



Technical Specifications

MOBOTIX MOVE 2MP Vandal Bullet ALPR Camera

Performant 2MP resolution ALPR (Automatic License Plate Recognition) cameras with integrated high-performance ALPR/OCR engine. The MOBOTIX MOVE Mx-VB1A-2-IR(-D)-ALPR camera extends the existing range of MOVE IP cameras with advanced ALPR features and MMC (make, model, color) vehicle classification “on board”. The MOBOTIX EverClear superhydrophilic and self-cleaning nano coating of the front glass ensures best image quality even in rain and reduces cleaning efforts and operational costs.

- Automatic license plate recognition for all vehicle speeds and stop-and-go applications
- 64 GB SD card pre-installed
- EverClear coating of front glass
- **Mx-VB1A-2-IR-ALPR:** Motorized Vari-Focal Lens 2.7 to 12 mm, F1.6 to F2.9, Zoom, Focus, One-Push AF
- **Mx-VB1A-2-IR-D-ALPR:** Motorized Zoom Lens 9 to 22 mm, F1.6 to F2.4, Zoom, Focus, One-Push AF
- Wide Dynamic Range (WDR) max. 130 dB
- Integrated IR LEDs up to 60 m/197 ft distance visual, 20 m/35 m (66 ft/115 ft) effective for ALPR
- ONVIF Profile S/G/T/M support
- Triple Power Support (PoE/12 VDC/24 VAC)
- Temperature Range -55 to 60 °C/-67 to 140 °F with activated heater
- IP66/IP67 and IK10
- Easily integrated into many common VMS solutions

HEVC Advance™



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MOBOTIX MOVE

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MOBOTIX MOVE 2MP Vandal Bullet ALPR Camera

Product Information

| | |
|--------------|-------------------------------|
| Product Name | 2MP Vandal Bullet ALPR Camera |
| Order Code | Mx-VB1A-2-IR(-D)-ALPR |

Image Quality

| | |
|-------------------------|---|
| Image Sensor | Sony 2M, 1/2.8" Progressive CMOS |
| Effective (Used) Pixels | H x V = 1945x1097 (2MP) |
| Pixel Size | 2.9 μm |
| Frame Rate (maximum) | H.265/H.264: 1920x1080@30 fps + 720x480@30fps MJPEG: 1080p@30fps |

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| Front Glass Coating | Superhydrophilic MOBOTIX EverClear nano coating transforms water droplets into an ultra-thin water film upon impact. The coating ensures best image quality in rain and difficult external conditions and it reduces reflections and noise in low-light scenarios. EverClear is dirt-repellent and increases the stability as well as the scratch-resistance of the front glass, further reducing maintenance efforts. Coating endurance up to 3 years depending on environmental conditions and cleaning treatment. |
|---------------------|--|

Lens

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| Minimum Illumination | Color: 0.02 lux B/W: 0.001 lux |
| Lens Characteristics | Mx-VB1A-2-IR-ALPR: Motorized Lens: Zoom, Focus, P-IRIS Focal Length: 2.7 to 12 mm Aperture: F1.6 to F2.9 Horizontal Field of View: 102.1° (Wide), 31.5° (Tele) Vertical Field of View: 70.3° (Wide), 22.7° (Tele) Mx-VB1A-2-IR-D-ALPR: Motorized Lens: Zoom, Focus Focal Length: 9 to 22 mm Aperture: F1.6 to F2.4 Horizontal Field of View: 36.1° (Wide), 15.4° (Tele) Vertical Field of View: 19.8° (Wide), 8.8° (Tele) |

Camera

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| Day/Night | Automatic mechanically switchable IR-cut filter |
| Shutter Time | Up to 1/43040 s |
| WDR | Up to 130 dB Multi Exposure WDR & HDR Engine support |
| Zoom | Optical zoom, digital zoom ready by lens type |
| Image settings | Color, Brightness, Sharpness, Contrast, White Balance, Exposure Control, 2DNR, 3DNR, NR by Motion, Masking, Text Overlay |
| Corridor Mode | 90°, 180°, 270° Rotation |

