Sarix® IBE Series Indoor and Environmental Bullets
UP TO 3 MPX, WDR AND LOW-LIGHT PERFORMANCE, H.264, IK10, IP66

Product Features

- SureVision 3.0 Technology, Including:
  - 130dB Wide Dynamic Range (WDR)
  - Advanced Low-Light Performance, 0.05 lux
  - Anti-Bloom Technology
  - 3D Noise Filtering
  - Enhanced Tone Mapping
- Up to 3 Megapixel (MPx) Resolution
- Up to 60 Frames per Second (fps)
- Autofocus Varifocal 3 ~ 9 mm or 9 ~ 22 mm lens
- Power over Ethernet (PoE), IEEE 802.3af, 24 VAC, 12 VDC
- Built-in Analytics Suite
- Adaptive IR Illumination up to 30 Meters
- Up to 128 GB Edge Storage with SD Card
- Compatible with Pelco and Third-Party Video Systems

Sarix Enhanced Range with SureVision 3.0

Sarix® Enhanced (E) range cameras feature SureVision technology, delivering high definition (HD) resolution, consistent color science, fast processing power, and simultaneous advanced low-light performance with wide dynamic range (WDR) and anti-bloom technologies. New advancements include 3D noise filtering, smooth response to illumination changes, and improved tone mapping to retain color accuracy and overall image contrast.

Designed to install quickly, the cameras include autofocus, motorized zoom, built-in analytics, and other advanced features needed for demanding security applications.

Camera

The IBE Series contains an integrated varifocal MPx autofocus lens (3 ~ 9 mm or 9 ~ 22 mm). All models include a camera in a compact surface mount enclosure that is ready to install. All models feature a sturdy design that is both vandal- and tamper-resistant. The environmental models feature worry-free use in a wide range of environmental operating conditions.

Sarix Enhanced range cameras include four unique, advanced autofocus options: temperature change (every 5°C / 9°F), day/night transition, a daily autofocus routine, and manual autofocus. These benefits ensure clear, focused images regardless of the scene or environment. All autofocus options are available through the web UI.

Integrated and Adaptive IR Illumination is included on all models.

VIDEO

The IBE Series supports two independently-configurable video streams in addition to a service video stream. The streams can be compressed in MJPEG and H.264 formats across several resolution configurations. The IBE Series offers real-time video (60 fps) with full HD resolution (up to 3 MPx) using H.264 compression for optimized bandwidth and storage efficiency.

The streams can be configured to a variety of frame rates, bit rates, and group of pictures (GOP) structures for additional flexibility in bandwidth administration. In addition, streams can be encoded as constrained variable bit rate (CVBR) or constant bit rate (CBR).

Open and Integrated

Sarix Enhanced range cameras seamlessly connect to Pelco video management systems such as VideoXpert™, Endura® version 2.0 (or later), and Digital Sentry® version 7.3 (or later). Sarix Enhanced range cameras integrate with major third-party video management systems through the Pelco API, and other third-party software and systems through the ONVIF Profile S, Profile G, and Profile Q standards.
TECHNICAL SPECIFICATIONS

CONVENIENT POWER

Sarix Enhanced range cameras are designed with Power over Ethernet (PoE), 24 VAC and 12 VDC to reduce costs and simplify planning, wiring, and installation. PoE functionality works with PoE-enabled network switches or power injectors, eliminating the need for separate power supplies and cabling, or increasing camera fail safety through an uninterruptable power supply (UPS).

ANALYTICS

Sarix Enhanced range cameras includes eight user-configurable behaviors. The camera is capable of running up to two behaviors at the same time.

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.

Analytics are configured and enabled using a standard Web browser, and behavior alarms are compatible with VideoXpert or a third-party system that supports Pelco’s API system.

Analytics 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 behaviors include:

- **Abandoned Object**: Detects objects placed within a defined zone and triggers an alarm if the object remains in the zone unattended. 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.
- **Intrusion 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 by spray paint, a cloth, or a lens cap. Any unauthorized repositioning of the camera also triggers an alarm.
- **Wrong Direction**: 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 too long. 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 defined line. This behavior can 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 user-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.
TECHNICAL SPECIFICATIONS

COMPONENT FEATURES

VALUES IN PARENTHESES ARE INCHES; ALL OTHERS ARE CENTIMETERS.

