



# Technical Specifications

## MOBOTIX MOVE 12MP Vandal Hemispheric Analytics Indoor Camera

This high-performance 12MP indoor camera with Edge and backend dewarping delivers a 360-degree view of the entire surveillance area. Thanks to its integrated IR illumination and advanced exposure control, darkness poses no problem to this camera, which also offers eight embedded video analysis functions. DNN (Deep Neural Network) support for intrusion detection, loitering detection, object counting, face and license plate recognition. Easy installation and ready-to-go straight out of the box.

- Edge Dewarping and Backend Dewarping
- IR LED (true day/night function, up to 15 m)
- Vandal-Proof IK10 (indoor)
- Sony Progressive Scan CMOS
- Image Sensor Resolution up to 12MP
- Multi Codec support (H.265/H.264/MJPEG)
- Multiple Dewarp Display Modes Digital PTZ/Panorama View/Quad View
- True Day/Night function (ICR)
- 3D Motion Compensated Noise Reduction
- ONVIF Profile S/G/T/M support
- Smart Event Functions: External Input/Manual Trigger, Motion Detection/Periodical Event, Network Failure Detection/Audio Detection
- Micro SD/SDHC/SDXC Card support up to 1 TB
- Enhanced Video Analytics Package (abandoned objects/sabotage/wrong direction/object count and removal)



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#### High-Quality DNN Edge Video Analytics



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.

## Product Information

Product Name	12MP Vandal Hemispheric Analytics Indoor Camera
Order Code	Mx-VH1A-12-IR-VA

## Hardware Design

Processor	Ambarella CV22 (Quad-core ARM® Cortex®-A53, 1 GHz)
Memory	RAM: 512 MBytes FLASH: 256 MBytes
Image Sensor	12MP, 1/1.7" Progressive CMOS IMX226 (SONY STARVIS)
Effective (Used) Pixels	4000x3000 (12MP)

## Image Quality

Frame Rate (maximum)	<p><b>H.265/H.264</b></p> <ul style="list-style-type: none"> <li>▪ Single-stream, <b>Backend</b> (software) dewarping:             <ul style="list-style-type: none"> <li>▪ 12MP@20 fps</li> <li>▪ 2992x2992@30 fps</li> </ul> </li> <li>▪ Single-stream, <b>Edge</b> (camera) dewarping:             <ul style="list-style-type: none"> <li>▪ 8.9MP@27 fps</li> <li>▪ 2048x2048@30 fps</li> </ul> </li> </ul> <p><b>MJPEG</b></p> <ul style="list-style-type: none"> <li>▪ <b>Backend</b> (software) dewarping:             <ul style="list-style-type: none"> <li>▪ 1920x1080@60 fps</li> </ul> </li> <li>▪ <b>Edge</b> (camera) dewarping:             <ul style="list-style-type: none"> <li>▪ 1920x1080@30 fps</li> </ul> </li> </ul>
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## Lens

Minimum Illumination	<p>Color: 0.1 lux B/W: 0.01 lux</p>
Lens Characteristics	<p>Type: 1/1.7" Hemispheric Lens Focal Length: 1.65 mm Aperture: F2.8 Horizontal Field of View: 102.1° (Wide), 31.5° (Tele) Vertical Field of View: 70.3° (Wide), 22.7° (Tele)</p>

## Camera

Day and Night	Automatic mechanically switchable IR-cut filter
Shutter Speed	1 – 1/24767 sec.
Auto Gain	Min. gain: 3 dB, max. gain: 45 dB, step size: 3
Zoom	Digital zoom

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Image Settings	Backlight Compensation, White Balance, Noise Reduction, Wide Dynamic Range, Privacy Mask, Brightness, Exposure, Sharpness, Contrast, Saturation, Hue, Digital Zoom, Privacy Mask Type, ICR, IR Threshold
Rotation Mode	180° rotation

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## Video Codec

Compression	H.265/MJPEG/H.264 (MPEG-4 Part 10/AVC) Baseline/Main Profile/High Profile
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	G.711/G.726/AAC/LPCM
Streaming	2 way
Audio Input	Microphone built-in
Audio Output	Speaker built-in

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## 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)

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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	RJ45, 1 Gbps Ethernet
Supported Protocols	ARP, IPv4/v6, TCP/IP, UDP, RTP, RTSP, HTTP, HTTPS, ICMP, FTP, SMTP, DHCP, PPPoE, UPnP, IGMP, SNMP, QoS, ONVIF
ONVIF	Supports profiles S/G/T/M

**System Integration**

Base Video Analytics	<ul style="list-style-type: none"> <li>▪ Motion Detection</li> <li>▪ Tampering</li> <li>▪ Audio Detection</li> </ul>
Enhanced Video Analytics (embedded)	<ul style="list-style-type: none"> <li>▪ Abandoned objects</li> <li>▪ Intrusion (object classification)</li> <li>▪ Sabotage</li> <li>▪ Wrong direction</li> <li>▪ Loitering (object classification)</li> <li>▪ Object counting (object classification)</li> <li>▪ Object removal</li> <li>▪ Stopped vehicle (object classification)</li> </ul> <p>2 analytics functions can be activated simultaneously</p>

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#### 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 Materials