Video Codec

| | |
|----------------------|---|
| Compression/Encoding | H.265/H.264/MJPEG |
| Streaming | Up to 4 individually configurable streams in H.264/H.265/MJPEG Configurable resolution/frame rate/bandwidth LBR/VBR/CBR in H.265/H.264 |

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Audio Codec

| | |
|----------------------|--|
| Compression/Encoding | G.711/G.726/AAC/LPCM |
| Streaming | 2-Way, bidirectional |
| Audio Input | Line In: Max 6.2 Vpp Signal In, Input Impedance: 33 k Ω |
| Audio Output | Line Out: 1 Vrms Signal Out, Output Resistance: 200 Ω |

Cyber Security Features

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| Password Protection | Yes |
| IP address filtering | Yes |
| IEEE 802.1X network access control | Yes |
| Digest authentication | Yes |
| AES encryption for password protection | Yes |
| SNMP, TLS, HTTP, HTTPS | Yes |
| User and Group Management | Yes |
| SSL connections | Yes |
| VPN | Yes |
| Digital image signature | Yes |
| RSA encryption (2048 bits) | Yes |

Network

| | |
|---------------------|---|
| Interface | 10/100 Mbps Ethernet |
| Supported Protocols | ARP, PPPoE, IPv4/v6, ICMP, IGMP, QoS, TCP, UDP, DHCP, UPnP, SNMP, SMTP, RTP, RTSP, HTTP, HTTPS, FTP, NTP, DDNS, SMBv2 |
| ONVIF conformance | Supports profiles S/G/T/M |
| Supported Browsers | All current browsers are supported. |

ALPR (Automatic License Plate Recognition) Features

NOTE! Formatted 64 GB SD card is pre-installed! For replacement cards, using a 64 GB or larger SD card is recommended. See **MicroSD Cards for MOBOTIX MOVE Cameras** document on www.mobotix.com > **Support > Download Center > Marketing & Documentation > White Lists.**

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Operational Range

- Monitors 1 or 2 lanes
- **Mx-VB1A-2-IR-ALPR:**
 - Reading distance up to 18 m/59 ft
 - Effective IR distance up to 20 m/66 ft
 - Recommended speed range from 0 to 60 km/h/37.3 mph
 - Suitable for low-speed scenarios: parking, Smart City traffic, etc.
- **Mx-VB1A-2-IR-D-ALPR:**
 - Reading distance up to 35 m/115 ft
 - Effective IR distance up to 35 m/115 ft
 - Recommended speed range from 0 to 160 km/h/99.4 mph (up to 200 km/h/124.3 mph)
 - Suitable for low-speed to high-speed scenarios: parking, Smart City traffic, urban traffic, highway traffic, etc.
- Min. to max. characters height: 14 to 70 pixels.
- Operates under extreme conditions such as low lighting, shadows, overexposed/damaged/dirty plates
- Operates in bad weather and with extreme angles while maintaining high-accuracy readings

MOBOTIX ALPR
MOBOTIX Machine/Deep Learning Engine

- Full support of over a hundred countries (full list available upon request)
- High-performance DNN-based OCR engine for selected countries (full list available upon request)
- Support of Latin, Arabic, and Thai alphabets, GCC members, and enhanced North America state recognition
- Min. to max. characters height: 13 to 70 pixels (recommended 25 to 30)
- Max. rotation X (pitch) vertical angle $\pm 60^\circ$ (max $\pm 25^\circ$ for optimal performance)
- Max. rotation Y (yaw) horizontal angle $\pm 65^\circ$ (max $\pm 25^\circ$ for optimal performance)
- Max. rotation Z (roll) $\pm 35^\circ$ (max $\pm 10^\circ$ for optimal performance)
- Vehicle category, make, model, and color classification
- Direction of travel reporting/filtering
- Achieves >99% accuracy (several third-party independent assessments)

Results Integration

- Both push and pull modes supported (API available)
- Generic HTTP XML/2x JSON
- TCP/IP proprietary protocol (open)
- UTMC
- FTP
- TCP server
- Branded SW/VMS integration: MOBOTIX HUB, Genetec Security Center, Milestone XProtect, Axis Camera Station, Helix, Network Optix, among others.
- Branded HW integration: MOBOTIX MOVE NVRs.

