure with Camera and Lens
- Rugged, High-Impact, Vandal-Resistant, Puncture-Proof Domes; Tamper-Resistant Hardware
- 4 Camera Options:
  - Day/Night Wide Dynamic Range (WDR): Pixel-Based Imager for Accurate Color Representation, Progressive Scan
  - Day/Night High Resolution: 540 TVL
  - Wide Dynamic Range (WDR): Pixel-Based Imager for Accurate Color Representation, Progressive Scan
  - High Resolution Color: 540 TVL
- Varifocal Lens Options: 3.0 ~ 9.5 mm, 9.0 ~ 22.0 mm
- Includes Both Composite and Unshielded Twisted Pair (UTP) Outputs
- 12 VDC or 24 VAC Operation, Autosensing
- Available with Smoked or Clear Bubble
- Service Connector for Video Output

IS110 SERIES DOME

IS110 SERIES DOME WITH ICS110-PG PENDANT ADAPTER AND SWM-GY MOUNT

Camera Modules

The **IS110 Series Camclosure® Integrated Camera System** offers a large selection of camera and lens options. Available camera modules include:

- **Day/night wide dynamic range (WDR)** and **wide dynamic range:** Pelco's WDR uses a pixel-based imager that adjusts for lighting by pixel. Traditional CCD cameras adjust the entire image for lighting conditions that appear in a small portion of the image or lighting conditions that are not extreme. Different lighting problems occur at night; car headlights and parking lot lights are good examples of problematic video images. Use Pelco's Day/Night WDR where you need the camera to adjust from extreme lighting to low light conditions.
- **Day/night high resolution (540 TVL)** color camera with auto iris, varifocal lens: Application examples include environments that require monochrome images at night and color images during the day.
- **High resolution (540 TVL)** color camera with auto iris, varifocal lens: Application examples include all general-purpose environments.

Enclosure Module

The **IS110 Series Camclosure Integrated Camera System** combines an environmental cover, back box, camera, lens, and lower dome into a small, high-security system that is quick and easy to install. The system is perfect for a variety of indoor and outdoor applications and its versatile design allows for multiple mounting options.

The **IS110 Series** can be installed directly into a ceiling or wall, or to a 1.5-inch (3.81 mm) NPT fitting with the optional pendant mount adapter (ICS110-PG). The unit can also mount directly to a 4S electrical box using the optional adapter plate (ICS110-AP) or a standard plaster ring.

The system's back box has three conduit openings: two in the base, and a threaded 0.75-inch (1.91 cm) opening in the side. The environmental cover can be used to hide and protect the side conduit opening if it is not used.

TECHNICAL SPECIFICATIONS

GENERAL

Construction	Aluminum with steel camera mounting bracket and polycarbonate dome
Impact	IS110 is a rugged product that exceeds an IK10++ rating of Standard EN62262 and can withstand up to 100J in a vertical impact
Finish	Light gray polyester powder coat
Light Attenuation	
Smoked	f/1.5 light loss
Clear	Zero light loss
Unit Weight	2.20 lb (1.00 kg)
Shipping Weight	4.0 lb (1.81 kg)

ELECTRICAL

Input Voltage*	12 VDC or 24 VAC (±10%), autosensing
Synchronization	Internal or AC line lock
Power Consumption	
Camera	<3 W (DW/CW models) <4 W (DN/CH models)
Heaters	10 W when active; thermostatically controlled

MECHANICAL

Cable Entry	One 0.75-inch (1.91 cm) NPT threaded opening on side; two 0.75-inch (1.91 cm) openings on base
Pan/Tilt Adjustment	Manual
Pan	360°
Tilt	80° (20° to 100° range)
Rotation	360°

VIDEO

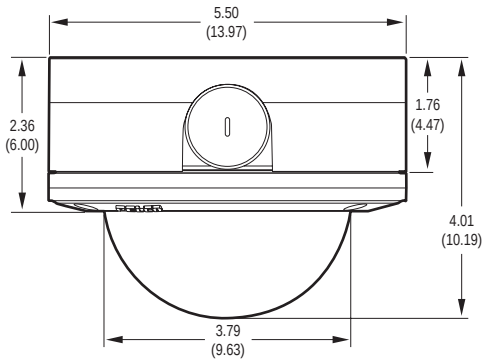
Signal System	NTSC or PAL
Video Output	
Composite	1 Vp-p, 75 ohms
UTP	1 Vp-p, 100 ohms
Video Connectors	1 composite BNC and 1 UTP
Service Connector	3-conductor, 2.5 mm connector for video output to optional IS-SC cable

ENVIRONMENTAL

Environment	Low temperature, indoor/outdoor
Operating Temperature	–50° to 122°F (–46° to 50°C); de-ices to 25°F (–4°C)
Thermostat Operation	Heater is thermostatically controlled to activate at 50°F (10°C) and turn off at 80°F (27°C)

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- Meets NEMA Type 4X and IP66 standards
- IEC 60068-2-27 Shock Certified
- IEC 60068-2-30 Humidity Certified
- IEC 60068-2-6 Vibration Certified
- ISTA Shipping Standard
- U.S. Patents D476,025; 6,715,939 B2; 6,805,498 B2



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

*24 VAC power is recommended when installing any Camclosure Integrated Camera System under fluorescent lighting conditions.

TECHNICAL SPECIFICATIONS

CAMERA SPECIFICATIONS

	Day/Night Wide Dynamic Range Varifocal, Auto Iris (DW Series)	Day/Night High Resolution Varifocal, Auto Iris (DN Series)	Wide Dynamic Range Varifocal, Auto Iris (CW Series)	High Resolution Varifocal, Auto Iris (CH Series)
Imaging Device	1/3-inch pixel based imager	1/3-inch interline color CCD	1/3-inch pixel based imager	1/3-inch interline color CCD
Picture Elements	720 (H) x 540 (V)	NTSC: 768 (H) x 494 (V) PAL: 752 (H) x 582 (V)	720 (H) x 540 (V)	NTSC: 768 (H) x 494 (V) PAL: 752 (H) x 582 (V)
Dynamic Range (DW/CW only)	102 dB typical 120 dB maximum	—	102 dB typical 120 dB maximum	—
Scanning System	2:1 interlace/ progressive (DIP switch)	2:1 interlace	2:1 interlace/ progressive (DIP switch)	2:1 interlace
Horizontal Resolution	NTSC: 504 TV lines PAL: 504 TV lines	NTSC: 540 TV lines PAL: 540 TV lines	NTSC: 504 TV lines PAL: 504 TV lines	NTSC: 540 TV lines PAL: 540 TV lines
Signal-to-Noise Ratio	>53 dB	>50 dB	>53 dB	>50 dB
Minimum Illumination	Color (day): 0.8 lux SENS 8X: 0.2 lux B-W (night): 0.08 lux SENS 8X: 0.02 lux (f/1.0, 40 IRE, AGC on, 75% scene reflectance, 3.0 ~ 9.5 mm lens)	Color (day): 0.15 lux B-W (night): 0.015 lux (f/1.0, 40 IRE, AGC on, 75% scene reflectance, 3.0 ~ 9.5 mm lens)	Color (day): 0.8 lux SENS 8X: 0.2 lux (f/1.0, 40 IRE, AGC on, 75% scene reflectance, 3.0 ~ 9.5 mm lens)	0.3 lux (f/1.0, 40 IRE, AGC on, 75% scene reflectance, 3.0 ~ 9.5 mm lens)
Day/Night Operation				
Day	Infrared (IR) cut filter	Infrared (IR) cut filter and optical low pass filter	—	—
Night	No filter	Optical low pass filter		
Filter Switch Threshold	Dusk 4 lux Dark 1 lux	0.15 lux	—	—
Gain Control	Auto (36 dB maximum)	Auto/Manual (DIP switch)	Auto (36 dB maximum)	Auto/Manual (DIP switch)
Exposure	Auto (1/15 ~ 1/22,000)	Auto (1/60 ~ 1/100,000)	Auto (1/15 ~ 1/22,000)	Auto (1/60 ~ 1/100,000)
White Balance	Auto or manual (DIP switch), 2800° to 7500°K	Auto or manual (DIP switch), 2500° to 9500°K	Auto or manual (DIP switch), 2800° to 7500°K	Auto or manual (DIP switch), 2500° to 9500°K
Backlight Compensation	Auto	ON/OFF (DIP switch)	Auto	ON/OFF (DIP switch)

LENS SPECIFICATIONS

	Varifocal with Auto Iris			
Series	**DW/CW Series**		**DN/CH Series**	
Focal Length	3.0~9.5 mm	9.0~22.0 mm	3.0~9.5 mm	9.0~22.0 mm
Format Size	1/3-inch	1/3-inch	1/3-inch	1/3-inch
F-Number (f)	1.0~1.7	1.5~3.0	1.0~1.7	1.5~3.0
Operation Iris Focus Zoom	 Auto Manual Manual	 Auto Manual Manual	 Auto Manual Manual	 Auto Manual Manual
Angle of View* Horizontal Diagonal Vertical	 100.4° to 31.6° 131.6° to 39.6° 72.8° to 23.8°	 32.4° to 13.6° 41.4° to 17.2° 23.8° to 10.2°	 95.0° to 30.2° 123.6° to 37.6° 69.0° to 22.6°	 30.6° to 13.0° 39.2° to 16.4° 22.6° to 9.8°

*Focal length specifications presume a 10% horizontal and 4% vertical monitor overscan.

MODEL NUMBERS

Dome Only

IS110-ENC IS110 Series surface mount enclosure (no camera/lens)

IS110-LD IS110 Series smoked bubble

IS111-LD IS110 Series clear bubble with liner

When ordering an IS110 Series surface mount dome with no camera or lens, please order one enclosure and one bubble.

System Numbers

Camera	Lens/Iris	Smoked Bubble		Clear Bubble	
		NTSC	PAL	NTSC	PAL
Day/Night WDR	3.0 ~ 9.5 mm with Auto Iris	IS110-DWV9		IS111-DWV9	
	9.0 ~ 22.0 mm with Auto Iris	IS110-DWV22		IS111-DWV22	
Day/Night	3.0 ~ 9.5 mm with Auto Iris	IS110-DNV9	IS110-DNV9X	IS111-DNV9	IS111-DNV9X
	9.0 ~ 22.0 mm with Auto Iris	IS110-DNV22	IS110-DNV22X	IS111-DNV22	IS111-DNV22X
WDR	3.0 ~ 9.5 mm with Auto Iris	IS110-CWV9		IS111-CWV9	
	9.0 ~ 22.0 mm with Auto Iris	IS110-CWV22		IS111-CWV22	
High Resolution, Color	3.0 ~ 9.5 mm with Auto Iris	IS110-CHV9	IS110-CHV9X	IS111-CHV9	IS111-CHV9X
	9.0 ~ 22.0 mm with Auto Iris	IS110-CHV22	IS110-CHV22X	IS111-CHV22	IS111-CHV22X

RECOMMENDED POWER SUPPLIES

TF2000	Power supply for one 24 VAC camera, 20 VA
MCS Series	Multiple 24 VAC camera power supply, indoor
WCS Series	Single/multiple 24 VAC camera power supply, outdoor

OPTIONAL ACCESSORIES

ICS110-AP	Adapter plate for a 4-square electrical box
ICS110-PG	Pendant mount adapter
ICS110-BV	Breather vent to prevent condensation from forming inside the unit
SWM Series	Compact wall mount with cable feedthrough. Requires ICS110-PG adapter.
IS-SC	4-foot service/monitor cable; compatible with any standard monitor BNC connector

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CCC1390H Series Day/Night, WDR, CCD Compact Camera

1/3-INCH, HIGH RESOLUTION, 530 TVL B-W/480 TVL COLOR (NTSC/PAL)

Product Features

- Compact Body Style
- Wide Dynamic Range (60 dB Maximum)
- Day/Night with Automatic or Manual Control
- Electronic PTZ
- 1/3-Inch Format Sony® SS-2WD CCD Imager
- Digital Signal Processing
- 530 TV Lines (B-W); 480 TV Lines (Color)
- On-Screen Menu Configuration
- Four Preset Application Profiles; One User-Definable Profile
- Auto White Balance, Automatic Gain Control, Electronic Shutter Control, and Backlight Compensation
- Flickerless Mode
- Autosensing DC-Drive Auto Iris
- Autosensing 24 VAC/12 VDC with Line Lock or Internal Synchronization
- Compatible with Pelco P and Pelco D Protocol

(LENS NOT SUPPLIED WITH CAMERA)

CCC1390H-6/6X

The **CCC1390 Series** camera is a compact, wide dynamic range (WDR), day/night camera. Its WDR technology provides up to 60 dB of dynamic range and produces superior images over a wide range of lighting conditions, including extreme backlight conditions. The camera also uses a removable infrared (IR) cut filter to switch between color and black-white (B-W) modes as environmental lighting conditions change. It also provides a dual resolution of 530 TVL (B-W) and 480 TVL (color).

On-screen programmable menus can be accessed locally using the rear panel button or remotely using any Pelco controller with Pelco P or Pelco D protocol. Use these menus to select a specific profile or to customize and save camera settings for the specific application.

The **CCC1390 Series** camera has a standard CS-mount and can be used with fixed, manual, or DC-drive auto iris lenses. The auto iris is controlled through a standard four-pin square connector that is included with all Pelco auto iris lenses.

The **CCC1390 Series** camera is quick and easy to install and its compact size makes it ideal for Pelco's DomePak® and ImagePak® fixed camera dome/enclosure packages.

CCC1390H-6/6X

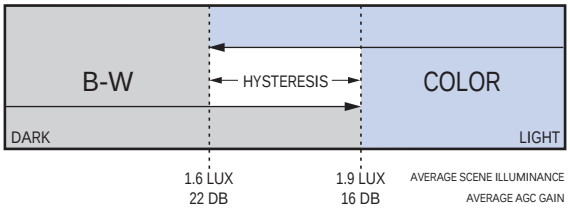
TECHNICAL SPECIFICATIONS

MODELS

CCC1390H-6	1/3-inch high resolution day/night, WDR, CCD camera; 24 VAC or 12 VDC; NTSC format
CCC1390H-6X	1/3-inch high resolution day/night, WDR, CCD camera; 24 VAC or 12 VDC; PAL format

GENERAL

Day/Night Operation	
Day	Infrared (IR) cut filter
Night	BK-7 glass, same optical displacement as day
Imaging Device	1/3-inch image format Sony SS-2WD CCD
Dynamic Range	60 dB maximum (WDR mode)
Picture Elements	
NTSC	768 (H) x 494 (V) (approx. 380K)
PAL	752 (H) x 582 (V) (approx. 440K)
Sensing Area	6 mm diagonal
Scanning System	525 (NTSC)/625 (PAL), 2:1 interlace
Synchronization	AC line lock/internal
Horizontal Resolution	530 TV lines (B-W); 480 TV lines (color)
Electronic Shutter Range	
NTSC	1/60-1/50,000 second
PAL	1/50-1/50,000 second
Auto Iris Lens Type	DC-drive (autosensing)
Minimum Illumination	
B-W (SENS 40x)	0.002 lux, F1.2, 40 IRE, AGC on, 75% scene reflectance
Color (SENS 40x)	0.02 lux, F1.2, 40 IRE, AGC on, 75% scene reflectance
B-W	0.08 lux, F1.2, 40 IRE, AGC on, 75% scene reflectance
Color	0.8 lux, F1.2, 40 IRE, AGC on, 75% scene reflectance
Filter Switching Threshold	
Day to Night	1.6 lux, average scene illumination
Night to Day	1.9 lux, average scene illumination



Digital Slow Shutter (SENS)	Selectable: on/off; 2x, 4x, 6x, 8x, 10x, 20x, 40x
Electronic PTZ	Selectable: 1.5x, 2.0x, 2.5x
Signal-to-Noise Ratio	>50 dB
Vertical Phase	Adjustable ±90°
Automatic Gain Control	Selectable: on/off
Backlight Compensation	Selectable: on/off
Flickerless Mode	Selectable: on/off; 1/100 sec (NTSC), 1/120 sec (PAL)
Auto White Balance	Selectable: on/off, 4 modes
Day/Night	Selectable: on/off, 4 modes
Signal Processing	Digital signal processing (DSP)
Video Output	1 Vp-p, 75 ohms
Gamma Correction	Selectable: on/off, 0.45, 0.6, 1.0
White Balance Range	2,500° to 8,600°K

ELECTRICAL

Power Requirements	
CCC1390H-6	24 VAC ±15%/12 VDC ±15%, 60 Hz
CCC1390H-6X	24 VAC ±15%/12 VDC ±15%, 50 Hz
Power Consumption	3.5 W
Power Connector	3-pin terminal strip, push-in type
Video Connector	BNC
Auto Iris Connector	4-pin connector (miniature square)
Mode Indicators	4 LED
Controls	5-position button Serial data termination switch
Control Connector	7-pin micro (1.25 mm) connector Data I/O (Pelco P or Pelco D protocol) External day/night filter control

MECHANICAL

Lens Mount	CS mount
Camera Mount	1/4-inch UNC-20 screw, top or bottom of camera housing

ENVIRONMENTAL

Operating Temperature	14° to 122°F (–10° to 50°C)
Storage Temperature	–4° to 140°F (–20° to 60°C)
Operating Humidity	20% to 80% (noncondensing)
Storage Humidity	20% to 90% (noncondensing)

PHYSICAL

Dimensions	2.69" D x 2.09" W x 2.19" H (6.83 x 5.31 x 5.56 cm)
Weight (without lens)	0.44 lb (0.20 kg)
Shipping Weight	1 lb (0.45 kg)

CERTIFICATIONS

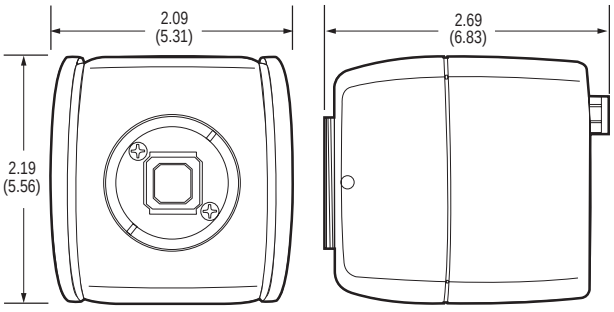
- CE, Class B
- FCC, Class B
- UL/cUL Listed

RECOMMENDED LENSES

13VDIR2.8-11, 13VDIR3-8.5, 13VDIR7.5-50	Varifocal lenses, 1/3-inch format, auto iris, direct drive, infrared

RECOMMENDED MOUNTS

C10-UM	C10 series universal wall/ceiling/rail mount kit



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C10DN Series Day/Night, CCD Color Camera

1/3-INCH, ULTRA HIGH RESOLUTION, 540 TVL (NTSC/PAL)

Product Features

- Compact Body Style
- Day/Night with Automatic or Manual Control
- 1/3-Inch Format CCD Imager
- Digital Signal Processing
- 540 TV Lines
- On-Screen Menu Configuration with Side Joystick
- 4 Preset Application Profiles; 1 User-Definable Profile
- Automatic White Balance, Automatic Gain Control, Electronic Shutter Control, and Backlight Compensation
- Flickerless Mode
- Autosensing DC Drive Auto Iris
- CS Lens Mount
- Autosensing 24 VAC/12 VDC with Line Lock or Internal Synchronization
- Long Distance Cable Compensation
- Internal Top/Bottom Mount
- Eclipser Function

C10DN-6/C10DN-6X
(LENS NOT SUPPLIED WITH CAMERA)

C10DN-7X
(LENS NOT SUPPLIED WITH CAMERA)

The **C10DN Series** camera is Pelco's smallest, day/night camera. Its day/night technology provides outstanding performance over a wide range of lighting conditions. The camera uses a removable infrared (IR) cut filter to switch between color and black-white (B-W) modes as environmental lighting conditions change, and the need for infrared sensitivity is realized.

The **C10DN Series** is an ultra high resolution digital camera with 540 TVL of resolution and 0.3 lux minimum illumination in day mode and 0.07 lux in night mode. Camera features include autosensing power (24 VAC with internal line lock or 12 VDC with internal synchronization), automatic gain control (AGC), electronic shutter control (ESC), and flickerless mode. The **C10DN Series** also includes automatic white balance (AWB) for difficult lighting situations, and backlight compensation (BLC) that adjusts the picture to prevent objects from appearing dark due to a strong backlight. These fine-tuning features are easily set using the on-screen menus.

The **C10DN Series** camera has a standard CS mount and can be used with fixed, manual, or DC drive auto iris lenses. The auto iris is controlled through a standard 4-pin square connector that is included with all Pelco auto iris lenses. A back panel control allows you to control the **C10DN Series** with an external IR light during B-W mode operation.

The convenient on-screen menu allows you to select area masking, titling, pixel correction, and preset lighting profiles, features which are not typically found in a compact camera. Also, the **C10DN Series** allows on-screen setup of color/B-W modes.

The **C10DN Series** is quick and easy to install. The C10DN-6 and C10DN-6X are ideal for use with DF5, DF8A, EH100, EH3508, and EH2508 enclosures. The camera is also featured in Pelco's DomePak® and ImagePak® fixed camera dome/enclosure packages. The optional C10-UM wall/ceiling/rail mount kit offers easy installation in many nonenclosure applications, for all models (C10DN-6, C10DN-6X, and C10DN-7X).

TECHNICAL SPECIFICATIONS

MODELS

C10DN-6	1/3-inch high resolution day/night, CCD camera; 24 VAC or 12 VDC; NTSC format
C10DN-6X	1/3-inch high resolution day/night, CCD camera; 24 VAC or 12 VDC; PAL format
C10DN-7X	1/3-inch high resolution day/night, CCD camera; 230 VAC, PAL format

GENERAL

Day/Night Operation	
Day	Infrared (IR) cut filter
Night	BK-7 glass, same optical displacement as day mode
Imaging Device	1/3-inch interline transfer CCD
Picture Elements	
NTSC	768 (H) x 494 (V), approx. 380k
PAL	752 (H) x 582 (V), approx. 440k
Sensing Area	3/16 x 1/8-inch (4.7 x 3.5 mm)
Scanning System	
NTSC	525 lines, 2:1 interlace
PAL	625 lines, 2:1 interlace
Synchronization System	AC line lock/internal
Horizontal Resolution	540 TV lines
Auto Iris Lens Type	DC/video drive (autosensing)
Sensitivity	
Color	0.4 lux, f/1.2, 50 IRE, AGC on, 89% scene reflectance
B-W	0.08 lux, f/1.2, 50 IRE, AGC on, 89% scene reflectance
Minimum Illumination	
Color	0.3 lux, f/1.2, 40 IRE, AGC on, 75% scene reflectance
B-W	0.07 lux, f/1.2, 40 IRE, AGC on, 75% scene reflectance
Signal-to-Noise Ratio	>50 dB
Vertical Phase Adjustable	±90°
Automatic Gain Control	Selectable
Electronic Shutter Control	Selectable
Electronic Shutter Range	
NTSC	1/60 sec to 1/100000 sec
PAL	1/50 sec to 1/100000 sec
Backlight Compensation	Selectable
Eclipser Function	Selectable
Auto White Balance	Selectable
Internal Synchronization	Selectable
Gamma	Selectable
Flickerless Mode	Selectable
Signal Processing	Digital signal processing (DSP)
Video Output	1 Vp-p, 75 ohms
Auto White Balance Range	2,500° to 9,500°K

ELECTRICAL

Power Requirements	
C10DN-6	24 VAC ±15%/12 VDC ±15%, 60 Hz
C10DN-6X	24 VAC ±15%/12 VDC ±15%, 50 Hz
C10DN-7X	230 VAC ±15%, 50 Hz
Power Consumption	3 W
Power Connector	2-pin terminal block with screw lock
Video Connector	BNC
Auto Iris Connector	4-pin connector (miniature square)
Controls	5-position button

MECHANICAL

Lens Mount	CS mount
Camera Mount	1/4-inch UNC-20 screw, top or bottom of camera housing

ENVIRONMENTAL

Operating Temperature	14° to 122°F (-10° to 50°C)
Storage Temperature	–40° to 140°F (–40° to 60°C)
Operating Humidity	20% to 80%, noncondensing
Storage Humidity	20% to 90%, noncondensing

PHYSICAL

Dimensions (includes BNC)	
C10DN-6/C10DN-6X	2.95" L x 2.17" W x 1.97" H (7.5 x 5.5 x 5.0 cm)
C10DN-7X	5.50" L x 2.17" W x 1.97" H (13.97 x 5.5 x 5.0 cm)
Weight (without lens)	
C10DN-6/C10DN-6X	0.44 lb (0.20 kg)
C10DN-7X	0.88 lb (0.40 kg)
Shipping Weight	
C10DN-6/C10DN-6X	1 lb (0.45 kg)
C10DN-7X	2 lb (0.90 kg)

CERTIFICATIONS

- CE, Class B
- FCC, Class B
- UL/cUL Listed

RECOMMENDED MOUNTS

C10-UM	C10 series universal wall/ceiling/rail mount kit

RECOMMENDED POWER SUPPLIES

TF2000	Power supply for one 24 VAC camera, 20 VA
MCS Series	Multiple 24 VAC camera power supply, indoor
WCS Series	Single/multiple 24 VAC camera power supply, outdoor

RECOMMENDED LENSES

13VA, VD, VDIR Series	Varifocal lenses, 1/3-inch format. VA (manual iris); VD (auto iris, DD); VDIR (auto iris, DD, infrared).
13ZD Series	Motorized zoom lenses, 1/3-inch format (auto iris, DD).

NOTE: *For outdoor camera installations, a Pelco enclosure is recommended.*

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C10CH Series Digital CCD Color Camera

1/3-INCH, ULTRA HIGH RESOLUTION, 540 TVL (NTSC/PAL), COMPACT

Product Features

- Compact Body Style
- 1/3-Inch Format CCD Imager
- Digital Signal Processing
- 540 TV Lines
- 0.4 Lux Sensitivity
- CS Lens Mount
- Autosensing DC/Video Drive Auto Iris
- On-Screen Menu Configuration with Side Joystick
- Automatic/Manual White Balance Settings for Difficult Lighting Situations
- Selectable Automatic Gain Control, Electronic Shutter Control, and Backlight Compensation
- Flickerless Mode
- Eclipser Function
- Autosensing Power (24 VAC/12 VDC with Line Lock or Internal Synchronization)
- Internal Top/Bottom Mount
- Long Distance Cable Compensation

C10CH-6/C10CH-6X
(LENS NOT SUPPLIED WITH CAMERA)

C10CH-7X
(LENS NOT SUPPLIED WITH CAMERA)

The **C10CH Series** is Pelco's smallest full-featured digital color CCD camera. It is designed to provide superior picture quality over a wide range of conditions. The camera's compact size, combined with its numerous features, makes it the ideal camera for most applications.

The **C10CH Series** is an ultra high resolution digital camera with 540 TVL of resolution and 0.3 lux minimum illumination. Camera features include autosensing power (24 VAC with internal line lock or 12 VDC with internal synchronization), automatic gain control (AGC), electronic shutter control (ESC), and flickerless mode. The **C10CH Series** also includes automatic white balance (AWB) for difficult lighting situations, an analog eclipser function that allows the auto iris lens to create clear images in a dark area with a strongly backlit background, and backlight compensation (BLC) that adjusts the picture to prevent objects from appearing dark due to a strong backlight. These features are easily set using the on-screen menus.

The **C10CH Series** has a standard CS lens mount and can be used with fixed, manual, or auto iris (DC or video drive) lenses. The iris is controlled through a standard 4-pin square connector that is included on all Pelco auto iris lenses.

The convenient on-screen menu allows you to select area masking, titling, pixel correction, and preset lighting profiles, features which are not typically found in a compact camera.

The **C10CH Series** is quick and easy to install. The C10CH-6 and C10CH-6X are ideal for use with DF5, DF8A, EH100, EH3508, and EH2508 enclosures. The camera is also featured in Pelco's DomePak® and ImagePak® fixed camera dome/enclosure packages. The optional C10-UM wall/ceiling/rail mount kit offers easy installation in many nonenclosure applications, for all models (C10CH-6, C10CH-6X, C10CH-7X).

TECHNICAL SPECIFICATIONS

MODELS

C10CH-6	1/3-inch ultra high resolution digital color CCD camera, 24 VAC or 12 VDC, NTSC format
C10CH-6X	1/3-inch ultra high resolution digital color CCD camera, 24 VAC or 12 VDC, PAL format
C10CH-7X	1/3-inch ultra high resolution digital color CCD camera, 230 VAC, PAL format

GENERAL

Imaging Device	1/3-inch interline transfer CCD
Picture Elements	
NTSC	768 (H) x 494 (V), approx. 380k
PAL	752 (H) x 582 (V), approx. 440k
Sensing Area	3/16 x 1/8-inch (4.7 x 3.5 mm)
Scanning System	
NTSC	525 lines, 2:1 interlace
PAL	625 lines, 2:1 interlace
Synchronization System	AC line lock/internal
Horizontal Resolution	540 TV lines
Auto Iris Lens Type	DC/video drive (autosensing)
Sensitivity	0.4 lux, f/1.2, 50 IRE, AGC on, 89% scene reflectance
Minimum Illumination	0.3 lux, f/1.2, 50 IRE, AGC on, 75% reflectance
Signal-to-Noise Ratio	> 50 dB
Vertical Phase	Adjustable ±90°
Automatic Gain Control	Selectable
Electronic Shutter Control	Selectable
Electronic Shutter Range	
NTSC	1/60 sec to 1/100000 sec
PAL	1/50 sec to 1/100000 sec
Backlight Compensation	Selectable
Eclipser Function	Selectable
Auto White Balance	Selectable
Internal Synchronization	Selectable
Gamma	Selectable
Flickerless Mode	Selectable
Signal Processing	Digital signal processing (DSP)
Video Output	1 Vp-p, 75 ohms
Auto White Balance Range	2,500° to 9,500°K

ELECTRICAL

Power Requirements	
C10CH-6	24 VAC ±15%/12 VDC ±15%, 60 Hz
C10CH-6X	24 VAC ±15%/12 VDC ±15%, 50 Hz
C10CH-7X	230 VAC ±15%, 50 Hz
Power Consumption	3 W
Power Connector	2-pin terminal block with screw lock
Video Connector	BNC
Auto Iris Connector	4-pin connector (miniature square)
Controls	5-position button

MECHANICAL

Lens Mount	CS mount
Camera Mount	1/4-inch UNC-20 screw, top or bottom of camera housing

ENVIRONMENTAL

Operating Temperature	14° to 122°F (–10° to 50°C)
Storage Temperature	–40° to 140°F (–40° to 60°C)
Operating Humidity	20% to 80%, noncondensing
Storage Humidity	20% to 90%, noncondensing

PHYSICAL

Dimensions (includes BNC)	
C10CH-6/C10CH-6X	2.95" L x 2.17" W x 1.97" H (7.5 x 5.5 x 5.0 cm)
C10CH-7X	5.50" L x 2.17" W x 1.97" H (13.97 x 5.5 x 5.0 cm)
Weight (without lens)	
C10CH-6/C10CH-6X	0.44 lb (0.20 kg)
C10CH-7X	0.88 lb (0.40 kg)
Shipping Weight	
C10CH-6/C10CH-6X	1 lb (0.45 kg)
C10CH-7X	2 lb (0.90 kg)

CERTIFICATIONS

- CE, Class B
- FCC, Class B
- UL/cUL Listed

RECOMMENDED MOUNTS

C10-UM	C10 series universal wall/ceiling/rail mount kit

RECOMMENDED POWER SUPPLIES

TF2000	Power supply for one 24 VAC camera, 20 VA
MCS Series	Multiple 24 VAC camera power supply, indoor
WCS Series	Single/multiple 24 VAC camera power supply, outdoor

RECOMMENDED LENSES

13VA, VD Series	Varifocal lenses, 1/3-inch format. VA (manual iris); VD (auto iris, DD).
13ZD Series	Motorized zoom lenses, 1/3-inch format (auto iris, DD).

NOTE: *For outdoor camera installations, a Pelco enclosure is recommended.*

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Spectra® IV SL Series Dome Systems

HIGH-PERFORMANCE INTEGRATED DOME SYSTEM

Product Features

- Autofocus, High Resolution Integrated LowLight™ Color Camera/Optics Package
- Day/Night, 540 TVL
- 23X Optical Zoom
- Window Blanking
- Camera Title Overlay, 20 User-Definable Characters
- On-Screen Compass and Tilt Display
- Password Protection
- Freeze Frame During Presets
- Built-in Surge and Limited Lightning Protection
- Integrated Passive Unshielded Twisted Pair (UTP) Circuit
- Internal Scheduling Clock
- Ability to Add IP Network Capability by Purchasing Optional TXB-IP Module

IN-CEILING MODEL
SD423-F0

ENVIRONMENTAL PENDANT
SD423-PG-E0
(SHOWN WITH SWM-GY WALL MOUNT)

Modularity

Spectra® IV SL Series was designed with ease of installation and ease of maintenance in mind. Each dome system consists of three components: a back box, a dome drive, and a lower dome. These three system components are interchangeable with other Spectra IV dome systems, making retrofitting and application adjustments simple. Also, dome drives and lower domes can be removed and replaced reducing maintenance time.

Back Box

Spectra IV SL back box options include the following models: environmental in-ceiling (ideal for outdoor soffits), indoor in-ceiling, indoor surface mount, standard and environmental. A **passive UTP circuit** is located on the door assembly for convenient video transmission through twisted pair wire. For added flexibility, Pelco fiber modules can also be attached to the door assembly for transmission over single-mode or multimode fiber.

Dome Drive

The Spectra IV SL dome drive's **integrated optics package** incorporates many advanced features that allow the system to produce high quality video in the most difficult environments. The camera features 23X optical zoom and 12X digital zoom. Spectra IV SL dome drives feature an EXview HAD™ imager for increased sensitivity and **LowLight™** technology to compensate for scenes where minimal light is present. The camera also offers **freeze frame between presets** and **window blanking.**

Lower Dome

Special consideration was taken when designing the Spectra IV SL lower dome bubble to ensure that an optimal optical relationship between the lens and bubble was achieved, providing crystal clear video at long focal lengths.

Dome Systems

Spectra IV SL dome systems feature many software enhancements that increase performance and make configuration and operation easy. An **internal scheduling clock** allows for the scheduling of presets and patterns. **Window blanking** enables a user to configure a four-sided, user-defined privacy area. **Password protection** prevents unauthorized users from changing the system settings. Configurable **on-screen compass and tilt display** provides positioning information when needed. Intuitive multi-lingual on-screen menus can be displayed in English, Spanish, Portuguese, Italian, French, German, Russian, Polish, Turkish, and Czech.

Spectra IV SL's variable speed capabilities range from a smooth, fast pan motion of 400 degrees per second to a smooth "creep" speed of 0.1 degree per second. The system is capable of continuous 360 degrees rotation and has an **"auto flip"** feature that allows the dome to rotate 180 degrees and reposition itself for uninterrupted viewing of any subject that passes directly beneath the dome.

In addition, with the optional Pelco TXB-IP module, you can add IP network capability at any time to a Spectra IV dome system without losing analog viewing and control. By snapping the TXP-IP module into the back box, you can stream network video to a Web browser, Endura®, Digital Sentry®, or third-party software recording solution allowing integration into virtually any IP-based system.

TECHNICAL SPECIFICATIONS

CAMERA/OPTICS

Signal Format	NTSC (DD423) PAL (DD423-X)
Scanning System	2:1 Interlace
Image Sensor	
Effective Pixels	1/4-inch progressive scan CCD
NTSC	768 (H) X 494 (V)
PAL	752 (H) X 582 (V)
Horizontal Resolution	
NTSC/PAL	540 TV Lines
Lens	f/1.6 (focal length, 3.6~82.8 mm)
Zoom	23X optical, 12X digital
Zoom Speed (optical range)	2.9/4.2/5.8 seconds
Horizontal Angle of View	54˚ at 3.6 mm wide zoom; 2.5˚ at 82.8 mm telephoto zoom
Focus	Automatic with manual override
Maximum Sensitivity at 35 IRE	
NTSC/EIA	0.65 lux at 1/60 sec (color) 0.15 lux at 1/60 sec (B-W)
PAL/CCIR	0.55 lux at 1/50 sec (color) 0.12 lux at 1/50 sec (B-W)
Sync System	Internal/AC line lock, phase adjustable using remote control, V-Sync
White Balance	Automatic with manual override
Shutter Speed	Automatic (electronic iris)/manual
NTSC	1/2 ~1/30,000
PAL	1/1.5 ~1/30,000
Iris Control	Automatic iris control with manual override
Gain Control	Automatic/OFF
Video Output1	Vp-p, 75 ohms
Video Signal-to-Noise	>50 dB

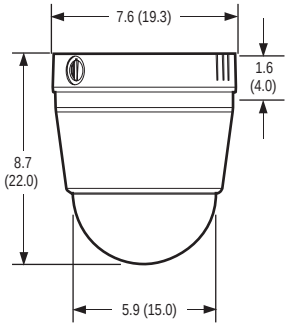
DOME DRIVE FEATURES

- 64 Presets
- ±0.1° Preset Accuracy
- Multilingual Menus (English, Spanish, Portuguese, Italian, French, German, Russian, Polish, Turkish, and Czech)
- RJ-45 Data Port for Software Update and Setup
- On-Screen Compass, Tilt, and Zoom Display
- Password Protection
- 400°/sec Pan Preset Speed and 200°/sec Tilt Preset Speed
- Rotating Discreet Liner with Sealed Fixed Bubble
- 8 Zones (configurable in size) Can Be Labeled with up to 20 Characters Each or Set to Output Blank Video
- Configurable Locations of Labels and On-Screen Displays
- Patterns: 1 On-Screen, User-Defined Configurable Pattern; Includes Pan, Tilt, Zoom, and Preset Functions
- Proportional Pan/Tilt: Continually Decreases Pan/Tilt Speeds in Proportion to Depth of Zoom
- Variable Scan Speed: Scan Speed Can Be Configurable Between 1 to 40°/sec
- Pan Motion Allows 0.1 to 150°/sec Pan Speed
- Configurable Limit Stops for Auto/Random/Frame Scan Modes
- Auto-sensing Protocol (Coaxitron®, RS-422 Pelco P and Pelco D, Sensormatic®, Vicon®); Accepts Other Control Protocols with Optional Translator Card
- Digital Position and Zoom Control and Feedback Using D Protocol
- Built-in Menu System for Setup of Configurable Functions
- “Auto Flip” Rotates Dome 180° at Bottom of Tilt Travel
- Window Blanking: Up to 4 Four-Sided, User-Defined Shapes
- 1 Alarm Input
- 1 Auxiliary (Form C) Relay Output
- Freeze Frame Between Presets

BACK BOX FEATURES

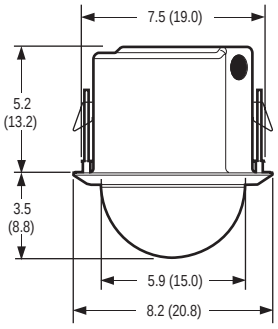
Surface Mount (Indoor)

- Available in Black or White Finish
- Installs Quickly and Easily to Any Type of Ceiling
- Quick Disconnect to Dome Drive
- Injection-Molded Plastic



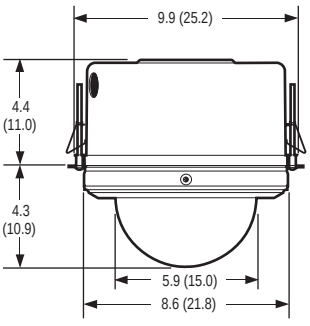
In-Ceiling (Indoor)

- Single Back Box for Suspended or Hard Ceiling Applications
- Requires 5.25-Inch Space Above Ceiling and 3.25 Inches Below
- Minimum Ceiling Thickness 0.5-Inch; Maximum 1.75 Inches
- Quick Disconnect to Dome Drive
- Aluminum Construction
- Suitable for Use in Environmental Air Handling Spaces



Environmental In-Ceiling

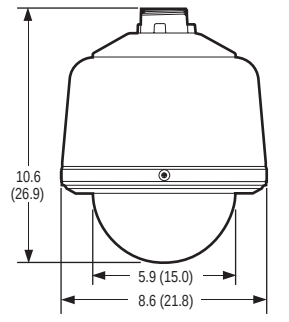
- Single Back Box for Hard Ceiling Applications
- Requires 4.4-Inch Space Above Ceiling and 4.3 Inches Below
- Includes Heater and Fan
- Minimum Ceiling Thickness 0.5-Inch; Maximum 1.75 Inches
- Quick Disconnect to Dome Drive
- Aluminum Construction



Standard and Environmental Pendant

- Standard and Environmental Models
- Standard Pendant Available in Black or Gray Finish; Environmental Pendant Gray Finish Only
- Quick Disconnect to Dome Drive
- Aluminum Construction
- Environmental Model Includes Sun Shield, Fan, and Heater

(ENVIRONMENTAL DOME WITH SUN SHROUD SHOWN)



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

MECHANICAL *(Dome Drive Only)*

Pan Movement	360° continuous pan rotation
Vertical Tilt	Unobstructed +2° to –92°
Manual Pan/Tilt Speeds	
Pan	0.1° to 80°/sec manual operation, 150°/sec Turbo
Tilt	0.1° to 40°/sec manual operation
Preset Speeds	
Pan	400°/sec
Tilt	200°/sec
	For variable-speed operation an appropriate controller is required. (With nonvariable speed control, Spectra IV pan/tilt speed is 20°/sec)

ELECTRICAL

Input Voltage	18 to 32 VAC; 24 VAC nominal 22 to 27 VDC; 24 VDC nominal
Input Power	
24 VAC	23 VA nominal (without heater); 73 VA nominal (with heater)
24 VDC	0.7 A nominal (without heater); 3 A nominal (with heater)
Fuse	1.25 A

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- S Mark for Argentina
- Meets NEMA Type 4X, IP66 when installed properly (BB4-F-E, BB4-PB, BB4-PG, and BB4-PG-E)
- Meets NEMA Type 1, IP40 (BB4-SMW, BB4-SMB, and BB4-F)
- U.S. Patents 5,931,432; 6,793,415 B2; 6,802,656 B2; 6,821,222 B2; 7,161,615 B2

GENERAL

Construction		
Back Box		
Surface Mount	Plastic	
In-Ceiling	Aluminum	
Pendant	Aluminum	
Dome Drive	Aluminum, thermo plastic	
Bubble	Acrylic	
Light Attenuation		
Smoked	f/0.5 light loss	
Clear	Zero light loss	
Chrome	f/2.0 light loss	
Gold	f/2.0 light loss	
Cable Entry (Back Box)		
In-Ceiling and Surface Mount	0.75-inch conduit fitting	
Pendant	Through 1.5-inch NPT pendant mount	
Weight (approximate)	Unit	Shipping
Back Box		
Surface Mount	0.7 lb (0.32 kg)	2 lb (0.90 kg)
In-Ceiling Environmental	1.5 lb (0.68 kg)	2 lb (0.90 kg)
In-Ceiling	2.1 lb (0.95 kg)	3 lb (1.36 kg)
Standard Pendant	2.4 lb (1.09 kg)	4 lb (1.81 kg)
Environmental Pendant	3.5 lb (1.59 kg)	5 lb (2.27 kg)
Dome Drive	3.3 lb (1.48 kg)	5 lb (2.27 kg)
Lower Dome		
Surface Mount	0.4 lb (0.18 kg)	1 lb (0.45 kg)
In-Ceiling Pendant and Environmental	0.2 lb (0.09 kg)	1 lb (0.45 kg)
In-Ceiling	0.6 lb (0.27 kg)	2 lb (0.90 kg)
Environment		
Surface Mount	Indoor	
In-Ceiling	Indoor	
Environmental In-Ceiling	Outdoor	
Pendant, Standard and Environmental	Indoor/outdoor	
Operating Temperature		
Surface Mount and Indoor In-Ceiling	32° to 122°F (0° to 50°C)	
Standard Pendant	(Assumes no wind chill factor)	
Maximum	113°F (45°C) absolute maximum; 95°F (35°C) sustained maximum	
Minimum	25°F (–4°C) sustained minimum	
Environmental In-Ceiling and Environmental Pendant	(Assumes no wind chill factor)	
Maximum	140°F (60°C) absolute maximum; 122°F (50°C) sustained maximum	
Minimum	–60°F (–51°C) absolute minimum; prevents icing at sustained minimum of –50°F (–45°C); de-ices 0.1 inch (2.5 mm) within 3 hours after power-up	
TS2	–29.2° to 165°F (–34° to 74°C) *Per NEMA TS2, para. 2.1.5.1, using fig. 2.1 test profile*	
Effective Projected Area (EPA)	20.5 square inches (without mount) 47 square inches (with IWM Series mount)	

RELATED PRODUCTS

OPTIONAL ACCESSORIES

DD5-FM	Fixed camera mount adapter. Interchangeable with all Spectra IV dome drives.
IPS-CABLE	Remote monitor cable and software kit consisting of the Spectra IV remote monitor interface cable and necessary software for use with a PC. Refer to *www.pelco.com* for a list of compatible devices.
IPS-RDPE-2*	Remote data port. 24 VAC, wall/pole mount video/data breakout box. Allows ground-level control/configuration and software upgrades when used with the IPS-CABLE.
TXB Series*	Translator boards for AD™ Manchester, Hernis, Bosch® (Philips, Burle), TASS, and NTCIP protocols.
TXB-IP Series*	Communication module that allows you to control and monitor Spectra IV dome systems over an IP network (in-ceiling and pendant models only).
FS85011A*	Fiber transmitter sends one unidirectional composite video channel and one bidirectional data channel over one multimode or single-mode fiber optical cable.

*If TXB or FS85011A boards are installed, it is not possible to upgrade system operating software through the remote data port (IPS-RDPE-2).

RECOMMENDED MOUNTS

Surface Mount Domes

PASMB	Pendant adapter for surface mount dome, black
SD53SM-P	2' x 2' drop ceiling panel for BB4-SMW Series back boxes. Replaces 2' x 2' ceiling tile. Aluminum construction.

In-Ceiling Domes

SD5-P	2' x 2' drop ceiling panel, aluminum construction. Replaces 2' x 2' ceiling tile.
SCA1	Support rails for BB4-F; for use in ceiling tile applications.

Pendant Domes

BB5-PCA-BK†	Pendant conduit adapter, black
BB5-PCA-GY†	Pendant conduit adapter, gray
IWM Series	Wall mount, with or without integral 24 VAC, 100 VA transformer. Black or gray finish. Can be adapted for corner, parapet or pole applications.
MRCA	Ceiling mount, black
PP4348	Parapet roof mount
PP350/PP351	Parapet wall/roof mount
SWM Series	Compact wall mount, black or gray finish. Can be adapted for corner or pole applications.

† Not suitable for use with heavy-duty, pressurized, or stainless steel Spectra domes.

RECOMMENDED POWER SUPPLIES

MCS Series	Indoor, 24 VAC power supply
WCS Series	Outdoor, 24 VAC power supply

Refer to individual power supply specifications for more information.

SYSTEM AND COMPONENT MODELS

SYSTEM MODEL NUMBERS

Type	Back Box Color	Lower Dome	23X Day/Night*
Surface Mount	White	Smoked	SD423-SMW-0
		Clear	SD423-SMW-1
		Chrome	SD423-SMW-2
		Gold	SD423-SMW-3
	Black	Smoked	SD423-SMB-0
		Clear	SD423-SMB-1
		Chrome	SD423-SMB-2
		Gold	SD423-SMB-3
In-Ceiling, Indoor	Black	Smoked	SD423-F0
		Clear	SD423-F1
		Chrome	SD423-F2
		Gold	SD423-F3
In-Ceiling, Environmental†	Black	Smoked	SD423-F-E0
		Clear	SD423-F-E1
Pendant, Standard	Black	Smoked	SD423-PB-0
		Clear	SD423-PB-1
		Chrome	SD423-PB-2
		Gold	SD423-PB-3
	Lt. Gray	Smoked	SD423-PG-0
		Clear	SD423-PG-1
		Chrome	SD423-PG-2
		Gold	SD423-PG-3
Pendant, Environmental†	Lt. Gray	Smoked	SD423-PG-E0
		Clear	SD423-PG-E1

COMPONENT MODEL NUMBERS

Back Box		Dome Drive*		Lower Dome‡	
BB4-SMB	Surface mount, black	DD423	Day/Night (NTSC) camera (23X)	LD53SMB-0	Smoked, surface, black
BB4-SMW	Surface mount, white	DD5-FM	Removable, fixed mount bracket only (camera and lens not included). Interchangeable with all Spectra IV dome drives.	LD53SMB-1	Clear, surface, black
BB4-F	In-ceiling, black			LD53SMB-2	Chrome, surface, black
BB4-F-E	In-ceiling, black, environmental			LD53SMB-3	Gold, surface, black
BB4-PB	Pendant mount, black, standard			LD53SMW-0	Smoked, surface, white
BB4-PG	Pendant mount, gray, standard			LD53SMW-1	Clear, surface, white
BB4-PG-E	Pendant mount, gray, environmental			LD53SMW-2	Chrome, surface, white
				LD53SMW-3	Gold, surface, white
				LD5F-0	Smoked, in-ceiling
				LD5F-1	Clear, in-ceiling
				LD5F-2	Chrome, in-ceiling
				LD5F-3	Gold, in-ceiling
				LD53PB-0	Smoked, pendant, black
				LD53PB-1	Clear, pendant, black
				LD53PB-2	Chrome, pendant, black§
				LD53PB-3	Gold, pendant, black§

Notes:

To order a fixed mount dome system refer to the component models above and select one each of the following options: back box (BB4-F), dome drive (DD5-FM), plus choice of lower dome (LD5F-0, LD5F-1, LD5F-2, or LD5F-3).

For environmental applications, you must order an environmental back box (BB4-F-E) or (BB4-PG-E).

DD5-FM is ideal for use with Pelco's C10DN-6, C10DN-6X, C10CH-6, C10CH-6X, CCC1390H-6, and CCC1390H-6X cameras with selected Pelco lenses.

*For PAL and CCIR models add "-X" suffix to part number. (Example: SD423-SMW-0-**X**)

†Environmental dome systems include a heater, fan, and the environmental pendant also includes a sun shield.

‡Use the pendant lower domes with the environmental in-ceiling and environmental pendant back boxes.

§Not recommended for outdoor use due to possible light reflections.

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Spectra® IV SE Series Dome Systems

PREMIER INTEGRATED DOME SYSTEM

Product Features

- 2 Autofocus, High Resolution Integrated Camera/Optics Packages; Multiple Back Box Models
- Day/Night, 540 TVL, 128X Wide Dynamic Range (WDR), Motion Detection, Image Enhancement, and Electronic Image Stabilization (SD435 Series)
- Day/Night, 540 TVL, 128X Wide Dynamic Range (WDR), and Motion Detection (SD427 Series)
- Window Blanking
- Camera Title Overlay, 20 User-Definable Characters
- Horizontal and Zone Blanking
- On-Screen Compass and Tilt Display
- Password Protection
- Low Lux Noise Reduction
- Built-in Surge and Limited Lightning Protection

SURFACE MOUNT MODEL
SD435-SMW-0

PENDANT MODEL
SD427-PG-0

- Sure Focus
- Integrated Passive Unshielded Twisted Pair (UTP) Circuit
- Internal Scheduling Clock
- Ability to Add IP Network Capability by Purchasing Optional TXB-IP Module

Modularity

Spectra® IV SE was designed with ease of installation and ease of maintenance in mind. Each dome system consists of three components: a back box, a dome drive, and a lower dome. These three system components are interchangeable with other Spectra IV SE dome systems, making retrofitting and application adjustments simple. Also, dome drives and lower domes can be removed and replaced reducing maintenance time.

Back Box

Spectra IV SE back box options include the following models: environmental in-ceiling (ideal for outdoor soffits), indoor in-ceiling, indoor surface mount, and standard and environmental pendant. The Spectra IV SE Series can also be ordered with heavy-duty, pressurized, and stainless steel back box options (refer to the appropriate product specification sheets for more information). Each back box model features built-in **back box memory** to store camera and location-specific dome settings, including labels, presets, patterns, and zones. A **passive UTP circuit** is located on the door assembly for convenient video transmission through twisted pair wire. For added flexibility, Pelco fiber modules can also be attached to the door assembly for transmission over single-mode or multimode fiber.

Dome Drive

The Spectra IV SE dome drive's unique **integrated optics package** incorporates many advanced features that allow the system to produce high quality video in the most difficult environments. All cameras in Spectra IV SE dome drives feature **LowLight**™ technology allowing the cameras to compensate for scenes where minimal light is present. Both the 27X and the 35X cameras feature built-in motion detection and advanced **128X WDR** that enables the system to compensate for scenes where dramatic contrasts in lighting are present. The 35X day/night camera **electronic image stabilization** digitally reduces blurring of the camera image due to vibration caused by external sources, such as wind and traffic.

Lower Dome

Special consideration was taken when designing the Spectra IV SE lower dome bubble to ensure that an optimal optical relationship between the lens and bubble was achieved, providing crystal clear video at long focal lengths.

Dome Systems

Spectra IV SE dome systems feature many software enhancements that increase performance and make configuration and operation easy. An **internal scheduling clock** allows for the scheduling of presets and patterns. **Window blanking** enables a user to configure up to eight, four-sided, user-defined privacy areas. **Password protection** prevents unauthorized users from changing the system settings. Configurable **on-screen compass and tilt display** provides positioning information when needed. Intuitive multilingual on-screen menus can be displayed in English, Spanish, Portuguese, Italian, French, German, Russian, Polish, Turkish, and Czech.

Spectra IV SE's variable speed capabilities range from a smooth, fast pan motion of 400 degrees per second to a smooth "creep" speed of 0.1 degree per second. The system is capable of continuous 360 degrees rotation and has an **"auto flip"** feature that allows the dome to rotate 180 degrees and reposition itself for uninterrupted viewing of any subject that passes directly beneath the dome.

In addition, with the optional Pelco TXB-IP module, you can add IP network capability at any time to a Spectra IV dome system without losing analog viewing and control. By snapping the TXB-IP module into the back box, you can stream network video to a Web browser, Endura®, Digital Sentry®, or third-party software recording solution allowing integration into virtually any IP-based system.

CAMERA/OPTICS

	Day/Night (35X)	Day/Night (27X)
Signal Format	NTSC **(DD4CBW35)** PAL **(DD4CBW35-X)**	NTSC **(DD427)** PAL **(DD427-X)**
Scanning System	2:1 Interlace	2:1 Interlace
Image Sensor Effective Pixels NTSC PAL	1/4-inch EXview HAD™ 768 (H) X 494 (V) 752 (H) X 582 (V)	1/4-inch EXview HAD 768 (H) X 494 (V) 752 (H) X 582 (V)
Horizontal Resolution NTSC PAL	 >540 TV Lines >540 TV Lines	 >540 TV Lines >540 TV Lines
Lens	f/1.4 (focal length, 3.4 ~ 119 mm)	f/1.4 (focal length, 3.4 ~ 91.8 mm)
Zoom	35X optical, 12X digital	27X optical, 12X digital
Zoom Speed (optical range)	3.2/4.6/6.6 seconds	3.2/4.6/6.6 seconds
Horizontal Angle of view Focus	55.8° at 3.4 mm wide zoom; 1.7° at 119 mm telephoto zoom Automatic with manual override	55.8° at 3.4 mm wide zoom; 2.3° at 91.8 mm telephoto zoom Automatic with manual override
Maximum Sensitivity at 35 IRE NTSC/EIA PAL/CCIR	 0.55 lux at 1/60 sec **(color)** 0.018 lux at 1/2 sec **(color)** 0.00018 lux at 1/2 sec **(B-W)** 0.45 lux at 1/50 sec **(color)** 0.015 lux at 1/1.5 sec **(color)** 0.00015 lux at 1/1.5 sec **(B-W)**	 0.55 lux at 1/60 sec **(color)** 0.018 lux at 1/2 sec **(color)** 0.00018 lux at 1/2 sec **(B-W)** 0.45 lux at 1/50 sec **(color)** 0.015 lux at 1/1.5 sec **(color)** 0.00015 lux at 1/1.5 sec **(B-W)**
Sync System	Internal/AC line lock, phase adjustable using remote control, V-Sync	Internal/AC line lock, phase adjustable using remote control, V-Sync
White Balance	Automatic with manual override	Automatic with manual override
Shutter Speed NTSC PAL	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000 1/1.5 ~ 1/30,000	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000 1/1.5 ~ 1/30,000
Iris Control	Automatic iris control with manual override	Automatic iris control with manual override
Gain Control	Automatic/OFF	Automatic/OFF
Video Output	1 Vp-p, 75 ohms	1 Vp-p, 75 ohms
Video Signal-to-Noise	>50 dB	>50 dB
Wide Dynamic Range	128X	128X
Electronic Image Stabilization	Integrated/Selectable	—
Image Enhancement	Integrated/Selectable	—

DOME DRIVE FEATURES

- 256 Presets
- ±0.1° Preset Accuracy
- Electronic Image Stabilization (35X model)
- Image Enhancement (35X model)
- Multilingual Menus (English, Spanish, Portuguese, Italian, French, German, Russian, Polish, Turkish, and Czech)
- RJ-45 Data Port for Software Update and Setup
- On-Screen Compass, Tilt, and Zoom Display
- 400°/sec Pan Preset Speed and 200°/sec Tilt Preset Speed
- Rotating Discreet Liner with Sealed Fixed Bubble
- Window Blanking: Up to 8, Four-Sided, User-Defined Shapes
- 8 Zones (configurable in size) Can Be Labeled with up to 20 Characters Each or Set to Output Blank Video
- 7 Alarm Inputs
- 1 Auxiliary (Form C) Relay Output and 1 Open Collector Auxiliary Output (can be alternately configured to operate upon alarm)
- Configurable Locations of Labels and On-Screen Displays
- Action on Alarm: Alarms Can Be Individually Configured for 3 Priority Levels, to Initiate a Stored Pattern, or to Go to an Associated Preset When Received
- Resume After Alarm: Allows the Dome to Return to a Previously Configured State After Alarm Acknowledgement or to its Previous Position Before Alarm
- Multiple Park and Power-Up Action
- Patterns: Up to 8, On-Screen, User-Defined Configurable Patterns; Includes Pan, Tilt, Zoom, and Preset Functions
- Proportional Pan/Tilt: Continually Decreases Pan/Tilt Speeds in Proportion to Depth of Zoom
- Variable Scan Speed: Scan Speed Can Be Configurable Between 1 to 40°/sec
- Pan Motion Allows 0.1 to 150°/sec Pan Speed
- Configurable Limit Stops for Auto/Random/Frame Scan Modes
- Autosensing Protocol (Coaxitron®, RS-422 Pelco P and Pelco D, Sensormatic®, Vicon®); Accepts Other Control Protocols with Optional Translator Card
- Digital Position and Zoom Control and Feedback through Pelco D Protocol
- Built-in Menu System for Setup of Configurable Functions
- "Auto Flip" Rotates Dome 180° at Bottom of Tilt Travel
- Configurable Zoom Speeds
- Low Lux Noise Reduction (reduces noise in low light)

WINDOW BLANKING

Window blanking allows a user to configure up to eight, four-sided, user-defined areas that cannot be viewed by the operator of the dome system. A blanked area will move with pan and tilt functions and automatically adjust in size as the lens zooms telephoto and wide.

BEFORE

AFTER

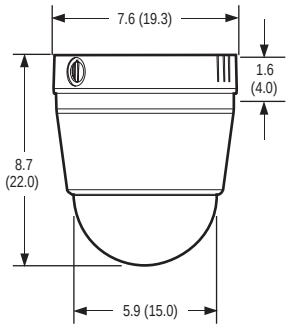
WIDE DYNAMIC RANGE

The WDR setting balances the brightest and darkest sections of a scene to produce a picture that provides more detail.

BEFORE

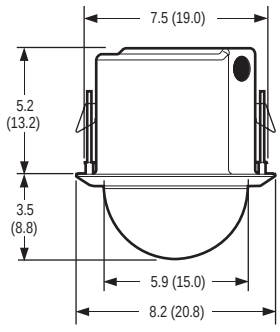
AFTER

BACK BOX FEATURES



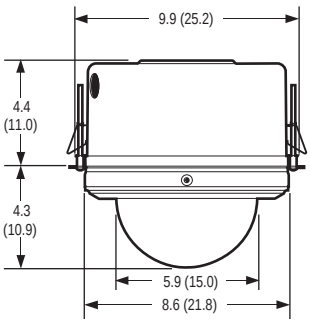
Surface Mount (Indoor)

- Built-in Memory Stores Camera/Dome Settings
- Available in Black or White Finish
- Quick Disconnect to Dome Drive
- Injection-Molded Plastic
- Integrated Passive UTP



In-Ceiling (Indoor)

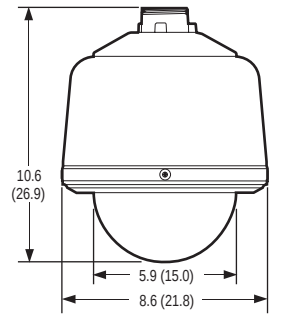
- Built-in Memory Stores Camera/Dome Settings
- Single Back Box for Suspended or Hard Ceiling Applications
- Requires 5.25-Inch Space Above Ceiling and 3.25 Inches Below
- Minimum Ceiling Thickness 0.5-Inch; Maximum 1.75 Inches
- Quick Disconnect to Dome Drive
- Aluminum Construction
- Suitable for Use in Environmental Air Handling Spaces
- Integrated Passive UTP



Environmental In-Ceiling

- Built-in Memory Stores Camera/Dome Settings
- Single Back Box for Hard Ceiling Applications
- Requires 4.4-Inch Space Above Ceiling and 4.3 Inches Below
- Includes Heater and Fan
- Minimum Ceiling Thickness 0.5-Inch; Maximum 1.75 Inches
- Quick Disconnect to Dome Drive
- Aluminum Construction
- Integrated Passive UTP

(ENVIRONMENTAL DOME WITH SUN SHROUD SHOWN)



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

Standard and Environmental Pendant

- Standard and Environmental Models
- Built-in Memory Stores Camera/Dome Settings
- Standard Pendant Available in Black or Gray Finish; Environmental Pendant Gray Finish Only
- Quick Disconnect to Dome Drive
- Aluminum Construction
- Environmental Model Includes Sun Shield, Fan, and Heater
- Integrated Passive UTP

Note: The Spectra IV SE Series can be ordered with heavy-duty, pressurized, and stainless steel back box options. Refer to the appropriate product specification sheets for more information.

TECHNICAL SPECIFICATIONS

MECHANICAL *(Dome Drive Only)*

Pan Movement	360° continuous pan rotation
Vertical Tilt	Unobstructed +2° to –92°
Manual Pan/Tilt Speeds	
Pan	0.1° to 80°/sec manual operation, 150°/sec Turbo
Tilt	0.1° to 40°/sec manual operation
Preset Speeds	
Pan	400°/sec
Tilt	200°/sec
	For variable-speed operation, an appropriate controller is required (with nonvariable speed control, Spectra IV SE pan/tilt speed is 20°/sec)

ELECTRICAL

Input Voltage	18 to 32 VAC; 24 VAC nominal 22 to 27 VDC; 24 VDC nominal
Input Power	
24 VAC	23 VA nominal (without heater); 73 VA nominal (with heater)
24 VDC	0.7 A nominal (without heater); 3 A nominal (with heater)
Fuse	1.25 A
Auxiliary Outputs	2
Alarm Inputs	7

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- S Mark for Argentina
- Meets NEMA Type 4X, IP66 when installed properly (BB4-F-E, BB4-PB, BB4-PG, and BB4-PG-E)
- Meets NEMA Type 1, IP40 (BB4-SMW, BB4-SMB, and BB4-F)
- U.S. Patents 5,931,432; 6,793,415 B2; 6,802,656 B2; 6,821,222 B2; 7,161,615 B2

GENERAL

Construction		
Back Box		
Surface Mount	Plastic	
In-Ceiling	Aluminum	
Pendant	Aluminum	
Dome Drive	Aluminum, thermo plastic	
Bubble	Acrylic	
Light Attenuation		
Smoked	f/0.5 light loss	
Clear	Zero light loss	
Chrome	f/2.0 light loss	
Gold	f/2.0 light loss	
Cable Entry (Back Box)		
In-Ceiling and Surface Mount	0.75-inch conduit fitting	
Pendant	Through 1.5-inch NPT pendant mount	
Weight (approximate)	Unit	Shipping
Back Box		
Surface Mount	0.7 lb (0.32 kg)	2 lb (0.90 kg)
In-Ceiling Environmental	1.5 lb (0.68 kg)	2 lb (0.90 kg)
In-Ceiling	2.1 lb (0.95 kg)	3 lb (1.36 kg)
Standard Pendant	2.4 lb (1.09 kg)	4 lb (1.81 kg)
Environmental Pendant	3.5 lb (1.59 kg)	5 lb (2.27 kg)
Dome Drive	3.3 lb (1.48 kg)	5 lb (2.27 kg)
Lower Dome		
Surface Mount	0.4 lb (0.18 kg)	1 lb (0.45 kg)
In-Ceiling Pendant and Environmental	0.2 lb (0.09 kg)	1 lb (0.45 kg)
In-Ceiling	0.6 lb (0.27 kg)	2 lb (0.90 kg)
Environment		
Surface Mount	Indoor	
In-Ceiling	Indoor	
Environmental In-Ceiling	Outdoor	
Pendant, Standard and Environmental	Indoor/outdoor	
Operating Temperature		
Surface Mount and Indoor In-Ceiling	32° to 122°F (0° to 50°C)	
Standard Pendant	(Assumes no wind chill factor)	
Maximum	113°F (45°C) absolute maximum; 95°F (35°C) sustained maximum	
Minimum	25°F (–4°C) sustained minimum	
Environmental In-Ceiling and Environmental Pendant	(Assumes no wind chill factor)	
Maximum	140°F (60°C) absolute maximum; 122°F (50°C) sustained maximum	
Minimum	–60°F (–51°C) absolute minimum; prevents icing at sustained minimum of –50°F (–45°C); de-ices 0.1 inch (2.5 mm) within 3 hours after power-up	
TS2	–29.2° to 165°F (–34° to 74°C) *Per NEMA TS2, para. 2.1.5.1, using fig. 2.1 test profile*	
Effective Projected Area (EPA)	20.5 square inches (without mount) 47 square inches (with IWM Series mount)	

OPTIONAL ACCESSORIES

DD5-FM	Fixed camera mount adapter. Interchangeable with all Spectra IV dome drives.
IPS-CABLE	Remote monitor cable and software kit consisting of the Spectra IV remote monitor interface cable and necessary software for use with a PC. Refer to *www.pelco.com* for a list of compatible devices.
IPS-RDPE-2*	Remote data port. 24 VAC, wall/pole mount video/data breakout box. Allows ground-level control/configuration and software upgrades when used with the IPS-CABLE.
TXB Series*	Translator boards for AD™ Manchester, Hernis, Bosch® (Philips, Burle), TASS, and NTCIP protocols.
TXB-IP Series*	Communication module that allows you to control and monitor Spectra IV dome systems over an IP network (in-ceiling and pendant models only).
FS85011A*	Fiber transmitter sends 1 unidirectional composite video channel and 1 bidirectional data channel over 1 multimode or single-mode fiber optical cable.

*If TXB or FS85011A boards are installed, remote upload of system software will not be possible.

RELATED PRODUCTS

RECOMMENDED MOUNTS

Surface Mount Domes

PASMB	Pendant adapter for surface mount dome, black
SD53SM-P	2' x 2' drop ceiling panel for BB4-SMW and BB4T-SMW series back boxes; replaces 2' x 2' ceiling tile; aluminum construction

In-Ceiling Domes

SD5-P	2' x 2' drop ceiling panel, aluminum construction; replaces 2' x 2' ceiling tile
SCA1	Support rails for BB4-F; for use in ceiling tile applications

Pendant Domes

BB5-PCA-BK*	Pendant conduit adapter, black
BB5-PCA-GY*	Pendant conduit adapter, gray
IWM Series	Wall mount, with or without integral 24 VAC, 100 VA transformer; black or gray finish; can be adapted for corner, parapet, or pole applications
MRCA	Ceiling mount, black
PP4348	Parapet roof mount
PP350/PP351	Parapet wall/roof mount
SWM Series	Compact wall mount, black or gray finish; can be adapted for corner or pole applications

*Not suitable for use with heavy-duty, pressurized, or stainless steel Spectra domes.

RECOMMENDED POWER SUPPLIES

MCS Series	Indoor, 24 VAC power supply
WCS Series	Outdoor, 24 VAC power supply

Refer to individual power supply specifications for more information.

