

# AXIS Q1656 Box Camera

## Outstanding performance in 4 MP

With 4 MP resolution at up to 60 fps, a 1/1.8" sensor, and Lightfinder 2.0, AXIS Q1656 delivers exceptional video quality even in poor light conditions. Based on the latest Axis system-on-chip (SoC), it offers support for advanced features and powerful applications based on deep learning on the edge. And AXIS Object Analytics offers highly nuanced object classification. This high-performance box camera includes premium Q-line functionality and support for PoE and redundant DC power. Furthermore, built-in cybersecurity features, such as Axis Edge Vault, signed firmware and secure boot, and FIPS-certified TPM, prevent unauthorized access and safeguard your system.

- > **Exceptional images with 1/1.8" sensor**
- > **Support for analytics with deep learning**
- > **Built-in cybersecurity features**
- > **Premium Axis Q-line camera functionality**
- > **Remote zoom and focus**



# AXIS Q1656 Box Camera

## Camera

### Image sensor

1/1.8" progressive scan RGB CMOS

### Lens

Varifocal, 3.9–10 mm, F1.5  
Horizontal field of view: 120°–47°  
Vertical field of view: 63°–27°  
Autofocus, i-CS lens, IR corrected, remote zoom and focus, P-Iris control  
Minimum focus distance: 0.5 m (1.6 ft)

### Day and night

Automatically removable infrared-cut filter

### Minimum illumination

4 MP 25/30 fps with Forensic WDR and Lightfinder 2.0  
Color: 0.05 lux at 50 IRE, F1.5  
B/W: 0.01 lux at 50 IRE, F1.5  
4 MP 50/60 fps with Lightfinder 2.0  
Color: 0.1 lux at 50 IRE, F1.5  
B/W: 0.02 lux at 50 IRE, F1.5  
4 MP 25/30 fps with Forensic WDR and Lightfinder 2.0  
With optional F0.9 lens  
Color: 0.02 lux at 50 IRE, F0.9  
B/W: 0.004 lux at 50 IRE, F0.9

### Shutter speed

1/47500 s to 1 s

## System on chip (SoC)

### Model

ARTPEC-8

### Memory

2048 MB RAM, 8194 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 2688x1512 Quad HD to 160x90  
4:3 2016x1512 to 160x120

### Frame rate

No WDR: Up to 60/50 fps (60/50 Hz) in all resolutions  
WDR: Up to 30/25 fps (60/50 Hz) in all resolutions

### Video streaming

Multiple, individually configurable streams in H.264, H.265 and Motion JPEG  
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

### Multi-view streaming

Up to 8 individually cropped out view areas

### Image settings

Saturation, contrast, brightness, Forensic WDR: Up to 120 dB depending on scene, white balance, day/night threshold, tone mapping, exposure mode, exposure zones, defogging, barrel distortion correction, electronic image stabilization, compression, rotation: 0°, 90°, 180°, 270° including Corridor Format, mirroring, dynamic text and image overlay, polygon privacy mask  
Scene profiles: forensic, vivid, traffic overview

### Pan/Tilt/Zoom

Digital PTZ, preset positions  
Uploadable PTZ driver (Pelco D pre-installed)

## Audio

### Audio streaming

Two-way, full duplex  
Noise reduction

## Audio encoding

24bit LPCM, AAC-LC 8/16/32/48 kHz, G.711 PCM 8 kHz, G.726 ADPCM 8 kHz, Opus 8/16/48 kHz  
Configurable bit rate

## Audio input/output

External microphone input or line input, line output, built-in microphone (can be disabled), ring power, digital audio input, automatic gain control

## Network

### Network protocols

IPv4, IPv6, USGv6, HTTP, HTTPS<sup>1</sup>, HTTP/2, TLS<sup>1</sup>, QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, Bonjour, UPnP®, SNMP v1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, NTS, RTSP, RTP, SRTP/RTSPS, TCP, UDP, IGMPv1/v2/v3, RTCP, ICMP, DHCPv4/v6, ARP, SSH, LLDP, MQTT v3.1.1, Secure syslog (RFC 3164/5424, UDP/TCP/TLS)

