

AXIS P1485-LE Kit License Plate Verifier

LPR bullet camera kit for free-flow traffic

Built for free-flow traffic, this robust, all-in-one LPR kit offers a 2 MP bullet camera with AXIS License Plate Verifier preinstalled. It's purpose-tuned for highly reliable license plate capture and can recognize vehicle details under optimal conditions, including type, color, make, and model. It delivers the image clarity and frame rate needed for accurate and reliable license plate recognition 24/7. Easy to deploy and smoothly integrates with AXIS Camera Station Pro and other third-party VMSs. What's more, there's a wide variety of mounting, housings, and cabinets available for any environment or infrastructure requirement.

- > **AXIS License Plate Verifier preinstalled**
- > **Purpose-tuned for license plate recognition**
- > **Recognizes vehicle type, color, make, and model**
- > **Robust design withstands tough weather**
- > **Easily integrate with Axis and third-party VMSs**



AXIS License Plate Verifier

Application

Compute platform

Edge

Licenses

AXIS License Plate Verifier license included.

Configuration

Web configuration included

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

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.

Object classes

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

System integration

Application Programming Interface

Open API for software integration.

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.

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

Languages

English

AXIS P1485-LE Kit License Plate Verifier

Camera

Image sensor

1/2.8" progressive scan RGB CMOS
Pixel size 2.9 µm

Lens

Varifocal, 10.8–28.2 mm, F1.7–1.76
Horizontal field of view 29.4°–11°
Vertical field of view 16.5°–6.3°
Minimum focus distance: 2.5 m (8.2 ft)
P-iris lens, IR corrected

Day and night

Automatic IR-cut filter
Hybrid IR filter

Minimum illumination

0 lux with IR illumination on
Color: 0.06 lux, at 50 IRE F1.7
B/W: 0.01 lux, at 50 IRE F1.7

Shutter speed

With Forensic WDR: 1/37000 s to 2 s
No WDR: 1/71500 s to 2 s

License Plate Capture

Detection range

7–20 m (23–66 ft)

IR illumination

Optimized IR with power-efficient, long-life 850 nm IR LED's with adjustable angle of illumination and intensity. Range of reach 45 m (150 ft) or more depending on the scene

Vehicle speed

Up to 105 km/h (65 mph) with edge analytics

Coverage

Single lane with edge analytics

Installation

Mounting height: 2 m to 8 m (7 ft to 26 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-9

Memory

2 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
AV1
Motion JPEG

Resolution

16:9: 1920x1080 to 640x360
16:10: 1280x800 to 320x200
4:3: 1440x1080 to 160x120

Frame rate

With Forensic 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⁽¹⁾
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

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.

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)

Image settings

Saturation, contrast, brightness, sharpness, white balance, day/night threshold, exposure mode, exposure zones, defogging, compression, orientation: auto, 0°, 90°, 180°, 270° including corridor format, mirroring of images, dynamic text and image overlay, polygon privacy masks, barrel distortion correction
Scene profiles: forensic, vivid, traffic overview
Electronic image stabilization

Image processing

Axis Zipstream, Forensic WDR, Lightfinder 2.0, OptimizedIR

Pan/Tilt/Zoom

Digital PTZ, digital zoom

Audio

Features

Automatic gain control (AGC)

Speaker pairing, microphone pairing

Streaming

Configurable duplex:

One-way (simplex, half duplex)

Two-way (half duplex, full duplex)

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

Output

Output through network speaker pairing

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⁽²⁾, HTTP/2, TLS⁽²⁾, 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.

One-click cloud connection

ONVIF® Profile G, ONVIF® Profile M, ONVIF® Profile S and ONVIF® Profile T, specification at onvif.org

Support for Voice over IP (VoIP) through the Session Initiation Protocol (SIP), using peer-to-peer (P2P) or Private Branch Exchange (PBX).

Video management systems

Compatible with AXIS Camera Station Edge, AXIS Camera Station Pro, and video management software from Axis' partners available at axis.com/vms.

Onscreen controls

Autofocus

Day/night shift

Defogging

Video streaming indicator

Wide dynamic range

IR illumination

Privacy masks

Media clip

Electronic image stabilization

Edge-to-edge

Microphone pairing

Speaker pairing

Siren and light pairing

2. 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 conditions

Application

Device status: above operating temperature, above or below operating temperature, within operating temperature, IP address removed, new IP address, network lost, system ready, ring power overcurrent protection, live stream active
Digital audio input status
Edge storage: recording ongoing, storage disruption, storage health issues detected
I/O: digital input, manual trigger, virtual input
MQTT: subscribe
Scheduled and recurring: schedule
Video: average bitrate degradation, day-night mode, tampering

Event actions

Audio clips: play, stop
Day-night mode
I/O: toggle I/O once, toggle I/O while the rule is active
Illumination: use lights, use lights while the rule is active
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
Upload of images or video clips: FTP, SFTP, HTTP, HTTPS, network share and email
WDR mode

Built-in installation aids

Pixel counter, remote zoom and focus, straighten image, auto rotation

Analytics

Applications

Included

AXIS License Plate Verifier, AXIS Image Health Analytics, AXIS Video Motion Detection

Supported

AXIS Speed Monitor⁽³⁾

Support for AXIS Camera Application Platform enabling installation of third-party applications, see 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

CE, FCC, ICES, KC, RCM, VCCI, WEEE

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 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/EN 60529 IP66/IP67, IEC/EN 62262, IEC 60950-22, ISTA 3A, IK10, NEMA TS 2 (2.2.7-2.2.9)

