IXE20 Series Sarix® IP 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
- Day/Night Models
- Video Setup Jack
- Sensitivity Down to 0.03 Lux
- Power over Ethernet (IEEE 802.3af) or 24 VAC
- Ability to Control and Monitor Video Over IPv4 and IPv6 Networks
- Built-in Analytics
- Local Storage (Micro SD) for Alarm Capture

(LENS NOT SUPPLIED WITH CAMERA)

- Adaptive Motion Detection
- ONVIF v1.02 Conformant
- Audio Accessory Available

The **Sarix® IXE20 Series extended platform (EP)** is a 2.1 megapixel (Mpx) high performance day/night camera with advanced low-light technology and a mechanical IR cut filter for increased sensitivity in low-light installations.

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 considerably smaller, making HD video more affordable.

Camera
The **IXE20 Series** has two 2.1 MPx 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 a standard feature of the IXE20DN. 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 alarms using Pelco's API. Camera models are also available with preloaded **OV Analytic Suites.**

Web Interface
The **IXE20 Series** uses a standard Web browser for powerful remote setup and administration.

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 7.3 (or later). The camera is also compatible with Digital Sentry NVs (DS NVs), a full-featured video management software, which is available as a free download at *www.pelco.com*. DS NVs includes four free Pelco IP licenses and allows for the management of video from up to 64 cameras.

The **IXE20 Series** features open architecture connectivity to third-party software. Pelco offers an application programming interface (API) and software developer's kit (SDK) for interfacing with Pelco's IP 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 behavior alarms are compatible with Endura or a third-party system that supports Pelco's 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 Detection:** 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.

SARIX

VIDEO

ANALYTICS OVERLAY
- CONFIGURATION
- ALARMS
- PELCO ANALYTICS API / OV READY

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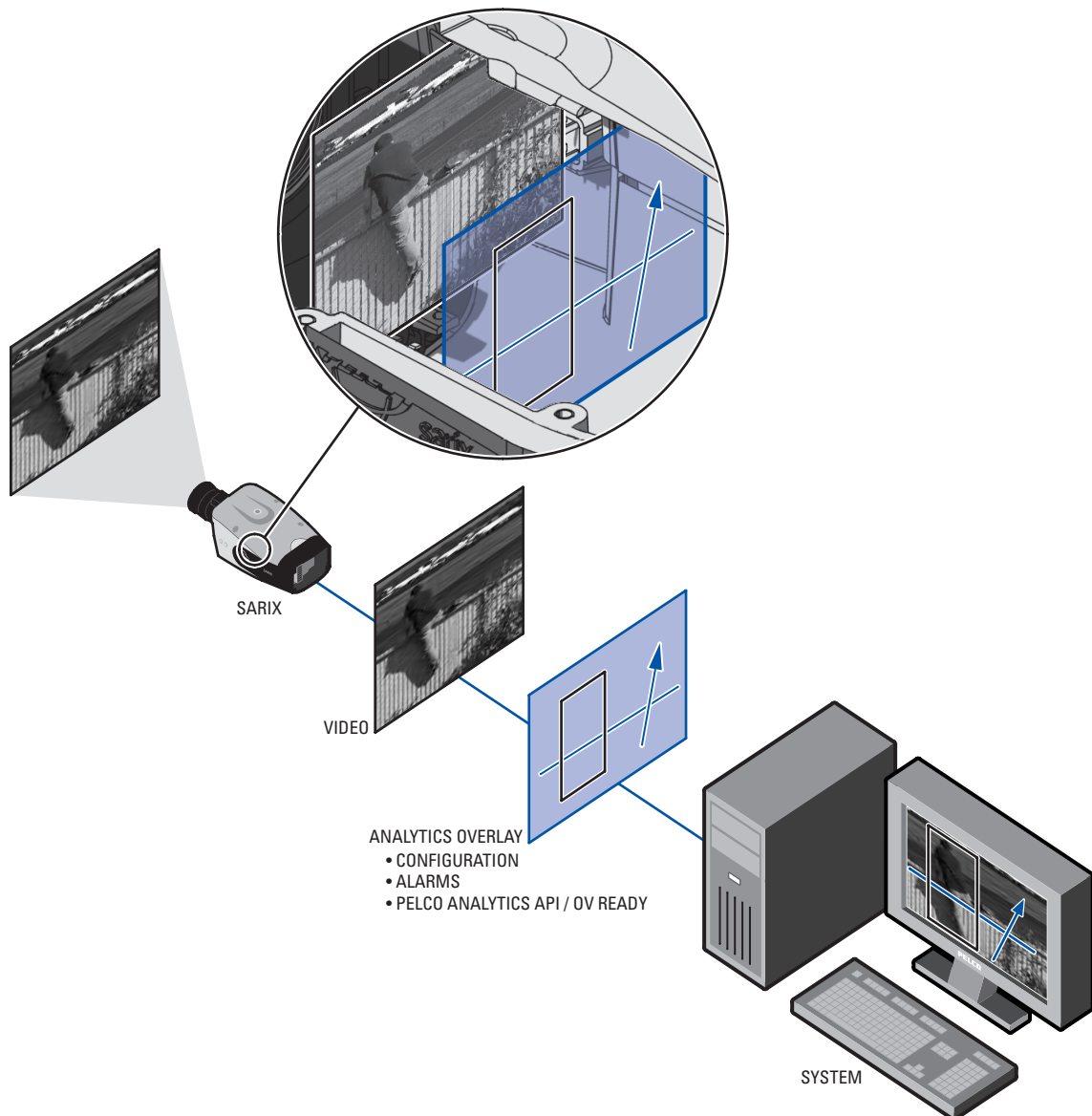
IMPORTANT NOTE: PLEASE READ. The network implementation is shown as a general representation only and is not intended to show a detailed network topology. Your actual network will differ, requiring changes or perhaps additional network equipment to accommodate the system as illustrated. Please contact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

