Technical Specifications

MOBOTIX MOVE 5MP Vandal Fixed Dome Analytics Camera

Performant 5MP resolution camera with integrated DNN-based video analytics features, perfect for the daily security and surveillance needs. The camera performs fast and reliable auto focus and adapts to different indoor and outdoor scenes. 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 2.7 to 12 mm, F1.6 to F2.9 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 40 m/131 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
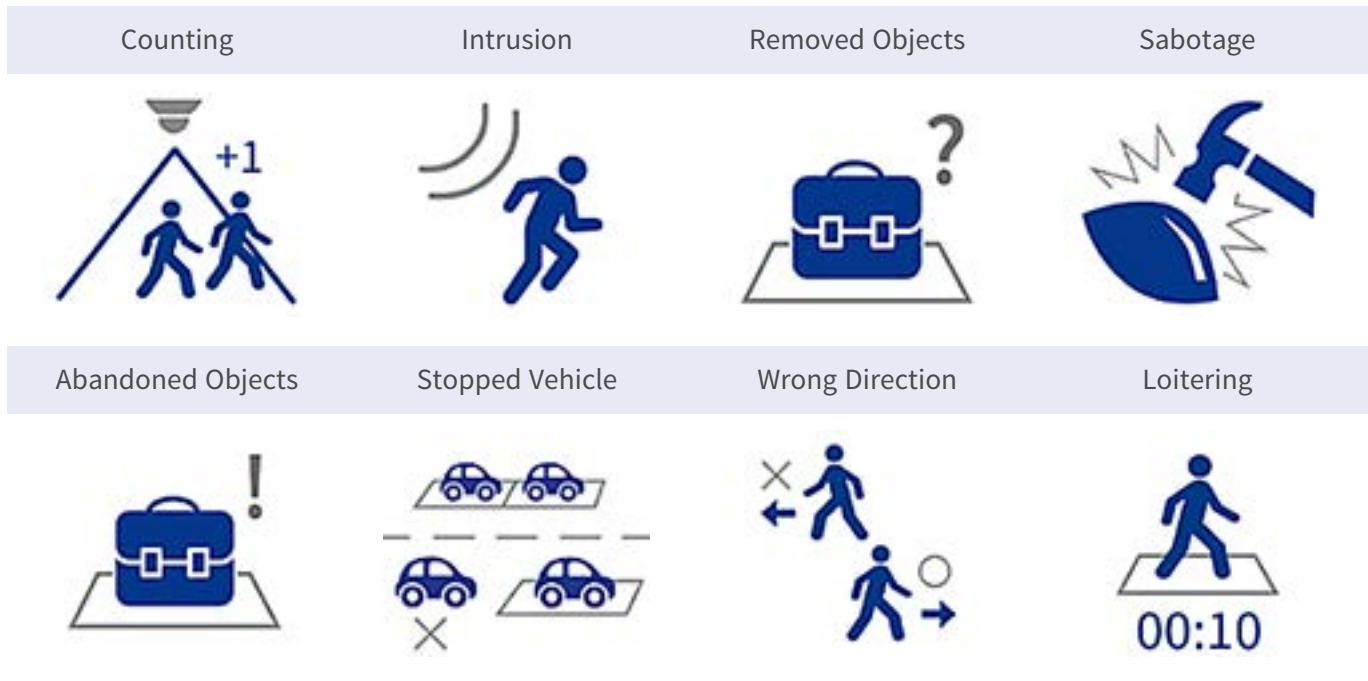- IP66 and IK10
- Quick Connection Mount

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High-Quality DNN Edge Video Analytics

Counting	Intrusion	Removed Objects	Sabotage

Abandoned Objects	Stopped Vehicle	Wrong Direction	Loitering

The latest computer vision technology makes the DNN-accelerated video processing engine efficient at the edge. This integrated engine provides high accuracy, and 8 video analytics functions. 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	5MP Vandal Fixed Dome Analytics Camera
Order Code	Mx-VD2A-5-IR-VA

Hardware Design

Processor	Ambarella S6L55m (Quad-core ARM® Cortex®-A53, 1 GHz)
Memory	RAM: 512 MBytes
	FLASH: 256 MBytes

