

Technical Specifications

MOBOTIX S ONE DUAL

MOBOTIX S ONE DUAL - Invisible Power. Visible Results.

With the MOBOTIX S ONE DUAL, MOBOTIX presents the next generation of modular premium dual cameras. It builds on the success of the S16 DualFlex and takes the concept to a new level of performance: two freely positionable 4K UHD sensor modules for 8K dual images, a compact, concealed camera housing, and AI-based edge analysis that runs simultaneously on both sensor channels for the first time.

The S ONE DUAL was developed for industrial requirements, mobile applications, and security-critical environments—it is robust, weatherproof, durable, and energy-efficient (PoE, <10 W).

- Two modular 4K UHD sensor modules – freely positionable for one or two viewing angles
- Compact, concealed camera housing – protected against tampering and external access
- Exceptionally robust: IP66 / NEMA 4X, IK10, operating temperature -40 to 65 °C/-40 to 149 °F
- AI-ready with built-in MxActivitySensorONE for reliable object detection
- Up to 2 TB internal storage, with 64 GB microSD card pre-installed
- Comprehensive codec support: H.264, H.265, MxPEG+, MJPEG
- Versatile deployment options: e.g. vehicles (buses, trains, etc.), industrial machines and production systems, video-controlled access or barrier systems, warehouse logistics and discreet surveillance applications

HEVCAdvance™ NDAA Compliant

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Order Information MOBOTIX S ONE DUAL

Order Code:	Mx-ONE-S1A-D (Body only)

Hardware

Feature	Properties
Image sensor (color or B&W sensor)	Up to 4K UHD 3840x2160, 16:9, 1/1.8”
Available Lenses	See Sensor Modules, p. 6
Light sensitivity	Color sensor: 0.1 lx @ 1/60 s; 0.005 lx @ 1 s
Exposure control	Manual and automatic mode 1 s to 1/16.000 s
IK protection class	Sensor modules: IK10
IP / NEMA protection class	IP66 / NEMA 4X
Intended use	Do not use in hazardous areas (Ex area)
Operating temperature range	-40 to 65 °C/-40 to 149 °F

Feature	Properties
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.

I/Os	INPUT
	■ Contact Closure (no galvanic isolation necessary) or up to 30 Vrms AC / 50 V DC
	■ Switching thresholds
	  ■ Input >1.6 V leads to a detected HIGH
	  ■ Input <0.9 V leads to a detected LOW (after a high)
	■ Max. length for cables: 50 m
	
	OUTPUT
	■ 3x Dry contact, form A (max 30 Vrms / max, 50 V DC / 60 W / 2 A DC)

Microphone	Microphone (integrated in ONE sensor modules): See Sensor Modules, p. 6
Speaker	External speaker required: ■ 1.8 W @ 8 Ω
Allowed cable dimensions for cables connected to the PCB terminals	*Conductor cross section* ■ *AWG*: 26 – 20 ■ *Rigid*: 0.14 – 0.5 mm² ■ *Flexible*: 0.14 – 0.5 mm² ■ *Flexible with ferrule without plastic sleeve*: 0.25 – 0.34 mm² ■ *Flexible with ferrule with plastic sleeve*: 0.14 – 0.25 mm²
Tampering Detection	Integrated Shock Sensor
PoE standard	PoE (802.3af-2003), Class 3
Power consumption	■ Max. 12.95 W / 270 mA (average can be significantly lower) ■ Average in dual operation: 9.0 W ■ Dual operation, WDR off: approx. 5.63 W ■ Dual operation, WDR on: approx. 6.27 W MxActivitySensorONE per Sensor: approx. 1.4 W
Electrical surge protection	Overvoltage Protection Box (not part of the scope of delivery)

