AXIS Q1808-LE Bullet Camera
Powerful 10 MP surveillance

With 4K and an ultra-high light sensitive 4/3" sensor, this powerful camera delivers exceptional low-light performance and less noise even at great distances. It's available with a choice of lenses; a wide lens for great coverage in open areas and a tele lens for surveillance from a distance. A deep learning processing unit enables more processing power to run advanced features and powerful analytics on the edge. And, with PoE-out you can connect and power other devices without any additional cabling. Furthermore, this robust, outdoor-ready camera features Axis Edge Vault to safeguard the device and protect sensitive information from unauthorized access.

> **Ultra-high light-sensitive 4/3" image sensor**
> **Wide or tele Canon lens**
> **Zipstream with storage profile**
> **Axis Edge Vault safeguards the device**
> **PoE-out to power an additional device**

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AXIS Q1808-LE Bullet Camera

Camera

Models	AXIS Q1808-LE AXIS Q1808-LE 150 mm
Image sensor	4/3" progressive scan RGB CMOS Pixel size 4.63 µm
Lens	**Q1808–LE:** Varifocal, 12-48 mm, F1.7-4.0 Horizontal field of view: 90°–21° Vertical field of view: 49°–12° Minimum focus distance: 1.5 m (4.9 ft) Remote zoom and focus, P-Iris control **Q1808–LE 150 mm:** Varifocal, 50-150 mm, F4.0 Horizontal field of view: 21°–7° Vertical field of view: 12°–4° Minimum focus distance: 5 m (16.4 ft) Remote zoom and focus, P-Iris control
Day and night	Automatically removable IR-cut filter in day mode and IR-pass filter 800–900 nm in night mode
Minimum illumination	**Q1808-LE:** **Color:** 0.02 lux at 50 IRE, F1.7 **B/W:** 0.004 lux at 50 IRE, F1.7 0 lux with IR illumination on **Q1808-LE 150 mm:** **Color:** 0.1 lux at 50 IRE, F4.0 **B/W:** 0.02 lux at 50 IRE, F4.0 0 lux with IR illumination on
Shutter speed	With WDR: 1/22000 s to 2 s in 4K With WDR: 1/25500 s to 2 s in 3712x2784 Without WDR: 1/45500 s to 2 s
Camera angle adjustment	Pan ±180°, tilt 0 to -90°, roll -90 to 270°

System on chip (SoC)

Model	ARTPEC-8
Memory	2048 MB RAM, 8192 MB Flash
Compute capabilities	Deep learning processing unit (DLPU)

Video

Video compression	H.264 (MPEG-4 Part 10/AVC) Baseline, Main and High Profiles H.265 (MPEG-H Part 2/HEVC) Main Profile Motion JPEG
Resolution	**4:3** 3712x2784 to 160x120 **16:9:** 3840x2160 to 160x90 **16:10** 1280x800 to 160x100
Frame rate	Up to 60 fps (50/60 Hz) in 4K mode Up to 30 fps (50/60 Hz) in 4:3 mode
Video streaming	Up to 20 unique and configurable video streams[a] Axis Zipstream technology in H.264 and H.265 Controllable frame rate and bandwidth VBR/ABR/MBR H.264/H.265 Low latency mode Video streaming indicator
Signal-to-noise ratio	>55 dB
WDR	Forensic WDR: Up to 120 dB depending on scene
Multi-view streaming	Up to 8 individually cropped out view areas
Noise reduction	Spatial filter (2D noise reduction) Temporal filter (3D noise reduction)
Image settings	Saturation, contrast, brightness, sharpness, white balance, day/night threshold, local contrast, tone mapping , exposure mode, exposure zones, defogging, barrel distortion correction, compression, rotation: 0°, 90°, 180°, 270° including corridor format, mirroring, text and image overlay, dynamic text and image overlay, polygon privacy mask Scene profiles: forensic, vivid, traffic overview
Image processing	Axis Zipstream, Forensic WDR, Lightfinder 2.0, OptimizedIR
Pan/Tilt/Zoom	Digital PTZ, optical zoom, preset positions

