

## AXIS Q1728-LE Block Camera

8 MP, superior light-sensitivity, outdoor camera

Built on ARTPEC-9, this AI-powered camera offers 4K and a large 1/1.2" sensor for outstanding performance even in low-light. A deep learning processing unit lets you run advanced features and powerful analytics on the edge. Preinstalled with AXIS Object Analytics, it detects and tracks objects. And AXIS Image Health Analytics notifies you if your image is blocked, degraded, underexposed, or redirected. Axis Zipstream with support for AV1 and H.264/H.265 significantly reduces bandwidth and storage needs. Furthermore, it's available with wide or tele lens, and a front window with carbon nanotube film heater guarantees great images every time.

- > **Superior image quality in 4K**
- > **Built-in wiper for harsh weather**
- > **Next-generation AI-powered analytics**
- > **Wide or tele lenses available**
- > **Built-in cybersecurity with Axis Edge Vault**



# AXIS Q1728-LE Block Camera

## Camera

### Variants

AXIS Q1728-LE 13 mm

AXIS Q1728-LE 48 mm

### Image sensor

1/1.2" progressive scan RGB CMOS

Pixel size 2.9 µm

### Lens

IR corrected, P-iris control

13 mm lens:

Varifocal, 5.9–13.3 mm, F1.6–2.9

Horizontal field of view: 108°–49°

Vertical field of view: 58°–27°

Minimum focus distance: 0.5 m (1.6 ft)

48 mm lens:

Varifocal, 15.2–48.7 mm, F1.7

Horizontal field of view: 42°–13°

Vertical field of view: 24°–7°

Minimum focus distance: 1.5 m (4.9 ft)

### Day and night

Automatic IR-cut filter

Hybrid IR filter

### Minimum illumination

13 mm lens:

With WDR and Lightfinder

Color: 0.05 lux at 50 IRE, F1.6–2.9

B/W: 0.01 lux at 50 IRE, F1.6–2.9

0 lux with IR illumination on

48 mm lens:

With WDR and Lightfinder

Color: 0.05 lux at 50 IRE, F1.7

B/W: 0.01 lux at 50 IRE, F1.7

0 lux with IR illumination on

### Shutter speed

1/66500 s to 2 s

## System on chip (SoC)

### Model

ARTPEC-9

### Memory

4 GB RAM, 8 GB 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

AV1

### Resolution

16:9:3840x2160 to 160x120

16:10: 2560x1600 to 160x120

4:3: 2592x1944 to 160x120

### Frame rate

With WDR: Up to 25/30 fps (50/60 Hz) in all resolutions

No WDR: Up to 50/60 fps (50/60 Hz) in all resolutions

### Video streaming

Up to 20 unique and configurable video streams<sup>1</sup>

Axis Zipstream technology in H.264, H.265 and AV1

Controllable frame rate and bandwidth

VBR/ABR/MBR H.264/H.265/AV1

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 7 individually cropped out view areas

### Noise reduction

Spatial filter (2D noise reduction)

Temporal filter (3D noise reduction)

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.

## Image settings

Saturation, contrast, brightness, sharpness, white balance, day/night threshold, local contrast, tone mapping, exposure mode, exposure zones, defog, barrel distortion correction, electronic image stabilization, compression, rotation: auto, 0°, 90°, 180°, 270° including corridor format, mirroring, dynamic text and image overlay, overlay widget, privacy masks, target aperture

Scene profiles: forensic, vivid, traffic overview

## Image processing

AXIS Zipstream, Forensic WDR, Lightfinder 2.0, OptimizedIR

## Pan/Tilt/Zoom

Digital PTZ, preset positions, preset position tour  
Uploadable PTZ driver (Pelco D, Visca and APTP pre-installed)

## Audio

### Features

Automatic gain control  
10-band graphic equalizer for audio input  
Speaker pairing, microphone pairing

### Streaming

Configurable duplex:  
One-way (simplex, half duplex)  
Two-way (half duplex, full duplex)

### Input

Input for external balanced or unbalanced microphone  
Digital input, optional 12 V ring power  
Balanced or unbalanced line input  
Input through microphone pairing

### Output

Output through speaker pairing

### Encoding

AAC-LC 8/16/32/44.1/48 kHz, G.711 PCM 8 kHz, G.726  
ADPCM 8 kHz, Opus 8/16/48 kHz, LPCM 48 kHz

## Network

### Network protocols

IPv4, IPv6 USGv6, ICMPv4/ICMPv6, HTTP, HTTPS<sup>2</sup>, HTTP/2, TLS<sup>2</sup>, 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, ICMP, DHCPv4/v6, ARP, SSH, LLDP, CDP, MQTT v3.1.1, Secure syslog (RFC 3164/5424, UDP/TCP/TLS), Link-Local address (ZeroConf)

## 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](https://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](https://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](https://axis.com/vms).