Additional Features

- Failover capabilities for transmission of results
 - Embedded whitelist/blacklist management
 - Video overlay
 - Customizable local relay triggering
 - Free-flow or signaled modes
 - 64 GB SD card pre-installed
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General

| | |
|--------------------------------|---|
| Casing | Metal Back Housing, PC Front |
| Device Color | PC front cover: RAL9003 Sunshield: <ul style="list-style-type: none">▪ Logo color: Pantone 286C and Pantone Gray 6 Cu▪ Body color: RAL9003▪ Back metal body: RAL9003 |
| Power Requirements | PoE IEEE802.3af, class 0, max 12.95 W DC12V, max 15.59 W AC24V, max 13.31 W, max 25.08 VA |
| PoE Modes Supported | Mode A or Mode B |
| Connectors | RJ45, Alarm in x2, Alarm out x1, 12 VDC Terminal Block, 24 VAC Terminal Block, Audio in 3.5 mm Jack, Audio out 3.5 mm Jack, CVBS Connector COAX (75 Ohm) (CVBS output available with max. 2 activated streams) |
| IR Illumination | Visual up to 60 m/197 ft distance depending on scenery reflection |
| Video Storage | Micro SD/SDHC/SDXC card support up to 1 TB, Support for recording to NAS, MOBOTIX HUB, MOBOTIX MOVE NVR |
| SD Card pre-installed | 64 GB |
| Environmental Protection Class | IP66/IP67 and IK10 |
| Operating Temperature | -55 to 60 °C/-67 to 140 °F with activated heater |
| Cold Start Temperature | -30 °C/-22 °F |
| Relative Humidity | 10 to 90 % non-condensing |
| Storage Conditions | -20 to 70 °C/-4 to 158 °F |

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| Approvals | EMC: CE/FCC Safety: LVD Environmental: IP66/IP67, IK10 |
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| MTBF | 95,000 hours |
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| Warranty | 5 years |
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| Dimensions | ø 105x232 mm |
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| Weight | 1280 g |
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NOTE! Observe the [MOBOTIX MOVE Installation Hints](#) document to ensure optimum performance of the camera features.