Limited guard tour, control queue, on-screen directional indicator
Tour recording (max 10, max duration 16 minutes each), guard tour (max 100), adjustable zoom speed

Audio

Audio features	Automatic gain control Speaker pairing Spectrum visualizer[b]
Audio input	10-band graphic equalizer Input for external unbalanced microphone, optional 5 V microphone power Digital input, optional 12 V ring power Unbalanced line input Microphone pairing
Audio output	Output via speaker pairing
Audio encoding	24bit LPCM, AAC-LC 8/16/32/44.1/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Opus 8/16/48 kHz Configurable bit rate

Network

Network protocols	IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS[c], HTTP/2, TLS[c], QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP®, SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, NTS, RTSP, RTP, SRTP/RTSPS, TCP, UDP, IGMPv1/v2/v3, RTCP, DHCPv4/v6, SSH, LLDP, CDP, MQTT v3.1.1, Secure syslog (RFC 3164/5424, UDP/TCP/TLS), Link-Local address (ZeroConf), IEEE 802.1X (EAP-TLS), IEEE 802.1AR

System integration

Application Programming Interface	Open API for software integration, including VAPIX®, metadata and AXIS Camera Application Platform (ACAP); specifications at *axis.com/developer-community*. ACAP includes Native SDK and Computer Vision SDK. One-click cloud connection ONVIF® Profile G, ONVIF® Profile M, ONVIF® Profile S, and ONVIF® Profile T, specifications at *onvif.org*
Video management systems	Compatible with AXIS Companion, AXIS Camera Station, video management software from Axis' Application Development Partners available at *axis.com/vms*
Onscreen controls	Image stabilization Day/night shift Defogging Video streaming indicator
Event conditions	Device status: above/below/within operating temperature, IP address blocked, IP address removed, live stream active, network lost, new IP address, ring power overcurrent protection, system ready, within operating temperature Digital audio: digital signal contains Axis metadata, digital signal has invalid sample rate, digital signal missing, digital signal okay Edge storage: recording ongoing, storage disruption, storage health issues detected I/O: digital input is active, manual trigger, virtual input MQTT: stateless Scheduled and recurring: schedule Video: average bitrate degradation, day-night mode, tampering
Event actions	Day-night mode Defog I/O: toggle I/O once, toggle I/O while the rule is active Illumination: use lights, use lights while the rule is active Images: send images through FTP, HTTP, SFTP MQTT: publish Notification: HTTP, HTTPS, TCP and email Overlay text Recordings: SD card and network share SNMP traps: send, send while the rule is active Video clips: send video clips through FTP, HTTP, HTTP, SFTP WDR mode
Built-in installation aids	Pixel counter, remote zoom and focus, level grid, leveling assistant

Analytics

AXIS Object Analytics	**Object classes:** humans, vehicles (types: cars, buses, trucks, bikes) **Features:** line crossing, object in area, time in area, crossline counting[BETA], occupancy in area[BETA] Up to 10 scenarios

	Metadata visualized with trajectories, color-coded bounding boxes and tables Polygon include/exclude areas Perspective configuration ONVIF Motion Alarm event
Metadata	**Object data**: Classes: humans, faces, vehicles (types: cars, buses, trucks, bikes), license plates Confidence, position **Event data**: Producer reference, scenarios, trigger conditions
Applications	Included AXIS Object Analytics, AXIS Video Motion Detection, active tampering alarm, audio detection, orientation aid Supported AXIS People Counter Support for AXIS Camera Application Platform enabling installation of third-party applications, see *axis.com/acap*

Approvals

Product markings	UL/cUL, BIS, UKCA, CE, KC, EAC, VCCI, RCM
Supply chain	TAA compliant
EMC	CISPR 35, CISPR 32 Class A, EN 55035, EN 55032 Class A, EN 50121-4, EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2 **Australia/New Zealand:** RCM AS/NZS CISPR 32 Class A **Canada:** ICES-3(A)/NMB-3(A) **Japan:** VCCI Class A **Korea:** KS C 9835, KS C 9832 Class A **USA:** FCC Part 15 Subpart B Class A **Railway:** IEC 62236-4
Safety	CAN/CSA C22.2 No. 62368-1 ed. 3, IEC/EN/UL 62368-1 ed. 3, IEC/EN 62471 risk group 2
Environment	IEC 60068-2-1, IEC 60068-2-2, IEC 60068-2-6, IEC 60068-2-14, IEC 60068-2-27, IEC 60068-2-78, IEC/EN 60529 IP66, IP67, IEC/EN 62262 IK10 body, IK08 glass, NEMA 250 Type 4X, NEMA TS 2 (2.2.7-2.2.9)
Network	NIST SP500-267
Cybersecurity	ETSI EN 303 645

