Modular 6MP Dual Camera with Day/Night and Thermal Sensor Modules for Concealed Installation

- Mx6 system platform, H.264 support
- Recording on internal microSD card (SDXC, SDHC installed)
- Various installation options for ceilings or walls
- Max. length of the sensor module cable is 3 m/3.3 yd each
- Microphones integrated in SMA-S and SMA-B sensor modules
- Audio connectors for microphone and speaker integrated
- Sensor for temperature and shock detector(*) integrated
- Weatherproof and sturdy camera housing (IP66, IK06)

MOBOTIX 6MP camera for concealed installation in indoor and outdoor applications, available as S15D DualFlex with external sensor modules SMA-S-6D/N/L016 to 500 and cables up to 3 m/3.3 yd long with Day/Night or Night-LPF image sensors. Can be combined with one or two Thermal(-TR) image sensors SMA-TP-T079/119/237 for thermal imaging and temperature measurement even in complete darkness.
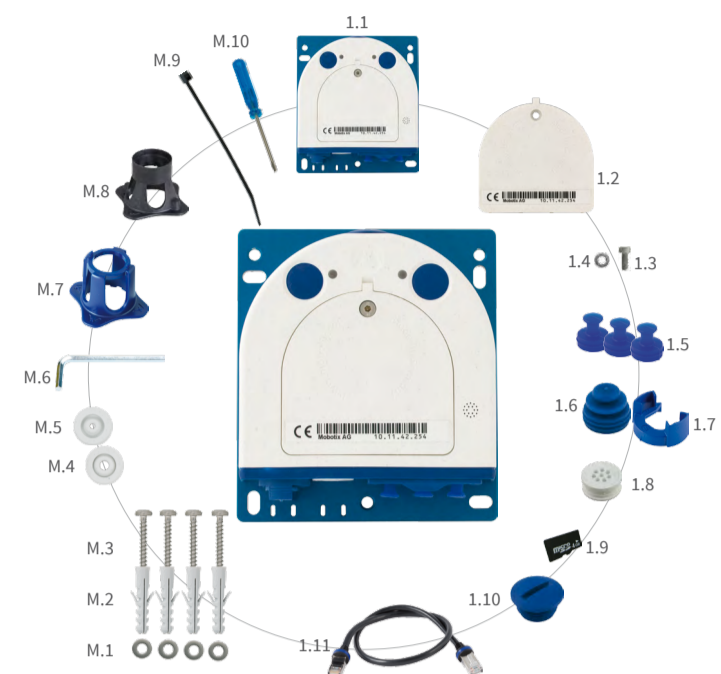
More information:
www.mobotix.com > Products > Outdoor Cameras > S16

Mx-S16
32.836-004_EN_10/2017

*: with firmware version 5.0.1 and higher

MOBOTIX

S16 Standard Delivery

Standard Delivery		
Item	Count	Part Name
1.3	1	Stainless steel Allen screw with flat head M4x8 mm (installed)
1.4	1	Sealing ring (installed)
1.5	3	Sealing plug blue, small (sensor modules, USB, mounted)
1.6	1	Sealing plug blue, large (Ethernet patch cable, mounted)
1.7	1	Cable lock with bayonet catch (Ethernet patch cable, mounted)
1.8	1	Single-wire plug, white (Ethernet installation cable, microphone, speaker, installed)
1.9	1	MicroSD card pre-installed (SDHC)
1.10	1	Threaded plug for SD card, blue (mounted)
1.11	1	Ethernet patch cable, 50 cm/19.7 in with sealing

| Mounting Supplies		
Item	Count	Part Name
M.1	4	Stainless steel washers dia. 4.3 mm
M.2	4	Dowels 6 mm
M.3	4	Stainless steel wood screws with hex head 4x40 mm
M.4	2	Cable plug 5 to 7 mm, white (Ethernet installation cable)
M.5	1	Cable plug 3 to 5 mm, white (Ethernet installation cable)
M.6	1	Allen wrench 2.5 mm
M.7	1	Lens wrench (lens, dome)
M.8	1	Module wrench (sensor module, glass cover/filter insert)
M.9	1	Cable tie (Ethernet installation cable, microphone, speaker)
M.10	1	Screwdriver (terminals)

Standard Delivery		
Item	Count	Part Name
1.1	1	S15D Core (base module with base plate)
1.2	1	Housing cover for S15D (installed)

Sensor Modules of the S16 (to Be Ordered Separately)

