



# Technical Specifications

## **MOBOTIX MOVE 4K (8MP) Vandal Fixed Dome Analytics Camera**

The MOBOTIX MOVE 4K (8MP) Vandal Fixed Dome Analytics Camera extends the existing range of MOVE IP Camera series with a performant 4K (8MP) resolution camera with DNN (Deep Neural Network) video analytics features. The camera performs fast and reliable auto focus and adapts to different indoor and outdoor scenes. The integrated MOBOTIX MxMessageSystem allows direct communication and interaction with MOBOTIX IoT cameras via the IP network. The MOBOTIX EverClear superhydrophilic and self-cleaning nano coating of the dome ensures best image quality even in rain and reduces cleaning efforts and operational costs.

- EverClear coating of dome
- Motorized Vari-Focal Lens 3.6 to 11 mm, F1.5 to F2.0 with Zoom and One-Push Auto Focus
- Wide Dynamic Range (WDR) max. 130 dB
- MOBOTIX MxMessageSystem communication system
- Integrated DNN-based video analytics with object classification/filtering
- Integrated IR LEDs up to 50 m/164 ft distance
- ONVIF Profile S/G/T/M support
- Triple power support (IEEE802.3af/AC24V/DC12V)
- Temperature Range -55 to 60 °C/-67 to 140 °F with integrated heater ON
- IP66 and IK10
- Quick Connection Mount



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High-Quality DNN Edge Video Analytics

Counting	Intrusion	Removed Objects	Sabotage	Face Recognition
				
Abandoned Objects	Stopped Vehicle	Wrong Direction	Loitering	ALPR
				

The latest computer vision technology makes the DNN-accelerated video processing engine efficient at the edge. This integrated engine provides high accuracy, and 10 (DNN-based) video analytics functions including ALPR and human face recognition. Moreover, it allows simultaneous detection on multiple objects.

MOBOTIX EverClear Nano Coating

The new, groundbreaking MOBOTIX EverClear coating uses a special nano technology that transforms water droplets into an ultra-thin water film immediately upon impact. This ensures the highest image quality in rain and difficult environmental conditions and reduces maintenance costs due to its “self-cleaning” effect.



Product Information

Product Name	4K (8MP) Vandal Fixed Dome Analytics Camera
Order Code	Mx-VD1A-8-IR-VA

Hardware Design

Processor	Ambarella CV22 (Quad-core ARM® Cortex®-A53, 1 GHz)
Memory	RAM: 512 MB FLASH: 256 MB

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Image Sensor	4K (8MP), 1/1.8" Progressive CMOS IMX334 (SONY STARVIS)
Effective (Used) Pixels	3864x2180 (4K/8MP)

## Lens

Minimum Illumination	Color: 0.04 lux B/W: 0.002 lux
Lens Characteristics	Motorized Lens: Zoom, Focus, P-IRIS Focal Length: 3.6 to 11 mm Aperture: F1.5 to F2.0 Horizontal Field of View: 115.0° (Wide), 47.5° (Tele) Vertical Field of View: 61.2° (Wide), 27.0° (Tele)
Lens Mechanics	3-Axis adjustment
Dome 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 dome, further reducing maintenance efforts. Coating endurance up to 3 years depending on environmental conditions and cleaning treatment.

## Camera

Day/Night	Automatic mechanically switchable IR-cut filter
Shutter Speed	<b>Manual Mode:</b> WDR: up to 1/67500 s Linear: up to 1/13500 s <b>Automatic Mode:</b> Up to 1/10000 s
Frame Rate (maximum)	H.265/H.264: 3864x2180@30 fps + 1920x1080@30 fps MJPEG: 1080p@30 fps
Auto Gain	Min. gain: 3 dB, max. gain: 48 dB, step size: 3

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WDR	Up to 130 dB Multi Exposure WDR & HDR Engine support
EIS (Electronic Image Stabilizer)	No
Zoom	Optical: 3.1x, Digital: 10x
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.