Alarm Input/Output Current and Voltage





Alarm In

3.3 V with 10 kΩ pull up, 50 mA

Alarm Out

350 V DC/AC, 130 mA

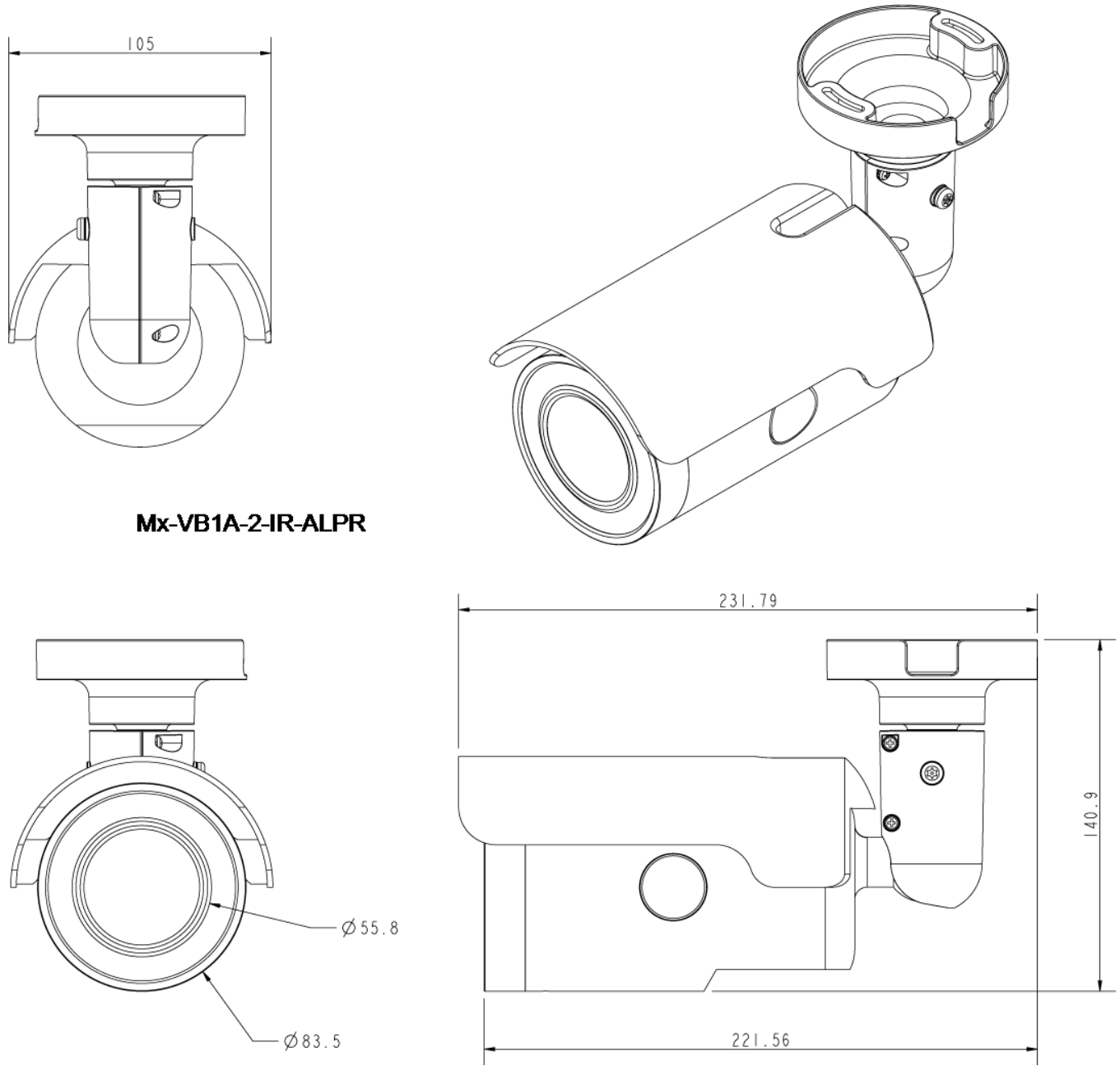
Accessories

| Picture | Order Code | Description |
|--|---------------------|---|
|  | Mx-M-BC-P | Pole Mount (junction mount) for MOBOTIX MOVE Bullet Cameras |
|  | Mx-M-BC-W | Wall Mount (junction mount) for MOBOTIX MOVE Bullet Cameras |
|  | Mx-NPA-UPOE1A-60W | UPoE Network Power Injector 60 W |
|  | Mx-A-ETP1A-2601-SET | Media Converter Set Ethernet (PoE+) – Twisted-Pair |

Dimensions

NOTE! Download the drilling template from the section or on the MOBOTIX website: www.mobotix.com > Support > Download Center > Marketing & Documentation > Drilling Templates.

CAUTION! Always print or copy the drilling template at 100% of the original size!