Sensor module SMA-S-6D/N/L016 — Dome — Plastic nut

Sensor module SMA-S-6D/N/L036–237 — Protective glass insert — Plastic nut

Sensor module SMA-S-6D/N/L500 — Lens cover

Rear (all except Thermal) — Sensor module cable — Top (markings)

BlockFlexMount SMA-B-6D/N/L016–500

BlockFlexMount CS-Mount (without lens) SMA-B-6D/N/LCS

PTMount Thermal(-TR) SMA-TP-T079–237

Sensor module Thermal(-TR) SMA-TS-T079–237

Installing the Sensor Modules

1. Mounting to a Wall or Ceiling (SMA-S-6D/N/L016 to 500)

Remove the plastic nut from the sensor module ❶. Remove the bayonet catch and the rubber plug ❷.
Insert the module into the hole you just drilled (43 mm) ❸.
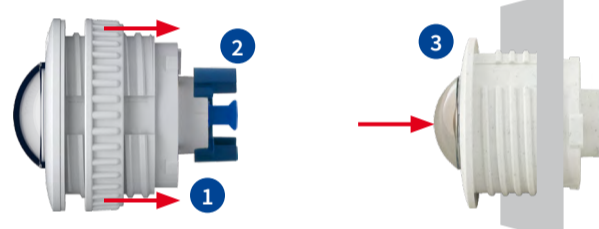
Tighten the plastic nut to keep the sensor module safely in place ❹.
Push the sensor module cable plug into the connector at the back of the module housing ❺.
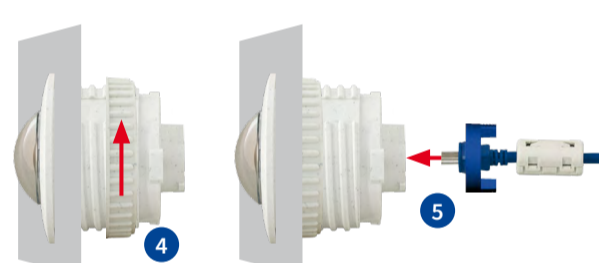
2. Installing a Sensor Module Thermal(-TR)

For information on installing and the technical specifications, please refer to the separate documentation «*Quick Install Sensor Module Thermal(-TR)*», which is part of that product delivery.

Sensor module Thermal(-TR)

3. Installing a PTMount-Thermal(-TR)

For information on installing and the technical specifications, please refer to the separate documentation «*Quick Install PTMount-Thermal(-TR)*», which is part of that product delivery.

PTMount Thermal(-TR)

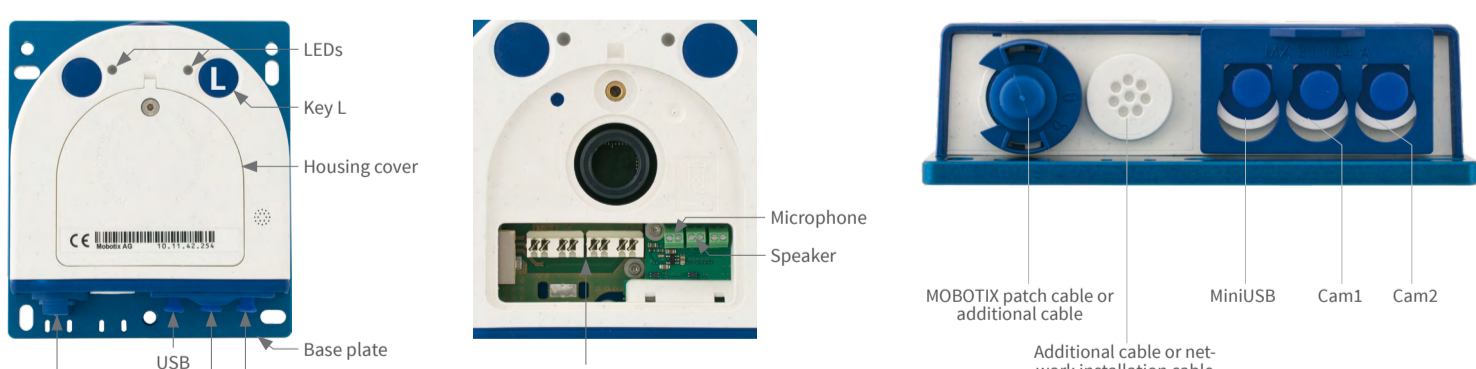## Mounting the Camera

Installation Using the Base Plate

Attach the camera using the supplied or other screws by affixing the base plate to a suitable material ❶ (see «*Dimensions/Drilling Template*» on page 2).