Cybersecurity

Edge security	**Software:** Signed firmware, brute force delay protection, digest authentication, password protection **Hardware:** Axis Edge Vault cybersecurity platform TPM 2.0 (CC EAL4+, FIPS 140-2 Level 2), secure element (CC EAL 6+), system-on-chip security (TEE), Axis device ID, secure keystore, signed video, secure boot, encrypted filesystem (AES-XTS-Plain64 256bit)
Network security	IEEE 802.1X (EAP-TLS)[c], IEEE 802.1AR, HTTPS/HSTS[c], TLS v1.2/v1.3[c], Network Time Security (NTS), X.509 Certificate PKI, host-based firewall
Documentation	*AXIS OS Hardening Guide* *Axis Vulnerability Management Policy* *Axis Security Development Model* AXIS OS Software Bill of Material (SBOM) To download documents, go to *axis.com/support/cybersecurity/resources* To read more about Axis cybersecurity support, go to *axis.com/cybersecurity*

General

Casing	IP66-, IP67-, and NEMA 4X-rated IK10 impact-resistant aluminum enclosure with integrated dehumidifying membrane, IK08 impact-resistant glass front window, weathershield with black anti-glare coating Color: white NCS S 1002-B, black NCS S 9000-N For repainting instructions, go to the product's support page. For information about the impact on warranty, go to *axis.com/warranty-implication-when-repainting*.
Power	Power over Ethernet (PoE) IEEE 802.3at Type 2 Class 4, typical 14.9 W, max 25.5 W Power over Ethernet (PoE) IEEE 802.3bt Type 3 Class 6, typical 14.9 W, max 51 W Axis Midspan 60 W, IEEE 802.3bt Type 3 Class 6, required for PoE out 10–28 V DC, typical 13.7 W, max 25.9 W 20–24 V AC, typical 20.7 VA, max 39.2 VA
Connectors	Network: Shielded RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE, RJ45 1000BASE-T PoE output to power an external PoE device I/O: 4-pin 2.5 mm terminal block for 1 alarm input and 1 output Audio: 3.5 mm mic/line in Power: DC input
IR illumination	**Q1808–LE:** OptimizedIR with power-efficient, long-life 850 nm IR LEDs and white LED combo Range of reach 100 m (328 ft) or more depending on the scene **Q1808–LE 150 mm:** OptimizedIR with power-efficient, long-life 850 nm IR LEDs Range of reach 120 m (394 ft) or more depending on the scene
Storage	Support for microSD/microSDHC/microSDXC card Support for SD card encryption (AES-XTS-Plain64 256bit) Recording to network-attached storage (NAS) For SD card and NAS recommendations see *axis.com*
Operating conditions	Temperature: -40 °C to 60 °C (-40 °F to 140 °F) Maximum temperature according to NEMA TS 2 (2.2.7): 74 °C (165 °F) Humidity: 10–100% RH (condensing)
Storage conditions	Temperature: -40 °C to 65 °C (-40 °F to 149 °F) Humidity: 5–95% RH (non-condensing)
Dimensions	For the overall product dimensions, see the dimension drawing in this datasheet. Effective Projected Area (EPA): 0.0455 m^2 (0.49 ft^2)
Weight	3200g (7.05 lb)
Box content	Camera, installation guide, terminal block connector, RJ45 cable, connector guard, cable gaskets, owner authentication key
Optional accessories	AXIS T8415 Wireless Installation Tool AXIS Surveillance Cards For more accessories, go to *axis.com/products/axis-q1808-le#accessories*
System tools	AXIS Site Designer, AXIS Device Manager, product selector, accessory selector, lens calculator Available at *axis.com*
Languages	English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Polish, Traditional Chinese, Dutch, Czech, Swedish, Finnish, Turkish, Thai, Vietnamese
Warranty	5-year warranty, see *axis.com/warranty*
Part numbers	Available at *axis.com/products/axis-q1808-le#part-numbers*