Feature	Properties
Interfaces	■ Ethernet 1000Base-T (RJ45 according to EIA/TIA-568B) ■ Sensor Modules M1, M2 ■ USB 2.0/3.0 via USB-C connector ■ 12-24 V DC power supply ■ Input / Output ■ Ext. Speaker ■ microSD card, max. 2 TB
Status LED	Multicolor (8 colors)
Mounting Options	Wall, ceiling, hidden installation; extensive selection of mounting accessories available (see Mounts, p. 12)
Dimensions (height x width x depth)	Camera: 137.5 x 115 x 33 mm Sensor Modules: See Sensor Modules, p. 6
Weight	Camera: 0.54 kg Sensor Modules: See Sensor Modules, p. 6
Housing	Aluminum, PBT-30GF
Detailed technical documentation	**www.mobotix.com > 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, FHD 1920x1080, QHD 2560x1440, 4K UHD 3840x2160 (8MP), FHD^2 (1080x1080; 1:1)*, UHD^2 (2160x2160; 1:1)* Hemispheric Sensor module 8DN016 required
Multi streaming	H.264, H.265 with up to 4 streams (2 per sensor)
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	■ H.264, H.265 Multistreaming ■ Multicast stream via RTSP ■ Digital pan, tilt, zoom/vPTZ (up to 8x zoom) ■ Genetec protocol integration ■ Programmable exposure zones ■ Snapshot recording (pre/post-alarm images) ■ Continuous recording ■ Event recording ■ Time-controlled flexible event logic ■ Weekly schedules for recordings and actions ■ Event video and image transfer via FTP and email ■ Playback and QuadView via web browser ■ Animated logos on the image ■ Master/Slave functionality ■ Privacy zone scheduling ■ Remote alarm notification (network message) ■ Programming interface (HTTP API) ■ MxMessageSystem ■ MQTT (Message Queuing Telemetry Transport)
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	■ On internal microSD card ■ On external USB and NAS devices ■ Different streams for live image and recording
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 **www.mobotix.com > Services > Download Center > Software Downloads**
MxManagementCenter	Yes (latest version recommended) **www.mobotix.com > 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

Accessories

NOTE!

Accessories are not part of the scope of delivery.

Sensor Modules

Standard Sensor Modules (4K Day & Night)

Lens	Sensor	Order Code
Fixed lens 120° WIDE	4K Sensor as D/N IR Cut / Microphone	Mx-ONE-SMA-8DN040
Fixed lens 95° WIDE	4K Sensor as D/N IR Cut / Microphone	Mx-ONE-SMA-8DN050
Fixed lens 60° WIDE	4K Sensor as D/N IR Cut / Microphone	Mx-ONE-SMA-8DN080
Fixed lens 45° STANDARD	4K Sensor as D/N IR Cut / Microphone	Mx-ONE-SMA-8DN100
Fixed lens 30° TELE	4K Sensor as D/N IR Cut / Microphone	Mx-ONE-SMA-8DN150

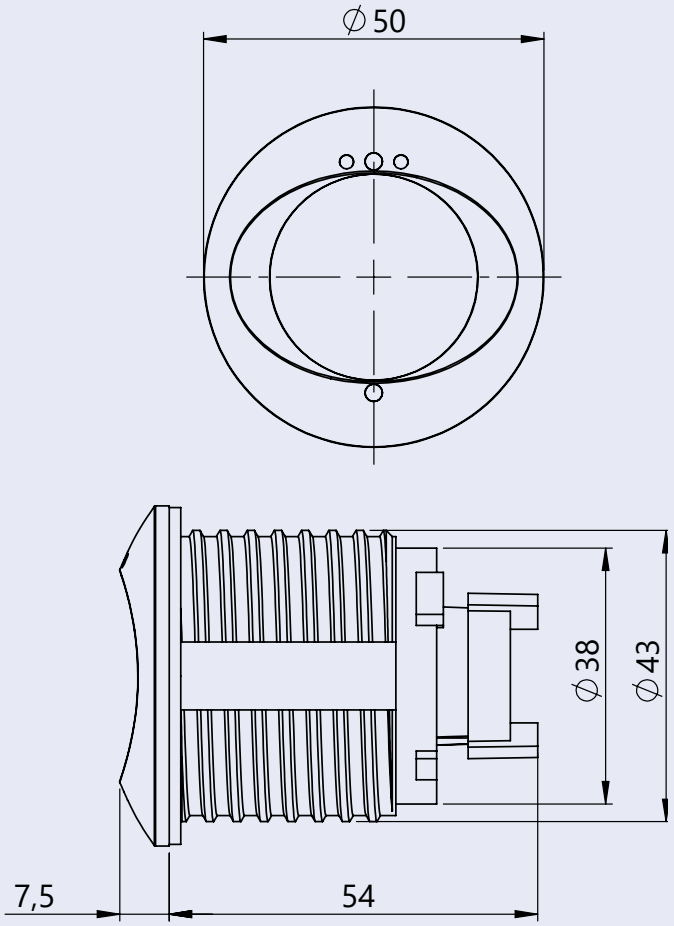
Lens	Sensor	Order Code
Fixed lens 15° TELE	4K Sensor as D/N IR Cut / Microphone	Mx-ONE-SMA-8DN280
Fixed lens 180° HEMISPHERIC	4K Sensor as D/N IR Cut / Microphone	Mx-ONE-SMA-8DN016-V

