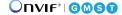# AXIS Q1656-BLE Box Camera
## Outdoor barebone model in 4 MP with IR

With 4 MP resolution at up to 60 fps, a 1/1.8" sensor, and Lightfinder 2.0, AXIS Q1656-BLE 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 applications based on deep learning on the edge. And AXIS Object Analytics provides highly nuanced object classification. With built-in cybersecurity features, it prevents unauthorized access and safeguards your system. This outdoor-ready barebone unit comes without lens and mounting for maximum flexibility. Furthermore, it includes power-efficient IR and white LED illumination.

> **Exceptional images with 1/1.8" sensor**

> **Support for analytics with deep learning**

> **Built-in cybersecurity features**

> **Ready to customize for specific needs**

> **Built-in wiper for snow and rain**

# AXIS Q1656-BLE Box Camera

## Camera

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|---|---|
| **Image sensor** | 1/1.8" progressive scan RGB CMOS |
| **Day and night** | Automatically removable infrared-cut filter |
| **Minimum illumination** | **4 MP 25/30 fps with Forensic WDR and Lightfinder 2.0**<br>**Color:** 0.05 lux at 50 IRE, F1.5<br>**B/W:** 0.01 lux at 50 IRE, F1.5<br>**4 MP 50/60 fps with Lightfinder 2.0**<br>**Color:** 0.1 lux at 50 IRE, F1.5<br>**B/W:** 0.02 lux at 50 IRE, F1.5<br>Lens not included<br>0 lux with IR illumination on |
| **Shutter speed** | 1/47500 s to 1 s |

## System on chip (SoC)

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| **Model** | ARTPEC-8 |
| **Memory** | 2048 MB RAM, 8194 MB Flash |
| **Compute capabilities** | Deep learning processing unit (DLPU) |

## Video

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|---|---|
| **Video compression** | H.264 (MPEG-4 Part 10/AVC) Baseline, Main and High Profiles<br>H.265 (MPEG-H Part 2/HEVC) Main Profile<br>Motion JPEG |
| **Resolution** | **16:9** 2688x1512 Quad HD to 160x90<br>**4:3** 2016x1512 to 160x120 |
| **Frame rate** | **No WDR:** Up to 60/50 fps (60/50 Hz) in all resolutions<br>**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<br>Axis Zipstream technology in H.264 and H.265<br>Controllable frame rate and bandwidth<br>VBR/ABR/MBR H.264/H.265<br>Low latency mode<br>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<br>Scene profiles: forensic, vivid, traffic overview |
| **Pan/Tilt/Zoom** | Digital PTZ, preset positions<br>Uploadable PTZ driver (Pelco D pre-installed) |

## Audio

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|---|---|
| **Audio streaming** | Two-way, full duplex<br>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<br>Configurable bit rate |
| **Audio input/output** | External microphone input or line input, line output, ring power, digital audio input, automatic gain control |

## Network

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|---|---|
| **Network protocols** | IPv4, IPv6 USGv6, HTTP, HTTPS[a], HTTP/2, TLS[b], QoS Layer 3 DiffServ, FTP, SFTP, CIFS/SMB, SMTP, Bonjour, UPnP®, SNMP v1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, 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

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| **Application Programming Interface** | Open API for software integration, including VAPIX® and AXIS Camera Application Platform; specifications at *axis.com*<br>One-click cloud connection<br>ONVIF® Profile G, ONVIF® Profile M, ONVIF® Profile S, and ONVIF® Profile T, specification at *onvif.org* |
| **Onscreen controls** | Electronic image stabilization<br>Day/night shift<br>Defogging<br>Wide dynamic range<br>Video streaming indicator |

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|---|---|
| | IR illumination<br>Timed wiper<br>Wiper<br>Heater |
| **Event conditions** | Application<br>Audio: audio detection, audio clip playing<br>Device status: above/below/within operating temperature, casing open, IP address blocked, IP address removed, live stream active, network lost, new IP address, ring power overcurrent protection, system ready<br>Digital audio: digital signal contains Axis metadata, digital signal has invalid sample rate, digital signal missing, digital signal okay<br>Edge storage: recording ongoing, storage disruption, storage health issues detected<br>I/O: digital input, manual trigger, virtual input<br>MQTT: stateless<br>PTZ: PTZ malfunctioning, PTZ movement, PTZ preset position reached, PTZ ready<br>Scheduled and recurring: schedule<br>Video: average bitrate degradation, day-night mode, tampering |
| **Event actions** | Overlay text, external output activation, play audio clip, zoom preset<br>I/O: toggle I/O once, toggle I/O while the rule is active<br>Illumination: use lights, use lights while the rule is active<br>MQTT: publish<br>Notification: HTTP, HTTPS, TCP, and email<br>Pre- and post-alarm video or image buffering for recording or upload<br>PTZ: PTZ preset, start/stop guard tour<br>Record video: SD card and network share<br>SNMP traps: send, send while the rule is active<br>Upload of images or video clips: FTP, SFTP, HTTP, HTTPS, network share, and email |
| **Built-in installation aids** | Remote back focus, leveling assistant, pixel counter<br>**i-CS lens:** Remote zoom and focus |

