



# Technical Specifications

## MOBOTIX M ONE (FIX & VARIO)

### MOBOTIX M ONE (FIX & VARIO) - The One-of-a-Kind Video Security System

A robust maintenance-free German IP video system with outstanding design and high-quality components: glass fiber-reinforced, salt water-resistant housing, high-end processors, image sensors for excellent quality, and cyber-secure firmware by MOBOTIX with integrated AI for top-level perimeter protection and intrusion detection.

- Comprehensive codec support: H.264, H.265, MxPEG+, and MJPEG
- Wide range of optics with application-oriented fixed and varifocal lenses
- 4K UHD resolution for crisp and detailed images at day and night
- Two integrated IR LED lights (near and long distance)
- Wide Dynamic Range (WDR) with up to 120 dB
- Internal DVR including 64 GB microSD card (up to 1 TB supported)
- Integrated MOBOTIX ActivitySensor with AI-based object recognition
- Robust in all environmental conditions: -40 to 65 °C, IP66, NEMA 4X, and IK10
- 'Quick&Easy' installation with integrated bracket, concealed cabling, and varifocal optics



BeyondHumanVision

**MOBOTIX**

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## Order Information MOBOTIX M ONE (FIX & VARIO)

|                               |                                                           |
|-------------------------------|-----------------------------------------------------------|
| Varifocal Lens Variants       |                                                           |
| Mx-ONE-M1A-S-8DNTELE          | M1A-S with 4K DN Tele Varifocal (Day/Night), 42° - 15°    |
| Mx-ONE-M1A-S-8DNWIDE          | M1A-S with 4K DN Wide Varifocal (Day/Night), 112° - 47.5° |
| Fixed Lens Day/Night Variants |                                                           |
| Mx-ONE-M1A-S-8DN040           | M1A-S with 4K DN040 (Day/Night), 120°x60°                 |
| Mx-ONE-M1A-S-8DN050           | M1A-S with 4K DN050 (Day/Night), 95°x50°                  |
| Mx-ONE-M1A-S-8DN080           | M1A-S with 4K DN080 (Day/Night), 60°x33°                  |
| Mx-ONE-M1A-S-8DN100           | M1A-S with 4K DN100 (Day/Night), 45°x25°                  |
| Mx-ONE-M1A-S-8DN150           | M1A-S with 4K DN150 (Day/Night), 30°x17°                  |
| Mx-ONE-M1A-S-8DN280           | M1A-S with 4K DN280 (Day/Night), 15°x8.5°                 |
| Fixed Lens Night Variants     |                                                           |
| Mx-ONE-M1A-S-8N040            | M1A-S with 4K N040 (Night) 120°x60°                       |
| Mx-ONE-M1A-S-8N050            | M1A-S with 4K N050 (Night), 95°x50°                       |
| Mx-ONE-M1A-S-8N080            | M1A-S with 4K N080 (Night), 60°x33°                       |
| Mx-ONE-M1A-S-8N100            | M1A-S with 4K N100 (Night), 45°x25°                       |
| Mx-ONE-M1A-S-8N150            | M1A-S with 4K N150 (Night), 30°x17°                       |
| Mx-ONE-M1A-S-8N280            | M1A-S with 4K N280 (Night), 15°x8.5°                      |
| Mounts                        |                                                           |
| Mx-MH-SecureFlex-ESWS         | Pole mount for M1x, M2x, M1A-S                            |
| MX-M-CM-M1                    | Ceiling mount for M1 cameras                              |

