

AXIS P1465-LE Bullet Camera

Fully featured, all-around 2 MP surveillance

Based on ARTPEC-8, AXIS P1465-LE delivers excellent image quality in 2 MP. It includes a deep learning processing unit enabling advanced features and powerful analytics based on deep learning on the edge. With AXIS Object Analytics, it can detect and classify humans, vehicles, and types of vehicles. Available with a wide or tele lens, this IP66/IP67, NEMA 4X, and IK10-rated camera can withstand winds up to 50 m/s. Lightfinder 2.0, Forensic WDR, and OptimizedIR ensure sharp, detailed images under any light conditions. Furthermore, Axis Edge Vault protects your Axis device ID and simplifies authorization of Axis products on your network.

- > [Lightfinder 2.0, Forensic WDR, OptimizedIR](#)
- > [Analytics with deep learning](#)
- > [Audio and I/O connectivity](#)
- > [Built-in cybersecurity features](#)
- > [Two lens alternatives](#)



AXIS P1465-LE Bullet Camera

Camera

Variants

AXIS P1465-LE 9 mm
AXIS P1465-LE 29 mm

Image sensor

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

Lens

Varifocal, remote focus and zoom, P-Iris control, IR corrected

9 mm:

Varifocal, 3-9 mm, F1.6-3.3
Horizontal field of view 117°-37°
Vertical field of view 59°-20°
Minimum focus distance: 0.5 m (1.6 ft)

29 mm:

Varifocal, 10.9-29 mm, F1.7-1.7
Horizontal field of view 29°-11°
Vertical field of view 16°-6°
Minimum focus distance: 2.5 m (8.2 ft)

Day and night

Automatic IR-cut filter
Hybrid IR filter

Minimum illumination

0 lux with IR illumination on

9 mm:

Color: 0.06 lux, at 50 IRE F1.6

B/W: 0.01 lux, at 50 IRE F1.6

29 mm:

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

System on chip (SoC)

Model

ARTPEC-8

Memory

1024 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

16:9: 1920x1080 to 160x90

16:10: 1280x800 to 160x100

4:3: 1280x960 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 streams¹

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)

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, 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
29 mm: Electronic image stabilization

Image processing

Axis Zipstream, Forensic WDR, Lightfinder 2.0, OptimizedIR

Pan/Tilt/Zoom

Digital PTZ, digital zoom

Audio

Audio features

AGC automatic gain control
Network speaker pairing

Audio streaming

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

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

Audio output

Output via network 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, HTTPS², HTTP/2, TLS², 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

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

Autofocus
Day/night shift
Defogging
Video streaming indicator
Wide dynamic range
IR illumination
Privacy masks
Media clip
29 mm: Electronic image stabilization

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 (ey@cryptsoft.com).

Event conditions

Application
Device status: above operating temperature, above or below operating temperature, 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 (3x optical), remote focus, auto rotation

Analytics

Applications

Included

AXIS Object Analytics, AXIS Scene Metadata, AXIS Image Health Analytics, AXIS Live Privacy Shield, AXIS Video Motion Detection, active tampering, shock detection

Supported

AXIS Perimeter Defender, AXIS License Plate Verifier, AXIS Speed Monitor³
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, occupancy in area, time in area
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

CSA, UL/cUL, BIS, UKCA, CE, KC, EAC

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 60068-2-78, IEC/EN 60529 IP66/IP67, IEC/EN 62262 IK10, NEMA 250 Type 4X, NEMA TS 2 (2.2.7-2.2.9)

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

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), AES-XTS-Plain64 256bit SD card encryption
Hardware: Axis Edge Vault cybersecurity platform 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)⁴, IEEE 802.1AE (MACsec PSK/EAP-TLS), IEEE 802.1AR, HTTPS/HSTS⁴, TLS v1.2/v1.3⁴, 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 IEEE 802.3af/802.3at Type 1 Class 3

Typical: 7.9 W, max 12.95 W

10–28 V DC, typical 7.2 W, max 12.95 W

Connectors

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

Audio: 3.5 mm mic/line in

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

Power: DC input

IR illumination

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

9 mm:

Range of reach 40 m (131 ft) or more depending on the scene

29 mm:

Range of reach 80 m (262 ft) or more depending on the scene

Storage

Support for microSD/microSDHC/microSDXC card

Recording to network-attached storage (NAS)

For SD card and NAS recommendations see axis.com

Operating conditions

-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)

Storage conditions

-40 °C to 65 °C (-40 °F to 149 °F)

Humidity 5–95% RH (non-condensing)

Dimensions

Ø132 x 132 x 280 mm (Ø5.2 x 5.2 x 11.0 in)

Effective Projected Area (EPA): 0.022 m² (0.24 ft²)

Weight

With weather shield:

1.2 kg (2.65 lb)

Box content

Camera, installation guide, TORX® L-keys, terminal block connector, connector guard, cable gaskets, AXIS Weather Shield L, owner authentication key

Optional accessories

AXIS T94F01M J-Box/Gang Box Plate, AXIS T91A47 Pole Mount, AXIS T94P01B Corner Bracket, AXIS T94F01P Conduit Back Box, AXIS Weather Shield K, Axis PoE Midspans

For more accessories, go to axis.com/products/axis-p1465-le#accessories

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 (eyay@cryptsoft.com).