Image Sensor	5MP, 1/2.7" Progressive CMOS OS05A20 (OmniVision)
Effective (Used) Pixels	2688x1944 (5MP)

Lens

Minimum Illumination	Color: 0.08 lux B/W: 0.008 lux
Lens Characteristics	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)
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	**Manual Mode:** WDR: up to 1/17550 s Linear: up to 1/37440 s **Automatic Mode:** Up to 1/10000 s

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Frame Rate (maximum)	**WDR on:** H.265/H.264: 2688x1944@30 fps + 1024x768@30 fps H.265/H.264: 2592x1944@30 fps + 1280x720@30 fps H.265/H.264: 2688x1512@30 fps + 1280x1024@30 fps H.265/H.264: 1920x1080@30 fps + 1920x1080@30 fps MJPEG: 1080p@30 fps **WDR off:** H.265/H.264: 2688x1944@30 fps + 1024x768@30 fps H.265/H.264: 2592x1944@30 fps + 1280x720@30 fps H.265/H.264: 2688x1512@30 fps + 1280x1024@30 fps H.265/H.264: 1920x1080@60 fps + 1280x1024@44 fps H.265/H.264: 1920x1080@60 fps + 1280x720@60 fps Stream 1 (main stream) with resolutions below 1920x1080 can support 2 streams@60 fps MJPEG: 1080p@60 fps
Auto Gain	Min. gain: 3 dB, max. gain: 48 dB, step size: 3
WDR	Up to 130 dB Multi Exposure WDR & HDR Engine support
Zoom	Optical: 4.4x, 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)
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.

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System Integration

Base Video Analytics	- Motion detection - Audio detection
Enhanced DNN-Based Video Analytics	- Abandoned objects - Intrusion (object classification/filtering for people, vehicles, etc.) - Sabotage - Wrong direction - Loitering (object classification/filtering for people, vehicles, etc.) - Object counting (object classification/filtering for people, vehicles, etc.) - Object removal - Stopped vehicle (object classification/filtering) 2 analytics functions can be activated simultaneously
Event Triggers	- External input - Analytics - Network failure detection - Periodical event - Manual trigger - MxMessageSystem messages
Event Actions	- External output activation - Video and audio recording to edge storage - File upload: FTP, network share and email - Notification: HTTP, FTP, email - MxMessageSystem messages

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 12.95 W
	DC12V, max 14.88 W
	AC24V, max 15.25 W, max 26.16 VA
	Zero-Down-Time Power Source Switching
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 40 m/131 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
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	Tele	Wide	Tele	Wide	Tele	Wide	Tele
Mx-VD2A-5-IR-VA	60 m/ 197 ft	196 m/ 643 ft	24 m/ 79 ft	78 m/ 256 ft	12 m/ 39 ft	39 m/ 128 ft	6 m/ 20 ft	20 m/ 66 ft