## Hardware

| Feature                                                            | Properties                                                                                                                                                                                                                                                                                                                                |     |         |       |                                          |          |                                          |                       |                                           |
|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------|-------|------------------------------------------|----------|------------------------------------------|-----------------------|-------------------------------------------|
| Image sensor (color or B&W sensor)                                 | Up to 4K UHD 3840x2160, 16:9, 1/1,8"                                                                                                                                                                                                                                                                                                      |     |         |       |                                          |          |                                          |                       |                                           |
| Available Lenses                                                   | Varifocal Wide (4.3-9.3mm; f/1.3; 112-47°),<br>Varifocal Tele (11-29mm; f/1.7; 42-15°),<br>Fixed lenses with various focal lengths (aperture f/1.8)                                                                                                                                                                                       |     |         |       |                                          |          |                                          |                       |                                           |
| Optical zoom                                                       | Yes (for varifocal models)                                                                                                                                                                                                                                                                                                                |     |         |       |                                          |          |                                          |                       |                                           |
| Light sensitivity                                                  | <ul style="list-style-type: none"> <li>Color sensor (day): 0,1 lx @ 1/60s; 0,005 lx @ 1s</li> <li>BW sensor (night): 0,02 lx @ 1/60s; 0,001 lx @ 1s</li> </ul>                                                                                                                                                                            |     |         |       |                                          |          |                                          |                       |                                           |
| Exposure control                                                   | Manual and automatic mode<br>1 s to 1/16,000 s                                                                                                                                                                                                                                                                                            |     |         |       |                                          |          |                                          |                       |                                           |
| IK protection class                                                | IK10                                                                                                                                                                                                                                                                                                                                      |     |         |       |                                          |          |                                          |                       |                                           |
| IP / NEMA protection class                                         | IP66 / NEMA 4X                                                                                                                                                                                                                                                                                                                            |     |         |       |                                          |          |                                          |                       |                                           |
| Intended use                                                       | Not intended for use in hazardous areas (Ex areas)                                                                                                                                                                                                                                                                                        |     |         |       |                                          |          |                                          |                       |                                           |
| Operating temperature range                                        | -40 to 65 °C/-40 to 149 °F                                                                                                                                                                                                                                                                                                                |     |         |       |                                          |          |                                          |                       |                                           |
| Min. cold start temperature                                        | -30 °C/-22 °F                                                                                                                                                                                                                                                                                                                             |     |         |       |                                          |          |                                          |                       |                                           |
| Relative Humidity                                                  | 5% to 95%, non-condensing                                                                                                                                                                                                                                                                                                                 |     |         |       |                                          |          |                                          |                       |                                           |
| Internal DVR Storage                                               | Internal microSD card (SDHC/SDXC), 64 GB out-of-the-box, max. 2 TB.                                                                                                                                                                                                                                                                       |     |         |       |                                          |          |                                          |                       |                                           |
| Allowed cable dimensions for cables connected to the PCB terminals | <p><i>Conductor cross section</i></p> <table> <tr> <td>AWG</td><td>20 - 26</td></tr> <tr> <td>Rigid</td><td>0.14mm<sup>2</sup> - 0.5mm<sup>2</sup></td></tr> <tr> <td>Flexible</td><td>0.14mm<sup>2</sup> - 0.5mm<sup>2</sup></td></tr> <tr> <td>Flexible with ferrule</td><td>0.25mm<sup>2</sup> - 0.34mm<sup>2</sup></td></tr> </table> | AWG | 20 - 26 | Rigid | 0.14mm <sup>2</sup> - 0.5mm <sup>2</sup> | Flexible | 0.14mm <sup>2</sup> - 0.5mm <sup>2</sup> | Flexible with ferrule | 0.25mm <sup>2</sup> - 0.34mm <sup>2</sup> |
| AWG                                                                | 20 - 26                                                                                                                                                                                                                                                                                                                                   |     |         |       |                                          |          |                                          |                       |                                           |
| Rigid                                                              | 0.14mm <sup>2</sup> - 0.5mm <sup>2</sup>                                                                                                                                                                                                                                                                                                  |     |         |       |                                          |          |                                          |                       |                                           |
| Flexible                                                           | 0.14mm <sup>2</sup> - 0.5mm <sup>2</sup>                                                                                                                                                                                                                                                                                                  |     |         |       |                                          |          |                                          |                       |                                           |
| Flexible with ferrule                                              | 0.25mm <sup>2</sup> - 0.34mm <sup>2</sup>                                                                                                                                                                                                                                                                                                 |     |         |       |                                          |          |                                          |                       |                                           |
| Input                                                              | <p>Contact Closure (no galvanic isolation necessary) or up to 30 Vrms AC / 50V DC</p> <p>Switching thresholds</p> <ul style="list-style-type: none"> <li>Input &gt;1.6V results in detected HIGH</li> <li>Input &lt;0.9V results in detected LOW (after a HIGH)</li> </ul> <p>Max. length for cables: 50m</p>                             |     |         |       |                                          |          |                                          |                       |                                           |
| Output                                                             | 2x dry contact, form A (max 30 Vrms / max, 50V DC/ 60 W/ 2A DC)                                                                                                                                                                                                                                                                           |     |         |       |                                          |          |                                          |                       |                                           |
| Microphone/Speaker                                                 | <ul style="list-style-type: none"> <li>Embedded</li> <li>Microphone Sensitivity: -35 +/-4 dB (0 dB = 1 V/pa, 1 kHz)</li> <li>1 Embedded Speaker: 0.9 W at 8 Ohm</li> <li>1 External Speaker optional</li> </ul>                                                                                                                           |     |         |       |                                          |          |                                          |                       |                                           |