## 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, specification at [onvif.org](https://onvif.org)

### Onscreen controls

Electronic image stabilization

Day/night shift

Defogging

Wide dynamic range

Video streaming indicator

## Event conditions

Application

Audio: audio detection, audio clip playing

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

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

PTZ: PTZ malfunctioning, PTZ movement, PTZ preset position reached, PTZ ready

Scheduled and recurring: schedule

Video: average bitrate degradation, day-night mode, tampering

## Event actions

Overlay text, external output activation, play audio clip, zoom preset

I/O: toggle I/O once, toggle I/O while the rule is active

MQTT: publish

Notification: HTTP, HTTPS, TCP, and email

Pre- and post-alarm video or image buffering for recording or upload

PTZ: PTZ preset, start/stop guard tour

Record video: 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

## Built-in installation aids

Remote zoom and focus, remote back focus, leveling assistant, pixel counter

## Analytics

### Applications

Included

AXIS Object Analytics, AXIS Scene Metadata,

AXIS Image Health Analytics, AXIS Live Privacy Shield <sup>2</sup>

AXIS Video Motion Detection

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

1. 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 ([eyay@cryptsoft.com](mailto:eyay@cryptsoft.com)).

2. Available for download

## 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

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

### EMC

EN 55032 Class A, EN 55035, EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2

**Australia/New Zealand:** CISPR 24, CISPR 35, RCM AS/NZS CISPR 32 Class A

**Canada:** ICES-3(B)/NMB-3(B)

**Japan:** VCCI Class A

**Korea:** KS C 9832 Class A, KS C 9815, KS C 9835, KS C 9547

**USA:** FCC Part 15 Subpart B Class A

### Safety

IEC/EN/UL 62368-1

### 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

### 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 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>3</sup>, IEEE 802.1AE (MACsec PSK/EAP-TLS), IEEE 802.1AR, HTTPS/HSTS<sup>3</sup>, TLS v1.2/v1.3<sup>3</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

Aluminum casing

Color: black NCS S 9000-N

### Mounting

1/4"-20 UNC tripod screw thread

### Sustainability

PVC free, BFR/CFR free, 0% recycled plastics, 4% bio-based plastics

### Power

Power over Ethernet (PoE) IEEE 802.3af/802.3at Type 1 Class 3

Typical 5.1 W, max 8.2 W

10-28 VDC, typical 4.6 W, max 7.7 W

Power redundancy

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 ([ey@cryptsoft.com](mailto:ey@cryptsoft.com)).

## Connectors

RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE  
Terminal block for two supervised and two unsupervised configurable inputs / digital outputs (12 VDC output, max load 50 mA)  
RS485/RS422, 2 pcs, 2 pos, full duplex, terminal block  
DC input, terminal block, 3.5 mm mic/line in, 3.5 mm line out  
i-CS connector (compatible with P-Iris and DC-iris)  
AXIS T92G20 connector, Security lock slot

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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

-20 °C to 60 °C (-4 °F to 140 °F)  
Humidity 10–85% RH (non-condensing)

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## Storage conditions

-40 °C to 65 °C (-40 °F to 149 °F)  
Humidity 5–95% RH (non-condensing)

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## Dimensions

214 x 80 x 68 mm (8.4 x 3.2 x 2.7 in)

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## Weight

790 g (1.7 lb)

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## Included accessories

Installation guide, Windows® decoder 1-user license, stand, drill hole template, connector kit, RESISTORX® L-key

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## Optional accessories

AXIS T8415 Wireless Installation Tool  
AXIS Surveillance Cards  
For more accessories, see [axis.com](https://axis.com)

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## Optional lenses

Lens CS 4–10 mm F0.9 P-Iris  
Lens i-CS 9–50 mm F1.5 8 MP  
Lens CS 12–50 mm F1.4 P-Iris 8 MP

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## Video management software

AXIS Camera Station and video management software from Axis Application Development Partners available at [axis.com/vms](https://axis.com/vms)

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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)