Connections and Initial Operation of the S16

You can find detailed information on the **installation** and **connections** of the S16 in the *S15 Camera Manual* (PDF, available on **www.mobotix.com > Support > Manuals**).

Please note that the boot options of this camera have changed compared to its predecessor (see «*Boot Options of the*» on page 2) and the camera only has one key ("L"). Regarding the rest of the **initial operation** of the S16, please see the *S15 Camera Manual* in *Chapter 3, «Initial Operation»*.

LEDs
Key L
Housing cover
USB
Base plate
Ethernet patch cable
Cam1 Cam2

Microphone
Speaker
Ethernet installation cable, LSA terminal block

MOBOTIX patch cable or additional cable
Additional cable or network installation cable
MiniUSB Cam1 Cam2

Configuring the Installed Image Sensors

Open **Admin Menu > Hardware Configuration > Image Sensor Configuration** and set the image sensors that are installed as left and right image sensors. If you are using *hemispherical sensor modules with Vandalism domes*, you should open **Admin Menu > Hardware Configuration > Lens Configuration** and activate the corresponding option.

Inserting/Exchanging the SD Card

All camera models can use the integrated microSD card (SDHC) to record video data. In order to exchange the microSD card, please proceed as outlined in the following instruction. For information on reliable SD cards, please see the MOBOTIX website **www.mobotix.com > Support > MxMedia Library > Planning** in the document *MicroSD Card Whitelist for MOBOTIX Cameras*.

When replacing the SD card, make sure that recording has been deactivated in the browser (**Admin Menu > Storage > Storage on External File Server / Flash Device**; activate recording again in the same dialog).

1. Remove the SD card

Loosen the threaded plug at the top of the housing (using a suitable coin, for example) and remove the plug. Using tweezers, gently press the SD card into the slot (as indicated by the arrow) until you hear a **click**. The card is protruding slightly and can be easily removed with the tweezers.

2. Insert the SD card

Again using tweezers, insert the SD card as shown (contacts facing forward) into the card slot. Make sure that you hear a **click** again when pushing the card into the slot. The card is now locked and can be used. Insert the threaded plug again and tighten it using the coin.

MOBOTIX

By default, the camera starts as DHCP client and automatically tries to get an IP address from a DHCP server. To start the camera in a mode different from the default mode, you can activate the boot menu of the camera.

1. Preparing the Camera

- Disconnect the camera's power supply.
- Reconnect the power supply of the camera.

2. Activating the Boot Menu

The red LED lights up 5 to 10 seconds after establishing the power supply and will stay on for 10 seconds. Briefly press the key **L** indicated by the red circle in the figure. The camera enters the boot menu, ready for selecting one of the boot options.

The LED now flashes once and repeats the flash signal after pausing for one second (the number of flashes indicates the current boot option). To go to the next boot option, briefly press the key again (< 1 sec). After the last boot option, the camera returns to the first option (LED flashes once).

LED flashes	Boot Option	Meaning	Audio Confirmation*
1 x	Not used	Not available on this camera model.	—
2 x	Factory Defaults	Starts the camera with factory defaults (factory default IP address, users and passwords will not be reset).	Boing
3 x	Automatic IP Address	Starts the camera as DHCP client and tries to obtain an IP address from a DHCP server. If a DHCP server cannot be found or no IP address can be obtained, the camera starts with its factory default address.	Boing Boing
4 x	Recovery System	Starts the camera with the recovery system, e.g., in order to recover from a failed update of the camera software.	Alarm Sound

*Only on cameras with audio option and installed speaker.

3. Selecting a Boot Option

Press the key longer (> 2 sec) into the hole. The camera confirms the selection by flashing rapidly three times. After 20 sec, the camera will confirm the selection by playing a sound according to the table above.

If nothing is selected, the camera will resume its normal boot process after a certain time.

Important Notes

Safety Warnings

Notes on Installing:
- This product must not be used in locations exposed to the dangers of explosion.
- Make sure that you install this product as outlined in *Chapter 2, «Installation»* of the corresponding manual. A faulty installation can damage the camera!
- When installing this product, make sure that you are only using genuine MOBOTIX parts and MOBOTIX connection cables.
- Only install this product on suitable, solid materials that provide for a sturdy installation of the fixing elements used.

Electrical installation: Electrical systems and equipment may only be installed, modified and maintained by a qualified electrician or under the direction and supervision of a qualified electrician in accordance with the applicable electrical guidelines. Make sure to properly set up all electrical connections.

Electrical surges: MOBOTIX cameras are protected against the effects of small electrical surges by numerous measures. These measures, however, cannot prevent the camera from being damaged when stronger electrical surges occur. Special care should be taken when installing the camera outside of buildings to ensure proper protection against **lightning**, since this also protects the building and the whole network infrastructure.