Metal and Plastic

#### Housing Color

RAL 9003

#### Power Requirements

PoE IEEE802.3af, class 0, max 12.95 W

#### PoE Modes Supported

Mode A or Mode B

#### Connectors

RJ45  
Alarm in x1, Alarm out x1, Terminal Block  
Audio in Terminal Block  
Audio out Terminal Block

#### Storage

Micro SD/SDHC/SDXC card support up to 1 TB,  
Support for recording to NAS, MOBOTIX MOVE NVR

#### Operating Temperature

-10 to 55 °C/14 °F to 131 °F

#### Relative Humidity

90 % non-condensing

#### Storage Conditions

-20 to 70 °C/-4 to 158 °F

#### Approvals

EMC, Safety, Environment, CE/FCC, RoHS, IK10

#### MTBF

95,000 hours

#### Warranty

5 years

#### Dimensions

Ø 130x57.8 mm

#### Weight

565 g

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

# 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-VH1A-12-IR-VA	Front End: 36 m/ 118 ft Back End: 36 m/ 118 ft		Front End: 14 m/ 46 ft Back End: 14 m/ 46 ft		Front End: 7 m/ 23 ft Back End: 7 m/ 23 ft		Front End: 3 m/ 10 ft Back End: 4 m/ 13 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

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# 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!

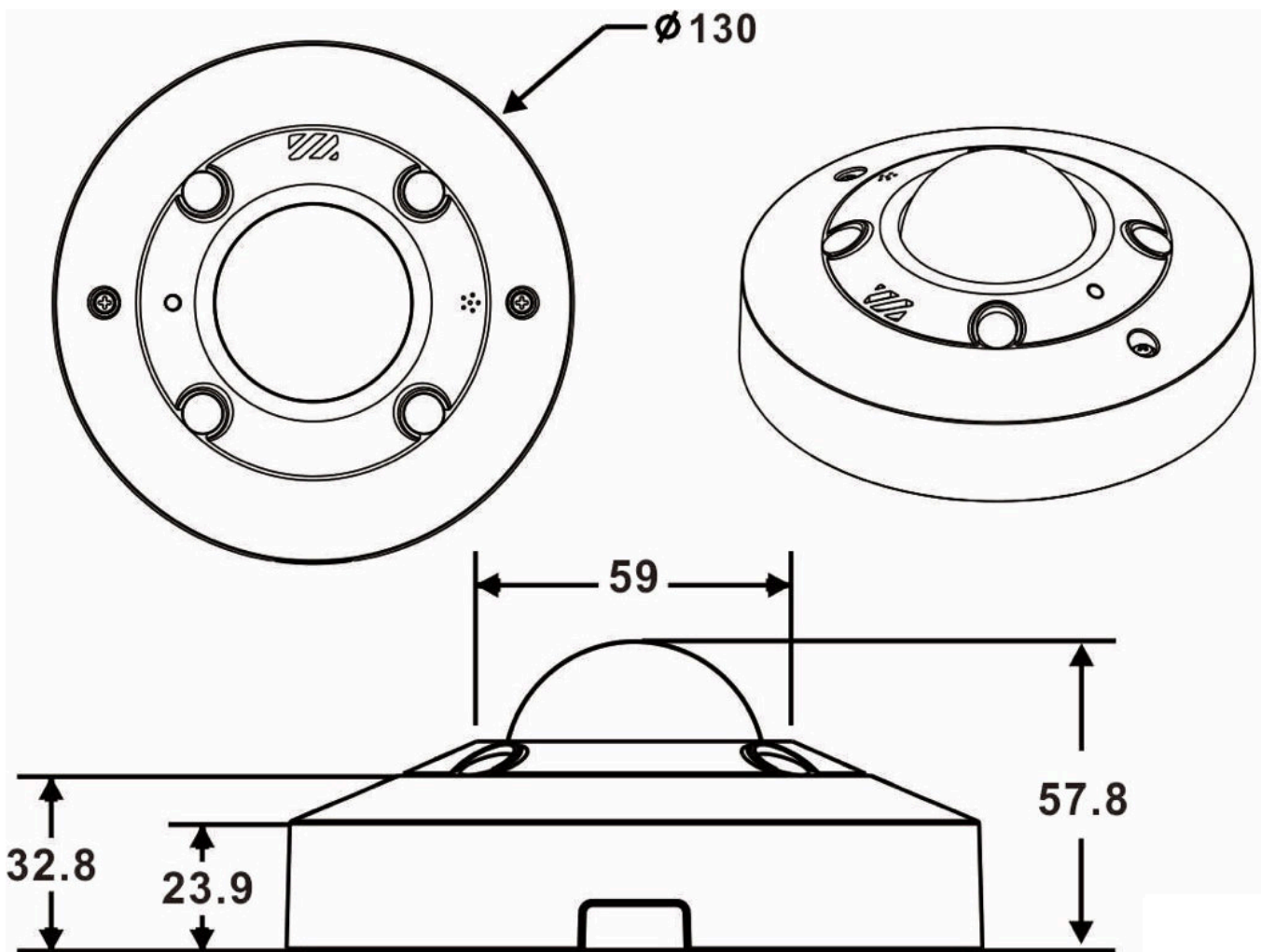


Fig. 1: 12MP Vandal Hemispheric Analytics Indoor Camera: All measurements in mm

## Further Reading

[Manuals and Quick Installation documents](#)



[Technical Specifications](#)



[MOBOTIX MOVE Installation Hints](#)



[MOBOTIX Community](#)



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