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### MOBOTIX M ONE (FIX & VARIO)

| Feature                             | Properties                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Integrated illumination             | 2 x embedded IR LEDs, 850nm, up to 30 m/100 ft (may be more depending on scene)                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Tampering Detection                 | Integrated Shock Sensor                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Max. power consumption              | Max. 12.95 W/270 mA (average can be significantly lower)                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Electrical surge protection         | Overvoltage Protection Box (not part of the scope of delivery)                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| PoE standard                        | PoE (802.3af-2003) / Class 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Interfaces                          | <ul style="list-style-type: none"> <li>■ Ethernet 1000BaseT (RJ45 according to EIA/TIA-568B)</li> <li>■ USB 2.0 via USB-C connector</li> <li>■ 12-24VDC power supply</li> <li>■ Input / Output</li> <li>■ Ext. Speaker</li> </ul>                                                                                                                                                                                                                                                                     |
| Status LED                          | Multicolor (8 colors)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Mounting Options                    | Wall-mountable (default)<br><br>Ceiling- or pole-mountable (with accessory, compatible with M26)                                                                                                                                                                                                                                                                                                                                                                                                      |
| Dimensions (height x width x depth) | 222 x 131 x 238 mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Weight                              | Approx. 0,973 kg/2,15 lbs                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Housing                             | PBT-30GF                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Standard accessories                | 1 Ethernet patch cable, 50 cm/19.7 in (installed)<br><br>1 SD card 64 GB (installed)<br><br>1 Important Safety Information<br><br>1 Sticker with IP address of camera<br><br>1 Camera connection flyer<br><br>1 Module wrench *M1A-S FIX only<br><br>1 Sealing ring for VarioFlex and wall mounts)<br><br>5 Screw caps plastic white<br><br>1 5mm Allen wrench<br><br>4 Stainless steel washers Ø5.3 mm<br><br>4 Wood screws 4.5x60 mm<br><br>4 Dowels S8<br><br>1 Tweezers for replacing the SD card |
| Tiltability of camera               | <ul style="list-style-type: none"> <li>■ Wall &amp; pole mounted<br/>Horizontal: 180°<br/>Vertical: 110°</li> <li>■ Ceiling mounted<br/>Horizontal: 360°<br/>Vertical: 110°</li> </ul>                                                                                                                                                                                                                                                                                                                |

| Feature                          | Properties                                                                                                                                                                                                                                  |
|----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Detailed technical documentation | <a href="http://www.mobotix.com">www.mobotix.com</a> > Services > Download Center > Marketing & Documentation                                                                                                                               |
| MTBF                             | 100,000 hours                                                                                                                                                                                                                               |
| Certificates                     | EN 55032, EN 55035, EN 61000-6-1, EN 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 62368-1, EN 63000, AS/NZS CISPR32, 47 CFR Part 15b, NRTL                                                                                                     |
| Protocols                        | DHCP (client and server), DNS, ICMP, IGMP v3, IPv4, IPv6, HTTP, HTTPS, FTP, FTPS, NFS, NTP (client and server), MQTT, RTP, RTCP, RTSP, SFTP, SIP (client and server), SMB/CIFS, SNMP, SMTP, SSL/TLS 1.3, TCP, UDP, VLAN, VPN, Zeroconf/mDNS |
| Manufacturer warranty            | 5 years                                                                                                                                                                                                                                     |