Never touch the lenses: Due to the high performance of the S16, the area of the image sensor **can get quite hot**, especially when the ambient temperature is also high. This does not affect the proper functioning of the camera in any way. For this reason, the product must not be installed within the reach of persons without domes or protective lens covers mounted on the sensor modules.

Power off before opening the camera or exchanging sensor modules: Make sure the power supply to the camera is disconnected before opening the camera housing (e.g., when exchanging the SD card) or when installing or exchanging sensor modules.

Network security: MOBOTIX products include all of the necessary configuration options for operation in Ethernet networks in compliance with data protection laws. The operator is responsible for the data protection concept across the entire system. The basic settings required to prevent misuse can be configured in the software and are password-protected. This prevents unauthorized parties from accessing these settings.

Attention – Special Export Laws Apply!

Cameras with thermal image sensors ("thermal cameras") are subject to the special export regulations of the U.S.A. and the ITAR (International Traffic in Arms Regulation):

- According to the currently applicable export regulations of the U.S.A. and the ITAR, cameras with thermal image sensors or parts thereof must not be exported to countries embargoed by the U.S.A. or the ITAR. At present, this applies to the following countries: Syria, Iran, Cuba, North Korea and Sudan. The same export ban applies to all persons and institutions listed in "The Denied Persons List" (see **www.bis.doc.gov > Policy Guidance > Lists of Parties of Concern**).

- Under no circumstances must the camera itself or its thermal image sensors be used in the design, the development or in the production of nuclear, biological or chemical weapons or in the weapons themselves.

Legal Notes

Legal aspects of video and sound recording: You must comply with all data protection regulations for video and sound monitoring when using MOBOTIX products. Depending on national laws and the installation location of the S16, the recording of video and sound data may be subject to special documentation or it may be prohibited. All users of MOBOTIX products are therefore required to familiarize themselves with all applicable regulations and to comply with these laws. MOBOTIX AG is not liable for any illegal use of its products.

Disposal

Electrical and electronic products contain many valuable materials. For this reason, we recommend that you dispose of MOBOTIX products at the end of their service life in accordance with all legal requirements and regulations (or deposit these products at a municipal collection center). MOBOTIX products must not be disposed of in household waste! If the product contains a battery, please dispose of the battery separately (the corresponding product manuals contain specific directions if the product contains a battery).

Disclaimer

MOBOTIX AG does not assume any responsibility for damages, which are the result of improper use or failure to comply to the manuals or the applicable rules and regulations. Our **General Terms and Conditions** apply. You can download the current version of the General Terms and Conditions from our website at **www.mobotix.com** by clicking on the **COS** link at the bottom of every page.

