

## AXIS Q1800-LE-3 License Plate Verifier Kit

Robust, cost-effective kit for high speeds

With AXIS License Plate Verifier preinstalled, this purpose-tuned camera kit is preconfigured for accurate license plate reading 24/7 at speeds up to 200 km/h (124 mph) and distances up to 100 m (328 ft). It facilitates fast and efficient search in the VMS, so you can quickly find specific plates in video footage. Easy to set up and install, its robust design ensures reliable performance in extreme weather. With a built-in weathershield, it withstands wind forces up to 60 m/s (134 mph), ensuring durability in the toughest conditions.

- > [AXIS License Plate Verifier preinstalled](#)
- > [Purpose-tuned for license plate recognition](#)
- > [Read license plates up to 200 km/h \(124 mph\)](#)
- > [Reading range of up to 100 m \(328 ft\)](#)
- > [Robust design withstands tough weather](#)



# AXIS License Plate Verifier

## Application

### Compute platform

Edge

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### Licenses

AXIS License Plate Verifier license included.

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### Configuration

Web configuration included

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### Settings

Define area of interest in scene.

Allow-, block- and custom list logic. Each list can contain 10,000 plates with a total of 30,000.

Missing plate detection.

Barrier mode: Open to all, open to allowlisted, open to all but blocklisted.

Minimum width: 130 pixels for one-row license plates; 70 pixels for two-row license plates.

FIFO event log entries including thumbnail image of license plate. Up to 1000 entries on camera storage. Up to 100 000 entries on AXIS Surveillance Cards.

Configurable retention time of stored events

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### Object attributes

Vehicle data: license plate recognition, license plate type (GCC), make, model, color, country, region.

Supports 120 makes and 5,000 models with more models added over time.

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### Object classes

Vehicle type: bike, car, SUV, van, pick-up, truck, bus

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## System integration

### Application Programming Interface

Open API for software integration.

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### Event streaming

Integrates with camera event management system to enable event streaming to management software and camera actions such as I/O control, notification, and edge storage.

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### Supported devices

Direct integration with Axis network door controllers and relay modules.

## General

### Supported countries

For a complete list of supported countries, go to the product page at [axis.com](http://axis.com)

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### Languages

English

# AXIS Q1800-LE-3 License Plate Verifier Kit

## Camera

### Image sensor

1/2.8" progressive scan RGB CMOS  
Pixel size 2.9  $\mu$ m

### Lens

Varifocal, 7–137 mm, F1.5–4.0  
Horizontal field of view: 38°–2.3°  
Vertical field of view: 22°–1.3°  
Minimum focus distance: 1.2 m (3.9 ft)  
Remote zoom and focus, P-Iris control  
Thread for 62 mm filters, max filter thickness: 5 mm

### Day and night

Automatic IR-cut filter in day mode  
IR-pass filter 720 nm in night mode

### Minimum illumination

Color: 0.06 lux at 50 IRE, F1.5  
B/W: 0.01 lux at 50 IRE, F1.5  
0 lux with IR illumination on

### Shutter speed

1080p @ 25/30 fps (WDR): 1/37000 s to 2 s  
1080p @ 50/60 fps: 1/71500 s to 2 s  
1080p @ 90 fps: 1/111000 s to 2 s

### Camera adjustment

Pan  $\pm$ 180°, tilt 0 to -90°, roll -90 to 270°

## License Plate Capture

### Detection range

Day: 20–100 m (66–328 ft)  
Night: 20–50 m (66–164 ft)  
Night detection range up to 100 m (328 ft) with optional accessory AXIS T90D20 IR-LED Illuminator

### IR illumination

Optimized IR with power-efficient, long-life 850 nm IR LED's with adjustable angle of illumination and intensity. Range of reach 40 m (131 ft) in wide field of view and 50 m (164 ft) in full tele view, or more depending on the scene

### Vehicle speed

Up to 200 km/h (124 mph) with built-in edge analytics

## Coverage

Single lane with optional edge analytics

## Installation

Mounting height: Up to 10 m (33 ft)  
Distance from road: Up to 10 m (33 ft)  
Camera detects tilt and roll angle automatically  
Built-in licence plate capture assistant optimizes video settings based on mounting height, distance to vehicle, and expected vehicle speed

## 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: 1400x1050 to 160x120  
16:9 1920x1080 to 320x180

### Frame rate

With WDR: Up to 25/30 fps (50/60 Hz) in all resolutions  
No WDR: Up to 90 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 and H.265  
Controllable frame rate and bandwidth  
VBR/ABR/MBR H.264/H.265  
Low latency mode  
Video streaming indicator

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.