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 kΩ
Audio Output	Line Out: 1 Vrms Signal Out, Output Resistance: 200 Ω

Cyber Security Features

Password Protection	Yes (including “forced” password change during initial setup)
IP address filtering	Yes (to restrict unauthorized access based on IP addresses)
IEEE 802.1X network access control	Yes (for advanced network security and authentication)
Digest authentication	Yes (for secure user authentication)
Secure Boot	Yes (support of fixed IP setting and automatic DHCP IP configuration according to individual MAC address)
AES encryption for password protection	Yes (to ensure strong encryption for password storage)



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HTTPS/SSL (using TLS)	Yes (TLS 1.2 default, TLS 1.0/1.1 optional selectable)
User and Group Management	Yes (for fine-grained access control)
VPN	Yes (to establish secure network connections)
Digitally signed firmware	Yes (to prevent firmware file tampering)
RSA encryption	Yes (to support stronger ciphers; supported: RSA (2048 bits), AES-128, AES-256, SHA-256, SHA-384)

## 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.

## System Integration

Base Video Analytics	<ul style="list-style-type: none"> <li>■ Motion detection</li> <li>■ Audio detection</li> </ul>
DNN-Based Video Analytics	<ul style="list-style-type: none"> <li>■ Abandoned objects</li> <li>■ Intrusion (object classification/filtering for people, vehicles, etc.)</li> <li>■ Sabotage</li> <li>■ Wrong direction</li> <li>■ Loitering (object classification/filtering for people, vehicles, etc.)</li> <li>■ Object counting (object classification/filtering for people, vehicles, etc.)</li> <li>■ Object removal</li> <li>■ Stopped vehicle (object classification/filtering)</li> </ul> <p>2 analytics functions can be activated simultaneously</p>
Enhanced DNN-Based Video Analytics	<ul style="list-style-type: none"> <li>■ Face Recognition (incl. gender &amp; age estimation)</li> </ul>

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	<ul style="list-style-type: none"><li>■ Number Plate Recognition – supported countries: Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Ireland, Israel, Italy, Japan, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Luxembourg, Moldova, Monaco, Montenegro, Netherlands, North Macedonia, Norway, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Taiwan, Turkey, Ukraine, United Kingdom, Uzbekistan, Vietnam</li></ul>
Event Triggers	<ul style="list-style-type: none"><li>■ External input</li><li>■ Analytics</li><li>■ Network failure detection</li><li>■ Periodical event</li><li>■ Manual trigger</li><li>■ MxMessageSystem messages</li></ul>
Event Actions	<ul style="list-style-type: none"><li>■ External output activation</li><li>■ Video and audio recording to edge storage</li><li>■ File upload: FTP, network share and email</li><li>■ Notification: HTTP, FTP, email</li><li>■ MxMessageSystem messages</li></ul>

General

Housing Materials	Metal Housing
Housing Color	RAL 9003
Camera Module Adjustment	3-Axis Gimbal (Pan/Tilt/Rotate)
Device Color	Metal body housing: RAL 9003 Logo color: Pantone 286C and Pantone Gray 6 Cu
Power Requirements	PoE IEEE802.3af, class 0, max 11.67 W DC12V, max 12.14 W AC24V, max 11.99 W, max 20.02 VA Zero-Down-Time Power Source Switching

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PoE Modes Supported	Mode A or Mode B
Connectors	RJ45, Alarm in x2, Alarm out x1, Audio in, Audio out terminal block, DC12V/AC24V terminal block, CVBS Connector COAX (75 Ohm) (CVBS output available with max. 2 activated streams, requires optional adapter 2-pin COAX cable)
IR Illumination	850 nm; up to 50 m/164 ft distance depending on reflection of scenery
Video Storage	Micro SD/SDHC/SDXC card support up to 1 TB, Support for recording to NAS, MOBOTIX HUB, MOBOTIX MOVE NVR
Environmental Protection Class	IP66 and IK10
Operating Temperature	-55 to 60 °C/-67 to 140 °F with integrated heater ON
Cold Start Temperature	-30 °C/-22 °F
Relative Humidity	90 % non-condensing
Storage Conditions	-20 to 70 °C/-4 to 158 °F
Approvals	EMC: CE, FCC, BIS Safety: LVD Environmental: IP66, IK10
MTBF	95,000 hours
Warranty	5 years
Dimensions	ø 133.8 x 117.4 mm
Weight	760 g

**NOTE!** Observe the [MOBOTIX MOVE Installation Hints](#) document to ensure optimum performance of the camera features.