CAMERA
- Imaging Device: 1/2.8-inch
- Imager Type: CMOS
- Imager Readout: Progressive scan
- Highest Resolution:
  - 3 MPx: 2048 x 1536
  - 2 MPx: 1920 x 1080
  - 1 MPx: 1280 x 960
- Signal-to-Noise Ratio: >60 dB
- Electronic Shutter Range: 1/20,000 sec (or faster) to 2 sec
- White Balance Range: 2,000° to 10,000°K
- Sensitivity 3 – 9 mm:
  - f/1.3: 2,850°K; SNR >20 dB
  - Color (33 ms): 0.050 lux
  - Color (500 ms): 0.005 lux
  - Mono (33 ms): 0.010 lux
  - Mono (500 ms): 0.001 lux
  - Mono (IR on): 0.000 lux
- Sensitivity 9 – 22 mm:
  - f/1.6: 2,850°K; SNR >20 dB
  - Color (33 ms): 0.200 lux
  - Color (500 ms): 0.010 lux
  - Mono (33 ms): 0.100 lux
  - Mono (500 ms): 0.0025 lux
  - Mono (IR on): 0.000 lux
- Day/Night Capabilities: Yes
- Mechanical IR Cut Filter: Yes, (ON/OFF/AUTO selectable), with different set points on lux
- Adaptive IR Illumination: 850nm wavelength, maximum distance of 30 meters (100 feet) IR illumination at 0 lux
- Micro SD Card Support: Up to 128 GB
- SDHC/SDXC Cards Supported: Yes

LENS
- Lens Type: Built-in; varifocal
- Focal Length:
  - 3 MPx: f/1.3, 3 – 9 mm or f/1.6, 9 – 22 mm
  - 1 MPx: f/1.6, 9 – 22 mm
- Focus: Autofocus, motorized
- Zoom: Remote
- Auto Iris Type: DC drive P-iris lens
- Field of View in Degrees:

<table>
<thead>
<tr>
<th>Lens</th>
<th>Focal Length</th>
<th>3 MPx</th>
<th>1.3 &amp; 2 MPx</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Horiz</td>
<td>Vert</td>
<td>Horiz</td>
</tr>
<tr>
<td>3 – 9 mm</td>
<td>Wide</td>
<td>100°</td>
<td>74°</td>
</tr>
<tr>
<td></td>
<td>Tele</td>
<td>39°</td>
<td>29°</td>
</tr>
<tr>
<td>9 – 22 mm</td>
<td>Wide</td>
<td>33°</td>
<td>24°</td>
</tr>
<tr>
<td></td>
<td>Tele</td>
<td>14°</td>
<td>10°</td>
</tr>
</tbody>
</table>

Indoor Bullet
- SE White 3, RAL 9003
- Aluminum body with plastic heat shield
- IP66, IK10 on front and side
- Camera can mount directly to the wall.
- IR illuminator

Outdoor Bullet
- Telegray 4, RAL 7047
- Aluminum body with plastic heat shield
- Type 4X, IP66, IK10 on front and side
- Camera can mount directly to the wall.
- Heater
- IR illuminator

NOTE: All values are in English measurements unless otherwise specified.
**TECHNICAL SPECIFICATIONS**

**AUDIO**
- **Streaming**: Bidirectional: full or half duplex
- **Input/Output**: Line level/external microphone input; Single-ended, stereo, 1 Vp-p max. signal
- **Compression**: G.711 PCM 8 bit, 8 kHz mono at 64 kbit/s

**MECHANICAL**
- **Pan/Tilt Adjustment**: Manual
  - Pan: 360°
  - Tilt: +5, –90°
  - Rotation: 360°

**PHYSICAL**
- **Weight (Unit)**: 940 gm (2.07 lb)
  - Indoor Bullet
  - Environmental Bullet
- **Product Box Dimensions**: 13.3 x 6.7 x 6.5 in.