## Signal-to-noise ratio

>55 dB

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## WDR

Forensic WDR: Up to 120 dB depending on scene

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## Noise reduction

Spatial filter (2D noise reduction)  
Temporal filter (3D noise reduction)

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## Image settings

Saturation, contrast, brightness, sharpness, white balance, day/night threshold, local contrast, tone mapping, exposure mode, exposure zones, defog, 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, target aperture  
Scene profiles: license plate

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## Image processing

Axis Zipstream, Forensic WDR, Lightfinder 2.0, OptimizedIR

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## Audio

### Features

Automatic gain control  
10-band graphic equalizer for audio input  
Speaker pairing  
Spectrum visualizer<sup>2</sup>

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### Streaming

Two-way (half duplex)

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### Input

Input through microphone pairing  
Input for external unbalanced microphone, optional 5 V microphone power  
Digital input, optional 12 V ring power  
Unbalanced line input

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### Output

Output through speaker pairing

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### 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<sup>3</sup>, HTTP/2, TLS<sup>3</sup>, QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, mDNS (Bonjour), UPnP<sup>®</sup>, SNMP v1/v2c/v3 (MIB-II), DNS/DNSv6, DDNS, NTP, PTP, NTS, RTSP, RTP, SRTP/RTSPS, TCP, UDP, IGMPv1/v2/v3, RTCP, DHCPv4/v6, ARP, SSH, NTCIP, 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<sup>®</sup>, metadata and AXIS Camera Application Platform (ACAP); specifications at [axis.com/developer-community](https://axis.com/developer-community).

One-click cloud connection

ONVIF<sup>®</sup> Profile G, ONVIF<sup>®</sup> Profile M, ONVIF<sup>®</sup> Profile S, and ONVIF<sup>®</sup> Profile T, specifications at [onvif.org](https://onvif.org)

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### Video management systems

Compatible with AXIS Camera Station Pro, AXIS Camera Station 5, and video management software from Axis' partners available at [axis.com/vms](https://axis.com/vms).

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### Onscreen controls

Video streaming indicator  
Day/night shift  
Image stabilization  
Defog  
Autofocus  
Privacy masks  
Wide dynamic range  
IR illumination  
Media clip  
License plate overlay

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### Edge-to-edge

Microphone pairing  
Radar pairing  
Speaker pairing

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2. Feature available with ACAP

3. 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 ([eay@cryptsoft.com](mailto:eay@cryptsoft.com)).

## 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, traffic camera installation assistance

## Analytics

### Applications

#### Included

AXIS License Plate Verifier, AXIS Image Health Analytics, AXIS Scene Metadata, AXIS Speed Monitor, AXIS Video Motion Detection, active tampering alarm, audio detection

#### Supported

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

### AXIS Image Health Analytics

#### Detection settings:

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

## Approvals

### Product markings

UL/cUL, BIS, UKCA, CE, KC, 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(A)/NMB(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 exempt, 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, 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 and OAuth 2.0 RFC6749 Client Credential Flow/OpenID Authorization Code Flow for centralized ADFS account management, 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, 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

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## 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)

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## General

### Casing

IP66 and NEMA 4X-rated

IK10 impact-resistant aluminum enclosure with integrated dehumidifying membrane, IK08 impact-resistant glass front window

Color: grey NCS S 5502-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](https://axis.com/warranty-implication-when-repainting).

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### Mounting

Mounting bracket with junction box holes (double-gang, single-gang, 4" square, and 4" octagon)

3/4" (M25) conduit side entries

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### Power

Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 3, typical 12.6 W, max 12.95 W (no IR, no heaters)

Power over Ethernet (PoE) IEEE 802.3at Type 2 Class 4, typical 12.6 W, max 25.5 W

10–28 V DC, typical 11 W, max 29 W

20–24 V AC, typical 11 VA, max 28 VA

For PoE output: Power over Ethernet (PoE) IEEE 802.3bt Type 3 Class 6

Power over Ethernet (PoE) IEEE 802.3at Type 2

Class 4 (30 W) to a second device

Features: power profiles, power meter

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### 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

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## 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)

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## 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)

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## 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): 0.054 m<sup>2</sup> (0.58 ft<sup>2</sup>)

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## Weight

3200 g (7.05 lb)

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## Box content

Camera, installation guide, terminal block connector, RJ45 cable, connector guard, cable gaskets, owner authentication key

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## Optional accessories

AXIS T8415 Wireless Installation Tool

AXIS Surveillance Cards

For more accessories, go to [axis.com/products/axis-q1800-le#accessories](https://axis.com/products/axis-q1800-le#accessories)

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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-q1800-le#part-numbers](https://axis.com/products/axis-q1800-le#part-numbers)

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4. 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)).

## 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](http://echa.europa.eu)

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### Materials

Renewable carbon-based plastic content: 60%  
(recycled: 1%, bio-based: 59%)

Screened for conflict minerals in accordance with OECD guidelines

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

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### Environmental responsibility

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

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

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

	DORI definition	Distance (wide)	Distance (tele)
Detect	25 px/m (8 px/ft)	96.7 m (317.18 ft)	1884.2 m (6180.18 ft)
Observe	63 px/m (19 px/ft)	38.4 m (125.95 ft)	747.7 m (2452.46 ft)
Recognize	125 px/m (38 px/ft)	19.3 m (63.30 ft)	376.8 m (1235.90 ft)
Identify	250 px/m (76 px/ft)	9.7 m (31.82 ft)	188.4 m (617.95 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.



## Highlighted capabilities

### 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 License Plate Verifier

AXIS License Plate Verifier offers real-time, AI-powered license plate recognition for a wide range of traffic applications, including vehicle access, vehicle search, and parking solutions. With an intuitive user interface, it supports event log entries with license plate thumbnail images, simplifying administration and follow-up. Moreover, our edge-based license plate recognition approach means the camera manages the processing and storage, eliminating the need for expensive servers and reducing bandwidth requirements. Finally, it's easy to set up, especially when investing in our ready-to-use, purpose-tuned kits.

### 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.

For more information, see [axis.com/glossary](https://axis.com/glossary)