Sustainability

Substance control	PVC free, BFR/CFR free in accordance with JEDEC/ECA Standard JS709 RoHS in accordance with EU RoHS Directive 2011/65/EU/ and EN 63000:2018 REACH in accordance with (EC) No 1907/2006. For SCIP UUID, see *echa.europa.eu*
Materials	Renewable carbon-based plastic content: 65% (bio-based) Screened for conflict minerals in accordance with OECD guidelines To read more about sustainability at Axis, go to *axis.com/about-axis/sustainability*
Environmental responsibility	*axis.com/environmental-responsibility* Axis Communications is a signatory of the UN Global Compact, read more at *unglobalcompact.org*

a. *We recommend a maximum of 3 unique video streams per camera or channel, for optimized user experience, network bandwidth, and storage utilization. A unique video stream can be served to many video clients in the network using multicast or unicast transport method via built-in stream reuse functionality.*
b. *Feature available with ACAP.*
c. *This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (openssl.org), and cryptographic software written by Eric Young (eay@cryptsoft.com).*
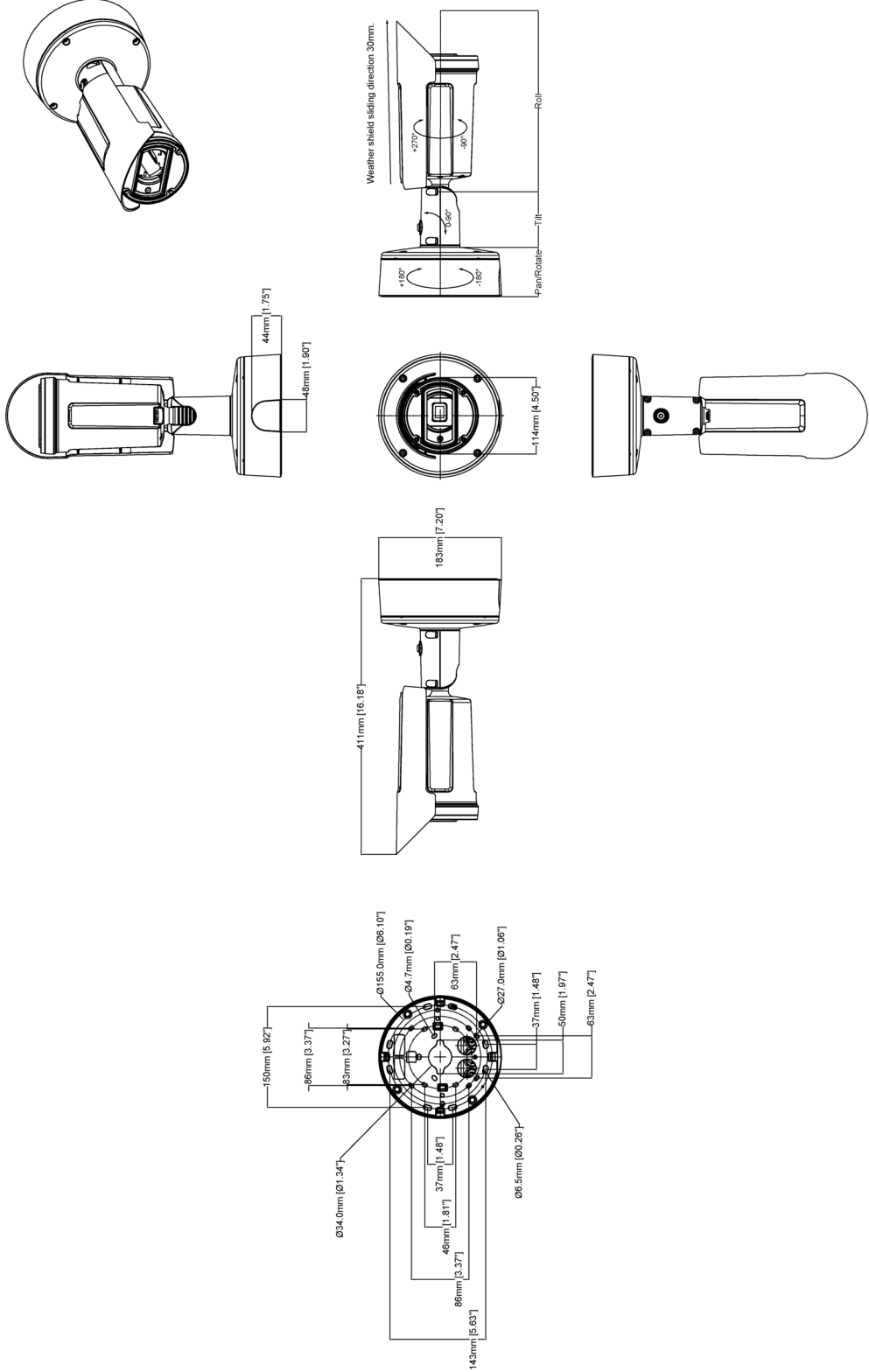
Detect, Observe, Recognize, Identify (DORI)