**ENVIRONMENTAL**
- **Operating Temperature**
  - Indoor/Vandal-Resistant: –10° to 55°C (14° to 131°F)
  - Environmental: –40° to 55°C (–40° to 131°F)
- **Start-Up Temperature**
  - Indoor/Vandal-Resistant: –10°C (14°F)
  - Environmental With Heater: –40°C (–40°F)
- **Storage Temperature**
  - Indoor and Environmental: –40° to 60°C (–40° to 140°F)
- **Operating Humidity**
  - Indoor/Vandal-Resistant: 10 to 90%, RH noncondensing
  - Environmental: 5 to 95%, RH noncondensing
- **Storage Humidity**: 20 to 80%, RH noncondensing
- **Impact Resistance**: IK10 (20J), all surfaces, per IEC 62262

**ELECTRICAL**
- **Network Port**: RJ-45 connector for 100Base-TX
- **Auto MDI/MDI-X**
- **Cable Type**: Cat5 or better for 100Base-TX
- **Input Power**: PoE (IEEE 802.3af, Class 3), 12 VDC, 24 VAC
- **Power Consumption**: 8.5 W nominal
- **Current Consumption**: 177 mA @ PoE; 0.35 A @ 24 VAC; 0.7 A @ 12 VDC
- **Local Storage**: SD, SDHC, SDXC
- **Alarm**: Detects open or closed alarm state
- **Input**: 5 VDC maximum, 0.5 mA maximum
- **Relay Output**: ±350V VDC maximum, ±130 mA maximum

**NETWORK**
- **Supported Protocols**: TCP/IP, UDP/IP (Unicast, Multicast IGMP), UPnP, DNS, DHCP, RTP, RTSP, NTP, IPv4, IPv6, SNMP v2c/v3, QoS, HTTP, HTTPS, SSH, SSL, SMTP, FTP, ARP, ICMP, and 802.1x (EAP)
- **Users**
  - Unicast: Up to 20 simultaneous users depending on the resolution settings
  - Multicast: Unlimited users H.264
- **Security Access**: Password protected
- **Software Interface**: Web browser view and setup

**VIDEO**
- **Video Streams**: Independently configurable primary and secondary streams plus service stream
- **Available Resolutions**: Two configurable streams as follows:

<table>
<thead>
<tr>
<th>Camera Model</th>
<th>Aspect Ratio</th>
<th>MPx</th>
<th>Width</th>
<th>Height</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 MPx</td>
<td>3.0</td>
<td>2048</td>
<td>1536</td>
<td></td>
</tr>
<tr>
<td>2.95</td>
<td>1984</td>
<td>1488</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.8</td>
<td>1600</td>
<td>1200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>1280</td>
<td>960</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.5</td>
<td>800</td>
<td>600</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.3</td>
<td>704</td>
<td>480</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.3 (480p)</td>
<td>640</td>
<td>480</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.07</td>
<td>320</td>
<td>240</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Maximum Frame Rate**: Up to 80 frames per second, 30 fps with WDR
- **Video Encoding**: H.264 High, Main, or Base profiles, and MJPEG
- **Bit Rate Control**: Constrained variable bit rate (CVBR), constant bit rate (CBR)
- **Corridor Mode**: Electronic image flip and mirror: 180°, 90° and 270° (H.264 only)
- **Service Stream**: JPEG stream; 640 x 480 or 640 x 360, up to 15 fps

**VIDEO**
- **Video Streams**: Independently configurable primary and secondary streams plus service stream
- **Available Resolutions**: Two configurable streams as follows:
TECHNICAL SPECIFICATIONS