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!
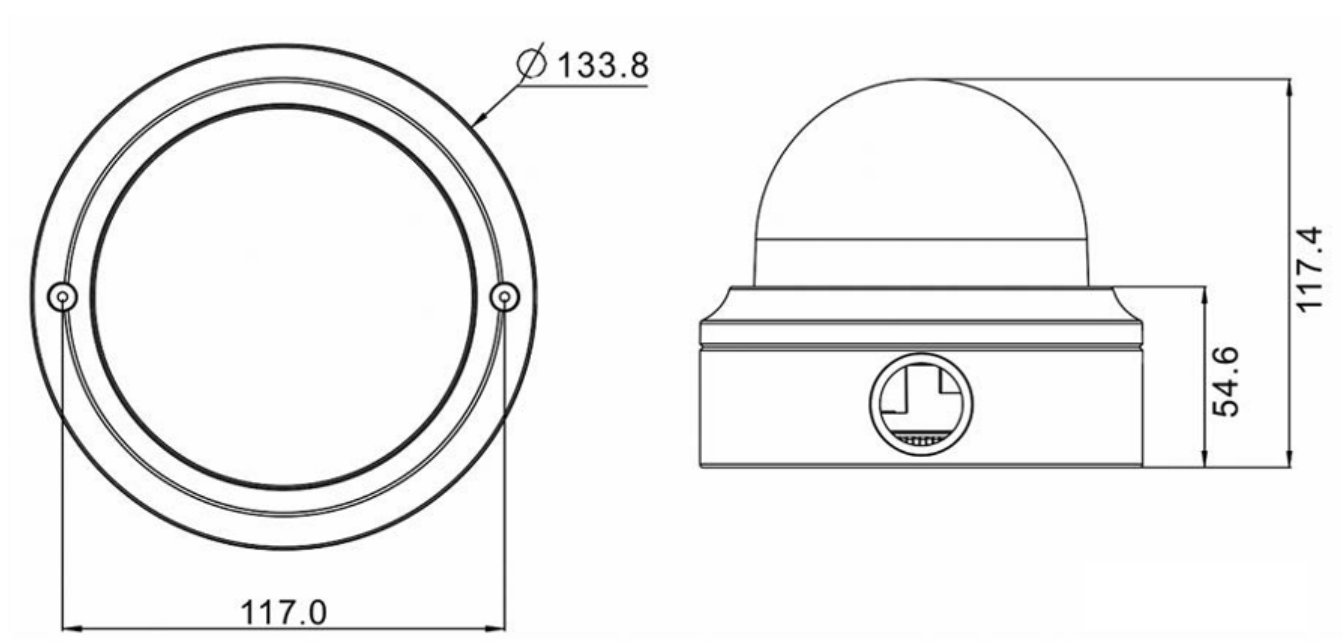
Fig. 1: Mx-VD2A-5-IR-VA: All measurements in mm

Accessories for Vandal Dome Cameras

Order Code/ Picture	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.	Steel, 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.	Steel zinc-coated, RAL9003	0.7 kg

Technical Specifications
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Order Code/ Picture	Description	Compatible Products	Material/ Color	Weight
Mx-M-VD-W	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.	Aluminum (wall mount) and polycarbonate (pendant cap), RAL9003	1.4 kg
Mx-M-VD-IC	Indoor in-ceiling mount for MOVE Vandal Dome cameras.	All MOVE Vandal Dome (VD) cameras.	Steel zinc-coated, RAL9003	0.8 kg
Mx-A-VD-DCS	Clear replacement dome for MOVE Vandal Dome cameras.	All MOVE Vandal Dome (VD) cameras.	Polycarbonate, clear	0.21 kg

| Order Code/ Picture	Description	Compatible Products	Material/ Color	Weight
Mx-A-VD-DCT	Tinted replacement dome for MOVE Vandal Dome cameras.	All MOVE Vandal Dome (VD) cameras.	Polycarbonate, tinted	0.25 kg
Mx-A-VD-DBC-EC	Clear **EverClear-coated** replacement dome for MOVE Vandal Dome cameras.	All MOVE Vandal Dome (VD) cameras.	Polycarbonate, clear	0.21 kg
Mx-A-VD-DBT-EC	Tinted **EverClear-coated** replacement dome for MOVE Vandal Dome cameras.	All MOVE Vandal Dome (VD) cameras.	Polycarbonate, tinted	0.25 kg