Technical Specifications Sensor Modules

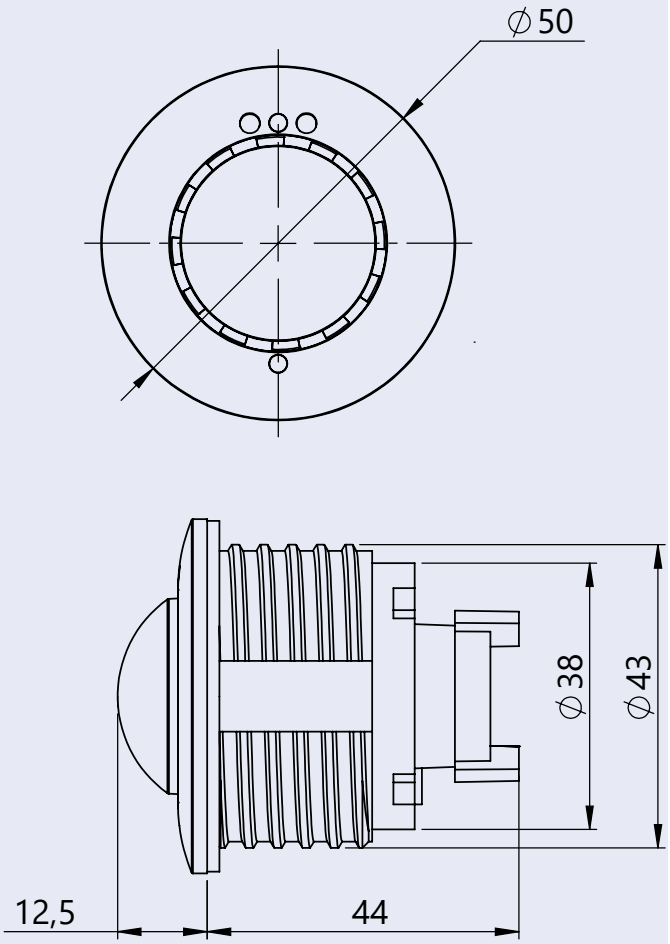
Feature	Properties
IK protection class	IK10
IP / NEMA protection class	IP66 / NEMA 4X
Microphone	Microphone (integrated in ONE sensor modules): ■ Sensitivity: −41 dB FS ±1 dB ■ SNR 68 dBA ■ AOP 133 dB SPL
Dimensions (height x width x depth)	Standard Sensor Modules: 50 x 61.5 mm Hemispheric Sensor Modules: 50 x 56.5 mm
Weight	Standard Sensor Modules: 100 g Hemispheric Sensor Modules: 120 g
Housing	PBT-30GF
Manufacturer warranty	5 years