## Image and Video Properties

| Feature                   | Properties                                                                                      |
|---------------------------|-------------------------------------------------------------------------------------------------|
| Available video codecs    | H.264, H.265, MxPEG+, MJPEG                                                                     |
| Image resolutions         | VGA 640x360, XGA 1024x576, HD 1280x720, FullHD 1920x1080, QHD 2560x1440, 4K UHD 3840x2160 (8MP) |
| Multi streaming           | H.264, H.265 with triple streaming                                                              |
| Multicast stream via RTSP | Yes                                                                                             |
| Max. frame rate           | MxPEG: 20@4K, H.264: 30@4K, H.265: 30@4K                                                        |

## General Software Features

| Feature                      | Properties                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| WDR                          | Up to 120 dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Software features            | <ul style="list-style-type: none"><li>■ H.264, H.265 Multistreaming</li><li>■ Multicast stream via RTSP</li><li>■ Digital pan, tilt, zoom/vPTZ (up to 8x zoom)</li><li>■ Genetec protocol integration</li><li>■ Programmable exposure zones</li><li>■ Snapshot recording (pre/post-alarm images)</li><li>■ Continuous recording</li><li>■ Event recording</li><li>■ Time-controlled flexible event logic</li><li>■ Weekly schedules for recordings and actions</li><li>■ Event video and image transfer via FTP and email</li><li>■ Playback and QuadView via web browser</li><li>■ Animated logos on the image</li><li>■ Master/Slave functionality</li><li>■ Privacy zone scheduling</li><li>■ Remote alarm notification (network message)</li><li>■ Programming interface (HTTP API)</li><li>■ MxMessageSystem</li><li>■ MQTT (Message Queuing Telemetry Transport)</li></ul> |
| ONVIF compatibility          | Profile S/G/T                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Master/Slave functionality   | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Remote alarm notification    | Email, MQTT, MxMessageSystem, network message (HTTP/HTTPS), SNMP, SIP                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| DVR/image storage management | <ul style="list-style-type: none"><li>■ On internal microSD card</li><li>■ On external USB and NAS devices</li><li>■ Different streams for live image and recording</li><li>■ MxFFS with buffered archive, pre- and post-alarm images, storage monitoring with error reporting</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Camera and data security     | FIPS 140-3 validated encryption (OpenSSL 3.1.2, NIST CMVP #4985), VPN with FIPS-certified library, HTTPS with custom X.509 certificates (TLS), AES encryption at rest (microSD / NAS), role-based access control, IP-level access control list, audit trail / web server access log, intrusion detection with automatic IP lockout, IEEE 802.1X port-based network access control, digital image signature                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Firmware Tampering Detection | Digital Signature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

## Video Analysis

| Feature                | Properties                                            |
|------------------------|-------------------------------------------------------|
| Video motion detection | Yes                                                   |
| MxActivitySensor       | Version 1.0, 2.1                                      |
| MxActivitySensorONE    | Motion and Loitering Detection of Person and Vehicles |

## Video Management Software

| Feature                | Properties                                                                                                                                 |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| MOBOTIX HUB            | Yes<br><a href="http://www.mobotix.com">www.mobotix.com</a> > Services > Download Center > Software Downloads                              |
| MxManagementCenter     | Yes (latest version recommended)<br><a href="http://www.mobotix.com">www.mobotix.com</a> > Services > Download Center > Software Downloads |
| MOBOTIX LIVE App       | Yes, available in Google Play Store (Android) and Apple App Store (iOS).                                                                   |
| 3rd Party VMS Software | See ONVIF Profile S/G/T specification                                                                                                      |

## Dimensions

### NOTE!

Drilling template: [www.mobotix.com](http://www.mobotix.com) > Services > Download Center > Marketing & Documentation > Drilling Templates.