### Onscreen controls

Autofocus  
Day-night shift  
Defog  
Electronic image stabilization  
Enable-disable all privacy masks  
Fan  
Heater  
IR LED  
Play media clip  
Timed wiper  
Video streaming indicator  
WDR

### Edge-to-edge

Microphone pairing  
Speaker pairing

2. This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. ([openssl.org](https://openssl.org)), and cryptographic software written by Eric Young ([ey@cryptsoft.com](mailto:ey@cryptsoft.com)).

## Event conditions

Audio: audio detection  
Casing open  
Device status: above/below/within operating temperature, IP address blocked, IP address removed, live stream active, network lost, new IP address, system ready, ring power overcurrent protection, shock detected  
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, manual trigger, virtual input  
MQTT: stateless  
Scheduled and recurring: schedule  
Video: average bitrate degradation, day-night mode

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## Event actions

Day-night mode  
Defog  
Guard tour  
I/O  
LEDs  
MQTT  
Notification: HTTP, HTTPS, TCP and email  
Overlay text  
Recordings  
Security  
SNMP trap messages  
Images or video clips: FTP, SFTP, HTTP, HTTPS, network share and email  
WDR mode  
Wiper

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## Built-in installation aids

Remote zoom and focus  
Pixel counter  
Traffic camera installation assistance

## Analytics

### Applications

#### Included

AXIS Object Analytics, AXIS Image Health Analytics, AXIS Scene Metadata, AXIS Live Privacy Shield, AXIS Speed Monitor<sup>3</sup>  
AXIS Video Motion Detection

#### Supported

AXIS Perimeter Defender, AXIS License Plate Verifier  
Support for AXIS Camera Application Platform enabling installation of third-party applications, see [axis.com/acap](https://axis.com/acap)

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## AXIS Object Analytics

Object classes: humans, vehicles (types: cars, buses, trucks, bikes, other)  
Scenarios: line crossing, object in area, time in area, crossline counting, occupancy in area, motion in area, motion line crossing  
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

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## AXIS Image Health Analytics

### Detection settings:

Tampering: blocked image, redirected image  
Image degradation: blurred image, underexposed image  
Other features: sensitivity, validation period

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## 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

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## AXIS Live Privacy Shield

Object classes: Humans, (entire body or face only), license plates, backgrounds  
Masking type: Pixelated with adjustable block size, color (solid), masking inclusion and exclusion areas  
Other features: Dynamic masking up to 10 fps.  
Supports multiple dynamically masked streams, and one unmasked stream with full frame rate, simultaneously.

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## Approvals

### Product markings

CE, EAC, FCC, ICES, KC, RCM, UL, VCCI

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### Supply chain

TAA compliant

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## 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, IEC 62236-4

Australia/New Zealand: RCM AS/NZS CISPR 32 Class A

Canada: ICES(A)/NMB(A)

Japan: VCCI Class A

USA: FCC Part 15 Subpart B Class A

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## Safety

CAN/CSA C22.2 No. 62368-1 ed. 3,  
IEC/EN/UL 62368-1 ed. 3, IEC/EN 62471 risk group  
exempt

## 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, IEC/EN 62262 IK10, NEMA 250  
Type 4X, NEMA TS 2 (2.2.7-2.2.9),  
ISO 21207 (Method B)

## 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 and OAuth 2.0 RFC6749 Client  
Credential Flow/OpenID Authorization Code Flow for  
centralized ADFS account management, password  
protection

**Hardware:** Axis Edge Vault cybersecurity platform  
Secure keystore: secure element (CC EAL 6+, FIPS 140-3  
Level 3), system-on-chip security (TEE)

### Network security

IEEE 802.1X (EAP-TLS, PEAP-MSCHAPv2)<sup>4</sup>,  
IEEE 802.1AE (MACsec PSK/EAP-TLS), IEEE 802.1AR,  
HTTPS/HSTS<sup>4</sup>, TLS v1.2/v1.3<sup>4</sup>, 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](https://axis.com/support/cybersecurity/resources)

To read more about Axis cybersecurity support, go to  
[axis.com/cybersecurity](https://axis.com/cybersecurity)

## General

### Casing

IP66-, 67-, NEMA 4X- and IK10-rated

Aluminum and plastic casing

Color: NCS S 1002-B

Tamper switch, cable holes in bottom

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](https://axis.com/warranty-implication-when-repainting).