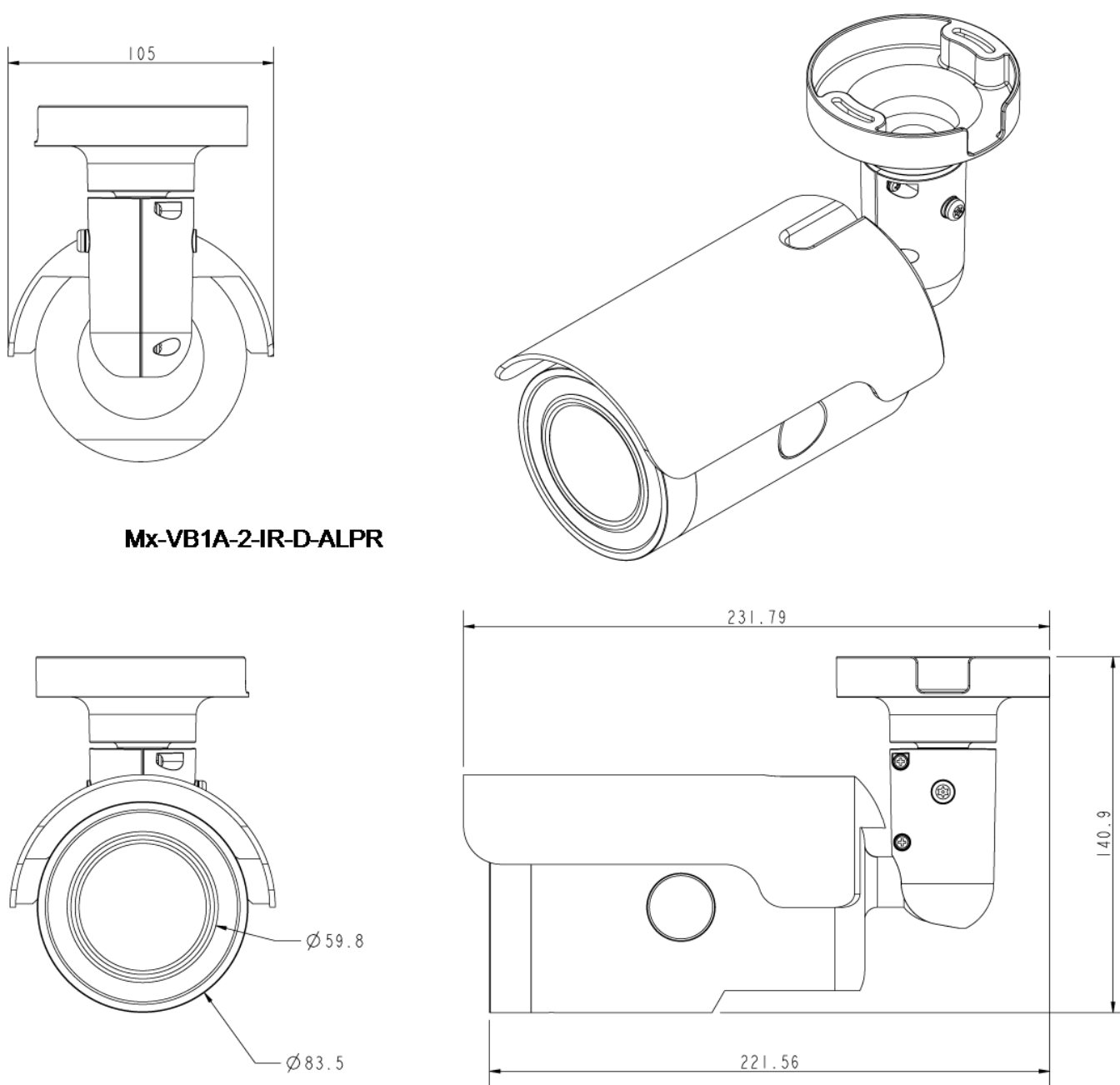


Mx-VB1A-2-IR-ALPR

Fig. 1: Mx-VB1A-2-IR-ALPR: All measurements in mm

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Mx-VB1A-2-IR-D-ALPR

Fig. 2: Mx-VB1A-2-IR-D-ALPR: All measurements in mm

Further Reading

Manuals and Quick Installation documents



Technical Specifications



MOBOTIX MOVE Installation Hints



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