## Analytics

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| **Applications** | Included<br>AXIS Object Analytics, AXIS Scene Metadata, AXIS Image Health Analytics, AXIS Live Privacy Shield [c]<br>AXIS Video Motion Detection<br>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)<br>**Scenarios:** line crossing, object in area, time in area, crossline counting, occupancy in area<br>Up to 10 scenarios<br>**Other features:** triggered objects visualized with color-coded bounding boxes<br>Polygon include/exclude areas<br>Perspective configuration<br>ONVIF Motion Alarm event |
| **AXIS Image Health Analytics** | **Detection settings:**<br>Tampering: blocked image, redirected image<br>Image degradation: blurred image, underexposed image<br>**Other features:** sensitivity, validation period |
| **AXIS Scene Metadata** | **Object classes:** humans, faces, vehicles (types: cars, buses, trucks, bikes), license plates<br>**Object attributes:** vehicle color, upper/lower clothing color, confidence, position |

## Approvals

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| **EMC** | EN 55032 Class A, EN 55035, EN 61000-3-2, EN 61000-3-3, EN 61000-6-1, EN 61000-6-2, EN 50121-4<br>**Australia/New Zealand:** CISPR 24, CISPR 35, RCM AS/NZS CISPR 32 Class A<br>**Canada:** ICES-3(A)/NMB-3(A)<br>**Japan:** VCCI Class A<br>**Korea:** KS C 9832 Class A, KS C 9815, KS C 9835, KS C 9547<br>**USA:** FCC Part 15 Subpart B Class A<br>**Railway:** IEC 62236-4 |
| **Safety** | IEC/EN/UL 62368-1, IEC/EN/UL 60950-22, IEC 62471, 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), ISO 21207 (Method B) |
|---|---|
| **Network** | NIST SP500-267 |
| **Cybersecurity** | ETSI EN 303 645, BSI IT Security Label, FIPS 140 |

## Cybersecurity

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| **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, AES-XTS-Plain64 256bit SD card encryption<br>**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)[d], IEEE 802.1AE (MACsec PSK/EAP-TLS), IEEE 802.1AR, HTTPS/HSTS[e], TLS v1.2/v1.3[f], Network Time Security (NTS), X.509 Certificate PKI, host-based firewall |
| **Documentation** | *AXIS OS Hardening Guide*<br>*Axis Vulnerability Management Policy*<br>*Axis Security Development Model*<br>AXIS OS Software Bill of Material (SBOM)<br>To download documents, go to *axis.com/support/cybersecurity/resources*<br>To read more about Axis cybersecurity support, go to *axis.com/cybersecurity* |

## General

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| **Casing** | IP66-, IP67-, and NEMA 4X-rated, IK10 impact-resistant aluminum enclosure with integrated dehumidifying membrane IK08 impact-resistant glass front window with wiper weathershield with black anti-glare coating<br>Color: white NCS S 1002-B<br>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.* |
| **Sustainability** | PVC free, BFR/CFR free, 2% recycled plastics, 7% bio-based plastics |
| **Power** | Power over Ethernet (PoE) IEEE 802.3at Type 2 Class 4<br>Typical 11.8 W, max 25.5 W<br>10–28 VDC, typical 11.2 W, max 25.2 W<br>Power redundancy |
| **Connectors** | RJ45 10BASE-T/100BASE-TX/1000BASE-T PoE<br>Terminal block for two supervised and two unsupervised configurable inputs / digital outputs (12 VDC output, max load 50 mA)<br>RS485/RS422, 2 pcs, 2 pos, full duplex, terminal block<br>DC input, terminal block, 3.5 mm mic/line in, 3.5 mm line out<br>i-CS connector (compatible with P-Iris and DC-iris) |
| **IR illumination** | OptimizedIR with power-efficient, long-life 850 nm IR LEDs |

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| | Range of reach 50 m (164 ft) or more depending on the scene |
| **Illumination LED** | Power-efficient, long-life white LED<br>Range of reach 25 m (82 ft) or more depending on the scene |
| **Storage** | Support for microSD/microSDHC/microSDXC card<br>Support for SD card encryption (AES-XTS-Plain64 256bit)<br>Recording to network-attached storage (NAS)<br>For SD card and NAS recommendations see *axis.com* |
| **Operating conditions** | -40 °C to 60 °C (-40 °F to 140 °F)<br>**Arctic Temperature Control:** Start-up at -40 °C (-40 °F)<br>Maximum temperature according to NEMA TS 2 (2.2.7): 74 °C (165 °F)<br>Humidity 10–100% RH (condensing) |
| **Storage conditions** | -40 °C to 65 °C (-40 °F to 149 °F)<br>Humidity 5–95% RH (non-condensing) |
| **Dimensions** | 404 x 159 x 182 mm (16 x 6.3 x 7.2 in) |
| **Weight** | 4.1 kg (9.0 lb) |
| **Included accessories** | Sunshield, connector kit, resistorx® T20 tool, installation guide, Windows® decoder 1-user license |
| **Optional accessories** | AXIS T8415 Wireless Installation Tool<br>AXIS Surveillance Cards<br>For more accessories, see *axis.com* |
| **Optional lenses** | Lens CS 4-10 mm F0.9 P-Iris<br>Lens i-CS 9-50 mm F1.5 8 MP<br>Lens CS 12-50 mm F1.4 P-Iris 8 MP<br>Lens i-CS 1/1.8" 3.9-10 mm F1.5 |
| **Video management software** | AXIS Camera Station and video management software from Axis Application Development Partners available at *axis.com/vms* |
| **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* |

a. *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).*
b. *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).*
c. *Available for download*
d. *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).*
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