## Alarm Input/Output Current and Voltage

Alarm In	Alarm Out
3.3 V with 10 kΩ pull up, 50 mA	350 V DC/AC, 130 mA

# DORI Specifications

In the video surveillance context, “DORI” stands for Detection, Observation, Recognition and Identification and is based on IEC EN62676-4: 2015. These levels define the minimum pixels that a face of a person must have to provide proper identification, for example.

- **Detection:** Up to this distance, you can reliably determine if a person or vehicle is present.
- **Observation:** Up to this distance, you can see characteristic details of an individual, such as distinctive clothing.
- **Recognition:** Up to this distance, you can determine with a high degree of certainty whether an individual is the same as someone that has been seen before.
- **Identification:** Up to this distance, you can determine the identity of an individual beyond reasonable doubt.

DORI Level	Detection		Observation		Recognition		Identification	
Camera	Wide-Angle	Tele	Wide-Angle	Tele	Wide-Angle	Tele	Wide-Angle	Tele
Mx-VD1A-8-IR-VA	77 m/ 253 ft	183 m/ 600 ft	30 m/ 98 ft	73 m/ 240 ft	15 m/ 49 ft	37 m/ 121 ft	8 m/ 26 ft	18 m/ 59 ft



## Dimensions

**NOTE!** Download the drilling template from the section or on the MOBOTIX website: [www.mobotix.com](http://www.mobotix.com) > [Support > Download Center > Marketing & Documentation > Drilling Templates](#).