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)	0.50 kg (1.11 lb)
Shipping Weight	0.90 kg (2.00 lb)

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	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

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

SERVICE PORT   LED

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

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

13.67
(5.40)

4.90
(1.95)

7.59
(3.00)

7.92
(3.12)

8.53
(3.37)*

*FRONT COVER OPEN
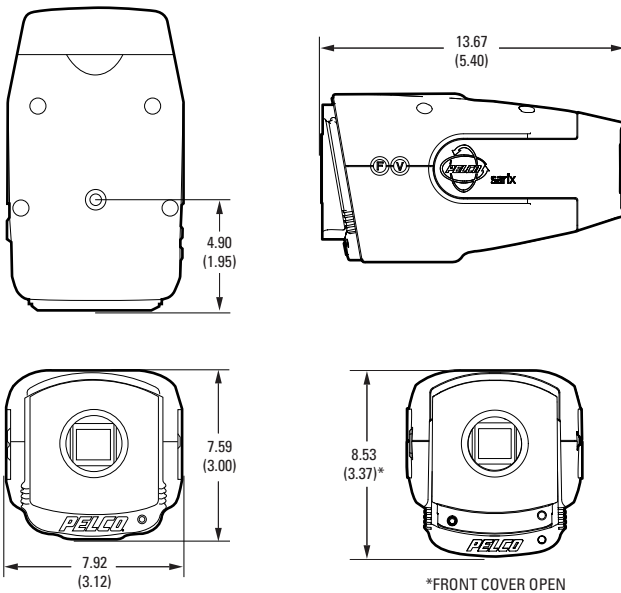
REAR VIEW

VIDEO

Video Encoding	H.264 High, Main, or Base profiles 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				JPEG		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	15.0 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	3.25 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, IPv6*, SNMP v2c/v3, QoS, HTTP, HTTPS, LDAP (client), SSH, SSL, SMTP, FTP, 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
Pelco System Integration	Endura 2.0 (or later) Digital Sentry 7.3 (or later)
Open API	Pelco API or ONVIF v1.02
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

*Supports mixed IPv4 and IPv6 installations, but not IPv6-only deployments.

[†]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	The Pelco API can transmit behavior alarm data to third-party applications, available at *pdn.pelco.com*
Required System for Object Video Suites	OV ready-compliant system with OV Ready video management system

MODELS

IXE20DN	Sarix 2.1 MPx network day/night camera, extended platform with built-in Pelco Analytics
IXE20DN-OS	Sarix 2.1 MPx network day/night camera, extended platform with built-in OV Security Suite
IXE20DN-OSP	Sarix 2.1 MPx network day/night camera, extended platform with built-in OV Security Suite Plus
IXE20DN-OCP	Sarix 2.1 MPx network day/night camera, extended platform with built-in OV Event Counting Suite

CERTIFICATIONS

- CE, Class B
- FCC, Class B
- UL/cUL Listed
- C-Tick
- Cisco® Medianet (MSP) compatible
- ONVIF v1.02

OPTIONAL ACCESSORIES

IX-SC	Service/monitor cable, 1.22 m (4 ft); compatible with standard BNC connectors
AUD-1	External audio accessory
ALM-1	External alarm accessory
SECURE-SLA License	Enables Information Assurance compliant mode of operation

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.