### Power

Power over Ethernet IEEE 802.3af/802.3at Type 2

Class 4, max 25.5 W, typical (heater off, IR off) 9.0 W

10–28 V DC, max 25.5 W, typical (heater off, IR off)

7.8 W

Features: dynamic power mode, low power mode, power  
meter

### Connectors

Network: Shielded RJ45 10BASE-T/100BASE-TX/

1000BASE-T PoE

Network: IDC punchdown connector PoE

I/O: 6-pin 2.5 mm terminal block for four configurable  
inputs

Serial communication: RS485/RS422, 2 pcs, 2 pos, full  
duplex, terminal block

Audio: 3.5 mm mic/line in

Power: DC input, terminal block

AHI (Axis Housing Interface)

Security lock slot

### IR illumination

Optimized IR with power-efficient, long-life 850 nm IR  
LEDs

Range of reach 50 m (164 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](https://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)

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).

## Storage conditions

Temperature: -40 °C to 65 °C (-40 °F to 149 °F)

Humidity: 5–95% RH (non-condensing)

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## Dimensions

For the overall product dimensions, see the dimension drawing in this datasheet.

Effective Projected Area (EPA): 0.068 m<sup>2</sup> (0.73 ft<sup>2</sup>)

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## Weight

13 mm lens:

4800 g (10.6 lb)

48 mm lens:

4880 g (10.8 lb)

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## Box content

Camera, installation guide, owner authentication key, connector guard, cable gaskets, AXIS TQ1003-E Wall Mount

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## System tools

AXIS Site Designer, AXIS Device Manager, product selector, accessory selector, lens calculator

Available at [axis.com](https://axis.com)

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## Languages

English, German, French, Spanish, Italian, Russian, Simplified Chinese, Japanese, Korean, Portuguese, Polish, Traditional Chinese, Dutch, Czech, Swedish, Finnish, Turkish, Thai, Vietnamese

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## Warranty

5-year warranty, see [axis.com/warranty](https://axis.com/warranty)

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## Part numbers

Available at [axis.com/products/axis-q1728-le#part-numbers](https://axis.com/products/axis-q1728-le#part-numbers)

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## Optional accessories

### Installation

AXIS T8415 Wireless Installation Tool

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### Storage

AXIS Surveillance Cards

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For more accessories, go to [axis.com/products/axis-q1728-le#compatible-products](https://axis.com/products/axis-q1728-le#compatible-products)

## 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 2015/863, and standard EN IEC 63000:2018

REACH in accordance with (EC) No 1907/2006. For SCIP UUID, see [echa.europa.eu](https://echa.europa.eu)

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### Materials

Renewable carbon-based plastic content (recycled: 4%, bio-based: 42%, carbon capture based: 0%)

Screened for conflict minerals in accordance with OECD guidelines

To read more about sustainability at Axis, go to [axis.com/about-axis/sustainability](https://axis.com/about-axis/sustainability)

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### Environmental responsibility

[axis.com/environmental-responsibility](https://axis.com/environmental-responsibility)

Axis Communications is a signatory of the UN Global Compact, read more at [unglobalcompact.org](https://unglobalcompact.org)

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## Detect, Observe, Recognize, Identify (DORI)