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

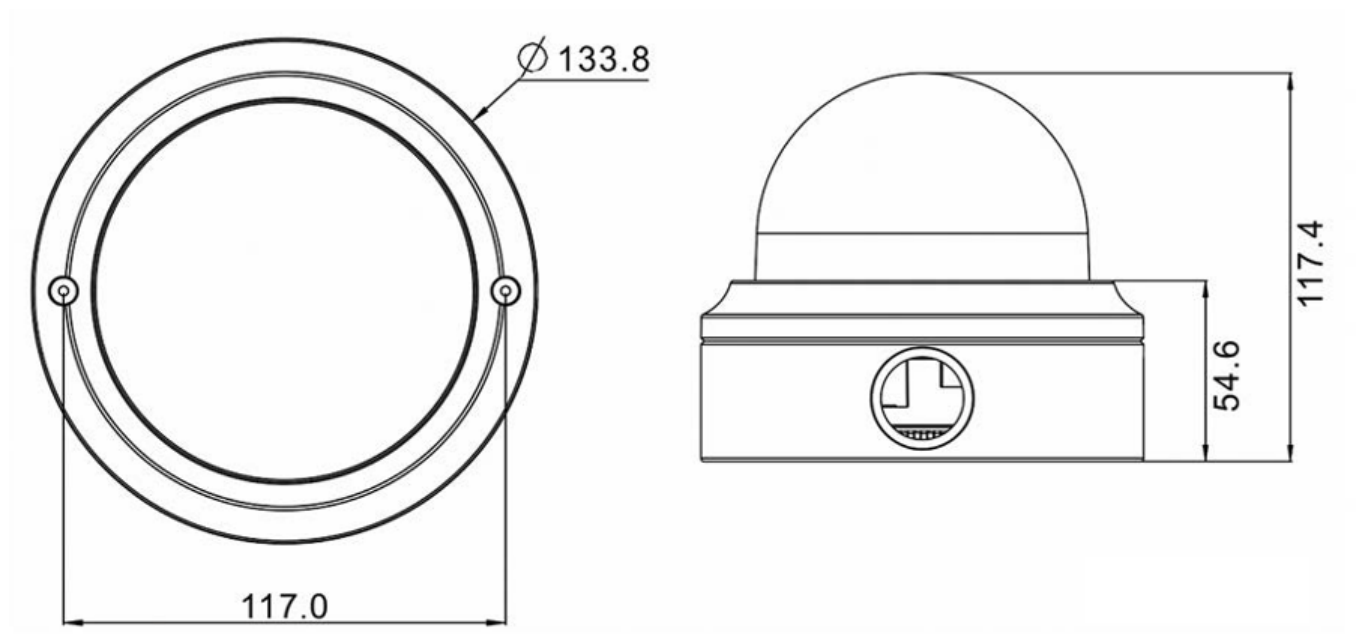




Fig. 1: Mx-VD1A-8-IR-VA: All measurements in mm

# Accessories for Vandal Dome Cameras




Picture/ Order Code	Description	Compatible Products	Material/ Color	Weight
 Mx-M-VD-C	Weatherproof corner mount for MOVE Vandal Dome cameras.	All MOVE Vandal Dome (VD) cameras. Requires use of Mx-M-VD-W.	SPCC steel, hammer-blow painted RAL9003	2.0 kg
 Mx-M-VD-P	Weatherproof pole mount for MOVE Vandal Dome cameras.	All MOVE Vandal Dome (VD) cameras. Requires use of Mx-M-VD-W.	Zinc-galvanized SECC steel, powder-coated RAL9003	0.7 kg

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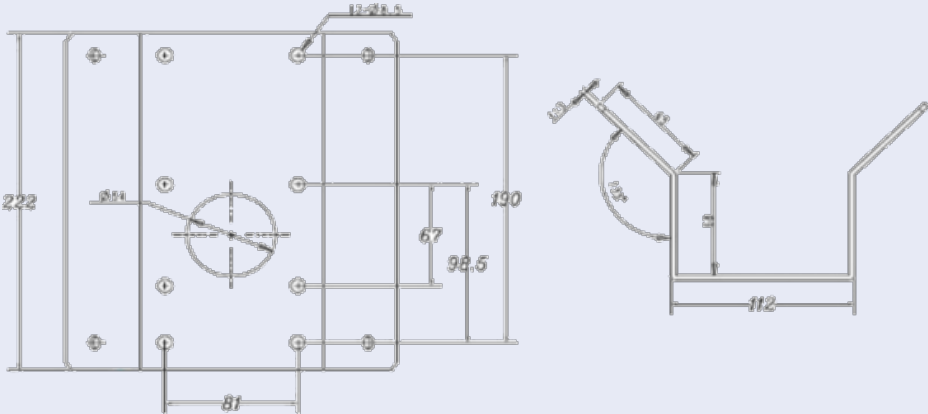
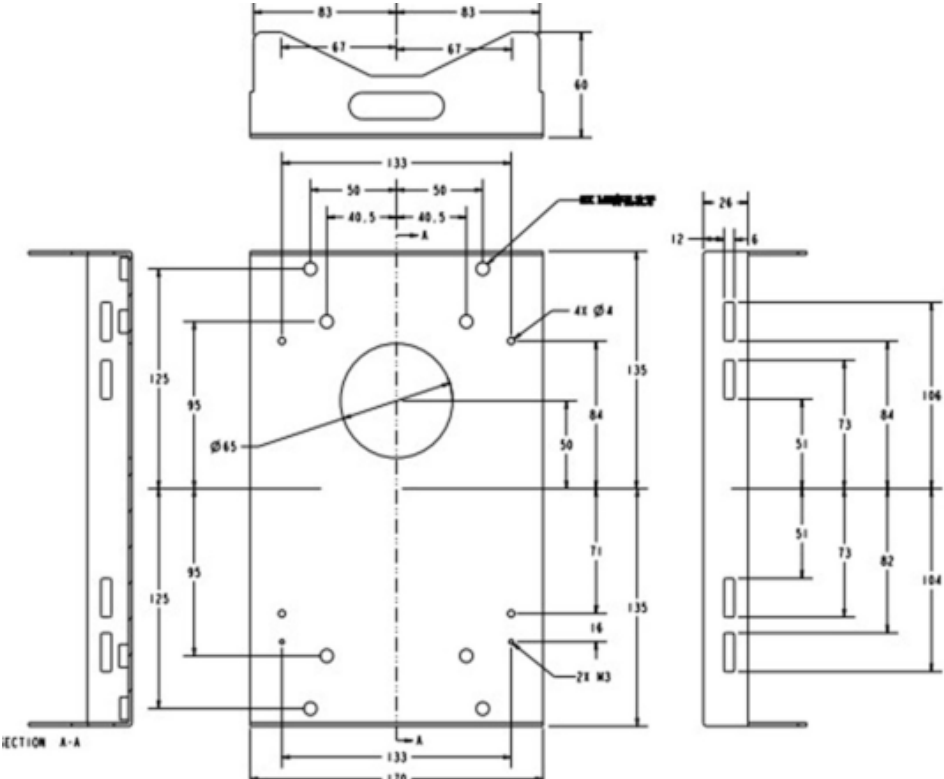
Picture/ Order Code	Description	Compatible Products	Material/ Color	Weight
 <p>Mx-M-VD-W</p>	Weatherproof wall mount for MOVE Vandal Dome cameras (2-piece set of wall mount and pendant cap).	All MOVE Vandal Dome (VD) cameras. Can be combined with Mx-M-VD-C or Mx-M-VD-P.	Wall Mount: Die-cast ADC12 aluminium alloy, hammer blow-painted RAL9003 Pendant cap: polycarbonate RAL9003	1.4 kg
 <p>Mx-M-VD-IC</p>	Indoor in-ceiling mount for MOVE Vandal Dome cameras.	All MOVE Vandal Dome (VD) cameras.	Zinc-galvanized SECC steel, powder-coated RAL9003	0.8 kg
 <p>Mx-A-VD-DCS</p>	Clear replacement dome for MOVE Vandal Dome cameras.	All MOVE Vandal Dome (VD) cameras.	Ring: Die-cast ADC12 aluminium alloy, powder-coated RAL9003 Dome: Polycarbonate, clear	0.21 kg