Dimensions Sensor Modules

Standard Sensor Module



Hemispheric Sensor Module



Thermal Sensor Modules

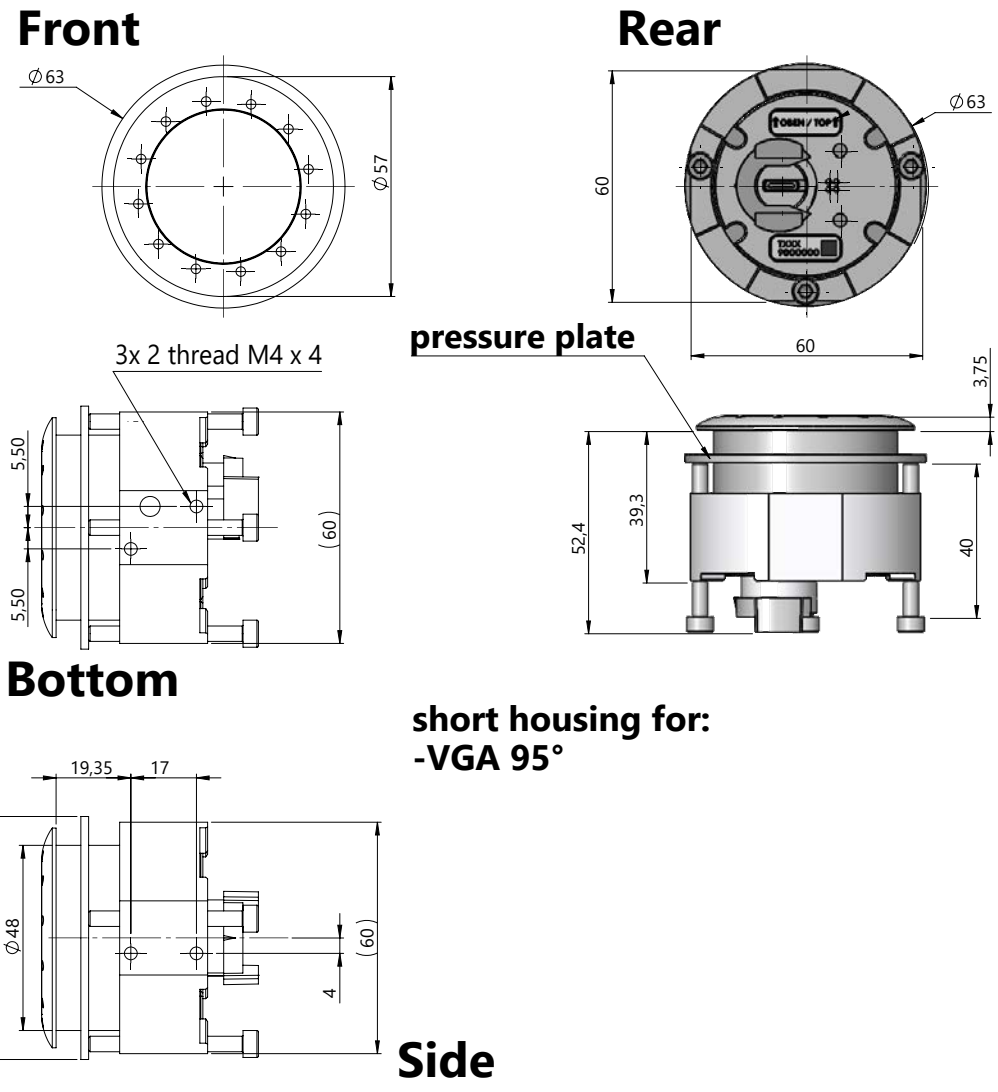
Sensor Module	Order Code
VGA Thermal Radiometry 95° x 76°	Mx-ONE-SMA-640R050
VGA Thermal Radiometry 50° x 40°	Mx-ONE-SMA-640R100