Table 1.Q1808-LE

	DORI definition	Distance (wide)	Distance (tele)
Detect	25 px/m (8 px/ft)	105.4 m (345.7 ft)	407.1 m (1335.3 ft)
Observe	63 px/m (19 px/ft)	41.8 m (137.1 ft)	161.6 m (530.0 ft)
Recognize	125 px/m (38 px/ft)	21.1 m (69.2 ft)	81.4 m (267.0 ft)
Identify	250 px/m (76 px/ft)	10.5 m (34.44 ft)	40.7 m (133.5 ft)

Table 2.Q1808-LE 150 mm

	DORI definition	Distance (wide)	Distance (tele)
Detect	25 px/m (8 px/ft)	426.9 m (1400.2 ft)	1275.8 m (4184.6 ft)
Observe	63 px/m (19 px/ft)	169.4 m (555.6 ft)	506.3 m (1660.7 ft)
Recognize	125 px/m (38 px/ft)	85.4 m (280.1 ft)	255.1 m (836.7 ft)
Identify	250 px/m (76 px/ft)	42.7 m (140.1 ft)	127.6 m (418.5 ft)

The DORI values are calculated using pixel densities for different use cases as recommended by the EN-62676-4 standard. The calculations use the center of the image as the reference point and consider lens distortion. The possibility to recognize or identify a person or object depends on factors such as object motion, video compression, lighting conditions, and camera focus. Use margins when planning. The pixel density varies across the image, and the calculated values can differ from the distances in the real world.

Dimension drawings

AXIS Q1808-LE Bullet Camera

Weather shield sliding direction 30mm.

+270°
-90°
Revolve
-90°
+90°
Tilt
+180°
-180°
Pan/Rotate

44mm [1.75"]
48mm [1.90"]
114mm [4.50"]

Ø183mm [7.20"]
385mm [15.17"]

Ø155.0mm [Ø6.10"]
Ø4.7mm [Ø0.19"]
63mm [2.47"]
Ø27.0mm [Ø1.06"]
37mm [1.48"]
50mm [1.97"]
63mm [2.47"]
150mm [5.92"]
86mm [3.37"]
83mm [3.27"]
Ø34.0mm [Ø1.34"]
Ø6.5mm [Ø0.26"]
37mm [1.48"]
46mm [1.81"]
86mm [3.37"]
143mm [5.63"]

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Created by	MF	Scale	1:8

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AXIS Q1808-LE Bullet Camera 150mm

Weather shield sliding direction 30mm.