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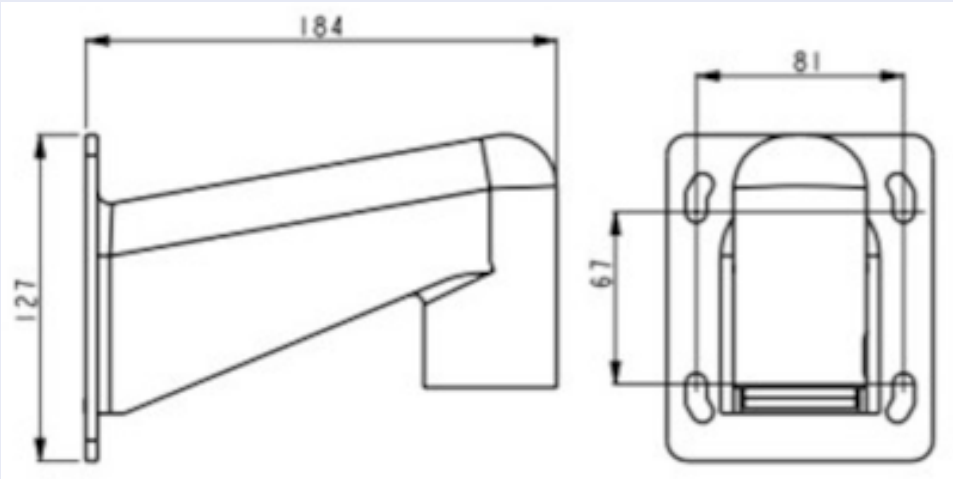
Picture/ Order Code	Description	Compatible Products	Material/ Color	Weight
 Mx-A-VD-DCT	Tinted replacement dome for MOVE Vandal Dome cameras.	All MOVE Vandal Dome (VD) cameras.	Ring: Die-cast ADC12 aluminium alloy, powder-coated RAL9003  Dome: Polycarbonate, tinted	0.25 kg
 Mx-A-VD-DBC-EC	Clear <b>EverClear-coated</b> replacement dome for MOVE Vandal Dome cameras.	All MOVE Vandal Dome (VD) cameras.	Ring: Die-cast ADC12 aluminium alloy, powder-coated RAL9003  Dome: Polycarbonate, clear	0.21 kg
 Mx-A-VD-DBT-EC	Tinted <b>EverClear-coated</b> replacement dome for MOVE Vandal Dome cameras.	All MOVE Vandal Dome (VD) cameras.	Ring: Die-cast ADC12 aluminium alloy, powder-coated RAL9003  Dome: Polycarbonate, tinted	0.25 kg