SYSTEM MODEL NUMBERS

Type	Back Box Color	Lower Dome	35X Day/Night*	27X Day/Night*
Surface Mount	White	Smoked	SD435-SMW-0	SD427-SMW-0
		Clear	SD435-SMW-1	SD427-SMW-1
		Chrome	SD435-SMW-2	SD427-SMW-2
		Gold	SD435-SMW-3	SD427-SMW-3
	Black	Smoked	SD435-SMB-0	SD427-SMB-0
		Clear	SD435-SMB-1	SD427-SMB-1
		Chrome	SD435-SMB-2	SD427-SMB-2
		Gold	SD435-SMB-3	SD427-SMB-3
In-Ceiling, Indoor	Black	Smoked	SD435-F0	SD427-F0
		Clear	SD435-F1	SD427-F1
		Chrome	SD435-F2	SD427-F2
		Gold	SD435-F3	SD427-F3
In-Ceiling, Environmental†	Black	Smoked	SD435-F-E0	SD427-F-E0
		Clear	SD435-F-E1	SD427-F-E1
Pendant, Standard	Black	Smoked	SD435-PB-0	SD427-PB-0
		Clear	SD435-PB-1	SD427-PB-1
		Chrome	SD435-PB-2	SD427-PB-2
		Gold	SD435-PB-3	SD427-PB-3
	Lt. Gray	Smoked	SD435-PG-0	SD427-PG-0
		Clear	SD435-PG-1	SD427-PG-1
		Chrome	SD435-PG-2	SD427-PG-2
		Gold	SD435-PG-3	SD427-PG-3
Pendant, Environmental†	Lt. Gray	Smoked	SD435-PG-E0	SD427-PG-E0
		Clear	SD435-PG-E1	SD427-PG-E1

COMPONENT MODEL NUMBERS

Back Box		Dome Drive*		Lower Dome‡	
BB4-SMB	Surface mount, black	DD427	Day/Night (NTSC) camera (27X)	LD53SMB-0	Smoked, surface, black
BB4-SMW	Surface mount, white	DD4CBW35	Day/Night (NTSC) camera (35X)	LD53SMB-1	Clear, surface, black
BB4-F	In-ceiling, black	DD5-FM	Removable, fixed mount bracket only (camera and lens not included). Interchangeable with all Spectra IV dome drives.	LD53SMB-2	Chrome, surface, black
BB4-F-E	In-ceiling, black, environmental			LD53SMB-3	Gold, surface, black
BB4-PB	Pendant mount, black, standard			LD53SMW-0	Smoked, surface, white
BB4-PG	Pendant mount, gray, standard			LD53SMW-1	Clear, surface, white
BB4-PG-E	Pendant mount, gray, environmental			LD53SMW-2	Chrome, surface, white
				LD53SMW-3	Gold, surface, white
				LD5F-0	Smoked, in-ceiling
				LD5F-1	Clear, in-ceiling
				LD5F-2	Chrome, in-ceiling
				LD5F-3	Gold, in-ceiling
				LD53PB-0	Smoked, pendant, black
				LD53PB-1	Clear, pendant, black
				LD53PB-2	Chrome, pendant, black§
				LD53PB-3	Gold, pendant, black§

Notes:
To order a fixed mount dome system, refer to the component models above and select one each of the following options: back box (BB4-F), dome drive (DD5-FM), plus choice of lower dome (LD5F-0, LD5F-1, LD5F-2, or LD5F-3).

For environmental applications, you must order an environmental back box (BB4-F-E) or (BB4-PG-E).

DD5-FM is ideal for use with Pelco's C10DN-6, C10DN-6X, C10CH-6, C10CH-6X, CCC1390H-6, and CCC1390H-6X cameras with selected Pelco lenses.

*For PAL and CCIR models add "-X" suffix to part number (for example, SD435-SMW-0-**X**).
†Environmental dome systems include a heater, fan, and the environmental pendant also includes a sun shield.
‡Use the pendant lower domes with the environmental in-ceiling and environmental pendant back boxes.
§Not recommended for outdoor use due to possible light reflections.

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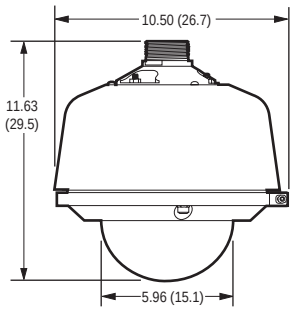
Pressurized Spectra® IV SE Series

BACK BOX AND LOWER DOME

Product Features

- Pressurized to 8 psig (55 kPa)
- Solid-State Sensors for Internal Temperature, Pressure, and Dew Point
- On-Demand Environmental Status Display for Internal Temperature, Pressure, and Dew Point
- On-Screen Alert Modes
- On-Screen Programmable Menus for Pan/Tilt, Camera, and Sensor Alert Settings
- Built-in Back Box Memory
- Integrated Passive UTP Circuit
- 2 Auxiliary Outputs and 7 Alarm Inputs
- Environmental Pendant Style Back Box
- Stainless Steel Construction
- Meets NEMA Type 6P and IP67 Standards
- Compatible with 27X and 35X Spectra® IV SE Dome Drives
- Built-in Power Line Surge and Limited Lightning Protection
- Fiber Optic Feedthrough Models Available



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE IN INCHES.

Pelco's **Pressurized Spectra® IV SE Series** dome system provides ultimate protection of the camera optics and electronics from moisture, corrosive gases, and airborne contaminants. Domes are easily pressurized with dry nitrogen to 8 psig (55 kPa) before or after installation to stabilize the environment inside the system.

Sensors strategically placed in the dome system send an "Alert" message when changes in internal pressure, temperature, or dew point are beyond factory-set acceptable limits. The sensors also allow for instant on-screen display of internal temperature, pressure, and dew point.

The components of the **Pressurized Spectra IV SE Series** include an environmental pendant style back box and a lower dome designed for optimum optical clarity. All stainless steel construction provides added protection in harsh environments.

The back box features a sun shroud, heater, and fan to maintain a consistent operating environment. The back box also features built-in back box memory, an integrated passive UTP circuit, two auxiliary outputs, seven alarm inputs, and is compatible with all Spectra IV SE Series dome drives.

The lower dome features an innovative O-ring seal and a stainless steel V-band to create a reliable pressure seal. The V-band has a unique latching system with one captivated fastener making lower dome installation easy. Accessible on the lower dome trim ring are a Schrader valve for system purging and a pressure relief valve.

The **Pressurized Spectra IV SE Series** is supplied with a prewired cable with mating connector. The cable includes all wires for system functionality, including power, alarms, auxiliaries, coaxial video, UTP video, and serial control.

Also available are pressurized back box models with fiber optic feedthrough that allow Pelco's FS85011A and third-party fiber optic transmitters to be installed inside the back box. These models include either a 9/125 µm single-mode or 62.5/125 µm multimode fiber optic cable with an ST-type connector.

TECHNICAL SPECIFICATIONS

SYSTEM MODEL NUMBERS

Back Box Type	Lower Dome	27X Day/Night†	35X Day/Night†
Environmental Pendant, Pressurized	Smoked	SD427-PRE0	SD435-PRE0
	Clear	SD427-PRE1	SD435-PRE1
Environmental Pendant, Pressurized Fiber Optic Feedthrough, Single-Mode	Smoked	SD427-PRSE0	SD435-PRSE0
	Clear	SD427-PRSE1	SD435-PRSE1
Environmental Pendant, Pressurized Fiber Optic Feedthrough, Multimode	Smoked	SD427-PRME0	SD435-PRME0
	Clear	SD427-PRME1	SD435-PRME1

COMPONENT MODEL NUMBERS

Back Box		Lower Dome		Dome Drive*	
BB4-PR-E	Environmental pendant, gray, pressurized	LD53PR-0	Lower dome with smoked bubble	DD427	Day/night (NTSC) camera (27X)
BB4-PRS-E	Environmental pendant, gray, pressurized, fiber optic feedthrough, single-mode	LD53PR-1	Lower dome with clear bubble	DD4CBW35	Day/night (NTSC) camera (35X)
BB4-PRM-E	Environmental pendant, gray, pressurized, fiber optic feedthrough, multimode			DD5-FM	Removable, fixed mount bracket only (camera and lens not included); interchangeable with all Spectra IV dome drives

*For PAL and CCIR models add "-X" suffix to part number (for example: SD435-PRSE0-**X** or DD427-**X**)

Note: To order a fixed mount system, refer to the component models above and select a back box model, a lower dome model, and the DD5-FM dome drive. DD5-FM is ideal for use with Pelco's C10DN-6, C10DN-6X, C10CH-6, C10CH-6X, CCC1390H-6, and CCC1390H-6X cameras with selected Pelco lenses.

ELECTRICAL

Input Voltage	18 to 32 VAC; 24 VAC nominal 22 to 27 VDC; 24 VDC nominal
Input Power	
24 VAC	23 VA nominal (without heater); 73 VA nominal (with heater)
24 VDC	0.7 A nominal (without heater)
Fuse	1.25 A
Auxiliary Outputs	2
Alarm Inputs	7

GENERAL

Construction	
Back Box and Lower Dome	Type 316L stainless steel
Bubble	Polycarbonate, 0.090-inch thick
Light Attenuation	1 F-stop (smoked); zero light loss (clear)
V-Band	Type 316L stainless steel
Pressure Relief	Brass
Schrader Valve	Brass
Connector	Nickel-plated steel
Mounting	1.5-inch NPT, threaded
Pressurization	
Valve	Schrader
Pressure	8 psig (55 kPa) (not factory pressurized)
Pressure Relief	10 psig (69 kPa)
Operating Temperature	(Assumes no wind chill factor; for detailed test conditions, contact Pelco)
Maximum	140°F (60°C) absolute maximum; 122°F (50°C) sustained maximum
Minimum	–60°F (–51.11°C) absolute minimum; minimal icing at sustained minimum of –50°F (–45°C); prevents icing at sustained minimum of –40°F (–40°C); de-ices 0.1 inch (2.5 mm) within 3 hours after power-up

Weight (approximate)	Unit	Shipping
Back Box	10.2 lb (4.6 kg)	13 lb (5.9 kg)
Lower Dome	3.3 lb (1.5 kg)	7 lb (3.2 kg)

CERTIFICATIONS/RATINGS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- S Mark for Argentina
- Meets NEMA Type 6P and IP67 standards

OPTIONAL ACCESSORIES

IPS-CABLE	Remote monitor cable and software kit
IPS-RDPE-2†	Remote data port
EH8000RKIT	Dry nitrogen recharging kit (cannot be refilled)
TXB Series†	Translator boards for AD Manchester, Hernis, Bosch® (Philips, Burle), TASS, and NTCIP protocols
FS85011A†	Fiber transmitter sends one unidirectional composite video channel and one bidirectional data channel over one optical fiber. Available in multimode and single-mode versions
Mounts	IDM4012SS (stainless steel, wall), IWM Series (wall), MRCA (ceiling), PP4348 (parapet roof), and PP350/PP351 (parapet wall/roof)

†If TXB or FS85011A boards are installed, it is not possible to upgrade system operating software through the remote data port (IPS-RDPE-2).

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Heavy-Duty Spectra® IV SE Series

BACK BOX AND LOWER DOME

Product Features

- Tough, Heavy-Duty Construction
- Improved Bubble Design
  - 0.090-Inch Injection Molded Polycarbonate
  - Increased Optical Clarity
  - 3.5X Stronger Than Previous Heavy-Duty Bubbles
  - Available in Clear and Smoked Bubble
- Trim Rings Are Constructed of Thick Aluminum
- Protective Cage for Lower Dome (Optional)
- Built-in Back Box Memory
- 2 Auxiliary Outputs
- 7 Alarm Inputs
- Integrated Passive UTP Circuit
- Compatible with 27X and 35X Spectra® IV SE Dome Drives
- In-Ceiling and Pendant Models Available
- Indoor/Outdoor Applications
- Pendant Models Meet NEMA Type 4X and IP66 Standards
- Ability to Add IP Network Capability by Purchasing Optional TXB-IP Module

IN-CEILING MODEL
BB4HD-F AND LD53HDF-1

ENVIRONMENTAL PENDANT
BB4HD-PG-E AND LD53HDCPB-1
(SHOWN WITH IWM-GY WALL MOUNT)

Pelco's **Heavy-Duty Spectra® IV SE Series** is ideal for installations where structural integrity and resistance to vandalism are a priority. Dual wall construction, added thickness, and a geometric design enhance the overall durability of the enclosure.

Three **Heavy-Duty Spectra IV SE Series** back box models are available. The in-ceiling model (BB4HD-F) has a reinforced mounting system for added security. The indoor pendant (BB4HD-PG) and environmental pendant (BB4HD-PG-E) models are strengthened by a thick shroud and dual wall construction, and meet NEMA Type 4X and IP66 standards. The environmental pendant includes a heater and fan.

The **Heavy-Duty Spectra IV SE Series** has all the features of the Spectra IV SE dome system (built-in back box memory, two auxiliary outputs, seven alarm inputs, integrated passive UTP circuit) and is also compatible with all Spectra IV SE dome drives.

The lower dome of the **Heavy-Duty Spectra IV SE Series** meets Pelco's stringent standards for optical clarity and strength. The lower dome features a clear or smoked 0.090-inch polycarbonate bubble that is 3.5 times stronger than previous heavy-duty bubbles. The trim ring is all aluminum construction with two barrel-type key locks to increase the tamper resistance of the unit.

For installations that face the highest threat of vandalism, models are available with a protective cage (optional). The cage is designed to increase the protection of the unit's bubble with minimal obstruction of the viewed scene. The camera automatically focuses through the cage's bars at medium to high zoom settings, eliminating interference (as shown below). The cage is removable for cleaning purposes. Cage hardware is only accessible when the lower dome is removed.

PELCO
by Schneider Electric

International Standards Organization Registered Firm; ISO 9001 Quality System

ISO 9001 CERTIFIED

C3419 / REVISED 10-31-10

TECHNICAL SPECIFICATIONS

SYSTEM MODEL NUMBERS

Back Box Type	Lower Dome	Cage	27X Day/Night†	35X Day/Night†
In-Ceiling	Clear	No	SD427-HF1	SD435-HF1
		Yes	SD427-HCF1	SD435-HCF1
Indoor Pendant		No	SD427-HP1	SD435-HP1
		Yes	SD427-HCP1	SD435-HCP1
Environmental Pendant		No	SD427-HPE1	SD435-HPE1
		Yes	SD427-HCPE1	SD435-HCPE1

COMPONENT MODEL NUMBERS

Back Box		Lower Dome*		Dome Drive†	
BB4HD-F	In-ceiling, gray	LD53HDF-1	Clear, in-ceiling	DD427	Day/night (NTSC) camera (27X)
BB4HD-PG	Pendant, gray	LD53HDCF-1	Clear, in-ceiling with cage	DD4CBW35	Day/night (NTSC) camera (35X)
BB4HD-PG-E	Environmental pendant, gray	LD53HDPB-1	Clear, pendant	DD5-FM‡	Removable, fixed mount bracket only (camera and lens not included)
		LD53HDCPB-1	Clear, pendant with cage		

*Also available with smoked bubble. To order, replace the number 1 with a 0 (zero) in the model number (for example: SD435-HF**0** or LD53HDF-**0**).
†For PAL and CCIR models add "-X" suffix to part number (for example: SD427-HF1-**X** or SD435-HCF1-**X**).
‡DD5-FM is ideal for use with Pelco's C10DN-6, C10DN-6X, C10CH-6, C10CH-6X, CCC1390H-6, and CCC1390H-6X cameras with selected Pelco lenses.

GENERAL

Construction		
Back Box	Aluminum	
Lower Dome	Clear or smoked polycarbonate, 0.09-inch thick	
Cage	Thickness 0.12 x 0.30 cast stainless steel	
Cage Color	Black, for maximum discreetness	
Cable Entry (Back Box)		
In-ceiling	0.75-inch conduit fitting	
Pendant	Through 1.5-inch NPT pendant mount	
Weight (approximate)		
Back Box	Unit	Shipping
In-ceiling	2.17 lb (0.98 kg)	6 lb (2.72 kg)
Pendant	4.45 lb (2.02 kg)	6 lb (2.72 kg)
Environmental Pendant	4.75 lb (2.15 kg)	5 lb (2.27 kg)
Lower Dome		
In-ceiling	1.6 lb (0.73 kg)	3 lb (1.36 kg)
In-ceiling w/cage	3.6 lb (1.63 kg)	5 lb (2.27 kg)
Pendant	1.83 lb (0.83 kg)	3 lb (1.36 kg)
Pendant w/cage	3.83 lb (1.74 kg)	4 lb (1.81 kg)
Environment		
In-ceiling	Indoor only	
Pendant	Indoor/outdoor	
Environmental Pendant	Indoor/outdoor	
Dimensions		
Pendant	9.7" W x 10.1" H (24.64 cm x 25.65 cm)	
In-ceiling	9.75" W x 8.5" H (24.77 cm x 21.59 cm)	
Operating Temperature		
In-ceiling	32° to 122°F (0° to 50°C)	
Pendant	32° to 140°F (0° to 60°C) absolute maximum operating temperature; 32° to 122°F (0° to 50°C) sustained maximum operating temperature	
Environmental Pendant	(Assumes no wind chill factor; for detailed test conditions, contact Pelco)	
Maximum	140°F (60°C) absolute maximum; 122°F (50°C) sustained maximum	
Minimum	–60°F (–51°C) absolute minimum; minimal icing at sustained minimum of –50°F (–45°C); prevents icing at sustained minimum of –40°F (–40°C); de-ices 0.1 inch (2.5 mm) within 3 hours after power-up	

ELECTRICAL

Input Voltage	18 to 32 VAC; 24 VAC nominal 22 to 27 VDC; 24 VDC nominal
Input Power	
24 VAC	23 VA nominal (indoor, without heater) 73 VA nominal (outdoor, with heater)
24 VDC	0.7 A nominal (indoor, without heater) 3 A nominal (outdoor, with heater)
Fuse	1.25 A
Auxiliary Outputs	2
Alarm Inputs	7

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- S Mark for Argentina
- Meets NEMA Type 4X, IP66 standards (Pendant models)
- Meets NEMA Type 1, IP40 standards (In-ceiling models)
- U.S. Patents D457,904 and D460,978

OPTIONAL ACCESSORIES

HD-KEYS	1 set of keys for heavy duty lower dome
IPS-CABLE	Remote monitor cable and software kit
IPS-RDPE-2§	Remote data port
TXB Series§	Translator boards for AD Manchester, Hernis, Bosch® (Philips, Burle), TASS, and NTCIP protocols
TXB-IP Series§	Communication module that allows you to control and monitor Spectra IV dome systems over an IP network (in-ceiling and pendant models only).
FS85011A§	Fiber transmitter modules

§If TXB or FS85011A boards are installed, remote code upload of system will not be possible.

Pelco by Schneider Electric
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Stainless Steel Spectra® IV SE Series

BACK BOX AND LOWER DOME

Product Features

- All Stainless Steel Construction
- Built-in Back Box Memory
- Intregrated Passive UTP Circuit
- 7 Alarm Inputs; 2 Programmable Auxiliary Outputs
- Built-in Surge and Limited Lightning Protection
- Compatible with 27X and 35X Spectra® IV SE Dome Drives
- Bubble Constructed of Optically Clear Acrylic
- Environmental Pendant Model Only
- Indoor/Outdoor Applications
- Meets NEMA Type 4X and IP66 Standards
- Ability to Add IP Network Capability by Purchasing Optional TXB-IP Module

ENVIRONMENTAL PENDANT
BB4-PSG-E AND LD53PSB-1
(SHOWN WITH IDM4012SS WALL MOUNT)

Pelco's **Stainless Steel Spectra® IV SE Series** is designed for harsh environmental installations and meets NEMA Type 4X and IP66 standards.

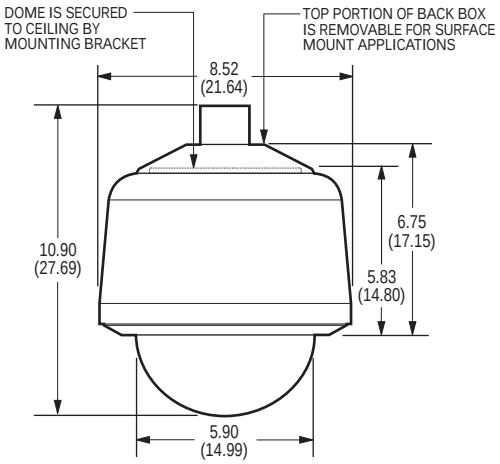
The components (back box and lower dome) provide added protection against corrosive conditions. The pendant-style back box (**BB4-PSG-E**) is constructed of Type 316 Stainless Steel (SS) and includes a sun shield (also constructed of Type 316 SS), heater, and fan. The lower dome features a trim ring constructed of Type 316 SS and an optically clear bubble that is available in smoked (**LD53PSB-0**) or clear (**LD53PSB-1**) acrylic.

The **Stainless Steel Spectra IV SE Series** has all the features of the Spectra IV SE dome system (built-in back box memory, two auxiliary outputs, seven alarm inputs) and is also compatible with all Spectra IV SE dome drives.

Camera and lens options for the **Stainless Steel Spectra IV SE Series** include:

- Day/night camera, 128X wide dynamic range, motion detection, electronic image stabilization, image enhancement, LowLight™ technology, and 35X optical zoom with 12X digital zoom
- Day/night camera, 128X wide dynamic range, motion detection, LowLight technology, and 27X optical zoom with 12X digital zoom

For an alternative mounting option use the **IDM4012SS** wall mount. The **IDM4012SS** mount is designed specifically for the **Stainless Steel Spectra IV SE Series** and features all stainless steel construction and conduit access in the bottom and back of the mount.



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

SYSTEM MODEL NUMBERS

Back Box Type	Lower Dome	27X Day/Night*	35X Day/Night*
Environmental Pendant	Smoked	SD427-PSGE0	SD435-PSGE0
	Clear	SD427-PSGE1	SD435-PSGE1

COMPONENT MODEL NUMBERS

Back Box		Lower Dome		Dome Drive*	
BB4-PSG-E	Environmental Pendant mount, gray 316 SS	LD53PSB-0	Smoked, pendant, black trim ring 316 SS	DD427	Day/night (NTSC) camera (27X)
				DD4CBW35	Day/night (NTSC) camera (35X)
		LD53PSB-1	Clear, pendant, black trim ring 316 SS	DD5-FM†	Removable, fixed mount bracket only (camera and lens not included); interchangeable with all Spectra IV dome drives

*For PAL and CCIR models add "-X" suffix to part number (for example: SD427-PSGE0-**X** or DD427-**X**)

† DD5-FM is ideal for use with Pelco's C10DN-6, C10DN-6X, C10CH-6, C10CH-6X, CCC1390H-6, and CCC1390H-6X cameras with selected Pelco lenses.

ELECTRICAL

Input Voltage	18 to 32 VAC; 24 VAC nominal
Input Power	
24 VAC	73 VA nominal
24 VDC	3 A nominal
Fuse	1.6 A
Auxiliary Outputs	2
Alarm Inputs	7

GENERAL

Construction		
Back Box	316 stainless steel; gray, polyurethane powder coated finish	
Lower Dome Trim Ring	316 stainless steel; black, polyurethane powder coated finish	
Bubble	Acrylic, clear or smoked	
Cable Entry	Through 1.5-inch NPT back box pendant mount	
Weight (approximate)	Unit	Shipping
Back Box	4.75 lb (2.15 kg)	7 lb (3.18 kg)
Lower Dome	1.83 lb (0.83 kg)	4 lb (1.81 kg)
Dome Drive	3.3 lb (1.48 kg)	4.9 lb (2.22 kg)
Environment	Indoor/outdoor	
Operating Temperature	(Assumes no wind chill factor; for detailed test conditions, contact Pelco)	
Maximum	140°F (60°C) absolute maximum; 122°F (50°C) sustained maximum	
Minimum	–60°F (–51.11°C) absolute minimum; minimal icing at sustained minimum of –50°F (-45.56°C); prevents icing at sustained minimum of –40°F (–40°C); de-ices 0.1 inch (2.5 mm) within 3 hours after power-up	

CERTIFICATIONS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- S Mark for Argentina
- Meets NEMA Type 4X, IP66 standards when installed properly

OPTIONAL ACCESSORIES

IPS-CABLE	Remote monitor cable and software. See www.pelco.com for a list of compatible devices.
IPS-RDPE-2	Remote data port. 24 VAC, wall/pole mount video/data breakout box. Allows ground-level control/programming and software upgrades when used with the IPS-CABLE.
TXB Series ‡	Translator boards for AD Manchester, Hernis, Bosch® (Philips, Burle), TASS, and NTCIP protocols.
TXB-IP Series‡	Communication module that allows you to control and monitor Spectra IV dome systems over an IP network (in-ceiling and pendant models only).
FS85011A‡	Fiber transmitter sends one unidirectional composite video channel and one bidirectional data channel over one multi-mode or single-mode fiber optic cable.

‡If TXB/TXB-IP Series or FS85011A boards are installed, it is not possible to upgrade system operating software through the remote data port (IPS-RDPE-2).

RECOMMENDED POWER SUPPLIES

WCS Series	Single/multiple 24 VAC camera power supply, outdoor

RECOMMENDED MOUNT

IDM4012SS	Stainless steel wall mount with feed-through capabilities

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Spectra® IV SE Horizon Series Dome Systems

CRYSTAL CLEAR, INTEGRATED LOOK-UP DOME SYSTEM

Product Features

- Unparalleled Crystal Clear Video at Any Angle
- Vertical Tilt of up to 18° Above Horizontal
- Autofocus, High Resolution Integrated Camera/Optics Package
- Day/Night, 540 TVL, 128X Wide Dynamic Range (WDR), Motion Detection, and Electronic Image Stabilization
- Window Blanking
- Camera Title Overlay, 20 User-Definable Characters
- Horizontal and Zone Blanking
- On-Screen Compass and Tilt Display
- Password Protection
- Freeze Frame During Presets
- Built-in Surge and Limited Lightning Protection
- Integrated Passive Unshielded Twisted Pair (UTP) Circuit
- Low Lux Noise Reduction

ENVIRONMENTAL IN-CEILING MODEL SD4H35-F-E0

PENDANT MODEL SD4H35-PG-0

- Ability to Add IP Network Capability by Purchasing Optional TXB-IP Module

An important, but often overlooked, component of a high-speed dome system is the relationship between the dome bubble and the camera lens. Special consideration was taken when designing the Spectra® IV SE Horizon lower dome bubble to ensure that an optimal optical relationship between the lens and bubble was achieved, providing crystal clear video at long focal lengths and extended vertical angles.

The Spectra IV SE Horizon dome drive's unique **integrated optics package** incorporates many advanced features that allow the system to produce high quality video in the most difficult environments. The camera in the Spectra IV SE Horizon dome drive features vertical tilt of 18° above the horizon, providing optical clarity and the ability to look up. **LowLight™** technology allows the camera to compensate for scenes where minimal light is present. The camera features advanced **128X wide dynamic range** that enables the system to compensate for scenes where dramatic contrasts in lighting are present. **Electronic image stabilization** digitally reduces blurring of the camera image due to vibration caused by external sources such as wind and traffic.

Spectra IV SE Horizon back box options include environmental in-ceiling, standard pendant, and environmental pendant models. Each back box model features built-in **back box memory** to store camera and location-specific dome settings, including labels, presets, patterns, and zones. A **passive UTP circuit** is located on the door assembly for convenient video transmission through twisted pair wire. For added flexibility, Pelco fiber modules can also be attached to the door assembly for transmission over single-mode or multimode fiber.

Spectra IV SE Horizon dome systems feature many software enhancements that increase performance and make configuration and operation easy. An **internal scheduling clock** allows for the scheduling of presets and patterns. **Window blanking** enables a user to configure up to eight, four-sided, user-defined privacy areas. **Password protection** prevents unauthorized users from changing the system settings. Configurable **on-screen compass and tilt display** provides positioning information when needed. Intuitive multilingual on-screen menus can be displayed in English, Spanish, Portuguese, Italian, French, German, Russian, Polish, Turkish, and Czech.

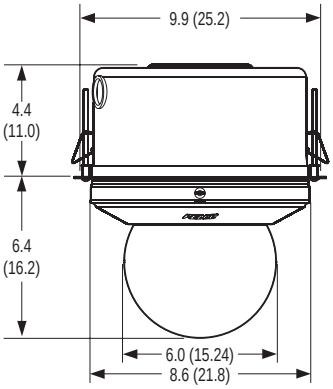
Spectra IV SE Horizon's variable speed capabilities range from a smooth, fast pan motion of 400 degrees per second to a smooth "creep" speed of 0.1 degree per second. The system is capable of continuous 360 degrees rotation and has an **"auto flip"** feature that allows the dome to rotate 180 degrees and reposition itself for uninterrupted viewing of any subject that passes directly beneath the dome.

In addition, with the optional Pelco TXB-IP module, you can add IP network capability at any time to a Spectra IV dome system without losing analog viewing and control. By snapping the TXP-IP module into the back box, you can stream network video to a Web browser, Endura®, Digital Sentry®, or third-party software recording solution allowing integration into virtually any IP-based system.

DOME DRIVE FEATURES

- Vertical Tilt of 18° Above Horizontal
- 256 Presets
- ±0.1° Preset Accuracy
- Electronic Image Stabilization
- Extended Vertical Angles
- Multilanguage Menus (English, Spanish, Portuguese, Italian, French, German, Russian, Polish, Turkish, and Czech)
- RJ-45 Data Port for Software Update and Setup
- On-Screen Compass, Tilt, and Zoom Display
- 400°/sec Pan Preset Speed and 200°/sec Tilt Preset Speed
- Rotating Discreet Liner with Sealed Fixed Bubble
- Window Blanking: Up to 8, Four-Sided, User-Defined Shapes
- 8 Zones (configurable in size) Can Be Labeled with up to 20 Characters Each or Set to Output Blank Video
- 7 Alarm Inputs
- 1 Auxiliary (Form C) Relay Output and 1 Open Collector Auxiliary Output (can be alternately configured to operate upon alarm)
- Configurable Locations of Labels and On-Screen Displays
- Action on Alarm: Alarms Can Be Individually Configured for 3 Priority Levels, to Initiate a Stored Pattern, or to Go to an Associated Preset When Received
- Resume After Alarm: Allows the Dome to Return to a Previously Configured State After Alarm Acknowledgement or to its Previous Position Before Alarm
- Multiple Park and Power-Up Action
- Patterns: Up to 8, On-Screen, User-Defined Configurable Patterns; Includes Pan, Tilt, Zoom, and Preset Functions
- Proportional Pan/Tilt: Continually Decreases Pan/Tilt Speeds in Proportion to Depth of Zoom
- Variable Scan Speed: Scan Speed Can Be Configurable Between 1–40°/sec
- Pan Motion Allows 0.1–150°/sec Pan Speed
- Configurable Limit Stops for Auto/Random/Frame Scan Modes
- Auto-sensing Protocol (Coaxitron®, RS-422 Pelco P and Pelco D); Accepts Competitive Control Protocol with Optional Translator Card
- Digital Position, Zoom Control, and Feedback Through Pelco D Protocol
- Built-in Menu System for Setup of Configurable Functions
- "Auto Flip" Rotates Dome 180° at Bottom of Tilt Travel
- Configurable Zoom Speeds

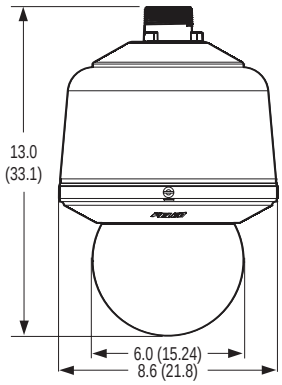
BACK BOX FEATURES



Environmental In-Ceiling

- Built-in Memory Stores Camera/Dome Settings
- Single Back Box for Hard Ceiling Applications
- Requires 4.4-Inch Space Above Ceiling and 6.4 Inches Below
- Includes Heater and Fan
- Minimum Ceiling Thickness 0.5-Inch; Maximum 1.75 Inches
- Quick Disconnect to Dome Drive
- Aluminum Construction
- Integrated Passive UTP

(STANDARD PENDANT MODEL)



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

Standard and Environmental Pendant

- Standard and Environmental Models
- Built-in Memory Stores Camera/Dome Settings
- Quick Disconnect to Dome Drive
- Aluminum Construction
- Environmental Model Includes Sun Shield, Fan, and Heater
- Integrated Passive UTP

TECHNICAL SPECIFICATIONS

CAMERA/OPTICS

Signal Format	NTSC **(DD4H35)** PAL **(DD4H35-X)**
Scanning System	2:1 Interlace/1:1 progressive scan (user selectable)
Image Sensor	1/4-inch EXview HAD™
Effective Pixels	
NTSC	768 (H) X 494 (V)
PAL	752 (H) X 582 (V)
Horizontal Resolution	
NTSC	>540 TV Lines
PAL	>540 TV Lines
Lens	f/1.4 (focal length, 3.4 ~ 119 mm)
Zoom	35X optical, 12X digital
Zoom Speed (optical range)	3.2/4.6/6.6 seconds
Horizontal	
Angle of View	55.8° at 3.4 mm wide zoom; 1.7° at 119 mm telephoto zoom
Focus	Automatic with manual override
Maximum Sensitivity at 35 IRE	
NTSC/EIA	0.55 lux at 1/60 sec **(color)** 0.018 lux at 1/2 sec **(color)** 0.00018 lux at 1/2 sec **(B-W)**
PAL/CCIR	0.45 lux at 1/50 sec **(color)** 0.015 lux at 1/1.5 sec **(color)** 0.00015 lux at 1/1.5 sec **(B-W)**
Sync System	Internal/AC line lock, phase adjustable using remote control, V-Sync
White Balance	Automatic with manual override
Shutter Speed	Automatic (electronic iris)/Manual
NTSC	1/2 ~ 1/30,000
PAL	1/1.5 ~ 1/30,000
Iris Control	Automatic Iris Control with manual override
Gain Control	Automatic/OFF
Video Output	1 Vp-p, 75 ohms
Video Signal to Noise	>50 dB
Wide Dynamic Range	128X
Electronic Image Stabilization	Integrated
Image Enhancement	Integrated

MECHANICAL *(Dome Drive Only)*

Pan Movement	360° continuous pan rotation
Vertical Tilt	Unobstructed +18° to –92°
Manual Pan/Tilt Speeds	
Pan	0.1° to 80°/sec manual operation, 150°/sec Turbo
Tilt	0.1° to 40°/sec manual operation
Preset Speeds	
Pan	400°/sec
Tilt	200°/sec For variable-speed operation an appropriate controller is required. (With nonvariable speed control, Spectra IV SE Horizon pan/tilt speed is 20°/sec)

ELECTRICAL

Input Voltage	18 to 32 VAC; 24 VAC nominal 22 to 27 VDC; 24 VDC nominal
Input Power	
24 VAC	23 VA nominal (without heater); 73 VA nominal (with heater)
24 VDC	0.7 A nominal (without heater); 3 A nominal (with heater)
Fuse	1.25 A
Auxiliary Outputs	2
Alarm Inputs	7

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- U.S. Patents 5,931,432; 6,793,415 B2; 6,802,656 B2; 6,821,222 B2

Meets the following standards:

- NEMA Type 4X, IP66 when installed properly

GENERAL

Construction		
Back Box		
In-Ceiling	Aluminum	
Pendant	Aluminum	
Dome Drive	Aluminum, thermo plastic	
Bubble	Acrylic	
Light Attenuation		
Smoked	f/0.5 light loss	
Clear	Zero light loss	
Cable Entry (back box)		
In-Ceiling	0.75-inch conduit fitting	
Pendant	Through 1.5-inch NPT pendant mount	
Weight (approximate)	Unit	Shipping
Back Box		
Environmental In-Ceiling	2.1 lb (0.95 kg)	3 lb (1.36 kg)
Standard Pendant	2.4 lb (1.09 kg)	4 lb (1.81 kg)
Environmental Pendant	3.5 lb (1.59 kg)	5 lb (2.27 kg)
Dome Drive	3.0 lb (1.36 kg)	4 lb (1.81 kg)
Lower Dome	0.8 lb (0.40 kg)	2 lb (0.90 kg)
Environment		
Environmental In-Ceiling	Outdoor	
Pendant, Standard and Environmental	Indoor/outdoor	
Operating Temperature		
Standard Pendant	(Assumes no wind chill factor)	
Maximum	113°F (45°C) absolute maximum; 95°F (35°C) sustained maximum	
Minimum	25°F (–4°C) sustained minimum	
Environmental In-Ceiling and Environmental Pendant	(Assumes no wind chill factor)	
Maximum	140°F (60°C) absolute maximum; 122°F (50°C) sustained maximum	
Minimum	–60°F (–51°C) absolute minimum; prevents icing at sustained minimum of –50°F (–45°C); de-ices 0.1 inch (2.5 mm) within 3 hours after power-up	
Effective Projected Area (EPA)	24 square inches (without mount) 50.6 square inches (with IWM Series mount)	

TECHNICAL SPECIFICATIONS

SYSTEM MODEL NUMBERS

Type	Back Box Color	Lower Dome	NTSC	PAL
In-Ceiling, Environmental*	Black	Smoked	SD4H35-F-E0	SD4H35-F-E0-X
		Clear	SD4H35-F-E1	SD4H35-F-E1-X
Pendant, Standard	Lt. Gray	Smoked	SD4H35-PG-0	SD4H35-PG-0-X
		Clear	SD4H35-PG-1	SD4H35-PG-1-X
Pendant, Environmental*	Lt. Gray	Smoked	SD4H35-PG-E0	SD4H35-PG-E0-X
		Clear	SD4H35-PG-E1	SD4H35-PG-E1-X

*Environmental dome systems include a heater, fan, and the environmental pendant also includes a sun shield.

COMPONENT MODEL NUMBERS

Back Box		Dome Drive		Lower Dome	
BB4-F-E	In-ceiling, black, environmental	DD4H35	Day/Night (NTSC) camera (35X)	LD4H-0	Smoked
BB4-PG	Pendant mount, gray, standard			LD4H-1	Clear
BB4-PG-E	Pendant mount, gray, environmental				

OPTIONAL ACCESSORIES

IPS-CABLE	Remote monitor cable and software kit consisting of the Spectra IV remote monitor interface cable and necessary software for use with a PC. Refer to *www.pelco.com* for a list of compatible devices.
IPS-RDPE-2†	Remote data port. 24 VAC, wall/pole mount video/data breakout box. Allows ground-level control/configuration and software upgrades when used with the IPS-CABLE.
TXB Series†	Translator boards for AD™ Manchester, Hernis, Bosch® (Philips, Burle), Sensormatic®, Vicon™, TASS, and NTCIP protocols.
TXB-IP Series	Communication module that allows you to control and monitor Spectra IV dome systems over an IP network (in-ceiling and pendant models only).
FS85011A†	Fiber transmitter sends one unidirectional composite video channel and 1 bidirectional data channel over 1 multimode or single-mode fiber optical cable.

†If TXB or FS85011A boards are installed, remote upload of system software will not be possible.

RECOMMENDED MOUNTS

In-Ceiling Domes

SD5-P	2' x 2' drop ceiling panel, aluminum construction. Replaces 2' x 2' ceiling tile.
SCA1	Support rails for BB4-F; for use in ceiling tile applications.

Pendant Domes

BB5-PCA-BK	Pendant conduit adapter, black
IWM Series	Wall mount, with or without integral 24 VAC, 100 VA transformer. Can be adapted for corner, parapet, or pole applications.
MRCA	Ceiling mount, black
PP4348	Parapet roof mount
PP350/PP351	Parapet wall/roof mount
SWM Series	Compact wall mount. Can be adapted for corner or pole applications.

RECOMMENDED POWER SUPPLIES

MCS Series	Indoor, 24 VAC power supply
WCS Series	Outdoor, 24 VAC power supply

Refer to individual power supply specifications for more information.

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Spectra® Mini Dome System

INDOOR, MINIATURE, SURFACE MOUNT/IN-CEILING

Product Features

- Familiar Spectra® Camera Menu Structure
- Single Model for Surface Mount and In-Ceiling Applications
- Autofocus, High Resolution Integrated Color Camera/Optics Package
- 80X Zoom (10X Optical, 8X Digital)
- Zone Blanking
- 64 Presets
- 0.5° Preset Accuracy
- 140°/second Pan Speed
- Rotating Discreet Liner
- 1 Pattern
- 1 Dynamic Window Blanking Area
- Proportional Pan and Tilt
- Programmable Zoom Speeds
- Multilingual Support
- Integral, Autosensing, Multiprotocol Receiver
- Auto Flip Dome Rotation
- Integrated UTP Circuit
- Quick Connect Cable for Power, Video (Coaxial or UTP), and Data
- Available with Smoked or Clear Dome

SURFACE MOUNT APPLICATION

RECESSED CEILING APPLICATION

The **Spectra® Mini** incorporates many well-known features from Pelco's full-size Spectra dome system into a cost effective, small form factor. The easy-to-install dome system can be mounted to the surface of ceilings or recessed into hard ceilings and suspended tile ceilings. A high resolution camera transmits video over coaxial cable or unshielded twisted pair (UTP) wires. When paired with active UTP receivers, **Spectra Mini** is capable of transmitting high quality video across distances of up to 4,000 ft (1,219 m). Pan/tilt operation can be performed with Pelco's controllers that transmit Pelco D, Pelco P, or Coaxitron® protocols. For non-Pelco controllers, a translator board can be installed. On-screen programming allows easy setup of the miniature dome's many features.

Variable speed capabilities of the **Spectra Mini** range from a fast pan motion of 140 degrees per second to a smooth "creep" speed of 0.4 degrees per second. The system is capable of continuous 360 degrees rotation and has an auto flip feature. This feature allows the dome to rotate 180 degrees and reposition itself for uninterrupted viewing of any subject that passes directly beneath the dome's location.

TECHNICAL SPECIFICATIONS

Product Features

- 64 Presets: 53 User Definable and 11 Predefined
- ±0.5° Preset Accuracy
- Multilingual Menus (English, Spanish, Portuguese, Italian, French, and German)
- Alternate Language Files (includes Russian, Polish, Turkish, and Czechoslovakian) Available as Optional Software Upload
- Data Port for Software Update and Setup
- On-Screen Compass, Tilt, and Zoom Display
- Password Protection
- 140°/sec Pan Preset Speed and 80°/sec Tilt Preset Speed
- Rotating Discreet Liner
- 4 Zones (programmable in size) Can Be Labeled with up to 20 Characters Each or Set to Output Blank Video
- Programmable Locations of Labels and On-Screen Displays
- 1 on-screen, user-defined programmable pattern. Includes pan, tilt, zoom, and preset functions
- 1 Programmable Window Blanking Area
- Proportional Pan and Tilt: Continually decreases pan and tilt speeds in proportion to depth of zoom
- Variable Scan Speed: Scan speed can be 3, 6, or 12°/sec
- Pan Motion Allows 0.4-140°/sec Pan Speed
- Programmable Limit Stops for Auto/Random/Frame Scan Modes
- Autosensing Protocol (Coaxitron, RS-422 Pelco P and Pelco D); Accepts Competitive Control Protocols with Optional TXB Translator Boards
- Digital Position, Zoom Control, and Feedback Through Pelco D Protocol
- Built-in Menu System for Setup of Programmable Functions
- Auto Flip Rotates Dome 180° at Bottom of Tilt Travel
- Programmable Zoom Speeds

GENERAL

Construction	
Top Cap	Anodized cast aluminum
Dome Drive	ABS plastic
Trim Ring and Surface Mount Ring	ABS plastic
Bubble	Acrylic
Finish	White or black
Light Attenuation	
Smoked	f/0.5 light loss
Clear	Zero light loss
Cable Entry	RJ45-10 pigtail connector for video (UTP), power, and data (supplied) BNC connector for video (coaxial)
Environment	Indoor
Operating Temperature	32° to 122°F (0° to 50°C)
Unit Weight	1.75 lb (0.79 kg)
Shipping Weight	4 lb (1.81 kg)

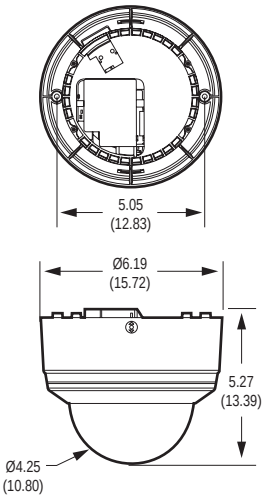
MECHANICAL

Pan Movement	360° continuous pan rotation
Vertical Tilt	Unobstructed +2° to –92°
Manual Pan/Tilt Speeds	
Pan	0.4° to 80°/sec manual operation, 100°/sec turbo
Tilt	0.7° to 40°/sec manual operation
Preset Speeds	
Pan	140°/sec
Tilt	80°/sec For variable speed operation an appropriate controller is required.

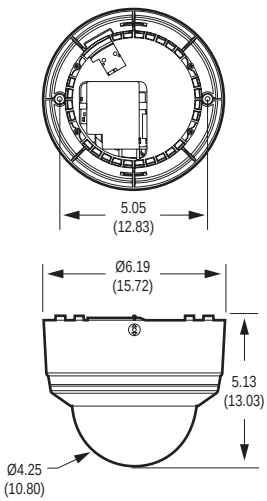
ELECTRICAL

Input Voltage	18 to 30 VAC; 24 VAC nominal
Input Power	21 VA nominal
Fuse	1.6 A

WITH TXB TRANSLATOR BOARD



WITHOUT TXB TRANSLATOR BOARD



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

CAMERA

Signal Format	NTSC/PAL
Scanning System	2:1 interlace
Image Sensor	1/4-inch interline CCD
Effective Pixels	
NTSC	768 (H) x 494 (V)
PAL	752 (H) x 582 (V)
Horizontal Resolution	
NTSC	>470 TV lines
PAL	>460 TV lines
Minimum Illumination	3.0 lux
Sync System	AC line lock, phase adjustable using remote control, V-Sync
White Balance	Automatic with manual override
Shutter Speed	Automatic (electronic iris)/manual 1/60 ~1/30,000
Gain Control	Automatic with manual override
Video Output	
Composite	1.0 to 1.2 Vp-p, 75 ohms, adjustable
UTP	1.0 to 1.2 Vp-p, 100 ohms, adjustable
Video Signal-to-Noise Ratio	>50 dB

OPTIONAL MOUNTS

SPM4-W	Pendant mount, white
SPM4-B	Pendant mount, black
SWM4-W	Pendant-wall mount, white
SWM4-B	Pendant-wall mount, black

LENS

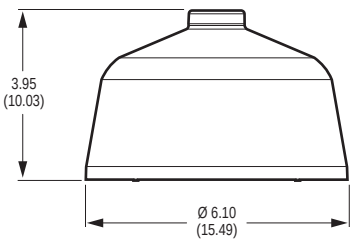
Lens	f/1.8 (f= 4.2~42 mm optical) 10X optical zoom, 8X digital zoom
Zoom Speed (optical range)	1.5/2.5/4.3 seconds
Horizontal Angle of View	46.4° wide zoom; 5.0° telephoto zoom
Focus	Automatic with manual override
Iris Control	Automatic with manual override

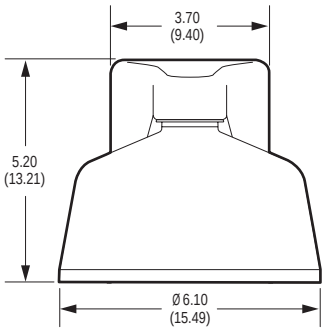
CERTIFICATIONS

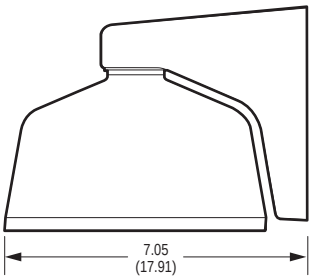
- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick

SPECTRA MINI DOME SHOWN WITH OPTIONAL SPM4-W PENDANT MOUNT

SPECTRA MINI DOME SHOWN WITH OPTIONAL SWM4-W PENDANT-WALL MOUNT







NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

SPM4-W/SPM4-B

Mounting Method	Attach mount to 0.75-inch NPT pipe or 20 mm threaded conduit; attach Spectra Mini dome with hardware supplied with mount
Construction	ABS plastic
Finish	
SPM4-W	White
SPM4-B	Black
Unit Weight	0.30 lb (0.14 kg)
Shipping Weight	2 lb (0.91 kg)

SWM4-W/SWM4-B

Mounting Method	Install adapter plate on wall or junction box using appropriate hardware; attach wall mount to adapter plate; attach Spectra Mini dome with hardware supplied with mount
Construction	ABS plastic, aluminum
Finish	
SWM4-W	White
SWM4-B	Black
Unit Weight	0.72 lb (0.33 kg)
Shipping Weight	2 lb (0.91 kg)

MODELS AND RELATED PRODUCTS

MODELS

SD4-B0	Indoor dome system, black, smoked bubble, NTSC
SD4-B1	Indoor dome system, black, clear bubble, NTSC
SD4-B0-X	Indoor dome system, black, smoked bubble, PAL
SD4-B1-X	Indoor dome system, black, clear bubble, PAL
SD4-W0	Indoor dome system, white, smoked bubble, NTSC
SD4-W1	Indoor dome system, white, clear bubble, NTSC
SD4-W0-X	Indoor dome system, white, smoked bubble, PAL
SD4-W1-X	Indoor dome system, white, clear bubble, PAL

OPTIONAL ACCESSORIES

IPS-CABLE	Remote monitor cable and software kit consisting of the Spectra IV remote monitor interface cable and necessary software for use with a PC. Refer to *www.pelco.com* for a list of compatible devices.
IPS-MINIADPT	Adapter cable required to use IPS-CABLE.
TXB Series	Translator boards for AD Manchester, Hernis, Bosch® (Philips, Burle), Sensormatic®, TASS, and Vicon™ protocols.

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ES30C/ES31C Series Positioning System

ESPRIT® SYSTEM WITH IOP CAMERA AND OPTIONAL WIPER

Product Features

- Receiver, Pan/Tilt, and Enclosure with an Integrated Optics Package (IOP)
- Configurable Camera Settings
- Configurable Camera Title
- On-Screen Compass, Tilt, and Zoom Display
- Auto Iris with Manual Override
- Auto Focus with Manual Override
- AC Line Lock
- Variable Speed Pan: 0.1° to 100°/Sec with Proportional Pan
- 360° Continuous Pan Rotation
- Zone Blanking Allows up to 8 Zones (Configurable in Size) to be Set to Output Blank Video
- Tilt Range of +33° to –83° from Horizontal
- Preset Positioning, Patterns, Multiple Scan Modes
- Designed for Minimal Maintenance, No Gears to Adjust
- Wide Dynamic Range (35X only)

ESPRIT IOP SYSTEM WITH WIPER
(SHOWN WITH WALL MOUNT AND POLE ADAPTER)

Pelco's **ES30C/ES31C** Esprit® Positioning System features a receiver, pan/tilt, enclosure, and Integrated Optics Package (IOP) in a single, easy-to-install system. The IOP contains an autofocus camera and lens module with configurable features.

For a wide range of applications, the **ES30C** and **ES31C Series** features a choice of three different IOP cameras:

- Day/night camera (540 TVL) with an infrared cut filter, 35X zoom lens (35X optical, 12X digital), electronic image stabilization, and wide dynamic range
- Day/night camera (520 TVL) with an infrared cut filter and 24X zoom lens (24X optical, 10X digital)
- High resolution color camera (470 TVL) with LowLight™ color technology and 22X zoom lens (22X optical, 10X digital)

A powder-coated, aluminum construction makes the **ES30C** and **ES31C** ideal for either indoor or outdoor applications. The system has an absolute operating temperature range of –50° to 140°F (–45° to 60°C). Within two hours after power-up, the entire unit can de-ice and be operational from a temperature of –13°F (–25°C).

The **ES31C Series** includes a window wiper. The wiper is completely integrated into the enclosure and does not interfere with the viewing range of the system. The wiper can be configured to delay between wipes and to automatically shut off after a specified period. The wiper design also allows for easy replacement of the wiper blade. A built-in heater, window defroster/defogger, sun shroud, and insulation blanket are standard features on the **ES30C** and **ES31C** units. All units also include an open collector auxiliary output that functions for two seconds before deactivating.

The **ES30C** and **ES31C Series** variable pan and tilt speeds range from 0.1 to 40 degrees per second in manual pan mode and 0.1 to 20 degrees per second in manual tilt. Pan preset and turbo speeds are 100 degrees per second in wind speeds of 50 mph and 50 degrees per second in the 90 mph wind-speed profile. Tilt preset speed is 30 degrees per second. The **ES30C** and **ES31C** are capable of 360 degrees of continuous pan rotation. The tilt range allows for horizontal viewing of +33 to –83 degrees. There are 64 configurable preset positions with a preset accuracy of one-quarter degree.

The systems are available with an input voltage of 24 VAC or with a selectable power source of 120/230 VAC. The **ES30C** and **ES31C** also have a power-up recovery mode that allows the user to specify what operation the system will resume whenever the power is cycled.

TECHNICAL SPECIFICATIONS

ADDITIONAL PRODUCT FEATURES

- Deterrent Surveillance
- Integral Multiprotocol (Coaxitron®, RS-422 Pelco D and Pelco P Protocols) Receiver/Driver
- Digital Position and Zoom Control and Feedback Using Pelco D Protocol
- Integral Camera Enclosure
- Operational in 90 mph Winds, Can Withstand Wind Velocity up to 130 mph
- Pan Preset Speed of 100°/Sec in 50 mph Winds and 50°/Sec in 90 mph Winds
- Variable Scan Speeds (1 to 40°/Sec)
- Translator Boards for Selected Competitive Protocols
- Easy to Install: Quick and simple electrical connections
- 24 VAC or 120/230 VAC Selectable
- Full Continuous-Duty Warranty
- 850 nm and 950 nm Active IR Illumination Focus Algorithms (24X and 35X models only)

SOFTWARE/HARDWARE

- 64 Configurable Presets with Labels
- Auto, Frame, and Random Scan
- Configurable Power-up Mode
- Configurable Park
- Configurable Manual Limit Stops (Pan)
- Configurable Scan Limit Stops (Pan)
- Patterns
- Proportional Pan/Tilt
- 8 Zones (configurable in size) Can Be Labeled with up to 20 Characters Each
- Up to 8 Zones (configurable in size) Can Be Set to Output Blank Video
- 10-Inch Integrated Enclosure with Pre-Assembled, IOP Camera
- Sun Shroud, Heater/Window Defroster, and Insulation All Standard
- 1 Auxiliary Output
- Integrated Window Wiper with Configurable Delay and Shut-Off (ES31C Models)

ELECTRICAL

Input Voltage	24, 120, or 230 VAC, 50/60 Hz; switch selectable for 120/230 VAC inputs
Input Voltage Range	±10%
Power Consumption	Maximum 70 VA per system
Heater and Defroster	Thermostatically controlled
Electrical Connections	2 power source connections made at mount location with wire splices and 1 ground wire splice; 1 BNC receptacle and 4 wire splices at mount location for RS-422 Pelco D and Pelco P protocols; 2 wire splices for open collector auxiliary output
Aux 2	Open collector output with 2-second activation; connected relay must require no more than 32 VDC and 40 mA to energize relay coil; wire length between Esprit and relay must be less than 100 ft (30 m)

Video Coaxial Cable Max. Wiring Distances

Cable Type*	Maximum Distance
RG59/U	750 ft (229 m)
RG6/U	1,000 ft (305 m)
RG11/U	1,500 ft (457 m)

*Minimum cable requirements:
75-ohms impedance; all-copper center conductor; all copper braided shield with 95% braid coverage

MECHANICAL

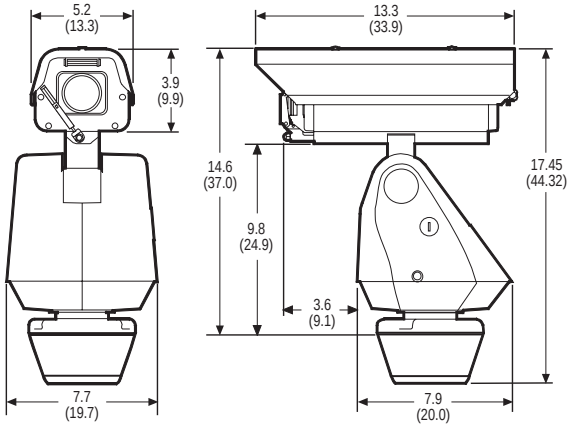
Pan Movement	360° Continuous pan rotation
Vertical Tilt	Unobstructed +33° to –83°
Variable Pan/Tilt Speed	
Pan	0.1° to 40°/sec variable-speed operation, 100°/sec Turbo
Tilt	0.1° to 20°/sec variable-speed operation
Preset Speeds	
Pan	100°/sec
Tilt	30°/sec
Camera Mounting	Integrated camera sled assembly
Latches	One link-lock, No. 3 stainless-steel latch; can be secured with padlock (not supplied)

GENERAL

Construction	Die-cast, extruded and sheet aluminum; stainless steel hardware	
Finish	Gray polyester powder coat	
Viewing Window	0.23" (5.84 mm) thick, optically clear impact/scratch-resistant coated Lexan®	
Operating Temperature	–50° to 122°F (–45° to 50°C) for sustained system operation or 140°F (60°C) absolute maximum. Within two hours after power-up, the entire unit can de-ice and be operational from a temperature of –13°F (–25°C).	
Operating Environment	Will remain operational in 90 mph wind conditions; withstands 130 mph	
Weight	With Pedestal Adapter	With Wall Mount
Unit		
Standard with IOP	20 lb (9.0 kg)	22 lb (9.9 kg)
With Wiper and IOP	21 lb (9.5 kg)	23 lb (10.4 kg)
Shipping		
Standard with IOP	25 lb (11.3 kg)	28 lb (12.6 kg)
With Wiper and IOP	26 lb (11.7 kg)	29 lb (13.1 kg)

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- Meets NEMA Type 4X and IP66 standards
- U.S. Patents 340,940 and 5,224,675



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

CAMERA/OPTICS

	Day/Night (35X)	Day/Night (24X)	Color, LowLight (22X)
Signal Format	NTSC, PAL	NTSC, PAL	NTSC, PAL
Scanning System	Progressive or 2:1 Interlace	2:1 Interlace	2:1 Interlace
Image Sensor Effective pixels NTSC PAL	1/4-inch EXview HAD™ CCD 768 (H) x 494 (V) 752 (H) x 582 (V)	1/4-inch CCD 768 (H) x 494 (V) 752 (H) x 582 (V)	1/4-inch EXview HAD CCD 768 (H) x 494 (V) 752 (H) x 582 (V)
Horizontal Resolution NTSC PAL	 >540 TV lines >540 TV lines	 >520 TV lines >520 TV lines	 >470 TV lines >460 TV lines
Lens	f/1.4 (focal length, 3.4 ~ 119 mm optical)	f/1.2 (focal length, 3.8 ~ 91.2 mm optical)	f/1.6 (focal length, 4 ~ 88 mm optical)
Zoom	35X optical, 12X digital	24X optical, 10X digital	22X optical, 10X digital
Zoom Speed (optical range)	3.2 /4.6/6.6 seconds	3.9 seconds	3.9 seconds
Horizontal Angle of View Focus	 55.8° at 3.4 mm wide zoom; 1.7° at 119 mm telephoto zoom Automatic with manual override	 50.7° at 3.8 mm wide zoom; 2.3° at 91.2 mm telephoto zoom Automatic with manual override	 47.3° at 4.0 mm wide zoom; 2.2° at 88 mm telephoto zoom Automatic with manual override
Maximum Sensitivity at 35 IRE NTSC PAL	 0.55 lux at 1/60 sec shutter **(color)** 0.063 lux at 1/4 sec shutter **(color)** 0.00018 lux at 1/2 sec shutter **(B-W)** 0.050 lux at 1/50 sec shutter **(color)** 0.062 lux at 1/3 sec shutter **(color)** 0.00014 lux at 1/1.5 sec shutter **(B-W)**	 0.005 lux at 1/2 sec shutter **(color)** 0.015 lux at 1/60 sec shutter **(B-W)** 0.0005 lux at 1/2 sec shutter **(B-W)** 0.005 lux at 1/1.5 sec shutter **(color)** 0.015 lux at 1/50 sec shutter **(B-W)** 0.0005 lux at 1/1.5 sec shutter **(B-W)**	 0.02 lux at 1/2 sec shutter 0.02 lux at 1/1.5 sec shutter
Sync System	Internal/AC line lock, phase adjustable using remote control, V-Sync	Internal/AC line lock, phase adjustable using remote control, V-Sync*	Internal/AC line lock, phase adjustable using remote control, V-Sync*
White Balance	Automatic with manual override	Automatic with manual override*	Automatic with manual override*
Shutter Speed NTSC PAL	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000 1/1.5 ~ 1/30,000	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000* 1/1.5 ~ 1/30,000*	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000* 1/1.5 ~ 1/30,000*
Iris Control	Automatic with manual override	Automatic iris control with manual override*	Automatic iris control with manual override*
Gain Control	Automatic/OFF*	Automatic/OFF*	Automatic/OFF*
Video Output	1 Vp-p, 75 ohms	1 Vp-p, 75 ohms	1 Vp-p, 75 ohms
Video Signal-to-Noise Ratio	>50 dB	>50 dB	>50 dB
Electronic Image Stabilization	Integrated	—	—
Wide Dynamic Range	128X	—	—

*Manual control of camera setup functions can be done with CM6700, CM6800, CM9700 Series, KBD200A, and KBD300A controllers, but not with CM7500, MPT9000 or KBD9000 controllers.

MODEL NUMBERS

MODELS

Enclosure Type	Camera Type	Signal Format	Pedestal Mount*		Wall Mount†	
			24 VAC	120/230 VAC	24 VAC	120/230 VAC
Standard	22X Color	NTSC PAL	ES30C22-2N ES30C22-2N-X	ES30C22-5N ES30C22-5N-X	ES30C22-2W ES30C22-2W-X	ES30C22-5W ES30C22-5W-X
With Wiper		NTSC PAL	ES31C22-2N ES31C22-2N-X	ES31C22-5N ES31C22-5N-X	ES31C22-2W ES31C22-2W-X	ES31C22-5W ES31C22-5W-X
Standard	24X Day/Night	NTSC PAL	ES30CBW24-2N ES30CBW24-2N-X	ES30CBW24-5N ES30CBW24-5N-X	ES30CBW24-2W ES30CBW24-2W-X	ES30CBW24-5W ES30CBW24-5W-X
With Wiper		NTSC PAL	ES31CBW24-2N ES31CBW24-2N-X	ES31CBW24-5N ES31CBW24-5N-X	ES31CBW24-2W ES31CBW24-2W-X	ES31CBW24-5W ES31CBW24-5W-X
Standard	35X Day/Night	NTSC PAL	ES30CBW35-2N ES30CBW35-2N-X	ES30CBW35-5N ES30CBW35-5N-X	ES30CBW35-2W ES30CBW35-2W-X	ES30CBW35-5W ES30CBW35-5W-X
With Wiper		NTSC PAL	ES31CBW35-2N ES31CBW35-2N-X	ES31CBW35-5N ES31CBW35-5N-X	ES31CBW35-2W ES31CBW35-2W-X	ES31CBW35-5W ES31CBW35-5W-X

*Pedestal mount models include Esprit EPP pedestal adapter plate. Use with PM2000/PM2010 mount (not supplied) for pedestal application.

† Wall mount models include Esprit EWM wall mount. Optional mounting adapters for corner, pole, and parapet applications are available.

REPLACEMENT INTEGRATED OPTICS PACKAGE (IOP CAMERA) MODULES

The following IOP modules are replacement components only; they are not interchangeable.

ESIOPC22	Esprit high resolution color camera and lens module, 22X NTSC format
ESIOPC22-X	Same as ESIOPC22 except PAL format
ESIOPCBW24	Esprit high resolution day/night camera and lens module, 24X, NTSC format
ESIOPCBW24-X	Same as ESIOPCBW24 except PAL format
ESIOPBW35	Esprit high resolution day/night camera and lens module, 35X, NTSC format
ESIOPBW35-X	Same as ESIOPBW35 except PAL format

OPTIONAL ACCESSORIES

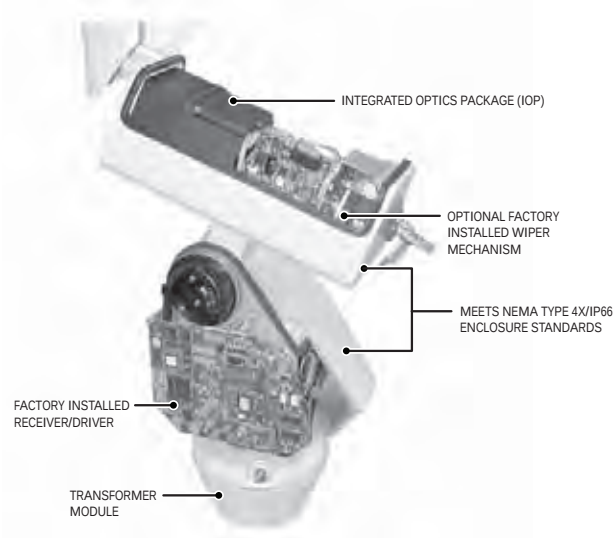
ES-REPLBLADE-2	Package of 2 window wiper replacement blades
ES-REPLBLADE-10	Package of 10 window wiper replacement blades
IPS-RDPE-2	Remote data port. 24 VAC, wall/pole mount video/data breakout box. Allows ground-level control/configuration when used with the IPS-CABLE. (No code upload.)
IPS-CABLE	Kit consisting of the remote monitor interface cable and necessary software for use with a PC.
TXB Series	Translator boards for AD™ Manchester, Hernis, Bosch® (Philips, Burle), Sensormatic®, TASS, Vicon™, and NTCIP protocols.

OPTIONAL MOUNTS AND ADAPTERS

ECM100	Corner mount adapter for use with EWM wall mount
EPM	Pole mount adapter for use with EWM wall mount
EA4348	EWM-to-Legacy adapter; use with PP4348 parapet mount
PM2000/PM2010	Pedestal mount with cable feedthrough. For use with Esprit systems with EPP pedestal adapter plate.

RECOMMENDED POWER SUPPLIES

MCS Series	Multiple 24 VAC camera power supply, indoor
WCS Series	Single/multiple 24 VAC camera power supply, outdoor



GSA Contract #GS-07F-9323S

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ES30PC/ES31PC Series Positioning System

ESPRIT® WITH PRESSURIZED IOC AND OPTIONAL WIPER

Product Features

- Receiver, Pan/Tilt, and Enclosure with Pressurized Integrated Optics Cartridge (IOC), NTSC/PAL
- All Components Factory Assembled and System Tested
- Pressurized Integrated Optics Cartridge Factory Charged to 10 psig
- Solid-State Sensors For Temperature, Pressure, and Dew Point
- On-Demand Environmental Status Display For Temperature, Pressure, and Dew Point
- On-Screen Multiple Fault Alert Modes
- On-Screen Compass, Tilt, and Zoom Display
- On-Screen Configurable Zone Blanking
- On-Screen Configurable Menus For Pan/Tilt, Camera, and Sensor Alert Settings
- All Standard Features of the Esprit® Positioning System
- Wide Dynamic Range (35X only)

Pelco's **ES30PC/ES31PC** Esprit® Positioning System is optimally designed to protect camera optics and electronics from moisture and airborne contaminants. The system features a receiver, pan/tilt, enclosure, and a pressurized Integrated Optics Cartridge (IOC).

The **ES30PC/ES31PC** system's IOC packages an auto focus camera, lens, heater, and sensors in a small, self-contained, sealed unit. Dry nitrogen pressurized to 10 psig protects the environment inside the cartridge eliminating internal condensation and corrosion. Sensors strategically placed in the cartridge send an "Alert" message if changes in pressure, temperature, and humidity are beyond factory set acceptable limits. The sensors also allow for instant on-screen display of temperature, pressure, and dew point.

The IOC is factory assembled and installed in the **ES30PC/ES31PC** systems. All labor intensive procedures of setting up the camera, lens and charging the unit with dry nitrogen are eliminated. The miniature size of the cartridge decreases the future need for maintenance and increases the overall reliability of the pressurized unit.

The **ES30PC** and **ES31PC Series** feature three models of pressurized IOCs:

- Day/night camera (540 TVL) with an infrared cut filter, 35X zoom lens (35X optical, 12X digital), electronic image stabilization, and wide dynamic range
- Day/night camera (520 TVL) with an infrared cut filter and 24X zoom lens (24X optical, 10X digital)
- High resolution color camera (470 TVL) with LowLight™ color technology and 22X zoom lens (22X optical, 10X digital)

A powder-coated, aluminum construction makes the **ES30PC** and **ES31PC** ideal for either indoor or outdoor applications. The system has an absolute operating temperature range of –50° to 140°F (-45° to 50°C). Within two hours after power-up, the entire unit can de-ice and be operational from a temperature of –13°F (–25°C).

The **ES31PC Series** has a window wiper completely integrated into the enclosure and designed not to interfere with the viewing range of the system. The wiper can be configured to delay between wipes and to shut off automatically after a specified period. The wiper design also allows for easy replacement of the wiper blade.

The **ES30PC** and **ES31PC Series** variable pan and tilt speeds range from 0.1 to 40 degrees per second in manual pan mode and 0.1 to 20 degrees per second in manual tilt. Pan preset and turbo speeds are 100 degrees per second in wind speeds up to 50 mph and 50 degrees per second in the 90 mph wind-speed profile. Tilt preset speed is 30 degrees per second. The **ES30PC** and **ES31PC** are capable of 360 degrees of continuous pan rotation. The tilt range allows for horizontal viewing of +33 to –83 degrees. There are 64 configurable preset positions with a preset accuracy of one-quarter degree.

The systems are available with an input voltage of 24 VAC or with a selectable power source of 120/230 VAC. The **ES30PC** and **ES31PC** also have a power-up recovery mode that allows the user to specify what operation the system will resume whenever the power is cycled.

