



Technical Specifications

MOBOTIX MOVE 2MP Low-Light Flush-Mount Video Analytics Speed Dome

Supported by high-performance DNN processor/SoC in combination with state-of-the-art CMOS video sensor, the indoor MOBOTIX MOVE 2MP Low-Light Flush-Mount Video Analytics Speed Dome is much more than just standard, providing crisp, noise-free and smooth video streaming at full HD 2MP resolution even under extreme low-light conditions. The integrated DNN-based video analytics functions include face and license plate recognition that can be combined with preset PTZ positions to enable a wide variety of 24/7 video surveillance applications.

- High light sensitivity: 0.01 Lux color, 0.001 Lux B/W
- 30x motorized zoom/focus lens 4.3 to 129 mm
- WDR up to 130 dB
- Quad streaming H.264/H.265/MJPEG
- Intelligent encoding, smart low-bitrate control
- MOBOTIX MxMessageSystem
- 2D & 3D motion-compensated noise reduction (MCTF)
- ONVIF Profile S/G/T/M Support
- Electrical image stabilizer (EIS)
- Auto object tracking, DNN-based (persons, vehicles)
- DNN video analytics (8 VA, Face & ALPR) linkable to PTZ presets & smart event functions
- Smart Event Functions
- Micro SD/SDHC/SDXC card support up to 1 TB
- Dual power supply IEEE802.3at/AC24 V
- Temp. Range -40 to 55 °C/-40 to 131 °F



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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, real-time object tracking and 10 (DNN-based) video analytics functions including ALPR and human face recognition. Moreover, it allows simultaneous detection on multiple objects.

Product Information

| | |
|--------------|--|
| Product Name | 2MP Low-Light Flush-Mount Video Analytics Speed Dome |
| Order Code | Mx-SD2A-230-LL-FM-VA |

Image Quality

| | |
|-------------------------|--|
| Image Sensor | 2MP 1/2.8" Progressive CMOS IMX662 (SONY STARVIS II) |
| Effective (Used) Pixels | H x V = 1920x1080 (2MP) |
| Pixel Size | 2.9 μm |
| Frame Rate (maximum) | WDR on/off: H.265/H.264: 2MP@30 fps MJPEG: 1080p@30 fps |

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Hardware Design

| | |
|-----------|---------------------------|
| Processor | Ambarella CV25 |
| Memory | RAM: 8 GB, FLASH: 4 GB |

Lens

| | |
|----------------------|--|
| Minimum Illumination | Color: 0.01 Lux B/W: 0.001 Lux F1.6, AGC=on, 30 IRE, 1/1 s |
| Lens Characteristics | Zoom Lens: Zoom, Auto Focus, P-IRIS, Auto-IRIS Focal Length: 4.3 to 129 mm Aperture: F1.6 – F4.7 Horizontal Field of View: 59.3° (Wide), 2.3° (Tele) Vertical Field of View: 34.9° (Wide), 1.4° (Tele) |

Camera

| | |
|-----------------------------------|--|
| Shutter Speed (Auto) | 1 to 1/10000 s |
| Shutter Speed (Manual) | WDR: 1/37500 s Linear: 1/75000 s |
| Shutter Priority Mode | Up to 1/45 s |
| WDR | Up to 130 dB |
| Electronic Image Stabilizer (EIS) | Yes |
| Auto Object Tracking | On/off (object-based DNN algorithm: humans/vehicles selectable) |
| Zoom | Optical: 30x, Digital: 10x |
| Image Settings | Color, Brightness, Sharpness, Contrast, White Balance, Exposure Control, 2DNR, 3DNR, NR by Motion, Masking, Text Overlay |
| Image Rotation | 90°, 180°, 270° |
| Servo Feedback | Yes |

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PTZ Features

| | |
|---------------------------|--|
| Preset positions | Up to 256 positions, 1 Home position |
| Sequences | Up to 8 sequences with 64 preset positions each |
| Cruise Paths | Up to 8 |
| Auto Pan Paths | Up to 4 |
| Display Position | Pan/Tilt degrees can be displayed in live image |
| Pan Range | 360° endless |
| Tilt Range | -10° to +100° |
| Pan Speed | Manual Pan Speed: 0.1°–90°/s Preset Pan Speed: 400°/s |
| Tilt Speed | Manual Tilt Speed: 0.1°–55°/s Preset Tilt Speed: 300°/s |
| Joystick/Keypoint Control | RS485 protocols DSCP, Pelco-D and Pelco-P |
| Video Analytics | Presets can be combined with 1 selectable integrated video analytics feature |

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 | Bi-directional |
| Audio Input | Line In Max. 2.28 V _{pp} for line signal Input impedance: 33 kΩ |
| Audio Output | Line Out Output resistance: 220 Ω Output voltage: 1 V _{rms} |

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Cyber Security Features

| | |
|--|---|
| Password Protection | Yes (including “forced” password change during initial setup) |
| 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, VPN |
| ONVIF conformance | Supports profiles S/G/T/M |
| Supported Browsers | All current browsers are supported. |

System Integration

Base Video Analytics

- Motion detection
- Noise detection (ext. microphone required)

Enhanced Video Analytics (linkable to PTZ presets)

- Abandoned objects
- Intrusion (object classification)
- Sabotage
- Wrong direction
- Loitering (object classification)
- Object counting (object classification)
- Object removal
- Stopped vehicle (object classification)

