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

AXIS Q1808-LE Bullet Camera

Camera

Variants
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 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[1]
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

1. *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.*

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[2]

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[3], HTTP/2, TLS[3], QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP®, SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, PTP, 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*.
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 Camera Station Edge, AXIS Camera Station Pro, AXIS Camera Station 5, and video management software from Axis' 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

2. *Feature available with ACAP*
3. *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).*

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

Applications
Included
AXIS Object Analytics, AXIS Scene Metadata, AXIS Image Health Analytics
AXIS Live Privacy Shield, AXIS Video Motion Detection, active tampering alarm, audio detection, orientation aid
Supported
AXIS License Plate Verifier, AXIS Perimeter Defender, AXIS Speed Monitor
Support for AXIS Camera Application Platform enabling installation of third-party applications, see *axis.com/acap*

AXIS Object Analytics
Object classes: humans, vehicles (types: cars, buses, trucks, bikes, other)
Scenarios: line crossing, object in area, time in area, crossline counting[BETA], occupancy in area[BETA]
Up to 10 scenarios
Other features: triggered objects visualized with trajectories, color-coded bounding boxes and tables
Polygon include/exclude areas
Perspective configuration
ONVIF Motion Alarm event

AXIS Image Health Analytics
Detection settings:
Tampering: blocked image, redirected image
Image degradation: blurred image, underexposed image
Other features: sensitivity, validation period

AXIS Scene Metadata
Object classes: humans, faces, vehicles (types: cars, buses, trucks, bikes), license plates
Object attributes: vehicle color, upper/lower clothing color, confidence, position

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,
IS 13252

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, BSI IT Security Label, FIPS 140

Cybersecurity

Edge security
Software: Signed OS, brute force delay protection, digest authentication, password protection, Axis Cryptographic Module (FIPS 140-2 level 1)
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)[4], IEEE 802.1AR, HTTPS/HSTS[4], TLS v1.2/v1.3[4], 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
Midspan 60 W, IEEE 802.3bt Type 3 Class 6 required for PoE out IEEE 802.3at Type 2 Class 4 (30 W) to a second device
10–28 V DC, typical 13.7 W, max 25.5 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 two configurable supervised inputs / digital outputs (12 V DC output, max. load 50 mA)
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)
Wind load (sustained): 60 m/s (134 mph)

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

4. *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).*

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*

Detect, Observe, Recognize, Identify (DORI)

Q1808-LE

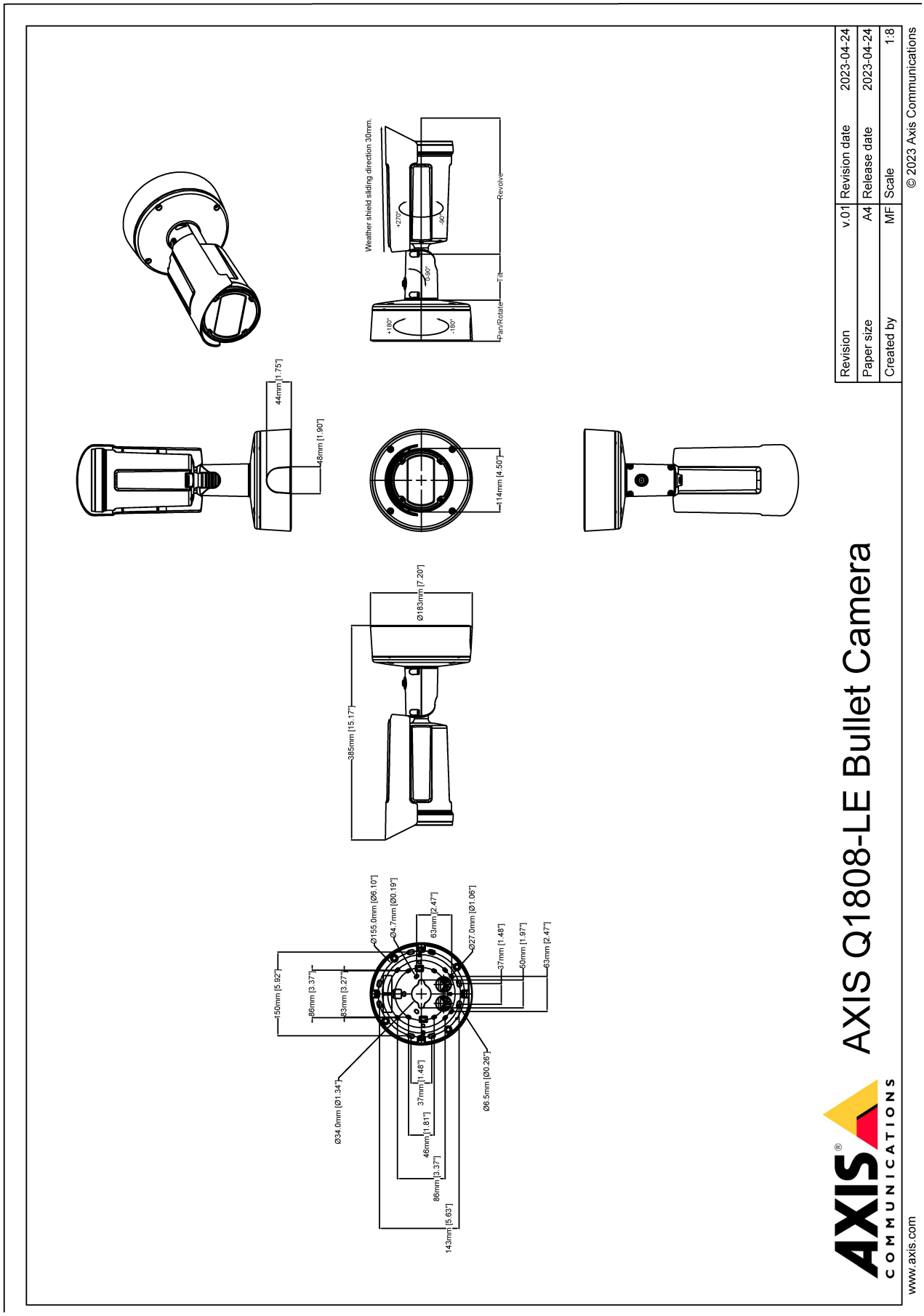
	DORI definition	Distance (wide)	Distance (tele)
Detect	25 px/m (8 px/ft)	105.4 m (345.7 ft)	407.1 m (1335.3 ft)
Observe	63 px/m (19 px/ft)	41.8 m (137.1 ft)	161.6 m (530.0 ft)
Recognize	125 px/m (38 px/ft)	21.1 m (69.2 ft)	81.4 m (267.0 ft)
Identify	250 px/m (76 px/ft)	10.5 m (34.44 ft)	40.7 m (133.5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