TECHNICAL SPECIFICATIONS

ADDITIONAL PRODUCT FEATURES

- Deterrent Surveillance
- Integral Multiprotocol (Coaxitron®, RS-422 Pelco D and Pelco P Protocols) Receiver/Driver
- Digital Position and Zoom Control and Feedback Using Pelco D Protocol
- Integral Camera Enclosure
- Variable Speed 0.1 to 100°/Sec
- 360° Continuous Pan Rotation
- +33° to –83° Tilt Range
- Operational in 90 mph Winds, Can Withstand Wind Velocity up to 130 mph
- Pan Preset Speed of 100°/Sec in 50 mph Winds and 50°/Sec in 90 mph Winds
- Variable Scan Speeds (1 to 40°/Sec)
- Translator Boards for Selected Competitive Protocols
- Easy to Install; Quick and Simple Electrical Connections
- 24 VAC or 120/230 VAC Selectable
- Designed for Minimal Maintenance, No Gears to Adjust
- Full Continuous-Duty Warranty
- 850 nm and 950 nm Active IR Illumination Focus Algorithms (24X and 35X models only)

SOFTWARE/HARDWARE

- 64 Configurable Presets with Labels
- Auto, Frame, and Random Scan
- Configurable Power-up Mode
- Configurable Park
- Configurable Manual Limit Stops (Pan)
- Configurable Scan Limit Stops (Pan)
- Patterns
- Proportional Pan/Tilt
- 8 Zones (configurable in size) Can Be Labeled with up to 20 Characters Each and Set to Output Blank Video
- 10-Inch Integrated Enclosure with Pre-Assembled, Pressurized IOC
- Sun Shroud, Heater/Window Defroster, and Insulation All Standard
- 1 Auxiliary Output
- Integrated Window Wiper with Configurable Delay and Shut-Off (ES31PC Models)

PRESSURIZED INTEGRATED OPTICS CARTRIDGE (IOC)

- Pressurized to 10 psig, Nominal (Sea Level, 70°F)
- Internal Sensors for Temperature, Dew Point and Pressure
- On-Screen Alert for High and Low Temperature, High and Low Pressure, and High Humidity
- 4 Alert On-Screen Display Modes
- 4 Acknowledge Modes
- Pressurized Relief Valve
- Meets IP67 Standards

ELECTRICAL

Input Voltage	24, 120, or 230 VAC, 50/60 Hz; switch selectable for 120/230 VAC inputs
Input Voltage Range	±10%
Power Consumption	Maximum 70 VA per system
Heater/Defroster	Digital temperature control
Electrical Connections	2 power source connections made at mount location with wire splices and 1 ground wire splice; 1 BNC receptacle and 4 wire splices at mount location for RS-422 Pelco D and Pelco P protocols; 2 wire splices for open collector auxiliary output
Aux 2	Open collector output with 2-second activation; connected relay must require no more than 32 VDC and 40 mA to energize relay coil; wire length between Esprit and relay must be less than 100 ft (30 m)

Video Coaxial Cable Max. Wiring Distances

Cable Type*	Maximum Distance
RG59/U	750 ft (229 m)
RG6/U	1,000 ft (305 m)
RG11/U	1,500 ft (457 m)

*Minimum cable requirements:
75-ohms impedance; all-copper center conductor; all copper braided shield with 95% braid coverage

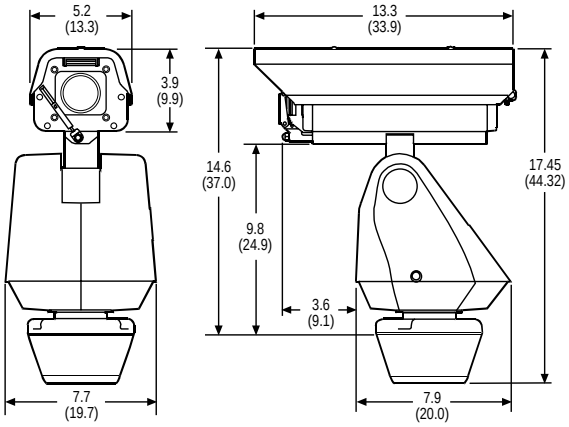
MECHANICAL

Pan Movement	360° Continuous pan rotation
Vertical Tilt	Unobstructed +33° to –83°
Variable Pan/Tilt Speed	
Pan	0.1° to 40°/sec variable-speed operation, 100°/sec Turbo
Tilt	0.1° to 20°/sec variable-speed operation
Preset Speeds	
Pan	100°/sec
Tilt	30°/sec
Camera Mounting	Replaceable pressurized cartridge
Latches	1 link-lock, No. 3 stainless-steel latch; can be secured with padlock (not supplied)

GENERAL

Construction	Die-cast, extruded and sheet aluminum; stainless steel hardware
Finish	Gray polyester powder coat
Viewing Window	0.23" (5.84 mm) thick, optically clear tempered glass
Operating Temperature	–50° to 122°F (–45° to 50°C) for sustained system operation or 140°F (60°C) absolute maximum. Within two hours after power-up, the entire unit can de-ice and be operational from a temperature of –13°F (–25°C).
Operating Environment	Will remain operational in 90 mph wind conditions; withstands 130 mph

Weight	With Pedestal Adapter	With Wall Mount
Unit		
Standard with IOC	21 lb (9.5 kg)	23 lb (10.4 kg)
With Wiper and IOC	22 lb (10 kg)	24 lb (11 kg)
Shipping		
Standard with IOC	26 lb (11.7 kg)	29 lb (13.1 kg)
With Wiper and IOC	27 lb (12.3 kg)	30 lb (13.6 kg)



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- U.S. Patent D472,260

Meets the following standards:

- NEMA Type 4X (Pan/Tilt and Enclosure)
- IP66 (Pan/Tilt and Enclosure)
- IP67 (Pressurized Integrated Optics Cartridge [IOC])

CAMERA/OPTICS

	Day/Night (35X)	Day/Night (24X)	Color, LowLight (22X)
Signal Format	NTSC, PAL	NTSC, PAL	NTSC, PA
Scanning System	Progressive or 2:1 Interlace	2:1 Interlace	2:1 Interlace
Image Sensor Effective pixels NTSC PAL	1/4-inch EXview HAD™ CCD 768 (H) x 494 (V) 752 (H) x 582 (V)	1/4-inch CCD 768 (H) x 494 (V) 752 (H) x 582 (V)	1/4-inch EXview HAD CCD 768 (H) x 494 (V) 752 (H) x 582 (V)
Horizontal Resolution NTSC PAL	 >540 TV lines >540 TV lines	 >520 TV lines >520 TV lines	 >470 TV lines >460 TV lines
Lens	f/1.4 (focal length, 3.4 ~ 119 mm optical)	f/1.2 (focal length, 3.8 ~ 91.2 mm optical)	f/1.6 (focal length, 4 ~ 88 mm optical)
Zoom	35X optical, 12X digital	24X optical, 10X digital	22X optical, 10X digital
Zoom Speed (optical range)	3.2 /4.6/6.6 seconds	3.9 seconds	3.9 seconds
Horizontal Angle of View Focus	 55.8° at 3.4 mm wide zoom; 1.7° at 119 mm telephoto zoom Automatic with manual override	 50.7° at 3.8 mm wide zoom; 2.3° at 91.2 mm telephoto zoom Automatic with manual override	 47.3° at 4.0 mm wide zoom; 2.2° at 88 mm telephoto zoom Automatic with manual override
Maximum Sensitivity at 35 IRE NTSC PAL 	 0.55 lux at 1/60 sec shutter **(color)** 0.063 lux at 1/4 sec shutter **(color)** 0.00018 lux at 1/2 sec shutter **(B-W)** 0.50 lux at 1/50 sec shutter **(color)** 0.062 lux at 1/3 sec shutter **(color)** 0.00014 lux at 1/1.5 sec shutter **(B-W)**	 0.005 lux at 1/2 sec shutter **(color)** 0.015 lux at 1/60 sec shutter **(B-W)** 0.0005 lux at 1/2 sec shutter **(B-W)** 0.005 lux at 1/1.5 sec shutter **(color)** 0.015 lux at 1/50 sec shutter **(B-W)** 0.0005 lux at 1/1.5 sec shutter **(B-W)**	 0.02 lux at 1/2 sec shutter 0.02 lux at 1/1.5 sec shutter
Sync System	Internal/AC line lock, phase adjustable using remote control, V-Sync	Internal/AC line lock, phase adjustable using remote control, V-Sync*	Internal/AC line lock, phase adjustable using remote control, V-Sync*
White Balance	Automatic with manual override	Automatic with manual override*	Automatic with manual override*
Shutter Speed NTSC PAL	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000 1/1.5 ~ 1/30,000	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000* 1/1.5 ~ 1/30,000*	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000* 1/1.5 ~ 1/30,000*
Iris Control	Automatic with manual override	Automatic iris control with manual override*	Automatic iris control with manual override*
Gain Control	Automatic/OFF*	Automatic/OFF*	Automatic/OFF*
Video Output	1 Vp-p, 75 ohms	1 Vp-p, 75 ohms	1 Vp-p, 75 ohms
Video Signal-to-Noise Ratio	>50 dB	>50 dB	>50 dB
Electronic Image Stabilization	Integrated	—	—
Wide Dynamic Range	128X	—	—

*Manual control of camera setup functions can be done with CM6700, CM6800, CM9700 Series, KBD200A, and KBD300A controllers, but not with CM7500, MPT9000 or KBD9000 controllers.

MODEL NUMBERS

MODELS

Enclosure Type	Camera Type	Signal Format	Pedestal Mount*		Wall Mount†	
			24 VAC	120/230 VAC	24 VAC	120/230 VAC
Standard	22X Color	NTSC PAL	ES30PC22-2N ES30PC22-2N-X	ES30PC22-5N ES30PC22-5N-X	ES30PC22-2W ES30PC22-2W-X	ES30PC22-5W ES30PC22-5W-X
With Wiper		NTSC PAL	ES31PC22-2N ES31PC22-2N-X	ES31PC22-5N ES31PC22-5N-X	ES31PC22-2W ES31PC22-2W-X	ES31PC22-5W ES31PC22-5W-X
Standard	24X Day/Night	NTSC PAL	ES30PCBW24-2N ES30PCBW24-2N-X	ES30PCBW24-5N ES30PCBW24-5N-X	ES30PCBW24-2W ES30PCBW24-2W-X	ES30PCBW24-5W ES30PCBW24-5W-X
With Wiper		NTSC PAL	ES31PCBW24-2N ES31PCBW24-2N-X	ES31PCBW24-5N ES31PCBW24-5N-X	ES31PCBW24-2W ES31PCBW24-2W-X	ES31PCBW24-5W ES31PCBW24-5W-X
Standard	35X Day/Night	NTSC PAL	ES30PCBW35-2N ES30PCBW35-2N-X	ES30PCBW35-5N ES30PCBW35-5N-X	ES30PCBW35-2W ES30PCBW35-2W-X	ES30PCBW35-5W ES30PCBW35-5W-X
With Wiper		NTSC PAL	ES31PCBW35-2N ES31PCBW35-2N-X	ES31PCBW35-5N ES31PCBW35-5N-X	ES31PCBW35-2W ES31PCBW35-2W-X	ES31PCBW35-5W ES31PCBW35-5W-X

*Pedestal mount models include Esprit EPP pedestal adapter plate. Use with PM2000/PM2010 mount (not supplied) for pedestal application.
†Wall mount models include Esprit EWM wall mount. Optional mounting adapters for corner, pole, and parapet applications are available.

REPLACEMENT PRESSURIZED INTEGRATED OPTICS CARTRIDGE (IOC)

The following IOC models are replacement components only; they are not interchangeable.

IOC-C22-X	Same as IOC-C22 except PAL format
IOC-CBW24	Esprit high resolution day/night camera and lens module, 24X, NTSC format
IOC-CBW24-X	Same as IOC-CBW24 except PAL format
IOC-CBW35	Esprit high resolution day/night camera and lens module, 35X, NTSC format
IOC-CBW35-X	Same as IOC-CBW35 except PAL format

OPTIONAL ACCESSORIES

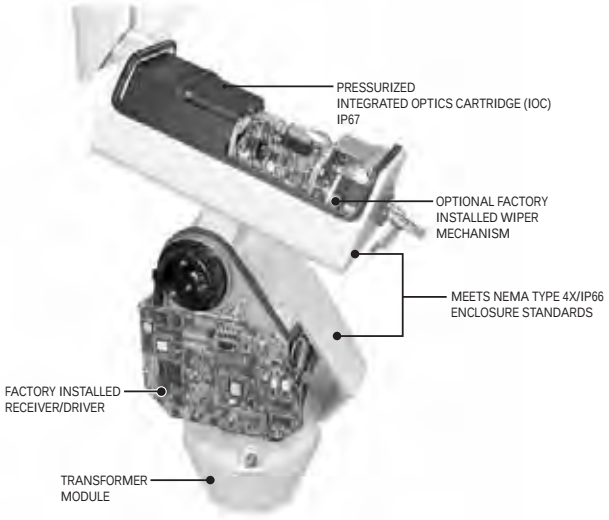
ES-REPLBLADE-2	Package of 2 window wiper replacement blades
ES-REPLBLADE-10	Package of 10 window wiper replacement blades
IPS-RDPE-2	Remote data port. 24 VAC, wall/pole mount video/data breakout box. Allows ground-level control/configuration when used with the IPS-CABLE. (No code upload.)
IPS-CABLE	Kit consisting of the remote monitor interface cable and necessary software for use with a PC.
TXB Series	Translator boards for AD™ Manchester, Hernis, Bosch® (Philips, Burle), Sensormatic®, TASS, Vicon™, and NTCIP protocols.

OPTIONAL MOUNTS/ADAPTERS

ECM100	Corner mount adapter for use with EWM wall mount
EPM	Pole mount adapter for use with EWM wall mount
EA4348	EWM-to-Legacy adapter; use with PP4348 parapet mount
PM2000/PM2010	Pedestal mount with cable feedthrough. For use with Esprit systems with EPP pedestal adapter plate.

RECOMMENDED POWER SUPPLIES

MCS Series	Multiple 24 VAC camera power supply, indoor
WCS Series	Single/multiple 24 VAC camera power supply, outdoor



GSA Contract #GS-07F-9323S

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ES3012 Series Integrated Positioning System

ESPRIT® PREMIUM PERFORMANCE P/T, COAXITRON® COMPATIBLE

Product Features

- Integrated Receiver, Pan/Tilt, and Housing with No Exposed Cabling
- Optional ImagePak® Integrated Optics Package
- Quick and Simple Electrical Connections
- Variable Speed Advanced Motor Control Technology
- 360° Continuous Pan Rotation
- Zone Blanking Allows up to 8 Zones (Programmable in Size) to Be Set to Output Blank Video
- Operational in 90 mph Wind Conditions; Can Withstand Wind Velocity Up to 130 mph
- Pan Preset Speed of 100° Per Second in 50 mph Winds and 50° Per Second in 90 mph Winds
- Tilt Range of +33° to –83° from Horizontal
- Preset Positioning
- Designed for Minimal Maintenance, No Gears to Adjust
- Lightweight Aluminum Construction
- Meets NEMA Type 4X and IP66 Standards

ES3012-2W SYSTEM WITH WALL MOUNT

Pelco's **Esprit® ES3012 Series** integrated positioning system ingeniously integrates a pan/tilt, enclosure, and receiver into one compact system that is easy to install. On-screen, user-friendly menus also make the system easy to program and operate.

The **ES3012 Series** is available as a standard or ImagePak® system. The **Esprit ImagePak** system combines the innovative design of the standard system with a factory-installed camera and lens package of your choice. Choose from a variety of high resolution, day/night and color cameras. The standard system does not include the camera and lens components. It is designed to accept any 24 VAC camera and lens combination up to 12.10" L x 3.45" W x 3.17" H (30.73 x 8.76 x 8.05 cm).

Every **ES3012** system (standard or ImagePak) has a built-in heater, window defroster/defogger, sun shroud, and insulation blanket. The system is available with an input voltage of 24 VAC or with a selectable power source of 120/230 VAC.

A powder-coated, aluminum construction makes the **ES3012 Series** ideal for either indoor or outdoor applications. The system has an absolute operating temperature range of –40° to 140°F (–40° to 60°C). Within two hours after power-up, the entire unit can de-ice and be operational from a temperature of –13°F (–25°C).

The **Esprit ES3012 Series** variable pan and tilt speeds range from 0.5 degrees to 40 degrees per second in manual pan mode and 0.5 degrees to 20 degrees per second in manual tilt. Pan preset and turbo speeds are 100 degrees per second in wind speeds of 50 mph and 50 degrees per second in the 90 mph wind-speed profile. Tilt preset speed is 30 degrees per second. The **ES3012 Series** is capable of 360 degrees of continuous pan rotation. The tilt range allows for horizontal viewing of +33 to –83 degrees. There are 64 programmable preset positions with a preset accuracy of one-quarter degree.

The **ES3012 Series** features on-screen programmable menus for pan and scan speed, limit stops, zone blanking, and patterns. The unit also has a power-up recovery mode that allows the user to specify what condition the system will resume whenever the power is cycled.

TECHNICAL SPECIFICATIONS

ELECTRICAL

Input Voltage	24, 120, or 230 VAC, 50/60 Hz; switch selectable for 120/230 VAC inputs
Input Voltage Range	±10%
Power Consumption	Maximum 70 VA per system
Camera and Lens Voltage	24 VAC
Heater and Defroster	Thermostatically controlled
Electrical Connections	Two power source connections made at mount location with wire nut splices and one ground terminal; one BNC receptacle and four terminals on interconnect PCB at mount location

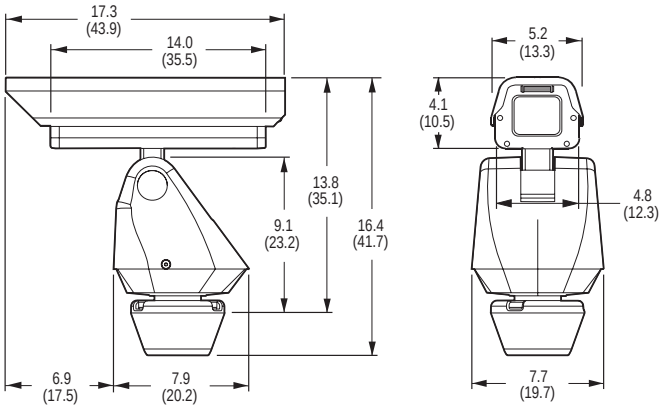
Video Coaxial Cable Max. Wiring Distances

Cable Type*	Maximum Distance
RG59/U	750 ft (229 m)
RG6/U	1,000 ft (305 m)
RG11/U	1,500 ft (457 m)

*Minimum cable requirements:
75 ohms impedance; all-copper center conductor; all copper braided shield with 95% braid coverage

MECHANICAL

Pan Movement	360° Continuous pan rotation
Vertical Tilt	Unobstructed +33° to –83°
Variable Pan/Tilt Speed	
Pan	0.5° to 40°/sec variable-speed operation, 100°/sec Turbo
Tilt	0.5° to 20°/sec variable-speed operation
Preset Speeds	
Pan	100°/sec
Tilt	30°/sec
Camera Mounting	Elongated holes on removable camera mount; supplied with an adapter bracket to accommodate various heights of cameras
Maximum Camera and Lens Size	Accepts camera and lens combinations (including BNC connector) up to: 12.10" L x 3.45" W x 3.17" H (30.73 x 8.76 x 8.05 cm)
Latches	One link-lock, No. 3 stainless-steel latch; can be secured with padlock (not supplied)



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

GENERAL

Construction	Die-cast, extruded and sheet aluminum; stainless steel hardware
Finish	Gray polyester powder coat
Viewing Window	0.18-inch (4.76 mm) thick, optically clear, impact-resistant MR5 coated Lexan® (UL 94 HB rated)
Window Viewing Area	2.25-inch (5.71 cm) diameter
Operating Temperature	–40° to 122°F (–40° to 50°C) for sustained system operation or 140°F (60°C) absolute maximum. Within two hours after power-up, the entire unit can de-ice and be operational from a temperature of –13°F (–25°C).
Operating Environment	Will remain operational in 90 mph wind conditions; withstands 130 mph
Unit Weight	
ES3012-2, ES3012-5	20 lb (9.1 kg)
ES3012-2 or ES3012-5 with ImagePak option	25.7 lb (11.7 kg)
Shipping Weight	
ES3012-2, ES3012-5	27 lb (12.3 kg)
ES3012-2 or ES3012-5 with ImagePak option	33 lb (14.8 kg)

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- Meets NEMA Type 4X and IP66 standards
- U.S. Patents 340,940 and 5,224,675

LENS SPECIFICATIONS (IMAGEPAK ESPRIT SYSTEMS ONLY)

	Z10/Z10P	Z20/Z20P	Z30/Z30P
Type	Motorized zoom	Motorized zoom	Motorized zoom
Format Size	1/3-inch	1/3-inch	1/3-inch
Focal Length	6 to 60 mm	5.6 to 112 mm	5.5 to 165 mm
Zoom Ratio	10X	20X	30X
Relative Aperture (F)	1.6 ~ 360	1.6 ~ 360	1.8 ~ 360
Operation			
Iris	Auto iris (direct drive)	Auto iris (direct drive)	Auto iris (direct drive)
Focus and Zoom	Motorized†	Motorized†	Motorized†
Angle of View			
Diagonal	9.7°~ 53.7°	3.2°~ 59.4°	2.1°~ 58.7°
Horizontal	7.8°~ 43.7°	2.6°~ 47.6°	1.7°~ 47.6°
Vertical	5.9°~ 33.0°	1.9°~ 35.7°	1.3°~ 33.9°
Min. Object Distance	1.0 m	1.5 m	1.8 m

†Model numbers with "P" suffix are motorized with preset capability.

CAMERA SPECIFICATIONS (IMAGEPAK ESPRIT SYSTEMS ONLY)

	Ultra High Resolution, Day/Night		High Resolution, Color, LowLight™ DSS	
	C10DN-6 (AM)	**C10DN-6X (AN)**	**CC3751H-2 (CL)**	**CC3651H-2X (CM)**
Signal Format	NTSC	PAL	NTSC	PAL
Image Device	1/3-inch image format interline transfer CCD	1/3-inch image format interline transfer CCD	1/3-inch image format interline transfer CCD	1/3-inch image format interline transfer CCD
Picture Elements	768 (H) x 494 (V) (approx. 380k)	752 (H) x 582 (V)	768 (H) x 494 (V)	795 (H) x 696 (V)
Scanning System	525 lines, 2:1 interlace	625 lines; 2:1 interlace	525 lines; 2:1 interlace	625 lines; 2:1 interlace
Horizontal Resolution	540 TVL	540 TVL	480 TVL	480 TVL
Minimum Illumination			0.01 lux at 40 IRE, f/1.2	0.01 lux at 40 IRE, f/1.2
B-W	0.07 lux, f/1.2, 40 IRE, AGC on, 75% scene reflectance	0.07 lux, f/1.2, 40 IRE, AGC on, 75% scene reflectance	—	—
Color	0.3 lux, f/1.2, 40 IRE, AGC on, 75% scene reflectance	0.3 lux, f/1.2, 40 IRE, AGC on, 75% scene reflectance	—	—
Sensitivity				
B-W (SENS 40x)	0.08 lux, f/1.2, 50 IRE, AGC on, 89% scene reflectance	0.08 lux, f/1.2, 50 IRE, AGC on, 89% scene reflectance	—	—
Color (SENS 40x)	0.4 lux, f/1.2, 50 IRE, AGC on, 89% scene reflectance	0.4 lux, f/1.2, 50 IRE, AGC on, 89% scene reflectance	—	—
Electronic Shutter Range	1/60 ~ 1/100,000 sec	1/50 ~ 1/100,000 sec	1/60 ~ 1/100,000 sec	1/60 ~ 1/100,000 sec
Signal-to-Noise Ratio	>50 dB	>50 dB	50 dB	50 dB
Automatic Gain Control	Selectable	Selectable	Automatic	Automatic
Backlight Compensation	Selectable	Selectable	On/off selectable	On/off selectable

	High Resolution, Color, Extended Dynamic Range	
	CC3701H-2 (CB)	**CC3701H-2X (CD)**
Signal Format	NTSC	PAL
Image Device	1/3-inch image format interline transfer CCD	1/3-inch image format interline transfer CCD
Picture Elements	768 (H) x 494 (V)	752 (H) x 582 (V)
Scanning System	525 lines; 2:1 interlace	625 lines; 2:1 interlace
Horizontal Resolution	480 TVL	480 TVL
Minimum Illumination	0.5 lux at 40 IRE, f/1.2	0.5 lux at 40 IRE, f/1.2
Electronic Shutter Range	1/60 ~ 1/100,000 sec	1/60 ~ 1/100,000 sec
Signal-to-Noise Ratio	52 dB	52 dB
Automatic Gain Control	On/off selectable	On/off selectable
Backlight Compensation	On/off selectable	On/off selectable

	Ultra High Resolution, Color,	
	C10CH-6 (AJ)	**C10CH-6X (AK)**
Signal Format	NTSC	PAL
Image Device	1/3-inch image format interline transfer CCD	1/3-inch image format interline transfer CCD
Picture Elements	768 (H) x 494 (V) (approx. 380k)	752 (H) x 582 (V) (approx. 440k)
Scanning System	525 lines, 2:1 interlace	625 lines, 2:1 interlace
Horizontal Resolution	540 TVL	540 TVL
Minimum Illumination	0.3 lux, f/1.2, 50 IRE, AGC on, 75% reflectance	0.3 lux, f/1.2, 50 IRE, AGC on, 75% reflectance
Electronic Shutter Range	Selectable	Selectable
Signal-to-Noise Ratio	>50 dB	>50 dB
Automatic Gain Control	Selectable	Selectable
Backlight Compensation	Selectable	Selectable
Signal Processing	DSP	DSP

MODEL NUMBERS

MODELS

Basic

ES3012-2	Standard Esprit integrated positioning system (pan/tilt, enclosure and receiver), 24 VAC, no mount
ES3012-5	Same as ES3012-2 except 120/230 VAC
ES3012-2N	Standard Esprit integrated positioning system, 24 VAC, with EPP pedestal adapter plate
ES3012-5N	Same as ES3012-2N except 120/230 VAC
ES3012-2W	Standard Esprit integrated positioning system, 24 VAC, with EWM wall mount
ES3012-5W	Same as ES3012-2W except 120/230 VAC

ImagePak Esprit Systems

Create a complete, ready-to-install system (including optics package) from the optional components below or refer to the Esprit ImagePak Selection Guide for model numbers.

ES3012-5CLZ20PW

Esprit Series

ES3012

Primary Input Voltage

-2 = 24 VAC

-5 = 120/230 VAC

Camera Configuration

Color

AM	= C10DN-6	Ultra High Res, Day/Night (NTSC)
AN	= C10DN-6X	Ultra High Res, Day/Night (PAL)
CL	= CC3751H-2	High Res, LowLight (NTSC)
CM	= CC3651H-2X	High Res, LowLight (PAL)
CB	= CC3701H-2	High Res, EDR (NTSC)
CD	= CC3701H-2X	High Res, EDR (PAL)
AJ	= C10CH-6	Ultra High Res, color (NTSC)
AK	= C10CH-6X	Ultra High Res, color (PAL)

Lens Configuration

Z10	= 13ZD6X10	10X, 6-60 mm
Z10P	= 13ZD6X10P	10X, 6-60 mm, with presets
Z20	= 13ZD5.6X20	20X, 5.6-112 mm
Z20P	= 13ZD5.6X20P	20X, 5.6-112 mm, with presets
Z30	= 13ZD5.5X30	30X, 5.5-165 mm
Z30P	= 13ZD5.5X.30P	30X, 5.5-165 mm, with presets

Mount Configuration

N = EPP pedestal adapter

W = EWM wall mount

OPTIONAL MOUNTS AND ADAPTERS

ECM100	Corner mount adapter for use with EWM wall mount
EPM	Pole mount adapter for use with EWM wall mount
EA4348	EWM-to-Legacy adapter; use with PP4348 parapet mount
PM2000/PM2010	Pedestal mount with cable feedthrough; for use with Esprit systems with EPP pedestal adapter plate
PP4348	Parapet mount; requires EWM wall mount and EA4348 adapter when used with Esprit system

OPTIONAL ACCESSORIES

IPS-RDPE-2	Remote data port. 24 VAC, wall/pole mount video/data breakout box. Allows ground-level control/programming when used with the IPS-CABLE. (No code upload.)
IPS-CABLE	Remote monitor cable and software kit.
TXB Series	Translator boards for model specific AD™ Manchester, Hernis, Bosch® (Philips, Burle), Sensormatic®, Vicon™, TASS, and NTCIP protocols.

RECOMMENDED POWER SUPPLIES

MCS Series	Multiple 24 VAC camera power supply, indoor
WCS Series	Single/multiple 24 VAC camera power supply, outdoor

RECOMMENDED CONTROLS

All Pelco multiplexer and matrix switchers (CM6700, CM6800, CM9700 Series, MPT9000, and MX4000 Series) and PelcoNet™ Series.

RECOMMENDED KEYBOARD CONTROLS

(For use in Direct Mode operation only)

KBD200A	Desktop keyboard, multispeed PTZ control
KBD300A	Desktop keyboard, variable speed PTZ control

Note: KBD keyboards require a remote keyboard wiring kit (KBDKIT) for direct mode operation; allows two-wire control of up to 16 daisy-chained receivers (or Esprit systems). Keyboards output Pelco P protocol at 4800 baud.

GSA Contract #GS-07F-9323S

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ExSite® Series Explosionproof Positioning System

PAN/TILT SYSTEM WITH IOP CAMERA AND OPTIONAL WIPER

Product Features

- Electropolished 316L Stainless Steel Construction
- Upright or Inverted Operation
- Receiver, Pan/Tilt, and Enclosure with an Integrated Optics Package (IOP)
- 2 Autofocus, High Resolution Integrated Optic Packages
  - 23X Day/Night, 80X Wide Dynamic Range, Motion Detection, and 540 TVL Horizontal Resolution
  - Color 22X EXview HAD™
- Multilingual On-Screen Menus
- Password Protection
- Configurable Camera Settings
- On-Screen Compass, Tilt, and Zoom Display
- Variable Speed Pan: 0.1° to 40°/second with Proportional Pan
- 360° Continuous Pan Rotation
- Tilt Range of +90° to –90° from Horizontal
- Preset Positioning, Patterns, Multiple Scan Modes
- Designed for Minimal Maintenance
- Built-in System Memory
- Software Update and Setup Through Remote Data Port (IPS-RDPE-2)
- Password Protection to Prevent Unauthorized Changes to the System

SHOWN WITH WXM100 WALL MOUNT (NOT SUPPLIED)

- On-Board Connector for
  - Pelco VC-UTP Video Converter
  - Pelco TXB Series Translator Boards for Use with Hernis and Other Protocols
  - Pelco FS85011A and Third-Party Fiber Optic Transmitters

The **ExSite® Series** are innovative integrated positioning systems that meet stringent explosionproof requirements. The **ExSite Series** not only combine a receiver, pan/tilt, and enclosure in a single, easy-to-install system, but also includes an Integrated Optics Package (IOP). The Integrated Optics Package contains an autofocus camera and lens module with configurable features.

For a wide range of applications, the **ExSite Series** feature a choice of two different IOP cameras: a high resolution camera with LowLight™ color technology and 22X zoom lens (22X optical, 12X digital), and a high resolution day/night camera with a removable infrared cut filter and 23X zoom lens (23X optical, 12X digital).

The electropolished 316L stainless steel construction makes the **ExSite Series** ideal for all kinds of environmental conditions including marine applications. The system has an absolute operating temperature range of –76° to 140°F (–60° to 60°C). Within two hours after power-up, the entire unit can de-ice and be operational from a temperature of –13°F (–25°C).

The **ExSite Series** include an optional window wiper. The wiper is completely integrated into the enclosure and does not interfere with the viewing range of the system. The wiper can be configured to delay between wipes and to automatically shut off after a specified period. A built-in heater, window defroster/defogger, sun shroud, and blower are standard features on the **ExSite Series**. All units also include three auxiliary output relays that can be configured for a variety of uses.

The **ExSite Series** variable pan and tilt speeds range from 0.1 to 40 degrees per second in manual pan, tilt, and preset mode. The **ExSite Series** is capable of 360 degrees of continuous pan rotation. The tilt range allows for horizontal viewing of –90 to +90 degrees. There are 80 preset positions with a preset accuracy of ±0.1 degree.

The systems are available with an input voltage of 24 VAC or with a power source of 100 to 240 VAC. The **ExSite Series** also have a power-up recovery mode that allows the user to specify what operation the system will resume whenever the power is cycled.

ExSite Series feature built-in system memory in the power module to store camera and location-specific pan/tilt settings, including labels, presets, patterns, and zones. These settings are automatically down-loaded if a new pan and tilt body is installed.

TECHNICAL SPECIFICATIONS

PRODUCT FEATURES

- Integral Multiprotocol Receiver/Driver
- 360° Continuous Pan Rotation, Tilt Range ±90°
- Quick and Easy Installation
- Designed for Minimal Maintenance, No Gears to Adjust
- 2-Year Continuous-Duty Warranty
- Upright or Inverted Installation

SOFTWARE/HARDWARE

- Configurable Power-up Mode
- Configurable Park
- Sun Shroud, Heater/Window Defroster, and Blower All Standard
- 80 Presets with Custom Camera Settings and Labels
- ±0.1° Preset Accuracy
- Multilingual Menus (English, Spanish, Portuguese, Italian, French, German, Russian, Polish, Turkish, and Czech)
- On-Screen Compass, Tilt, and Zoom Display
- Password Protection
- 8 Zones (configurable in size) Can Be Labeled with Up to 20 Characters Each or Set to Output Blank Video
- Configurable Locations of Labels and On-Screen Displays
- 7 Alarm Inputs
- 3 Relay Outputs
- Action on Alarm: Alarms can be individually configured for 3 priority levels, to initiate a stored pattern, or to go to an associated preset when received
- Resume After Alarm: Allows the pan/tilt to return to a previously configured state after alarm acknowledgement or to its previous position before alarm
- Patterns: Up to 4, on-screen, user-defined configurable patterns; includes pan, tilt, zoom, and preset functions
- Proportional Pan/Tilt: Continually decreases pan and tilt speeds in proportion to depth of zoom
- Variable Scan Speed: Scan speed can be configurable between 1° and 40°/sec
- Configurable Limit Stops for Auto/Random/Frame Scan Modes
- Autosensing Protocol (Coaxitron®, RS-422 Pelco P and Pelco D); Accepts Competitive Control Protocol with Optional Translator Card
- Built-in Menu System for Setup of Configurable Functions

ALL CAMERAS

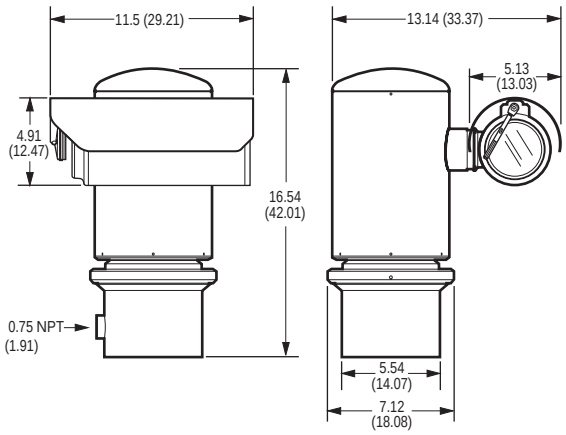
- Autofocus with Manual Override
- Auto Iris with Manual Override
- Configurable Settings
- AC Line Lock
- NTSC/PAL

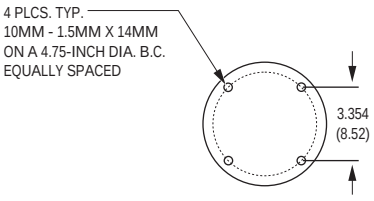
ELECTRICAL

Input Voltage	24 VAC or 100 to 240 VAC, 50/60 Hz
Input Voltage Range	±10%
Power Consumption	Maximum 60 W (120 VA) per system
Heater and Defroster	Microprocessor controlled
Electrical Connections	6-foot pigtail wire harness with connections for power, video, data control, alarm inputs, and auxiliary outputs
Auxiliary Outputs	3 N/O or N/C relays, 32 VDC, 0.5 A. Relay 3 is allocated specifically for an external washer (not supplied by Pelco).
Alarm Inputs	7

MECHANICAL

Cable Entry	One 0.75-inch (1.91 cm) NPT threaded opening; one explosionproof sealable fitting supplied
Pan Movement	360° Continuous pan rotation
Vertical Tilt	Unobstructed +90° to –90°
Variable Pan/Tilt Speed	
Pan	0.1° to 40°/sec variable-speed operation
Tilt	0.1° to 40°/sec variable-speed operation
Preset Speeds	
Pan	40°/sec
Tilt	40°/sec





NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

GENERAL

Construction	316L stainless steel
Finish	Electropolish
Viewing Window	0.50-inch (12.7 mm) thick, soda-lime tempered glass
Operating Temperature	–76° to 140°F (–60° to 60°C)
Unit Weight	55 lb (25 kg)
Shipping Weight	73 lb (33 kg)
Effective Projected Area (EPA)	40.8 square inches

CERTIFICATIONS/RATINGS

- UL/cUL Listed
- UL/cUL Hazardous Locations Listed per NEC Division and Zone requirement
  Class I, Divisions I and II, Groups A, B, C, and D
  Class II, Divisions I and II, Groups E, F, G, and T5
  Class I, Zone 1, AEx d IIC, Ex d IIC, T5
- 04/UL-BRAE-0027
  BR-Ex d IIC, T5, IP66
- IECEx UL 04.0010X
  Ex d IIC, T5
- DEMKO 04 ATEX 0413858
  CE 0539 Ex II 2 G Ex d IIC, T5
  Ex II 2 D Ex tD A21 IP66 T105°C
- Tamb –60°C to 60°C
- NEPSI-China, Ex d IIC, T5, Cert No. GYJ05584
- C-Tick
- S Mark for Argentina
- Meets NEMA Type 4X standards
- Lloyd's Register Type Approval: Marine, offshore, and industrial installations for use in environmental categories ENV1, ENV2, and ENV5; Certificate No. 06/60001

CAMERA/OPTICS

	Day/Night (23X)	Color, LowLight™ (22X)
Signal Format	NTSC, PAL	NTSC, PAL
Scanning System	2:1 Interlace	2:1 Interlace
Image Sensor Effective pixels NTSC PAL	1/4-inch Progressive Scan CCD 768 (H) x 494 (V) 752 (H) x 582 (V)	1/4-inch EXview HAD™ CCD 768 (H) x 494 (V) 752 (H) x 582 (V)
Horizontal Resolution NTSC PAL	 540 TV lines 540 TV lines	 >470 TV lines >460 TV lines
Lens	f/1.6 (focal length, 3.6 ~ 82.8 mm optical)	f/1.6 (focal length, 4 ~ 88 mm optical)
Zoom	23X optical, 12X digital	22X optical, 12X digital
Configurable Zoom Speed (Optical Range)	2.9/4.2/5.8 seconds	2.4/3.9/6.3 seconds
Horizontal Angle of View Focus	 54° at 3.6 mm wide zoom; 2.5° at 82.8 mm telephoto zoom Automatic with manual override	 47° at 4.0 mm wide zoom; 2.2° at 88 mm telephoto zoom Automatic with manual override
Maximum Sensitivity at 35 IRE NTSC PAL	 0.025 lux at 1/2 sec shutter **(color)** 0.1 lux at 1/60 sec shutter **(B-W)** 0.004 lux at 1/2 sec shutter **(B-W)** 0.025 lux at 1/1.5 sec shutter **(color)** 0.1 lux at 1/50 sec shutter **(B-W)** 0.004 lux at 1/1.5 sec shutter **(B-W)**	 0.02 lux at 1/2 sec shutter 0.02 lux at 1/1.5 sec shutter
Sync System	Internal/AC line lock, phase adjustable using remote control, V-Sync*	Internal/AC line lock, phase adjustable using remote control, V-Sync*
White Balance	Automatic with manual override*	Automatic with manual override*
Shutter Speed NTSC PAL	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000* 1/1.5 ~ 1/30,000*	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000* 1/1.5 ~ 1/30,000*
Iris Control	Automatic Iris Control with manual override*	Automatic Iris Control with manual override*
Gain Control	Automatic/OFF*	Automatic/OFF*
Video Output	1 Vp-p, 75 ohms	1 Vp-p, 75 ohms
Video Signal to Noise	>50 dB	>50 dB

*Manual control of camera setup functions can be done with CM6700, CM6800, CM9760, CM9770, CM9780, KBD200A, KBD300A, and MPT9500 controllers. Manual control of cameras cannot be done with CM7500, MPT9000, or KBD9000 controllers.

MOUNTING ACCESSORIES

MODELS

WXM100	Wall mount designed to mount the ExSite Series system directly to a load-bearing vertical surface
PXM100	Pedestal mount designed to mount an ExSite Series system directly to a horizontal surface in either an upright or inverted position
CMXM100	Corner adapter for use with the WXM100 to mount an ExSite Series system to the corner of a structure
PAXM100	Pole adapter for use with the WXM100 to mount a system to a vertical pole or with a PXM100 to mount a system to a horizontal pole; recommended pole diameter is 4 to 9 inches (10.16 to 22.86 cm)

GENERAL

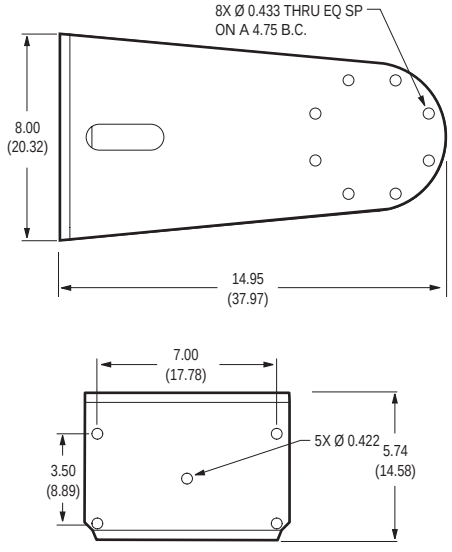
Construction	
Mounts	Electropolished 304 stainless steel
PAXM100 Mounting Straps	316 stainless steel
Maximum Load	
WXM100	73 lb (33 kg)
CMXM100	85 lb (38.50 kg)
PAXM100	88 lb (40 kg)
PXM100	79 lb (35.83 kg)
Unit Weight	
WXM100	12.4 lb (5.62 kg)
CMXM100	7.6 lb (3.45 kg)
PAXM100	9.2 lb (4.17 kg)
PXM100	1.3 lb (0.60 kg)
Shipping Weight (approximate)	
WXM100	17 lb (7.71 kg)
CMXM100	13 lb (5.89 kg)
PAXM100	14 lb (6.35 kg)
PXM100	4 lb (1.81 kg)

MECHANICAL

Mounting Method	Recommended Mounting Surface	Recommended Hardware
WXM100, CMXM100*, and PXM100	Solid concrete with the recommended strength of 3,600 psi or 25 Mpa	Five 3/8-16 x 1-9/16-inch long stainless steel drop-in anchors and five 3/8-16 x 1.0-inch thread length, stainless steel hex head bolts with stainless steel lock washers (not supplied)
	Steel I beam with a minimum of 1/8-inch wall	Five 3/8-16 x 1.0-inch thread length, stainless steel hex head bolts with stainless steel lock washers and 3/8-16 stainless steel nuts (not supplied)
PAXM100*	Steel pole with a diameter of 4 to 9 inches (10.16 to 22.86 cm)	Four 5/8-inch wide x 40-inch (101.6 cm) long stainless steel straps to attach the adapter to a pole (supplied)

* Five 3/8-16 x 1.0-inch thread length, stainless steel hex head bolts with lock washers are supplied with the CMXM100 and PAXM100 to be used with the WXM100 wall mount or PXM100 pedestal mount.

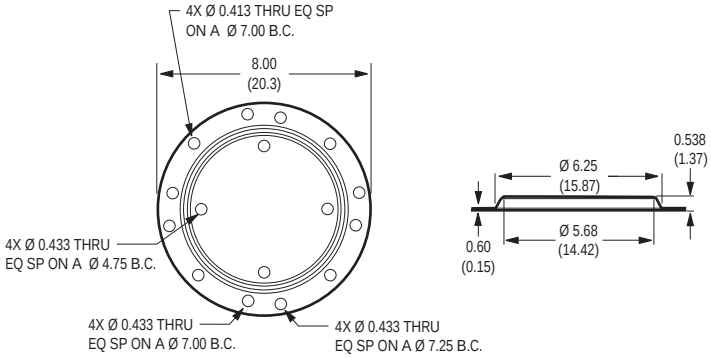
WXM100 WALL MOUNT



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

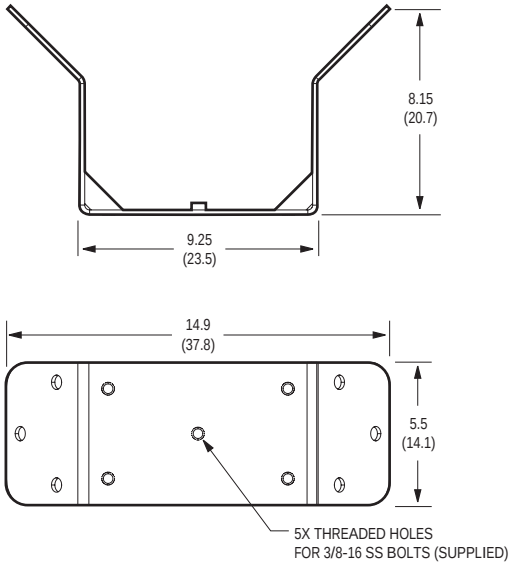
MOUNTING ACCESSORIES

PXM100 PEDESTAL MOUNT



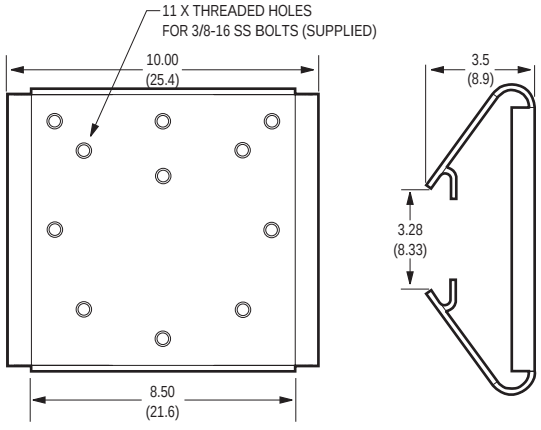
CMXM100 CORNER ADAPTER

Note: *Designed for use with a WXM100 wall mount.*



PAXM100 POLE ADAPTER

Note: *Designed for use with a WXM100 to mount a system to a vertical pole or a PXM100 to mount the system to a horizontal pole. Recommended pole diameter is 4 to 9 inches (10.16 to 22.86 cm).*



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MODEL NUMBERS

SYSTEM MODEL NUMBERS

Model		Format	24 VAC	100-240 VAC
22X Color	Standard	NTSC PAL	IPSXM30C22-2 IPSXM30C22-2X	IPSXM30C22-7 IPSXM30C22-7X
	With Wiper	NTSC PAL	IPSXM31C22-2 IPSXM31C22-2X	IPSXM31C22-7 IPSXM31C22-7X
23X Day/ Night	Standard	NTSC PAL	IPSXM30CBW23-2 IPSXM30CBW23-2X	IPSXM30CBW23-7 IPSXM30CBW23-7X
	With Wiper	NTSC PAL	IPSXM31CBW23-2 IPSXM31CBW23-2X	IPSXM31CBW23-7 IPSXM31CBW23-7X

COMPONENT MODEL NUMBERS

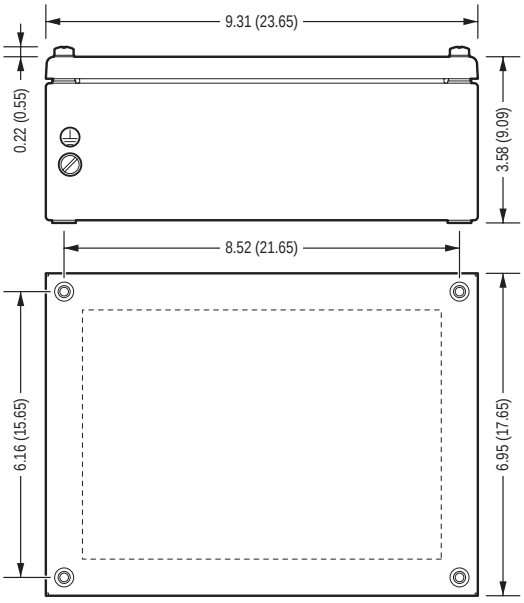
Power Module	PTZ	Camera Module	
IPSXM-2 24 VAC IPSXM-7 100 to 240 VAC	IPSXMPT30 No Wiper	IPSXM30C22 IPSXM30C22X IPSXM30CBW23 IPSXM30CBW23X	Color (NTSC) camera (264X) no wiper Color (PAL) camera (264X) no wiper Day/Night (NTSC) camera (276X) no wiper Day/Night (PAL) camera (276X) no wiper
	IPSXMPT31 With Wiper	IPSXM31C22 IPSXM31C22X IPSXM31CBW23 IPSXM31CBW23X	Color (NTSC) camera (264X) with wiper Color (PAL) camera (264X) with wiper Day/Night (NTSC) camera (276X) with wiper Day/Night (PAL) camera (276X) with wiper

OPTIONAL ACCESSORIES

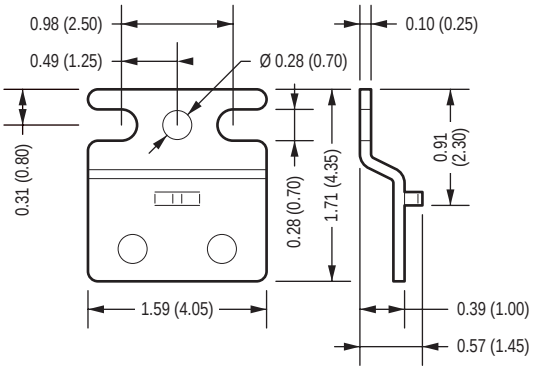
TXB Series*	Translator boards for AD Manchester, Hernis, Bosch® (Philips®, Burle), Sensormatic®, TASS, Vicon™, and NTCIP™ protocols.
IPS-CABLE	Remote monitor cable and software kit.
IPS-RDPE-2*	Remote data port. 24 VAC, wall/pole mount video/data breakout box. Allows ground-level control/configuration when used with the IPS-CABLE.
VC-UTP	Converts video for use with unshielded twisted pair (UTP); cannot be used simultaneously with TXB translator boards.
FS85011A Series*	Factory-installed fiber transmitter sends one unidirectional composite video channel and one bidirectional data channel over on multimode or single-mode fiber optic cable.
EXAC	Factory-installed increased safety (Ex e) potted cable interface and junction box with screw-down terminal for quick connection and easy installation.

*If TXB or FS85011A boards are installed, remote upload of system software will not be possible.

EXAC JUNCTION BOX



EXAC MOUNTING BRACKET



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EHXM Series Explosionproof Camera System

CAMERA SYSTEM WITH IOP CAMERA AND OPTIONAL WIPER

Product Features

- Electropolished 316L Stainless Steel Construction
- Upright or Inverted Installation
- Manual 200° Pan and 180° Tilt Adjustments
- Receiver and Enclosure with Integrated Optics Package (IOP)
- For Use in a Variety of Harsh and/or Hazardous Environments, including Marine Environments
- 2 Auto Focus, High Resolution Integrated Camera/Optics Packages
  - 23X Day/Night, 80X Wide Dynamic Range, Motion Detection, and 540 TVL Horizontal Resolution
  - Color 22X EXview HAD™
  - Multilingual On-Screen Menus
  - Password Protection
  - Autofocus with Manual Override
  - Configurable Camera Settings
  - Auto Iris with Manual Override
- Integral Multiprotocol Receiver/Driver
- Meets NEMA Type 4X and IP66 Standards
- Designed for Minimal Maintenance
- Password Protection

- On-Board Connector for
  - Pelco VC-UTP Video Connector
  - Pelco TXB Series Translator Boards for Use with Hernis and Other Protocols
  - Pelco FS85011A and Third-Party Fiber Optic Transmitters

The **EHXM Series** explosionproof camera enclosures are designed to meet the rigorous requirements of explosionproof and dust-ignitionproof electrical equipment for installation and use in hazardous locations. The system can be installed in a standard or inverted position and features manually adjustable 200 degrees of pan and 180 degrees of tilt positioning.

All units feature an integrated camera and lens package with LowLight™ technology. The day/night model features a 23X lens, built-in motion detection and 80X wide dynamic range imager. The color camera has a 22X lens and EXview HAD™ imager for increased sensitivity.

The electropolished 316L stainless steel construction makes the **EHXM Series** ideal for either indoor or outdoor applications. The system has an absolute operating temperature range of –76° to 140°F (–60° to 60°C). Within two hours after power-up, the entire unit can de-ice and be operational from a temperature of –13°F (–25°C).

The systems are available with an input voltage of 24 VAC or with a power source of 100 to 240 VAC.

The **EHXM Series** includes an optional window wiper. The wiper is completely integrated into the enclosure and does not interfere with the viewing range of the system. The wiper can be configured to delay between wipes and to automatically shut off after a specified period. The wiper design also allows for easy replacement of the wiper blade. A built-in heater, window defroster/defogger, sun shroud, and blower are standard features on the **EHXM Series** units. All units also include three auxiliary output relays that can be configured for a variety of uses including third-party washer systems.

Also available are video conversion modules for applications using unshielded twisted pair (UTP) and fiber. Refer to OPTIONAL ACCESSORIES for information.

TECHNICAL SPECIFICATIONS

PRODUCT FEATURES

- Integral Multiprotocol Receiver/Driver
- Quick and Easy Installation

SOFTWARE/HARDWARE

- Multilingual Menus (English, Spanish, Portuguese, Italian, French, and German)
- Alternate Language Files (includes Russian, Polish, Turkish) Available as Optional Software Upload
- Password Protection
- Configurable Locations of Labels and On-Screen Displays
- Autosensing Protocol (Coaxitron®, RS-422 Pelco P and Pelco D); Accepts Competitive Control Protocol with Optional Translator Card
- Built-in Menu System for Setup of Configurable Functions

ALL CAMERAS

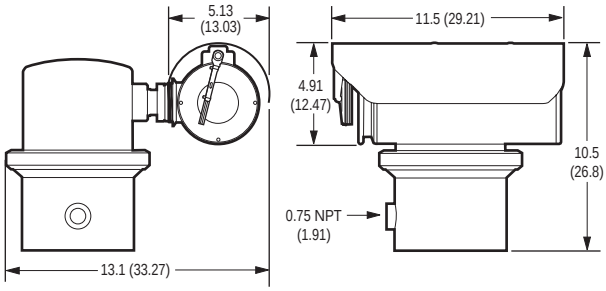
- Autofocus with Manual Override
- Auto Iris with Manual Override
- Configurable Settings
- AC Line Lock
- NTSC/PAL

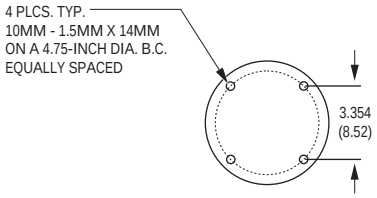
ELECTRICAL

Input Voltage	24 VAC or 100 to 240 VAC, 50/60 Hz
Input Voltage Range	±10%
Power Consumption	Maximum 60 W (120 VA)
Heater and Defroster	Microprocessor controlled
Electrical Connections	6-foot pigtail wire harness with connections for power, video, alarm inputs, and auxiliary outputs.

MECHANICAL

Cable Entry	One 0.75-inch (1.91 cm) NPT threaded opening; explosionproof sealable fitting (supplied)





NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

GENERAL

Construction	316L stainless steel
Finish	Electropolish
Viewing Window	0.50-inch (12.7 mm) thick, soda-lime tempered glass
Operating Temperature	–76° to 140°F (–60° to 60°C)
Unit Weight	34.7 lb (11.33 kg)
Shipping Weight	40 lb (18.14 kg) approximate
Effective Projected Area (EPA)	31.1 square inches

CERTIFICATIONS/RATINGS

- UL/cUL Listed
- UL/cUL Hazardous Locations Listed per NEC Division and Zone requirement
  Class I, Divisions I and II, Groups A, B, C, and D
  Class II, Divisions I and II, Groups E, F, G, and T5
  Class I, Zone 1, AEx d IIC, Ex d IIC, T5
- 04/UL-BRAE-0027
  BR-Ex d IIC, T5, IP66
- IECEx UL 04.0010X
  Ex d IIC, T5
- DEMKO 04 ATEX 0413858
  CE 0539 Ex II 2 G Ex d IIC, T5
  Ex II 2 D Ex tD A21 IP66 T105°C
- Tamb –60°C to 60°C
- NEPSI-China, Ex d IIC, T5, Cert No. GYJ05584
- C-Tick
- S Mark for Argentina
- Meets NEMA Type 4X standards
- Lloyd's Register Type Approval: Marine, offshore, and industrial installations for use in environmental categories ENV1, ENV2, and ENV5; Certificate No. 06/60001

CAMERA/OPTICS

	Day/Night (23X)	Color, LowLight™ (22X)
Signal Format	NTSC, PAL	NTSC, PAL
Scanning System	2:1 interlace	2:1 interlace
Image Sensor Effective pixels NTSC PAL	1/4-inch progressive scan CCD 768 (H) x 494 (V) 752 (H) x 582 (V)	1/4-inch EXview HAD™ CCD 768 (H) x 494 (V) 752 (H) x 582 (V)
Horizontal Resolution NTSC PAL	540 TV lines 540 TV lines	>470 TV lines >460 TV lines
Lens	f/1.6 (focal length, 3.6 ~ 82.8 mm optical)	f/1.6 (focal length, 4 ~ 88 mm optical)
Zoom	23X optical, 12X digital	22X optical, 12X digital
Zoom Speed	2.9/4.2/5.8 seconds	2.4/3.9/6.3 seconds
Horizontal Angle of View Focus	54° at 3.6 mm wide zoom; 2.5° at 82.8 mm telephoto zoom Automatic with manual override	47° at 4.0 mm wide zoom; 2.2° at 88 mm telephoto zoom Automatic with manual override
Maximum Sensitivity at 35 IRE NTSC PAL	 0.025 lux at 1/2 sec shutter **(color)** 0.1 lux at 1/60 sec shutter **(B-W)** 0.004 lux at 1/2 sec shutter **(B-W)** 0.025 lux at 1/1.5 sec shutter **(color)** 0.1 lux at 1/50 sec shutter (B-W) 0.004 lux at 1/1.5 sec shutter (B-W)	 0.02 lux at 1/2 sec shutter 0.02 lux at 1/1.5 sec shutter
Sync System	Internal/AC line lock, phase adjustable using remote control, V-Sync*	Internal/AC line lock, phase adjustable using remote control, V-Sync*
White Balance	Automatic with manual override*	Automatic with manual override*
Shutter Speed NTSC PAL	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000* 1/1.5 ~ 1/30,000*	Automatic (electronic iris)/Manual 1/2 ~ 1/30,000* 1/1.5 ~ 1/30,000*
Iris Control	Automatic Iris Control with manual override*	Automatic Iris Control with manual override*
Gain Control	Automatic/OFF*	Automatic/OFF*
Video Output	1 Vp-p, 75 ohms	1 Vp-p, 75 ohms
Video Signal to Noise	>50 dB	>50 dB

*Manual control of camera setup functions can be done with CM6700, CM6800, CM8500, CM9500, CM9740, CM9760, CM9770, CM9780, KBD200A, KBD300A, and MPT9500 controllers. Manual control of cameras cannot be done with CM7500, MPT9000 or KBD9000 controllers.

MOUNTING ACCESSORIES

MODELS

WXM100	Wall mount designed to mount the EHXM Series system directly to a load-bearing vertical surface
PXM100	Pedestal mount designed to mount an EHXM Series system directly to a horizontal surface in either an upright or inverted position
CMXM100	Corner adapter for use with the WXM100 to mount an EHXM Series system to the corner of a structure
PAXM100	Pole adapter for use with the WXM100 to mount a system to a vertical pole or with a PXM100 to mount a system to a horizontal pole; recommended pole diameter is 4 to 9 inches (10.16 to 22.86 cm)

GENERAL

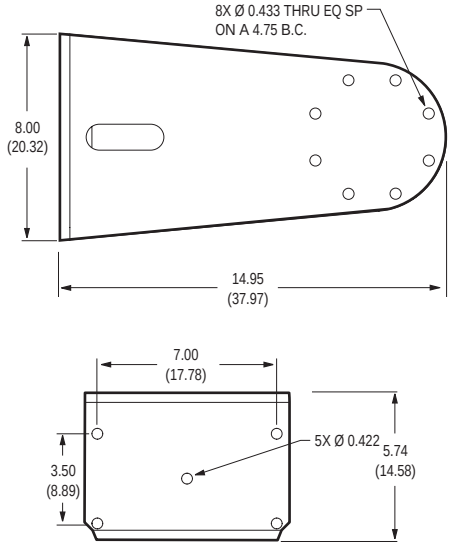
Construction	
Mounts	Electropolished 304 stainless steel
PAXM100 Mounting Straps	316 stainless steel
Maximum Load	
WXM100	73 lb (33 kg)
CMXM100	85 lb (38.50 kg)
PAXM100	88 lb (40 kg)
PXM100	79 lb (35.83 kg)
Unit Weight	
WXM100	12.4 lb (5.62 kg)
CMXM100	7.6 lb (3.45 kg)
PAXM100	9.2 lb (4.17 kg)
PXM100	1.3 lb (0.60 kg)
Shipping Weight (approximate)	
WXM100	17 lb (7.71 kg)
CMXM100	13 lb (5.89 kg)
PAXM100	14 lb (6.35 kg)
PXM100	4 lb (1.81 kg)

MECHANICAL

Mounting Method	Recommended Mounting Surface	Recommended Hardware
WXM100, CMXM100*, and PXM100	Solid concrete with the recommended strength of 3,600 psi or 25 Mpa	Five 3/8-16 x 1-9/16-inch long stainless steel drop-in anchors and five 3/8-16 x 1.0-inch thread length, stainless steel hex head bolts with stainless steel lock washers (not supplied)
	Steel I beam with a minimum of 1/8-inch wall	Five 3/8-16 x 1.0-inch thread length, stainless steel hex head bolts with stainless steel lock washers and 3/8-16 stainless steel nuts (not supplied)
PAXM100*	Steel pole with a diameter of 4 to 9 inches (10.16 to 22.86 cm)	Four 5/8-inch wide x 40-inch (101.6 cm) long stainless steel straps to attach the adapter to a pole (supplied)

*Five 3/8-16 x 1.0-inch thread length, stainless steel hex head bolts with lock washers are supplied with the CMXM100 and PAXM100 to be used with the WXM100 wall mount or PXM100 pedestal mount.

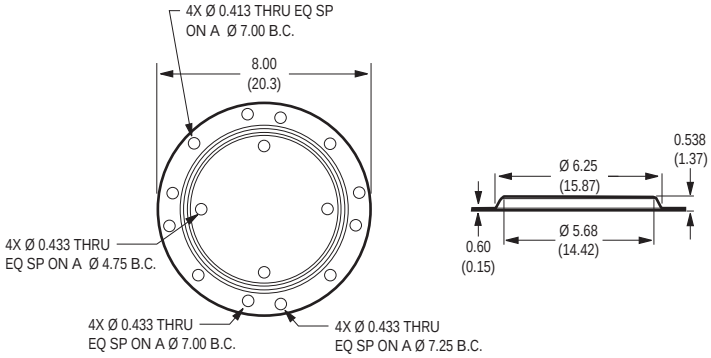
WXM100 WALL MOUNT



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

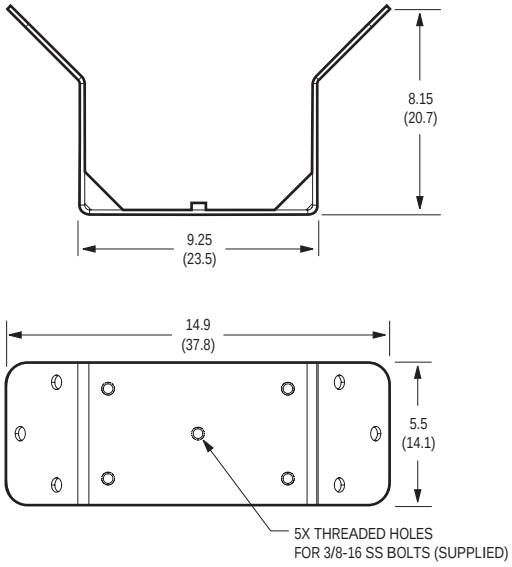
MOUNTING ACCESSORIES

PXM100 PEDESTAL MOUNT



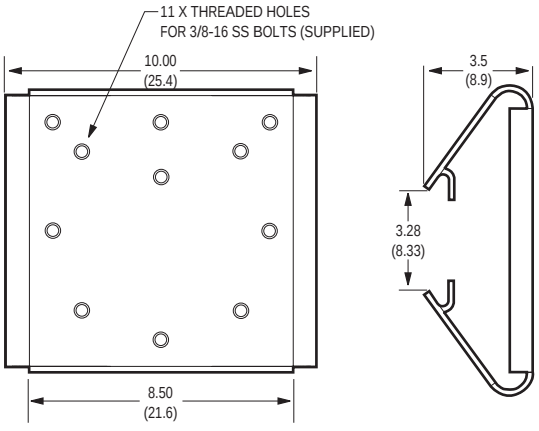
CMXM100 CORNER ADAPTER

Note: *Designed for use with a WXM100 wall mount.*



PAXM100 POLE ADAPTER

Note: *Designed for use with a WXM100 to mount a system to a vertical pole or a PXM100 to mount the system to a horizontal pole. Recommended pole diameter is 4 to 9 inches (10.16 to 22.86 cm).*



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

MODEL NUMBERS

SYSTEM MODEL NUMBERS

Model		Format	24 VAC	100-240 VAC
22X Color	Standard	NTSC PAL	EHXM30C22-2 EHXM30C22-2X	EHXM30C22-7 EHXM30C22-7X
	With Wiper	NTSC PAL	EHXM31C22-2 EHXM31C22-2X	EHXM31C22-7 EHXM31C22-7X
23X Day/ Night	Standard	NTSC PAL	EHXM30CBW23-2 EHXM30CBW23-2X	EHXM30CBW23-7 EHXM30CBW23-7X
	With Wiper	NTSC PAL	EHXM31CBW23-2 EHXM31CBW23-2X	EHXM31CBW23-7 EHXM31CBW23-7X

COMPONENT MODEL NUMBERS

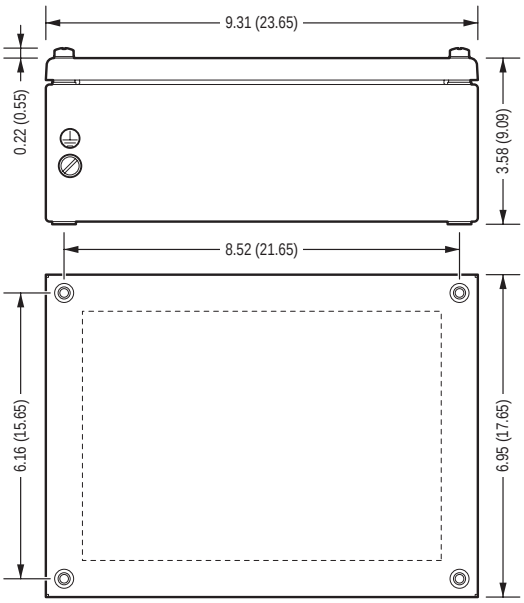
Power Module	Enclosure	Camera Module	
IPSXM-2 24 VAC IPSXM-7 100–240 VAC	EHXM30 No Wiper	IPSXM30C22 IPSXM30C22X IPSXM30CBW23 IPSXM30CBW23X	Color (NTSC) camera (264X) no wiper Color (PAL) camera (264X) no wiper Day/Night (NTSC) camera (276X) no wiper Day/Night (PAL) camera (276X) no wiper
	EHXM31 With Wiper	IPSXM31C22 IPSXM31C22X IPSXM31CBW23 IPSXM31CBW23X	Color (NTSC) camera (264X) with wiper Color (PAL) camera (264X) with wiper Day/Night (NTSC) camera (276X) with wiper Day/Night (PAL) camera (276X) with wiper

OPTIONAL ACCESSORIES

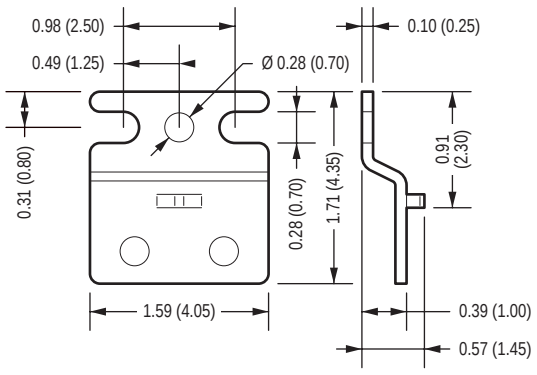
TXB Series*	Translator boards for AD Manchester, Hernis, Bosch® (Philips®, Burle), Sensormatic®, TASS, Vicon™, and NTCIP™ protocols.
IPS-CABLE	Remote monitor cable and software kit
IPS-RDPE-2*	Remote data port. 24 VAC, wall/pole mount video/data breakout box. Allows ground-level control/configuration when used with the IPS-CABLE (no code upload).
VC-UTP	Converts video for use with unshielded twisted pair (UTP); cannot be used simultaneously with TXB translator boards.
FS85011A Series*	Factory-installed fiber transmitter sends one unidirectional composite video channel and one bidirectional data channel over one multimode or single-mode fiber optic cable.
EXAC	Factory-installed increased safety (Ex e) potted cable interface and junction box with screw-down terminal for quick connection and easy installation.