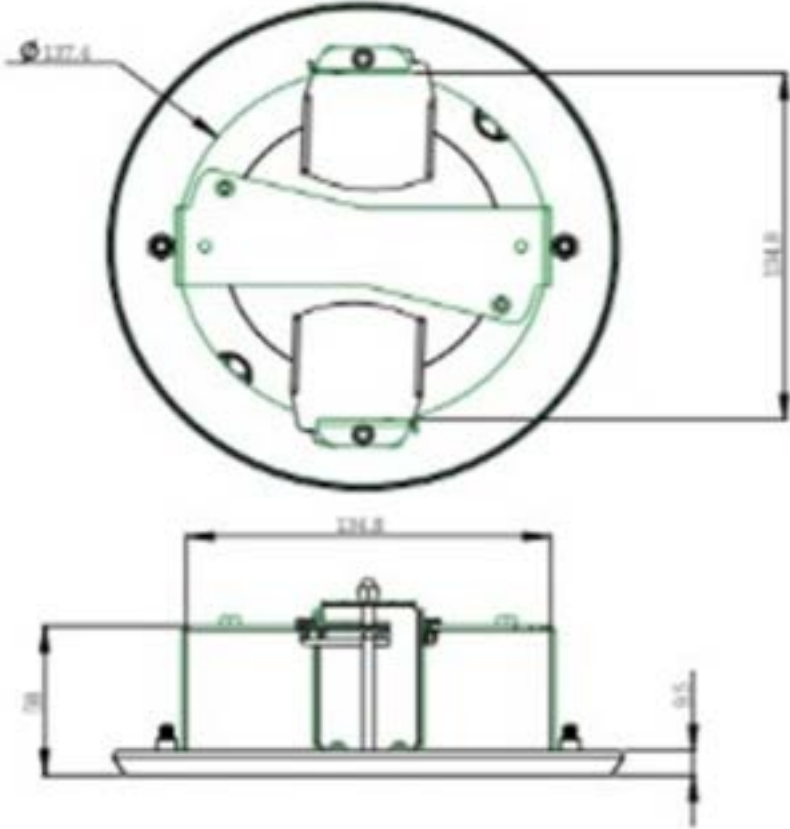
Dimensions

Order Code	Dimensions
Mx-M-VD-C	
Mx-M-VD-P	

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Order Code	Dimensions
Mx-M-VD-W	

Mx-M-VD-IC	
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## Accessories for All Cameras

Picture/ Order Code	Description	Compatible Products	Material/ Color	Weight
 MX-NPA-UPOE1A-60W	<p>UPoE Power Injector 60W. PoE++ 60W Network Power injector • AC Input Voltage: 100 to 240 VAC (50 to 60Hz) • AC Input Current: 1.5A @100-240 VAC • Operating Ambient Temperature: • -10° to 40°C @60W • -10° to 50°C, humidity 10 to 90% @30W • IEEE 802.3bt compliant • Output power of 60W over 4-pairs • Supports 10/100/1000Base-T applications • Plug-and-play installation • Full Protection OVP, OCP• Supports 10/100/1000Base-T applications.</p>	All cameras.	Plastic housing, black	0.45 kg
 Mx-A-ETP1A-2601-SET	<p>Media converter set Ethernet (PoE+) – Twisted-Pair. Complete set consisting of two two-wire transmit/receive units for establishing an Ethernet transmission path via twisted-pair cables. • Transmission of Ethernet and PoE+ power supply via two-wire line according to IEEE1901. • Simple connection of 10/100 Mbps Ethernet end devices • Max. 95 Mbps transmission bandwidth, range up to</p>	<p>All cameras. Requires Mx-A-ETP1A-2601-POW.</p>	Plastic housing, black	0.368 kg