Dimensions

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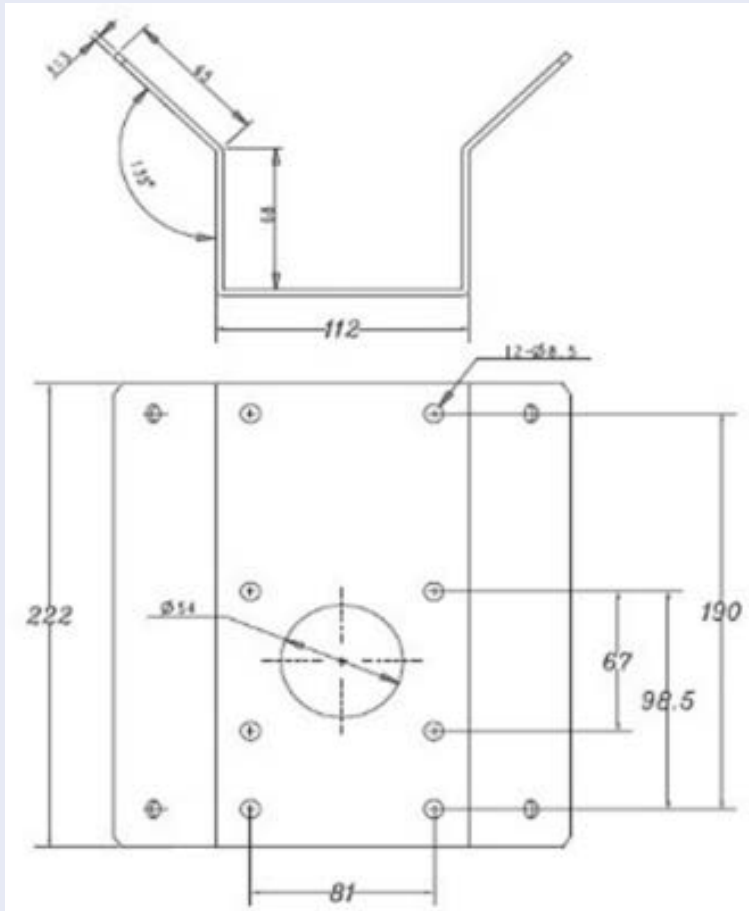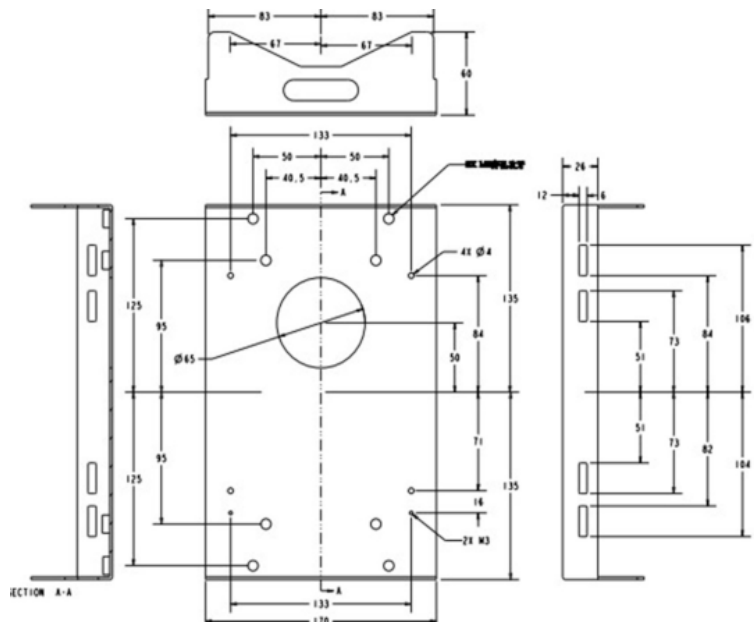
Technical Specifications