*If TXB or FS85011A boards are installed, remote upload of system software will not be possible.

EXAC JUNCTION BOX



EXAC MOUNTING BRACKET



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ES30TI Series Positioning System

ESPRIT® SYSTEM WITH THERMAL IMAGING OPTICS

Product Features

- Receiver, Pan/Tilt, and Enclosure with an Integrated Thermal Imaging Camera
- Sensitivity Below 40 mK at f/1.0
- Long Wave, Uncooled, Vanadium Oxide Microbolometer
- 320 x 240 Resolution; 38 µm Pixel Size
- User Definable/Configurable Camera Settings
- On-Screen Compass, Tilt, and Zoom Display
- 2X Digital Zoom
- Integral Multiprotocol (Coaxitron®, RS-422 Pelco D and Pelco P) Receiver/Driver
- Variable Speed Pan Ranges from 0.1° to 100°/Second with Proportional Pan
- 360° Continuous Pan Rotation
- Zone Blanking Allows up to 8 Zones (Configurable in Size) to Be Set to Output Blank Video
- Operational in 90 mph Wind Conditions; Can Withstand Wind Velocity up to 130 mph
- Pan Preset Speed of 100° Per Second in 50 mph Winds and 50° Per Second in 90 mph Winds
- Tilt Range of +33° to –83° from Horizontal

ES30TI ESPRIT THERMAL IMAGING SYSTEM (SHOWN WITH EPP PEDESTAL ADAPTER)

- Preset Positioning, Patterns, Multiple Scan Modes
- Designed for Minimal Maintenance, No Gears to Adjust

The **ES30TI Series** combines the power of an advanced thermal imaging device with the precision of an Esprit® pan/tilt to create a completely integrated, single addressable thermal imaging positioning system. At the core of the **ES30TI** is an uncooled, vanadium oxide microbolometer, long wave infrared (LWIR) camera. It delivers 320 x 240 thermal video with a pixel size of 38 µm and supports 2X digital zoom.

The **ES30TI Series** provides outstanding sensitivity below 40 mK. It is capable of multiple display formats, including white hot, black hot, and color signatures. The **ES30TI** is available with three different lens configurations (14.25 mm, 35 mm, and 50 mm focal lengths) for effective deployment in a wide range of applications.

A powder-coated, aluminum construction makes the **ES30TI Series** ideal for either indoor or outdoor applications. The system has an absolute operating temperature range of –50° to 140°F (–45° to 60°C). Within two hours after power-up, the entire unit can de-ice and be operational from a temperature of –13°F (–25°C).

A built-in heater, window defroster/defogger, sun shroud, and insulation blanket are standard features on the **ES30TI Series**. All units also include an open collector auxiliary output that functions for two seconds before deactivating.

The **ES30TI Series** variable pan and tilt speeds range from 0.1 to 40 degrees per second in manual pan mode and 0.1 to 20 degrees per second in manual tilt. Pan preset and turbo speeds are 100 degrees per second in wind speeds of 50 mph and 50 degrees per second in the 90-mph wind-speed profile. Tilt preset speed is 30 degrees per second. The **ES30TI** is capable of 360 degrees of continuous pan rotation. The tilt range allows for horizontal viewing of +33 to –83 degrees. There are 64 configurable preset positions with a preset accuracy of one-quarter degree.

ES30TI Series systems are available with an input voltage of 24 VAC or with a selectable power source of 120/230 VAC. The **ES30TI** also has a power-up recovery mode that lets users specify the operation to perform whenever the power is cycled.

TECHNICAL SPECIFICATIONS

ADDITIONAL FEATURES

- Deterrent Surveillance
- Digital Position and Feedback Using Pelco D Protocol
- Integral Infrared (IR) Camera Enclosure
- Meets NEMA Type 4X and IP66 Standards, Pan/Tilt and Enclosure
- Variable Scan Speeds (0.1 to 40°/Second)
- Translator Boards for Selected Competitive Protocols
- Easy to Install; Quick and Simple Electrical Connections
- 24 VAC or 120/230 VAC Selectable
- Full Continuous-Duty Warranty

SOFTWARE/HARDWARE

- 64 Configurable Presets with Labels
- Auto, Frame, and Random Scan
- Configurable Power-Up Mode
- Configurable Park
- Configurable Manual Limit Stops (Pan)
- Configurable Scan Limit Stops (Pan)
- Patterns
- Proportional Pan/Tilt
- 8 Zones (Configurable in Size) Can Be Labeled with up to 20 Characters Each
- Up to 8 Zones (Configurable in Size) Can Be Set to Output Blank Video
- 10-Inch Integrated Enclosure with Pre-Assembled, Thermal Camera
- Sun Shroud, Heater/Window Defroster, and Insulation All Standard
- 1 Auxiliary Output

ALL CAMERAS

- Configurable Settings
- AC Line Lock
- NTSC/PAL

ELECTRICAL

Input Voltage	24, 120, or 230 VAC, 50/60 Hz; switch selectable for 120/230 VAC inputs
Input Voltage Range	±10%
Power Consumption	Maximum 70 VA per system
Heater and Defroster	Thermostatically controlled
Electrical Connections	2 power source connections made at mount location with wire splices and one ground wire splice; 1 BNC receptacle and 4 wire splices at mount location for RS-422 Pelco D and Pelco P protocols; 2 wire splices for open collector auxiliary output
Aux 2	Open collector output with 2-second activation; connected relay must require no more than 32 VDC and 40 mA to energize relay coil; wire length between Esprit and relay must be less than 100 feet (30 m)

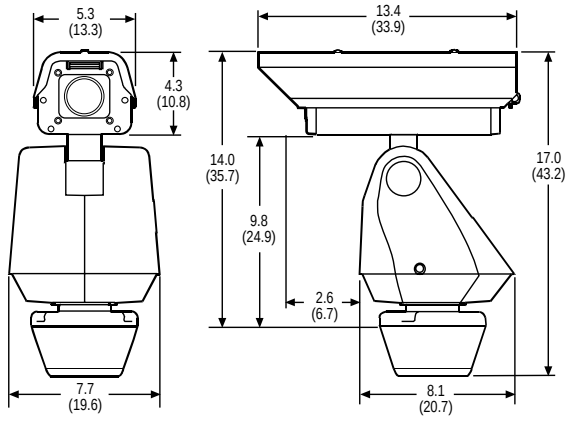
Video Coaxial Cable Maximum Wiring Distances

Cable Type*	Maximum Distance
RG59/U	750 ft (229 m)
RG6/U	1,000 ft (305 m)
RG11/U	1,500 ft (457 m)

*Minimum cable requirements:
75-ohms impedance; all-copper center conductor; all copper braided shield with 95 percent braid coverage

MECHANICAL

Pan Movement	360° continuous pan rotation
Vertical Tilt	Unobstructed +33° to –83°
Variable Pan/Tilt Speed	
Pan	0.1° to 40°/sec variable-speed operation, 100°/sec turbo
Tilt	0.1° to 20°/sec variable-speed operation
Preset Speeds	
Pan	100°/sec
Tilt	30°/sec
Camera Mounting	Integrated camera sled assembly
Latches	1 link-lock, No. 3 stainless-steel latch; can be secured with padlock (not supplied)



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

THERMAL CAMERA/OPTICS

Detector	Uncooled microbolometer, vanadium oxide (VOx)
Array Format	320 x 240
Pixel Size	38 µm
Spectral Response	7.5 to 13.5 µm, long wave infrared (LWIR)
Video Output	NTSC/PAL
Normalization Source	Internal shutter (offset only), 0.7 sec video freeze during shutter wink
Time to Image	Less than 2 seconds, no thermoelectric cooler (TEC)
Image Control	2X digital zoom
Serial Command	RS-232 compatible
Scene Temp Range (Lens Dependent)	To 150°C standard; optional auto-gain mode extends range to 560°C
Lens Options	14.25 mm, f/1.3 lens 35 mm, f/1.4 lens 50 mm, f/2.0 lens

PIXELS ON TARGET (POT)

The following performance values are based on a man-sized target from a unit mounted at 25 feet (8 m) under normal atmospheric conditions:

Model	Lens	Horizontal Field of View	Identification (12 POT)	Detection (2 POT)
ES3014TI	14.25 mm	50°	305 ft (93 m)	807 ft (246 m)
ES3035TI	35 mm	20°	767 ft (234 m)	1,902 ft (580 m)
ES3050TI	50 mm	14°	1,115 ft (340 m)	2,736 ft (834 m)

GENERAL

Construction	Die-cast, extruded and sheet aluminum; stainless steel hardware	
Finish	Gray polyester powder coat	
Viewing Window	3 mm thick hard carbon coated germanium	
Operating Temperature	–50° to 122°F (–45° to 50°C) for sustained system operation or 140°F (60°C) absolute maximum; within two hours after power-up, the entire unit can de-ice and be operational from a temperature of –13°F (–25°C)	
Operating Environment	Will remain operational in 90 mph wind conditions; withstands 130 mph	
Weight	With Pedestal Adapter	With Wall Mount
Unit	20 lb (9.0 kg)	22 lb (9.9 kg)
Shipping	25 lb (11.3 kg)	28 lb (12.6 kg)
Effective Projected Area (EPA)	104 square inches (with pole adapter) 132 square inches (with wall mount)	

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class B (all models)
- FCC, Class B (NTSC models)
- UL/cUL Listed (NTSC models)
- Meets NEMA Type 4X and IP66 standards
- U.S. Patents 340,940 and 5,224,675

SYSTEM MODELS AND ACCESSORIES

MODELS

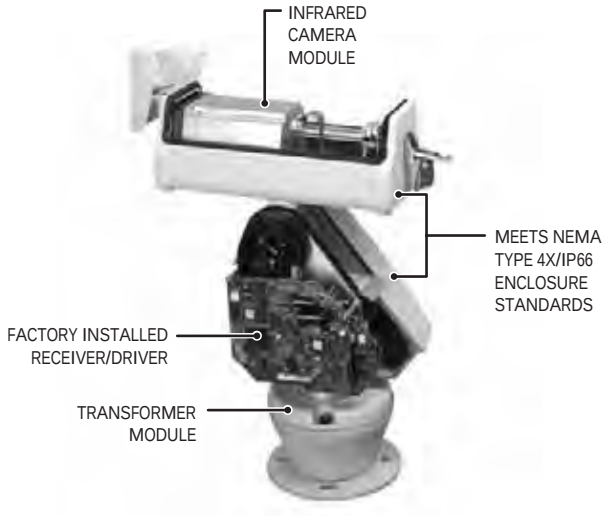
Lens	Format	Pedestal Mount*		Wall Mount†	
		24 VAC	120/230 VAC	24 VAC	120/230 VAC
14.25 mm	NTSC	ES3014TI-2N	ES3014TI-5N	ES3014TI-2W	ES3014TI-5W
	PAL	ES3014TI-2N-X	ES3014TI-5N-X	ES3014TI-2W-X	ES3014TI-5W-X
35 mm	NTSC	ES3035TI-2N	ES3035TI-5N	ES3035TI-2W	ES3035TI-5W
	PAL	ES3035TI-2N-X	ES3035TI-5N-X	ES3035TI-2W-X	ES3035TI-5W-X
50 mm	NTSC	ES3050TI-2N	ES3050TI-5N	ES3050TI-2W	ES3050TI-5W
	PAL	ES3050TI-2N-X	ES3050TI-5N-X	ES3050TI-2W-X	ES3050TI-5W-X

*Pedestal mount models include Esprit EPP pedestal adapter.

† Wall mount models include Esprit EWM wall mount. Optional mounting adapters for corner, pole, and parapet applications are available.

RELATED PRODUCTS

IPS-RDPE-2	Remote data port. 24 VAC, wall/pole mount video/data breakout box. Allows ground-level control/configuration when used with the IPS-CABLE. (No code upload.)
IPS-CABLE	Remote monitor cable and software kit.
TXB Series	Translator boards for AD Manchester, Hernis, Bosch® (Philips, Burle), NTCIP, Sensormatic®, TASS, and Vicon™ protocols.



OPTIONAL MOUNTS AND ADAPTERS

ECM100	Corner mount adapter; for use with the EWM wall mount
EPM	Pole mount adapter; for use with the EWM wall mount
EA4348	EWM-to-Legacy adapter; use with PP4348 parapet mount
PM2000/PM2010	Pedestal mount with cable feedthrough; for use with Esprit systems that contain a pedestal adapter plate

RECOMMENDED POWER SUPPLIES

MCS Series	Multiple 24 VAC camera power supply, indoor
WCS Series	Single/multiple 24 VAC camera power supply, outdoor

Note: Pelco thermal imaging products are subject to U.S. government export control regulations. Diversion contrary to U.S. law is prohibited. Questions about specific products can be sent to *exportcontrol@pelco.com.*

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TI2500 Series Fixed-Mount Thermal Imager

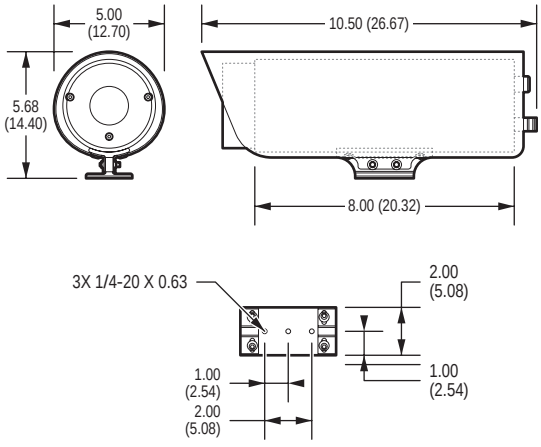
ENCLOSURE WITH INTEGRATED THERMAL IMAGING OPTICS

Product Features

- Long Wave Infrared (LWIR), Uncooled, Vanadium Oxide Microbolometer
- 320 x 240 Resolution, 38 Microns Pixel Size
- Sensitivity Below 85 mK at f/1.4
- User Definable/Configurable Camera Settings
- Interface Board for 24 VAC/24 VDC Input Power
- NTSC/PAL Analog Video Output
- 2X Digital Zoom
- 2 Lens Options (35 mm and 50 mm)
- Designed for Maximum Rain Protection
- Compact, Lightweight Aluminum Construction

TI2535

- Meets NEMA Type 4 and IP66 Standards
- Complete with Sun Shroud and Heater



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

The **TI2500 Series** offers a completely integrated advanced thermal imaging device in a Pelco outdoor enclosure. At the core of the **TI2500** is an uncooled, vanadium oxide 38 microns microbolometer, LWIR camera. It delivers 320 x 240 thermal video and supports 2X digital zoom.

The **TI2500 Series** provides outstanding sensitivity below 85 mK at f/1.4. It is capable of multiple display formats, including white hot, black hot, and color signatures. The **TI2500 Series** is available with two different lens configurations (35 mm and 50 mm focal lengths) for effective deployment in a wide range of applications.

The powder-coated, aluminum constructed enclosure makes the **TI2500 Series** ideal for either indoor or outdoor applications. With an absolute operating temperature range of –25° to 131°F (–32° to 55°C), this indoor/outdoor system can be used in many environments.

A sun shroud and built-in thermostatically controlled heater are standard features on the **TI2500 Series.**

The **TI2500 Series** produces video imagery within 5 seconds of turning on the unit, within the operating temperature range.

The **TI2500 Series** has an input voltage of 24 VAC or 24 VDC.

TI2500 Series cameras are factory focused and locked at infinity; however, they can be manually adjusted by a qualified technician.

TECHNICAL SPECIFICATIONS

MODELS

Model Number	Format	Focal Length
TI2535	NTSC	35 mm
TI2535-X	PAL	35 mm
TI2550	NTSC	50 mm
TI2550-X	PAL	50 mm

MECHANICAL

Latching	2 captivated hex screws
Face Plate	2 hex screws
Cable Entry	2 adjustable 0.5-inch NPT liquid-tight glands

ELECTRICAL

Connections	16 to 24 gauge screw-terminal jack on built-in interface board (bipolar)
Input Power	4 W, 6.2 VA nominal
Input Voltage	
24 VAC	18 to 27 VAC
24 VDC	14 to 32 VDC
Power Consumption	
24 VAC	260/350 mA
24 VDC	170/290 mA
Heater	Thermostatically controlled heater

GENERAL

Construction	Aluminum
Finish	Gray polyester powder coat
Environment	Indoor/outdoor
Operating Temperature	–25° to 131°F (–32° to 55°C)
Storage Temperature	–58° to 185°F (–50° to 85°C)
Weight	
Unit	4.7 lb (2.1 kg)
Shipping	11 lb (5 kg)

CERTIFICATIONS/RATINGS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick
- Meets NEMA Type 4 and IP66 standards

THERMAL CAMERA/OPTICS

Detector	Uncooled microbolometer, vanadium oxide
Array Format	320 x 240
Pixel Size	38 microns
Spectral Response	7.5 to 13.5 µm, LWIR
Video Output	1 Vp-p, 75 ohms
Normalization Source	Internal shutter (offset only), 0.7 seconds video freeze during shutter wink
Time to Image	Less than 2 seconds, no thermoelectric cooler
Image Control	2X digital zoom
Serial Command	RS-232/RS-422 compatible
Temporal NEdT	85 mK at f/1.4
Display Formats	White hot, black hot, and color signatures
Orientation	Invert/revert capability in software
Field of View	
TI2535	20° (H) x 15° (V)
TI2550	14° (H) x 10° (V)
Focus Range	
TI2535	3 ft (1 m) to infinity
TI2550	13 ft (4 m) to infinity
Hyper Focal Distance	
TI2535	85 ft (26 m)
TI2550	114 ft (35 m)

RECOMMENDED MOUNTS

Ceiling/Pedestal

EM1009U, EM1015U	Medium duty ceiling/pedestal mount

Wall

EM1450	Light duty wall mount

Pipe/Pole

EM1109	Medium duty pedestal mount for horizontal or vertical pipe/pole applications
EM2000	Medium duty mount for vertical applications
EM2200	Medium duty mount for horizontal applications

RECOMMENDED POWER SUPPLIES

WCS1-4	Outdoor camera power supply, 100/120/240 VAC input; one 24/26/28 VAC output; total current capacity of 4 A (100 VA)
WCS4-20	Outdoor multiple camera power supply, 120/240 VAC input; four fused 24/28 VAC outputs; total current capacity of 20 A (480 VA)

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13VA Series Varifocal Lens

1/3-INCH FORMAT, MANUAL IRIS

Product Features

- CS Mount
- For use with 1/3-Inch Format Cameras
- Manual Iris, Manual Focus, and Manual Zoom
- High Resolution Power in a Compact Body

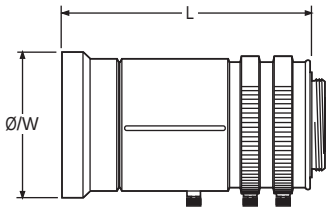
13VA5-40

Pelco's **13VA Series** 1/3-inch varifocal lenses offer versatile and flexible packages in one lens. Each adjustable manual iris lens in this series covers a specific range of focal lengths. Adjust these lenses to get the exact field of view instead of "almost-the-right-view."

Appropriate for indoor and outdoor lighting situations, the **13VA Series** lenses will fit all 1/3-inch CS-mount cameras and are ideal for those equipped with an electronic iris feature. Some lenses have aspheric elements, which provide optimized, crisper images at all focal lengths.

Lenses in this series are available in 2.1X, 2.7X, 4.3X, 8X, and 10X zoom with varying focal lengths.

Pelco's **13VA Series** varifocal lenses are optimized for maximum light transmission. Maximum f-numbers range from f/1.0~f/1.6 for excellent low light characteristics.



MODELS	Ø/W	L
13VA1-3	1.56 (3.96)	2.05 (5.21)
13VA2.8-12 13VA3-8	1.58 (4.01) 1.30 (3.30)	2.33 (5.92) 1.78 (4.52)
13VA5-40	1.65 (4.19)	2.86 (7.26)
13VA5-50	1.56 (3.96)	2.33 (5.92)

NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

MODELS

	13VA1-3	13VA2.8-12	13VA3-8
Type	Varifocal	Varifocal	Varifocal
Format Size	1/3-inch	1/3-inch	1/3-inch
Mount Type	CS	CS	CS
Focal Length	1.6~3.4 mm	2.8~12 mm	3~8 mm
Zoom Ratio	2.1X	4.3X	2.7X
F-number	1.4~Close	1.4~Close	1.0~Close
Operation			
Iris	Manual	Manual	Manual
Focus	Manual	Manual	Manual
Zoom	Manual	Manual	Manual
Angle of View			
Diagonal	106.1°~180.0°	—	—
Horizontal	84.3°~180.0°	24.1°~97.4°	36°~91°
Vertical	55.8°~114.1°	18.1°~72.5°	27°~67°
Minimum Object Distance	0.2 m	0.3 m	0.2 m
Back Focal Length	7.07~11.55 mm	8.6 mm	8.36 mm
Filter Size (mm)	N/A	N/A	NIL
Unit Weight	0.20 lb (0.09 kg)	0.15 lb (0.06 kg)	0.09 lb (0.04 kg)
Shipping Weight	1 lb (0.45 kg)	1 lb (0.45 kg)	1 lb (0.45 kg)

	13VA5-40	13VA5-50
Type	Varifocal	Varifocal
Format Size	1/3-inch	1/3-inch
Mount Type	CS	CS
Focal Length	5~40 mm	5~50 mm
Zoom Ratio	8X	10X
F-number	1.6~Close	1.4~Close
Operation		
Iris	Manual	Manual
Focus	Manual	Manual
Zoom	Manual	Manual
Angle of View		
Diagonal	8.8°~66.9°	—
Horizontal	6.5°~53.6°	5.3°~53.4°
Vertical	4.8°~40.2°	4.1°~40.1°
Minimum Object Distance	0.5 m	0.5 m
Back Focal Length	10~14.3 mm	10.05 mm
Filter Size (mm)	40.5P0.5	N/A
Unit Weight	0.30 lb (0.14 kg)	0.20 lb (0.09 kg)
Shipping Weight	1 lb (0.45 kg)	1 lb (0.45 kg)

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13VD Series Varifocal Lens

1/3-INCH FORMAT, AUTO IRIS (DIRECT DRIVE)

Product Features

- CS Mount
- Spot Filter
- For Use with 1/3-Inch Format Cameras
- Auto Iris, Manual Focus, and Zoom
- High Resolution Power in Compact Body

13VD5-40

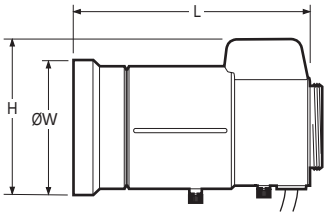
Pelco's **13VD Series** 1/3-inch varifocal lenses offer versatile and flexible packages in one basic lens. Each auto iris lens in this series covers a specific range of focal lengths. Adjust these lenses to get the exact field of view instead of "almost the right view."

Appropriate for indoor and outdoor lighting situations, the **13VD Series** lenses will fit all 1/3-inch CS-mount cameras requiring DC-drive auto iris lenses. In addition, all auto iris lenses include a spot filter. Lenses in the **13VD Series** come with a standard square 4-pin plug installed for ease of installation and convenience.

Lenses in this series are available in 2.1X, 2.4X, 2.7X, 4.3X, 8X, 10X, and 15X zoom with varying focal lengths.

Pelco's VD series lenses are intraspot-type lenses, which optimize the dynamic range of the iris. Maximum apertures of no less than f/1.8 to a minimum aperture of f/360 are typical of all these lenses. This allows for excellent performance characteristics across a wide range of lighting conditions.

Select the model lens that best suits your needs from the Technical Specifications section of this product specification sheet.



MODELS	H	ØW	L
13VD1-3 13VD2.5-6	1.80 (4.57) 1.80 (4.57)	1.56 (3.96) 1.55 (3.94)	2.05 (5.21) 1.85 (4.70)
13VD2.8-12 13VD3-8	1.83 (4.65) 1.65 (4.20)	1.58 (4.01) 1.30 (3.30)	2.33 (5.92) 1.78 (4.52)
13VD5-40	1.95 (4.95)	1.66 (4.22)	2.85 (7.24)
13VD5-50 13VD5.5-82.5	2.13 (5.41) 2.15 (5.46)	1.63 (4.14) 1.89 (4.80)	2.33 (5.92) 3.23 (8.20)

NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

MODELS

	13VD1-3	13VD2.5-6	13VD2.8-12	13VD3-8
Type	Varifocal	Varifocal	Varifocal	Varifocal
Format Size	1/3-inch	1/3-inch	1/3-inch	1/3-inch
Mount Type	CS	CS	CS	CS
Focal Length	1.6 ~ 3.4 mm	2.5 ~ 6 mm	2.8 ~ 12 mm	3 ~ 8 mm
Zoom Ratio	2.1X	2.4X	4.3X	2.7X
Relative Aperture (f)	1.4 ~ 360	1.4 ~ 125	1.4 ~ 360	1.0 ~ 360
Operation				
Iris	Auto (Direct Drive)	Auto (Direct Drive)	Auto (Direct Drive)	Auto (Direct Drive)
Focus	Manual	Manual	Manual	Manual
Zoom	Manual	Manual	Manual	Manual
Angle of View				
Diagonal	106.1° ~ 180.0°	56.8° ~ 133.3°	30° ~ 122.4°	44.9° ~ 117.9°
Horizontal	84.3° ~ 180.0°	45.6° ~ 107.6°	24.1° ~ 97.4°	36° ~ 91°
Vertical	55.8° ~ 114.1°	34.2° ~ 80.9°	18.1° ~ 72.5°	27° ~ 67°
Minimum Object Distance	0.2 m	0.2 m	0.3 m	0.2 m
Back Focal Length	7.06 ~ 11.54 mm	8.72 ~ 14.24 mm	8.6 mm	8.36 mm
Filter Size (mm)	N/A	N/A	N/A	N/A
Unit Weight	0.23 lb (0.11 kg)	0.20 (0.09 kg)	0.17 lb (0.08 kg)	0.09 lb (0.04 kg)
Shipping Weight	1 lb (0.45 kg)	1 lb (0.45 kg)	1 lb (0.45 kg)	1 lb (0.45 kg)

	13VD5-40	13VD5-50	13VD5.5-82.5
Type	Varifocal	Varifocal	Varifocal
Format Size	1/3-inch	1/3-inch	1/3-inch
Mount Type	CS	CS	CS
Focal Length	5 ~ 40 mm	5 ~ 50 mm	5.5 ~ 82.5 mm
Zoom Ratio	8X	10X	15X
Relative Aperture (f)	1.6 ~ 360	1.4 ~ 360	1.8 ~ 360
Operation			
Iris	Auto (Direct Drive)	Auto (Direct Drive)	Auto (Direct Drive)
Focus	Manual	Manual	Manual
Zoom	Manual	Manual	Manual
Angle of View			
Diagonal	8.8° ~ 66.9°	6.9° ~ 66.8°	4.2° ~ 64.7°
Horizontal	6.5° ~ 53.6°	5.3° ~ 53.4°	3.1° ~ 50.7°
Vertical	4.8° ~ 40.2°	4.1° ~ 40.1°	2.3° ~ 37.5°
Minimum Object Distance	Consult factory	0.5 m	0.2 m
Back Focal Length	10 ~ 14.3 mm	10.05 mm	8.65 ~ 10.32 mm
Filter Size (mm)	40.5P0.5	N/A	46P0.75
Unit Weight	0.30 lb (0.14 kg)	0.25 lb (0.11 kg)	0.44 lb (0.20 kg)
Shipping Weight	1 lb (0.45 kg)	1 lb (0.45 kg)	1 lb (0.45 kg)

CERTIFICATIONS

- CE, Class B (all models)

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13VDIR Series Day/Night Lens

1/3-INCH FORMAT, AUTO IRIS (DIRECT DRIVE), IR CORRECTED

Product Features

- Designed for All Day/Night and Monochrome Cameras
- Increased Sharpness in Monochrome Mode
- Focuses IR and Visible Light
- Eliminates the Problem of IR Focus Shift
- Auto Iris, Manual Focus, and Zoom

13VDIR3-8.5

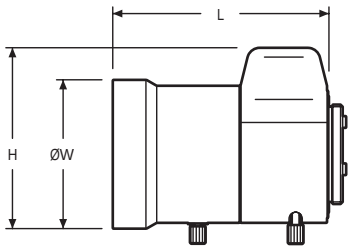
The purpose of Pelco's **13VDIR Series** is to compensate for the focus shift that results from the different wavelengths of visible and IR light. IR corrected lenses focus light energy on the same plane. The result is better focus, sharper contrast, and better overall image quality.

IR corrected lenses are particularly of benefit to Pelco's day/night cameras, which "see" both visible and IR light. IR corrected lenses allow a camera's imager to take in visible and IR illumination in "night" conditions (when the IR cut filter is not deployed), while eliminating the problem of IR focus shift.

Appropriate for indoor and outdoor lighting situations, the **13VDIR Series** lenses will fit all 1/3-inch CS mount cameras requiring DC drive auto iris lenses. Lenses in the **13VDIR Series** come with a standard square 4-pin plug installed for ease of installation and convenience.

Lenses in this series are available in 2.8X (13VDIR3-8.5), 3.9X (13VDIR2.8-11), and 6.7X (13VDIR7.5-50) zoom with varying focal lengths.

Maximum and minimum apertures for these lenses are f1.4 ~ f2.6 (13VDIR2.8-11), f1.0 ~ f1.6 (13VDIR3-8.5), and f1.3 ~ f1.8 (13VDIR7.5-50). This allows for excellent performance characteristics across a wide range of lighting conditions. These lenses have aspheric elements, which provide crisper, optimized images at all focal lengths.



MODELS	H	ØW	L
13VDIR2.8-11	1.82 (4.62)	1.57 (4.00)	2.15 (5.46)
13VDIR3-8.5	1.87 (4.74)	1.37 (3.50)	1.81 (4.60)
13VDIR7.5-50	1.97 (5.01)	1.49 (3.80)	2.17 (5.52)

NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

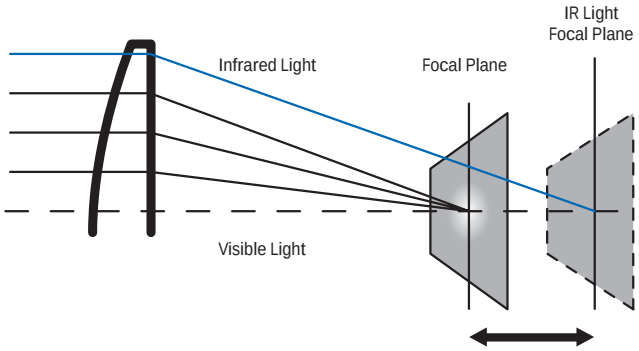
MODELS

	13VDIR2.8-11	13VDIR3-8.5	13VDIR7.5-50
Type	Varifocal Infrared	Varifocal Infrared	Varifocal Infrared
Format Size	1/3-inch	1/3-inch	1/3-inch
Mount Type	CS	CS	CS
Focal Length	2.8 ~ 11 mm	3 ~ 8.5 mm	7.5 ~ 50 mm
Zoom Ratio	3.9X	2.8X	6.7X
Relative Aperture (f)	1.4 ~ 2.6	1.0 ~ 1.6	1.3 ~ 1.8
Operation			
Iris	Auto (Direct Drive)	Auto (Direct Drive)	Auto (Direct Drive)
Focus	Manual	Manual	Manual
Zoom	Manual	Manual	Manual
Angle of View			
Diagonal	32.7° ~ 123.2°	41.9° ~ 114.1°	7.00° ~ 46.2°
Horizontal	26.2° ~ 97.4°	33.6° ~ 90.5°	5.64° ~ 36.6°
Vertical	19.7° ~ 72.4°	25.2° ~ 67.2°	4.26° ~ 27.4°
Minimum Object Distance	0.3 m	0.2 m	0.4 m
Back Focal Length	8.66 ~ 18.69 mm	7.94 ~ 13.96 mm	9.61 ~ 11.96 mm
Operating Temperature	–4° to 140°F (–20° to 60°C)	14° to 122°F (–10° to 50°C)	14° to 122°F (–10° to 50°C)
Unit Weight	0.18 lb (0.08 kg)	0.12 lb (0.05 kg)	0.15 lb (0.07 kg)
Shipping Weight	1 lb (0.45 kg)	1 lb (0.45 kg)	1 lb (0.45 kg)

CERTIFICATIONS

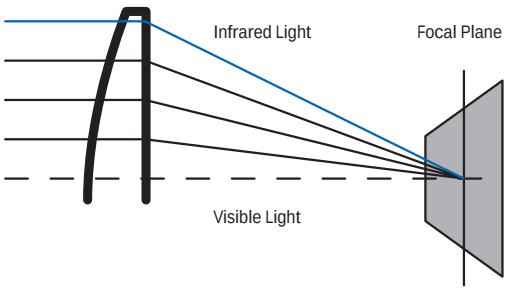
- CE, Class B (all models)
- C-Tick

Standard Lens



Out of focus caused by the focal plane difference. IR lens corrects this difference.

IR Lens



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13M Series Megapixel Varifocal Lens

1/3-INCH FORMAT, 3 MEGAPIXEL, AUTO IRIS (DIRECT DRIVE)

Product Features

- Up to 3 Megapixels (MPx)
- CS Mount
- For use with 1/3-Inch Cameras
- Auto Iris, Manual Focus, and Zoom
- High Resolution Power in a Compact Body
- Aspherical Elements

13M15-50

Pelco's **13M Series** megapixel varifocal lenses are a new class of lenses specially designed to provide optimal results when used in cameras with megapixel sensors. These lenses enable megapixel cameras to realize the high resolutions that standard lenses cannot deliver, with a resolving power of up to 100 lines per millimeter. These lenses provide excellent image quality at both the center and at the corner of the image.

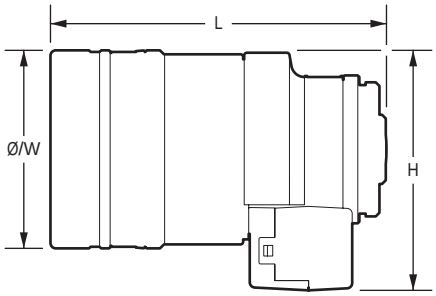
The **13M Series** offers versatility and flexibility in a compact package. Each auto iris lens covers a specific range of focal lengths, so you can adjust the lens to achieve the exact field of view instead of "almost the right view."

Appropriate for indoor and outdoor lighting situations, the **13M Series** lenses will fit all 1/3-inch CS-mount cameras requiring DC drive auto iris lenses. The lenses also include a spot filter. A factory-installed square 4-pin plug is standard for ease of installation.

Lenses in this series are available in 2.7X, 2.8X, 3.3X, and 4.3X zoom with varying focal lengths.

Designed especially for low-light capability, Pelco's **13M Series** lenses are extremely fast. These lenses provide excellent performance across a wide range of lighting conditions. The **13M Series** also provides excellent day/night performance in Pelco Sarix™ cameras that are capable of this function, which includes operation with IR lighting and visible lighting.

The **13M Series** lenses have a slip mechanism that allows it to be easily adjusted and oriented inside enclosures, domes, and so forth. In addition, the metal mount makes for a robust and secure attachment to cameras.



	H	ØW	L
13M2.2-6	1.85 (4.71)	1.61 (4.08)	2.13 (5.40)
13M2.8-8	1.85 (4.71)	1.61 (4.08)	2.05 (5.20)
13M2.8-12	2.01 (5.11)	1.92 (4.88)	2.58 (6.55)
13M15-50	1.79 (4.55)	1.48 (3.75)	2.30 (5.85)

NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

MODEL

	13M2.2-6	13M2.8-8	13M2.8-12	13M15-50
Type	Varifocal	Varifocal	Varifocal	Varifocal
Format Size	1/3-inch	1/3-inch	1/3-inch	1/3-inch
Mount Type	CS	CS	CS	CS
Focal Length	2.2 ~ 6.0 mm	2.8 ~ 8.0 mm	2.8 ~ 12.0 mm	15.0 ~ 50.0 mm
Zoom Ratio	2.7X	2.8X	4.3X	3.3X
F-number (iris fully opened)	1.3 ~ 2.0	1.2 ~ 1.9	1.4 ~ 2.7	1.5 ~ 2.2
Image Size	6 mm diameter	6 mm diameter	6 mm diameter	6 mm diameter
Flange Focal Length	12.5 mm	12.5 mm	12.5 mm	12.5 mm
Minimum Object Distance	0.3 m	0.3 m	0.3 m	0.8 m
Iris	Auto	Auto	Auto	Auto
Field of View				
Wide				
Vertical	91°	73°	74°	14°
Horizontal	120°	100°	100°	18°
Diagonal	146°	128°	127°	23°
Tele				
Vertical	35°	26°	17°	4.2°
Horizontal	46°	35°	23°	5.6°
Diagonal	57°	43°	29°	6.9°
Focus	Manual	Manual	Manual	Manual
Zoom	Manual	Manual	Manual	Manual
Operating Temperature	14° to 122°F (–10° to 50°C)	14° to 122°F (–10° to 50°C)	14° to 122°F (–10° to 50°C)	14° to 122°F (–10° to 50°C)
Storage Temperature	–4° to 140°F (–20° to 60°C)	–4° to 140°F (–20° to 60°C)	–4° to 140°F (–20° to 60°C)	–4° to 140°F (–20° to 60°C)
Relative Humidity	35% to 90%	35% to 90%	35% to 90%	35% to 90%
Iris Drive Coil Resistance	190 Ω ±10%	190 Ω ±10%	190 Ω ±10%	190 Ω ±10%
Iris Damping Coil Resistance	500 Ω ±10%	500 Ω ±10%	500 Ω ±10%	500 Ω ±10%
Maximum Iris Operating Current	23 mA at 4 VDC	23 mA at 4 VDC	23 mA at 4 VDC	23 mA at 4 VDC
Unit Weight (approximate)	0.13 lb (0.06 kg)	0.13 lb (0.06 kg)	0.20 lb (0.09 kg)	0.13 lb (0.06 kg)
Shipping Weight (approximate)	1 lb (0.5 kg)	1 lb (0.5 kg)	1 lb (0.5 kg)	1 lb (0.5 kg)

Note: When power is turned off, the iris will close automatically.

CERTIFICATIONS

- CE
- C-Tick

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13ZD Series Motorized Zoom Lens

1/3-INCH FORMAT, AUTO IRIS (DIRECT DRIVE)

Product Features

- CS Mount
- Spot Filter
- For Use with 1/3-Inch Format Cameras
- Auto Iris (Direct Drive, No Amplifier), Motorized Focus and Zoom (with or without Presets)
- High Resolution Power in Compact Body

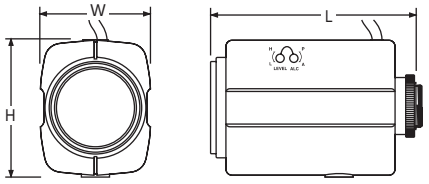
13ZD5.6X20

Pelco's **13ZD Series** of 1/3-inch motorized zoom lenses cover a wide range of applications from wide angle to telephoto. Each auto iris lens in this series covers a specific range of focal lengths and is available with or without preset positioning.

Appropriate for indoor and outdoor lighting situations, the **13ZD Series** lenses will fit all 1/3-inch CS-mount cameras requiring DC-drive auto iris lenses. In addition, all auto iris lenses include a spot filter. A factory-installed, square 4-pin auto iris connector is standard.

Lenses in this series are available in 8X, 10X, 15X, 20X, and 30X zoom with varying focal lengths.

Various maximum apertures of f1.4 to f1.8 and a minimum aperture of f/360 allow excellent performance characteristics across a wide range of lighting conditions.



MODEL	H	W	L
13ZD6X8	3.15 (8.00)	2.57 (6.53)	4.23 (10.74)
13ZD6X10(P) 13ZD6X15P	3.15 (8.00) 3.15 (8.00)	2.73 (6.93) 2.73 (6.93)	4.77 (12.12) 4.77 (12.12)
13ZD5.6X20(P) 13ZD5.5X30(P)	3.15 (8.00) 3.15 (8.00)	2.73 (6.93) 3.43 (8.71)	4.84 (12.29) 6.57 (16.69)

NOTES: ALL MEASUREMENTS ARE WITH LENSES FULLY EXTENDED (FOCUS-NEAR MODE).
VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

MODELS

	13ZD6X8	13ZD6X10/ 13ZD6X10P	13ZD6X15P
Type	Motorized Zoom	Motorized Zoom	Motorized Zoom
Format Size	1/3-inch	1/3-inch	1/3-inch
Mount Type	CS	CS	CS
Focal Length	6 ~ 48 mm	6 ~ 60 mm	6 ~ 90 mm
Zoom Ratio	8X	10X	15X
Relative Aperture (f)	1.4 ~ 360	1.6 ~ 360	1.6 ~ 360
Operation			
Iris	Auto (Direct Drive)	Auto (Direct Drive)	Auto (Direct Drive)
Focus	Motorized*	Motorized*	Motorized*
Zoom	Motorized*	Motorized*	Motorized*
Angle of View			
Diagonal	7.3° ~ 54.4°	5.8° ~ 54.3°	3.9° ~ 54.3°
Horizontal	5.8° ~ 44.2°	4.7° ~ 44.2°	3.1°~ 44.2°
Vertical	4.4° ~ 33.5°	3.5° ~ 33.5°	2.4° ~ 33.5°
Minimum Object Distance	1.0 m	1.0 m	1.0 m
Back Focal Length	10.10 mm	9.55 mm	9.55 mm
Filter Size (mm)	46P0.75	55P0.75	55P0.75
Unit Weight	0.92 lb (0.42 kg)	1.19 lb (0.54 kg)	1.43 lb (0.65 kg)
Shipping Weight	2 lb (0.90 kg)	3 lb (1.36 kg)	3 lb (1.36 kg)

	13ZD5.6X20/ 13ZD5.6X20P	13ZD5.5X30/ 13ZD5.5X30P
Type	Motorized Zoom	Motorized Zoom
Format Size	1/3-inch	1/3-inch
Mount Type	CS	CS
Focal Length	5.6 ~ 112 mm	5.5 ~ 165 mm
Zoom Ratio	20X	30X
Relative Aperture (f)	1.6 ~ 360	1.8 ~ 360
Operation		
Iris	Auto (Direct Drive)	Auto (Direct Drive)
Focus	Motorized*	Motorized*
Zoom	Motorized*	Motorized*
Angle of View		
Diagonal	3.2° ~ 59.4°	2.1° ~ 58.7°
Horizontal	2.6° ~ 47.6°	1.7° ~ 47.6°
Vertical	1.9° ~ 35.7°	1.3° ~ 33.9°
Minimum Object Distance	1.5 m	1.8 m
Back Focal Length	8.97 mm	15.5 mm
Filter Size (mm)	55P0.75	72P0.75
Unit Weight	1.23 lb (0.56 kg)	1.84 lb (0.83 kg)
Shipping Weight	3 lb (1.36 kg)	3 lb (1.36 kg)

*Model numbers with P suffix are motorized with preset capability.

CERTIFICATIONS

- CE, Class B (all models)
- C-Tick

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CM9765 Series Matrix

MICROPROCESSOR-BASED SWITCHER/CONTROLLER; 2,048 INPUTS; 512 OUTPUTS

Product Features

- Microprocessor-Based, Full Cross-Point Video Matrix
- High-Density Architecture Supports up to 256 Cameras and 16 Monitors in Each Bay
- Control up to 2,048 Cameras and 512 Monitors in a Single Node or Expand Camera Capacity with a Multi-Node System (up to 24 Nodes)
- Full System Reports From CM9700-MGR Provide System Wiring and Configuration Details
- Sixteen RS-422 COM Ports (Expandable to 120) and Two RS-232 Full-Duplex Ports Available on the CPU
- System Diagnostic LEDs Displayed on Front Panel
- Flash Technology Eases System Maintenance and Upgrades
- Logical Camera Selection and Priority Level Operation
- Multiplexer and DVR Control Using the Keyboard
- Built-in Video Loss Detection
- Windows®-Based System Management Software (Windows 2000, Windows XP) Includes Multilangual Menus and On-Screen Help
- Factory Tested Prepackaged Systems
- ASCII Data Input to Interface Access Control and Other External Computer-Based Systems
- Powerful Macro Programming

Optional Accessories

- "Hot Switch" and Backup CPU Ensure Uninterrupted Operation
- Redundant Power Supplies for Switching Bays
- Coaxitron® Translator Allows PTZ Communication Over Standard Coaxial Cable
- Responds to 5,000 Alarms
- Network Interface Unit Allows Multiple Systems to Share Video and Control
- DVR Management

All CM9765 Series systems require installation by a Pelco Certified Dealer/Installer. This specification sheet may be used for purpose of information only and does not constitute approval or certification of receiving party. Proof of certification must be provided prior to shipment of CM9765 Systems contained herein.

The **9765 System** is a full-featured video matrix switching control system that allows users to view and control up to 2,048 cameras and 512 monitors on a single node. Up to 96 individual user-defined ID numbers can be assigned to allow or deny access to system functions.

The base configuration for the **9765 System** is made up of a central processing unit (CC1), matrix switching bay(s) (MXBs) with video input/output modules, and keyboard controllers (KBDs). Optional components can be added to enhance system capabilities.

Preconfigured, prepackaged systems make installation fast and simple. The **9765 System** features a user-friendly Windows®-based management system, which allows for easy system programming and maintenance.

Macros allow activation of events based on schedule or alarm. Macros may call system-wide sequences (tours); activate preset positions on properly equipped cameras; and activate external relays to control auxiliary functions such as locking doors (additional equipment may be required).

The **9765 System** also includes built-in video loss detection and system diagnostic features, indicated by LEDs on the front panel of the matrix bay. Flash technology incorporated into the system design allows for easier system maintenance and upgrades.

Optional DVR management allows DVRs to be controlled directly from the system keyboards. Suitable DVRs can be monitored for operational conditions ensuring continuous recording.

CENTRAL PROCESSING UNIT (CC1)

The central processing unit communicates with external devices and accepts commands from external computers, keyboards, graphical user interfaces (GUIs), access control systems, casino data systems, programmable logic controllers (PLCs), and lighting and intercom systems. An internal VGA card is included for displaying system diagnostics and for programming. RS-422 COM ports are provided for communication with external devices such as matrix switching bays, pan/tilt or dome receivers, and keyboards.

ELECTRICAL

Input Voltage	120 VAC, 60 Hz or 230 VAC, 50 Hz, autoranging
Power Consumption	57 W
Diagnostic Monitor Output	1 VGA
I/O Ports	16 RS-422 ports (expandable to 32); total system capability is 120 ports*
	2 RS-232 ports
	1 parallel printer port
	1 VGA output port
	2 PC-AT compatible keyboard ports

GENERAL

Operating Temperature	32˚ to 120˚F (0˚ to 49˚C)
Dimensions	19.50" D x 19.00" W x 7.00" H (49.53 x 48.26 x 17.78 cm)
Mounting	Fits 19-inch EIA-standard rack (4 RUs)
Unit Weight	29.7 lb (13.5 kg)
Shipping Weight	43 lb (19.5 kg)

CERTIFICATIONS

- CE, Class A
- FCC, Class A
- UL/cUL Listed

MATRIX SWITCHING BAY

Each bay includes a power supply and mounting baffle and will support modules for up to 256 camera inputs and 16 monitor outputs. Multiple bays can be used to expand a single CPU system to a maximum of 2,048 camera inputs and 512 monitor outputs. An optional backup power supply module (MPS) can be installed in each bay to provide redundancy.

ELECTRICAL

Input Voltage	100 to 240 VAC, 50/60 Hz, autoranging
Power Consumption	60 W maximum (fully populated)
Communication	Full duplex RS-422 using an RJ-45 connector

VIDEO

Bandwidth	15 MHz
Signal-to-Noise Ratio	-70.5 dB
Adjacent Channel Crosstalk	-60.9 dB at 3.58 MHz
Differential Gain	0.51%
Differential Phase	0.38˚
Line Tilt	0.40%
Field Tilt	0.59%
Switching Time	16 ms
Inputs	Card slots support up to 256 inputs per bay
Outputs	1 output card slot for supporting 16 outputs per bay
Video Input Level	0.5 to 2 Vp-p, RS-170 composite video
Impedance	75 ohms terminating (looping versions available)

V-Sync	The Pelco V-Sync signal (sent up the coaxial cable) provides a synchronization pulse, which allows roll-free switching between cameras within the same matrix bay
Vertical Drive	Input connector available on rear panel
Overall Frequency Response	Flat to 8 MHz
Luminance Nonlinearity	20%

GENERAL

Operating Temperature	32˚ to 122˚F (0˚ to 50˚C), noncondensing
Dimensions	
Matrix Bay	21.70" D x 19.00" W x 10.50" H (55.10 x 48.26 x 26.67 cm)
Mounting Baffle†	24.00" D x 19.00" W x 1.75" H (60.96 x 48.26 x 4.45 cm)
Mounting	Fits 19-inch EIA-standard rack (matrix bay: 6 RUs; mounting baffle: 1RU)
Unit Weight	33 lb (14.99 kg) 52 lb (23.59 kg), fully populated
Shipping Weight	44 lb (19.96 kg) 62 lb (28.12 kg), fully populated

CERTIFICATIONS

- CE, Class A
- FCC, Class A
- UL/cUL Listed

*The CM9700-CC1 is equipped with 16 RS-422 COM ports; total capacity can be expanded to 32 ports by adding 2 CM9700-SER serial communication cards (8 ports each). Total system capability can be expanded to 120 RS-422 COM ports by adding 3 CM9700-SER-32 port expansion units (32 ports each) to the CC1.

†Included with each MXB unit. Total height of MXB with baffle installed is 12.25 inches (31 cm).

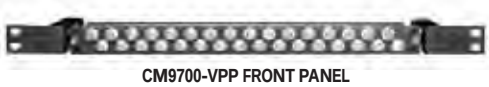
MODELS

CONTROLLER

CM9700-CC1	CPU controller; operates on 120 VAC, 60 Hz or 230 VAC, 50 Hz. (4 RUs).
CM9700-SER	Serial communication card (RS-422 SERCOM) provides eight communications ports to interface peripheral equipment (4 maximum per CPU).
CM9700-SER-32	Port expansion unit; 32 serial communication (SERCOM) ports per unit. Up to three units can be added to a CC1 (contact Pelco's System Applications Department before adding to an existing CM9700-CC1). Includes interconnecting cables and adapters for DB9 and RJ45 connectors. Data interface can be RS-232 or RS-422. (4 RUs).

MATRIX BAY

CM9765-MXB	Video matrix bay equipped with CM9700-MPS power supply; 100 to 240 VAC, 50/60 Hz, autoranging (6 RUs).
CM9700-MPS	Matrix bay power supply (spare); 120 VAC, 60 Hz or 230 VAC, 50 Hz.
CM9765-DFC	Down frame card and cable assembly; connects multiple matrix bays for expansion purposes.
CM9765-VCC	Video camera card capable of accepting up to 32 camera inputs. Also requires a rear panel card (CM9765-DFC, CM9765-RPC).
CM9765-RPC	Rear panel video card; provides 32 BNC connectors used to connect camera inputs to matrix bay.
CM9765-VMC	Video monitor card providing 16 monitor outputs; requires CM9765-RPM.
CM9765-RPM	Rear panel monitor card; provides 16 BNCs to connect monitor outputs to matrix bay; also interfaces video output signals from video output card.
CM9765-RPS	Rear panel side frame/down frame card; use when side framing and down framing.
CM9700-VPP	Video patch panel; provides 32 BNC inputs for bringing video inputs into the system or 32 BNC connections for looping video out of the system; includes 16-channel coaxial ribbon cable, 3 feet (0.91 m). (3 VPP units = 2 RUs; actual height of each VPP is 1.07 inches [2.7 cm])
CM9700-CBL-06FT	16-channel coaxial ribbon cable, 6 ft (1.82 m)
CM9700-CBL-10FT	16-channel coaxial ribbon cable, 10 ft (3.04 m)



CM9700-VPP FRONT PANEL

CM9700-VPP video patch panels can be mounted horizontally into a standard EIA rack. A cable management bracket is attached to each end of the video patch panel.

OPTIONAL COMPONENTS

The following components are compatible with the 9765 System:

KEYBOARDS

CM9760 Keyboard Controller

The CM9760 keyboard controller allows the user to control the system. The keyboard includes a variable speed, vector-solving joystick with zoom control knob for pan/tilt/zoom (PTZ) and dome control. From the keyboard, the user can control GPI-activated devices, receivers, camera/monitor switching, and multiplexer screen functions, and create single/dual patterns, zones, zone labels, presets and preset recalls. The user can also arm and disarm alarms as well as implement stand-alone, direct mode operation. Twenty-four programmable soft keys can be individually labeled allowing logical camera selection based on the camera's field of view rather than camera numbers.

CM9760-KBD	Full-function desktop variable speed keyboard, white finish; 100 to 240 VAC, 50/60 Hz.
CM9760-KBD-B	Full-function desktop variable speed keyboard, black finish; 100 to 240 VAC, 50/60 Hz.
CM9760-KBR	Full-function 19-inch EIA rack mount keyboard (4 RUs); available in black finish only; 100 to 240 VAC, 50/60 Hz.

A suffix of -US, -UK, -AU, or –EU, designating a region-specific power cord, is added to the above model numbers when ordering. For example, a CM9760-KBD-US is a desktop keyboard (white finish) with a power cord for use in the United States.

KBD200A Keyboard Controller

The KBD200A provides control of camera/monitor switching; reset, pattern, and sequence operation; local and receiver auxiliary operation; and multiplexer screen functions. The KBD200A also provides push-button control of PTZ functions. (A KBDKIT is required for power.)

KBD200A	Desktop keyboard with full switching capabilities, plus push-button control of PTZ functions. 12 VAC or ±12 VDC. (Requires KBDKIT for power.)

KBD300A Keyboard Controller

The KBD300A provides control of camera/monitor switching; preset, pattern, and sequence operation; local and receiver auxiliary operation; and multiplexer screen functions. The KBD300A also provides joystick control of PTZ functions. (A KBDKIT is required for power.)

KBD300A	Desktop keyboard with full switching capabilities, plus joystick control of PTZ functions. 12 VAC or ±12 VDC. (Requires KBDKIT for power.)

NETWORK INTERFACE UNIT

The CM9700-NW1 network interface unit allows multiple systems to share video and control.

CM9700-NW1	Network interface unit; network CPU and software necessary for joining two or more independent systems together. (4 RUs).

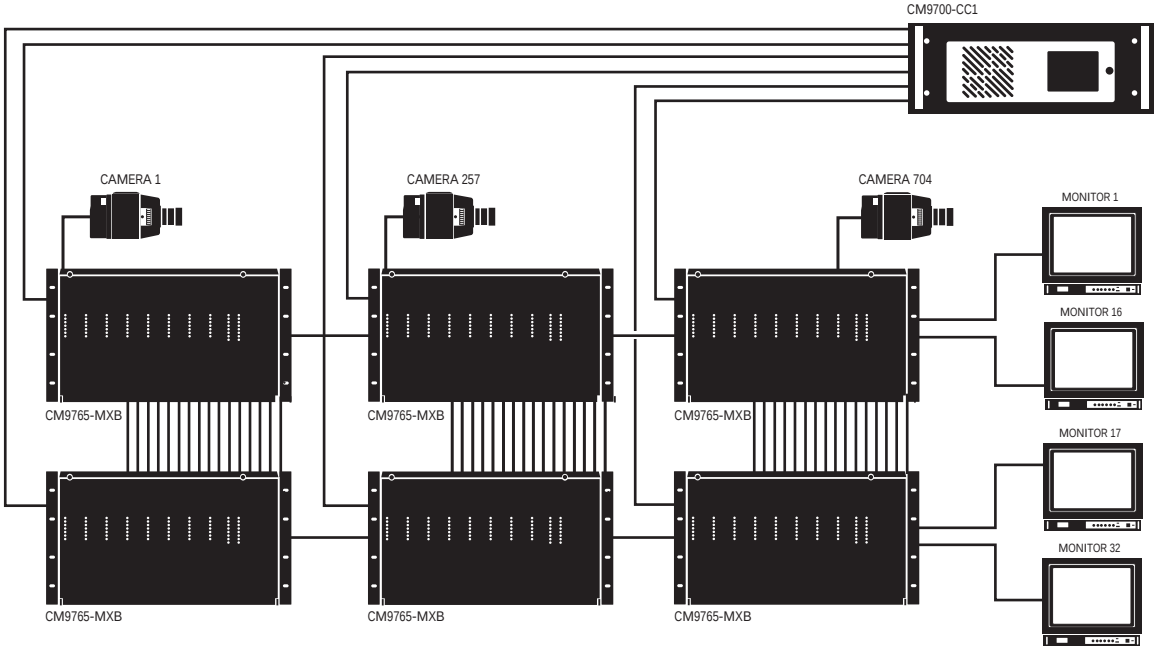
MISCELLANEOUS

CM9760-ALM	Alarm interface unit; connects directly to each system; each unit can monitor up to 64 alarms and up to four units can be connected in a series from one SERCOM port. (1 RU).
CM9760-CDU-T	Code distribution unit; 16-channel RS-422 transmit only (two data wires and ground) distributor. Primarily used for wiring up to 16 pan/tilt/zoom receivers in a "star" configuration. (1 RU).
CM9760-CXTA	Coaxitron translator; generates Coaxitron signals for Pelco Coaxitron receivers; each translator supports up to 16 receivers. (1 RU).
CM9760-DMR	Data merger and port expander unit; this unit allows multiple CM9700-CC1 units to control multiple pan/tilt/zoom cameras and allows multiple keyboards to communicate through one CC1 port. (1 RU).
CM9760-DMR-X	Same as CM9760-DMR except 230 VAC, 50 Hz.
CM9760-HS	Hot switch interface unit; changeover unit that monitors the status of a primary CC1 in a 9770 system: three components, 1 RU each.
CM9760-MDA	Master distribution amplifier; inserts master time and date from the CM9700-CC1 and a programmable title up to 24 characters on 1 to 16 video signals. (3 RUs).
CM9760-MDA-X	Same as CM9760-MDA except 230 VAC, 50 Hz.
CM9700MDD-EVS	Matrix digital decoder (NET5301R optimized for use with matrix) that converts digital video streams from Endura® products into analog video to be viewed and controlled on a Pelco CM9700 Series matrix switcher.
CM9760-REL	Relay interface unit; connects directly to each system and provides dry contact switching for direct or automatic control of peripheral equipment; each unit provides up to 64 SPST contact outputs. (1 RU).
CM6800E-48X8	Satellite video matrix switcher. Allows the user to distribute switching capability around a facility, reducing the number of coaxial cable runs to the matrix and allowing monitoring at the satellite switch location. Supports up to 48 inputs or up to 96 inputs in a 96 x 16 configuration. (3 RUs).
Genex® Multiplexers	Genex Series MX4009 (9-channel) and MX4016 (16-channel) multiplexers. (1 RU).

COMPATIBLE RECEIVERS

Spectra® Series	Spectra dome multiple protocol receiver.
ERD97P21-U	Pelco P protocol receiver.
LRD41C21-1/-2/-3	Legacy® fixed speed receiver with presets.
LRD41C22-1/-2/-3	Same as LRD41C21 Series except variable speed receiver.
Esprit®	Integrated pan/tilt positioning receiver.
Coaxitron	Coaxitron translator allows Coaxitron control of PTZ cameras.
ExSite®	Integrated explosionproof positioning system.

RU = The number of rack units (RU) required to mount a component in a 19-inch EIA-standard rack mount. One RU is equivalent to 1.75 inches (4.45 cm) of vertical space



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CM9770 Series Matrix

MICROPROCESSOR-BASED SWITCHER/CONTROLLER; 2,048 INPUTS; 512 OUTPUTS

Product Features

- Microprocessor-Based, Full Cross-Point Video Matrix
- High-Density Architecture Supports up to 256 Cameras and 32 Monitors in Each Bay
- Control up to 2,048 Cameras and 512 Monitors in a Single Node or Expand Camera Capacity with a Multi-Node System (up to 24 Nodes)
- Full System Reports From CM9700-MGR Provide System Wiring and Configuration Details
- Sixteen RS-422 COM Ports (Expandable to 120) and Two RS-232 Full-Duplex Ports Available on the CPU
- System Diagnostic LEDs Displayed on Front Panel
- Flash Technology Eases System Maintenance and Upgrades
- Logical Camera Selection and Priority Level Operation
- Multiplexer and DVR Control Via Keyboard
- Built-in Video Loss Detection
- Windows®-Based System Management Software (Windows 2000, XP) Includes Multilanguage Menus and On-Screen Help
- Factory Tested Prepackaged Systems
- ASCII Data Input to Interface Access Control and Other External Computer-Based Systems
- Powerful Macro Programming

Optional Accessories

- "Hot Switch" and Backup CPU Ensure Uninterrupted Operation
- Redundant Power Supplies for Switching Bays
- Coaxitron® Translator Allows PTZ Communication Over Standard Coaxial Cable
- Responds to 5,000 Alarms
- Network Interface Unit Allows Multiple Systems to Share Video and Control
- DVR Management

All CM9770 Series systems require installation by a Pelco Certified Dealer/ Installer. This specification sheet may be used for purpose of information only and does not constitute approval or certification of receiving party. Proof of certification must be provided prior to shipment of CM9770 Systems contained herein.

The **9770 System** is a full-featured video matrix switching control system that allows users to view and control up to 2,048 cameras and 512 monitors on a single node. Expanded monitor capacity in the matrix bay allows implementation of larger systems with a smaller footprint (less hardware) than other matrix systems.

The base configuration for the **9770 System** is made up of a central processing unit (CC1), matrix switching bay(s) (MXBs) with video input/output modules, and keyboard controllers (KBDs). Optional components can be added to enhance system capabilities.

Preconfigured, prepackaged systems make installation fast and simple. The **9770 System** features a user-friendly Windows-based management system, which allows for easy system programming and maintenance.

Macros allow activation of events based on schedule or alarm. Macros may call system-wide sequences (tours); activate preset positions on properly equipped cameras; and activate external relays to control auxiliary functions such as locking doors (additional equipment may be required).

The **9770 System** also includes built-in video loss detection and system diagnostic features, indicated by LEDs on the front panel of the matrix bay. Flash technology incorporated into the system design allows for easier system maintenance and upgrades.

Optional DVR management allows DVRs to be controlled directly from the system keyboards. Suitable DVRs can be monitored for operational conditions ensuring continuous recording.

CENTRAL PROCESSING UNIT (CC1)

The central processing unit communicates with external devices and accepts commands from external computers, keyboards, graphical user interfaces (GUIs), access control systems, casino data systems, programmable logic controllers (PLCs), and lighting and intercom systems. An internal VGA card is included for displaying system diagnostics and for programming. RS-422 COM ports are provided for communication with external devices such as matrix switching bays, pan/tilt or dome receivers, and keyboards.

ELECTRICAL

Input Voltage	120 VAC, 60 Hz or 230 VAC, 50 Hz, autoranging
Power Consumption	57 W
Diagnostic Monitor Output	One VGA
I/O Ports	Sixteen RS-422 ports (expandable to 32); total system capability is 120 ports* Two RS-232 ports One parallel printer port One VGA output port Two PC-AT compatible keyboard ports

GENERAL

Operating Temperature	32˚ to 120˚F (0˚ to 49˚C)
Dimensions	19.50" D x 19.00" W x 7.00" H (49.53 x 48.26 x 17.78 cm)
Mounting	Fits 19-inch EIA-standard rack (4 RUs)
Unit Weight	29.7 lb (13.5 kg)
Shipping Weight	43 lb (19.5 kg)

CERTIFICATIONS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick

MATRIX SWITCHING BAY

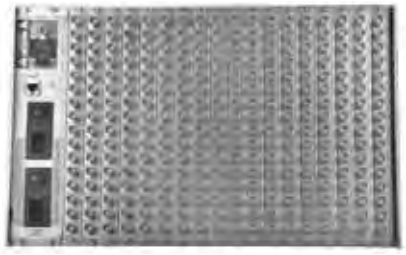
Each bay includes a power supply and mounting baffle and will support modules for up to 256 camera inputs and 32 monitor outputs. Multiple bays can be used to expand a single CPU system to a maximum of 2,048 camera inputs and 512 monitor outputs. An optional backup power supply module (MPS) can be installed in each bay to provide redundancy.

ELECTRICAL

Input Voltage	100-240 VAC, 50/60 Hz, autoranging
Power Consumption	60 W maximum (fully populated)
Communication	Full duplex RS-422 using an RJ-45 connector

VIDEO

Bandwidth	15 MHz
Signal-to-Noise Ratio	-70.5 dB
Adjacent Channel Crosstalk	-60.9 dB at 3.58 MHz
Differential Gain	0.51%
Differential Phase	0.38 degrees
Line Tilt	0.40%
Field Tilt	0.59%
Switching Time	16 mS
Inputs	Card slots support up to 256 inputs per bay
Outputs	Two output card slots for supporting 32 outputs per bay
Video Input Level	0.5 to 2 Vp-p, RS-170 composite video
Impedance	75 ohms terminating (looping versions available)



V-Sync	The Pelco V-Sync signal (sent up the coax cable) provides a synchronization pulse which allows roll-free switching between cameras within the same matrix bay
Vertical Drive	Input connector available on rear panel
Overall Frequency Response	Flat to 8 MHz
Luminance Nonlinearity	20%

GENERAL

Operating Temperature	32˚ to 122˚F (0˚ to 50˚C), non-condensing
Dimensions	
Matrix Bay	21.70" D x 19.00" W x 10.50" H (55.10 x 48.26 x 26.67 cm)
Mounting Baffle**	24.00" D x 19.00" W x 1.75" H (60.96 x 48.26 x 4.45 cm)
Mounting	Fits 19-inch EIA-standard rack (matrix bay: 6 RUs; mounting baffle: 1RU)
Unit Weight	33 lb (14.99 kg) 52 lb (23.59 kg), fully populated
Shipping Weight	44 lb (19.96 kg) 62 lb (28.12 kg), fully populated

CERTIFICATIONS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick

*The CM9700-CC1 is equipped with 16 RS-422 COM ports; total capacity can be expanded to 32 ports by adding two CM9700-SER serial communication cards (8 ports each). Total system capability can be expanded to 120 RS-422 COM ports by adding three CM9700-SER-32 port expansion units (32 ports each) to the CC1.

**Included with each MXB unit. Total height of MXB with baffle installed is 12.25 inches (31 cm).

MODELS

CONTROLLER

CM9700-CC1	CPU controller. Operates on 120 VAC, 60 Hz or 230 VAC, 50 Hz. (4 RUs).
CM9700-SER	Serial communication card (RS-422 SERCOM) provides eight communications ports to interface peripheral equipment (four maximum per CPU).
CM9700-SER-32	Port expansion unit; 32 serial communication (SERCOM) ports per unit. Up to three units can be added to a CC1. (Check with Pelco's System Applications Department before adding to an existing CM9700-CC1). Includes interconnecting cables and adapters for DB9 and RJ45 connectors. Data interface can be RS-232 or RS-422. (4 RUs).

MATRIX BAY

CM9770-MXB	Video matrix bay equipped with CM9700-MPS power supply. 100-240 VAC, 50/60 Hz, autoranging (6 RUs).
CM9700-MPS	Matrix bay power supply (spare). 120 VAC, 60 Hz or 230 VAC, 50 Hz.
CM9770-DFC	Downframe card and cable assembly; connects multiple matrix bays for expansion purposes.
CM9770-VCC	Video camera card capable of accepting up to 32 camera inputs. Also requires a rear panel card (CM9770-DFC, CM9770-RPC).
CM9770-RPC	Rear panel video card; provides 32 BNC connectors used to connect camera inputs to matrix bay.
CM9770-VMC	Video monitor card providing 16 monitor outputs; requires CM9770-RPM.
CM9770-RPM	Rear panel monitor card; provides 16 BNCs to connect monitor outputs to matrix bay; also interfaces video output signals from video output card.
CM9700-VPP	Video patch panel; provides 32 BNC inputs for bringing video inputs into the system or 32 BNC connections for looping video out of the system; includes 16-channel coaxial ribbon cable, 3 feet (0.91 m). (3 VPP units = 2 RUs; actual height of each VPP is 1.07 inches [2.7 cm])
CM9700-CBL-06FT	16-channel coaxial ribbon cable, 6 feet (1.82 m)
CM9700-CBL-10FT	16-channel coaxial ribbon cable, 10 feet (3.04 m)

CM9700-VPP FRONT PANEL

CM9700-VPP video patch panels can be mounted horizontally into a standard EIA rack. A cable management bracket is attached to each end of the video patch panel.

OPTIONAL COMPONENTS

The following components are compatible with the 9770 System:

KEYBOARDS

CM9760 Keyboard Controller

The CM9760 keyboard controller allows the user to control the system. The keyboard includes a variable speed, vector-solving joystick with zoom control knob for pan/tilt/zoom (PTZ) and dome control. From the keyboard, the user can control GPI-activated devices, receivers, camera/monitor switching, and multiplexer screen functions, and create single/dual patterns, zones, zone labels, presets and preset recalls. The user can also arm and disarm alarms as well as implement stand-alone, direct mode operation. Twenty-four programmable soft keys can be individually labeled allowing logical camera selection based on the camera's field of view rather than camera numbers.