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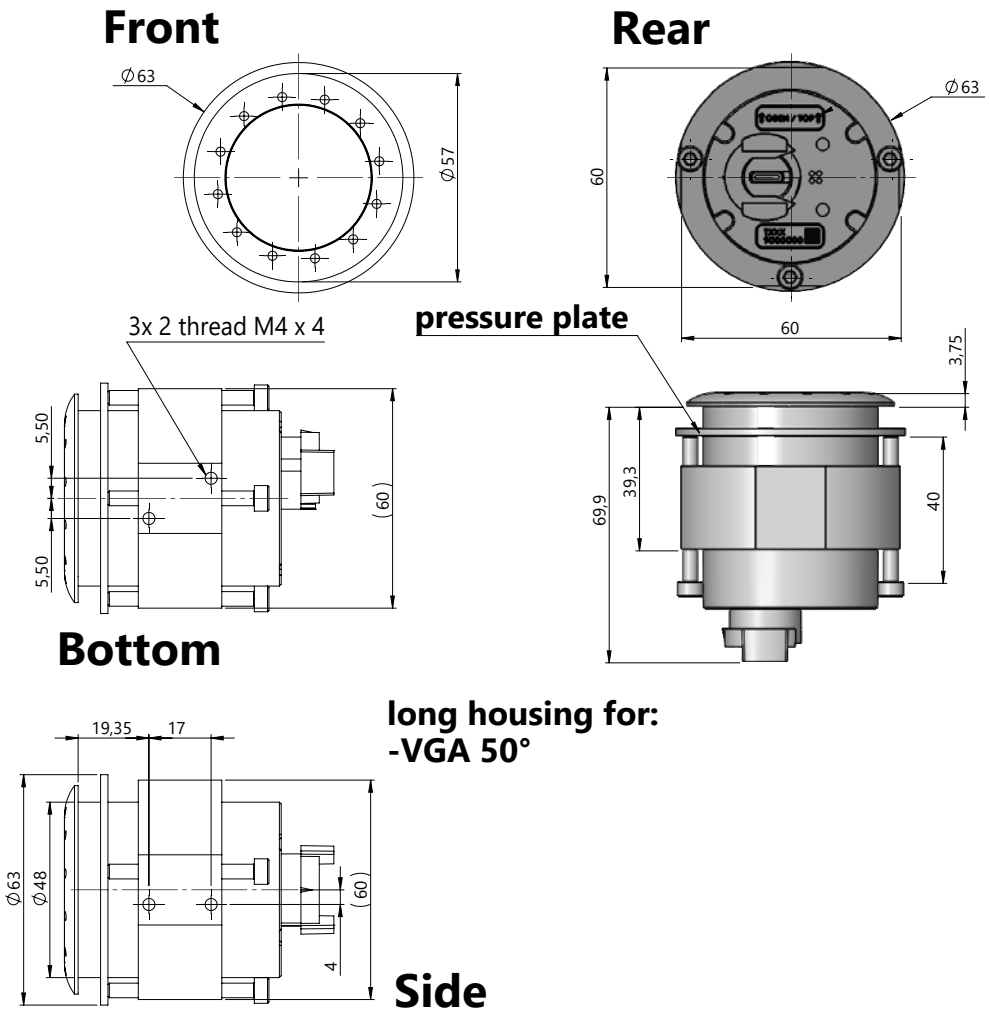
Feature	Properties
Thermal sensitivity	Typ. 30 mK, IR range 7.5 to 13.5 µm
Temperature measurement range (adjustable)	■ High Sensitivity: –40 to 150°C/–40 to 302°F ■ Low Sensitivity: –40 to 350°C/–40 to 662°F Default: Automatic (switches between High and Low depending on highest temperatures in FoV)
Thermal image sensor	Uncooled microbolometer, VGA: 640 x 480 px
Max. image size	Can be scaled up to 3072 x 2048 (6MP), automatically scaled to size of MX sensor module
Max. frame rate	30fps
Pixel pitch	12µm
Field of view	*Sensor Module* — *FoV (H x V)* 640R050 — 95° x 76°; focal length 4.9 mm; f/1.1 640R100 — 50° x 40°; focal length 9.2 mm; f/1.0
Operating temperature	-40 to 65 °C/-40 to 149 °F
Relative humidity	5 % to 95 %, non-condensing
Power consumption	■ CIF: 1W ■ VGA: 1.2W
MTBF	80,000 hours
IP rating	IP67
IK rating	IK04
Material	PBT-30GF (housing); Germanium (lens)
Software (included)	Video management software MxManagementCenter

Dimensions Thermal Sensor Modules

Mx-ONE-SMA-640R050



Mx-ONE-SMA-640R100



Module Cables

Module Cable	Description	Order Code:
Sensor cable 1m straight-angled	Sensor cable straight-angled, length 1 m/3.3 ft. ■ For connecting optical sensor modules and thermal sensor modules to the ONE S1x camera body. ■ Required for audio signals from the microphone in the sensor module.	Mx-ONE-CBL-S01-AN
Sensor cable 2m straight-angled	Sensor cable straight-angled, length 2 m/6.6 ft. ■ For connecting optical sensor modules and thermal sensor modules to the ONE S1x camera body. ■ Required for audio signals from the microphone in the sensor module.	Mx-ONE-CBL-S02-AN
Sensor cable 5m straight-angled	Sensor cable straight-angled, length 5 m/16.4 ft. ■ For connecting optical sensor modules and thermal sensor modules to the ONE S1x camera body. ■ Required for audio signals from the microphone in the sensor module.	Mx-ONE-CBL-S05-AN