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Picture/ Order Code	Description	Compatible Products	Material/ Color	Weight
	600 m/656 yd for data only, 300 m/328 yd for PoE depend- ing on the quality of the twis- ted-pair link • 128 bit AES network data encryption • Power supply 2-wire trans- mitter (Tx) and receiver (Rx) as well as end device via PoE+ network switch or external power supply 56VDC / 1.2A (not included!) • Connected end devices are supplied via PoE switch IEEE802.3af(PoE), IEEE802.3at (PoE+), UPoE up to 60W (requires ext. power supply unit). • Status LEDs (data, power supply, data link, PoE) • Integrated Over- voltage protection (IEC 61000- 4-5 4kV(1.2 / 50us), 2kA(8 / 20us)) • Power Supply: TX: T- Linx or DC12V~57V, RX: PoE Switch or DC48V~57V • Oper- ational temperature: -20 to 60°C • Dimensions: 80.4(L) x 61.6(W) x 24(H)mm • Weight: RX/TX: 102g • Warranty: 2 years			


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MOBOTIX MOVE 4K (8MP) Vandal Fixed Dome Analytics Camera

Picture/ Order Code	Description	Compatible Products	Material/ Color	Weight
 <p>Mx-A-ETP1A-2601-POW</p>	<p>Plug-type power supply for Mx-A-ETP1A-2601-SET.</p> <p>Output: 57V DC +/-3% / 1.2 A • Input: 90-260V AC (47-63Hz) • 68,4 Watt • Operating Temperature: 0-40°C/32-122°F</p>	Mx-A-ETP1A-2601-SET	Plastic housing, black	0.49 kg
 <p>Mx-A-KBD1A-PTZ-JOG</p>	<p>MOBOTIX USB Keyboard with PTZ Joystick &amp; Jog-Shuttle.</p> <p>USB control panel for operating MOBOTIX MxMC 2.6 and higher and MOBOTIX HUB incl. Control of software PTZ and motorized PTZ cameras and pan/tilt devices • Integrated 3-axis joystick • Integrated jog shuttle • 38 control keys with backlight predefined for MxMC functions or freely definable for MOBOTIX HUB • Integrated alarm buzzer • Suitable for operation as HID device on MOBOTIX VMS with Windows and MAC based operating systems via USB 2.0 • Suitable for right- and left-handed users • Power supply: USB, max. 350 mA • Operating temperature: 0°-45°C/32-113 °F.</p>	<p>All cameras. Requires Windows or macOS computer with USB 2.0 or better.</p>	Plastic housing, black	1.9 kg

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Picture/ Order Code	Description	Compatible Products	Material/ Color	Weight
<div> MX-SWITCH1</div>	<p>MOBOTIX network switch for DIN (top-hat) rail mounting.</p> <p>5x RJ45 port with 100 MBit/s (1x uplink, 4x PoE+ with max. 75 W). Supply: 48 V DC, max. 75 W. Simplified cabling for door stations due to available connectivity for anti-theft protection, door opener and MxBus. MxBus, anti-theft protection, door and lock contact can be connected via separate wires of Ethernet cable.</p>	All cameras.	Plastic hous- ing, gray	0.31 kg

## Further Reading

[Manuals and Quick Installation documents](#)



[Video Analytics Manual](#)



[Technical Specifications](#)



[MOBOTIX MOVE Installation Hints](#)



[MOBOTIX Community](#)