CM9760-KBD	Full-function desktop variable speed keyboard, white finish; 100-240 VAC, 50/60 Hz.
CM9760-KBD-B	Full-function desktop variable speed keyboard, black finish; 100-240 VAC, 50/60 Hz.
CM9760-KBR	Full-function 19-inch EIA rack mount keyboard (4 RUs); available in black finish only; 100-240 VAC, 50/60 Hz.

A suffix of -US, -UK, -AU, or –EU, designating a region-specific power cord, is added to the above model numbers when ordering. For example, a CM9760-KBD-US is a desktop keyboard (white finish) with a power cord for use in the United States.

KBD200A Keyboard Controller

The KBD200A provides control of camera/monitor switching; reset, pattern, and sequence operation; local and receiver auxiliary operation; and multiplexer screen functions. The KBD200A also provides push-button control of PTZ functions. (A KBDKIT is required for power.)

KBD200A	Desktop keyboard with full switching capabilities, plus push-button control of PTZ functions. 12 VAC or ±12 VDC. (Requires KBDKIT for power.)

KBD300A Keyboard Controller

The KBD300A provides control of camera/monitor switching; preset, pattern, and sequence operation; local and receiver auxiliary operation; and multiplexer screen functions. The KBD300A also provides joystick control of PTZ functions. (A KBDKIT is required for power.)

KBD300A	Desktop keyboard with full switching capabilities, plus joystick control of PTZ functions. 12 VAC or ±12 VDC. (Requires KBDKIT for power.)

NETWORK INTERFACE UNIT

The CM9700-NW1 network interface unit allows multiple systems to share video and control.

CM9700-NW1	Network interface unit; network CPU and software necessary for joining two or more independent systems together. (4 RUs).

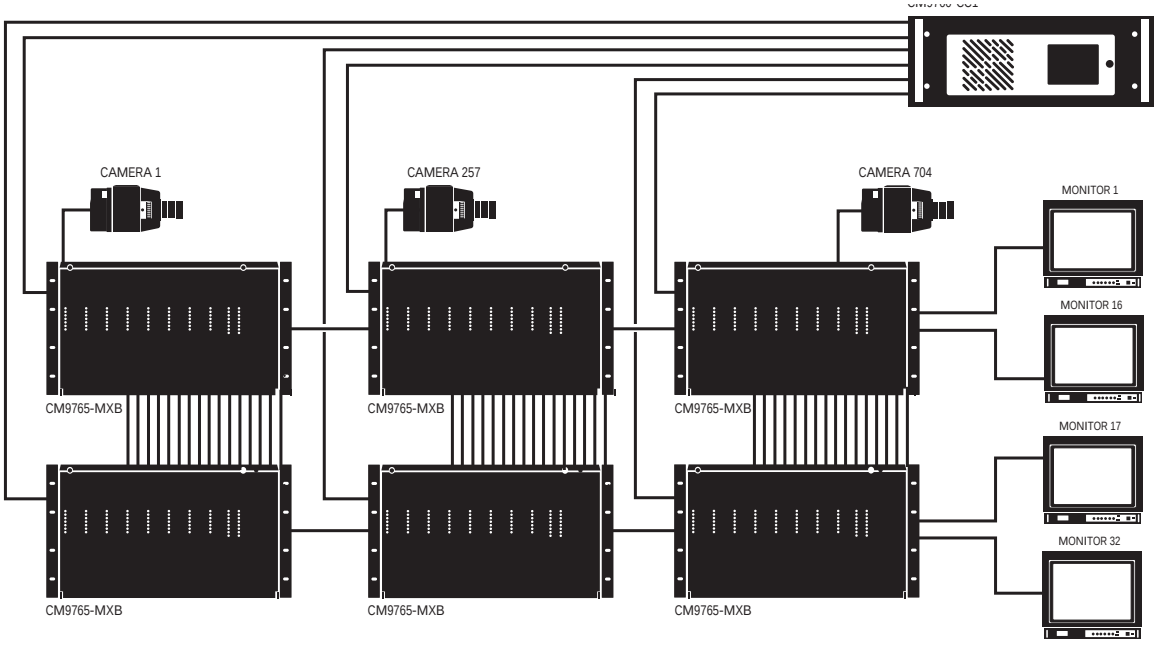
MISCELLANEOUS

CM9760-ALM	Alarm interface unit; connects directly to each system; each unit can monitor up to 64 alarms and up to four units can be connected in a series from one SERCOM port. (1 RU).
CM9760-CDU-T	Code distribution unit; 16-channel RS-422 transmit only (two data wires and ground) distributor. Primarily used for wiring up to 16 pan/tilt/zoom receivers in a "star" configuration. (1 RU).
CM9760-CXTA	Coaxitron® translator; generates Coaxitron signals for Pelco Coaxitron receivers; each translator supports up to 16 receivers. (1 RU).
CM9760-DMR	Data merger and port expander unit; this unit allows multiple CM9700-CC1 units to control multiple pan/tilt/zoom cameras and allows multiple keyboards to communicate through one CC1 port. (1 RU).
CM9760-DMR-X	Same as CM9760-DMR except 230 VAC, 50 Hz.
CM9760-HS	Hot switch interface unit; changeover unit that monitors the status of a primary CC1 in a 9770 system: three components, 1 RU each.
CM9760-MDA	Master distribution amplifier; inserts master time and date from the CM9700-CC1 and a programmable title of up to 24 characters on one to sixteen video signals. (3 RUs).
CM9760-MDA-X	Same as CM9760-MDA except 230 VAC, 50 Hz.
CM9700MDD-EVS	Matrix digital decoder (NET5301R optimized for use with matrix) that converts digital video streams from Endura products into analog video to be viewed and controlled on a Pelco CM9700 Series matrix switcher.
CM9760-REL	Relay interface unit; connects directly to each system and provides dry contact switching for direct or automatic control of peripheral equipment; each unit provides up to 64 SPST contact outputs. (1 RU).
CM6800E-48X8	Satellite video matrix switcher. Allows the user to distribute switching capability around a facility, reducing the number of coaxial cable runs to the matrix and allowing monitoring at the satellite switch location. Supports up to 48 inputs, or up to 96 inputs in a 96x16 configuration. (3 RUs).
Genex® Multiplexers	Genex Series MX4009 (9-channel) and MX4016 (16-channel) multiplexers. (1 RU).

COMPATIBLE RECEIVERS

Spectra® Series	Spectra dome multiple protocol receiver.
ERD97P21-U	Pelco P protocol receiver.
LRD41C21-1/-2/-3	Legacy®, fixed speed receiver with presets.
LRD41C22-1/-2/-3	Same as LRD41C21 Series except variable speed receiver.
Esprit®	Integrated pan/tilt positioning receiver.
Coaxitron	Coaxitron translator allows Coaxitron control of PTZ cameras.
ExSite®	Integrated explosionproof positioning system.

RU = Rack Unit. One RU is equivalent to 1.75 inches (4.45 cm) of vertical space. Identifies number of rack units required to mount component in a 19-inch EIA-standard rack mount.



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CM9780 Series Matrix

MICROPROCESSOR-BASED SWITCHER/CONTROLLER; 4,096 INPUTS; 512 OUTPUTS

Product Features

- Microprocessor-Based, Full Cross-Point Video Matrix
- High Density Architecture Supports up to 512 Cameras and 32 Monitors in Each Bay
- Control up to 4,096 Cameras and 512 Monitors in a Single Node or Expand Camera Capacity with a Multi-Node System (up to 24 Nodes)
- Full System Reports From CM9700-MGR Provide System Wiring and Configuration Details
- Sixteen RS-422 COM Ports (Expandable to 120) and Two RS-232 Full-Duplex Ports Available on the CPU
- System Diagnostic LEDs Displayed on Front Panel
- Flash Technology Eases System Maintenance and Upgrades
- Logical Camera Selection and Priority Level Operation
- Multiplexer and DVR Control Through Keyboard
- Built-in Video Loss Detection
- Windows®-Based System Management Software (Windows 2000, Windows XP) Includes Multilingual Menus and On-Screen Help
- Factory Tested Prepackaged Systems
- ASCII Data Input to Interface Access Control and Other External Computer-Based Systems
- Powerful Macro Programming

Optional Accessories

- "Hot Switch" and Backup CPU Ensure Uninterrupted Operation
- Redundant Power Supplies for Switching Bays
- Coaxitron® Translator Allows PTZ Communication Over Standard Coaxial Cable
- Responds to 5,000 Alarms
- Network Interface Unit Allows Multiple Systems to Share Video and Control
- DVR Management

The **9780 System** is a full-featured video matrix switching control system that allows users to view and control up to 4,096 cameras and 512 monitors on a single node. Expanded monitor capacity in the matrix bay allows implementation of larger systems with a smaller footprint (less hardware) than other matrix systems.

The base configuration for the **9780 System** is made up of a central processing unit (CC1), matrix switching bay(s) (MXBs) with video input/output modules, and keyboard controllers (KBDs). Optional components can be added to enhance system capabilities.

Preconfigured, prepackaged systems make installation fast and simple. The **9780 System** features a user-friendly Windows-based management system, which allows for easy system programming and maintenance.

Macros allow activation of events based on schedule or alarm. Macros may call system wide sequences (tours); activate preset positions on properly equipped cameras; and activate external relays to control auxiliary functions such as locking doors (additional equipment may be required).

The **9780 System** also includes built-in video loss detection and system diagnostic features, indicated by LEDs on the front panel of the matrix bay. Flash technology incorporated into the system design allows for easier system maintenance and upgrades.

Optional DVR management allows DVRs to be controlled directly from the system keyboards. Suitable DVRs can be monitored for operational conditions ensuring continuous recording.

All CM9780 Series systems require installation by a Pelco Certified Dealer/ Installer. This specification sheet may be used for purpose of information only and does not constitute approval or certification of receiving party. Proof of certification must be provided prior to shipment of CM9780 Systems contained herein.

CENTRAL PROCESSING UNIT (CC1)

The central processing unit communicates with external devices and accepts commands from external computers, keyboards, graphical user interfaces (GUIs), access control systems, casino data systems, programmable logic controllers (PLCs), and lighting and intercom systems. An internal VGA card is included for displaying system diagnostics and for programming. RS-422 COM ports are provided for communication with external devices such as matrix switching bays, pan/tilt or dome receivers, and keyboards.

ELECTRICAL

Input Voltage	120 VAC, 60 Hz or 230 VAC, 50 Hz, autoranging
Power Consumption	57 W
Diagnostic Monitor Output	1 VGA
I/O Ports	16 RS-422 ports (expandable to 32); total system capability is 120 ports* 2 RS-232 ports 1 parallel printer port 1 VGA output port 2 PC-AT compatible keyboard ports

GENERAL

Operating Temperature	32˚ to 120˚F (0˚ to 49˚C)
Dimensions	19.50" D x 19.00" W x 7.00" H (49.53 x 48.26 x 17.78 cm)
Mounting	Fits 19-inch EIA-standard rack (4 RUs)
Unit Weight	29.7 lb (13.5 kg)
Shipping Weight	43 lb (19.5 kg)

CERTIFICATIONS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick

MATRIX SWITCHING BAY

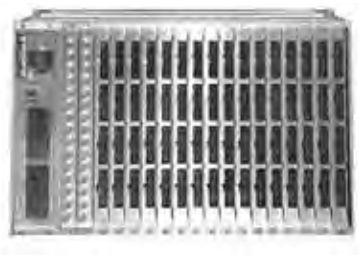
Each bay includes a power supply and mounting baffle and will support modules for up to 512 camera inputs and 32 monitor outputs. Cameras are connected to CM9700-VPP patch panels, which are then connected to the matrix bay with video ribbon cables. Monitors connect directly to rear panel BNC cards installed on the matrix bay. Multiple bays can be used to expand a single CPU system to a maximum of 4,096 camera inputs and 512 monitor outputs. An optional backup power supply module (MPS) can be installed in each bay to provide redundancy.

ELECTRICAL

Input Voltage	100-240 VAC, 50/60 Hz, autoranging
Power Consumption	60 W maximum (fully populated)
Communication	Full duplex RS-422 using an RJ-45 connector

VIDEO

Bandwidth	15 MHz
Signal-to-Noise	–70.5 dB
Adjacent Channel Crosstalk	–60.9 dB at 3.58 MHz
Differential Gain	0.51%
Differential Phase	0.38˚
Line Tilt	0.40%
Field Tilt	0.59%
Switching Time	16 mS
Inputs	Card slots support up to 512 inputs per bay
Outputs	2 output card slots for supporting 32 outputs per bay
Video Input Level	0.5 to 2 Vp-p, RS-170 composite video
Impedance	75 ohms, terminating (looping versions available)
V-Sync	The Pelco V-Sync signal (sent up the coaxial cable) provides a synchronization pulse which allows roll-free switching between cameras within the same matrix bay



Vertical Drive	Input connector available on rear panel
Overall Frequency Response	Flat to 8 MHz
Luminance Nonlinearity	20%

GENERAL

Operating Temperature	32˚ to 122˚F (0˚ to 50˚C), noncondensing
Dimensions	
Matrix Bay	21.70" D x 19.00" W x 10.50" H (55.10 x 48.26 x 26.67 cm)
Mounting Baffle†	24.00" D x 19.00" W x 1.75" H (60.96 x 48.26 x 4.45 cm)
CM9700-VPP	6.00" D x 19.00" W x 1.07" H (15.24 x 48.26 x 2.72 cm)
CM9700-VPP-RK	14.12" D x 19.00" W x 13.96" H (35.86 x 48.26 x 35.46 cm)
Mounting	Fits 19-inch EIA-standard rack (matrix bay: 6 RUs; mounting baffle: 1 RU)
Unit Weight	33 lb (14.99 kg) 57 lb (25.85 kg), fully populated
Shipping Weight	44 lb (19.96 kg) 67 lb (30.39 kg), fully populated

CERTIFICATIONS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick

*The CM9700-CC1 is equipped with 16 RS-422 COM ports; total capacity can be expanded to 32 ports by adding two CM9700-SER serial communication cards (8 ports each).

Total system capability can be expanded to 120 RS-422 COM ports by adding three CM9700-SER-32 port expansion units (32 ports each) to the CC1.

†Included with each MXB unit. Total height of MXB with baffle installed is 12.25 inches (31 cm).

MODELS

CONTROLLER

CM9700-CC1	CPU controller. Operates on 120 VAC, 60 Hz or 230 VAC, 50 Hz. (4 RUs).
CM9700-SER	Serial communication card (RS-422 SERCOM) provides 8 communication ports to interface peripheral equipment (4 maximum per CPU).
CM9700-SER-32	Port expansion unit; 32 serial communication (SERCOM) ports per unit. Up to 3 units can be added to a CC1. (Check with Pelco Systems Applications Department before adding to an existing CM9700-CC1.) Includes interconnecting cables and adapters for DB9 and RJ45 connectors. Data interface can be RS-232 or RS-422. (4 RUs).

MATRIX BAY

CM9780-MXB	Video matrix bay equipped with CM9700-MPS power supply. 100-240 VAC, 50/60 Hz, autoranging (6 RUs).
CM9700-MPS	Matrix bay power supply (spare). 120 VAC, 60 Hz or 230 VAC, 50 Hz.
CM9780-DFC	Rear panel card used to connect video ribbon cables from the CM9700-VPP video patch panels; also used for sideframing, downframing, and looping.
CM9780-VCC	Video camera card capable of accepting up to 32 camera inputs. Requires a rear panel card (CM9780-DFC) and associated VPP panels.
CM9780-RPC	Rear panel video card; provides 32 BNC connectors used for sideframing from additional input bays.
CM9780-VMC	Video monitor card providing 16 monitor outputs; requires CM9780-RPM.
CM9780-RPM	Rear panel monitor card; provides 16 BNCs to connect monitor outputs to matrix bay; also interfaces video output signals from video output card.
CM9700-VPP	Video patch panel; provides 32 BNC inputs for bringing video inputs into the system or 32 BNC connections for looping video out of the system; includes 16-channel coaxial ribbon cable, 3 feet (0.91 m). (3 VPP units = 2 RUs; actual height of each VPP is 1.07 inches [2.7 cm]).
CM9700-VPP-RK	Optional rack mount designed to hold up to 16 CM9700-VPP patch panels. (8 RUs).
CM9700-CBL-06FT	16-channel coaxial ribbon cable, 6 feet (1.82 m).
CM9700-CBL-10FT	16-channel coaxial ribbon cable, 10 feet (3.04 m).

OPTIONAL COMPONENTS

The following components are compatible with the 9780 System:

KEYBOARDS

CM9760 Keyboard Controller

The CM9760 keyboard controller allows the user to control the system. The keyboard includes a variable speed, vector-solving joystick with zoom control knob for pan/tilt/zoom (PTZ) and dome control. From the keyboard, the user can control GPI-activated devices, receivers, camera/monitor switching, and multiplexer screen functions, and create single/dual patterns, zones, zone labels, presets and preset recalls. The user can also arm and disarm alarms as well as implement stand-alone, direct mode operation. As many as 24 programmable soft keys can be individually labeled allowing logical camera selection based on the camera's field of view rather than camera numbers.

CM9760-KBD	Full-function desktop variable speed keyboard, white finish; 100-240 VAC, 50/60 Hz.
CM9760-KBD-B	Full-function desktop variable speed keyboard, black finish; 100-240 VAC, 50/60 Hz.
CM9760-KBR	Full-function 19-inch EIA rack mount keyboard (4 RUs); available in black finish only; 100-240 VAC, 50/60 Hz.

A suffix of -US, -UK, -AU, or -EU, designating a region-specific power cord, is added to the above model numbers when ordering. For example, a CM9760-KBD-US is a desktop keyboard (white finish) with a power cord for use in the United States.

KBD200A and KBD300A Keyboard Controllers

The KBD200A and KBD300A keyboards both provide control of camera/monitor switching; preset, pattern, and sequence operation; local and receiver auxiliary operation; and multiplexer screen functions.

KBD200A	Desktop keyboard with full switching capabilities, plus push-button control of PTZ functions. 12 VAC or ±12 VDC. (Requires KBDKIT for power.)
KBD300A	Desktop keyboard with full switching capabilities, plus joystick control of PTZ functions. 12 VAC or ±12 VDC. (Requires KBDKIT for power.)

NETWORK INTERFACE UNIT

CM9700-NW1	Network interface unit; network CPU and software necessary for joining two or more independent systems together. (4 RUs).

CM9700-VPP video patch panels can be mounted horizontally into a standard EIA rack. Although you can mount multiple video patch panels into a rack, a CM9700-VPP-RK can be used to save rack space if using more than nine video patch panels. A cable management bracket is attached to each end of the video patch panel.

The CM9700-VPP-RK can hold a maximum of 16 CM9700-VPP video patch panels. The CM9700-VPP-RK is mounted into a standard EIA rack and then the panels are mounted vertically into the CM9700-VPP-RK. Each video patch panel is secured to the CM9700-VPP-RK by way of two thumbscrews. You can attach two cable management brackets to each end of the CM9700-VPP-RK.

CM9700-VPP FRONT PANEL

CM9700-VPP-RK RACK MOUNT (SHOWN WITH VPP PATCH PANELS INSTALLED)

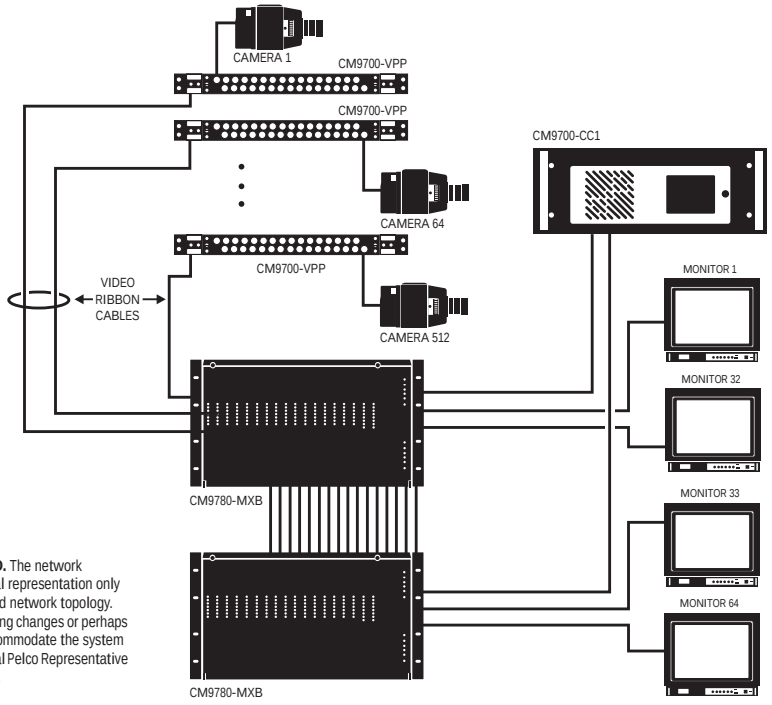
MISCELLANEOUS

CM9760-ALM	Alarm interface unit; connects directly to each system; each unit can monitor up to 64 alarms and up to 4 units can be connected in a series from one SERCOM port. (1 RU).
CM9760-CDU-T	Code distribution unit; 16-channel RS-422 transmit only (two data wires and ground) distributor. Primarily used for wiring up to 16 pan/tilt/zoom receivers in a "star" configuration. (1 RU).
CM9760-CXTA	Coaxitron translator; generates Coaxitron signals for Pelco Coaxitron receivers; each translator supports up to 16 receivers. (1 RU).
CM9760-DMR	Data merger and port expander unit; this unit allows multiple CM9700-CC1 units to control multiple pan/tilt/zoom cameras and allows multiple keyboards to communicate through one CC1 port. (1 RU).
CM9760-DMR-X	Same as CM9760-DMR except 230 VAC, 50 Hz.
CM9760-HS	Hot switch interface unit; changeover unit that monitors the status of a primary CC1 in a 9780 system: three components, 1 RU each.
CM9760-MDA	Master distribution amplifier; inserts master time and date from the CM9700-CC1 and a programmable title of up to 24 characters on 1–16 video signals. (3 RUs).
CM9760-MDA-X	Same as CM9760-MDA except 230 VAC, 50 Hz.
CM9700MDD-EVS	Matrix digital decoder (NET5301R optimized for use with matrix) that converts digital video streams from Endura products into analog video to be viewed and controlled on a Pelco CM9700 Series matrix switcher.
CM9760-REL	Relay interface unit; connects directly to each system and provides dry contact switching for direct or automatic control of peripheral equipment; each unit provides up to 64 SPST contact outputs. (1 RU).
CM6800E-48X8	Satellite video matrix switcher. Allows the user to distribute switching capability around a facility, reducing the number of coaxial cable runs to the matrix and allowing monitoring at the satellite switch location. Supports up to 48 inputs, or up to 96 inputs in a 96 x 16 configuration. (3 RUs).
Genex® Multiplexers	Genex Series MX4009 (9-channel) and MX4016 (16-channel) multiplexers. (1 RU).

COMPATIBLE RECEIVERS

Spectra® Series	Spectra dome multiple protocol receiver.
ERD97P21-U	Pelco P protocol receiver.
LRD41C21-1/-2/-3	Legacy®, fixed speed receiver with presets.
LRD41C22-1/-2/-3	Same as LRD41C21 series except variable speed receiver.
Esprit®	Integrated pan/tilt positioning receiver.
Coaxitron	Coaxitron translator allows Coaxitron control of PTZ cameras.
ExSite®	Integrated explosionproof positioning system.

RU = Rack Unit. One RU is equivalent to 1.75 inches (4.45 cm) of vertical space. Identifies number of rack units required to mount component in a 19-inch EIA-standard rack mount.



IMPORTANT NOTE: PLEASE READ. The network implementation is shown as a general representation only and is not intended to show a detailed network topology. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the system as illustrated. Please contact your local Pelco Representative to discuss your specific requirements.

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CM9760-KBD and CM9760-KBR Series Keyboards

FULL FUNCTION, VARIABLE-SPEED, PTZ CONTROL

Product Features

- Variable-Speed, Vector-Solving Joystick for PTZ and Dome Control
- Joystick Zoom Control Knob
- 24 Programmable Soft Keys, 6 Control Keys, and 3 Lens Control Keys
- LCD Display Provides 4 Lines of Keyboard Information and Options
- Preset Position and Pattern Control
- Auxiliary Operation
- Download Function Key Configurations to and from Other CM9760-KBD Keyboards, through the CM9700 System, or through the CM9700-MGR Software
- Desktop Models Available with a White Finish (CM9760-KBD) or a Black Finish (CM9760-KBD-B)
- Also Available as a Rack-Mount Model (CM9760-KBR)

CM9760-KBD-B

CM9760-KBR

The **CM9760** Series keyboards provide system users with the maximum degree of flexibility in controlling camera call-up and pan/tilt or dome operation. A desktop model (**KBD**) is available in either a white finish or a black finish, and a rack-mount model (black finish only) is also available (**KBR**).

The keyboard includes a variable speed, vector-solving joystick with zoom control knob for pan/tilt/zoom (PTZ) and dome control. All additional lens control functions are positioned next to the joystick for one-handed operation. LCD display keys give system operators fingertip control of powerful programming and operational features. These keys access multiple menus of logically displayed icons for simplistic operation.

Twenty-four programmable soft keys may be individually labeled with installation-specific titles. This allows logical camera selection based on the cameras field of view rather than camera numbers. The keyboard utilizes an adjustable backlit LCD screen to provide the greatest amount of flexibility in a variety of lighting conditions. In addition, all programmable soft keys illuminate when auxiliaries are activated.

From the keyboard, the user can control auxiliary relay activated devices, receivers, camera/monitor switching, multiplexer screen functions, and NVR/DVR playback. The user can create single/dual patterns, zones, zone labels, presets and preset recalls. The user can also arm and disarm alarms as well as implement stand-alone, direct mode operation. The keyboard also includes an adjustable audible beeper that can be used to alert operators of all alarm conditions.

MODELS

CM9760-KBD	Full-function desktop variable speed keyboard, white finish. 100-240 VAC, 50/60 Hz.
CM9760-KBD-B	Full-function desktop variable speed keyboard, black finish. 100-240 VAC, 50/60 Hz.
CM9760-KBR	Full-function 19-inch EIA rack mount keyboard (4 RUs); available in black finish only. 100-240 VAC, 50/60 Hz.

A suffix of -US, -UK, -AU, or -EU, designating a region-specific power cord, is added to the above model numbers when ordering. For example, a CM9760-KBD-US is a desktop keyboard (white finish) with a power cord for use in the United States.

FUNCTIONAL

Joystick	Vector-solving, variable-speed with zoom
Display	Four-line backlit LCD for programming and control
Display Keys	Eight multi-function keys to access programming icons and menus
Definable Keys	Twenty-four programmable “soft” keys
Numeric Keys	Numeric keys (0-9) plus (Cam) and (Mon)
Specialty Keys	
(T) “Turbo”	Activates high speed mode of camera positioning systems
(Fwd/Bwd)	Initiates forward or backward camera sequencing of next/last camera
(Run/Mac)	Initiates sequencing/calls pre-programmed macros
(Rcl/Alt)	Recalls previously selected cameras/calls next camera in group
(Prst/Lock)	Calls preset position scene/locks currently displayed camera to monitor
Lens Control	Three keys for controlling zoom (In/Out), iris (Open/Close), and focus (Near/Far)

ELECTRICAL

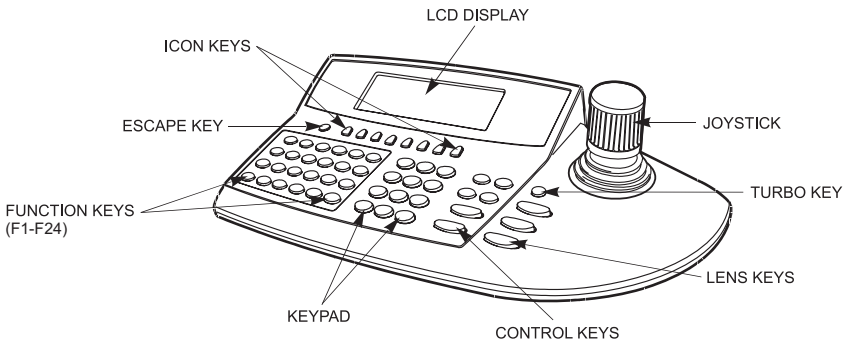
Input Voltage	100-240 VAC, 50/60 Hz
Power Consumption	10 W
Communication	RS-422, full duplex
Operating Distance	
For Direct Control Operation	Up to 3,900 ft (1.2 km) on 24-gauge wire (0.5 mm)
Keyboard Connectors	Five total, as follows: Two 8-pin RJ-45 connectors (female); both RS-422 serial ports One 4-pin RJ-45 connector (female); RS-232 serial port Two 6-pin RJ-45 connectors (female); one relay port; one PC bus port for future expansion
Internal Relay Rating	1 A

GENERAL

Ambient Operating Temperature	32˚ to 120˚F (0˚ to 49˚C)
Dimensions	
CM9760-KBD	7.80" D x 15.53" W x 3.30" H (19.81 cm x 39.45 x 8.38)
CM9760-KBR	1.75" D x 19.00" W x 7.00" H (4.45 cm x 48.26 x 17.78) Fits 19-inch EIA-standard rack (4 RUs)
Unit Weight	
CM9760-KBD	4.6 lb (2.09 kg)
CM9760-KBR	6.4 lb (2.90 kg)
Shipping Weight	
CM9760-KBD	9 lb (4.08 kg)
CM9760-KBR	11 lb (5.00 kg)

CERTIFICATIONS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick
- U.S. Patent D464,654



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CM9760-ALM Alarm Interface Unit

ALARM GATHERING UNIT FOR UP TO 64 ALARM INPUTS

Product Features

- Each Unit Can Handle up to 64 Alarms
- Up to Four Units Can Be Daisy-Chained from One CM9700 Series CC1 SERCOM Port for a Total of 256 Alarms
- Alarm Inputs Can Be Configured in Groups of 16 for Supervised or Unsupervised Mode
- Alarm Inputs in Groups of 16 Can Be Wired Either Normally Open or Normally Closed
- Each Unit Has One Common Alarm Relay Output
- Each Unit is Powered by an Autoranging Power Supply

CM9760-ALM (FRONT)

CM9760-ALM (REAR)

The **CM9760-ALM** uses an RS-232/422 communication interface with the CM9700 Series system controllers. The unit can be remotely placed with respect to the controller, from where it can communicate back to the central system when an alarm occurs. The alarm unit is capable of handling up to 64 alarm inputs.

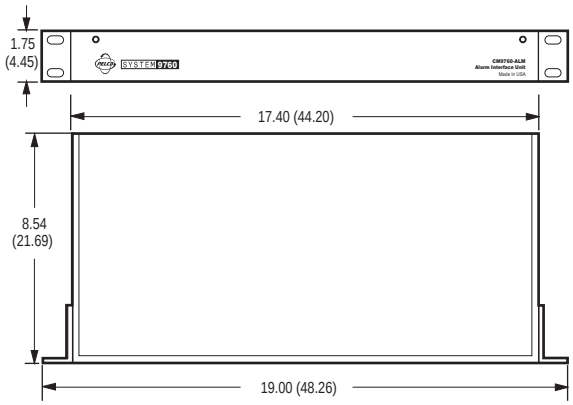
The front of the **CM9760-ALM** has two 10-position DIP switches, which allow the configuration of each unit. Also, a red LED flashes whenever there is a valid alarm condition.

The relay output connector accepts a screw terminal adapter. When a valid alarm condition is sensed, the alarm unit will activate the relay. It will deactivate only when the alarms are no longer present.

The alarm unit mounts in a standard 19-inch (48.3 cm) rack and occupies only 1 RU (1.75 inches or 4.45 cm) of rack space. For remote operation, the wiring from the alarm unit to the system controller should not exceed 4,000 feet (1,219 m).

Daisy-chaining is required when more than 64 alarms are needed. Daisy-chain configurations can be used whether alarm units are situated locally, remotely, or as a combination of the two.

The 64th input on an alarm unit can be used as an alarm output to report a data communication failure.



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS;
ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

MODEL

CM9760-ALM	Alarm interface unit

ELECTRICAL

Input Voltage	100 to 240 VAC, 50/60 Hz, autoranging
Power Consumption	30 VA (reactive consumption); 3 W (active)
Data Ports	
Input	RS-232, DB9 connector RS-422, RJ-45 connector
Output	RS-422, RJ-45 connector
Indicators	Two power LEDs, green One alarm LED, red
Fusing	500 mA, 250 V
Relay Out	Load rating or relay contacts: 0.50 A at 125 VAC or 1 A at 24 VDC
Operating Distance	4,000 feet (1,219 m) on 24 AWG

MECHANICAL

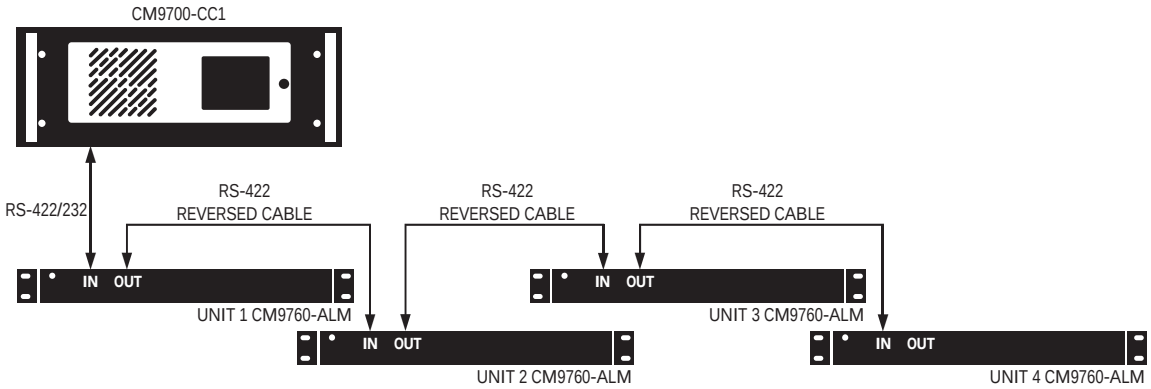
Connectors	
Alarm Input and Relay Out	Removable mating screw terminal; supports 14-22 AWG

GENERAL

Operating Temperature	32˚ to 120˚F (0˚ to 49˚C)
Dimensions	
Base Only	1.75" H x 17.40" W x 8.54" D (4.45 x 44.20 x 21.69 cm)
With Rack Ears	1.75" H x 19.00" W x 8.54" D (1 RU) (4.45 x 48.26 x 21.69 cm)
Mounting	Fits 19-inch EIA-standard rack
Unit Weight	7.0 lb (3.18 kg)
Shipping Weight	12 lb (5.45 kg)

CERTIFICATIONS

- CE, Class B
- FCC, Class B
- C-Tick



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CM9760-CDU-T Code Distribution Unit

16-CHANNEL TRANSMIT-ONLY DISTRIBUTOR

Product Features

- Two 8-Position, RJ-45 Parallel Connectors Provide an Input from a Controller and an Output for an Additional Daisy-Chained CDU Unit
- Sixteen 3-Position Screw Terminal Connectors Used to Output 16 RS-422 Transmit-Only Code Lines
- Allows for "Star" Type Wiring of PTZ Data Lines
- Standard 100-240 VAC, 50/60 Hz Line Input (Autoranging)
- Provides 16 Driver Outputs

CM9760-CDU-T (FRONT)

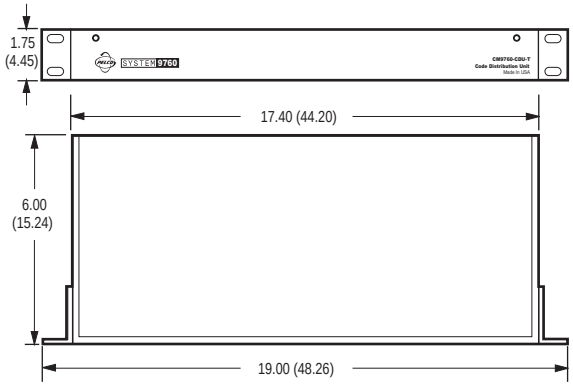
CM9760-CDU-T (BACK)

The **CM9760-CDU-T** code distribution unit is a 16-channel RS-422 transmit-only (two data wires and ground) data distribution unit. It can be used with any system that uses RS-422 serial communications. The CDU is used to install pan/tilt and dome receivers in a "star," or "home run," configuration.

The unit is rack/wall mountable and is only 6 inches (15.2 cm) deep. In addition to the 16 lines available for output with one unit, eight CDUs may be daisy-chained. This allows 128 receivers (that support 128 address settings) to be connected on a single SERCOM port.

The remote devices can be located as far as 4,000 feet (1,219 m) away from the controller, depending on the physical parameters of the connection.

The unit is ideal for use on larger switching systems where it becomes desirable to "home run" the RS-422 data lines for controlling pan/tilt or dome receivers.



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

MODEL

CM9760-CDU-T	Code distribution unit

ELECTRICAL

Input Voltage	100-240 VAC, 50/60 Hz, autoranging; or independent external source 10-24 VAC/VDC
Input Current	100 mA
Data Ports	
Input	One RS-422, RJ-45 female connector
Output	One RS-422, RJ-45 female connector
Drive Lines	Sixteen 3-position screw terminals with mating plugs
Indicators	One power LED (green) One data LED (red)

MECHANICAL

Connectors	
Power	AC power cord input, 3-wire, 18 AWG
RS-422	Two RJ-45, female
RS-422 Breakout Ports	Sixteen 3-pin headers with mating plug; connectors can accept 14-28 AWG

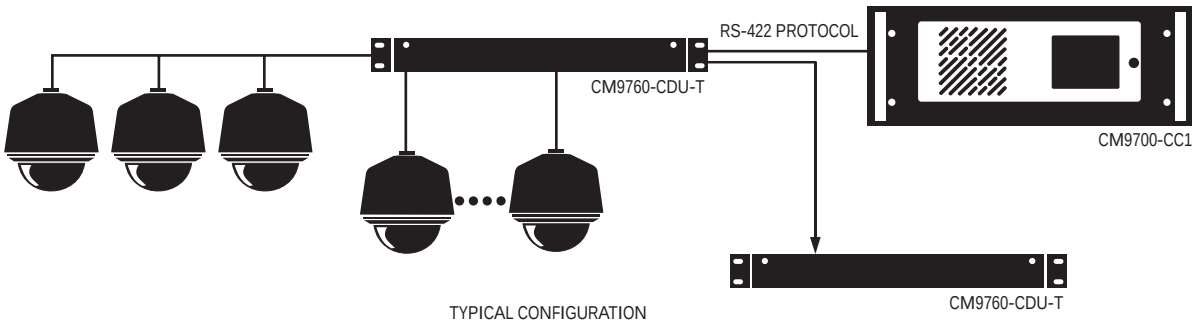
GENERAL

Dimensions	
Base Only	1.75" H x 17.40" W x 6.00" D (4.45 x 44.20 x 15.24 cm)
With Rack Ears	1.75" H x 19.00" W x 6.00" D (1 RU) (4.45 x 48.26 x 15.24 cm)
Mounting	Fits 19-inch EIA-standard rack
Operating Temperature	32˚ to 122˚F (0˚ to 50˚C)
Unit Weight	4.2 lb (1.91 kg)
Shipping Weight	9 lb (4.09 kg)

CERTIFICATIONS/RATINGS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick

NOTE: OTHER RS-422 PROTOCOL DEVICES INCLUDE THE CM6800, CM9760-DMR, AND KBD300A (DIRECT MODE).



TYPICAL CONFIGURATION

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CM9760-CXTA Coaxitron® Translator

INTERFACE UNIT FOR COAXITRON-CAPABLE RECEIVERS

Product Features

- Allows Coaxitron® Control from Any RS-422 P or D Protocol Device
- 16 Looping Video Inputs Allow Easy Connection Between Switch and Cameras
- Send PTZ Control Commands Through a Camera's Video Cable
- Fits a Standard 19-Inch Rack Mount

CM9760-CXTA (FRONT)

CM9760-CXTA (REAR)

The **CM9760-CXTA** interfaces Pelco's matrix switchers that use Pelco P protocol with Pelco's receivers that use Coaxitron® protocol for command and control functions.

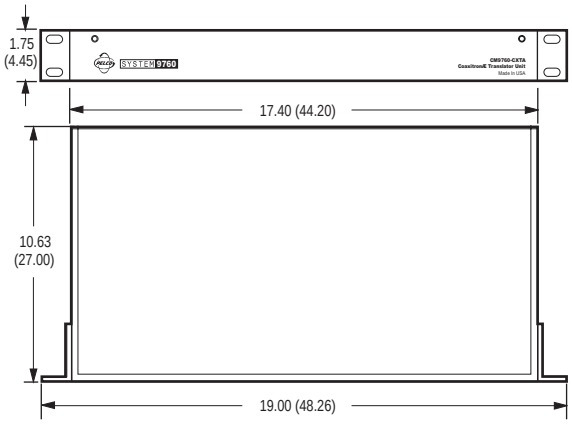
The **CM9760-CXTA** will also interface Pelco's digital video recorders (DVRs) that use Pelco D protocol with Pelco's receivers that use Coaxitron protocol for command and control functions.

CX9000, Legacy®, Spectra®, and Esprit® receivers can be used with the **CM9760-CXTA**.

The 32 BNCs are looped inside the unit. Each BNC on the top row is paired with a BNC on the bottom row. This allows either the top or bottom BNC to be selected as an input or output to communicate to or from the receiver.

The rear of the **CM9760-CXTA** has input and output connectors that allow two translator units to be cascaded. This makes 32 Coaxitron ports available that can be controlled from one RS-422 communication port on a System 9700 Series CC1.

The eight-position DIP switch allows the protocol for the BNC inputs to be set to either 15 bits or 32 bits. The DIP switch is also used to configure Pelco P or Pelco D protocol and data rates.



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

MODEL

CM9760-CXTA	Coaxitron translator

ELECTRICAL

Input Voltage	100 to 240 VAC, 50/60 Hz, auto-ranging
Power Consumption	15 VA
Coaxitron Ports	
Video Format	NTSC or PAL
Video Level	±6 dB minimum
Coaxitron Level	0.7 V peak
Data Ports	
Input	RS-422, 8-way, 4-wire, RJ-45 connector DIP-switch selectable baud rate, even parity
Output	RS-422, 8-way, 4-wire, RJ-45 connector DIP-switch selectable baud rate, even parity
Indicators	Power LED (green)
Fusing	1/4A, 250 VAC

MECHANICAL

Connectors	
Video	BNC type (32 total)
Power	3-wire, 18 AWG
RS-422	RJ-45 (8-way), connectors (2 total)

GENERAL

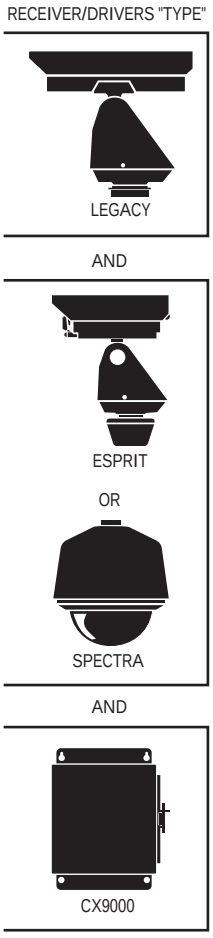
Dimensions	
Base Only	1.75" H x 17.40" W x 10.63" D (4.45 x 44.20 x 27.00 cm)
With Rack Ears	1.75" H x 19.00" W x 10.63" D (1 RU) (4.45 x 48.26 x 27.00 cm)
Mounting	Fits 19-inch EIA-standard rack
Operating Temperature	32˚ to 158˚F (0˚ to 70˚C)
Unit Weight	5.7 lb (2.59 kg)
Shipping Weight	13 lb (5.91 kg)

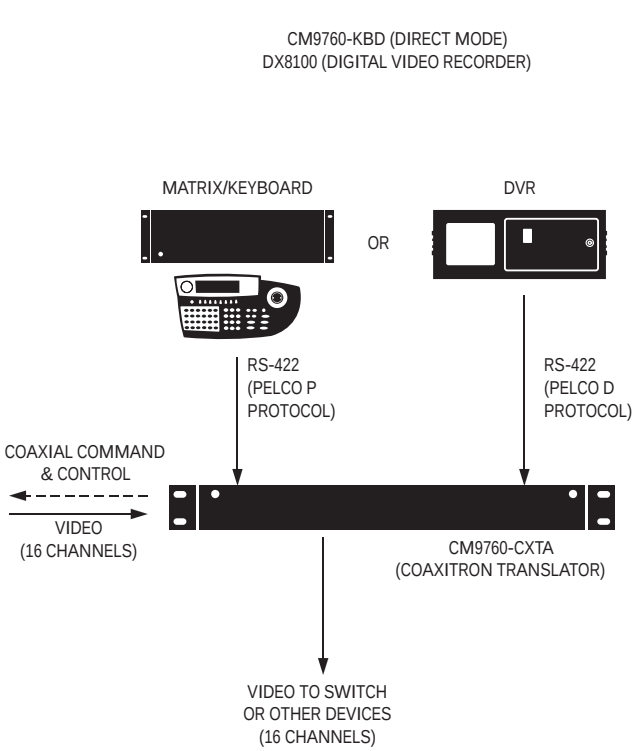
CERTIFICATIONS/RATINGS

- CE, Class B
- FCC, Class B
- C-Tick

COMPATIBLE DEVICES

CM9700-CC1
KBD200A (Direct Mode)
KBD300A (Direct Mode)
CM9760-KBD (Direct Mode)
DX4000, DVR5100, DX8100 (Digital Video Recorder)





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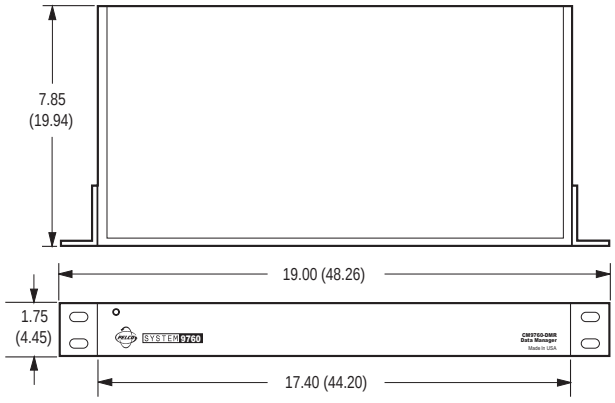
CM9760-DMR Data Manager

SERCOM PORT EXPANSION/DATA MERGER UNIT

Product Features

- Choose One of Three Different Operating Modes: Keyboard Expander, Camera Control Expander, or Data Merger
- Connect Up to Four CM9760-KBD Keyboards to One Data Port
- Address Up to 64 PTZ Cameras From One Data Port
- Allow Up to Four Matrix Switchers, DVRs, or Direct Keyboards to Share Control of Up to 32 PTZ Cameras
- Both RJ-45 Connectors and Screw Terminals Are Provided for Each Data Port
- Diagnostic LEDs Identify the Amount of Data Activity for Each Port



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

The **CM9760-DMR** is a data manager package that provides a four-to-one expansion of the number of data (SERCOM) ports available on a CM9765, CM9770, or CM9780 central processing unit (CPU). It may be used with System 9700 Series matrix switchers in three basic applications: To expand the number of cameras controlled through a port (Camera Control Expander), to expand the number of keyboards connected to a port (Keyboard Expander), and to interface up to four networked CPUs to control a common group of cameras (Data Merger).

When configured for use as a Keyboard Expander, the **CM9760-DMR** allows up to four CM9760-KBD keyboards to be connected to one SERCOM port on the CM9780, CM9770, or CM9765 CPU.

When configured for use as a Camera Control Expander, the **CM9760-DMR** allows addressing of up to 64 PTZ cameras from one SERCOM port on the CM9780, CM9770, or CM9765 CPU.

When configured for use as a Data Merger, the **CM9760-DMR** allows up to four matrix switchers or other devices to share control of up to 32 cameras using Pelco D or Pelco P protocol.

In the Data Merger configuration the **CM9760-DMR** can also interface control from as many as four non-matrix controllers to up to 32 cameras. Devices include direct mode KBD300A keyboards and other Pelco control products using Pelco P protocol. Priority can be assigned to each device with this configuration.

TECHNICAL SPECIFICATIONS

MODELS

CM9760-DMR	Data manager, 120 VAC
CM9760-DMR-X	Data manager, 230 VAC

ELECTRICAL

Input Voltage	
CM9760-DMR	120 VAC external adapter
CM9760-DMR-X	230 VAC external adapter
Power	9.9 W maximum
Data Ports	
Input/Output	(5) RJ-45 connectors, (5) screw terminal connectors, (1) DB9 connector
Indicators	One green power LED Five green port LEDs Five yellow data LEDs

MECHANICAL

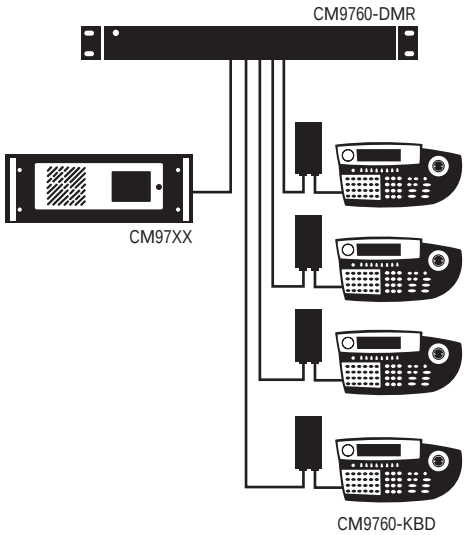
Connectors	
Power	9.0 VAC jack
Data Communication	RJ-45, screw terminals, DB9

GENERAL

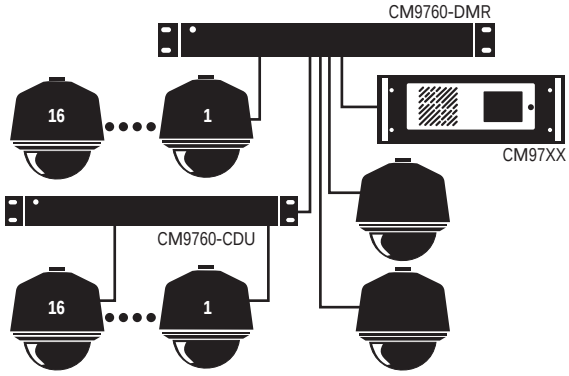
Operating Temperature	32˚ to 122˚F (0˚ to 50˚C)
Construction	Aluminum
Finish	Black polyester powder coat
Dimensions	
Base Only	1.75" H x 17.40" W x 7.85" D (4.45 x 44.20 x 19.94 cm)
With Rack Ears	1.75" H x 19.00" W x 7.85" D (1 RU) (4.45 x 48.26 x 19.94 cm)
Mounting	Fits 19-inch EIA-standard rack
Unit Weight	5.2 lb (2.36 kg)
Shipping Weight	9 lb (4.09 kg)

CERTIFICATIONS

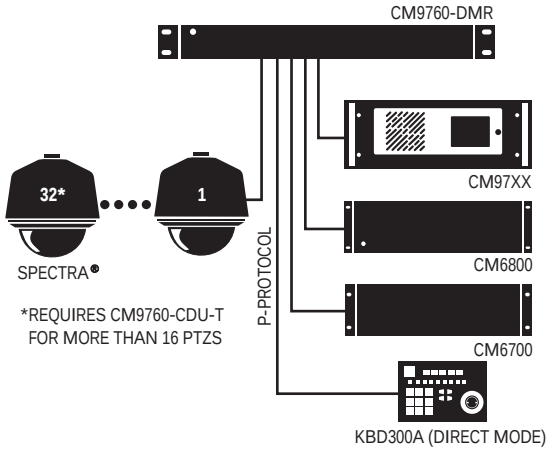
- CE, Class B
- UL/cUL Listed (CM9760-DMR)
- FCC, Class A (CM9760-DMR)
- C-Tick



CM9760-DMR
KEYBOARD EXPANDER CONFIGURATION



CM9760-DMR
CAMERA CONTROL EXPANDER CONFIGURATION



CM9760-DMR
DATA MERGER CONFIGURATION
(P-PROTOCOL APPLICATION)**

**D-PROTOCOL APPLICATION CAN MERGE CONTROL
FROM CM6800 SWITCHERS AND DX4000/DVR5100, DX8100DVRs.

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CM9760-HS Hot Switch Interface Unit

HOT STANDBY SWITCH FOR CM9700 SERIES MATRIX

Product Features

- Continuous Monitoring of Active and Standby CPUs
- Automatic or Manual Switching to Standby CPU in the Event of a Failure
- Diagnostic LEDs Show CPU Status
- Audible Alert in Case of CPU Failure
- Manual Control of Diagnostic Monitor and Keyboard Allows Servicing/Programming of Either CPU Without Interrupting System Operation
- Automatically Routes Data Lines for Keyboards, Bays, and Accessories to Standby CPU
- Backward Compatible With Older Matrix Systems
- Fits a 19-Inch EIA-Standard Rack

The **CM9760-HS** hot switch interface unit is a computer changeover switch that monitors the status of an active CC1 in a 9700 Series system. If the active CC1 fails to operate, the hot switch receives an alarm and transfers control to a standby CC1. All devices controlled by the active CC1 are then controlled by the standby CC1. Also, all common computer input/output devices (keyboard, monitor, printer and two serial ports) are switched from the active CC1 to the standby CC1; this can be done when there is a failure or by command of the system user.

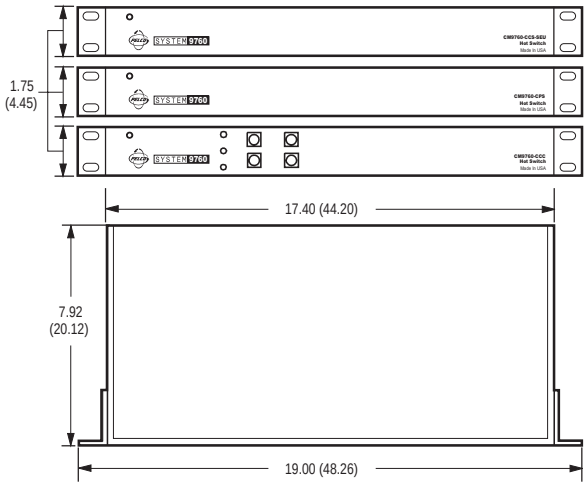
The hot switch is made up of three subunits: the CCC (computer changeover control), the CPS (computer peripheral switch), and the SEU (serial expansion unit).

The CCC is the main component of the hot switch. The data connections between the interfaced CC1s and the hot switch are located on the rear of this unit.

The CPS switches computer peripherals so that two CC1s may use only one monitor, printer, keyboard, and standard serial port.

The SEU switches the data communications ports. Each SEU can switch 16 standard RS-422/RS-485 ports.

The **CM9760-HS** allows for easy expansion to 128 ports.



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

TECHNICAL SPECIFICATIONS

MODELS

CM9760-HS	Hot switch interface unit, consisting of one CM9760-CCC, one CM9760-CPS, and one CM9760-SEU
CM9760-SEU	Serial expansion unit; supports switching of an additional 16 data ports.

ELECTRICAL

CM9760-CCC	
Input Voltage	120 to 240 VAC, 50/60 Hz (autoranging, European-standard plug supplied)
Power	30 VA
Fusing	2 A, fast acting
Power Indicator	LED, green
CM9760-CPS	
Power Indicator	LED, green
CM9760-SEU	
Power Indicator	LED, green

PORTS

CM9760-CCC	
Input (data)	Two RS-422, RJ-45 connectors (female) DIP switch selectable baud rate and communication type Two RS-232, DB9 connectors (female) DIP switch selectable baud rate and communication type
Common Bus	Two (one IN, one OUT), DB37 connectors (female)
Logging Printer	One DB25 (female)
CM9760-CPS	
Common Bus	Two (one IN, one OUT), DB37 connectors (female)
Input (Side A)	One mini-DIN, 5-pin connector One DB9, COM 2 connector (male) One DB15, VGA connector (female) One DB25 printer connector (female)
Input (Side B)	Same configuration as Side A, input
Output	Same configuration as Side A, input
CM9760-SEU	
Common Bus	Two (one IN, one OUT), DB37 connectors (female)
Input (Side A)	Sixteen, RJ-45 (female) connectors
Input (Side B)	Same as Side A configuration
Output	Same as Side A configuration

MECHANICAL

Connectors	
CM9760-CCC	
Power	3-wire, 18 AWG
RJ-45	Two (female)
DB9	Two (female)
DB25	Two (one male, capped, not used; and one female)
DB37	Two (female)
CM9760-CPS	
Mini-DIN, 5-pins	Three (female)
DB9	Three (male)
DB15	Three (female)
DB25	Six (three male and three female)
DB37	Two (female)
CM9760-SEU	
RJ-45	48 (female)
DB37	Two (female)

GENERAL

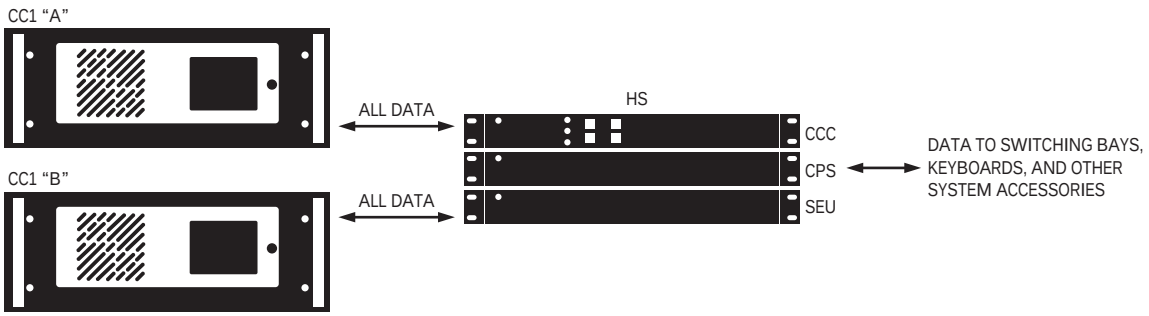
Operating Temperature	32˚ to 122˚F (0˚ to 50˚C)
Construction	Aluminum
Finish	Black polyester powder coat
Mounting	Fits 19-inch (48.2 cm) EIA-standard rack (1 RU)
Dimensions (all units)	
Base Only	1.75" H x 17.40" W x 7.92" D (4.45 x 44.20 x 20.12 cm)
With Rack Ears	1.75" H x 19.00" W x 7.92" D (4.45 x 48.26 x 20.12 cm)
Unit Weight	
CM9760-CCC	5.8 lb (2.64 kg)
CM9760-CPS	5.3 lb (2.41 kg)
CM9760-SEU	5.2 lb (2.36 kg)
Shipping Weight	
CM9760-CCC	6 lb (2.73 kg)
CM9760-CPS	6 lb (2.73 kg)
CM9760-SEU	7 lb (3.18 kg)

CERTIFICATIONS/RATINGS

- CE, Class B
- FCC, Class B
- UL/cUL Listed (CM9760-CCC)
- C-Tick

OPTIONAL ACCESSORIES

CM9700-CC1	Backup CPU for CM9700 Series systems



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CM9760-REL Relay Interface Unit

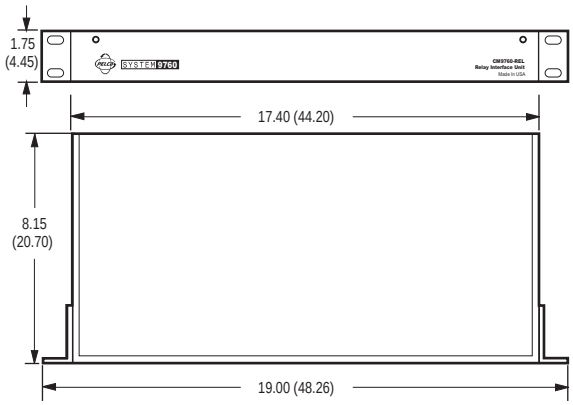
CONTROLS UP TO 64 RELAY CONTACT OUTPUTS PER UNIT

Product Features

- Each Unit Provides up to 64 Single-Pole, Single-Throw (SPST) Contact Outputs for Operating Different Peripheral Equipment
- Relay Output Contacts Can Be Configured for Normally Open (Factory Default) or Normally Closed Operation
- Memory Feature Allows Relay Groups to Retain or Hold Their Contact Position in the Event of a Power Failure or Front Panel Reset
- Multiple Units Can Be Daisy-Chained to Extend the Number of Relay Contact Outputs Controlled from a Single Port on the CC1 (More Than 5,000 Relay Outputs Can Be Configured)
- The Relay Unit Can Be Remotely Placed up to 4,000 Feet (1,219 meters) from the Controller (RS-422 Operation)

CM9760-REL FRONT VIEW

CM9760-REL REAR VIEW



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

The **CM9760-REL** relay interface unit is an optional accessory for System 9700 Series matrix switchers. The unit provides dry contact switching for direct or automatic control of peripheral equipment. The unit connects to any RS-422 COM port on the rear of the CM9700-CC1.

The basic function of the relay unit is to allow the user to control various peripheral equipment through relay contacts. Each relay unit processes and executes commands only with addresses that match that of the RELs (frame address). When a relay unit receives a command with an inappropriate address, it passes it on to the next unit (if applicable) through its output port.

The front of the relay interface unit has three 10-position DIP switches that configure the communication parameters for the unit as well as setting the parameters for relay contact output operation. The front also has a red data LED that flashes when the first valid command is received.

The relay unit mounts in a standard 19-inch (48.26 cm) rack and occupies only 1 RU (1.75 inches or 4.45 cm) of rack space. For remote operation, the wiring from the relay unit to the system controller should not exceed 4,000 feet (1,219 m).

Daisy-chaining is required when more than 64 relays are needed. Each unit must be configured to have a unique frame address. Daisy-chain configurations can be used whether relay units are situated locally, remotely, or as a combination of the two.

TECHNICAL SPECIFICATIONS

MODEL

CM9760-REL	Relay interface unit

ELECTRICAL

Input Voltage	100 to 230 VAC, 50/60 Hz, autoranging
Power Consumption	30 VA (reactive consumption); 5 W (active)
Data Ports	
Input	RS-422, RJ-45 connector DIP switch selectable baud rate
Output	RS-422, RJ-45 connector DIP switch selectable baud rate
Indicators	Two power LEDs (green) One data LED (red)
Fusing	500 mA, 250 V
Relay Output	
Contact Parameters	
Maximum Switching Capacity	60 W
Maximum Operating Voltage	125 VAC/VDC
Maximum Current	2 A
Contact Resistance	75 milliohms
Rated Load Parameters	0.5 A at 125 VAC 2 A at 30 VDC

MECHANICAL

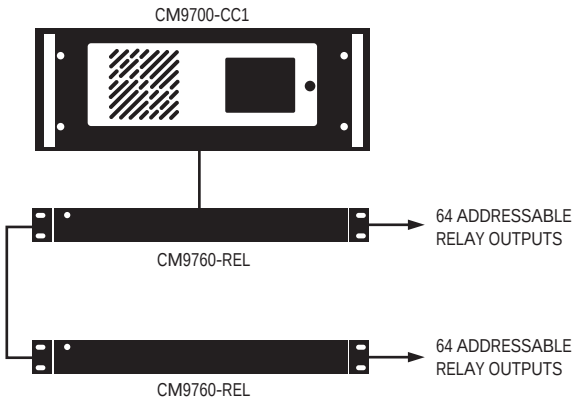
Connectors	
REL Input	Four dual-header, 32-input connectors with mating plugs
Power	3-wire, 18 AWG
RS-422	Two RJ-45 connectors
RS-232	One, DB9 connector (factory use only)
Relay Out	One, 3-pin header with mating plug

GENERAL

Operating Temperature	32˚ to 122˚F (0˚ to 50˚C)
Dimensions	
Base Only	1.75" H x 17.40" W x 8.15" D (4.45 x 44.20 x 20.70 cm)
With Rack Ears	1.75" H x 19.00" W x 8.15" D (1 RU) (4.45 x 48.26 x 20.70 cm)
Mounting	Fits 19-inch EIA-standard rack
Unit Weight	8.0 lb (3.64 kg)
Shipping Weight	13 lb (5.91 kg)

CERTIFICATIONS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick



TYPICAL CONFIGURATION

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PMCL300 Series TFT LCD Monitor

17-INCH, 19-INCH, OR 19-INCH WIDE, WITH MULTIMODE FUNCTIONALITY

Product Features

- Space-Saving, Flat Panel Design
- Picture-Frame-Style Desktop Stand
- Looping Composite and S-Video Inputs
- RGB and DVI Input
- Supports up to 1280 x 1024 SXGA Resolution (PMCL317A, PMCL319A), 1440 X 900 Resolution (PMC319W)
- Maximum Brightness of 300 cd/m^2
- Maximum Contrast Ratio of 1000:1
- Maximum Response Time of 5 ms
- 100 to 240 VAC, 50/60 Hz Autoranging Internal Power Supply
- Low Power Consumption (<50 W)
- Internal Speakers
- Optional Rack, Wall, and Ceiling Mounts
- 3-Year Warranty

PMCL319A

PMCL319W

The **PMCL300 Series** TFT LCD monitors, designed specifically for the security industry, provide high-resolution display of computer signals and composite video. These monitors have a color LCD panel with a thin film transistor (TFT) active matrix. The monitors automatically adapt to the appropriate input resolution and detect and display the correct video format (NTSC or PAL).

The **PMCL300 Series** provides looping composite (BNC) and S-Video inputs. Additionally, these models provide RGB and DVI inputs to support the use of digital video recorders (DVRs) and PC applications. This multimode functionality, combined with a quick panel response time to minimize ghosting in motion video, ergonomic design, autoranging internal power supply, and low power consumption, makes the **PMCL300 Series** ideal for applications requiring an RGB and DVI display with composite video capabilities.

The **PMCL300 Series** features a folding picture-frame-style desktop stand, optional rack mount kits, and VESA®-compliant mounting holes to easily adapt to different wall and ceiling mounts.

The **PMCL300 Series** uses four long-life CCFT (cold cathode fluorescent tube) backlights to maintain the brightness level over time, eliminating the brightness degradation common in aging CRT monitors.

Adjustments of standard monitor display parameters are made through user-friendly, on-screen menus and front panel controls.

TECHNICAL SPECIFICATIONS

MODELS

PMCL317A	17-inch (432 mm) active TFT LCD monitor
PMCL319A	19-inch (483 mm) active TFT LCD monitor
PMCL319W	19-inch (481 mm) wide TFT LCD monitor

GENERAL

Viewing Area	
PMCL317A	338 x 270 mm
PMCL319A	376 x 301 mm
PMCL319W	408 x 255 mm
Pixel Pitch	
PMCL317A	0.264 x 0.264 mm
PMCL319A	0.294 x 0.294 mm
PMCL319W	0.284 x 0.284 mm
Brightness	300 cd/m^2
Contrast Ratio	1000:1
Backlight Type	4 CCFL
Viewing Angle (H/V)	160˚/160˚
Response Time	5 ms
Native Resolution	
PMCL317A, PAMCL319A	1280 x 1024 SXGA
PMCL319W	1440 x 900 WXGA
Panel Aspect Ratio	
PMCL317A, PAMCL319A	5:4
PMCL319W	16:10
Panel Life	50,000 hours
Tilt	0˚ to 30˚
Display Colors	16.7 million
Speakers	Integrated, 2 x 2 W
Front Panel Controls	Power, source/enter, menu/exit, up/down, vol +/–
Indicators	LED, power on/off

ELECTRICAL

Power Consumption	<50 W
Input Voltage	100 to 240 VAC, 50/60 Hz
Input Interfaces	
Video	1 BNC, looping; 1 S-Video, looping; 1 RGB; 1 DVI
Audio	1 (L/R) RCA jack, looping; 1 PC
Horizontal Frequency	31 kHz to 80 kHz
Vertical Frequency	56 Hz to 75 Hz
Sync Format	NTSC/PAL

ENVIRONMENTAL

Operating Temperature	32˚ to 104˚F (0˚ to 40˚C)
Storage Temperature	–4˚ to 140˚F (–20˚ to 60˚C)
Operating Humidity	20% to 80%, noncondensing
Storage Humidity	10% to 90%, noncondensing

PHYSICAL

Dimensions	
PMCL317A	2.4" D x 14.9" W x 13.4" H (6.1 x 37.8 x 34.1 cm)
PMCL319A	2.4" D x 16.4" x W x 14.5" H (6.1 x 41.5 x 36.9 cm)
PMCL319W	2.4" D x 17.6" W x 12.7" H (6.1 x 44.7 x 32.2 cm)
Unit Weight	
PMCL317A	10.8 lb (4.9 kg)
PMCL319A	12.6 lb (5.7 kg)
PMCL319W	11.9 lb (5.4 kg)
Shipping Weight	
PMCL317A	16 lb (7.3 kg)
PMCL319A	18 lb (8.2 kg)
PMCL319W	17 lb (7.7 kg)

RECOMMENDED MOUNTS

Wall Mounts	PMCL-WM, PMCL-WMT, PMCL-WM1A
Ceiling Mounts	PMCL-CM, PMCL-CMP
Rack Mounts	PMCL-17ARM, PMCL-19ARM, PMCL-19WRM (wide)

Note: The PMCL300 Series are VESA MIS-D, 100/75, C-compliant monitors equipped with a 100 x 100 mm mounting hole pattern.