Technical Specifications

MOBOTIX M ONE (FIX & VARIO)

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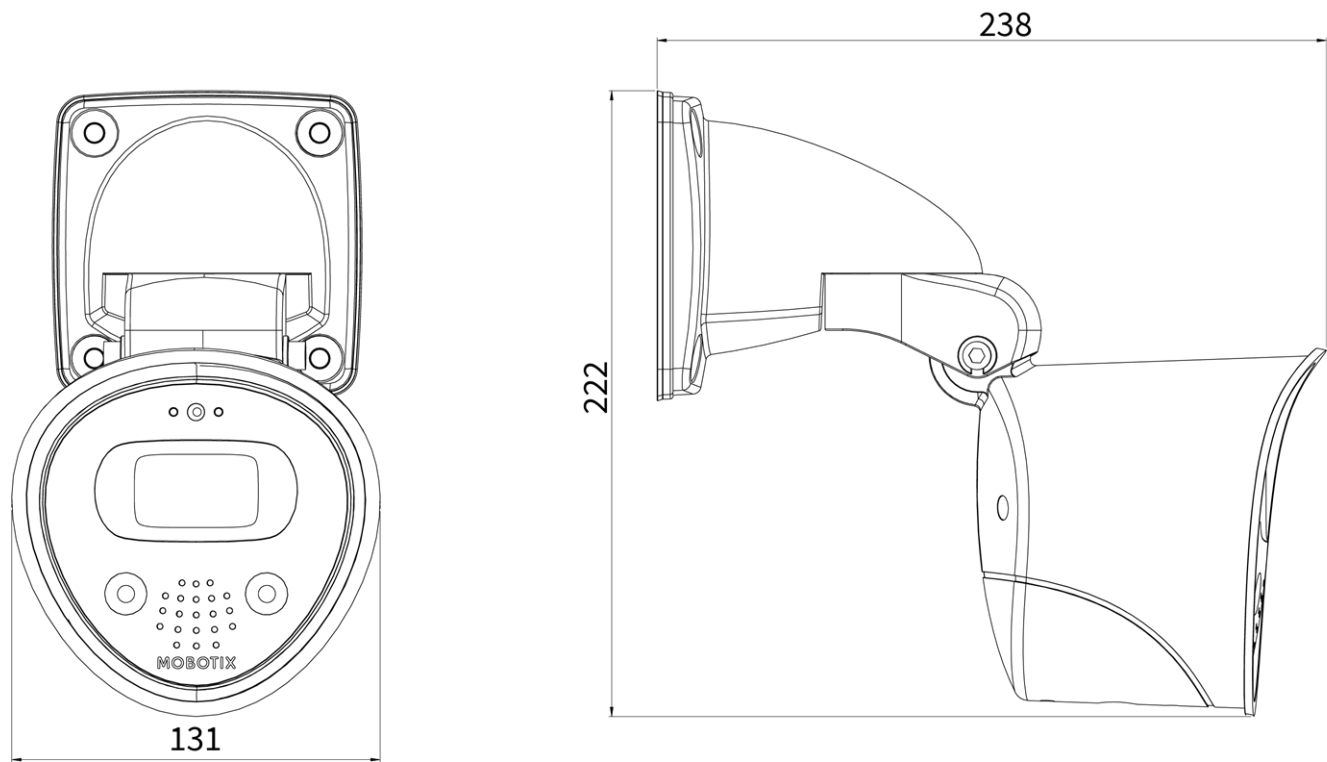


Fig. 1: MOBOTIX M ONE (FIX & VARIO): All measurements in mm



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MOBOTIX AG • Am Stundenstein 2 • D-67722 Winnweiler • Tel.: +49 6302 9816-103 • sales@mobotix.com • www.mobotix.com  
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