MINIMUM SYSTEM REQUIREMENTS

- Processor: Intel® Core™ i3 processor, 2.4 GHz
- Operating System: Microsoft® Windows® 7 (32- and 64-bit), or DirectX®11, Windows XP Service Pack 3 with DirectX 9.0c; or Mac® OS X 10.4 (or later)
- Memory: 4 GB RAM
- Network Interface: 100 megabits (or greater)
- Monitor: Minimum of 1024 x 768 resolution, 16- or 32-bit pixel color resolution
- Web Browser*: Internet Explorer® 8.0 (or later), Google Chrome™ 51 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 for Windows 7, XP, or Vista; or QuickTime 7.6.4 for Mac OS X 10.4 (or later)

ANALYTICS

- Required Systems for 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

INTEGRATION

- Pelco System Integration: VideoXpert
- Open API: Pelco API or ONVIF Profile S, Profile G, and Profile Q
- Mobile Application: Integrated with Pelco Mobile Application

SOFTWARE FEATURES

- Multilingual menus in user interface: Arabic, English, French, Italian, German, Korean, Spanish, Portuguese, Russian, Simplified Chinese, Turkish
- 16 window blanks, configurable in size
- Password protection
- Snapshot with JPEG capture at the same resolution as the highest stream configured
- Text overlays for camera name, time, date, or custom text
- Image overlays

CERTIFICATIONS/RATINGS*

- CE (Class A)
- FCC (Class A)
- ICES-003 (Class A)
- UL/cUL Listed
- UL/IEC 60950-22
- KC
- RCM
- Meets Type 4X (environmental models only), IP66 and IK10 ratings
- ONVIF Profile S, Profile G, and Profile Q Conformant

*At the time of this publication, certifications are pending. Consult the factory or www.pelco.com for the current status of certifications.

RECOMMENDED MOUNTS

- IBEPLMT-E: Environmental pole mount
- IBEWLMT-E: Environmental wall mount
- IBEWLMT-I: Indoor wall mount
TECHNICAL SPECIFICATIONS

MODELS

<table>
<thead>
<tr>
<th>Resolution</th>
<th>Model Number</th>
<th>Lens</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.3 MPx</td>
<td>IBE129-1I</td>
<td>3 ~ 9 mm</td>
<td>Sarix Enhanced Indoor IR Bullet</td>
</tr>
<tr>
<td>1.3 MPx</td>
<td>IBE129-1R</td>
<td>3 ~ 9 mm</td>
<td>Sarix Enhanced Environmental IR Bullet</td>
</tr>
<tr>
<td>2 MPx</td>
<td>IBE229-1I</td>
<td>3 ~ 9 mm</td>
<td>Sarix Enhanced Indoor IR Bullet</td>
</tr>
<tr>
<td>2 MPx</td>
<td>IBE229-1R</td>
<td>3 ~ 9 mm</td>
<td>Sarix Enhanced Environmental IR Bullet</td>
</tr>
<tr>
<td>2 MPx</td>
<td>IBE222-1I</td>
<td>9 ~ 22 mm</td>
<td>Sarix Enhanced Indoor IR Bullet</td>
</tr>
<tr>
<td>2 MPx</td>
<td>IBE222-1R</td>
<td>9 ~ 22 mm</td>
<td>Sarix Enhanced Environmental IR Bullet</td>
</tr>
<tr>
<td>3 MPx</td>
<td>IBE329-1I</td>
<td>3 ~ 9 mm</td>
<td>Sarix Enhanced Indoor IR Bullet</td>
</tr>
<tr>
<td>3 MPx</td>
<td>IBE329-1R</td>
<td>3 ~ 9 mm</td>
<td>Sarix Enhanced Environmental IR Bullet</td>
</tr>
<tr>
<td>2 MPx</td>
<td>IBE322-1I</td>
<td>9 ~ 22 mm</td>
<td>Sarix Enhanced Indoor IR Bullet</td>
</tr>
<tr>
<td>3 MPx</td>
<td>IBE322-1R</td>
<td>9 ~ 22 mm</td>
<td>Sarix Enhanced Environmental IR Bullet</td>
</tr>
</tbody>
</table>

IBE-WLMT-E ENVIRONMENTAL WALL MOUNT & IBE-WLMT-I INDOOR WALL MOUNT

IBE-PLMT-E ENVIRONMENTAL POLE MOUNT

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