CERTIFICATIONS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- S-Mark
- CCC
- GOST-R

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PMCL400 Series TFT LCD Monitor

17- AND 19-INCH MONITORS WITH MULTIMODE FUNCTIONALITY

Product Features

- Space-Saving, Flat Panel Design
- Picture-Frame-Style Desktop Stand
- Looping Composite and S-Video Inputs
- RGB and DVI Input
- Supports up to 1280 x 1024 SXGA Resolution
- Maximum Brightness of 450 cd/m^2
- Maximum Contrast Ratio of 1000:1
- Response Time of 5 ms
- 100 to 240 VAC, 50/60 Hz Autoranging Internal Power Supply
- Low Power Consumption (< 50 W)
- Internal Speakers
- Optional Rack, Wall, and Ceiling Mounts
- 3-Year Warranty

PMCL419A

The **PMCL400 Series** TFT LCD monitors, designed specifically for the security industry, provide high resolution display of computer signals and composite video. These monitors have a color LCD panel with a thin file transistor (TFT) active matrix. The monitors automatically adapt to the appropriate input resolution and detect and display the correct video format (NTSC or PAL).

The **PMCL400 Series** provides looping composite (BNC) and S-Video inputs. Additionally, these models provide RGB and DVI inputs to support the use of digital video recorders (DVRs) and PC applications. This multimode functionality, combined with a quick panel response time to minimize ghosting in motion video, ergonomic design, autoranging internal power supply, and low power consumption, makes the **PMCL400 Series** ideal for applications requiring an RGB and DVI display with composite video capabilities.

The **PMCL400 Series** features a folding picture-frame-style desktop stand, optional rack mount kits, and VESA®-compliant mounting holes to easily adapt to the available wall and ceiling mounts.

The **PMCL400 Series** uses four long-life CCFT (cold cathode fluorescent tube) backlights to maintain the brightness level over time, eliminating the brightness degradation common in aging CRT monitors.

Adjustments of standard monitor display parameters are made through user-friendly, on-screen menus and front panel controls.

TECHNICAL SPECIFICATIONS

MODELS

PMCL417A	17-inch (432 mm) active TFT LCD monitor
PMCL419A	19-inch (483 mm) active TFT LCD monitor

GENERAL

Viewing Area	
PMCL417A	338 x 270 mm
PMCL419A	376 x 301 mm
Pixel Pitch	
PMCL417A	0.264 x 0.264 mm
PMCL419A	0.294 x 0.294 mm
Brightness	450 cd/m^2
Contrast Ratio	1000:1
Backlight Type	4 CCFL
Viewing Angle (H/V)	160˚/160˚
Response Time	5 ms
Native Resolution	1280 x 1024 SXGA
Panel Aspect Ratio	5:4
Panel Life	50,000 hours
Tilt	0˚ to 30˚
Display Colors	16.7 million
Speakers	Integrated, 2 x 2 W
Front Panel Controls	Power, source/enter, menu/exit, up/down, vol+/–
Indicators	LED, power on/off

ELECTRICAL

Power Consumption	<50 W
Input Voltage	100 to 240 VAC, 50/60 Hz
Input Interfaces	
Video	2 BNC, looping; 1 S-Video, looping; 1 RGB; 1 DVI
Audio	2 (L/R) RCA, looping; 1 PC
Horizontal Frequency	31 kHz to 80 kHz
Vertical Frequency	56 Hz to 75 Hz
Sync Format	NTSC/PAL

ENVIRONMENTAL

Operating Temperature	32˚ to 104˚F (0˚ to 40˚C)
Storage Temperature	–4˚ to 140˚F (–20˚ to 60˚C)
Operating Humidity	20% to 80%, noncondensing
Storage Humidity	10% to 90%, noncondensing

PHYSICAL

Dimensions	
PMCL417A	2.4" D x 14.9" W x 13.4" H (6.1 x 37.8 x 34.1 cm)
PMCL419A	2.4" D x 16.4" x W x 14.5" H (6.1 x 41.5 x 36.9 cm)
Unit Weight	
PMCL417A	10.8 lb (4.9 kg)
PMCL419A	12.6 lb (5.7 kg)
Shipping Weight	
PMCL417A	16 lb (7 kg)
PMCL419A	18 lb (8 kg)

RECOMMENDED MOUNTS

Wall Mounts	PMCL-WM, PMCL-WMT, PMCL-WM1A
Ceiling Mounts	PMCL-CM, PMCL-CMP
Rack Mounts	PMCL-17ARM, PMCL-19ARM

Note: The PMCL400 Series are VESA MIS-D, 100/75, C-compliant monitors equipped with a 100 x 100 mm mounting hole pattern.

CERTIFICATIONS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- S-Mark
- CCC
- GOST-R

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Desktop Full High-Definition Series LCD Monitors

24- AND 32-INCH MONITORS

Product Features

- Full High Definition 1920 x 1080 Resolution
- 3D Digital Comb Filter with Deinterlacing for High Quality Video
- High Contrast Ratio
- Lightweight Design
- Built for 24/7 Applications
- VGA, DVI, S-Video, BNC, and HDMI
- Deinterlace Motion
- Picture-in-Picture (PIP)
- On-Screen Display (OSD) Languages: English, Spanish, French, Italian, German, Russian, Portuguese, and Chinese (simplified)
- Anti-Glare Panel Surface
- Energy Star Level 5 Compliant

PMCL524F

PMCL532F

Pelco's 24- and 32-inch displays combine the latest technologies into a perfect complement to your investment in megapixel imaging and performance. **Desktop full high-definition (FHD) monitors** deliver 1920 x 1080 resolution and are specifically engineered to exceed the demands of surveillance operators.

High-definition displays adapt to the changing nature of security in control room design and efficiency. Pelco **FHD monitors** are an integral component of the modern control room, allowing you to customize and deliver the most efficient video configuration for your installation.

Individual monitors, as well as entire walls, can be configured to meet your security needs. Also, multiple video streams can be arranged on a single monitor to significantly reduce your installation's power requirements. Pelco's energy-conscious **FHD** displays use low-power components to meet regulatory compliance.

FHD monitors deliver optimal performance and the truest color reproduction available while retaining compatibility with Pelco and third-party megapixel cameras. The result is superior clarity and image recognition. When used with other, lower resolution camera systems, Pelco **FHD** displays can seamlessly scale down to 720p. This feature guarantees crisp, detailed images from all cameras.

FHD monitors have been designed to meet the global demands of complex security installations. Stringent testing of **FHD monitor** components ensures that around-the-clock, day-in and day-out operation does not degrade the image quality, but consistently maintains the superior performance that surveillance operators require.

For additional product information go to www.pelco.com.

TECHNICAL SPECIFICATIONS

MODELS

PMCL524F	24-monitor (610 mm)
PMCL532F	32-monitor (813 mm)

GENERAL

Viewing Area	
PMCL524F	531 mm x 299 mm
PMCL532F	698 mm x 393 mm
Number of Pixels	1920 (H) x 1080 (V)
Pixel Pitch	
PMCL524F	0.277 mm x 0.277 mm
PMCL532F	0.364 mm x 0.364 mm
Brightness	
PMCL524F	250 cd/m^2 (typical)
PMCL532F	450 cd/m^2 (typical)
Contrast Ratio	
PMCL524F	1000:1
PMCL532F	5000:1
Backlight Type	
PMCL524F	Cold cathode fluorescent lamp (CCFL), 2 lamps
PMCL532F	CCFL, 4 lamps
Refresh Rate	60 Hz
Viewing Angle (H/V)	
PMCL524F	170˚/160˚
PMCL532F	178˚/178˚
Response Time	
PMCL524F	5 ms
PMCL532F	8 ms
Native Resolution	1920 x 1080 at 60 Hz
Optimum Resolution	
VGA	720 x 400 at 70 Hz; 640 x 480 at 60/72/75 Hz (50/60 Hz not available for DVI and HDMI inputs in coordinated video timings [CVT] format)
SVGA	800 x 600 at 50/60/72/75 Hz
XGA	1024 x 768 at 50/60/75 Hz
WXGA	1360 x 768/1366 x 768 at 60 Hz; 1920 x 1080 at 60 Hz
SDTV (480i/480p/576i/576p)	720 x 480 at 60 Hz 720 x 576 at 50 Hz
HDTV (720p/1080i/1080p)	1280 x 720 at 50/60 Hz 1920 x 1080 at 50/60 Hz 1920 x 1080i at 50/60 Hz
Panel Aspect Ratio	16:9
Video Formats	480p, 576p, 720p, 1080i, 1080p
Panel Life	50,000 hours
Display Colors	16.7 million
PIP (Picture-in-Picture)	Selectable, sizeable, swappable, moveable
Speakers	
PMCL524F	2, internal (3 W)
PMCL532F	2, internal (6 W)
Front Panel Controls	Power, left/right, up/down, menu, input
Indicators	LED (power on/off)
VESA® Mounting Compliance	
PMCL524F	100 mm x 100 mm
PMCL532F	200 mm x 200 mm

ELECTRICAL

Power Consumption	
PMCL524F	<33 W
PMCL532F	<100 W
Input Voltage	100 to 240 VAC, 50/60 Hz
Input Interfaces	
Video Input	DVI, BNC, HDMI, S-Video, VGA
Audio	3.5 mm stereo jack
Horizontal Frequency	15 kHz to 75 kHz
Vertical Frequency	25 Hz to 75 Hz
Sync Format	NTSC/PAL

ENVIRONMENTAL

Operating Temperature	32˚ to 104˚F (0˚ to 40˚C)
Storage Temperature	–4˚ to 140˚F (–20˚ to 60˚C)
Operating Humidity	20% to 80%, noncondensing
Storage Humidity	10% to 90%, noncondensing

PHYSICAL

Dimensions (with stand)		
PMCL524F	8.4" D x 22.4" W x 16.9" H (21.3 x 56.9 x 42.9 cm)	
PMCL532F	9.0" D x 30.5" W x 21.3" H (22.9 x 77.6 x 53.9 cm)	
Weight	Unit	Shipping
PMCL524F	16.5 lb (7.5 kg)	24 lb (11 kg)
PMCL532F	29.8 lb (13.5 kg)	40 lb (18 kg)

Note: The PMCL524F is a VESA-compliant monitor equipped with a 100 mm x 100 mm mounting hole pattern. The PMCL532F is a VESA-compliant monitor equipped with a 200 mm x 200 mm mounting hole pattern.

CERTIFICATIONS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- CCC
- GOST-R
- NOM
- Energy Star Level 5 Compliant

RECOMMENDED ACCESSORIES

PMCL-WM	Wall mount
PMCL-WMT	Tilt/swivel wall mount
PMCL-WM1A	Tilt/swivel single-arm wall mount
PMCL-CM	Ceiling mount
PMCL-CMP	Ceiling mount with pole
PMCL-V200	Adapter plate that converts 200 x 200 mm to 100 x 100 mm VESA pattern. (Required to use with the PMCL532F and Pelco PMCL-WM1A, PMCL-CM, and PMCL-CMP monitor mounts.)

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Full High-Definition Series LCD Monitors

42-, 47-, AND 52-INCH MONITORS

Product Features

- Embedded Installation Handles
- Full High Definition 1920 x 1080p Resolution
- Image Quality Enhancement (IQE) Technology
- Edge Enhancement Dynamic Contrast
- ISM (Image Sticking Minimization)
- High Contrast Ratio
- Lightweight Design
- Built for 24/7 Applications
- Looping BNC Output
- RGB and DVI Interface
- Remote Control Included
- Improved Thermal Management
- Picture-In-Picture (PIP)

Pelco's 42-, 47-, and 52-inch displays combine the latest technologies into a perfect complement to your investment in megapixel imaging and performance. **Full high-definition (FHD) monitors** deliver 1920 x 1080p resolution and are specifically engineered to exceed the demands of surveillance operators.

Large format, high-definition displays adapt to the changing nature of security in control room design and efficiency. Pelco **FHD monitors** are an integral component of the modern control room, allowing you to customize and deliver the most efficient video configuration for your installation.

Individual monitors, as well as entire walls, can be configured to meet your security needs. Also, multiple video streams can be arranged on a single monitor to significantly reduce your installation's power requirements. Pelco's energy-conscious **FHD monitors** use low-power components to meet regulatory compliance.

FHD monitors deliver optimal performance and the truest color reproduction available while retaining compatibility with Pelco and third-party megapixel cameras. The result is superior clarity and image recognition. When used with other, lower resolution camera systems, Pelco **FHD** displays can seamlessly scale down to 720p. This feature guarantees crisp, detailed images from all cameras.

FHD monitors have been designed to meet the global demands of complex security installations. Stringent testing of the components of our **FHD monitors** ensures that around-the clock, day-in and day-out operation does not degrade the image quality yet consistently maintains the superior performance that surveillance operators require.

For additional product information go to pelco.com.

TECHNICAL SPECIFICATIONS

MODELS

PMCL542F	42-inch monitor (1,067 mm)
PMCL547F	47-inch monitor (1,193 mm)
PMCL552F	52-inch monitor (1,321 mm)

GENERAL

Viewing Area	
PMCL542F	930 x 523 mm
PMCL547F	1040 x 585 mm
PMCL552F	1152 x 648 mm
Number of Pixels	1920 (H) x 1080 (V)
Pixel Pitch	
PMCL542F	0.485 x 0.485 mm
PMCL547F	0.542 x 0.542 mm
PMCL552F	0.600 x 0.600 mm
Brightness	500 cd/m^2 (typical)
Contrast Ratio	
PMCL542F	5000:1
PMCL547F	1300:1
PMCL552F	4000:1
Backlight Type	CCFL
Refresh Rate	60 Hz
Viewing Angle (H/V)	178˚/178˚
Response Time	
PMCL542F, PMCL547F	5 ms
PMCL552F	8 ms
Native Resolution	1920 x 1080 at 60 Hz
Optimum Resolution (RGB Mode)	
VGA	720 x 400 at 70 Hz 640 x 480 at 50/60/72/75 Hz
SVGA	800 x 600 at 50/60/72/75 Hz
XGA	1024 x 768 at 50/60/75 Hz
SXGA	1280 x 1024 at 60 Hz
WXGA	1360 x 768/1366 x 768 at 60 Hz
UXGA	1600 x 1200 at 60 Hz
SDTV (480p/576p)	720 x 480 at 60 Hz 720 x 576 at 50 Hz
HDTV (720p/1080i/1080p)	1280 x 720 at 50/60 Hz 1920 x 1080 at 50/60 Hz 1920 x 1080i at 50/60 Hz
Panel Aspect Ratio	16:9
Video Formats	480p, 576p, 720p, 1080i, 1080p
Panel Life	50,000 plus hours
Display Colors	
PMCL547F	1.07 billion
PMCL542F, PMCL552F	16.7 million
PIP (Picture-In-Picture)	Selectable, sizeable, swappable, moveable
Speakers	2, internal (5 W, 4 ohms x 2)
Front Panel Controls	Menu, source, down/up, vol -/+, power
Indicators	LED (power on/off)

ELECTRICAL

Power Consumption	
PMCL542F	250 W
PMCL547F	350 W
PMCL552F	380 W
Input Voltage	100 to 240 VAC, 50/60 Hz
Input Interfaces	
Video Input	2 BNC, looping; 1 S-Video looping; 1 RGB; 1 DVI; 1 component
Audio	2, audio, RCA jack
Horizontal Frequency	31 KHz to 69 KHz
Vertical Frequency	56 Hz to 85 Hz
Sync Format	NTSC/PAL

ENVIRONMENTAL

Operating Temperature	32˚ to 113˚F (0˚ to 45˚C)
Storage Temperature	–4˚ to 140˚F (–20˚ to 60˚C)
Operating Humidity	20% to 80%, noncondensing
Storage Humidity	10% to 90%, noncondensing

PHYSICAL

Dimensions (without stand)	
PMCL542F	4.4" D x 39.0" W x 24.1" H (11.1 x 99.0 x 61.3 cm)
PMCL547F	4.4" D x 43.4" W x 26.7" H (11.1 x 110.3 x 67.7 cm)
PMCL552F	4.5" D x 48.5" W x 29.8" H (11.4 x 123.3 x 75.7 cm)
Unit Weight	
PMCL542F	66.1 lb (30.0 kg)
PMCL547F	77.2 lb (35.0 kg)
PMCL552F	90.4 lb (41.0 kg)
Shipping Weight	
PMCL542F	78 lb (35 kg)
PMCL547F	91 lb (41 kg)
PMCL552F	104 lb (47 kg)

CERTIFICATIONS

- FCC, Class A
- CE, Class A
- UL/cUL Listed
- C-Tick
- CCC*
- GOST-R
- NOM
- Energy Star Level 5 Compliant*

*As of the date of this publication, these certifications/ratings are pending. Please consult the factory, our Web site at *www.pelco.com*, or the most recent B.O.S.S.® update for the current status of certifications.

RECOMMENDED MOUNTS

PMCL-WMTF	LCD tilt wall mount for FHD monitors
PMCL-WMF	LCD flat wall mount for FHD monitors
PMCL-CM	LCD ceiling mount for FHD monitors
PMCL-CMP	LCD ceiling mount and pole for FHD monitors
PMCL-VAF	Monitor mount adapter for PMCL-CM and PMCL-CMP

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DX4500/DX4600 Series Digital Video Recorder

8/16 CAMERA INPUTS, 250 GB TO 8 TB STORAGE, FLEXIBLE SEARCH CAPABILITIES

Product Features

- 8- or 16- Channel Digital Video Recorder
- Up to 480 Images per Second (IPS) Recording Rate
- Up to 704 x 480 (NTSC), 704 x 576 (PAL) Recording Resolution
- Support for KBD300A Keyboard Camera Control
- Pelco C Coaxitron®, Pelco D, and Pelco P PTZ Protocols
- Normal, Alarm, Motion, Instant Recording, and Multi-Event Recording
- Scheduled Backup
- HDD Storage Manager
- Increased Frame Rate and Resolution for Event Recording
- Channel Resolution, Quality, and Frame Rate Settings Configurable per Individual Camera
- Picture-On-Picture for Multiscreen Live and Playback Video
- Remote and Web Client
- Local and Remote PTZ Control
- Third-Party PTZ Protocols
- Up to 4 Audio Inputs and 1 Audio Output

- Export and Import System Configurations
- Pre- and Post-Alarm Recording
- Up to 16 Alarm Inputs and Up to 4 Relay Outputs
- Main Monitor for VGA or Analog Display, Analog Spot Monitor
- Multilingual On-Screen Display
- USB, CD-RW, or DVD±RW Media for Video Export
- Event Notifications by E-mail, Emergency Agent, or Sounder
- Time/Date, Bookmark, Event, and Pixel Search

A fully featured and fully affordable entry-level digital video recorder (DVR), the **DX4500/DX4600** Series is the next generation in DVRs. Equipped with an embedded operating system, it offers camera capacity, features, and functionality exceeding other DVRs. The **DX4500/DX4600** is designed for the entry-level market that requires 8 or 16 camera inputs; greater internal hard drive storage capacity; fast frame rate recording; and efficient playback, search, and export capability. The **DX4500/DX4600** not only replaces the traditional VCR and multiplexer combination, it provides a solution that scales from standalone to networked.

Designed to work with today's broadband networks, the **DX4500/DX4600** allows you to view and control the DVR across local or wide area networks. The **DX4500/DX4600** remote client allows live viewing and video playback for a maximum of sixteen **DX4000** series servers simultaneously. This display can consist of multiple **DX4500/DX4600** servers and one **DX4004** server.

With DS ControlPoint software, the **DX456/4600** can connect to a Digital Sentry® system and other DX Series HVRs/DVRs. DS ControlPoint operators can simultaneously view and playback analog video and control cameras from any **DX4500, DX4600,** DX8000, or DX8100. Operators can also view and playback analog and IP video and control cameras from any Digital Sentry system.

Recording at resolutions of up to 704 x 480 (4CIF), the **DX4500/DX4600** captures crystal clear pictures, creating effective footage for later use and retrieval. Each DVR input channel can be configured individually to meet a specific security application requirement for video retention. User-configurable disk partitioning is used to allocate specific hard disk space for storing continuous video data and event-initiated video data. The retention time can be different for retaining continuous recorded video and event-initiated recorded video. Video critical to investigation and archiving is easily exported to a USB memory device or to an optional DVD±RW device.

Exported video is easily reviewed at the **DX4500/DX4600,** the remote client, or using the export player. The export video preview feature allows you to verify the content and quality of video exported to a disc or a USB drive. At the client, users can easily and quickly capture a video scene, save it in JPEG format, and then store it on the hard drive. User-configurable disk partitioning is used to allocate specific hard

PELCO by Schneider Electric

International Standards Organization Registered Firm; ISO 9001 Quality System

ISO 9001 CERTIFIED

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disk space for storing continuous video data and event-initiated video data. The retention time can be different for retaining continuous recorded video and event-initiated recorded video.

Operation of the unit is made easy through the front panel, remote control device, or mouse. For surveillance applications requiring PTZ capability, the **DX4500/DX4600** addresses and controls pan/tilt/zoom (PTZ) equipment such as Spectra® domes and mini domes or third-party cameras. The optional KBD300A keyboard operates Pelco and third-party PTZ cameras that support Pelco C (Coaxitron), Pelco D, or Pelco P protocols.

Multi-event recording on the DX4600 supports single-event recording or a combination of alarm, motion, or instant event recording at a resolution, quality, and image rate specific to each camera. With the ability to trigger recording and in response to events (such as alarm inputs, motion detection, and video loss), the **DX4600** becomes an automated monitoring engine as well.

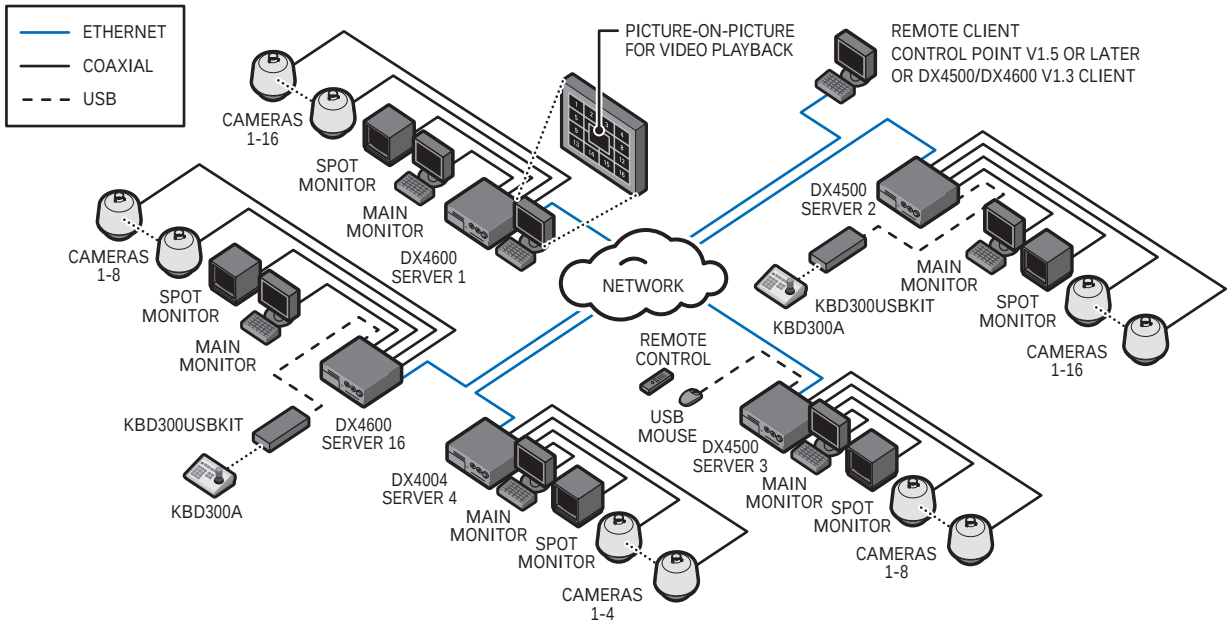
The **DX4500/DX4600** provides a robust set of features for small- to multiple-site applications. From the incorporation of watermarking technology to prevent alterations to captured video, to the ability to capture log entries, to the inclusion of Pelco's world renowned customer service promise, the **DX4500/DX4600** embodies the ideal entry-level DVR to protect people and assets.

APPLICATIONS

The remote client-to-server connectivity allows operation from a remote location, connecting multiple servers simultaneously. The remote client can be used to operate and administer both **DX4500/DX4600** and **DX4000** servers installed at multiple locations. For example, small sites can use the **DX4000** to record and display video from 1 to 4 cameras; medium sized sites can use the **DX4500/DX4600** to record and display video from 8 or 16 cameras. Additionally, the remote client is an application for the Microsoft® Windows Vista® operating system and supports all editions.

The remote client can export a video data file in AVI or native format from a **DX4500/DX4600** server, or in AVI format from a **DX4000** server. It can also store the file at a specified destination on the remote computer's hard drive or other allocated storage media. Use the Windows Media® Player or similar viewer to view video exported in AVI format. Use the **DX4500/DX4600** Export Viewer to playback video exported in native format or to view authenticated watermarked video. Use the **DX4000** Backup Player to view authenticated watermarked video.

The remote client can play back video from the live view or search modes of the **DX4500/DX4600**; the **DX4000** can play back video from the remote client's date/time search mode. For the **DX4000**, the playback mode, playback controls, and playback speed and volume controls are available in the remote client's date/time search mode. With only a few clicks of a button, the remote client can quickly print a **DX4500/DX4600** live view playback/search mode image or a **DX4000** date/time search mode playback video image.



IMPORTANT NOTE. PLEASE READ.

The network implementation is shown as a general representation only and is not intended to show a detailed network topology. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the system as illustrated. Please contact your local Pelco Representative to discuss your specific requirements.

TECHNICAL SPECIFICATIONS

ELECTRICAL/VIDEO

Input Voltage	100 to 240 VAC ±10%, 50/60 Hz, autoranging
Power Consumption	Maximum 85 W
Signal System	NTSC/PAL, switchable
Operating System	Linux®-Embedded
Recording Resolutions	NTSC: 704 x 480, 704 x 240, 352 x 240 PAL: 704 x 576, 704 x 288, 352 x 288
Video Outputs	1 main VGA or analog 1 analog spot (displays up to 4 cameras)
Video Compression	MPEG-4
Remote Connection	LAN/WAN TCP/IP 10/100 Mbps Network port
Bandwidth Throttle	Server-based, 128 Kbps to 100 Mbps

THIRD-PARTY PTZ COMPATIBILITY

Third-Party PTZ Device	Protocol
Bosch® AutoDome® Day/Night	Bosch_AutoDome
Samsung™ SCC 641	Samsung_SCC
LG™ LPT-SD163HM	LG_SD168
Baxall™ BPD1-RAS916	Pelco P
American Dynamics™ Speed Dome Ultra VII	Pelco P

MAXIMUM IPS RECORDING

Model	Format	NTSC IPS		PAL IPS	
		Total	Per Camera	Total	Per Camera
DX4508	CIF	120	15	100	12.5
	2CIF	60	7.5	48	6
	4CIF	30	3	24	3
DX4516	CIF	240	15	200	12.5
	2CIF	120	7.5	96	6
	4CIF	60	3	48	3
DX4608	CIF	240	30	200	25
	2CIF	120	15	100	12.5
	4CIF	60	7.5	48	6
DX4616	CIF	480	30	400	25
	2CIF	240	15	200	12.5
	4CIF	120	7.5	96	6

AUDIO

Decoding	ADPCM2
Bit Rate	8 Kbps
Input	Line-level input, 8 Kbps
Output	Line-level output
Audio Inputs	2 with DX4500, 4 with DX4600, RCA sockets
Audio Output	1 RCA socket

MECHANICAL

Connectors

Video Inputs	8 or 16, BNC
Video Outputs	8 or 16, BNC, looping
Alarm Input	8 or 16 N.C. or N.O.
Relay Output	2 or 4, N.C. or N.O. 30 VDC/1 A 125 VAC/0.5 A
TCP/IP port	RJ-45, 10/100 Mbps
Serial Port	2 RS-422/RS-485 for PTZ control
USB Port	3, USB 2.0 (1 front and 2 back panel)

GENERAL

Operating Temperature	32° to 95°F (0° to 35°C)
Relative Humidity	Maximum 80%, noncondensing
Dimensions	19.50" D x 16.88" W x 3.75" H (49.5 x 42.9 x 9.5 cm) **Note:** Depth includes jog dial to power cord; height includes an additional 0.25" to accommodate rubber feet.

Approximate Weight*	Unit	Shipping
DX4508-250	13.94 lb (6.3 kg)	21 lb (9.5 kg)
DX4508DVD-4000	18.8 lb (8.5 kg)	26 lb (11.8 kg)
DX4516-250	14.48 lb (6.6 kg)	22 lb (10.0 kg)
DX4516DVD-4000	19.34 lb (8.8 kg)	27 lb (12.3 kg)
DX4608DVD-250	16.34 lb (7.4 kg)	24 lb (10.9 kg)
DX4608DVD-8000	22.54 lb (10.2 kg)	30 lb (13.6 kg)
DX4616DVD-250	16.88 lb (7.7 kg)	24 lb (10.9 kg)
DX4616DVD-8000	23.08 lb (10.5 kg)	30 lb (13.6 kg)

*Minimum and maximum weights shown for example models. Contact the factory for specific model weights.

CERTIFICATIONS

- CE, Class A
- FCC, Class A
- UL/cUL Listed

REMOTE PC CLIENT APPLICATION

Minimum PC Requirement

Operating System	Windows®2000 (SP4), Windows XP (SP2), or later and DirectX® 8.1 or later
Processor	Intel® Pentium® 4
Memory	512 MB
Video Card	VGA card with minimum 64 MB video RAM
Hard Drive	40 GB hard drive with minimum of 15 GB of available space

Recommended PC Requirements

Operating System	Windows XP (SP3), Windows Vista, or Windows 7
Processor	1 GHz or higher, 32-bit (x86) or 64-bit (x64)
Memory	1 GB (32-bit) or 2 GB (64-bit) RAM
Video Card	DirectX 9 graphics card with Windows Display Driver Model (WDDM) 1.0 or higher driver and 128 MB of graphics memory
Hard Drive	40 GB hard drive with minimum 20 GB of available space
Remote Administration	Full remote control through TCP/IP network

Notice: *Judgment as to the suitability of the products for users' purposes is solely the users' responsibility. Users should refer to the Operation manuals for cautionary statements regarding user selected options and how they might affect video quality. Users shall determine the suitability of the products for their own intended application, picture rate and picture quality. In the event users intend to use the video for evidentiary purposes in a judicial proceeding or otherwise, users should consult with their attorney regarding any particular requirements for such use.*

PRODUCT MODELS AND FEATURES

Feature	DX4508	DX4516	DX4608	DX4616
IPS	120	240	240	480
Multi-Event Recording	No	No	Yes	Yes
Pixel Search	No	No	Yes	Yes
Maximum Hard Drive Storage (GB)	4000	4000	8000	8000
Audio Inputs	2	2	4	4
Alarms Inputs	8	16	8	16
Relay Outputs	2	2	2	4
Standard Optical Disk Drive	None	None	CD-RW	CD-RW
Optional Optical Disk Drive	CD-RW or DVD±RW	CD-RW or DVD±RW	DVD±RW	DVD±RW

MODEL NUMBERS

Use the following table to specify and customize your DX4500/DX4600.

For example, the model number for an 8-channel DX4500 with 250 GB of internal storage and an optional DVD±RW optical drive is DX4508DVD-250.

The model number for a 16-channel DX4600 with 250 GB of internal storage and an optional DVD±RW optical drive is DX4616DVD-250.

CREATING MODEL NUMBERS

DX4XXXXXX – XXXX

Model / Channels — Storage (GB) / CD/DVD

Models	Channels	Disk Drive	Storage In GB
5 (DX4500)	08	CD-RW* DVD±RW†	250
6 (DX4600)	16	DVD±RW†	500
			750
			1000
			1500
			2000
			4000
			6000‡
			8000‡

* Optional for the DX4500 and standard for the DX4600.
† Optional for the DX4500/DX4600. The DVD±RW drive supports double-layer recording.
‡ Drive configurations for only the DX4600.

SUPPLIED ACCESSORIES

Power cords (USA and European), USB mouse, remote control, remote client application disc, alarm and relay terminal blocks, and rack mounting kit.

COMPATIBLE PRODUCTS

Esprit Positioning Systems
Spectra Domes

OPTIONAL ACCESSORIES

DX4546HDD250KIT	DX4500/DX4600 SATA 250 GB upgrade
DX4546HDD500KIT	DX4500/DX4600 SATA 500 GB upgrade
DX4546HDD750KIT	DX4500/DX4600 SATA 750 GB upgrade
DX4546HD1000KIT	DX4500/DX4600 SATA 1000 GB upgrade
DX4546HD2000KIT	DX4500/DX4600 SATA 2000 GB upgrade
DX4546-DVDKIT	DVD drive upgrade for the DX4500/DX4600
KBD300A	KBD300A desktop keyboard with full switching and programming capabilities and joystick control of PTZ functions; requires a KDB300USBKIT or a KBD300USBKIT-X
KBD300USBKIT	Remote keyboard wiring kit (120 VAC) for KBD300A
KBD300USBKIT-X	Remote keyboard wiring kit (230 VAC) for KBD300A

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DX8100 Series Hybrid Video Recorder

8 TO 32 ANALOG/IP CAMERA INPUTS, UP TO 8 TB INTERNAL STORAGE

Product Features

- 8 to 32 Analog/IP Cameras
- DIACAP-Compliant
- Supports Pelco and AXIS® Standard Definition IP Cameras
- No Added IP Camera Licensing Fees
- USB 2.0 JBOD External Storage Supports up to 8 TB
- Remote Client Connection up to 200 Servers
- Internal Storage Capacity up to 8 TB
- 8, 16, 24, or 32 Looping Analog Video Channels
- Up to CIF/480 Images per Second (ips) Recording Rate
- DVD+RW Drive Standard
- Dynamic Adjustment of Video Settings
- 2 Standard Audio Channels with Live Audio Over the Network
- 8/16/24/32 Alarm Inputs and 8/16/24 Relay Outputs
- Online Help

- Thumbnail, Pixel (Smart Search), and ATM/POS Search Modes
- Instant Playback
- 5 Simultaneous Connections per Server
- Scheduled Backup
- Export and Import System Configurations
- Multilevel Password and User Configuration
- Multilingual Support

The **DX8100 Series hybrid video recorder (HVR)** has long-served the professional security market with a wide variety of search tools, the ability to view up to 72 cameras at the server, ATM/POS recording, and more. The new hybrid recording capability in **DX8100** version 2.0 offers an even more flexible and robust security recording platform.

The **DX8100D** is a security-enabled product for highly regulated markets. This model meets Defense Information Assurance Certification and Accreditation Process (DIACAP) standards. Government installations that have existing **DX8100** systems can convert them to DIACAP-compliant systems without losing existing video.

Efficient and Easy Analog to IP Camera Recording

The new **DX8100** resource meter monitors system resources in real time and is a useful gauge for the addition of IP cameras to the system. New configuration tools allow you to easily configure IP cameras. With no licensing fees for Pelco and AXIS® standard definition network cameras, the shift to IP recording is an affordable transition.

Flexible Storage

The **DX8100** provides a variety of options for internal storage and data redundancy needs. New 8 TB models provide increased storage retention. New USB 2.0 JBOD (just a bunch of disks) external storage of up to 8 TB meets cost-sensitive demands. Combined, the new storage options increase the HVR's recording capacity to 16 TB. Customers requiring file redundancy can select from a range of RAID 5 options up to 24 TB of external storage.

Increased Flexibility and Interconnectivity

With DS ControlPoint software, the **DX8100** can connect to a Digital Sentry® system and other DX Series HVRs/DVRs. DS ControlPoint operators can simultaneously view and playback analog video and control cameras from any DX4500, DX4600, DX8000, or **DX8100**. Operators can also view and playback analog and IP video, while controlling cameras from any Digital Sentry system.

Adaptable Viewing

The **DX8100's** unique server dual display capability allows simultaneous viewing of up to 72 cameras. Up to four extended composite monitors can function as public view monitors. The **DX8100** favorites feature lets users quickly recall any combination of camera and views for easy camera navigation. These extensive selections make the **DX8100** adaptable for complete surveillance viewing.

System Health Check Monitoring

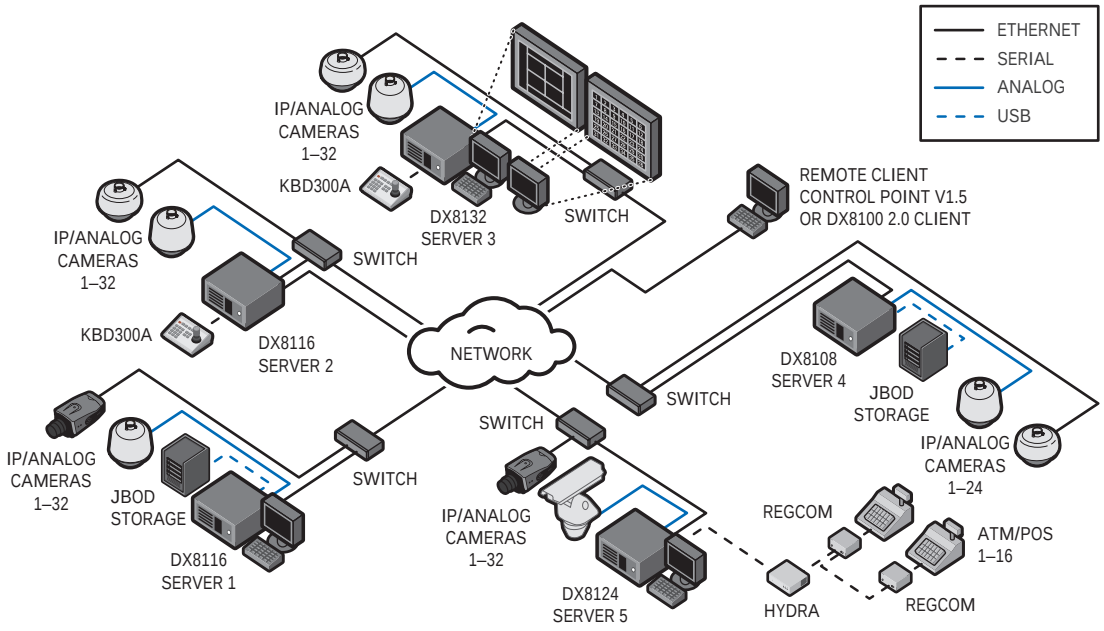
DX8100 provides a quick view of critical unit operating status. When an operating limit is exceeded, an alert appears on the server and connected remote clients. System health check monitoring helps ensure maximum system uptime and **DX8100** availability.

Application and System Integration

DX8100 flexibility and expendability is accomplished through published and well-documented APIs. For information about the Pelco developer program, visit our Web site at *www.pelco.com*.

Extensive Networking Options

DX8100 networks can grow as security requirements expand. A unit can operate as part of a network of as many as five **DX8100s** and DX8000s. This gives the HVR operator the ability to view and control up to 180 cameras. The remote client can administer **DX8100** servers, and it can simultaneously control and operate up to 36 cameras connected to any of 200 **DX8100** and DX8000 HVR/DVRs. The remote client application, EmergencyAgent, and **DX8100** Viewer are included at no extra cost. These applications can be installed on an unlimited number of client workstations.



IMPORTANT NOTE. PLEASE READ.
The network implementation is shown as a general representation only and is not intended to show a detailed network topology. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the system as illustrated. Please contact your local Pelco Representative to discuss your specific requirements.

ANALOG AND IP CAMERA CONFIGURATIONS

Model	Maximum Analog Cameras	Maximum Analog and IP Cameras
DX8108	8	24
DX8116	16	32
DX8124	24	32
DX8132	32	32

The total number of IP cameras depends on analog and IP camera settings and DX8100 system resources. You can record the maximum number of analog and IP cameras when all cameras are set to record at CIF/1 ips.

AVAILABLE IP CAMERA BANDWIDTH

Analog Camera Image Rate	Available Mbps IP Stream* for Each DX8100 Series	
	DX8108	DX8116
1 ips (Low)	13	11
15 ips (Medium)	11	7
30 ips (High)	11	4
	DX8124	DX8132
1 ips (Low)	11	15
7 ips (Medium)	10	14
15 ips (High)	6	13

*Testing has determined that recording at CIF, 2CIF, and 4CIF resolutions produces only small differences in the available bandwidth.

PELCO IP CAMERA RESOURCE USAGE

The available recording resources of the DX8100 is determined by the resolution and bit rate of the attached cameras. For example, a DX8108 with eight analog cameras recording at CIF/30 ips supports up to eleven IP110 cameras recording at CIF/15 ips.

Stream	Resolution	Bit Rate
Primary	4CIF/30 ips	2 Mbps
Secondary	CIF/15 ips	1 Mbps

Note: Pelco cameras with Sarix™ technology and AXIS IP camera resolutions and bit rates are variable. Refer to the appropriate product specification sheet for information about resource usage.

MAXIMUM ANALOG CAMERA RECORDING

Model	Format	NTSC IPS		PAL IPS	
		Total	Per Camera	Total	Per Camera
DX8108	CIF	240	30	200	25
	2CIF	120	15	100	12
	4CIF	60	7	50	6
DX8116	CIF	480	30	400	25
	2CIF	240	15	200	12
	4CIF	120	7	100	6
DX8124	CIF	360	15	300	12
	2CIF	180	6	150	6
	4CIF	90	3	75	3
DX8132	CIF	480	15	400	12
	2CIF	240	6	200	6
	4CIF	120	3	100	3

Resolution and frame rate values can be assigned evenly among all cameras, or they can be configured independently for individual cameras. Frame rate values can also be customized according to recording mode (normal, motion, alarm, and ATM/POS).

TECHNICAL SPECIFICATIONS

VIDEO

Signal System	NTSC/PAL	
Recording Resolutions	NTSC	PAL
	320 x 240	320 x 288
	640 x 240	640 x 288
	640 x 480	640 x 576
	352 x 240	352 x 288
	704 x 240	704 x 288
	704 x 480	704 x 576
Compression	Pelco-engineered	
Video Inputs	8/16/24/32 (looping with automatic termination)	
VGA Output	1 primary	
Dual Display Card	1 switch-selectable VGA (DB15) or analog (BNC) output	
Analog Video Outputs	1 with DX8108/DX8116; 2 with DX8124/DX8132	

AUDIO

Audio Decoding	GSM610 Wave Format
Audio Bit Rate	8 Kbps
Audio Channels	2 on-board channels for local or live audio over the network **Note:** Optional audio channels are available for all analog channels; on-board audio channels are disabled when optional audio is added.
Input	Line-level input
Output	Line-level output

ELECTRICAL

Input Voltage	100 to 240 VAC ±10%, 50/60 Hz, autoranging
Power Consumption	Maximum 350 W
Alarm Input Terminals	8/16/24/32 (user selectable, N.O./N.C.)
Relay Output Terminals	8/16/24 (user selectable, N.O./N.C.)
Relay Contact Ratings*	
Rated (Resistive) Load	0.5 A at 120 VAC or 1 A at 24 VDC
Remote Administration	Full remote control through TCP/IP network

MECHANICAL

Connectors	
BNC	Video inputs and outputs
6-pin mini-DIN	PS/2 mouse and keyboard
DB9	COM 1
DB15	VGA port
RJ-45	10/100/1000 Megabit Ethernet port and RS-485/RS-422 ports
USB	6 high-speed USB 2.0 ports (2 front, 4 back); connects the mouse, keyboard, and JBOD external storage
Audio Connectors	Miniature male phone plug for line in, microphone in, and audio output
Optional Audio Connectors	
Audio Connectors	Female RCA jacks
Audio Inputs	8 with the 8-channel unit; 16 with the 16-channel unit
Audio Outputs	1

ENVIRONMENTAL

Operating Temperature	50° to 95°F (10° to 35°C)
Relative Humidity	Maximum 80%, noncondensing

PHYSICAL

Dimensions		
Desktop	19.9" D x 17.0" W x 7.0" H (50.55 x 43.18 x 17.78 cm)	
Rack Mount	22.0" D x 19.0" W x 7.0" H (4 RUs) (55.88 x 48.26 x 17.78 cm)	
Expansion Unit Dimensions		
Desktop	8.19" D x 17.00" W x 1.73" H (20.80 x 43.18 x 4.39 cm)	
Rack Mount	8.19" D x 19.00" W x 1.73" H (20.80 x 48.26 x 4.39 cm)	
Approximate Weight†	Unit	Shipping
DX8108-250	39.8 lb (18.1 kg)	61.0 lb (27.6 kg)
DX8108-8000	44.9 lb (20.4 kg)	67.0 lb (30.4 kg)
DX8116-250	40.3 lb (18.3 kg)	62.0 lb (28.0 kg)
DX8116-8000	45.4 lb (20.6 kg)	67.0 lb (30.4 kg)
DX8124-250	40.8 lb (18.5 kg)	62.0 lb (28.0 kg)
DX8124-8000	45.9 lb (20.8 kg)	68.0 lb (30.8 kg)
DX8132-250	41.3 lb (18.7 kg)	63.0 lb (28.5 kg)
DX8132-8000	46.4 lb (21.1 kg)	68.0 lb (30.8 kg)

CLIENT APPLICATIONS

- Remote client
- Web client
- DX8100 viewer
- Emergency agent
- DS ControlPoint version 1.5 or later

*Relays are grounded.

†Minimum and maximum weights shown for example models. Contact factory for specific model weights.

TECHNICAL SPECIFICATIONS

RECOMMENDED SYSTEM REQUIREMENTS

Processor	Dual core 1.6 GHz or greater
Memory	2 GB RAM, minimum
Video	AGP or PCI-e VGA card with minimum 64 MB video RAM (nonshared memory), 1024 x 768 or 1280 x 1024 display resolution, and DirectX® 8.1 application programming interface
Monitor	SVGA or XGA with 1024 x 768 or 1280 x 1024 resolution
Operating System	Microsoft® Windows® 2000 (SP4) or Windows XP; Professional DirectX 8.1 or later, 500 MB free disk space
Web Browser	
Multicast	Internet Explorer® 6.0
Remote Client	Internet Explorer 6.0 and 7.0
Web Client	Internet Explorer 6.0 and 7.0
Antivirus Software*	Symantec™ Endpoint Protection version 11.0.4

*Supported on Windows XP Embedded only.

CERTIFICATIONS

- CE and FCC, Class A (all DX8124-M, DX8124-MA, DX8132-M, and DX8132-MA models)
- CE and FCC, Class B (all except DX8124-M, DX8124-MA, DX8132-M, and DX8132-MA models)
- UL/cUL Listed
- C-Tick

THIRD-PARTY PRODUCT SUPPORT

The DX8100 Series HVR is compatible with the third-party domes listed in the following table. Please note that this list is subject to change. For more information about dome compatibility or third-party devices, contact Pelco Product Support.

Manufacturer	Model
GE™ (Kalatel)	CyberDome™ Day/Night
LG®	LPT-SD163HM
Panasonic®	WV-CW864
Samsung™	SCC-641
American Dynamics™ (Sensormatic®)	SpeedDome® Ultra VII
Philips® CSI	AutoDome® Day/Night
Baxall™	BPD1-RAS916

The DX8100 has been tested with the USB 2.0 JBOD ICY DOCK® model MB561US-4S-1. Pelco tested this unit with a maximum capacity of four Seagate 2 TB Barracuda 7200.11 (model ST31500341AS) drives.

Notes:

- The DX8100 version 2.0 interface is designed to work with AXIS standard definition cameras. The interface was written using VAPIX® Application Programming Interface (API) version 2.0 (Firmware 4.xx). Pelco Product Support is limited to the interface. The DX8100 has been tested to work with the AXIS Model 211 and 232D network cameras.
- Consult the appropriate product Web site for specific model information.

Notice: *Judgment as to the suitability of the products for users' purposes is solely the users' responsibility. Users should refer to the Operation manuals for cautionary statements regarding user selected options and how they might affect video quality. Users shall determine the suitability of the products for their own intended application, picture rate and picture quality. In the event users intend to use the video for evidentiary purposes in a judicial proceeding or otherwise, users should consult with their attorney regarding any particular requirements for such use.*

MODEL NUMBERS

Use the following table to create a model number to specify your DX8100. For example, the model number for a 32-channel system with 1000 GB storage and audio option is DX8132-1000A. The model number for a DIACAP 32-channel system with 1000 GB storage, MUX, and audio options is DX8132-1000DMA.

Note: When a MUX or audio option is ordered, the MUX or audio option will have the same number of channels as the unit.

DX81XX – XXXXXXX

Channels
Storage (GB)
Options

Channels	Storage in GB	Options
8	250	M = MUX
16	500	A = Audio
24	750	MA = MUX and Audio
32	1000	D = DIACAP
	1500	DM= DIACAP and MUX
	2000	DA = DIACAP and Audio
	4000	DMA = DIACAP, MUX, and Audio
	6000	
	8000	

To order a custom system, specify the base unit first, and then specify the custom option. For example, for a 32-channel system with 1000 GB storage and 8 audio inputs, order the DX8132-1000 and the DX8108-AUD separately. For more information about ordering customized configurations, contact your Pelco sales representative.

SUPPLIED ACCESSORIES

Power Cords	1 USA and 1 European
USB Keyboard and Mouse	1 each for configuration and operation
Recovery Disc	1, for re-imaging the unit
Resource Disc	1, contains server and client software and documentation
Audio Input Breakout Cables	(optional)
Terminal Blocks	
Alarm (green)	1 (8 inputs) or 2 (16 inputs)
Relay (blue)	1 (8 inputs) or 2 (16 inputs)
Rack Mount Kit	1 standard kit (brackets, rails, and hardware)

Note: A monitor is not supplied with DX8100 Series HVR.

OPTIONAL ACCESSORIES

DX8100-EXP	DX8100 16-channel expansion unit kit; racks, 1 RU per unit (rack ears and screws are provided)
DX8108-AUD	DX8100 8-channel audio input card
DX8116-AUD	DX8100 16-channel audio input card
DX8100-512RAM	DX8100 memory upgrade from 512 MB to 1 GB*
DX8108-MUX	DX8100 8-channel graphics acceleration and additional composite output card
DX8116-MUX	DX8100 16-channel graphics acceleration and additional composite output card
DX8100-ISCI	DX8100 internal Ultra 160 SCSI card†
DX8100HDDI-6TB	6 TB external RAID 5 storage expansion unit†
DX8100HDDI-12TB	12 TB external RAID 5 storage expansion unit†
DX8100HDDI-18TB	18 TB external RAID 5 storage expansion unit†
DX8100HDDI-24TB	24 TB external RAID 5 storage expansion unit†
DX81HDD250KIT	DX8100 SATA 250 GB upgrade
DX81HDD500KIT	DX8100 SATA 500 GB upgrade
DX81HDD750KIT	DX8100 SATA 750 GB upgrade
DX81HD1000KIT	DX8100 SATA 1000 GB upgrade
DX81HD1500KIT	DX8100 SATA 1500 GB upgrade
DX81HD2000KIT	DX8100 SATA 2000 GB upgrade
Regcom	AVE® RS-485 network system unit‡
Hydra	AVE RS-485 network system control unit‡
VSI-PRO	AVE Video serial interface for ATM/POS§
KBD300A	KBD300A Universal keyboard (requires KBDKIT/KBDKIT-X)
KBDKIT/KBDKIT-X	Remote keyboard wiring kit
DX8100DSP-XP	Dual Display Card and version 2.0 software upgrade for Windows XP Embedded
DX81SWV20XPE	Software only upgrade for DX8100 Windows XP Embedded
DX8100XPEUP	Windows XP Embedded license upgrade
DX81SWV20XPED	Software for converting DX8100 version 1.0 (or later) to DIACAP version 2.0D**

*Provides pre- and post- alarm recording up to 15 minutes. Pre- and post-alarm recording is up to 60 seconds without upgrade.
†Not for use with DX8124 or DX8132 models.
‡One Regcom unit is required for each ATM/POS device; one Hydra unit is required for each DX8100 serial connection used. One to four serial ports may be used. Support is limited to 16 total ATM/POS devices. Hydra, Regcom, and the required cabling are available from AVE.
§The VSI-PRO and required cabling is available from AVE.
**For information about the DIACAP supported features, refer to the most current version of the DX8100 v2.0D DIACAP Addendum (C4653M).

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EE500 Series EnduraXpress™

INTEGRATED RECORDING AND MANAGEMENT PLATFORM, 32 OR 64 IP, 3 TO 24 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 Endura® WS5200 Software Licenses
- Software Runs on a Standard PC with Microsoft® Windows® XP Professional and 32-Bit Versions of Windows Vista® Business, Ultimate, or Enterprise Operating Systems
- 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

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** 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** 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** 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** 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** 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** 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** software easily accommodates standard resolution, high definition (HD), and megapixel camera sources; decodes MPEG-4 and H.264 (baseline, main, and high profile); 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** 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.

TECHNICAL SPECIFICATIONS

SYSTEM

Operating System	Linux®
RAID Level	RAID 6
Effective Capacity	Up to 18.1 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	50° to 95°F (10° to 35°C) at unit air intake
Storage Temperature	–40° to 149°F (–40° to 65°C)
Operating Humidity	20% to 80%, noncondensing
Maximum Humidity Gradient	10% per hour
Operating Altitude	–50 to 10,000 ft (–16 m to 3,048 m)
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)	24.3" D x 17.0" W x 5.2" H (61.8 x 43.2 x 13.2 cm)
Unit Weight	
Empty (without drives)	46.4 lb (21 kg)
Loaded (with drives)	66.8 lb (30 kg)
Shipping Weight	77.0 lb (35 kg)
Mounting Options	Rack, 3 RU per unit (rack rails and hardware are supplied)

TECHNICAL SPECIFICATIONS

MODELS

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

Note: Units shipped to China do not include power cords.

Model	Storage	Country Code
EE532 or EE564 (no expansion) EE532F or EE564F (fibre channel expansion)	3 TB	US = North America EU = Europe UK = United Kingdom CN = China AU = Australia AR = Argentina
	6 TB	
	9 TB	
	12 TB	
	24 TB	

SUPPLIED ACCESSORIES

Power Cord	2 power cords (based on country designation) **Note:** Units shipped to China do not include power cords
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
HD5200-250	Replacement 250 GB drive and carrier
HD5200-500	Replacement 500 GB drive and carrier
HD5200-750	Replacement 750 GB drive and carrier
HD5200-1000	Replacement 1 TB drive and carrier
HD5200-2000	Replacement 2 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

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.”

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NSM5200 Series Network Storage Manager

250 MBPS RECORDING THROUGHPUT, UP TO 24 TB OF RAW CAPACITY, RAID 6

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
- Pooled Storage Management Provides Automatic Distributed Load Balancing and Active-Active Failover Across a Storage Pool to Ensure Continued Recording if Catastrophic Failure Occurs
- Built-in EnduraStor™ Storage Management Increases Storage Efficiency by Grooming Recorded Streams Based on Age and Priority
- Ability to Serve 32 Simultaneous Playback Streams Per Storage Pool
- Performance Levels Maintained in Normal and RAID Error Conditions
- Built-in Diagnostic Monitoring Provides Preventative Maintenance and SNMP Monitoring

- Reduced Cost of Ownership and Increased Energy Efficiency Through Consolidation of Multiple Hardware Components into a Fully Integrated Chassis

The **NSM5200 Series** delivers industry leading performance and innovation for mission-critical storage needs. The combination of high performance, scalable hardware design and advanced software capabilities enables the **NSM5200** to meet the unique storage needs of physical security and surveillance applications.

Hardware Built for Performance, Reliability, and Scalability

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. In addition, physical security applications are almost always 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 **NSM5200** has been engineered to meet these unique performance and reliability demands. Custom hardware components, to eliminate common performance choke points to a patented scheme for writing content to a disk drive, have been specifically designed to deliver sustained high throughput for recording and playback. The **NSM5200** is capable of a maximum of 250 Mbps of throughput for incoming streams while delivering 32 simultaneous playback streams per storage pool. This performance is maintained whether the system is operating under normal conditions, dealing with disk drive errors, or rebuilding the RAID array.

The **NSM5200** improves the total cost of ownership and energy efficiency by consolidating disparate components into a single chassis. The 250 Mbps throughput provides double the improvement over Pelco's first generation integrated recorder, allowing users to service far more data streams in one storage unit than previously possible. In addition, with the integration of the management server functionality into the storage chassis, cost and energy efficiency is optimized by eliminating the cost of additional servers and the associated heating, ventilation, and cooling costs. Finally, the use of lower power components and adaptive cooling inside the chassis manage power dissipation based on load requirements.

Reliability is enhanced through the use of redundancy at all common failure points. A CompactFlash card is used to host the operating system for higher reliability than 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.

This Endura distributed, network-based product is available only to certified dealers/integrators. Please contact your local sales representative for details on certification applications and requirements. Additional information on Endura products and certifications may be found at http://www.pelco.com/endura.

As with any other system, maintenance is an important and vital part of sustained operation. The **NSM5200** 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 air-flow 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.

Storage capacity is scaled using third-party storage arrays with an optional fibre channel interface.

Software Built for Flexibility, Reliability, Cost Optimization

In addition to unique strains placed on hardware components, surveillance applications also demand innovations in software. Recording software must accommodate automatic failover should a catastrophic failure occur. Recording software must deal with file fragmentation caused by overwrite, locking of video clips, and managing metadata associated with alarms and events. Finally, recording software must deal with the escalating cost of storage by finding innovative ways to manage recorded content. This ensures that the user extracts the most value from the cost of the storage subsystem.

The **NSM5200** supports pooling of multiple recorders to provide for automatic load balancing and failover. Up to twenty NSM5200 nodes can be placed into the same storage pool. One of the **NSM5200s** in the pool acts as the master and manages the assignment of incoming streams, health monitoring, and redistribution of the recording load. Should a unit fail, the given streams are automatically redistributed to the remaining units in the storage pool. When the failed unit is brought back on-line, the recording load is distributed again such that the load on any given recorder is balanced. This capability also allows users to dynamically add additional storage to a pool as their retention needs change.

The **NSM5200** incorporates an improved version of Pelco's patented EnduraStor™ storage optimization technology. EnduraStor was developed to manage the cost of storing high resolution, high-frame rate video by leveraging the fact that the value of recorded video is typically higher immediately following an incident. Organizations are capable of specifying a desired delay period during which all recorded video will be kept at 30 images per second (25 for PAL). As the age of video available on hard disk drives exceeds the delay period, it is automatically groomed to a lower frame rate, thus freeing up storage capacity for new data. The **NSM5200** incorporates advancements in the EnduraStor algorithm, which gives administrators the option of classifying the priority level of alarm or event video to retain the full frame rate.

The **NSM5200** is built upon the proven stability and robustness of its Linux®-based operating system. It utilizes an XFS file system and automated defragmentation routines to keep the database from becoming fragmented. XFS has been proven to be a more superior file format for the rigors of surveillance recording applications than an NTFS file system, which is standard with Windows®-based recorders.

The **NSM5200** incorporates a number of diagnostic monitoring functions that serve vital roles in notifying operators of potential problems and failures. Integrated diagnostics utilize on-board LED indicators to display warnings and failures on the **NSM5200** and then it reports these failures to operators. The **NSM5200** monitors and provides warning messages for items such as retention time issues, accumulation of software errors, network errors that result in packet loss, and changes to network link speeds. It also monitors and reports hardware diagnostics such as temperatures approaching established thresholds, hard disk drive failures, fan failures, power supply failures, or when a stream or a **NSM5200** is off line. Finally, the **NSM5200** can communicate to an APC Smart-UPS® series uninterruptible power supply to provide battery status information and initiate a graceful shutdown if the available charge falls below its designated threshold.

TECHNICAL SPECIFICATIONS

MODELS

The following table describes the NSM5200 model numbers. For example, the model number for a 6 TB, no expansion unit with a United Kingdom power cord is NSM5200-06-UK.

Note: Units shipped to China do not include power cords.

Model	Storage	Country Code
NSM5200 (no expansion) NSM5200F (fibre channel expansion)	3 TB	US = North America EU = Europe UK = United Kingdom CN = China AU = Australia AR = Argentina
	6 TB	
	9 TB	
	12 TB	
	24 TB	

SUPPLIED ACCESSORIES

Power Cord	2 power cords (based on country designation) **Note:** Units shipped to China do not include power cords
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
HD5200-250	Replacement 250 GB drive and carrier
HD5200-500	Replacement 500 GB drive and carrier
HD5200-750	Replacement 750 GB drive and carrier
HD5200-1000	Replacement 1 TB drive and carrier
HD5200-2000	Replacement 2 TB hard drive and carrier

SYSTEM

Operating System	Linux
RAID Level	RAID 6
Effective Capacity	Up to 18.1 TB
Drive Interface	SAS/SATA II

Recommended PC Requirements

Web Browser	Microsoft® 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, amber, red
Ethernet Port 2	Reserved
Hardware Status	Green, amber, 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	50° to 95°F (10° to 35°C) at unit air intake
Storage Temperature	–40° to 149°F (–40°to 65°C)
Operating Humidity	20% to 80%, noncondensing
Max Humidity Gradient	10% per hour
Operating Altitude	–50 to 10,000 ft (–16 m to 3,048 m)
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	
Front Panel	Gray metallic with black end caps
Chassis	Black matte finish
Dimensions (without rails)	24.3" D x 17.0" W x 5.2" H (61.8 x 43.2 x 13.2 cm)
Unit Weight	
Empty (without drives)	46.4 lb (21 kg)
Loaded (with drives)	66.8 lb (30 kg)
Shipping Weight	77.0 lb (35 kg)
Mounting Options	Rack, 3 RU per unit (rack rails and hardware are supplied)

CERTIFICATIONS/RATINGS

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

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DS NVR Network Video Recorder

DIGITAL SENTRY® NVR, UP TO 32 CAMERAS AND 4 TB

Product Features

- Manages and Records Video from IP Cameras and Encoders Over an IP Network
- Support for Standard IP Video Devices
- Supports Pelco IP Cameras with Sarix™ HD Technology
- Supports the Recording of JPEG, MPEG-4, and H.264 Streams from IP Cameras
- Expandable by Networking an Unlimited Number of Servers and DS NVRs
- 4-, 16-, and 32-Channel Configurations per Server
- Compatible with DS ControlPoint for Simultaneous Monitoring of All DS and DX Products in a Single Client Interface
- Network Health and Event Monitoring Support Through Simple Network Management Protocol (SNMP)
- Compatible with the DS Archive Utility
- Recording Rate Configurable per Individual Camera
- Support for DS DataPoint Integration

(MONITOR NOT INCLUDED)

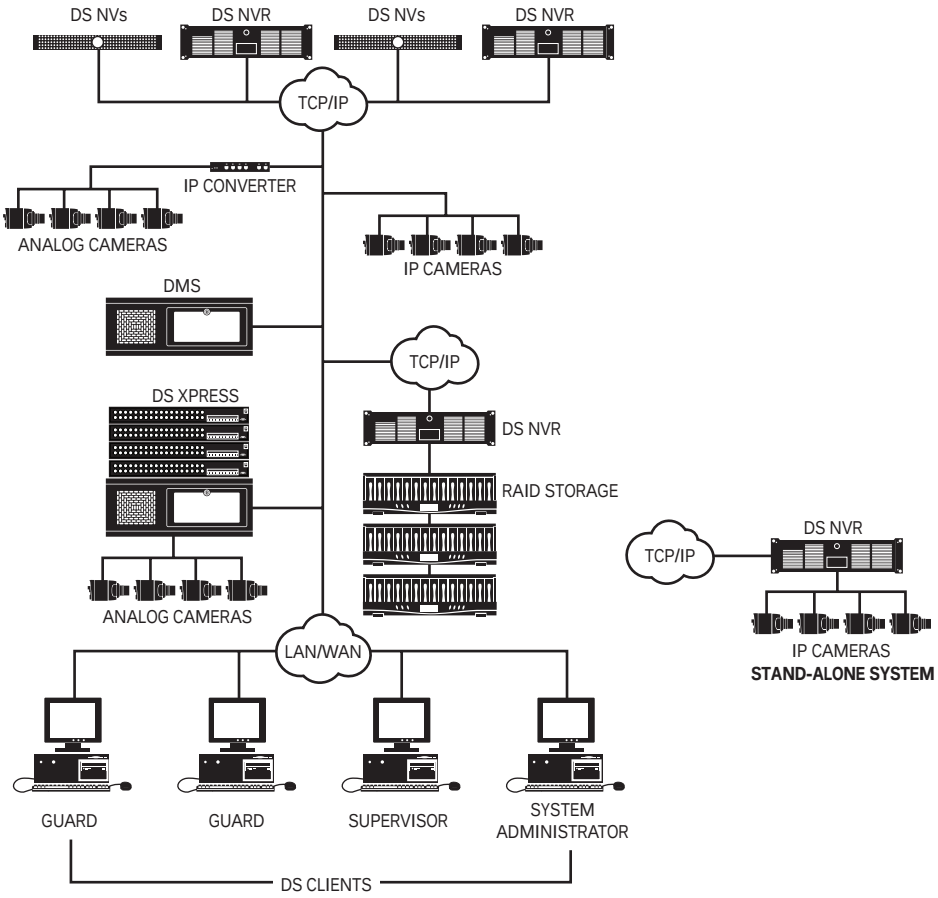
Digital Sentry® software provides IT-focused, scalable solutions that allow users to manage all data and hardware devices from a single client user interface. Digital Sentry network video recorder (**DS NVR**) is a purpose-built software and hardware solution that manages and records video from IP cameras and encoders across an Ethernet network connection. DS NVR comes in 4-, 16-, or 32-channel configurations with the appropriate number of IP connection licenses preconfigured. **DS NVR** is a fully scalable solution. **DS NVR** is HD-enabled, capable of recording exceptional high-quality images captured by Pelco IP cameras with Sarix™ HD technology.

Open architecture is the cornerstone of the Digital Sentry design. Users can choose specific IP cameras or encoders that fit their application. **DS NVR** supports the majority of third-party IP cameras available today and will continue to add support for new cameras as they are released to the market.

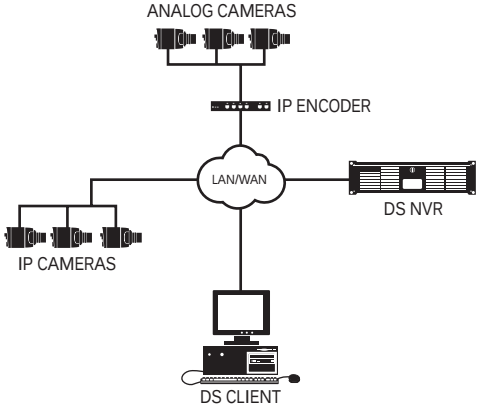
DS NVR supports the IT-focused Digital Sentry software suite that includes network health and event monitoring, video analytics, and archive utility. It seamlessly integrates with all other Digital Sentry video management systems and can be monitored by the same DS ControlPoint client application.

DS NVR offers up to 4 TB of internal storage, which provides enough storage to meet the requirements of most applications. Storage expansion options are also available for additional retention requirements, providing flexibility and scalability to the overall solution. Each **DS NVR** contains a SCSI card as standard equipment, providing simple connection to external storage solutions such as the DX8100HDDI, which adds another 24 TB of JBOD or RAID 5 storage.

DS NVR contains dual Gigabit network interface cards (NIC) so that users can segment network traffic: one NIC supports heavy IP camera traffic, while the other NIC connects to client workstations for monitoring live and recorded video. **DS NVR** is designed to accommodate most security and IT requirements.



LARGER SYSTEM WITH VARIOUS DS MODELS



ANALOG CAMERAS AND IP CAMERAS ON SAME SYSTEM

IMPORTANT NOTE. PLEASE READ.
The network implementations are shown as general representations only and are not intended to show detailed network topologies. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the systems as illustrated. Please contact your local Pelco representative to discuss your specific requirements.

TECHNICAL SPECIFICATIONS

SYSTEM

Operating System	Microsoft® Windows® XP Professional
User Interface	DS ControlPoint
Internal Storage	500 GB to 4 TB
External Storage	Up to 24 TB JBOD or RAID 5 through DX8100HDDI

VIDEO

IP Camera Capacity	32

AUXILIARY INTERFACES

Network	10/100/1000Base-T

MECHANICAL

Connectors

USB	6 high-speed USB 2.0 ports
DB15	VGA port
1394	1394 (not used)
RJ-45	Dual 10/100/1000 Megabit Ethernet ports
Audio Connectors	Miniature phono plug for line in (not used), line out, and microphone in (not used)

POWER

Input Voltage	100 to 240 VAC ±10%, 50/60 Hz
Power Consumption	255 W maximum

PHYSICAL

Dimension	19.5" D x 19.0" W x 3.5" H (2 RUs) (49.53 x 48.26 x 8.89 cm)
Unit Weight	29 lb (13.15 kg)
Shipping Weight	40 lb (18.14 kg)

ENVIRONMENTAL

Operating Temperature	50° to 95°F (10° to 35°C)
Storage Temperature	–40° to 149°F (–40° to 65°C)
Operating Humidity	20% to 80%, noncondensing
Operating Altitude	–50 to 10,000 ft (–15 to 3,048 m)
Operating Vibration	0.25 G at 3 Hz to 200 Hz at a sweep rate of 0.5 octave/min.