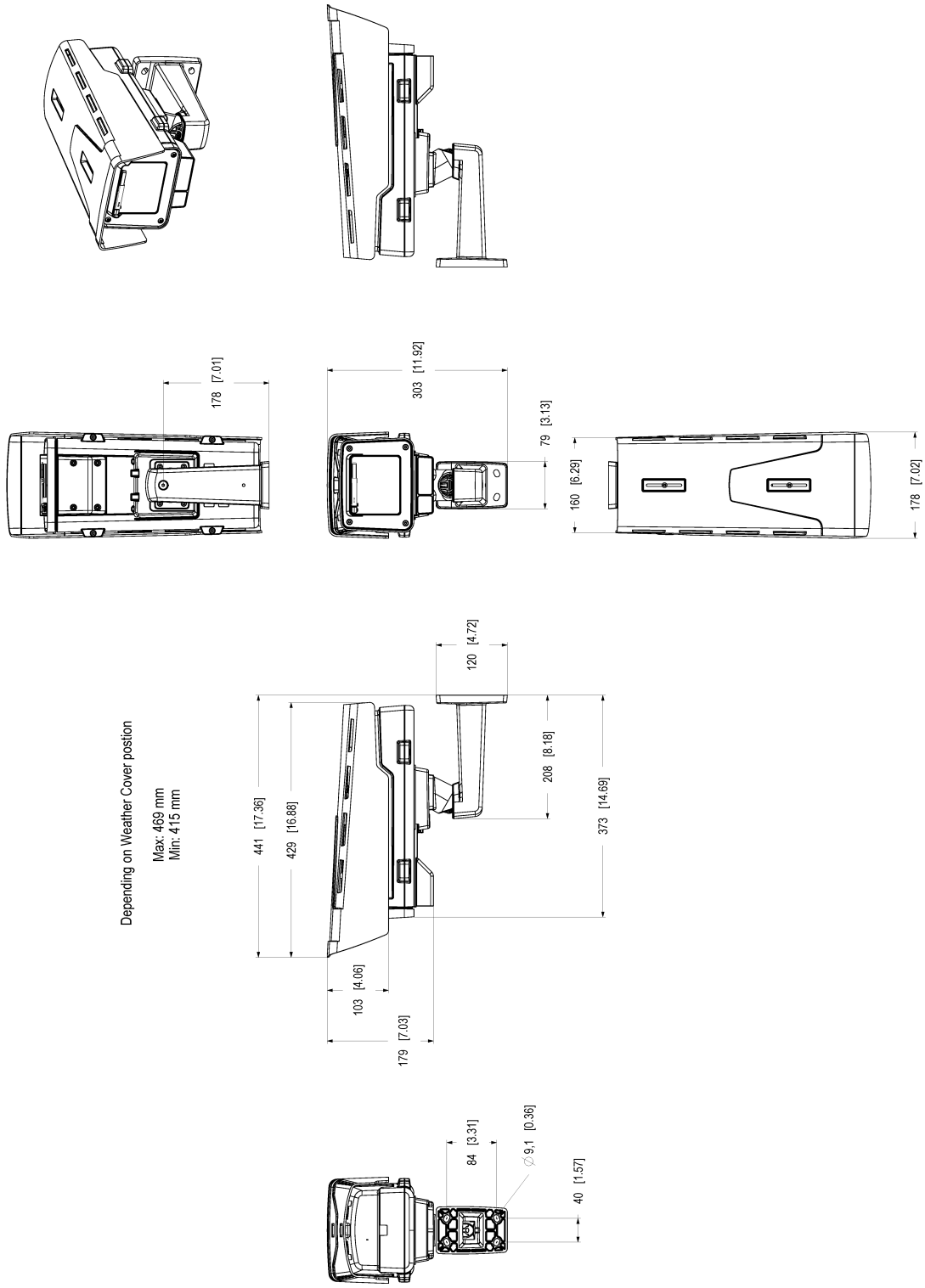
### 13 mm lens

|           | DORI definition     | Distance (wide)   | Distance (tele)    |
|-----------|---------------------|-------------------|--------------------|
| Detect    | 25 px/m (8 px/ft)   | 84.6 m (277.5 ft) | 177.9 m (583.5 ft) |
| Observe   | 63 px/m (19 px/ft)  | 33.6 m (110.2 ft) | 70.6 m (231.6 ft)  |
| Recognize | 125 px/m (38 px/ft) | 16.9 m (55.4 ft)  | 35.6 m (116.8 ft)  |
| Identify  | 250 px/m (76 px/ft) | 8.5 m (27.9 ft)   | 17.8 m (58.4 ft)   |