Roll

+270°
-90°

0-90°

Tilt

+180°
-180°

Pan/Rotate

44mm [1.75"]
48mm [1.90"]

114mm [4.50"]

183mm [7.20"]
411mm [16.18"]

Ø155.0mm [Ø6.10"]
Ø4.7mm [Ø0.19"]
63mm [2.47"]
Ø27.0mm [Ø1.06"]
37mm [1.48"]
50mm [1.97"]
63mm [2.47"]

150mm [5.92"]
86mm [3.37"]
83mm [3.27"]

Ø34.0mm [Ø1.34"]
37mm [1.48"]
46mm [1.81"]
86mm [3.37"]
143mm [5.63"]
Ø6.5mm [Ø0.26"]

Revision	v.01	Revision date	2023-06-08
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Key features and technologies

AXIS Object Analytics

AXIS Object Analytics is a preinstalled, multifeatured video analytics that detects and classifies humans, vehicles, and types of vehicles. Thanks to AI-based algorithms and behavioral conditions, it analyzes the scene and their spatial behavior within – all tailored to your specific needs. Scalable and edge-based, it requires minimum effort to set up and supports various scenarios running simultaneously.

Axis Edge Vault

Axis Edge Vault is the hardware-based cybersecurity platform that safeguards the Axis device. It forms the foundation that all secure operations depend on and offers features to protect the device's identity, safeguard its integrity from factory and protect sensitive information from unauthorized access.

Establishing the root of trust starts at the device's boot process. In Axis devices, the hardware-based mechanism **secure boot** verifies the operating system (AXIS OS) that the device is booting from. AXIS OS, in turn, is cryptographically signed (**signed firmware**) during the build process. Secure boot and signed firmware tie into each other and ensure that the firmware has not been tampered with during the lifecycle of the device and that the device only boots from authorized firmware. This creates an unbroken chain of cryptographically validated software for the chain of trust that all secure operations depend on.

From a security aspect, the **secure keystore** is the critical building-block for protecting cryptographic information used for secure communication (IEEE 802.1X, HTTPS, Axis device ID, access control keys etc..) against malicious extraction in the event of a security breach. The secure keystore is provided through a Common Criteria and/or FIPS 140 certified hardware-based cryptographic computing module. Depending on security requirements, an Axis device can have either one or multiple such modules, like a TPM 2.0 (Trusted Platform Module) or a secure element, and/or a system-on-chip (SoC) embedded Trusted Execution Environment (TEE).

Signed video ensures that video evidence can be verified as untampered without proving the chain of custody of the video file. Each camera uses its unique video signing key, which is securely stored in the secure keystore, to add a signature into the video stream. This allows video to be traced back to the Axis camera from where it originated, so it's possible to verify that the footage has not been tampered with after it left the camera.

To read more about Axis Edge Vault, go to *axis.com/solutions/edge-vault*.

Electronic image stabilization

Electronic image stabilization (EIS) provides smooth video in situations where a camera is subject to vibrations. Built-in gyroscopic sensors continuously detect the camera's movements and vibrations, and they automatically adjust the frame to ensure you always capture the details you need. Electronic image stabilization relies on different algorithms for modeling camera motion, which are used to correct the images.

Forensic WDR

Axis cameras with wide dynamic range (WDR) technology make the difference between seeing important forensic details clearly and seeing nothing but a blur in challenging light conditions. The difference between the darkest and the brightest spots can spell trouble for image usability and clarity. Forensic WDR effectively reduces visible noise and artifacts to deliver video tuned for maximal forensic usability.

Lightfinder

The Axis Lightfinder technology delivers high-resolution, full-color video with a minimum of motion blur even in near darkness. Because it strips away noise, Lightfinder makes dark areas in a scene visible and captures details in very low light. Cameras with Lightfinder discern color in low light better than the human eye. In surveillance, color may be the critical factor to identify a person, an object, or a vehicle.

OptimizedIR

Axis OptimizedIR provides a unique and powerful combination of camera intelligence and sophisticated LED technology, resulting in our most advanced camera-integrated IR solutions for complete darkness. In our pan-tilt-zoom (PTZ) cameras with OptimizedIR, the IR beam automatically adapts and becomes wider or narrower as the camera zooms in and out to make sure that the entire field of view is always evenly illuminated.

Zipstream

The Axis Zipstream technology preserves all the important forensic in the video stream while lowering bandwidth and storage requirements by an average of 50%. Zipstream also includes three intelligent algorithms, which ensure that rel-

evant forensic information is identified, recorded, and sent in full resolution and frame rate.

For more information, see *axis.com/glossary*