REMOTE PC CLIENT REQUIREMENTS

Processor	
Recommended	Intel Core™ Quad Q9400, 2.66 GHz
Internal Memory	
Recommended	4 GB
Operating System	
Minimum	Windows XP Home, Windows Vista®, Windows XP Professional SP 3 Professional SP 3
Recommended	Windows 7 Enterprise
Video System	
Minimum	128 MB RAM with DirectX® 9.0c
Recommended	Dual-head, 256 MB RAM with DirectX 9.0c

CERTIFICATIONS

- CE, Class A
- FCC, Class A
- UL Listed

MODELS

DSNVR04500	4 video inputs, 500 GB internal storage
DSNVR16500	16 video inputs, 500 GB internal storage
DSNVR162000	16 video inputs, 2000 GB internal storage
DSNVR164000	16 video inputs, 4000 GB internal storage
DSNVR32500	32 video inputs, 500 GB internal storage
DSNVR322000	32 video inputs, 2000 GB internal storage
DSNVR324000	32 video inputs, 4000 GB internal storage
DSNVR16-8080	16 video inputs, 80 GB x 80 GB RAID 1*

*No internal storage included. External RAID storage required.

Note: For a DS NVR system configured as a video acquisition unit (VAU) for use with a Data Management Server (DMS), add "-V" to the model number (not available with DSNVR16-8080).

SUPPLIED ACCESSORIES

USB Keyboard
USB Mouse
Power Cord
Keys
Resource Disc
Recovery Disc
Rack Hardware

OPTIONAL ACCESSORIES

KBD300A	KBD300A desktop keyboard with full switching and programming capabilities and joystick control of PTZ functions; requires a KDB300USBKIT or a KBD300USBKIT-X
KBD300USBKIT	Remote keyboard wiring kit (120 VAC) for KBD300A
KBD300USBKIT-X	Remote keyboard wiring kit (230 VAC) for KBD300A

DS NVR UPGRADES

3390-00290	DVD-RW option (factory installation)
3390-00295	DVD-RW option (field upgrade)

OPTIONAL SOFTWARE AND HARDWARE

AUSRV-SW-1L	Archive utility server software license for first DVMS unit (required)
AUS 2-10L	Archive utility server software license for second to tenth DVMS units
AUS-1L	Archive utility server software license for eleventh or greater DVMS units

OPTIONAL EXTERNAL STORAGE

Part Number	Number of 2 TB Drives	Storage in GB	
		Internal	Video
DX8100HDDI-6TB	3	6000	4000
DX8100HDDI-12TB	6	12,000	10,000
DX8100HDDI-18TB	9	18,000	16,000
DX8100HDDI-24TB	12	24,000	22,000

IP CAMERA LICENSE

DS-SW-CAM	IP camera license for an IP camera or each analog camera connected to an IP encoder

NOTICE: *Judgment as to the suitability of the products for users' purposes is solely the users' responsibility. Users should refer to the Operation manuals for cautionary statements regarding user selected options and how they might affect video quality. Users shall determine the suitability of the products for their own intended application, picture rate and picture quality. In the event users intend to use the video for evidentiary purposes in a judicial proceeding or otherwise, users should consult with their attorney regarding any particular requirements for such use.*

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DS NVs

DIGITAL SENTRY® NETWORK VIDEO SOFTWARE SOLUTION

Product Features

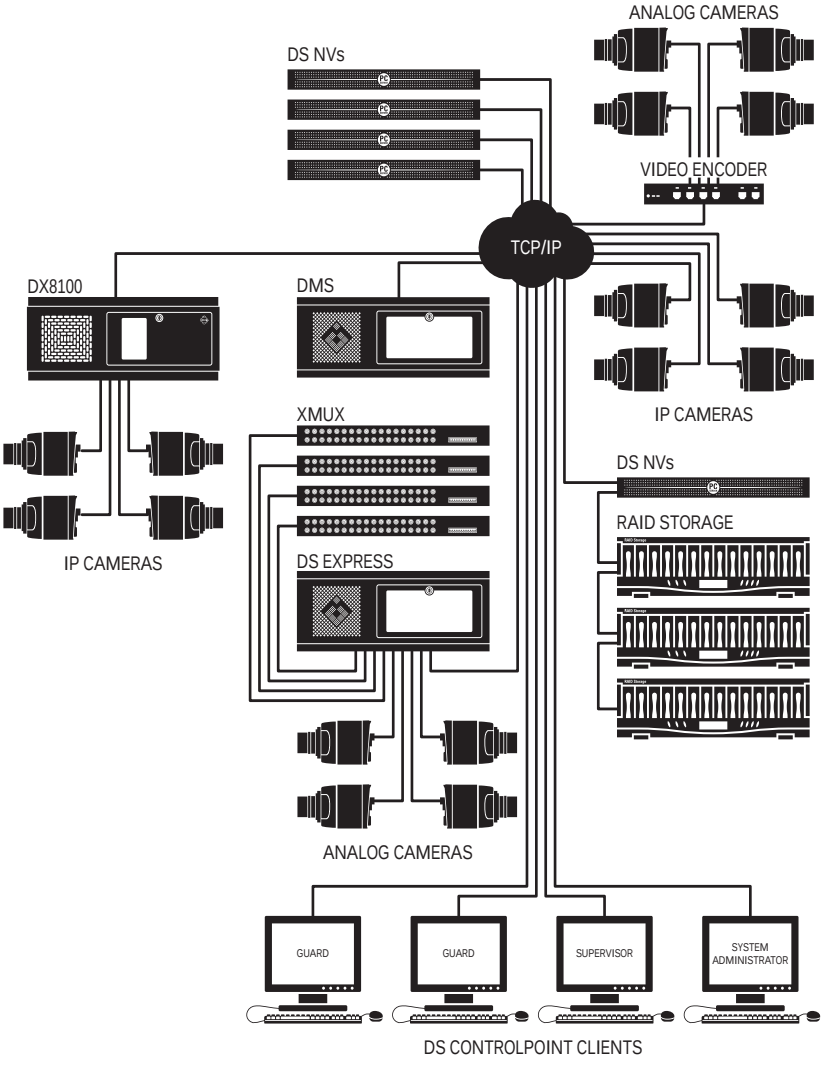
- Software-Only Video Management Solution
- Supports up to 64 Video Channels per Server
- Open Architecture Allows Installation on Industry-Standard Servers Running Microsoft® Windows®
- Manages Video from IP Cameras, Encoders, DX Series DVRs, DS Series HVRs, and Other DS NVs Servers Across the Network
- Supports Pelco IP Cameras with Sarix™ HD Technology
- Capable of Recording Audio from Pelco IP Cameras, Including Cameras with Sarix HD Technology
- Supports the Recording of MJPEG, MPEG-4, and H.264 Streams from Pelco and Numerous Third-Party Cameras
- Recording Rate Configurable per Individual Camera
- Supports Lightweight Directory Access Protocol (LDAP) Authentication
- Remote Administration, Monitoring, and Management of Video and Data
- Archive Utility Support
- Logical Camera Grouping
- Quick Review of up to 90 Minutes of Video and Data
- Detailed Reporting of System Settings and Configuration Changes
- Support for DS DataPoint Integration
- Wizard-driven "Quick Setup"

(MONITOR NOT INCLUDED)

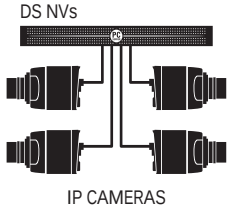
DS NVs is a software-only management solution that supports up to 64 video channels per server. **DS NVs** is also HD-enabled, capable of recording and displaying exceptional high-quality images captured by Pelco IP cameras with Sarix™ HD technology and various third-party megapixel cameras. This tight integration between product and technology makes **DS NVs** a robust HD-enabled, end-to-end solution.

DS NVs provides users the flexibility of installing Digital Sentry software on the server of their choice. Customers with standard PC or server platforms can reduce their cost of ownership by leveraging their existing platforms for volume pricing and technical support agreements. Because Digital Sentry is based on an open architecture, **DS NVs** allows customers the freedom to choose the PC/server platform and IP cameras that best fit their application.

DS NVs allows customers to leverage their investments in analog infrastructures while migrating to IP technologies. From a central location, the same user interface is used for viewing IP cameras and encoders simultaneously. This is especially important for users with existing analog systems who want to transition to completely digital systems.



DS NVS AS PART OF A LARGER DIGITAL SENTRY NETWORK



DS NVS AS A STAND-ALONE IP VIDEO MANAGEMENT SYSTEM

IMPORTANT NOTE. PLEASE READ. The network implementations in this document are shown as general representations only and are not intended to show detailed network topologies. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the systems as illustrated. Please contact your local Pelco representative to discuss your specific requirements.

TECHNICAL SPECIFICATIONS

SYSTEM

User Interface	DS ControlPoint

VIDEO

Video Standards	NTSC/PAL	
Video Decoding	iVEX, MPEG-4, MJPEG, wavelet, H.264	
Video Resolutions	NTSC	PAL
CIF	352 x 240	352 x 288
2CIF	704 x 240	704 x 288
4CIF	704 x 480	704 x 576
HD	Up to 5 megapixels (NTSC and PAL)	
IP Camera Capacity	Up to 64 per server	

RECOMMENDED SERVER REQUIREMENTS

Supported Operating Systems	Windows 7 Professional 32 bit, Windows Vista® SP2, Windows XP® SP3, Windows Server® 2003 or Windows Server 2008
Processor	
4 to 32 MPEG-4/MJPEG Cameras	Intel® Core™2 Duo (or later)
32 to 64 MPEG-4/MJPEG Cameras	Intel Core2 Quad, Intel Core i5, or Intel Core i7 (or later)
Greater than 16 H.264 Cameras	Intel Core i7 processor Extreme Edition (or equivalent)
System Memory	
2 GB or Greater	Microsoft Windows XP
4 GB or Greater	Windows Vista®, Windows 7, Windows Server® 2003, or Windows Server 2008
Graphics Card	Dedicated PCI/E graphics controller card with 512 MB (or greater) dedicated video memory
Optical Drive	DVD
Dedicated Server	Required

CERTIFIED PLATFORMS

Intransa Videoappliance™
Pivot 3 CloudBank™
Pivot 3 MiniBank™
Pivot3 HardBank™
Pivot3 DataBank™

MODEL

DS-NVS-NC	Base software, video recording software solution

IP CAMERA LICENSE

DS SW-CAM	IP camera license for IP cameras or analog cameras connected to IP encoders

Note: The first four Pelco camera licenses (equal to the initial default configuration) are included at no additional cost. Camera licenses are required to upgrade to any camera count (up to 64 cameras) above the initial default configuration or for the first non-Pelco camera.

OPTIONAL SOFTWARE AND HARDWARE

AUSVR-SW-1L	Archive Utility server software license for first DVMS unit (required)
AUS 2-10L	Archive Utility server software license for second to tenth DVMS units
AUS-1L	Archive Utility server software license for eleventh or greater DVMS units
3590-01067	ActiveAlert 2-camera video analytics for Digital Sentry version 4.0 or later
3590-01068	ActiveAlert 4-camera video analytics for Digital Sentry version 4.0 or later

NOTICE: *Judgment as to the suitability of the products for users' purposes is solely the users' responsibility. Users should refer to the Operation manuals for cautionary statements regarding user selected options and how they might affect video quality. Users shall determine the suitability of the products for their own intended application, picture rate and picture quality. In the event users intend to use the video for evidentiary purposes in a judicial proceeding or otherwise, users should consult with their attorney regarding any particular requirements for such use.*

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NET5301T-I Intelligent Video Encoder

DUAL-STREAM, NTSC/PAL

Product Features

- Powerful Video Analytics Processing at the Edge
- Encode and Transmit 2 Simultaneous MPEG-4 Video Streams
- Up to 30 NTSC (25 PAL) High Quality (4CIF) Images per Second per Stream
- Video, Audio, and Data over IP Network
- Simultaneously View Video on a Computer User Interface, Console User Interface, and Video Decoder While Recording to an Endura® Video Recorder
- Adaptive Deinterlacing Technology
- 3 Programmable Alarm Inputs (Supervised or Unsupervised), 1 Relay Output
- 2 Security Modes
- Video Loss Indicator

- PTZ Support Through Pelco P/Pelco D (RS-422) and Coaxitron® (up-the-coax) Protocols
- Optional Wall and Rack Kits; Rack Kit Will Accommodate up to 12 Units

The **NET5301T-I** intelligent video encoder is a dual-purpose video encoding unit and video analytics processor. As a video encoder, it converts live analog video into dual MPEG-4 video streams. It can process up to 30 NTSC (25 PAL) images per second (ips) per stream at 4CIF resolution. In addition, the **NET5301T-I** uses motion adaptive deinterlacing technology to reduce jitter in 4CIF images.

The **NET5301T-I** adds a sophisticated video analytics engine to the video encoder function. Once installed and configured, object and activity detection behaviors can interpret activity in the field of view and trigger an alarm when unwanted activity is detected. This ability to process video analytics at the edge conserves network bandwidth; the unit only transmits video streams that have triggered an analytics alarm.

The unit also improves operator effectiveness when monitoring both large and small installations. These sophisticated analysis techniques monitor each frame of video and only alert the operator to cameras and scenes that warrant attention.

Like all Endura® encoders, the **NET5301T-I** incorporates EnduraView™ video optimization technology to select the best image quality and frame rate for the target Endura product (decoder, workstation, console), all without affecting the system recording rate. For example, the unit selects a high rate and quality setting for recording and automatically selects a lower rate for viewing in a multiple view format.

The **NET5301T-I** can be configured for three alarm inputs and one relay output. When an alarm event is triggered, the unit can send a message to an operator, trigger a relay, and implement video recording.

The **NET5301T-I** also supports activity detection. You can configure up to three activity zones, each with its own independent sensitivity and threshold settings. When the **NET5301T-I** detects activity in any of these areas, it can trigger an alarm event.

The unit supports one audio input over the network. The system operator (security personnel) can see and hear activity in the target area.

The **NET5301T-I** can run in both unsecured and secured modes. The secure mode uses a proprietary key system to prevent unauthorized devices from communicating with a **NET5301T-I** over the Endura network.

All Endura products support Pelco P/Pelco D and Coaxitron® protocols. As a result, the **NET5301T-I** supports control of remote peripherals such as pan/tilt/zoom (PTZ) cameras.

VIDEO ANALYTIC BEHAVIORS

The NET5301T-I intelligent video encoder supports the following video analytic behaviors:

Vibration Removal

This behavior is designed for installations that experience video vibration. When you remove video vibration, your image quality and video storage capacity improve. Typical installations include the following options:

- **Pole mount:** A camera mounted to a pole is subject to wind currents.
- **Rooftop:** A camera mounted on a rooftop can be affected by equipment, including heating, ventilation, and air conditioning units.
- **Power zoom lens:** A camera with a high-power zoom lens is subject to amplified vibration.

Adaptive Motion

This behavior detects and tracks objects that enter a scene and then triggers an alarm when the objects enter a defined zone. The objects are monitored until they exit the scene. The movement of the objects is highlighted by a colored box and an optional trail.

Abandoned Object

This behavior detects objects placed in a defined zone and triggers an alarm if the object remains in the specified zone too long.

An air terminal is a typical installation. Cameras observe passengers walking through the terminal. If someone leaves a bag for a specified amount of time, an alarm is triggered. The behavior can distinguish between an abandoned object and baggage sitting next to a traveler. You can also program the behavior to distinguish an abandoned object from floor clutter (wrappers and cigarette butts) that accumulates over a period of time.

Camera Sabotage

This behavior detects contrast changes in the field of view. If the lens is covered with spray paint, a cloth, or a lens cap cover, the behavior triggers an alarm. It also triggers an alarm if there is any unauthorized movement of the camera.

Object Counting

This behavior counts the number of objects that enter a defined zone or that cross a defined tripwire. Typical installations include the following:

- **Counting people:** Counts the number of people at a store entrance or exit, or counts the people inside a store in an area with light foot traffic. The behavior is based on tracking and will not count people in a crowded setting.
- **Counting vehicles:** Counts the number of vehicles on highways, local streets and roads, or in parking lots and garages; otherwise, larger vehicles may be counted more than once.

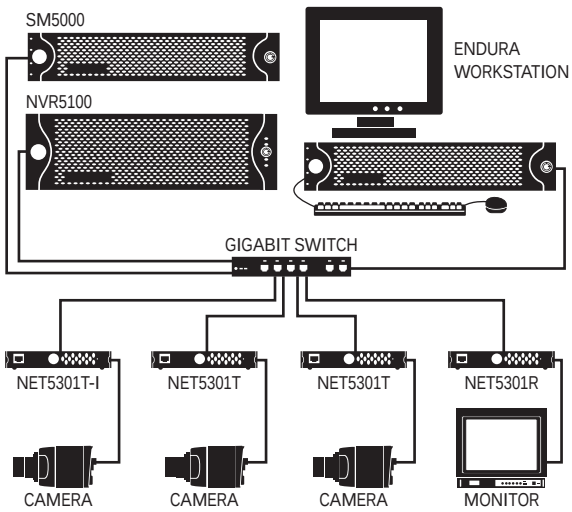
Object Removal

This behavior triggers an alarm if an object is removed from a defined zone. It is ideal for detecting the removal of high value objects, such as a painting from a wall or a statue from a pedestal.

Directional Motion

This behavior generates an alarm when a person or object moves in a certain direction. Typical installations include the following examples:

- **Airport:** Cameras observe passengers boarding an air bridge in a terminal. If a person moves in the opposite direction of the other passengers, an alarm triggers.
- **Traffic flow:** Cameras observe traffic flow in a tunnel. If a car drives into the tunnel through the wrong entrance, an alarm alerts the operator to activate the traffic signals to stop all traffic in the tunnel.
- **Exit doors:** The camera is pointed at an exit door. If someone tries to pass through the door in the wrong direction, an alarm triggers.



IMPORTANT NOTE: PLEASE READ. The network implementation is shown as a general representation only and is not intended to show a detailed network topology. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the system as illustrated. Please contact your local Pelco Representative to discuss your specific requirements.

TECHNICAL SPECIFICATIONS

SYSTEM

Operating System	Linux®
User Interface	Remote operation from Endura workstation or VCD5202

VIDEO/AUDIO

Video Standards	NTSC/PAL/EIA/CCIR composite	
Video Coding	MPEG-4	
Video Streams	2, simultaneous	
Video Resolutions	NTSC	PAL
4CIF	704 x 480	704 x 576
2CIF	704 x 240	704 x 288
CIF	352 x 240	352 x 288
QCIF	176 x 120	176 x 144
Video Inputs/Connector Type	1, BNC, looping, 75 ohms, 1 Vp-p	
Audio Encoding	G.711 speech codec	
Audio Bit Rate	64 kbps	
Audio Levels		
Line In	1 Vp-p (0 dBV) nominal, 1.228 Vp-p (+4 dBu) maximum, 10 kohms	
Microphone	5 mVp-p, approximately 40 kohms	
Audio Connectors	2, 3.5 mm monaural	
Connector Tip	Signal high (input)	
Connector Sleeve	Common	
Audio Input	Microphone or line in	

PTZ CONTROL

PTZ Interface	RS-422, video in
PTZ Protocols	Pelco P/Pelco D (RS-422), Coaxitron

ALARMS/RELAYS

Alarm Inputs	3, programmable, 3.3 VDC, 1 kohms, triggered; uses 6 of 16 pins on terminal block connector
Relay Output	1, form-C relay, 30 VDC, 1 A; uses 3 of 16 pins on terminal block connector

VIDEO ACTIVITY DETECTION

Zones	3 plus background zone
Zone Types	Any shape, user-definable in 16 x 16 pixel blocks
Sensitivity/Threshold	Adjustable per zone
Video Analytics	Refer to *Video Analytic Behaviors* on the second page of this specification.

AUXILIARY INTERFACES

Serial	Pelco P/Pelco D protocols (RS-422); uses 4 of 16 pins on terminal block connector
Terminal Block Connector	16-pin: Pelco P/Pelco D protocols (RS-422), 3 alarm inputs, 1 relay output

FRONT PANEL INDICATORS/FUNCTIONS

Network	RJ-45, 10/100Base-T
Power	Blue
Status	Green, amber, red
Network Link/Speed	Amber, red
Network Activity	Green
Video	Green, red

POWER

Power Consumption	14.5 W, 50 BTU/H
Power Input	12 VDC ±10% 24 VAC ±10%
Power Connectors	
4-Pin	For RK5200PS-5U or NET5301PS
2-Pin	For user-supplied power supply

ENVIRONMENTAL

Operating Temperature	41° to 95°F (5° to 35°C) at unit air intake
Storage Temperature	–40° to 149°F (–40° to 65°C)
Operating Humidity	20% to 80%, noncondensing
Maximum Humidity Gradient	10% per hour
Operating Altitude	–50 ft to 10,000 ft (–16 m to 3,048 m)
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 performance failure and unit damage, make sure the temperature at the unit is continuously within the operating temperature range.

PHYSICAL

Construction	Sheet metal
Finish	Gray metallic with black end caps, black matte finish
Dimension	8.75" D x 6.5" W x 1.2" H (22.2 x 16.5 x 3.0 cm)
Mounting	Desktop (feet), wall, or rack with options
Unit Weight	2.0 lb (0.9 kg)
Shipping Weight	5.0 lb (2.3 kg)

MODEL

NET5301T-I	Network video encoder that supports sophisticated object and activity detection behaviors, which simultaneously encodes video, audio, and control data for transmission over an IP network

SUPPLIED ACCESSORIES

Mating Connectors	1, 16-pin 1, 2-pin

OPTIONAL BEHAVIORS

Use this table to create a model number for the desired intelligent encoder behavior and license quantity. For example, NET-LIC-AO-10 is the model number for 10 licenses for the abandoned object behavior. For more information, contact your Pelco sales representative.

NET-LIC-a-b

Behavior
License Quantity

Behavior (a)		Quantity (b)
Vibration Removal	VR	1
Adaptive Motion	AM	5
Abandoned Object	AO	10
Camera Sabotage	CS	25
Object Removal	OR	50
Object Counting	OC	100
Directional Motion	DM	

OPTIONAL MOUNTING ACCESSORIES

RK5200PS-5U	Rack mount with power supply (12 units)
WM5200-4U	Wall mount without power supply (1 unit)
WM5200-4UEXP	Wall mount expansion (1 unit)

RECOMMENDED POWER SUPPLIES

NET5301PS	Power supply for one encoder (4-pin connector)
TF2000	Power supply for one encoder (2-pin connector)
MCS Series (B model)	Multiple unit power supply, indoor (2-pin connector)

CERTIFICATIONS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick

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
- Compliance, ISO/IEC 14496 standard (also known as MPEG-4)
- Compliant with International Telecommunication Union (ITU) Recommendation G.711, “Pulse Code Modulation (PCM) of Voice Frequencies”

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NET5400T Series Video Encoders

H.264 BASED NETWORK VIDEO ENCODERS WITH VIDEO CONTENT ANALYSIS

Product Features

- Open Standards-Based Architecture
- H.264 Baseline, Main, or High Profile Compression
- Dual-Stream at up to 4CIF, 30/25 Images per Second (ips) per Stream
- Integrated Video Content Analysis on Designated Models
- Integrated Multi-Zone Video Motion Detection
- Integrated Audio, Alarm, and Relay Inputs and Outputs
- Integrated Coaxitron® and Pelco D PTZ Protocols
- Power over Ethernet (PoE) Models (Compliant with IEEE 802.3af or IEEE 802.3at)
- Support for 2 Unicast Streams per Channel
- Support for Multicast Transmission
- 1-, 2-, and 4-Channel Models

The **NET5400T Series** is a high performance, single- to multi-channel video encoder that integrates analog cameras and positioning systems into an IP video surveillance system. The **NET5400T** encoders deliver crystal clear images while drastically reducing the network bandwidth and storage requirements for IP video surveillance applications.

Uncompromised Performance and Image Quality

The **NET5400T Series** encoders are capable of compressing a single video input into two streams, each up to 4CIF (704 x 480 for NTSC and 704 x 576 for PAL) and 30/25 ips. With individually configurable streams, each channel of the **NET5400T** encoder can be configured to meet differing bandwidth, resolution, and frame rate requirements.

The high profile H.264 compression option delivers outstanding picture quality at a drastically lower bandwidth. While H.264 compression provides significant bit-rate savings over JPEG and MPEG-4 compression schemes, high profile H.264 enables sophisticated tools that further reduce bit-rate while also improving picture quality under certain scene conditions. The **NET5400T** encoders provide baseline, main, and high profile H.264 compression to optimize the cost of deploying IP video surveillance while improving image quality.

Powerful Intelligence at the Edge

The **NET5400T-I** encoders are enabled for video intelligence at the edge. With a dedicated analytics processing unit per channel, each input can be independently configured to run multiple algorithms to analyze frames of video in real time. Once configured, object and activity detection algorithms can interpret activity in the field of view and trigger an alarm when unwanted activity is detected, thus making the surveillance operator significantly more effective and efficient. The ability to run analytic behaviors at the edge reduces network bandwidth requirements in transmitting video to a central server. In addition, edge-based analytics also allow for more graceful scalability as centralized servers can introduce bottlenecks. Pelco is constantly updating the available analytics libraries; contact a Pelco representative for the latest available algorithms.

Integration for Installation Flexibility

The **NET5400T Series** is available in a choice of 1-, 2-, or 4-channel form factors. The 1- and 2-channel models support PoE, minimizing the amount of wiring needed. The 1- and 2-channel models also support looping video output, allowing simple connections to other analog components at the edge.

The dual network ports allow for daisy-chaining the units to reduce the number of expensive network switch ports that would normally need to be consumed by each encoder.

The optional wall mounts and rack mount provide convenient installation of the 1- to 4-channel models. The RK5200 rack mount also provides built-in cooling and an integrated, redundant power supply to safeguard all encoder operations.

Integrated audio inputs for each video input can capture audio from various sources and associate it with the video. One alarm for each video input and one relay output for the encoder allows for I/O communication with external components.

Built-in Analytics

The **Pelco® Analytic Suite** and **ObjectVideo® (OV) Analytic Suites** enhance the flexibility and performance of the NET5400T Series video encoder. Models are preloaded and configured for the **Pelco Analytics Suite**. No additional licensing or license activation is required. Some models are also available preloaded with **OV Analytic Suites.**

NET5400T-I Series models provide full access to the entire Pelco Analytics library for each channel. Up to three behaviors can be run simultaneously per input. The **Pelco Analytic Suite** is easy to configure for alarm notification when used with Endura®. **OV Analytic Suites** offers rule configurations and alarm notifications that are compatible with **OV Ready™** systems.

Web Interface

The **NET5400T Series** uses a standard Web browser for powerful remote setup and administration. In addition, up to 16 cameras can be viewed on the same network.

Pelco Analytic Suite

The Pelco Analytic Suite is configured with an Endura system, which enables the behaviors to automatically detect and trigger alarms when specific activity is detected. Multiple Pelco analytics can be scheduled to work during a certain time or condition. For example, during the day, a camera can be configured with Object Counting to count the number of people that enter a lobby door. At the same time, Camera Sabotage and Directional Motion can also be running to detect any attempt at tampering with the camera or someone moving in the wrong direction. Further, profiles can be created and scheduled such that the behaviors on any given camera are changed throughout the day or as a result of an alarm or event trigger. The Pelco Analytics Suite includes the following behaviors:

- **Abandoned Object:** Detects objects placed in a defined zone and triggers an alarm if the object remains in the zone longer than the user-defined time allows. An airport terminal is a typical installation for this behavior. Abandoned Object can also detect objects left behind at an ATM, signaling possible card skimming.
- **Adaptive Motion:** Detects and tracks objects that enter a scene and then triggers an alarm when the objects enter a defined zone. Adaptive Motion is primarily used in outdoor environments with light traffic to reduce the number of false alarms caused by environmental changes.
- **Camera Sabotage:** Detects contrast changes in the camera's field of view. If the lens is obstructed with spray paint, a cloth, or covered with a lens cap, the behavior triggers an alarm. It also triggers an alarm if there is any unauthorized movement of the camera.
- **Directional Motion:** Generates an alarm in a high traffic area when a person or object moves in the wrong direction, alerting operators to a safety or security threat. Typical installations for this behavior include an airport gate or tunnel where cameras can detect objects moving in the opposite direction of the normal flow of traffic.
- **Loitering Detection:** Identifies when people or vehicles remain in a defined zone longer than the user-defined time allows. This behavior is effective in real-time notification of suspicious behavior around ATMs, stairwells, and school grounds.
- **Object Counting:** Counts the number of objects that cross a tripwire or enter a defined zone. This behavior can improve business intelligence and operations by counting the number of people at a store entrance or exit. It can also monitor foot traffic inside a store to gauge areas of interest.
- **Object Removal:** Triggers an alarm if an object is removed from a defined zone. This behavior is ideal for detecting the removal of high value objects, such as a painting from a wall or a statue from a pedestal.
- **Stopped Vehicle:** Detects vehicles stopped near a sensitive area longer than the user-defined time allows. This behavior is ideal for airport curbside drop-offs, parking enforcement, suspicious parking, traffic lane breakdowns, and vehicles waiting at gates.

ObjectVideo (OV) Analytic Suites

ObjectVideo Analytics Suites are preloaded on selected **NET5400T Series** video encoders and require an OV Ready system to configure the behaviors for alarm notification.

OV Security Suite

The OV Security Suite is easy to use and includes Tripwire Detection, Inside Area Detection, and Camera Tamper Detection behaviors.

- Tripwire Detection identifies objects that cross a user-defined line drawn within the camera's field of view.
- Inside Area Detection identifies objects entering, appearing, or moving within a user-defined area.
- Camera Tamper Detection identifies significant contrast changes in the camera's field of view; for example, if the lens is obstructed by spray paint, a cloth, or a lens cap.

OV Security Suite Plus

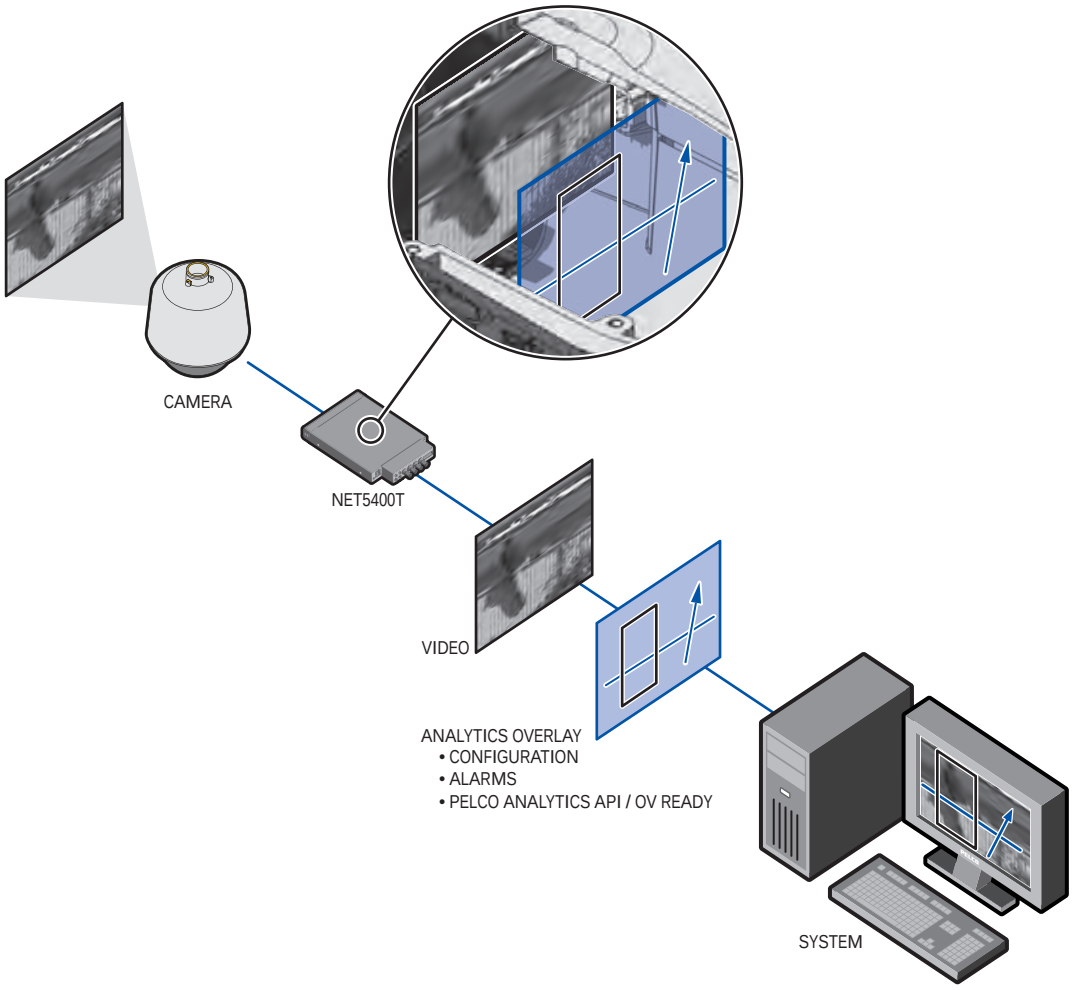
The OV Security Suite Plus includes the behaviors of the OV Security Suite, plus Multi-Line Tripwire Detection, Loitering Detection, and Leave Behind Detection behaviors.

- Multi-Line Tripwire Detection identifies objects that cross two defined lines and generates an event based on defined parameters, including directionality. Defined parameters for this behavior include direction, sequential order, and time between crossing each tripwire.
- Loitering Detection identifies when people or vehicles remain within a defined area beyond a specified period of time. This behavior is effective for real-time notification of suspicious behavior around ATMs, stairwells, and school grounds.
- Leave Behind Detection detects objects placed in a defined zone and triggers an alarm if the object remains in the zone longer than the user defined time allows.

OV Event Counting Suite

The OV Event Counting Suite uses advanced object calibration and additional features for schedules, parameters, and multiple rules. The suite includes behaviors for Tripwire Counting, Enters/Exits Counting, Loiter Counting, Occupancy Sensing, and Dwell-Time Monitoring.

- Tripwire Counting counts people or objects that cross a user-defined line.
- Enters/Exits Counting calculates the number of people that enter and exit an area without using a tripwire.
- Loiter Counting is useful in analyzing how frequently people stop in front of a product, display, or other area of interest. This feature is also useful in assessing promotion effectiveness and product interest.
- Occupancy Sensing counts people and generates a new value every time the occupancy level changes. Since each occupancy output is time-stamped, the data can be used to determine average occupancy levels or to correlate data to point-of-sale or other business scenarios.
- Dwell-Time Monitoring rules can be set up to record the length of time between when an object enters and then exits an area. Along with queue size information, wait times can also be assessed. This behavior can be used to evaluate consumer interaction for a point-of-sale display or digital advertisement.



TECHNICAL SPECIFICATIONS

SYSTEM

Operating System	Linux®
User Interface	Integrated Web browser (requires IE8 or higher) Supported VMS user interfaces

VIDEO/AUDIO

Analog Video Standards	NTSC/PAL	
Compression Standards	MJPEG and H.264 baseline, main, and high profiles	
Video Streams	3 independently configurable per video channel; up to 2 unicast streams; unlimited multicast streams	
Analog Video Resolutions	NTSC	PAL
4CIF	704 x 480	704 x 576
2CIF	704 x 240	704 x 288
CIF	352 x 240	352 x 288
Frame Rates	1, 2, 3, 4, 5, 6, 7.5, 8, 10, 12, 12.5, 15, 24, 25, 30 (varies with stream configurations)	
Video Inputs	1, 2, or 4 BNC inputs; 1 Vp-p; Hi-Z/75 ohms impedance	
Looping Outputs	On 1- and 2-channel models only	
Audio Encoding	G.711	
Audio Bit-Rate	64 kbps	
Audio Input	Line-in, 3.5 mm connector	
Audio Output	Line-out on 1- and 2-channel models only	

ANALYTICS

Required Systems for Pelco Analytic Suite	
Open API	Pelco analytics streaming information communicate through Pelco's API Guide for Video Analytics version 0.55.30 (or later), available at *Pelco.com/IP.*

NETWORK

Interface	2, Ethernet RJ-45 ports (100/1000Base-T)
Protocols	TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, SNMP, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, and mDNS (Bonjour®)

AUXILIARY INTERFACES

Alarm Inputs	1 alarm input per camera input, configurable (Supervised/Unsupervised); 5.0 VDC 10 kohms
Relay Outputs	1 relay; 30 VDC, 1 A; uses 3 of 16 pins on terminal block connector
PTZ Interface	Coaxitron or RS-422
PTZ Protocols	Pelco D, Coaxitron

FRONT PANEL INDICATORS

Power	Blue Pelco badge
Status	Green, amber, red (based on diagnostics)
Ethernet Port 1	Green, amber, red
Ethernet Port 2	Green, amber, red
Video Inputs	Green, red, off

TECHNICAL SPECIFICATIONS

POWER

Power Input	
1-Channel	PoE (IEEE 802.3af 2003), 12 VDC or 24 VAC ±10%; power supply sold separately
2-Channel	PoE+ (IEEE 802.3at), 12 VDC or 24 VAC ±10%; power supply sold separately
4-Channel	12 VDC ±10%; power supply sold separately
Power Supply	
1- and 2-Channel Units	4-pin connection to external power supply or PoE
4-Channel Units	4-pin connection to external power supply

ENVIRONMENTAL

Operating Temperature	
1- and 2-Channel Units	32° to 113°F (0° to 45°C)
4-Channel Units	41° to 95°F (5° to 35°C)
Storage Temperature	–40° to 149°F (–40° to 65°C)
Operating Humidity	20% to 80%, noncondensing
Max. Humidity Gradient	10% per hour
Operating Altitude	–50 to 10,000 ft (–16 to 3,048 m)
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 unit damage, make sure the temperature at the air intake of the unit is continuously within the operating temperature range.

PHYSICAL

Construction	Sheet metal
Finish	Gray metallic with black end caps, black matte finish
Dimensions	10.43" D x 6.55" W x 1.08" H (26.5 x 16.4 x 2.7 cm)
Mounting	
Desktop	Rubber feet provided
Wall or Rack	Optional mounting accessories required
Unit Weight	2.0 lb (0.9 kg)
Shipping Weight	5.0 lb (2.3 kg)

MODELS

Use the following table to create a model number to specify your NET5400T Series encoder. For example, the model number for a 2-channel encoder with the OV Security Suite and a European Union regional power cord is NET5402T-OS-EU.

Note: Units shipped to China do not include power cords.

Model	Description	Country Code
NET540xT	1-, 2-, or 4-channel H.264 encoder with Camera Sabotage	AR = Argentina AU = Australia CN = China EU = European Union UK = United Kingdom US = United States
NET540xT-I	1-, 2-, or 4-channel H.264 encoder with built-in Pelco Standard Suite	
NET540xT-OS	1-, 2-, or 4-channel H.264 encoder with built-in OV Security Suite	
NET540xT-OSP	1-, 2-, or 4-channel H.264 encoder with built-in OV Security Suite Plus	
NET540x-T-OCP	1-, 2-, or 4-channel H.264 encoder with built-in OV Event Counting Suite	

OPTIONAL ACCESSORIES

RK5200PS-5U	Rack mount with redundant power supply for 12 units
WM5200-4U	Wall mount for single unit (no power supply)
NET5400PS	Single module; 12 VDC 5A, 60 W

CERTIFICATIONS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick
- CCC*
- KCC*

*As of the date of this publication, these certifications are pending. Please consult the factory, our Web site at *www.pelco.com*, or the most recent B.O.S.S.® update for the current status of certifications.

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."

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NET5402R-HD Network Video Decoder

HIGH DEFINITION NETWORK DECODER WITH DUAL MONITOR OUTPUT

Product Features

- Decode Standard Resolution and Megapixel Resolution Streams
- Simultaneously Drive Two High Definition Monitors From a Single Unit
- Support for MPEG-4, H.264 Baseline, Main, and High Profile Codecs
- Simultaneously View up to Sixteen MPEG-4 Streams at 4CIF Resolution, 30/25 Images Per Second (ips); up to Twelve H.264 Streams at 4CIF Resolution, 30/25 ips; or up to Two 1080P Streams in Real Time
- EnduraView™ Technology Optimizes CPU Load and Bandwidth Utilization when Displaying Multiple Cameras Simultaneously
- Maintains Aspect Ratio of Original Stream
- Supports Monitor-Wall Configurations When Used in Conjunction with an Endura® VCD5202
- Supports Alarm/Spot Monitor Capability, Including Sequencing, When Programmed with Endura Scripts
- Supports User-Specified Language Choices for User Interface Display

The **NET5402R-HD** is a high performance, multistream network decoder capable of displaying streams from IP cameras and video encoders compressed in standards-compliant MPEG-4 or H.264 baseline, main, or high profiles.

The **NET5402R-HD** uniquely addresses the requirements of real-time surveillance installations with the complexity introduced by today's IP and megapixel cameras. Each decoder can simultaneously decode and display up to sixteen MPEG-4 streams at 4CIF resolution, 30/25 ips; up to twelve H.264 baseline streams at 4CIF resolution, 30/25 ips; or two 1080p streams at 30 ips. When additional streams are displayed, the **NET5402R-HD** uses the patent-pending EnduraView™ technology to automatically seek out and display a second stream from the camera. The technology can also reduce the refresh rate automatically to minimize the impact on processing requirements and network overhead.

Different streams can be displayed in 1 x 1, 2 x 2, 3 x 3, 4 x 4, 1 + 5, 1 + 12, and 2 + 8 configurations for 4:3 aspect ratio monitors. In addition, 3 x 2 and 4 x 3 screen configurations are available for 16:9 aspect ratio monitors. Any combination of live and playback streams can be displayed simultaneously, including both live and playback streams from the same camera.

Each **NET5402R-HD** network decoder is capable of driving two high definition displays (monitor resolutions up to 2560 x 1600). The unit's monitors can be integrated into a video wall controlled by the VCD5202. The cameras and configurations of each monitor can be independently changed through the WS5000 or the VCD5202.

Finally, the **NET5402R-HD** supports audio output, allowing an operator to monitor audio transmitted by a camera.

TECHNICAL SPECIFICATIONS

MODELS

NET5402R-HD-US	HD network video decoder, North America
NET5402R-HD-AR	HD network video decoder, Argentina
NET5402R-HD-AU	HD network video decoder, Australia
NET5402R-HD-CN	HD network video decoder, China
NET5402R-HD-EU	HD network video decoder, Europe
NET5402R-HD-UK	HD network video decoder, United Kingdom

VIDEO

Maximum Monitor Resolution	2560 x 1600
Video Coding	MPEG-4, H.264 baseline, main, and high profiles
Video Display Modes	1 image, 4 images (2 x 2), 9 images (3 x 3), 16 images (4 x 4), 6 images (1 large + 5 small), 10 images (2 large + 8 small), 13 images (1 large + 12 small); High definition monitors can also display 6 images (3 x 2) and 12 images (4 x 3)
Decoding Performance	16X real-time MPEG-4 streams at 704 x 480/576; 12X real-time H.264 baseline profile streams at 704 x 480/576; 2X real-time H.264 baseline profile streams at 1080p
Video Outputs	2 DVI outputs (2 DVI-to-VGA adapters supplied)

NETWORK

Interface	Gigabit Ethernet RJ-45 port (1000Base-T)

FRONT PANEL INDICATORS/FUNCTIONS

Power	Blue
Network Speed/Activity	Green, amber, red
Unit Status	Green, amber, red
Power Button	On, off (soft), off (hard)

POWER

Power Input	100 to 240 VAC, 50/60 Hz, autoranging
Power Supply	Internal
Power Consumption	Operating Maximum
100 VAC	170 W, 1.70 A, 580 BTU/H
120 VAC	170 W, 1.42 A, 580 BTU/H
240 VAC	170 W, 0.71 A, 580 BTU/H

ENVIRONMENTAL

Operating Temperature	50° to 95°F (10° to 35°C) (at unit air intake; front panel)
Storage Temperature	–40° to 149°F (–40° to 65°C)
Operating Humidity	20% to 80%, noncondensing
Maximum Humidity Gradient	10% per hour
Operating Altitude	–50 ft to 10,000 ft (–16 m to 3,048 m)
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 performance failure and unit damage, make sure the temperature at 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	20.8" D x 17.0" W x 1.7" H (52.8 x 43.2 x 4.3 cm)
Unit Weight	20.80 lb (9.4 kg)
Mounting	Desktop (feet) Rack, 1 RU per unit (Rack rails and hardware provided)

CERTIFICATIONS

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

SUPPLIED ACCESSORIES

Power Cord	1 power cord (based on country designation) **Note:** Units shipped to China do not include a power cord.
Rack Mount Kit	Brackets, rails, and hardware

OPTIONAL ACCESSORIES

WM5300	Vertical wall mount kit for one NET5308T set and one NET5308T-EXP unit; the WS5300 can also mount up to three NET5402R-HDs to a wall.

RECOMMENDED ACCESSORIES

UPS	APC Smart-UPS with USB connection

NOTICE: *Judgment as to the suitability of the products for users' purposes is solely the users' responsibility. Users should refer to the Operation manuals for cautionary statements regarding user selected options and how they might affect video quality. Users shall determine the suitability of the products for their own intended application, picture rate and picture quality. In the event users intend to use the video for evidentiary purposes in a judicial proceeding or otherwise, users should consult with their attorney regarding any particular requirements for such use.*

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Endura® GW5000 Gateway

PUBLIC NETWORK INTERFACE, NTSC/PAL

Product Features

- Delivers Video from an Endura® System to Public Network
- Manages up to 30 Connections Over Non-Endura Networks
- Provides Web Browser Access
- Works with NET5301-TC Video Transcoder
- Transmits Endura System Video in MPEG-4 or JPEG Formats
- Provides System Information Through E-mail and Event Messaging
- 2 Network Interfaces: Public and Private
- Uses Industry Standard Apache Web Server and PHP Engine Technology
- Compatible with Active Directory Networks

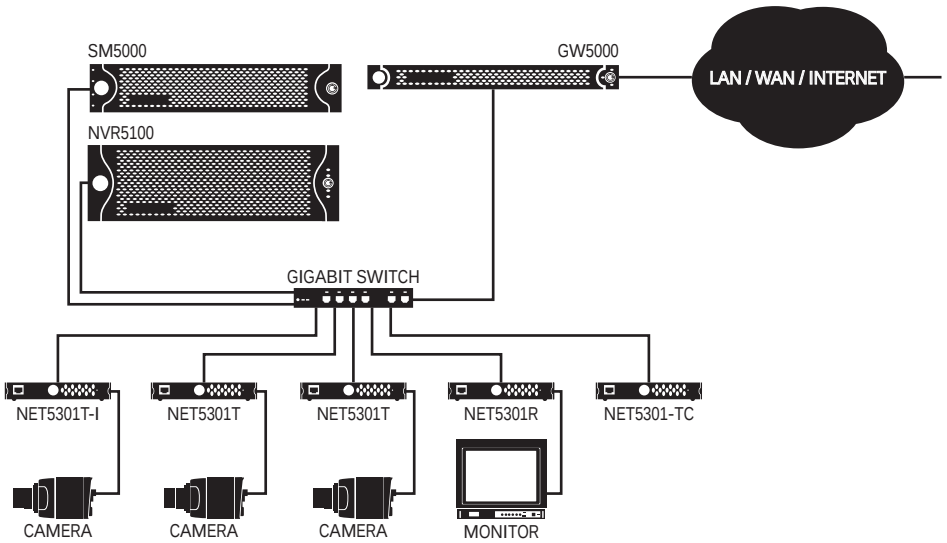
The **GW5000** gateway provides an interface to the Endura® system for users communicating through a public network with limited bandwidth, such as a local area network (LAN), wide area network (WAN), or the Internet.

The Endura technology provides high quality digital images that often exceed the bandwidth capabilities of public networks. When this occurs, the gateway receives the video from an Endura system and sends it over a public network for viewing through the Endura Web client.

The **GW5000** supports communication with the Endura network through Microsoft® Internet Explorer® versions 6.0 and 7.0 Web browsers on computers that are running a Windows® operating system.

The **GW5000** accepts Internet connections between bandwidths of 100 Mbps and 56 Kbps.

The Web client is translated into Arabic, Bulgarian, Chinese, Czech, Danish, Dutch, English, Finnish, French, German, Hungarian, Italian, Korean, Lithuanian, Norwegian, Polish, Brazilian Portuguese, Romanian, Russian, Spanish, Swedish, and Turkish.



IMPORTANT NOTE. PLEASE READ.
The network implementation is shown as a general representation only and is not intended to show a detailed network topology. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the system as illustrated. Please contact your local Pelco Representative to discuss your specific requirements.

TECHNICAL SPECIFICATIONS

MODEL

GW5000	Interface between Endura system and a public network with limited bandwidth

SYSTEM

Processor	PowerPC® 405EP
Operating System	Linux®
User Interface	GW5000 gateway Web client

VIDEO

Video Standards	Converts video from NTSC/PAL/EIA/CCIR composite	
Video Coding	MPEG-4/JPEG	
Video Streams	Manages up to 30 connections	
Video Resolutions	NTSC	PAL
4CIF	704 x 480	704 x 576
2CIF	704 x 240	704 x 288
CIF	352 x 240	352 x 288

Note: The GW5000 does not record video; it transmits video that has already been recorded on an Endura system.

NETWORK

Interface (Private)	1 Gigabit Ethernet RJ-45 port (1000Base-T)
Interface (Public)	56 kbps to 100 Mbps (100Base-T)

FRONT PANEL INDICATORS/FUNCTIONS

Power	Blue
CPU Activity	Yellow
Private Network Activity	Green
Network Status	Green, amber, red
Unit Status	Green, amber, red
Power Button	On, off (soft), off (hard)

POWER

Power Input	100–240 VAC, 50/60 Hz, 0.7 A, autoranging
Cable Type	1 USA (117 VAC); 1 European (220 VAC); 1 UK (250 VAC); all, 3 prongs, molded connector, 6 ft (1.8 m) cord
Power Consumption	40 W, 137 BTU/H (maximum)

SECURITY NOTICE: *The Endura GW5000 gateway is designed to serve as a point of access to a Pelco Endura network over a wide area network (WAN) infrastructure. The GW5000 is not intended to prevent unauthorized external access to your network, or to provide an effective method for monitoring or limiting access to the network or network resources. The customer should ensure that any confidential information or resources available on the local area network (LAN) are secured by a third-party firewall to prevent unauthorized access.*

The GW5000 is not designed to act as a corporate grade firewall and should not be exposed to Internet access without appropriate security measures. Installations that require greater security measures should consider using a virtual private network (VPN) connection for remote clients that connect to the Endura network. If the GW5000 is not used in conjunction with a secure VPN connection or firewall, it could serve as a point of entry for unauthorized access to your video security system.

ENVIRONMENTAL

Operating Temperature	32° to 95°F (0° to 35°C) at unit air intake (front of unit)
Storage Temperature	–40° to 149°F (–40° to 65°C)
Operating Humidity	20% to 80%, noncondensing
Maximum Humidity Gradient	10% per hour
Operating Altitude	–50 ft to 10,000 ft (–16 m to 3,048 m)
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 performance failure and unit damage, make sure the temperature at 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	16.7" D x 17.0" W x 1.7" H (42.4 x 43.2 x 4.3 cm)
Unit Weight	13.35 lb (6.10 kg)
Shipping Weight	20 lb (9.1 kg)
Mounting	Desk top (feet) Rack, 1 RU per unit (Rack ears and screws provided)

WEB CLIENT SYSTEM REQUIREMENTS

	Minimum	Recommended
Processor	Intel® Pentium® M 1.6 GHz	Intel Core™ 2 Duo 2.20 GHz
Internal Memory	512 MB	2 GB
Operating System	Microsoft Windows XP Professional	Windows XP Professional SP3
Display Adapter	32 MB Dedicated Video RAM	256 MB Dedicated Video RAM
Display Resolution	1280 x 1024	1280 x 1024
Web Browser	Internet Explorer 6.0	Internet Explorer 7.0

CERTIFICATIONS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick

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
- Compliance, 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"

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Endura® NET5301-TC Transcoder

VIDEO CONVERTER FOR PUBLIC NETWORKS, NTSC/PAL

Product Features

- Converts Video from an Endura® System to Smaller Formats for Increased Compatibility with Public Networks
- Works with GW5000 Gateway
- Converts Encoded Endura System Video Streams to MPEG-4 or JPEG Formats
- Accepts Encoded Video from any Endura Video Source (For Example, Encoders and IP Cameras)

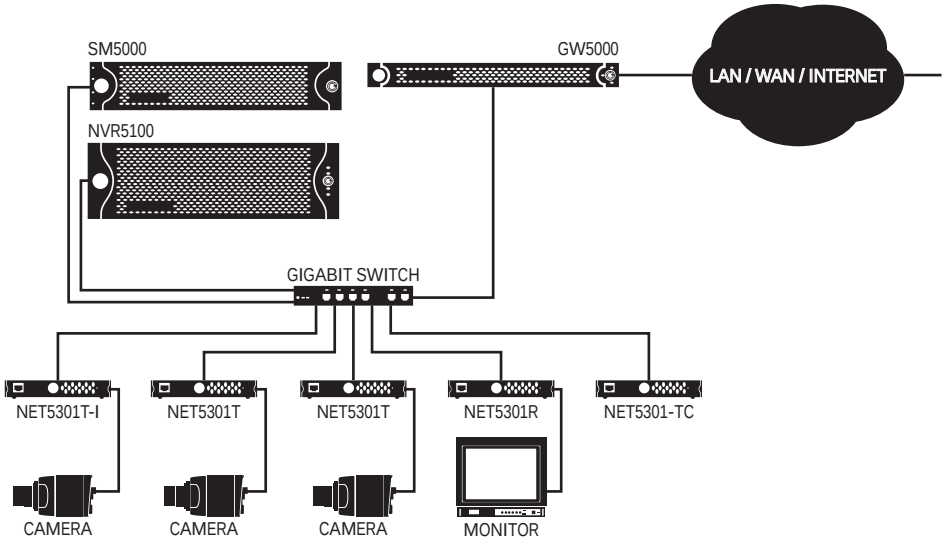
The **NET5301-TC** transcoder converts MPEG-4 video from the Endura® network into formats that are compatible with public networks with limited bandwidth, such as a local area network (LAN), wide area network (WAN), or the Internet.

Endura technology provides high quality digital images that often exceed the bandwidth capabilities of public networks. When this occurs, the **NET5301-TC** converts MPEG-4 video from the Endura network into MPEG-4 or JPEG formats that are suitable for the public network.

The **NET5301-TC** works in conjunction with the GW5000 Endura gateway device, which determines whether the Endura video should pass through the **NET5301-TC** before being placed on the public network.

The **NET5301-TC** accepts (transcodes) one MPEG-4, 4CIF, 30 images per second (ips) video stream from the Endura system.

The video output format, resolution, and frame rate are dynamically configurable. The available compression formats are MPEG-4 or JPEG. The available resolutions are CIF, 2CIF, or 4CIF or the PAL equivalent. The available frame rates are 1, 2, 5, 7 or 15 ips.



IMPORTANT NOTE. PLEASE READ.
The network implementation is shown as a general representation only and is not intended to show a detailed network topology. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the system as illustrated. Please contact your local Pelco Representative to discuss your specific requirements.

TECHNICAL SPECIFICATIONS

MODEL

NET5301-TC	Transcoder that converts MPEG-4 video from the Endura network into formats that are compatible with public networks with limited bandwidth. Converting MPEG video streams into 4 CIF JPEG streams often yields higher bit rates.

SUPPLIED ACCESSORY

Mating Connector	1, 2-pin

SYSTEM

Processor	PowerPC® 405EP
Operating System	Linux®
User Interface	GW5000 gateway Web client

VIDEO

Video Standards	NTSC/PAL/EIA/CCIR composite	
Video Coding	MPEG-4/JPEG	
Video Streams	1	
Video Resolutions	NTSC	PAL
4CIF	704 x 480	704 x 576
2CIF	704 x 240	704 x 288
CIF	352 x 240	352 x 288
Video Frame Rates		
MPEG-4	2, 5, 7, 15, 30 ips	
MJPEG	1 to 15 ips	

FRONT PANEL INDICATORS/FUNCTIONS

Network	RJ-45, 10/100Base-T
Power	Blue
Status	Green, amber, red
Network Link/Speed	Amber, red
Network Activity	Green
Configuration/Reset	Reserved for future use

POWER

Power Consumption	14.5 W, 24.2 VA
Power Input	12 VDC ±10% 24 VAC ±10%
Power Connectors	
4-Pin	For RK5200PS-5U or NET5301PS
2-Pin	For user-supplied power supply

ENVIRONMENTAL

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

*The RK5200PS-5U supplies approximately 200 W at 95°F (35°C). In environments at 95°F (35°C) and lower, you can install one unit in each of the 12 slots in the RK5200PS-5U.

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

Construction	Steel cabinet
Finish	Gray metallic with black end caps, black matte finish
Dimensions	8.75" D x 6.50" W x 1.20" H (22.2 x 16.5 x 3.0 cm)
Mounting	Desktop (feet), wall, or rack with options
Unit Weight	2.0 lb (0.9 kg)
Shipping Weight	5.0 lb (2.3 kg)

OPTIONAL ACCESSORIES

NET5301PS	12 VDC power supply (1 unit)
RK5200PS-5U	Rack mount with power supply (12 units)
WM5200-4U	Wall mount without power supply (1 unit)
WM5200-4UEXP	Wall mount expansion (1 unit)

CERTIFICATIONS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick

STANDARDS/ORGANIZATIONS

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- Compliance, ISO/IEC 14496 standard (also known as MPEG-4)
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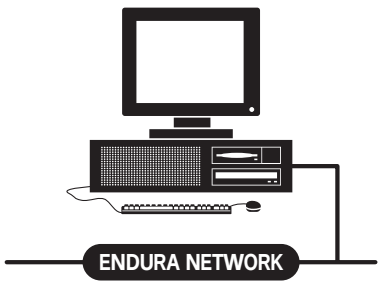
Endura® Advanced System Management Software

WS5200 VERSION 2.X MODELS

Product Features

- Software Runs on a Standard PC with Microsoft® Windows® XP Professional and 32-Bit Versions of Windows Vista® Business, Ultimate, or Enterprise Operating Systems
- Highly Intuitive Graphical User Interface Optimized for the Needs of Surveillance Professionals
- Unrestricted Scalability Easily Manages up to 10,000 Devices Simultaneously
- Optional Mapping Interface Provides Editing and Alarm Monitoring/Management Tools
- Support for Standard Resolution and Megapixel Resolution Cameras
- Support for MPEG-4, H.264 Baseline, Main, and High-Profile Codecs
- Audio Streaming and Playback
- Zone of Interest™ Allows Independent View and Management of Specified Areas Within a Camera's Field of View in Live or Playback Views
- Synchronized Playback of Multiple Cameras
- Digital Zoom in Live or Playback Views
- Convenient Tear-Off Options to Customize Display
- Maintains Camera's Native Aspect Ratio While Supporting 4:3 or 16:9 Aspect Ratio Monitors and a Mix of SD or Megapixel Video Content
- Capable of up to 16 Simultaneous 4SIF/CIF Resolution, 30/25 Frames per Second (fps) MPEG-4 Decode, 12 H.264 4SIF/CIF Resolution, 30/25 fps H.264 Baseline Decode, or 2 Full 1080 Pixels Decode in Real Time
- 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
- Powerful Scripting Engine to Automate Virtual Matrix Functionality
- On-Screen Pan/Tilt/Zoom (PTZ) Controls Including Click to Center and PTZ to Selected Area
- Camera Callup and PTZ Control from KBD5000
- Advanced Search Capabilities Including Motion, Alarm, Event, Camera
- Integrated Event and Alarm Monitoring and Management Interface
- User-Specific Choice of Language, Rights and Permissions, and Screen Configurations
- Export Video and Still Images in Multiple Formats Including PEF, QuickTime®, MPEG-4, AVI, PNG, BMP, and JPG



IMPORTANT NOTE: PLEASE READ. The network implementation is shown as a general representation only and is not intended to show a detailed network topology. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the system as illustrated. Please contact your local Pelco Representative to discuss your specific requirements.

The **WS5200** Advanced System Management Software provides access to all operation and configuration features of the Endura® system in a unified, intuitive, graphical user interface. The interface has been optimized for the demanding needs of surveillance professionals and utilizes drag-and-drop operations, shortcut menus, built-in tooltips, and online Help to enable the most direct, intuitive interactions with cameras and components distributed across the network.

Video Display Optimized for Surveillance

Surveillance operators require access to real-time live video and instant access to playback. The **WS5200** has been specifically designed to optimize performance, productivity, and effectiveness. Operators can customize up to six active workspaces. Each workspace can have its own screen configuration populated with any grouping of cameras. These workspaces allow the operator to rapidly switch from camera group to camera group. The workspaces and camera associations are automatically loaded upon login, along with the user's language preferences and permission levels. This eliminates any lost time in changing screen layouts or configurations during shift changes.

The second generation of the **WS5200** has also been designed to deliver optimum decoding performance to take advantage of the latest capabilities of analog cameras and advances in compression technology. The **WS5200** supports MPEG-4 as well as all common profiles of the latest H.264 codec. Provided the host PC has enough processing power, users can simultaneously decode sixteen 4CIF, MPEG-4 video streams in real time, or twelve H.264 baseline profile streams in real time, or two 1080p streams in real time. Of course, any combination is also supported. Additionally, more cameras can be viewed simultaneously using the **WS5200's** convenient tear-off tabs and leveraging multiple monitors to display up to 32 cameras concurrently. Endura's patent-pending EnduraView™ technology will manage the CPU processing load and network bandwidth requirements by automatically seeking out and displaying a lower resolution, secondary stream (if one exists), or reducing the refresh rate to ensure that system stabilization is not jeopardized.

To take advantage of the latest developments in monitor technology and camera capabilities, the **WS5200** interface automatically detects the monitor's native resolution and aspect ratio and configures the display to accommodate what the monitor can support. Based on the monitor's native aspect ratio, the **WS5200** supports screen configurations in single-image, 2 x 2, 3 x 3, 4 x 4, 1 + 5, 1 + 12, and 2 + 8 for 4:3 aspect ratio displays and adds 3 x 2 and 4 x 3 for 16:9 aspect ratio displays. As different cameras operate in different aspect ratios, the **WS5200** will maintain the native aspect ratio of the camera to minimize any potential distortion of the image. An innovative Zone of Interest™ feature makes it convenient to leverage the power of today's megapixel cameras to cover a large field of view while allowing a user to independently select certain areas of the scene to get a closer view. The **WS5200's** zone of interest capability consumes no additional processing power or network bandwidth as a user creates up to six independently controlled zones of interest from a single camera.

Recorded footage can be instantly accessed for any camera without impacting the maintenace of live surveillance of other cameras on the same monitor. Flexible synchronous playback allows operators to synchronize the playback of 16 cameras for investigations that require multiple vantage points of the same event. Additionally, the **WS5200** allows users to review recorded footage from any camera while simultaneously viewing the live stream from that camera on the same monitor. Camera controls, PTZ operation, video playback controls, snapshot capture, and export tools all conveniently appear over the video when the cursor is placed on the desired camera's view.

Fully Integrated Administration and Management

In addition to access to live and recorded video, the **WS5200** also serves as an administration and management console for the Endura system. With proper user credentials, administrative users can easily configure all devices and users on the system. Camera, encoder, recorder, and decoder hardware and software parameters can be accessed and managed from the administrative screens. Software patches and updates can easily be pushed out to select or multiple devices from the same console. User passwords, preferences, and credentials can be centrally managed from one **WS5200**.

All diagnostic messages from every component on the Endura network are available to any user and any viewing device. With proper credentials, administrators can easily configure all users and devices on the system. User actions and system messages are continuously logged and available for audit trail purposes.

Integrated Alarm Management Engine

The **WS5200** has a built-in alarm management engine. System alarms, motion, and video analytics alarms are displayed in a dedicated alarm workspace. As the alarm is generated, indicators display the type of alarm, the priority level of the alarm, and the current state of the alarm. Users can simply select the alarm and visually verify its cause before determining whether to acknowledge or snooze the alarm. Comments and instructions inserted by an administrator serve to provide more detail about the alarm or to instruct the operator about the next actions taken. Operators can also add their own comments to be logged with the associated alarm.

Extensible Architecture

The **WS5200** offers an optional interface to Endura Mapping. The mapping extension adds editing and map construction tools while providing for a convenient way to monitor the entire facility for alarms. Multiple layers can be turned on and off to provide access to key devices. In addition, multiple maps can be hyperlinked together to provide for easy navigation between map views.

As a fully integrated component of the **WS5200,** the mapping interface provides a convenient visual verification from a pop-up view. In addition to access to recorded and live video from the pop-up, operators can acknowledge or snooze the alarm, manually execute relays and scripts as a response to the alarm, capture a snapshot, or direct the associated camera onto the Endura monitor wall for further analysis and action.

TECHNICAL SPECIFICATIONS

MODELS

WS5200-1	Advanced System Management Software license for 1 seat
WS5200-5	Same as WS5200-1 except for 5 seats
WS5200-10	Same as WS5200-1 except for 10 seats
WS5200-25	Same as WS5200-1 except for 25 seats
WS5200-SITE	Same as WS5200-1 except for site

OPTIONAL SOFTWARE ACCESSORIES

WS5200-MAP	Endura Mapping interface

MINIMUM PC SPECIFICATIONS

Processor	Intel® Core™2 Duo, 1.66 GHz or better
Internal Memory	2 GB of RAM or higher
Operating System	Windows XP Professional SP3, 32-bit versions of Windows Vista Business SP1, or Windows Vista Ultimate SP1, or Windows Vista Enterprise SP2
Video System	Graphics card with DirectX 9.x or later, 256 MB of dedicated RAM
Network	1000 Mbps network port

VIDEO

Video Codecs Supported	MPEG-4 ASP; H.264 baseline, main, and high profiles
Decoding Performance	16X real-time MPEG-4 streams at 704 x 480; 12X real-time H.264 baseline profile streams at 704 x 480; 2X real-time H.264 baseline profile streams at 1080p
Screen Configurations	1 image, 4 images (2 x 2), 9 images (3 x 3), 16 images (4 x 4), 6 images (1 large + 5 small), 10 images (2 large + 8 small), 13 images (1 large + 12 small); High definition monitors can also display 6 images (3 x 2) and 12 images (4 x 3)

AUDIO

Audio Codec	G.711 ADPCM
Audio Bit-Rate	64 kbps

NETWORK

Infrastructure	Access to network infrastructure in compliance with the Endura Network Design Guide specifications

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
- Compliance, ISO/IEC 14496 standard (also known as MPEG-4)

NOTICE: *Judgment as to the suitability of the products for users' purposes is solely the users' responsibility. Users should refer to the Operation manuals for cautionary statements regarding user selected options and how they might affect video quality. Users shall determine the suitability of the products for their own intended application, picture rate and picture quality. In the event users intend to use the video for evidentiary purposes in a judicial proceeding or otherwise, users should consult with their attorney regarding any particular requirements for such use.*

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Endura® Mapping

ENDURA WORKSTATION MAP-BASED EXTENSION

Product Features

- Designed to Work with the Endura® WS5000 version 2.x Advanced System Management Software for Ease in Creating and Working With Maps
- Access to Mapping Functions and Cameras Managed Through Endura Roles and Permissions
- Import Existing Maps Generated in AutoCAD or as Images in BMP, JPEG, TIF, or GIF Format
- Create Custom Maps Using Integrated Shapes Tools
- Configurable Icons and Easy Association of Endura Devices to Icons
- Embed Hyperlinks in Maps to Link Various Maps, URL Pages, and Network Servers to Map Areas
- Icon Animation to Indicate State of Alarm and Automatic Tally of Types of Alarms per Icon
- Zoom Controls to Quickly Zoom in to a Specific Area on a Map
- Ability to Filter by Shapes and Icons to Quickly Access Required Views or Simply Jump to Predefined Views
- Access Cameras, Relays, Scripts, Alarms, and Video Wall Directly From Mapping Interface
- Access to Playback Video Related to an Alarm or Event with Commands to Mark Video and Take Snapshots

The **Endura® Mapping** interface gives operators the ability to display the physical location of cameras, alarms, and other Endura devices throughout a facility. Careful integration with the Endura WS5000 advanced system software makes setting up a map fast and intuitive. A flexible user interface with powerful filtering and navigation tools makes working with maps an effective way of monitoring a large and disparate system for the operator.

The ability to use maps created in AutoCAD, or available as common graphics files, allows administrators to quickly import an existing map to begin building a graphical representation of the site. Direct access to the Endura system provides a simple click-and-drag operation to assign cameras, alarms, and relays, to map icons. Icons can be customized in size and color to manage clutter on a map while still providing an effective way of determining where key components are located. Hyperlinks can be utilized throughout the map to easily link multiple maps together to create a hierarchy of views. Further, custom shape layers, icon layers, and views can be created to serve the needs of various operators.

Operators can launch the mapping interface through the WS5000 advanced system software. User rights and permissions are managed by the Endura system manager, providing a single database for managing the operator's experience and access in the mapping interface in accordance with the rest of the Endura system. Icons with alarms pulse with different colors to indicate the presence of an alarm. Each alarm severity supported in the Endura system is automatically tallied in their associated icon, providing operators with a quick view of the number of alarms and their severity for a given icon. An intuitive graphical user interface allows operators to access and acknowledge alarms, activate relays, and scripts, view live and recorded video, and even manage monitor wall displays without ever having to leave the application.