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, 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-p1465-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 axis.com/partner.

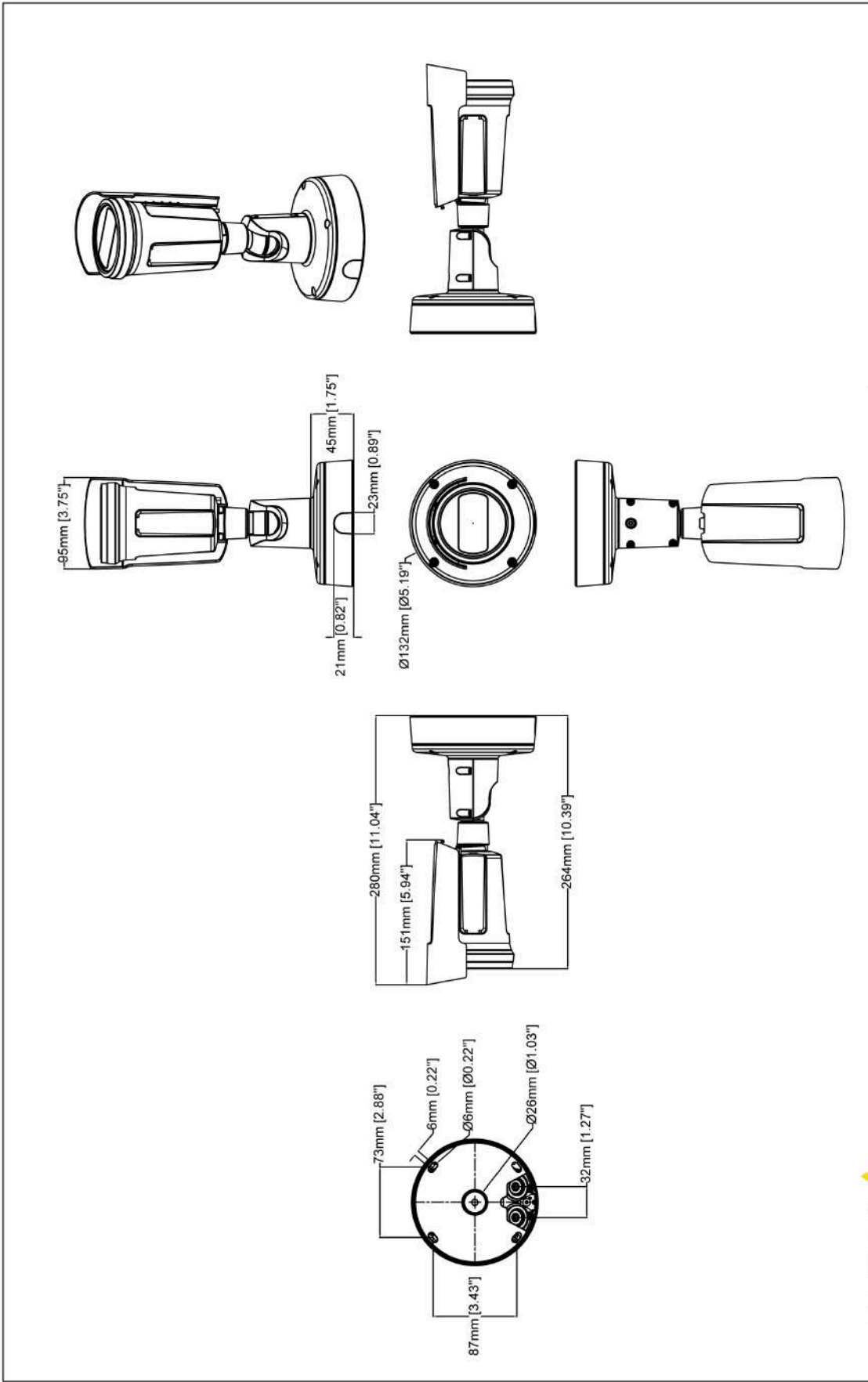
Materials

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

Dimension drawing



Revision	v.01	Revision date	2022-09-23
Paper size	A4	Release date	2022-09-23
Created by	MS	Scale	1:5

AXIS COMMUNICATIONS
 www.axis.com

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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.

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.

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.

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.

Two lens alternatives

The camera is available in two variants with a choice of lenses: a wide 3.9-9 mm lens for wide area surveillance and a tele 10-29 mm lens for surveillance from a distance.

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