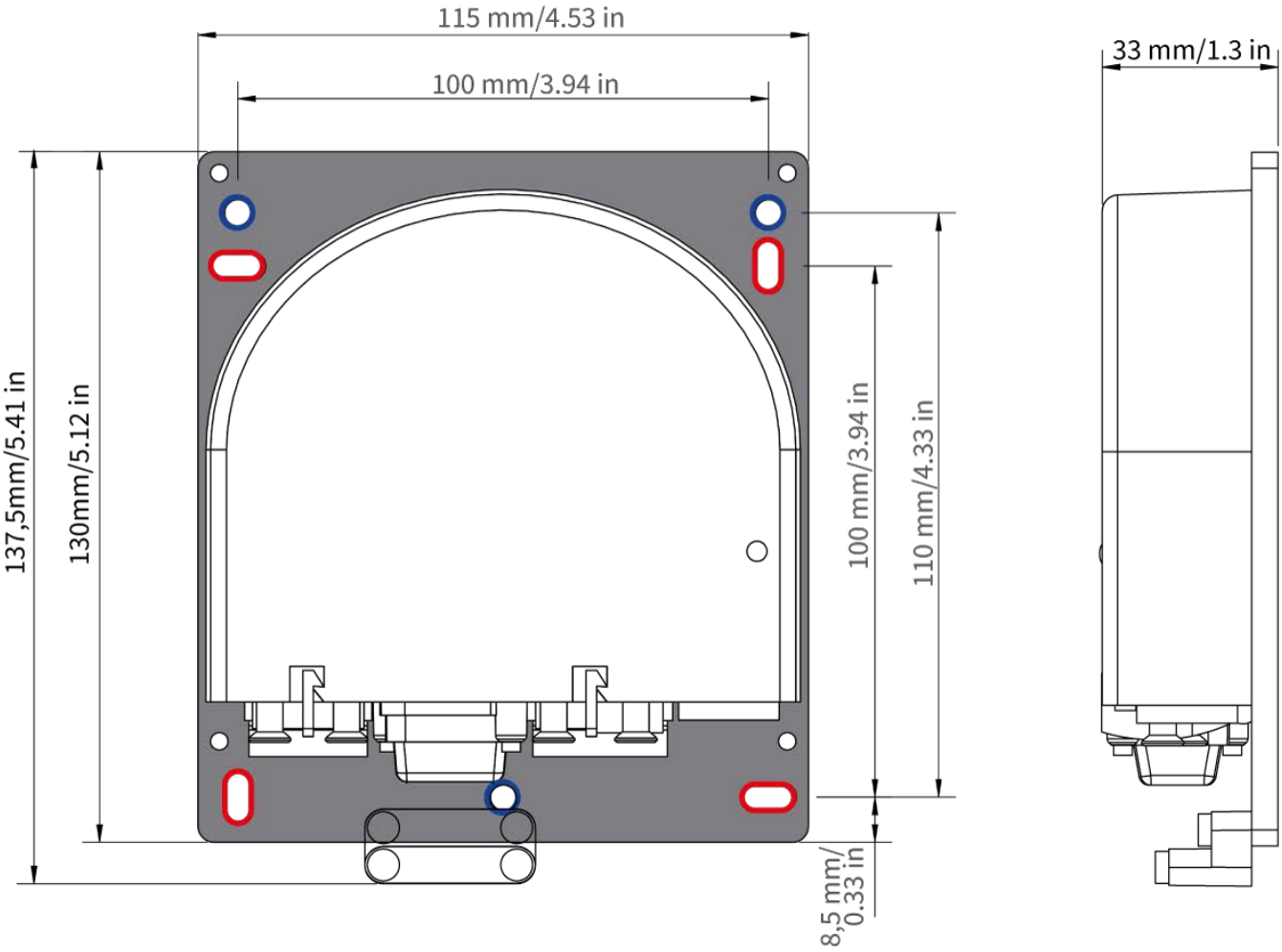
Mounts

NOTE! Mount Compatibility

- Mounts from previous camera generations may show color variations.
- An S16 PTMount purchased before January 2020 is not compatible with a S ONE DUAL module.
- The following sensor module mounts from previous camera models are compatible:

Mount Type	Description	Order Code:
On-Wall Kit for PTMount, white	On-Wall Kit for PTMount, white incl. mounting parts.	Mx-M-PTMA-OW
PTMount, white	Three axis adjustable mount	Mx-M-PTMA
SingleMount, white	For surveillance of one area with one sensor module	Mx-M-SLMA
DualMount, white	For surveillance of one to two areas with two sensor modules	Mx-M-DLMA

Dimensions



NOTE!

Drilling template: **www.mobotix.com > Services > Download Center > Marketing & Documentation > Drilling Templates**.

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