2 analytics functions can be activated simultaneously

DNN (Deep Neural Network) based video analytics (linkable to PTZ presets)

- Face Recognition (incl. gender & age estimation)
- 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

Event Triggers

- External input
- Analytics
- Network failure detection
- Periodical event
- Manual trigger

Event Actions

- External output activation
- Video and audio recording to edge storage
- File upload: FTP, network share and email
- Notification: HTTP, FTP, email

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General

| | |
|-----------------------|---|
| Housing material | Metal and plastic |
| Power Requirements | PoE+ IEEE802.3at, class 4, max 17.71 watt AC24V, max 17.10 watt, max 32.67 VA |
| PoE Modes Supported | Mode A or Mode B |
| Connectors | <ul style="list-style-type: none"> ▪ RJ45 ▪ 4 x Alarm in, 2x Alarm out terminal block ▪ AC 24 V terminal block ▪ RS485 terminal block |
| Video Storage | Micro SD/SDHC/SDXC card support up to 1 TB, Support for recording to NAS, MOBOTIX HUB, MOBOTIX MOVE NVR |
| Remotely Upgradable | Yes |
| Operating Temperature | -40 to 55 °C/-40 to 131 °F |
| Relative Humidity | 10 to 90 % non-condensing |
| Storage Conditions | -20 to 70 °C/-4 to 158 °F |
| Approvals | EMC: CE/FCC Safety: LVD |
| MTBF | 50,000 hours |
| Warranty | 5 years; mechanically wearable parts (motor, gears, belts, etc.) excluded |
| Dimensions | ø 212 x 264 mm (overall) ø 212 x 103 mm (visible) |
| Weight | 2700 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

5 V with 10 kΩ pull up, 50 mA

Alarm Out

400 V DC/AC, 120 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 | |
|----------------------|-----------------|--------------------|----------------|-------------------|----------------|-------------------|----------------|------------------|
| | Wide | Tele | Wide | Tele | Wide | Tele | Wide | Tele |
| Mx-SD2A-230-LL-FM-VA | 71 m/ 233 ft | 1768 m/ 5801 ft | 28 m/ 92 ft | 702 m/ 2303 ft | 14 m/ 46 ft | 354 m/ 1161 ft | 7 m/ 23 ft | 177 m/ 581 ft |

Accessories

| Picture | Order Code | Description |
|---|---------------------|--|
|  | 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!

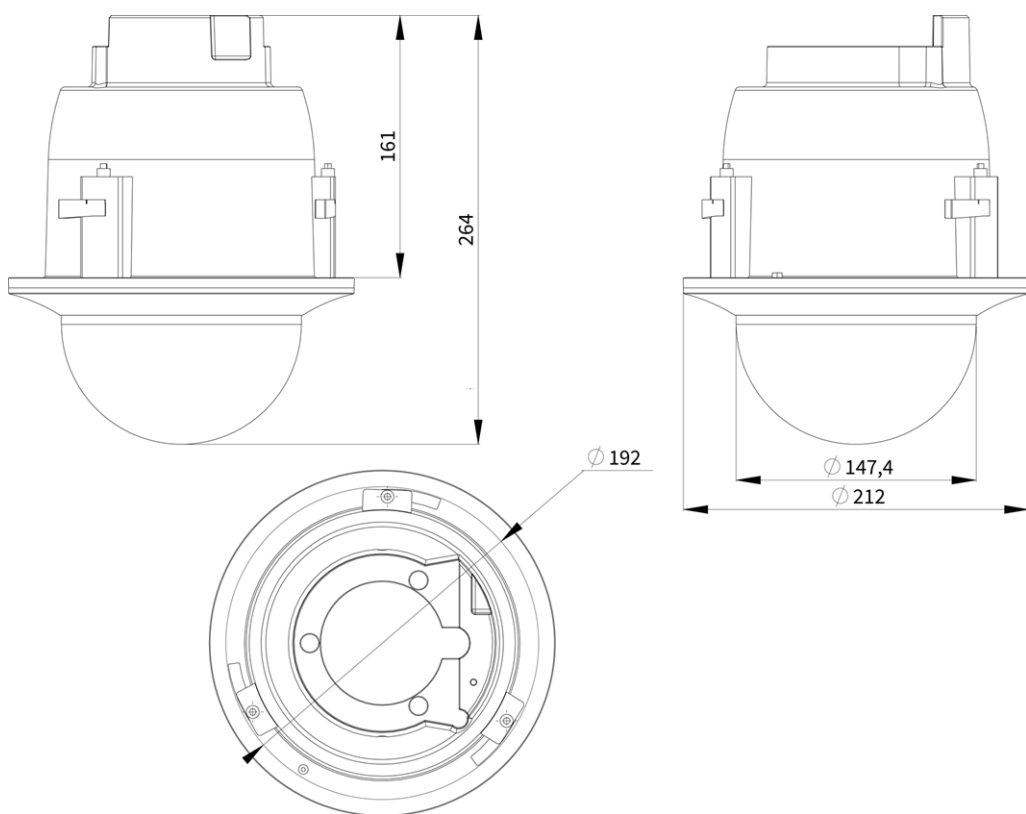


Fig. 1: 2MP Low-Light Flush-Mount Video Analytics Speed Dome: All measurements in mm

Further Reading

[Manuals and Quick Installation documents](#)



[Technical Specifications](#)



[MOBOTIX MOVE Installation Hints](#)



MOBOTIX

BeyondHumanVision

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