### 48 mm lens

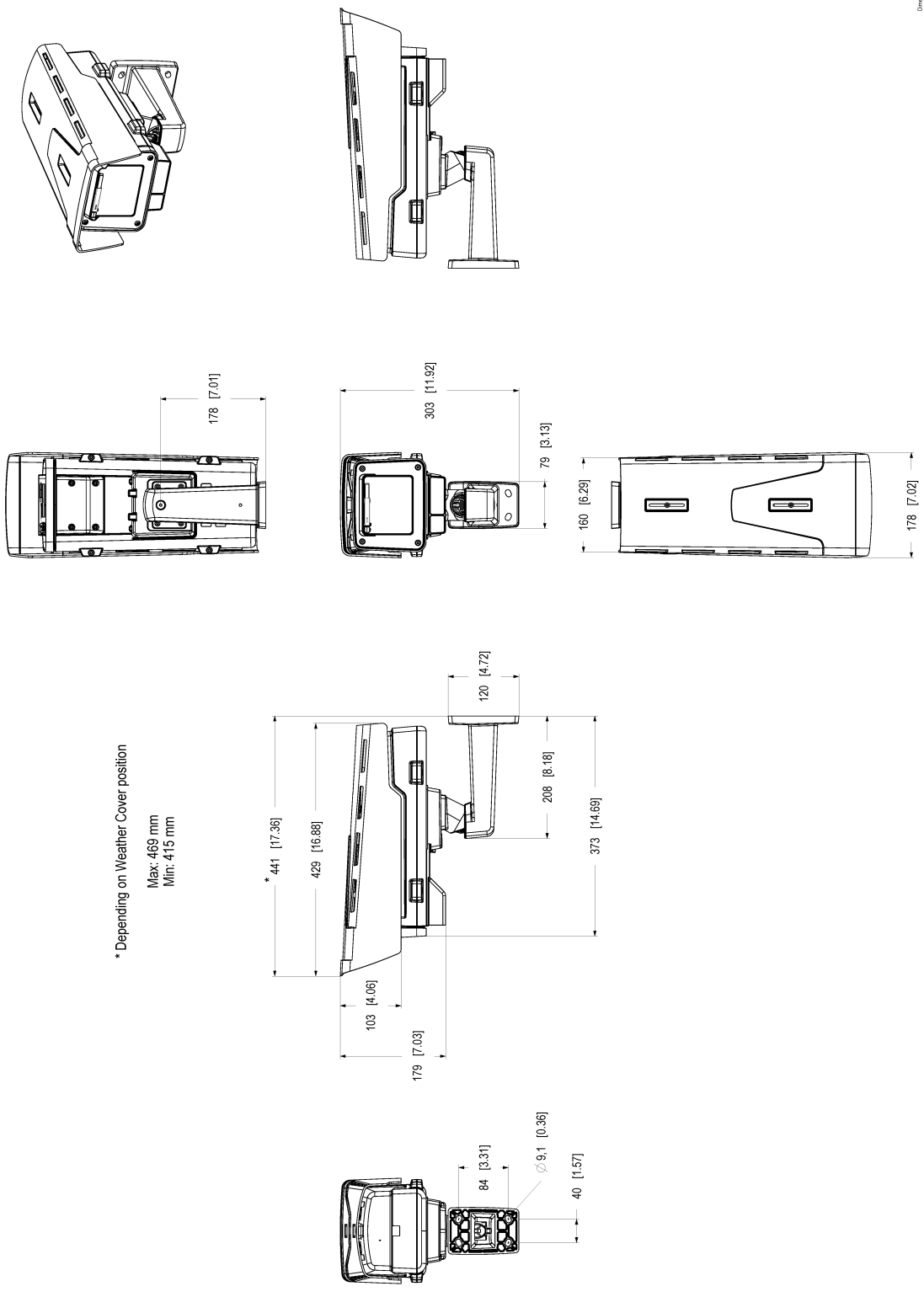
|           | DORI definition     | Distance (wide)   | Distance (tele)     |
|-----------|---------------------|-------------------|---------------------|
| Detect    | 25 px/m (8 px/ft)   | 211 m (692.1 ft)  | 672.9 m (2207.1 ft) |
| Observe   | 63 px/m (19 px/ft)  | 83.7 m (274.5 ft) | 267.0m (875.8 ft)   |
| Recognize | 125 px/m (38 px/ft) | 42.2 m (138.4 ft) | 134.6 m (441.5 ft)  |
| Identify  | 250 px/m (76 px/ft) | 21.1 m (69.2 ft)  | 67.3 m (220.7 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.



| Dimensions in mm [in] |      |      |      |
|-----------------------|------|------|------|
| 1000                  | 1000 | 1000 | 1000 |
| 1000                  | 1000 | 1000 | 1000 |
| 1000                  | 1000 | 1000 | 1000 |

# AXIS Q1728-LE Block Camera



\* Depending on Weather Cover position

## Highlighted capabilities

### AV1

AV1 is a modern video encoding standard optimized for video transmission over the internet by Alliance for Open Media (AoM). It was designed to provide better compression efficiency than older codecs including H.264 (also known as AVC) and H.265 (HEVC), while being royalty-free and open-source.

### 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](https://axis.com/solutions/edge-vault).

### 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.

### 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.