Powerful and yet easy to use, **Endura Mapping** provides an effective way of supporting Endura's scalable architecture without diluting an operator's ability to maintain vigilance over the surveillance system.

TECHNICAL SPECIFICATIONS

MODEL

WS5200-MAP	Site license for Endura Mapping

ENDURA SOFTWARE REQUIREMENTS

WS5000 version 2.x or later

SM5000 version 1.04.0027 or later

MINIMUM PC SPECIFICATIONS

Endura Workstation or the following PC Specifications

Processor	Intel Core™ 2 Duo 1.66 GHz or higher
Internal Memory	2 GB of RAM or higher
Operating System (32-bit version only)	Windows® XP Professional Service Pack 2; Windows Vista® Business, Windows Vista Ultimate SP1, or Windows Vista Enterprise SP2
Video System	Graphics card with 256 MB of Video RAM, 1280 x 1024 display resolution, and DirectX® 9.x or later
Network	1000 Gbps network port

COMPATIBLE IMAGE FILE FORMATS

- Windows Bitmap (bmp)
- Tagged Image File (tiff, tif)
- CompuServe Graphics Interchange Format (gif)
- Joint Photographic Experts Group (jpeg, jpg)
- AutoDesk AutoCAD Drawing Interchange Format (dxf) 12, 13, 2000, 2004 to 2007

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WS5070 Endura® Workstation

WITH WS5200 ADVANCED SYSTEM MANAGEMENT SOFTWARE

Product Features

- Provides Full Access to Operations and Administration Through User-Friendly and Highly Intuitive Graphical User Interface
- Microsoft® Windows Vista® Business 32-bit Operating System
- Highly Intuitive Graphical User Interface Optimized for Surveillance Professionals
- Unrestricted Scalability Easily Manages 10 to 10,000 Devices Simultaneously
- Optional Endura Mapping Interface Provides Editing and Alarm Monitoring/Management Tools
- Support for Standard Resolution and Megapixel Resolution Cameras
- Support for MPEG-4, H.264 Baseline, Main, and High-Profile Codecs
- Audio Streaming and Playback
- Zone of Interest™ Allows Independent View and Management of Specified Areas Within a Camera's Field of View in Live or Playback Views
- Synchronized Playback of Multiple Cameras
- Digital Zoom in Live or Playback Views
- Convenient Tear-off Options to Customize Display
- Maintains Camera's Native Aspect Ratio While Supporting 4:3 or 16:9 Aspect Ratio Monitors and a Mix of SD or Megapixel Video Content
- Capable of Up to 16 Simultaneous 4SIF/CIF Resolution, 30/25 Frames per Second (fps) MPEG-4 Decode, 12 H.264 4SIF/CIF Resolution, 30/25 fps H.264 Baseline Decode, or 2 Full 1080p
- 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
- Powerful Scripting Engine to Automate Virtual Matrix Functionality
- On-Screen Pan/Tilt/Zoom (PTZ) Controls Including Click to Center and PTZ to Selected Area
- Camera Call Up and PTZ Control from KBD5000
- Advanced Search Capabilities Including Motion, Alarm, Event, and Camera
- Integrated Event and Alarm Monitoring and Management Interface
- User-Specific Choice of Language, Rights and Permissions, and Screen Configurations
- Export Video and Still Images in Multiple Formats Including PEF, QuickTime®, MPEG-4, AVI, PNG, BMP, and JPG

The **Endura® workstation** is a high-end personal computer running Windows Vista® Business edition that is optimized for the **WS5200** advanced system management software. The **Endura workstation** can decode and display up to 16 video streams simultaneously and can process up to 30/25 (NTSC/PAL) images at 4CIF resolution per second, per stream. The **Endura workstation** includes the **WS5200** software package.

The **WS5200** software provides access to all operation and configuration features of the Endura system in a unified, intuitive, graphical user interface. The interface has been optimized for the demanding needs of surveillance professionals and utilizes drag-and-drop operations, shortcut menus, built-in tooltips, and online Help to enable the most direct, intuitive interactions with cameras and components distributed across the network.

Video Display Optimized for Surveillance

Surveillance operators require access to real-time live video and instant access to playback. The **WS5200** has been specifically designed to optimize performance, productivity, and effectiveness. Operators can customize up to six active workspaces. Each workspace can have its own screen configuration populated with any grouping of cameras. These workspaces allow the operator to rapidly switch from camera group to camera group. The workspaces and camera associations are automatically loaded upon logon, along with the user's language preferences and permission levels. This eliminates any lost time in changing screen layouts or configurations during shift changes.

The second generation of the **WS5200** has also been designed to deliver optimum decoding performance to take advantage of the latest capabilities of analog cameras and advances in compression technology. The **WS5200** supports MPEG-4 as well as all common profiles of the latest H.264 codec. Provided the host PC has enough processing power, users can simultaneously decode sixteen 4CIF, MPEG-4 video streams in real time, or twelve H.264 baseline profile streams in real time, or two 1080p streams in real time. Of course, any combination is also supported. Additionally, more cameras can be viewed simultaneously using the **WS5200's** convenient tear-off tabs and leveraging multiple monitors to display more content. Endura's patent-pending EnduraView™ technology will manage the CPU processing load and network bandwidth requirements by automatically seeking out and displaying a lower resolution, secondary stream (if one exists), or reducing the refresh rate to ensure that system stabilization is not jeopardized.

To take advantage of the latest developments in monitor technology and camera capabilities, the **WS5200** interface automatically detects the monitor's native resolution and aspect ratio and configures the display to accommodate what the monitor can support. Based on the monitor's native aspect ratio, the WS5200 supports screen configurations in single-image, 2 x 2, 3 x 3, 4 x 4, 1 + 5, 1 + 12, and 2 + 8 for 4:3 aspect ratio displays and adds 3 x 2 and 4 x 3 for 16:9 aspect ratio displays. As different cameras operate in different aspect ratios, the **WS5200** will maintain the native aspect ratio of the camera to minimize any potential distortion of the image. An innovative Zone of Interest™ feature makes it convenient to leverage the power of today's megapixel cameras to cover a large field of view while allowing a user to independently select certain areas of the scene to get a closer view. The **WS5000's** zone of interest capability consumes no additional processing power or network bandwidth as a user creates up to six independently controlled zones of interest from a single camera.

Recorded footage can be instantly accessed for any camera without impacting the ability to maintain live surveillance over other cameras on the same monitor. Flexible synchronous playback allows operators to synchronize the playback of 16 cameras for investigations that require multiple vantage points of the same event. Additionally, the **WS5200** allows users to review recorded footage from any camera while simultaneously viewing the live stream from that camera on the same monitor. Camera controls, PTZ operation, video playback controls, snapshot capture, and export tools all conveniently appear over the video when the cursor is placed on the desired camera's view.

Fully Integrated Administration and Management

In addition to access to live and recorded video, the **WS5200** also serves as an administration and management console for the Endura system. With proper user credentials, administrative users can easily configure all devices and users on the system. Camera, encoder, recorder, and decoder hardware and software parameters can be accessed and managed from the administrative screens. Software patches and updates can easily be pushed out to select or multiple devices from the same console. User passwords, preferences, and credentials can be centrally managed from one **WS5200.**

All diagnostic messages from every component on the Endura network are available to any user and any viewing device. With proper credentials, administrators can easily configure all users and devices on the system. User actions and system messages are continuously logged and available for audit trail purposes.

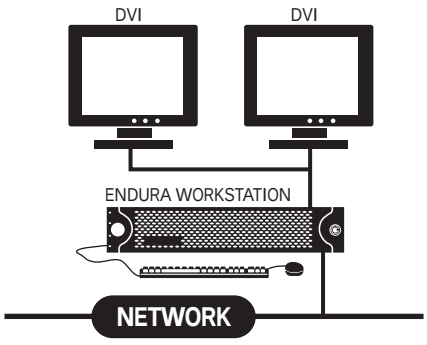
Integrated Alarm Management Engine

The **WS5200** has a built-in alarm management engine. System alarms, motion, and video analytics alarms are displayed in a dedicated alarm workspace. As the alarm is generated, indicators display the type of alarm, the priority level of the alarm, and the current state of the alarm. Users can simply select the alarm and visually verify its cause before determining whether to acknowledge or snooze the alarm. Comments and instructions inserted by an administrator serve to provide more detail about the alarm or to instruct the operator about the next actions taken. Operators can also add their own comments to be logged with the associated alarm.

Extensible Architecture

The **WS5200** offers an optional interface to Endura Mapping. The mapping extension adds editing and map construction tools while providing for a convenient way to monitor the entire facility for alarms. Multiple layers can be turned on and off to provide access to key devices. In addition, multiple maps can be hyperlinked together to provide for easy navigation between map views.

As a fully integrated component of the **WS5200,** the mapping interface provides a convenient visual verification from a pop-up view. In addition to access to recorded and live video from the pop-up, operators can acknowledge or snooze the alarm, manually execute relays and scripts as a response to the alarm, capture a snapshot, or direct the associated camera onto the Endura monitor wall for further analysis and action.



IMPORTANT NOTE: PLEASE READ. The network implementation is shown as a general representation only and is not intended to show a detailed network topology. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the system as illustrated. Please contact your local Pelco Representative to discuss your specific requirements.

TECHNICAL SPECIFICATIONS

WORKSTATION HARDWARE SPECIFICATIONS

Processor	Intel® Core™ 2 Quad Q9400
Internal Memory	4 GB RAM
Operating System	Windows Vista Business SP1, 32-bit version
User Interface	Graphical User Interface, WS5200 version 2.X, advanced system management software
Video System	Graphics card with 512 MB video RAM (nonshared memory), 2560 x 1600 display resolution-capable, and DirectX® 10; true color (32 bit), 2 dual-link DVI outputs

VIDEO

Video Standards	XVGA (2560 x 1600) 60 Hz capability for NTSC 75 Hz capability for PAL
Video Coding	MPEG-4; H.264 baseline, main, and high profile
Video Display Speed	480/400 fps (NTSC/PAL) in each workspace
Video Display Modes	1 image, 4 images (2 x 2), 9 images (3 x 3), 16 images (4 x 4), 6 images (1 large + 5 small), 10 images (2 large + 8 small), 13 images (1 large + 12 small); High definition monitors can also display 6 images (3 x 2) and 12 images (4 x 3)
Video Decoding Supported	MPEG-4 ASP; H.264 baseline, main and high profiles
Decoding Performance	16x real-time MPEG-4 streams at 704 x 480 12x real-time H.264 baseline profile streams at 704 x 480 2x real-time H.264 baseline profile streams at 1080p
Video Outputs	2 DVI or VGA outputs (2 DVI- to-VGA adapters supplied)

AUDIO

Audio Decoding	G.711 speech codec
Audio Bit-rate	64 kbps
Audio Levels	
Input	Electret microphone
Output	Up to 3 Vp-p, adjustable, minimum load of 8 ohms
Audio Connectors	3, 3.5 mm stereo jacks
Connector Tip	Signal left (input and output)
Connector Ring	Signal right (input and output)
Connector Sleeve	Common
Audio Inputs	Microphone and line-in
Audio Outputs	Speaker or line out

PTZ CONTROL

PTZ Interface	On-screen

NETWORK

Interface	Gigabit Ethernet RJ-45 port (1000Base-T)
Security	2 modes: secure mode (device authentication) and unsecure mode

AUXILIARY INTERFACES

USB Ports	7 USB 2.0 ports (1 front, 6 rear)

FRONT PANEL

DVD±RW/CD-RW Drive	
CD read/write speed	24X
CD rewrite speed	24X
DVD read/write speed	8X
DVD dual layer read/write speed	8X/6X
Buttons	Power, configuration/reset
Indicators	
Power	Blue if power
Network Activity	Green when activity
Unit Status	Green, yellow, red

POWER

Power Input	100 to 240 VAC, 50/60 Hz, autoranging
Power Supply	Internal
Power Consumption	Operating Maximum
100 VAC	160 W, 1.60 A, 547 BTU/H
115 VAC	160 W, 1.39 A, 547 BTU/H
220 VAC	160 W, 0.72 A, 547 BTU/H

ENVIRONMENTAL

Operating Temperature	50° to 95°F (10° to 35°C) at unit air intake (front of unit)
Storage Temperature	–40° to 149°F (–40° to 65°C)
Operating Humidity	20% to 80%, noncondensing
Maximum Humidity Gradient	10% per hour
Operating Altitude	–50 to 10,000 ft (–15 to 3,048 m)
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 performance failure and unit damage, make sure the temperature at the unit is continuously within the operating temperature range.

PHYSICAL

Construction	Steel cabinet
Finish	
Front panel	Gray metallic with black end caps
Chassis	Black matte finish
Dimensions	17.0" D x 17.1" W x 3.5" H (43.2 x 43.4 x 8.9 cm)
Mounting	Desktop (feet) or rack (2 RU per unit)
Unit Weight	28.8 lb (13.06 kg)

MODELS

Use the following table to create a model number for your WS5070. For example, the model number for a unit with a United Kingdom power cord would be WS5070-UK.

Model	Country Code	Description
WS5070	US = North America AU = Australia AR = Argentina EU = Europe UK = United Kingdom	Endura Workstation with WS5200 version 2.x advanced system management software package (WS5200-1) and regional power cord
	CN = China	Endura Workstation with WS5200 version 2.x advanced system management software package (WS5200-1) and no power cord

SUPPLIED ACCESSORIES

Pelco Keyboard
Pelco Mouse
Resource Disc
Recovery Disc
Nero® StartSmart Disc
Windows Vista Business Edition Disc
Rack Mount Kit (for mounting in a 2 RU rack)
Power Cord
Note: Units shipped to China do not include a power cord.

OPTIONAL SOFTWARE ACCESSORIES

WS5200-MAP	Endura Mapping interface

CERTIFICATIONS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- S-Mark for Argentina
- CCC
- C-Tick

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 Frequencies"

NOTICE: *Judgment as to the suitability of the products for users' purposes is solely the users' responsibility. Users should refer to the Operation manuals for cautionary statements regarding user selected options and how they might affect video quality. Users shall determine the suitability of the products for their own intended application, picture rate and picture quality. In the event users intend to use the video for evidentiary purposes in a judicial proceeding or otherwise, users should consult with their attorney regarding any particular requirements for such use.*

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VCD5202 Video Console Display

MULTICHANNEL VIDEO DISPLAY AND USER INTERFACE

Product Features

- Optimized Virtual Matrix User Interface Provides Full Operator Access Through a User-Friendly, Icon-based, Semitransparent Heads-up Menu Display
- Optimized to Work with the KBD5000 Endura® Keyboard
- User Specific Language Preferences
- Decodes up to 32 Streams Across 2 High Definition Monitors
- Support for High Definition Monitors Through DVI Video Outputs
- Multiple VCDs and Network Decoders Can Be Configured in a Monitor Wall and Accessed from a Single Keyboard
- Multiple Screen Configurations Support Simultaneous Live and Playback Views
- Exports Video and Still Images to a User-Supplied USB Memory Device or Internal CD/DVD Recorder in Multiple Formats, Including Pelco Native, QuickTime® MPEG-4, PNG, BMP, and JPG

The **VCD5202** video console display (VCD) delivers virtual matrix functionality for surveillance operators. The **VCD5202** uniquely addresses the requirements of real-time surveillance installations while balancing the complexity introduced by today's IP and megapixel cameras. Each **VCD5202** decodes up to 32 streams, manages elaborate video walls, and provides for CCTV-style keyboard control and management functionality.

Each **VCD5202** is capable of simultaneously decoding sixteen MPEG-4 streams at 4CIF resolution and 30/25 images per second (ips), twelve H.264 baseline streams at 4CIF resolution and 30/25 ips, or two full 1080p streams in real time. When additional streams are displayed, the VCD5202 uses the patent-pending EnduraView™ technology to automatically seek out and display a lower resolution, second stream from the camera. The technology can also reduce the refresh rate to minimize the impact on processing requirements and network overhead.

Standard resolution and megapixel video streams can be displayed in single, 2 x 2, 3 x 3, 4 x 4, 1 + 5, 1 + 12, and 2 + 8 configurations on 4:3 aspect ratio monitors. For 16:9 aspect ratio monitors, 3 x 2 and 4 x 3 configurations are also available. Any combination of live or playback streams can be displayed simultaneously, including both live and playback streams from the same camera.

Each **VCD5202** drives two high definition monitors (monitor resolutions up to 2560 x 1600) through DVI-I connections. The VCD5202 can also manage a video wall of monitors attached to network decoders or Microsoft® Windows® workstations.

The **VCD5202** incorporates a heads-up display designed to provide efficient control while allowing the operators to remain focused on the video being observed. Working in conjunction with the optional KBD5000, the icon-based menu structure is blended across the primary monitor's display. Shortcut keys on the KBD5000 allow operators to quickly access critical functionality without having to look away from their monitors.

When exporting video, the **VCD5202** provides a built-in DVD burner and the option of exporting video on a user-supplied USB memory key. Audio monitoring is enabled through a built-in speaker in the KBD5000.

TECHNICAL SPECIFICATIONS

MODELS

The following table describes the VCD5202 model numbers. For example, the model number for a unit with a United Kingdom power cord is VCD5202-UK.

Note: Units shipped to China do not include a power cord.

Model	Country Code
VCD5202	US = North America EU = Europe UK = United Kingdom CN = China AU = Australia AR = Argentina

SUPPLIED ACCESSORIES

Power Cord	1 power cord (based on country designation) **Note:** Units shipped to China do not include a power cord.
Rack Mount Kit	Brackets, rails, and hardware
Bezel Key	2 bezel keys
DVI to VGA Converters	2 DVI-to-VGA Converters

SYSTEM

Operating System	Linux®
User Interface	Icon-based, heads-up display

VIDEO

Video Standards	XVGA (2560 x 1600); 60 Hz capability for NTSC; 75 Hz capability for PAL
Video Coding	MPEG-4, H.264 baseline, main, and high profile
Video Outputs	2 DVI or VGA outputs (2 DVI-to-VGA adapters supplied)

AUDIO

Audio Decoding	G.711 speech codec
Audio Bit Rate	64 kbps
Audio Inputs	Microphone and line in through KBD5000
Audio Outputs	Speaker or line out through KBD5000

PTZ CONTROL

PTZ Interface	Through KBD5000

NETWORK

Interface	Gigabit Ethernet RJ-45 port (1000Base-T)

AUXILIARY INTERFACES

USB Ports	7 USB 2.0 (1 front, 6 rear)

FRONT PANEL FUNCTIONS/INDICATORS

DVD+/-RW/CD-RW Drive	
CD Read/Write Speed	24X
CD Rewrite Speed	24X
DVD Read/Write Speed	8X
DVD Dual Layer Read/Write Speed	8X/6X
Buttons	Power, configuration/reset
Indicators	
Power	Blue for power
Network Activity	Green or red for activity
Unit Status	Green, yellow, red

POWER

Power Input	100 to 240 VAC, 50/60 Hz, autoranging
Power Supply	Internal
Power Consumption	Operating Maximum
100 VAC	160 W, 1.60 A, 547 BTU/H
115 VAC	160 W, 1.39 A, 547 BTU/H
220 VAC	160 W, 0.72 A, 547 BTU/H

ENVIRONMENTAL

Operating Temperature	50˚ to 95˚F (10˚ to 35˚C) at unit air intake (front of unit)
Storage Temperature	–40˚ to 149˚F (–40˚ to 65˚C)
Operating Humidity	20% to 80%, noncondensing
Maximum Humidity Gradient	10% per hour
Operating Altitude	–50 to 10,000 ft (–15 to 3,048 m)
Operating Vibration	0.25 G at 3 Hz to 200 HZ at a sweep rate of 0.5 octave/min.

Note: The temperature at the unit air intake can be significantly higher than room temperature. Temperature is affected by rack configuration, floor ayout, 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	
Front panel	Gray metallic with black end caps
Chassis	Black matte finish
Dimensions	17.0" D x 17.1" W x 3.5" H (43.2 x 43.4 x 8.9 cm)
Mounting	Desktop (feet) or rack (2 RU per unit)
Unit Weight	28.8 lb (13.06 kg)

CERTIFICATIONS/RATINGS

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

NOTICE: *Judgment as to the suitability of the products for users' purposes is solely the users' responsibility. Users should refer to the Operation manuals for cautionary statements regarding user selected options and how they might affect video quality. Users shall determine the suitability of the products for their own intended application, picture rate and picture quality. In the event users intend to use the video for evidentiary purposes in a judicial proceeding or otherwise, users should consult with their attorney regarding any particular requirements for such use.*

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KBD5000 Keyboard

FULL FUNCTIONALITY, MODULAR CONTROLS, PAN/TILT/ZOOM CONTROL

Product Features

- Controls Located on 3 Modules in the Keyboard
- Modules Can Be Rotated to Suit User Preference
- 1 Keyboard Can Control All System Cameras Through a VCD5202 Interface
- Built-in USB Hub for Connection of Export Devices
- Variable Speed, Vector-Solving Joystick for Precise Pan/Tilt/Zoom (PTZ) Control
- Jog/Shuttle for Playback Control and Menu Navigation
- Keypad Call-Up of Cameras, Presets, and Patterns
- Built-in Speaker

The **KBD5000** keyboard is optimized for surveillance requirements in controlling virtual matrix cameras. User feedback is provided through the VCD5202's head-up display and built-in LED lighting on the keyboard. It is compatible with the Endura®-distributed IP video surveillance system and Endura-based DVRs. Limited functionality is available for the DS ControlPoint user interface and the Endura WS5200 client interface.

The **KBD5000** is configured with three control modules that can be rotated individually to provide ergonomic comfort for the operator. These modules include:

- A variable speed, vector-solving joystick with keys for lens iris and focus control. The barrel-type joystick provides precise pan and tilt control of fixed speed and variable speed positioning systems. Twisting the joystick zooms the lens in and out. The joystick and control buttons are used for navigating the on-screen configuration menus of the compatible VCD5202.
- A jog dial/shuttle ring for playback and menu navigation. The jog/shuttle contains four illuminated function keys. Each key's color corresponds to the color of the icons displayed on the monitors linked to the user interface. This intuitive color matching design lets users navigate the on-screen menus without taking their eyes off of the video to read keyboard text labels.
- A keypad for camera and monitor control. Keys select cameras and monitors and the number of cameras to view.

The **KBD5000** contains a built-in wrist support for added comfort. The context-sensitive Help key is another unique feature of this keyboard. In addition, easy export is accomplished using the **KBD5000's** USB port.

The **KBD5000** can be logically configured so any number of keyboards can be added to the system. When combined with Pelco's Endura IP video management system, the KBD5000 delivers CCTV-style control for virtual matrix applications.

TECHNICAL SPECIFICATIONS

MODEL

KBD5000	Desktop keyboard with control pods for full switching and configuration capabilities, plus joystick control of PTZ functions and jog/shuttle playback control

SUPPLIED ACCESSORIES

1 external power supply

3 power cords (1 USA standard, 1 UK standard, and 1 European standard)

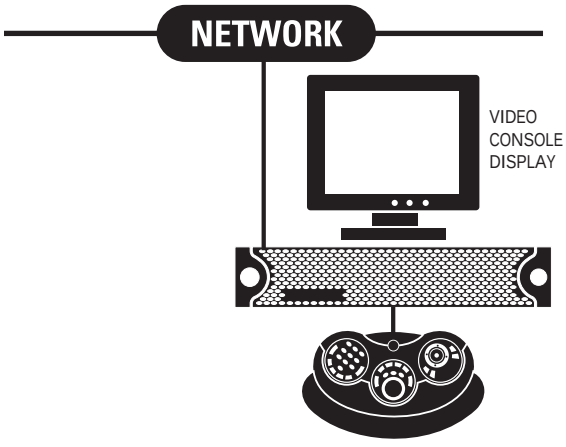
POWER SUPPLY

Input Voltage	100 to 240 VAC, 50/60 Hz
Output Voltage	12 VDC
Power Output	20 W
Input Connector Type	Universal
Output Connector Type	2.5 mm screw-on barrel

KEYBOARD BASE

Keyboard Interface	USB 2.0
Cable	USB, captive, 16.4 ft (5.0 m)
Input Voltage	12 VDC
Input Current	1.3 A (maximum)
Upstream Port	USB 2.0 (USB type B connector)
Downstream Port	2, USB 2.0 high/full/low speed (USB type A connector)
Audio Output	Embedded speaker or plug-in headset, 0.5 W into 8-ohm load per channel
Audio Input*	Plug-in microphone, mono, (30 to 350 mVp-p); or line input, stereo (0.35 to 2.0 Vp-p)

*Reserved for future use.



KBD5000 KEYBOARD

IMPORTANT NOTE: **PLEASE READ.** The network implementation is shown as general representation only and is not intended to show a detailed network topology. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the system as illustrated. Please contact your local Pelco Representative to discuss your specific requirements.

KEYBOARD MODULES

Keyboard Keypad	0 to 9 keys, camera, monitor, and multiple view keys
Joystick	Fully proportional pan/tilt, variable speed; with zoom, iris, and focus controls
Jog/Shuttle	Proportional, fast forward, reverse, and video transport; menu navigation on VCD5202 video console display

GENERAL

Dimensions	
Without Wrist Support	7.86" D x 14.78" W x 4.6" H (19.96 x 37.54 x 11.68 cm)
With Wrist Support	9.94" D x 16.88" W x 4.6" H (25.25 x 42.88 x 11.68 cm)
Weights	
Unit Weight	
Without Wrist Support	2.68 lb (1.22 kg)
With Wrist Support	3.32 lb (1.51 kg)
Shipping Weight	5 lb (2 kg)

ENVIRONMENTAL

Operating Temperature	32° to 104°F (0° to 40°C) at unit air intake
Storage Temperature	–40° to 149°F (–40° to 65°C)
Operating Humidity	Up to 96%

CERTIFICATIONS/RATINGS/PATENTS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- S Mark for Argentina
- U.S. Patents #D525,262 S; D515,580 S; D516,073 S

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Endura® UDI5000-CAM Universal Device Interface

FLEXIBLE INTEGRATION PLATFORM FOR ENDURA AND THIRD-PARTY CAMERAS

Product Features

- Concurrently Runs Disparate Drivers in Support of MPEG4 or H.264 Compliant Third-Party IP Cameras
- Handles Command and Control Translations Between Endura® and Each Third-Party IP Camera in Support of PTZ Protocols
- Accommodates Cameras Supporting RTP, RTSP, TCP, HTTP Polling, and Several Custom Transmission Protocols
- Normalizes Camera Stream Parameters to Support Endura's Scalable, Real-Time Monitoring and Recording Capabilities
- Small, Independently Configured Servers Can Accommodate Up to 16 Standard Resolution Streams or Megapixel Streams (Depending on Camera, Vendor, and Bandwidth)
- No Additional Camera Connection Licenses Required

The **UDI5000-CAM** universal device interface is designed to allow third-party IP cameras to easily and transparently interface to the Endura® system. With the proliferation of IP camera technology, a great deal of variability exists between IP camera vendors in terms of supported protocols for streaming and command and control. While efforts are underway to create an industry standard, each vendor has and may continue to have several disparate protocols and drivers that their family of IP cameras support. The **UDI5000-CAM** provides an efficient way to normalize disparate drivers and protocols into a cohesive set that is compatible with Endura and the rest of Pelco's IP video surveillance portfolio.

Protocol Conversion and Stream Management

The **UDI5000-CAM** can easily accommodate camera streams that use HTTP polling, TCP, RTP, or RTSP protocols. Regardless of the streaming protocol the camera uses, the **UDI5000-CAM** converts the transmitted stream to an RTP header that is RFC1889/RFC3550-compliant for use by Endura.

Since Endura uses information such as the source time stamp placed in the user data section of the transmission packet, the **UDI5000-CAM** will inject this information if it is missing from the camera. And if the camera does not support multiple outgoing streams or multicast streaming, the **UDI5000-CAM** multiplexes the single stream into streams that can be used by an unlimited number of viewers and recorders.

The **UDI5000-CAM** converts command and control protocols used by the IP cameras into the SOAP/XML protocol used by Endura for camera control.

Convenient Scalability and Packaging

Endura's promise of unlimited scalability is extended to the use of third-party IP cameras through the **UDI5000-CAM**. Each **UDI5000-CAM** can accommodate up to 16 standard resolution cameras or up to 8 megapixel cameras from most manufacturers. Any combination of camera type and manufacturer is also supported. The built-in bandwidth monitor allows the administrator to maximize the number and type of cameras that each **UDI5000-CAM** can accommodate. To provide unrestricted scalability, each **UDI5000-CAM** is an independent server that can run multiple concurrent disparate drivers and normalization routines. This capacity virtually eliminates undue load on other Endura servers and components.

The **UDI5000-CAM** server is a half-width, 1 RU server. The compact size allows for two **UDI5000-CAMs** to be rack mounted next to each other in just 1 RU of space using the optional rack mount kit.

Network Administration and Upgradeability

The **UDI5000-CAM** supports Single Network Management Protocol (SNMP) monitoring and traps along with Endura diagnostic monitoring. As such, health status information is available through the Endura workstation or an external SNMP monitoring application.

The **UDI5000-CAM** complies with Endura's firmware upgrade scheme, allowing administrators to easily push out updated drivers and other utilities over the network as they become available from Pelco.

TECHNICAL SPECIFICATIONS

MODELS

Use the following table to create a model number to specify your **UDI5000-CAM**. For example, the model number for a unit that includes a European power cord is UDI5000-CAM-EU.

Model	Country Code
UDI5000-CAM	-US = North America -EU = Europe -UK = United Kingdom -CN = China -AU = Australia -AR = Argentina

SUPPLIED ACCESSORIES

Power Cord	2 power cords (based on country designation) **Note:** Units shipped to China do not include power cords

OPTIONAL ACCESSORIES

RK-UDI5000	UDI5000-CAM rack mount kit; optional 1 RU rack mount assembly, hardware, and power supply support bracket

SUPPORTED CAMERA MODELS

The UDI5000-CAM supports several IP device vendors. For a complete list of supported cameras, go to *www.pelco.com*.

SYSTEM

Operating System	Embedded Linux™

NETWORK

Interface	1 Gigabit Ethernet RJ-45 port (1000 Base-T)

FRONT PANEL INDICATORS

Buttons	Power
Indicators	
Power	Blue if power
Network Activity	Green, amber, red
Unit Status	Green, amber, red

POWER

Power Consumption	31.2 W, 107 BTU/H
Power Input	12 VDC ±10%

ENVIRONMENTAL

Operating Temperature	50° to 95°F (10° to 35°C) at unit air intake
Storage Temperature	–40° to 149°F (–40° to 65°C)
Operating Humidity	20% to 80%, noncondensing
Maximum Humidity Gradient	10% per hour
Operating Altitude	–50 to 10,000 ft (–15 to 3,048 m)
Operating Vibration	0.25 G at 3 Hz to 200 HZ at a sweep rate of 9.5 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 performance failure and unit damage, make sure the temperature at the unit is continuously within the operating temperature range.

PHYSICAL

Construction	Steel cabinet
Finish	
Front Panel	Gray metallic with black end caps
Chassis	Black matte finish
Dimensions	12.32" D x 8.5" W x 1.70" H (31.3 x 21.6 x 4.3 cm)
Mounting	Desktop (feet) or rack (1 RU per unit, requires optional rack mount kit)
Unit Weight	6.6 lbs (3 kg)
Shipping Weight	8.0 lbs (3.6 kg)

RECOMMENDED PC REQUIREMENTS

Web Browser	Microsoft® Internet Explorer® 7 or later
Media Player	Adobe® Flash® Player 3.0

ENDURA SYSTEM COMPATIBILITY REQUIREMENTS

WS5200	Version 2.1 or later
VCD5202	Version 2.0 or later
NET5402R	Version 2.0 or later

CERTIFICATIONS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick
- CCC

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RK5200PS-5U Rack Mount

CHASSIS FOR ENDURA® SYSTEM MODULES

Product Features

- Mounts in Standard 19-inch (48.26 cm) Rack
- Hot-Swappable Internal Power Supplies
- Thermal Management Included
- Optional Blank Modules
- Integrates with Pelco Endura® Modules
- 5 Rack Units (RU) High

The **RK5200PS-5U** chassis has redundant hot swappable internal power supplies, thermal management, and can contain up to 12 Endura® system modules. The chassis measures 5 RU in height. The internal power supply powers all modules and can be replaced easily if it fails. The Pelco badge on the front of the power supply illuminates blue when the power supply is running, and a status LED provides notification of a power failure on either of the redundant power supplies. The chassis is designed to mount into an EIA-standard, 19-inch (48.26 cm) rack.

The internal power supply has a relay output connector that is directly wired to the power and is a normally closed (N.C.) dry contact. If the power supply fails, the relay opens and the LED above the Pelco badge lights up.

Optional blank modules (RK5001B-4U) can be inserted into empty module slots to create a clean, full-rack look as well as ensure proper airflow if the rack contains fewer than 12 modules.

TECHNICAL SPECIFICATIONS

MODEL

RK5200PS-5U	Rack mount chassis for up to 12 Endura modules; redundant internal power supply

GENERAL

Dimensions	15.50" D x 17.70" W x 8.72" H (39.37 x 44.96 x 22.15 cm)
Mounting	Fits 19-inch (48.26 cm), EIA-standard rack
Unit Weight	12.7 lb (5.76 kg), with power supply 37.8 lb (17.15 kg), fully populated
Shipping Weight	44.0 lb (19.93 kg)

ELECTRICAL

Input Voltage	100-240 VAC, 50-60 Hz, autoranging
Output Voltage	12 VDC
Power Consumption	Operating Maximum*
100 VAC	75 W, 256 BTU/H†
115 VAC	75 W, 256 BTU/H†
220 VAC	70 W, 239 BTU/H†
Fuse	4 A/250 V
Redundant Capability	Yes, hot swappable

MECHANICAL

Number of Slots	12 for modules and 2 for power supply
Module Orientation	Vertical
Rack Units‡	5 (includes thermal management)
Construction	Aluminum
Finish	Black

ENVIRONMENTAL

Operating Temperature	41° to 95°F (5° to 35°C) at air intake (front of unit)
Storage Temperature	–40° to 149°F (–40° to 65°C)
Operating Humidity	20% to 80% noncondensing
Maximum Humidity	Gradient 10% per hour
Operating Altitude	–50 ft to 10,000 ft (–16 m to 3,048 m)
Operating Vibration	0.25 G at 3 Hz to 200 Hz at a sweep rate of 0.5 octaves/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 performance failure and unit damage, make sure the temperature at the unit is continuously within the operating temperature range. The RK5200 pulls air from the bottom of the rack, across the modules, and then exhausts the heated air through the upper-rear of the rack. A 1 RU spacer below the rack is required to ensure adequate airflow.

CERTIFICATIONS

- CE, Class A
- FCC, Class A
- UL/cUL Listed
- C-Tick
- S Mark for Argentina

OPTIONAL ACCESSORIES

RK5001B-4U	Single-width blank module
RK5200PS	Replacement power supply module

*Operating maximum is noninclusive of components within the rack.

†BTU/H is based on 20% internal inefficiency rating; 80% of power output is consumed by NET5400T1 units.

‡Use a 1 RU spacer under the rack to ensure adequate airflow.

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WM5200-4U Wall Mount

WALL MOUNT KITS FOR ENDURA® SYSTEM MODULES

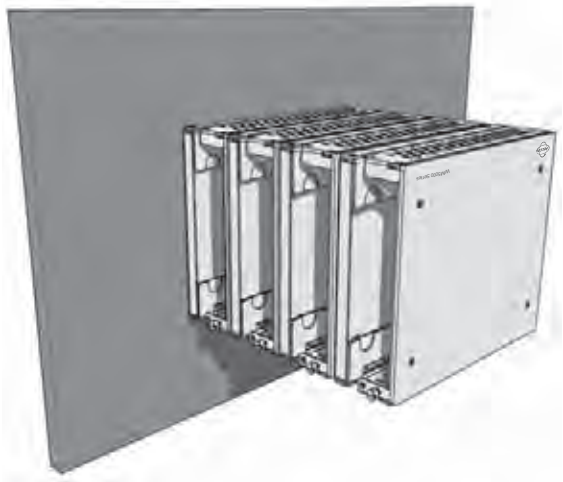
Product Features

- Any Orientation for Wall-Mounted Modules
- Wall Brackets Accommodate NET5400T Encoders and Single-Width Modules
- Rubber Feet Attached to Wall Brackets for Desktop Placement
- Aesthetic Cover Plates
- Optional Expansion Kit for Applications Where Wall Space Is a Premium
- Integrates with Stand-Alone Power Supplies

Up to four Endura® system modules can be installed when using the **WM5200-4U** wall mount kit. The base kit includes a wall bracket that can be mounted onto a wall in any orientation and a module sleeve with cover plate. The **WM5200-4UEXP** expansion kit includes an additional module sleeve. Three expansion kits can be attached to the base kit for a maximum of four module sleeves.

The module sleeve interlocks with the wall bracket and is secured with thumbscrews. The wall brackets have rubber feet providing for the option of placing them on a desk and stacking the modules.

The **WM5200-4U** facilitates installation into areas that may not have a standard rack available. Its unique design allows for installation in a very small wall space since all of the connections are inside the framework of the module dimensions.



MAXIMUM OF FOUR MODULE SLEEVES ATTACHED TO A WALL. SHOWN ABOVE: (1) WM5200-4U AND (3) WM5200-4UEXP

TECHNICAL SPECIFICATIONS

MODEL

WM5200-4U	Wall-mount base kit for one module

COMPATIBILITY CROSS-REFERENCE

Endura System Modules	UTP Modules
CM9700MDD-EVS NET5301R NET5301T NET5301T-I NET5301-TC NET5401T/NET5401T-I NET5402T/NET5402T-I NET5404T/NET5404T-I	TW4004AR

MECHANICAL

Number of Modules	1
Module Orientation	Variable
Construction	Aluminum
Finish	Black

GENERAL

Dimensions*	6.69" D x 7.88" W x 2.19" H (16.99 x 20.02 x 5.56 cm)
Mounting	Wall or desktop
Unit Weight	
WM5200-4U	1.46 lb (0.66 kg)
WM5200-4UEXP	0.42 lb (0.19 kg)
Shipping Weight	
WM5200-4U	3.0 lb (1.3 kg)
WM5200-4UEXP	2.0 lb (1.0 kg)

*The dimensions are based on the orientation of the wall mount as shown in the photo.

OPTIONAL ACCESSORIES

WM5200-4UEXP	Wall-mount expansion kit for an additional module; use three with WM5200-4U base kit for a maximum of four modules per wall location
NET54000PS Power Supply	Single module; 12 VDC 5A, 60 W

CERTIFICATIONS

- UL/cUL Listed

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WM5300 Wall Mount Kit

WALL MOUNT FOR ENDURA® NET5308T

Product Features

- Includes Three Frames for Use with the NET5308T and an Additional NET5308T-EXP
- Frames Can Be Placed On a Wall in Any Orientation
- Supplied Brackets Allow for the Easy Attachment of the Frames
- Maximum Installation of One NET5300B Base Module and Two NET5308T-EXP Video Input Modules
- For Use in Installations That Will Not Accommodate Standard Racks
- Compact, Wall-Hugging Design

A **WM5300** wall mount kit consists of three frames, four brackets, and 24 screws. The frames can be attached to a wall in any orientation providing a maximum of three slots. The NET5308T video encoder includes one NET5300B base module and one NET5308T-EXP video input module, but the **WM5300** can also accommodate an additional NET5308T-EXP module. The captive screws on each module are fastened to the frames ensuring a safe and secure installation.

The **WM5300** facilitates installation into areas that may not have a standard rack available. Its unique design allows for installation in a very small space since all of the connections are inside the framework of the module dimensions.

The **WM5300** was designed with the installer in mind. The wall mount kit allows for any installation challenge.

TECHNICAL SPECIFICATIONS

MODEL

WM5300	Wall mount kit allowing the installation of a maximum of three modules

MECHANICAL

Number of Slots	3
Module Orientation	Variable
Construction	Aluminum
Finish	Black

GENERAL

Dimensions	17.00" D x 20.00" W x 1.75" H (43.18 x 50.80 x 4.45 cm)
Mounting	Wall
Unit Weight	15 lb (6.80 kg)
Shipping Weight	21 lb (9.52 kg)

TYPICAL NET5308T INSTALLATION INTO WM5300

WARNING: *Do not attach more than three WM5300 wall mount frames with NET5308T modules. The excessive weight can cause the equipment to fall from the wall. Use proper wall-attaching hardware suited for the wall type and weight of the attached devices.*

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SM5000 System Manager

DISTRIBUTED SYSTEM MANAGEMENT AND SECURITY PLATFORM

Product Features

- Manages Endura® Products
- Administers Rights and Privileges for All Endura Devices
- Stores and Administers Secure Keys for System Level Security
- Logs Errors and Alarms
- Supports UPnP Architecture
- Provides DHCP Services, Supporting the Dynamic Addition of Network Devices

- Functions as System Time Server (NTP)
- Replicates Data to a Backup SM5000

The **SM5000** system manager is an integrated hardware and software platform that serves as the system management component of the Endura® system. The **SM5000** provides distributed administration of multiple devices on the network.

The **SM5000** manages system security, functioning as a key server for user and device authentication. The **SM5000** routes communication between all devices on large, subnetted security networks.

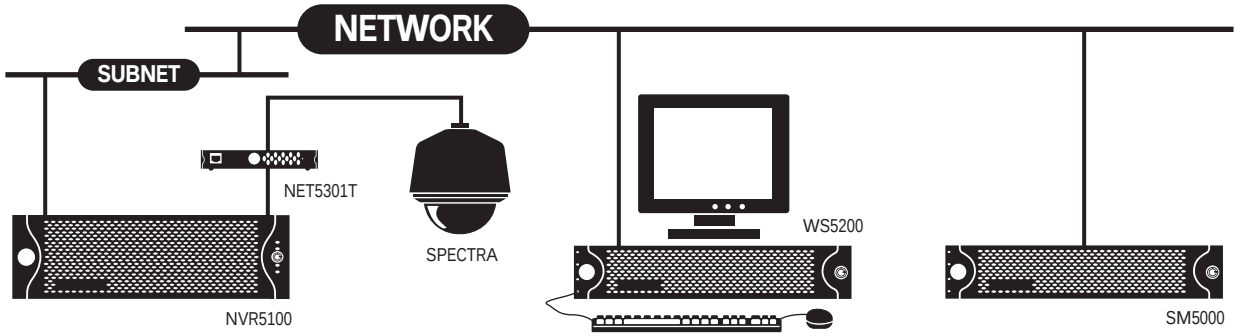
To ensure integrated devices are synchronized, the **SM5000** functions as the default system time server, using the industry standard NTP protocol. Additionally, the SM5000 can be directed at an external Network Time Protocol (NTP) time server for synchronization.

The **SM5000** maintains a database of all system functions including device errors, alarms, and user actions. This comprehensive system log may be accessed and searched through the System Log window in the WS5200 interface.

The **SM5000** system manager can be connected to an intelligent uninterruptible power supply (UPS), not supplied. If the main power fails, an intelligent UPS sends a message to the **SM5000** and provides enough extra battery power to allow the manager to shut down gracefully, thereby preserving the integrity of the system data.

As an additional security feature, the **SM5000** supports data base replication: critical system data can be synchronized with a second **SM5000**. This feature enables a quick and easy failover to backup equipment.

This Endura distributed, network-based product is available only to certified dealers/integrators. Please contact your local sales representative for details on certification applications and requirements. Additional information on Endura products and certifications may be found at http://www.pelco.com/endura.



IMPORTANT NOTE: PLEASE READ.
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PELCO by Schneider Electric

International Standards Organization Registered Firm; ISO 9001 Quality System

C1623 / REVISED 10-25-10

TECHNICAL SPECIFICATIONS

MODEL

SM5000	System Manager

SUPPLIED ACCESSORIES

3 power cables (1 USA standard, 1 European standard, and 1 UK standard)
1 rack-mounting kit (for mounting in a 2 RU rack)

SYSTEM

Operating System	Linux®
User Interface	Remote operation through WS5200

NETWORK

Interface	Gigabit Ethernet RJ-45 port (1000Base-T)
Security	2 modes: secure mode (device authentication) and unsecure mode

AUXILIARY INTERFACES

USB 2.0	7 USB 2.0 ports (1 front, 6 rear)

FRONT PANEL

DVD/CD-RW Drive	
CD Read/Write Speed	24x
CD Rewrite Speed	10x
DVD Read/Write Speed	8x
DVD Rewrite Speed	4x
Buttons	Power, configuration/reset
Indicators	
Power	Blue if power
HDD Activity	Yellow when activity
Network Activity	Green when activity
Network Status	Green, amber, red
Unit Status	Green, amber, red

POWER

Power Input	100-240 VAC, 50/60 Hz, autoranging
Power Supply	Internal
Cable Type	1 USA (117 VAC), 1 European (220 VAC), 1 UK (250 VAC) All, 3 prongs, molded connector, 6 ft (1.8 m) cord
Power Consumption	Operating Maximum
100 VAC	87.2 W, 297.5 BTU/H
115 VAC	85.3 W, 291.1 BTU/H
220 VAC	82.5 W, 281.5 BTU/H

ENVIRONMENTAL

Operating Temperature	50° to 95°F (10° to 35°C) at unit air intake
Storage Temperature	–40° to 149°F (–40° to 65°C)
Operating Humidity	20% to 80%, noncondensing
Maximum Humidity Gradient	10% per hour
Operating Altitude	–50 ft to 10,000 ft (–16 m to 3,048 m)
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 performance failure and unit damage, make sure the temperature at the unit is continuously within the operating temperature range.

PHYSICAL

Construction	Steel cabinet
Finish	
Front Panel	Gray metallic with black end caps
Chassis	Black matte finish
Dimensions	17.0" D x 17.0" W x 3.5" H (43.2 x 43.2 x 8.9 cm) 2 RU per unit
Mounting	Desktop (feet) or rack
Unit Weight	28.9 kg (13.1 kg)
Shipping Weight	38 lb (17.24 kg)

CERTIFICATIONS/PATENTS

- CE, Class A; meets EN50130-4 standard requirements
- FCC, Class A
- UL/cUL Listed
- C-Tick
- S Mark for Argentina
- CCC
- U.S. Patent D527,390 S

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
- Compliance, ISO/IEC 14496 standard (also known as MPEG-4)
- Compliance, International Telecommunication Union (ITU) Recommendation G.711, "Pulse Code Modulation (PCM) of Voice Frequencies"

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EDI5000-AD2088 Matrix Keyboard Interface

INTERFACE BETWEEN ENDURA® AND AMERICAN DYNAMICS™ AD2088

Product Features

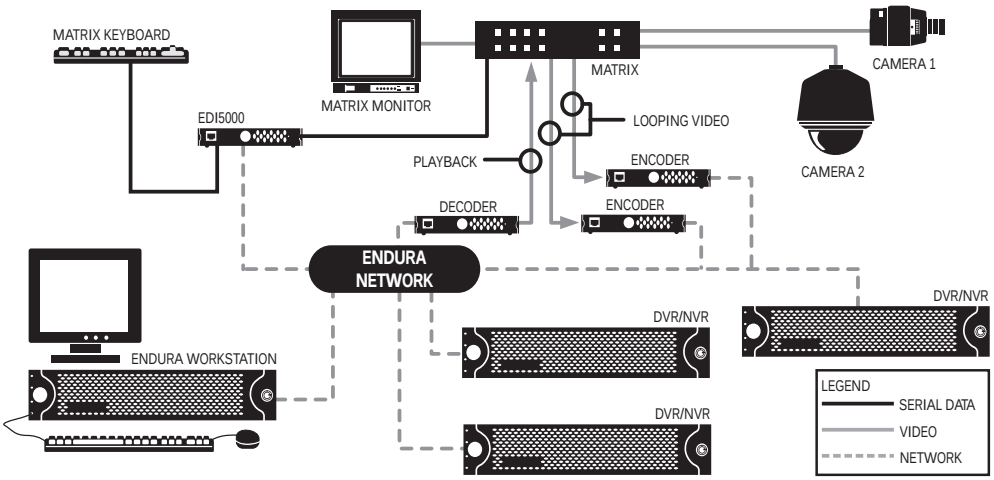
- Provides Interface Between Endura® IP Video Security Systems and the American Dynamics™ AD2088 Keyboard
- Failover of Endura NVRs and DVRs Through the Analog Matrix
- Allows Control of Endura Devices Such as Cameras, PTZ Operation, and Playback from Endura Recorders Using the AD2088 Keyboard to Retain Existing and Familiar User Interfaces
- Allows Expansion of an Existing Matrix System Through Endura IP Video Surveillance Components

The **EDI5000** provides a flexible integration platform between third-party systems and the Endura® IP Video Surveillance platform. The **EDI5000-AD2088** provides a bidirectional communication path between Endura and the American Dynamics™ AD2088 keyboard.

The **EDI5000-AD2088** allows the existing matrix to access and control Endura cameras and recorders. Matrix keyboard users can retain their existing and familiar user interface while taking advantage of Endura's high quality video recording capability. The **EDI5000-AD2088** allows Endura to be used as a recording system for existing matrix cameras and to expand existing cameras with the use of Endura components.

When used in conjunction with Endura network decoders, video captured by Endura network encoders or IP cameras can be streamed onto matrix monitors in either live or playback mode. When in playback mode, familiar keyboard functions are exposed to help navigate through playback video. Users have access to the same keyboard functions for play, pause, step forward, step backward, fast forward, fast rewind, and digital zoom. Additionally, video segments can be marked on the Endura recorders for later search and retrieval.

When in live mode, network video from IP cameras or Endura encoders is streamed to the matrix monitors. The keyboard's joystick can be used to operate pan/tilt/zoom (PTZ) cameras, if available, and users can start an Endura script to automate a preprogrammed action directly from the keyboard.



SAMPLE EDI5000 SYSTEM USING ENDURA FOR RECORDING

TECHNICAL SPECIFICATIONS

MODEL

EDI5000-AD2088	Interface that allows serial data communication between an American Dynamics matrix system and the Endura video and recording system; security personnel can use the AD2088 keyboard to view and control cameras attached to, and recorded onto, an Endura system through the existing analog matrix.

GENERAL

Construction	Sheet metal
Finish	Gray metallic with black end caps, black matte finish
Operating System	Linux®
COM Ports	2, RS-232
Other Connectors	Reserved for future use
LED Indicators	Power, COM Port Status, Network Link/Speed, Network Activity
Reset Button	Recessed button with 2 options: reboot and reset factory default settings
Dimensions	8.21" D x 1.08" W x 6.56" H (20.85 x 2.74 x 16.66 cm)
Mounting	
Desktop	Rubber feet (factory-installed)
Wall or Rack	Optional mounting accessories required
Unit Weight	2.2 lb (1.0 kg)
Shipping Weight	6.0 lb (2.7 kg)

POWER

Power Input	12 VDC or 24 VAC
Power Consumption	6 W, 0.50 A, 20 BTU/H
Power Connectors	
4-pin	For RK5200PS-5U or NET5301PS
4-pin to 2-pin adapter	For user-supplied power supply

ENVIRONMENTAL

Operating Temperature Range	32° to 122°F (0° to 50°C)
Storage Temperature Range	–40° to 149°F (–40° to 65°C)
Operating Humidity	20% to 80%, noncondensing

COMPATIBLE PRODUCTS

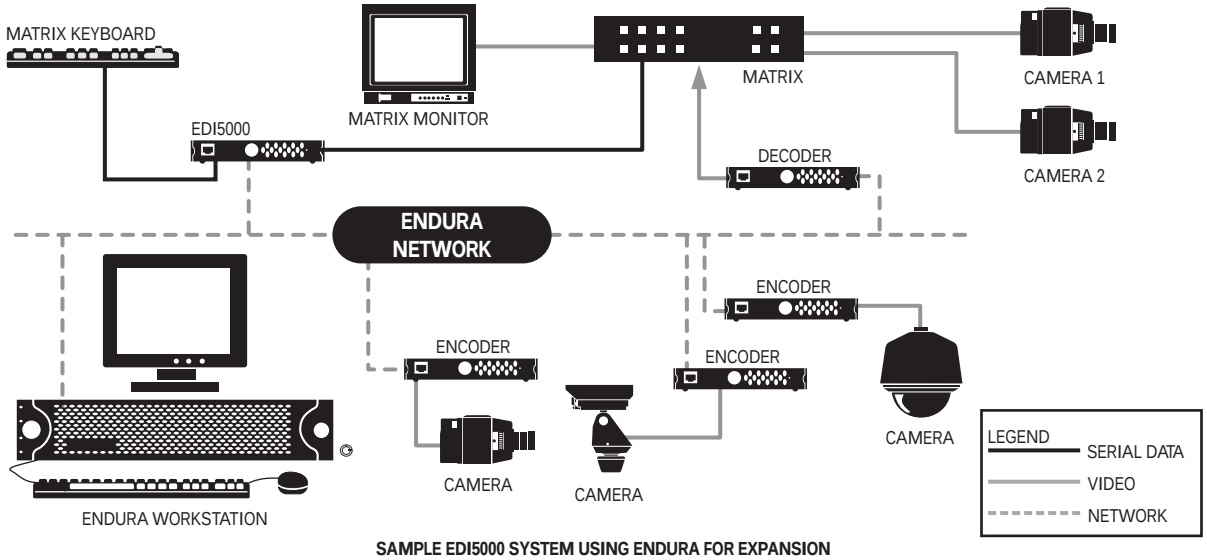
Endura System Components	The EDI5000 is compatible with Endura version 1.03 or later components (NVR5100 and SM5000). Endura decoders must be version 1.04.0032 or later.

POWER SUPPLIES AND ACCESSORIES

RK5200PS-5U	Rack mount with power supply (12 units)
NET5301PS	Power supply for one data interface (4-pin connector)
TF2000	Power supply for one data interface (4-pin to 2-pin adapter)
MCS Series	Multiple unit power supply, indoor
WM5200-4U	Wall mount without power supply (1 unit)
WM5200-4UEXP	Wall mount expansion (1 unit)

CERTIFICATIONS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick



SAMPLE EDI5000 SYSTEM USING ENDURA FOR EXPANSION

IMPORTANT NOTE: PLEASE READ.
The network implementations in this document are shown as general representations only and are not intended to show detailed network topologies. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the systems as illustrated. Please contact your local Pelco Representative to discuss your specific requirements.

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MCS Series Power Supply

MULTIPLE 24 VAC POWER SUPPLY, INDOOR

Product Features

- 2, 5, 10, or 20 A Capacities
- 4, 8, or 16 Outputs
- Fuse or Circuit Breaker Protection;
  Spare Fuses Included with Fused Models Only
- 120 VAC or 240 VAC Selectable Input
- 24 VAC Output or 28 VAC Output for Longer Wire Runs
- AC Power Indicator with Power On/Off Switch
- Compatible with Cameras, Domes, and Pan/Tilts
- Models with Circuit Breakers Have Class 2 Rated Outputs

MCS16-10

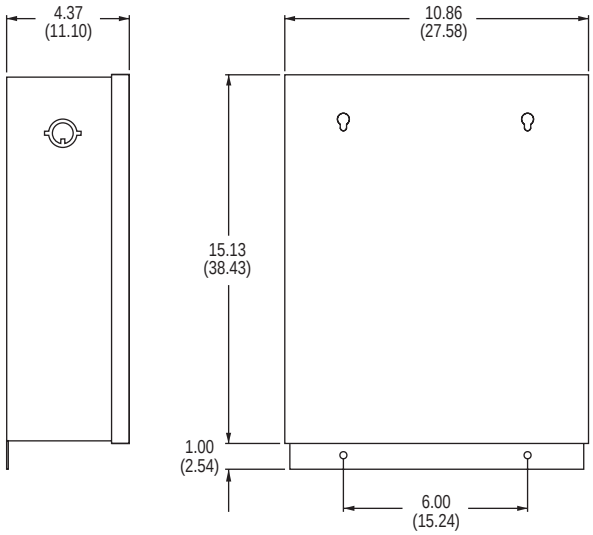
Power supplies in the **MCS Series** offer a variety of configurations for powering up to 16 units from a single power source.

The power supplies provide 24 VAC output for 4, 8, or 16 units. To compensate for voltage losses over long wire runs, 28 VAC outputs also are available on most models. The power supplies have a selectable input of 120 or 240 VAC and are packaged in an easy-to-install metal enclosure that has ample room for wiring connections and conduit entries.

For integrated systems such as Spectra® and Esprit®, the higher capacity models are capable of handling pan/tilt and receiver operation in addition to camera functions. (See product capacity chart.)

Models are available with either fuses or self-resetting circuit breakers on each output. Fused models provide a greater degree of protection for the camera because they are faster acting and more precise. Circuit breakers will self-reset when the fault is corrected, eliminating the need for replacing fuses. However, the amount of current required to trip a circuit breaker can vary as much as 100 percent depending on temperature. In the fused models, the values of fuses can be changed depending upon the specific current requirements of the equipment connected.

The **MCS16-10S**, **MCS16-10SB**, **MCS16-20S**, and **MCS16-20SB** are 16-output supplies that have individual power switches and LEDs on each output. This is a popular feature in larger systems where it is frequently necessary to power down individual units.



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS;
ALL OTHERS ARE INCHES.

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International Standards Organization Registered Firm; ISO 9001 Quality System

ISO 9001 CERTIFIED

TECHNICAL SPECIFICATIONS

MODELS

MCS4-2	Indoor multiple power supply, 120/240 VAC input. 4 fused 24 VAC outputs, total current capacity of 2 A (48 VA).
MCS4-2B	Same as MCS4-2 except has circuit breakers.
MCS8-5	Indoor multiple power supply, 120/240 VAC input. 8 fused 24/28 VAC outputs, total current capacity of 5 A (120 VA).
MCS8-5B	Same as MCS8-5B except has circuit breakers.
MCS16-10	Indoor multiple power supply, 120/240 VAC input. 16 fused 24/28 VAC outputs, total current capacity of 10 A (240 VA).
MCS16-10B	Same as MCS16-10 except has circuit breakers.
MCS16-10S	Same as MCS16-10 except each output has a power switch and power indication LED.
MCS16-10SB	Same as MCS16-10S except has circuit breakers.
MCS16-20	Indoor multiple camera power supply, 120/240 VAC input. 16 fused 24/28 VAC outputs, total current capacity of 20A (480 VA).
MCS16-20B	Same as MCS16-20 except has circuit breakers.
MCS16-20S	Same as MCS16-20 except each output has a power switch and power indication LED.
MCS16-20SB	Same as MCS16-20S except has circuit breakers.

Product Capacity Chart

A partial list of compatible products and the number of units that may be powered by each power supply are listed below. Capacity is based on the VA rating of each product to be used with the power supply.

Product	Power Supply Model			
	MCS4-2/ 4-2B (48 VA)	MCS8-5/ 8-5B (120 VA)	MCS16-10/ 16-10B (240 VA)	MCS16-20/ 16-20B (480 VA)
CCD Camera (12 VA)	4	8	16	16
Indoor DF5 with camera (3 VA)	4	8	16	16
Indoor DF8 with camera (12 VA)	4	8	16	16
Indoor Spectra (25 VA)	1	4	8	16
Esprit (70 VA)	–	1	3	6

MECHANICAL

Cable Entry	4 knockouts for either 1/2-inch (1.27 cm) or 3/4-inch (1.91 cm) conduit

ELECTRICAL

Input Voltage	120 or 240 VAC, 50/60 Hz
Output Voltage	
MCS4-2	24 VAC
All Other Models	24/28 VAC
Output Fuse/ Circuit Breaker Ratings	
MCS4-2, MCS4-2B	1.5 A*
All other models	3 A*
Input Connectors	Wire nut
Output Connectors	Screw-type barrier strips; models with circuit breakers are suitable for Class 2 wiring
Input Wire Size	12-16 gauge solid wire
Output Wire Size	12-22 gauge solid or stranded wire
Recommended Wiring Distances	See chart below

The following are the recommended maximum distances (transformer to load) and are calculated with a 10% voltage drop. (10% is generally the maximum allowable voltage drop for AC-powered devices.) Distances are calculated in feet; values in parentheses are meters.

Recommended Wiring Distance Chart

Input Voltage	Total VA Consumed	Wire Gauge		
		20 AWG (0.5 mm^2)	18 AWG (1.0 mm^2)	16 AWG (1.5 mm^2)
24 VAC	10	283 (86)	451 (137)	716 (218)
	20	141 (42)	225 (68)	358 (109)
	30	94 (28)	150 (45)	238 (72)
	50	56 (17)	90 (27)	143 (43)
28 VAC	10	386 (117)	614 (187)	975 (297)
	20	193 (58)	307 (93)	487 (148)
	30	128 (39)	204 (62)	325 (99)
	50	77 (23)	122 (37)	195 (59)

GENERAL

Construction	Steel	
Finish	Charcoal black polyester powder coat	
Environment	Indoor	
Operating Temperature	32° to 120°F (0° to 49°C)	
Weights	Unit	Shipping
MCS4-2	14.10 lb (6.40 kg)	17 lb (7.71 kg)
MCS4-2B	13.89 lb (6.30 kg)	17 lb (7.71 kg)
MCS8-5	17.05 lb (7.73 kg)	20 lb (9.07 kg)
MCS8-5B	16.85 lb (7.64 kg)	20 lb (9.07 kg)
MCS16-10	20.72 lb (9.40 kg)	24 lb (10.89 kg)
MCS16-10B	20.72 lb (9.40 kg)	24 lb (10.89 kg)
MCS16-10S	20.35 lb (9.23 kg)	23 lb (10.43 kg)
MCS16-10SB	20.48 lb (9.29 kg)	23 lb (10.43 kg)
MCS16-20	22.50 lb (10.21 kg)	26 lb (11.79 kg)
MCS16-20B	22.47 lb (10.19 kg)	26 lb (11.79 kg)
MCS16-20S	22.27 lb (10.10 kg)	25 lb (11.33 kg)
MCS16-20SB	22.28 lb (10.11 kg)	25 lb (11.33 kg)

CERTIFICATIONS/RATINGS

- CE
- UL/cUL Listed
- Meets NEMA Type 1 standards

*Individual output cannot exceed this rating, and the total of all outputs cannot exceed the overall rating of the power supply (see the Models section).

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WCS Series Power Supply

24 VAC POWER SUPPLY, OUTDOOR

Product Features

- 4 A or 20 A Capacities
- 1–4 Outputs
- Selectable Input Voltage
- 24 VAC Output or 28 VAC Output for Longer Wire Runs
- Meets NEMA Type 4X/IP66 Standards for Weatherproof Enclosure
- AC Power Indicator with Power On/Off Switch
- Compatible with Cameras, Domes, and Pan/Tilts
- WCS4-20B Has Class 2 Rated Outputs

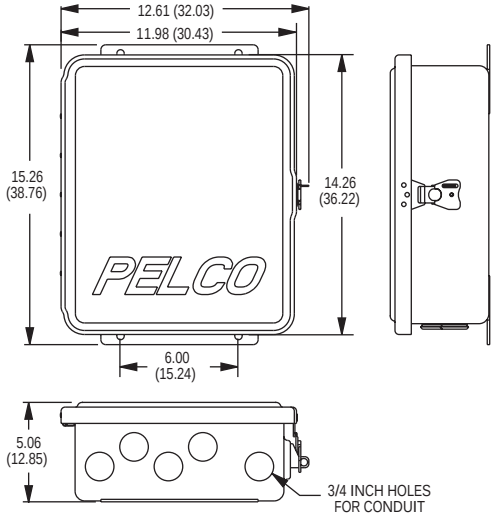
WCS4-20/WCS4-20B

Power supplies in the **WCS Series** offer a variety of configurations for powering up to four outdoor units from a single power source.

The power supplies provide 24 VAC output for 1–4 units, depending on the model selected. To compensate for voltage losses over long wire runs, 28 VAC outputs are available on all models. The input voltage of all models is also selectable.

For integrated systems such as Spectra® and Esprit®, the power supplies are capable of handling pan/tilt, heater, and blower operation in addition to the camera.

The **WCS1-4** has one fused output and is capable of handling up to 4 A (100 VA) of total load. The WCS4-20 has four fused outputs and is capable of handling up to 20 A (480 VA) of total load. The **WCS4-20B** has four protected outputs with self-resetting circuit breakers and is capable of handling up to 12 A (288 VA) of total load. Fuses provide a greater degree of protection for the unit because they are faster acting and more precise. Circuit breakers will self-reset when the fault is corrected, eliminating the need for replacing fuses. However, the amount of current required to trip a circuit breaker can vary as much as 100 percent, depending on temperature. In the fused models, the values of fuses can be changed depending upon the specific current requirements of the equipment connected.



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE

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TECHNICAL SPECIFICATIONS

MODELS

WCS1-4	Outdoor camera power supply, 100/120/240 VAC input. One 24/26/28 VAC output, total current capacity of 4 A (100 VA).
WCS4-20	Outdoor multiple camera power supply, 120/240 VAC input. Four fused 24/28 VAC outputs, total current capacity of 20 A (480 VA).
WCS4-20B	Outdoor multiple camera power supply, 120/240 VAC input. Four protected 24/28 VAC outputs, total current capacity of 12 A (288 VA) with circuit breakers.

Product Capacity Chart

A partial list of compatible products and the number of units that may be powered by each power supply are listed below. Capacity is based on the VA rating of each product to be used with the power supply.

Product	Power Supply Model		
	WCS1-4 (100 VA)	WCS4-20 (480 VA)	WCS4-20B (288 VA)
CCD Camera (12 VA max)	1	4	4
Indoor Spectra (25 VA)	1	4	4
Outdoor Spectra (70 VA)	1	4	4
Outdoor DF5 (62 VA)	1	4	4
Esprit (70 VA)	1	4	4

MECHANICAL

Cable Entry	Hole plugs for 0.75-inch (1.9 cm) conduit
Latch	Stainless steel link-lock latch; can be secured with padlock (not supplied)

ELECTRICAL

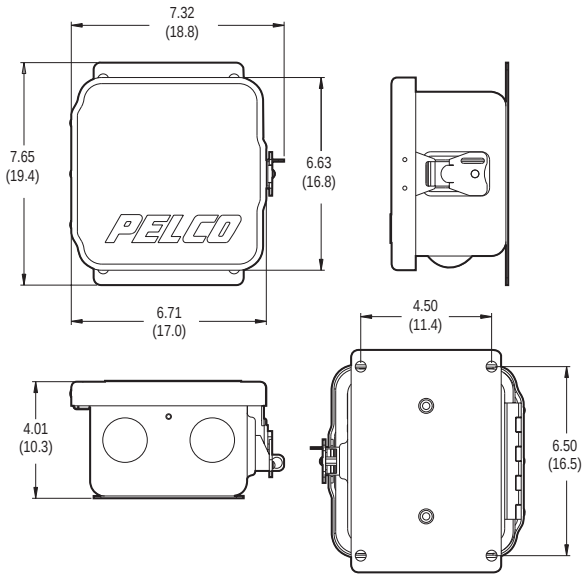
Input Voltage	
WCS1-4	100/120/240 VAC, 50/60 Hz
WCS4-20/WCS4-20B	120 or 240 VAC, 50/60 Hz
Output Voltage	
WCS1-4	24/26/28 VAC
WCS4-20, WCS4-20B	24/28 VAC
Required Input Current	
WCS1-4	1 A
WCS4-20/WCS4-20B	4.40/2.30 A
Output Fuse Ratings	
WCS1-4	4 A*
WCS4-20	8 A*
Output Circuit Breaker Ratings	
WCS4-20B	3A*
Input Connectors	Screw-type barrier strips
Output Connectors	Screw-type barrier strips; WCS4-20B is suitable for Class 2 wiring
Input Wire Size	12–16 gauge solid wire
Output Wire Size	
WCS1-4	16–20 gauge solid or stranded wire
WCS4-20/-20B	16–22 gauge solid or stranded wire

GENERAL

Environment	Outdoor	
Operating Range	–50° to 122°F (–45.56° to 50°C)	
Construction	Aluminum	
Finish	Gray polyester powder coat	
Weight	Unit	Shipping
WCS1-4	6.8 lb (3.1 kg)	8 lb (3.6 kg)
WCS4-20/4-20B	16.2 lb (7.3 kg)	18 lb (8.1 kg)

*Individual output cannot exceed this rating, and the total of all outputs cannot exceed the overall rating of the power supply (refer to *Models*).

WCS1-4 POWER SUPPLY



NOTE: VALUES IN PARENTHESES ARE CENTIMETERS; ALL OTHERS ARE INCHES.

The following are the recommended maximum distances (transformer to load) and are calculated with a 10 percent voltage drop. (Ten percent is generally the maximum allowable voltage drop for AC-powered devices.) Distances are calculated in feet; values in parentheses are meters.

Recommended Wiring Distance Chart

Input Voltage	Total VA Consumed	Wire Gauge					
		20 AWG (0.5 mm²)		18 AWG (1.0 mm²)		16 AWG (1.5 mm²)	
24 VAC	25	113	(34)	180	(55)	287	(87)
	50	56	(17)	90	(27)	143	(43)
	70	41	(12)	64	(19)	102	(31)
26 VAC	25	133	(40)	212	(64)	337	(103)
	50	66	(20)	105	(32)	168	(51)
	70	49	(15)	78	(24)	124	(38)
28 VAC	25	155	(47)	246	(75)	392	(119)
	50	77	(23)	122	(37)	195	(59)
	70	55	(17)	88	(27)	135	(41)

CERTIFICATIONS/RATINGS

- CE
- UL/cUL Listed
- Meets NEMA Type 4X and IP66 standards

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