Network

IPv6 USGv6, 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 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
Secure keystore: secure element (CC EAL 6+, FIPS 140-3 Level 3), system-on-chip security (TEE)
Axis device ID, signed video, secure boot, encrypted filesystem (AES-XTS-Plain64 256bit)

3. It also requires AXIS D2110-VE Security Radar with AXIS OS 10.12 or later.

Network security

IEEE 802.1X (EAP-TLS, PEAP-MSCHAPv2)⁽⁴⁾,
IEEE 802.1AE (MACsec PSK/EAP-TLS), 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-, NEMA 4X-, and IK10-rated casing

Polycarbonate blend and aluminium

Color: white NCS S 1002-B

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 802.3af/802.3at Type 1
Class 3, max 12.95 W, typical (heater off, IR off) 4.63 W
Features: dynamic power mode, low power mode, power meter

Connectors

Network: Shielded RJ45 10BASE-T/100BASE-TX/
1000BASE-T

Audio: 3.5 mm mic/line in

I/O: Terminal block for 1 supervised alarm input and 1
output (12 V DC output, max. load 25 mA)

Power: DC input

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 TS2 (2.2.7):
74 °C (165 °F)

Start-up temperature: -40 °C

Humidity 10–100% RH (condensing)

Wind load (sustained): 60 m/s (134 mph)

Storage conditions

-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): 0.024 m² (0.26 ft²)

Weight

With weather shield: 1.38 kg (3 lb)

Box content

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

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-p1485-le-kit#part-numbers

Optional accessories

Installation

AXIS T8415 Wireless Installation Tool

Mounting

AXIS T91B47 Pole Mount, AXIS T94F01P Conduit Back Box, AXIS TM4101 Pendant Kit

Storage

AXIS Surveillance Cards

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 (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 EN 63000:2018

REACH in accordance with (EC) No 1907/2006. For SCIP UUID, see axis.com/partner.

Materials

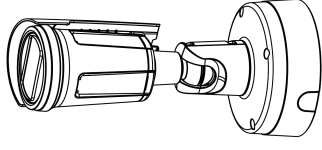
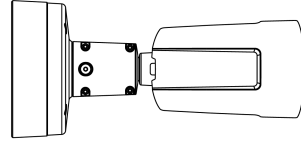
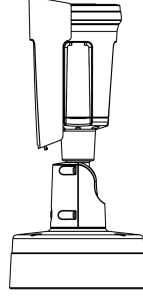
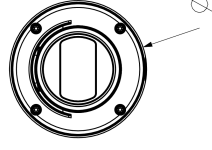
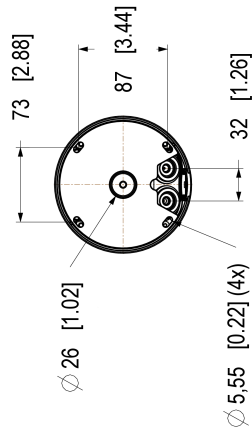
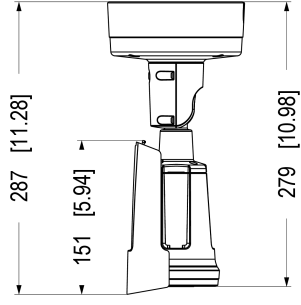
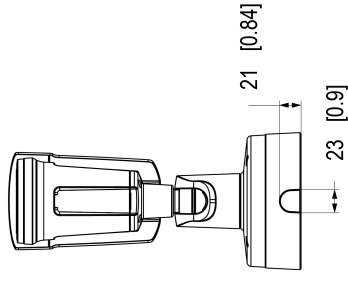
Screened for conflict minerals in accordance with OECD guidelines

To read more about sustainability at Axis, go to axis.com/about-axis/sustainability

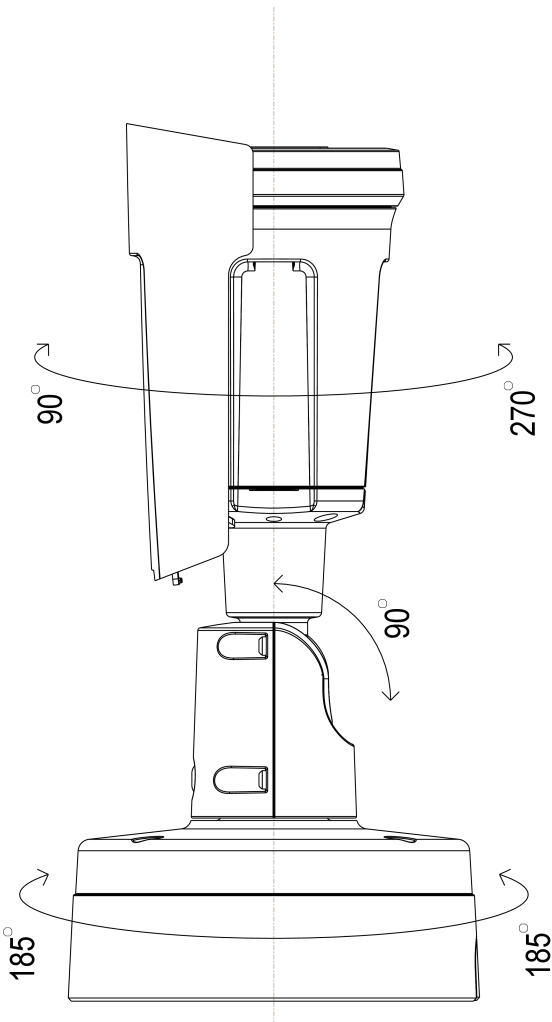
Environmental responsibility

axis.com/environmental-responsibility

Axis Communications is a signatory of the UN Global Compact, read more at unglobalcompact.org



Weather Shield sliding direction: 15.5mm [6.10]



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.

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.

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.