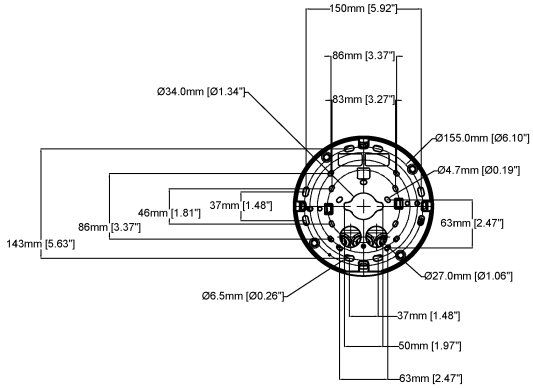
Q1808-LE 150 mm

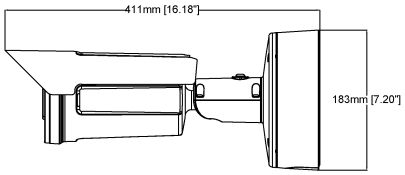
	DORI definition	Distance (wide)	Distance (tele)
Detect	25 px/m (8 px/ft)	426.9 m (1400.2 ft)	1275.8 m (4184.6 ft)
Observe	63 px/m (19 px/ft)	169.4 m (555.6 ft)	506.3 m (1660.7 ft)
Recognize	125 px/m (38 px/ft)	85.4 m (280.1 ft)	255.1 m (836.7 ft)
Identify	250 px/m (76 px/ft)	42.7 m (140.1 ft)	127.6 m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

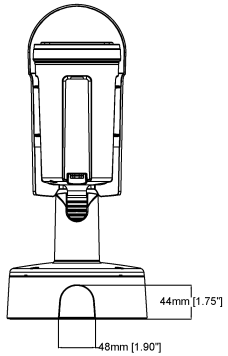
The DORI values are calculated using pixel densities for different use cases as recommended by the EN-62676-4 standard. The calculations use the center of the image as the reference point and consider lens distortion. The possibility to recognize or identify a person or object depends on factors such 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.

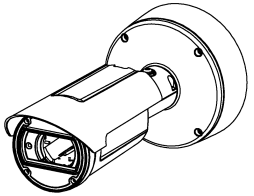
Dimension drawings

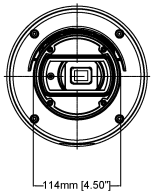


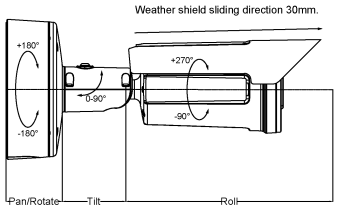


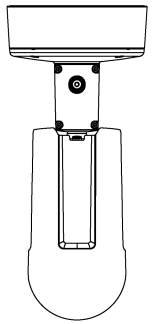












AXIS Q1808-LE Bullet Camera 150mm

Revision	v.01	Revision date	2023-06-08
Paper size	A4	Release date	2023-06-08
Created by	MF	Scale	1:8

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Highlighted capabilities

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 offer features to protect the device's identity, safeguard its integrity and protect sensitive information from unauthorized access. For instance, **secure boot** ensures that a device can boot only with **signed OS**, which prevents physical supply chain tampering. With signed OS, the device is also able to validate new device software before accepting to install it. And 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 and secure connections are provided through a Common Criteria or FIPS 140 certified hardware-based cryptographic computing module.

Furthermore, signed video ensures that video evidence can be verified as untampered. Each camera uses its unique video signing key, which is securely stored in the secure keystore, to add a signature into the video stream allowing video to be traced back to the Axis camera from where it originated.

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

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

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