MOBOTIX MOVE 5MP Vandal Fixed Dome Analytics Camera
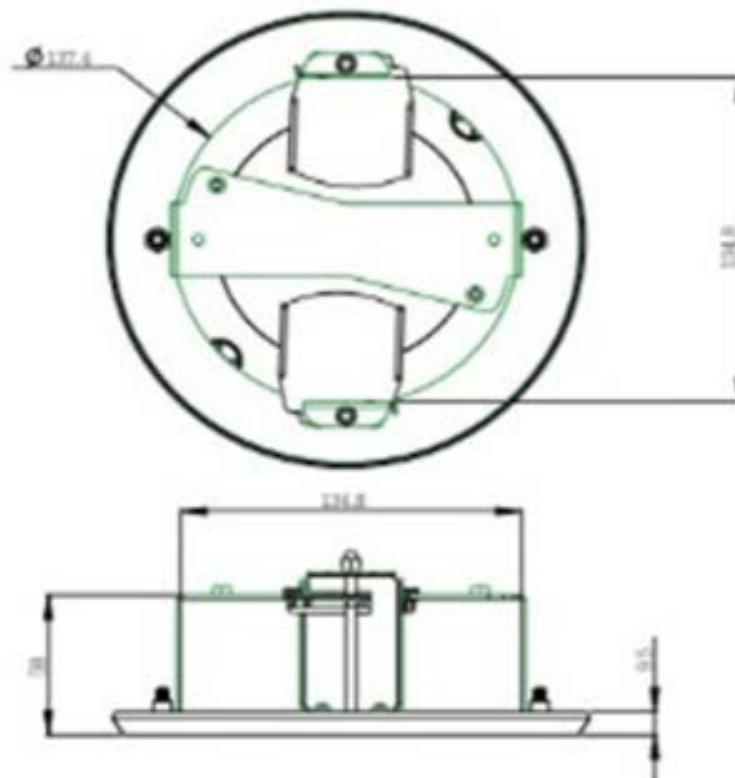
Order Code	Dimensions
Mx-M-VD-W	
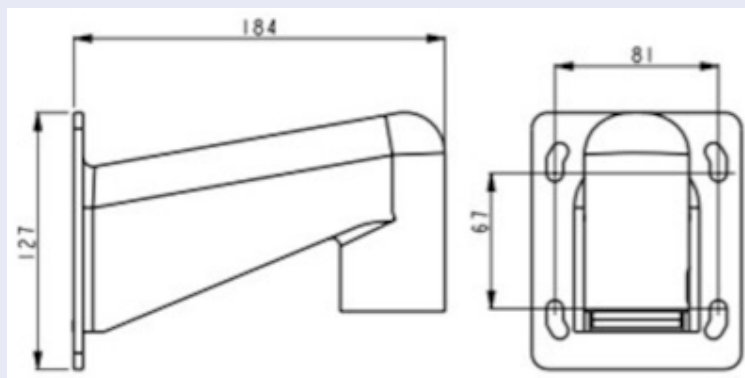
Mx-M-VD-IC

Accessories for All Cameras

Technical Specifications

MOBOTIX MOVE 5MP Vandal Fixed Dome Analytics Camera

Order Code/ Picture	Description	Compatible Products	Material/ Color	Weight
MX-NPA-UPOE1A-60W	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: • -10º to 40ºC @60W • -10º to 50ºC, 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.	All cameras.	Plastic housing, black	0.45 kg

Order Code/ Picture	Description	Compatible Products	Material/ Color	Weight
Mx-A-ETP1A-2601-SET	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 600 m/656 yd for data only, 300 m/328 yd for PoE depending on the quality of the twisted-pair link • 128 bit AES network data encryption • Power supply 2-wire transmitter (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 Overvoltage protection (IEC 61000-4-5 4kV (1.2 / 50us), 2kA(8 / 20us)) • Power Supply: TX: T-Linx or	All cameras. Requires Mx-A-ETP1A-2601-POW.	Plastic housing, black	0.368 kg

Order Code/ Picture	Description	Compatible Products	Material/ Color	Weight
	DC12V~57V, RX: PoE Switch or DC48V~57V • Operational temperature: -20 to 60°C • Dimensions: 80.4(L) x 61.6(W) x 24 (H)mm • Weight: RX/TX: 102g • Warranty: 2 years			
Mx-A-ETP1A-2601-POW	Plug-type power supply for Mx-A-ETP1A-2601-SET. Output: 57V DC +/-3% / 1.2 A • Input: 90-260V AC (47-63Hz) • 68,4 Watt • Operating Temperature: 0–40°C/32–122°F	Mx-A-ETP1A-2601-SET	Plastic housing, black	0.49 kg

Order Code/ Picture	Description	Compatible Products	Material/ Color	Weight
Mx-A-KBD1A-PTZ-JOG	MOBOTIX USB Keyboard with PTZ Joystick & Jog-Shuttle. 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.	All cameras. Requires Windows or macOS computer with USB 2.0 or better.	Plastic housing, black	1.9 kg
MX-SWITCH1	MOBOTIX network switch for DIN (top-hat) rail mounting. 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.	All cameras.	Plastic housing, gray	0.31 kg

Further Reading

Manuals and Quick Installation documents

Video Analytics Manual

Technical Specifications

MOBOTIX MOVE Installation Hints

MOBOTIX Community

MOBOTIX

Beyond**Human**Vision