Technical Specifications S16
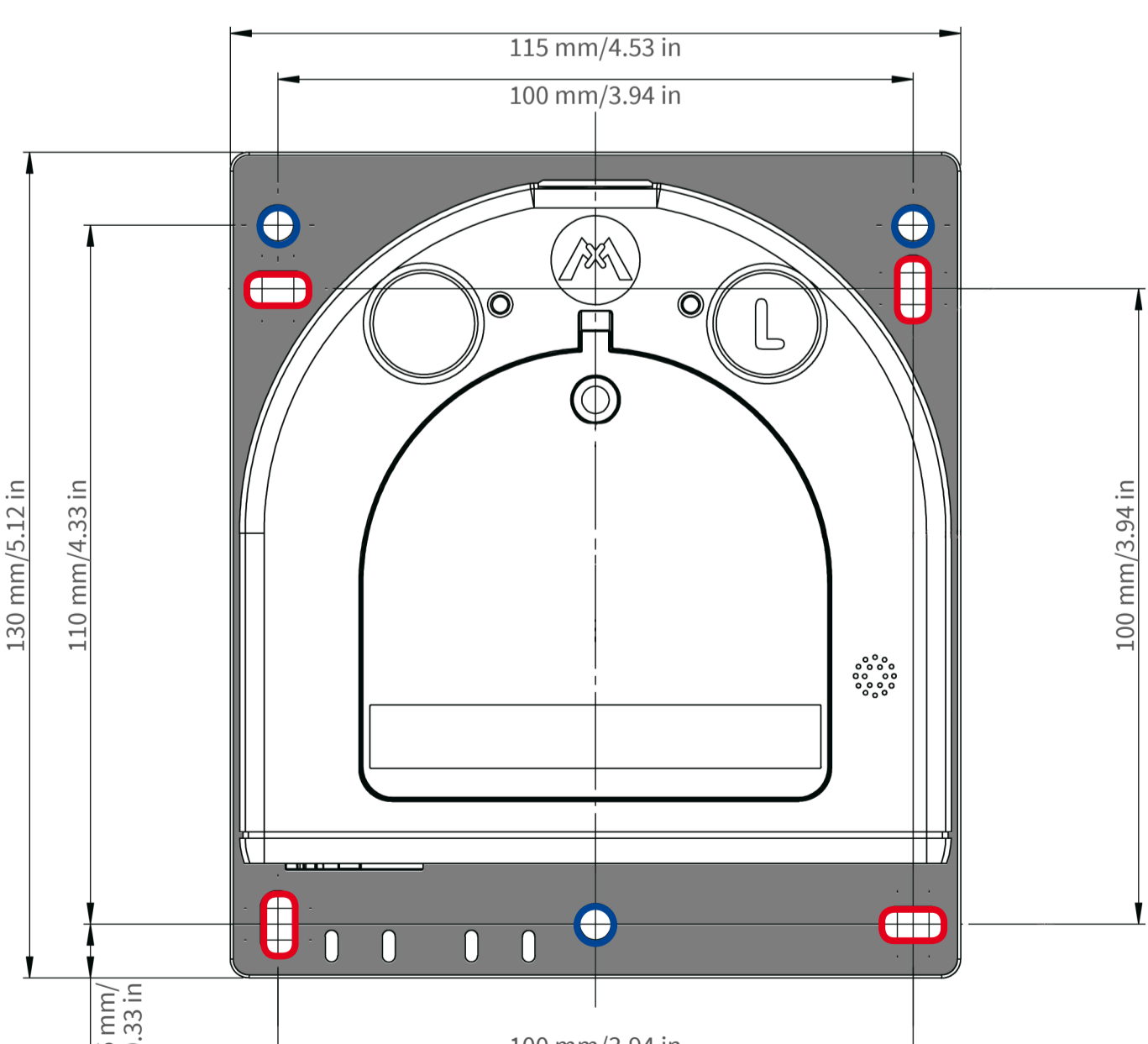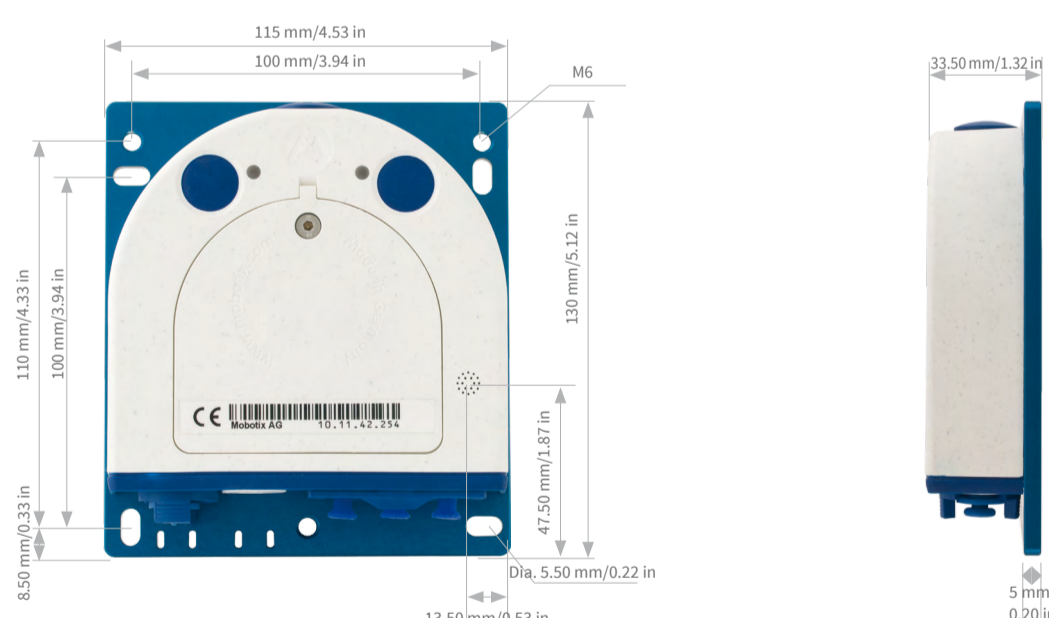
Model Versions	Mx-S16 (all combinations of Day/Night/Thermal/Thermal-TR sensor modules)
Lens Options Mx Sensor Module	10 to 270 mm (35 mm format), hor. angles of view 180° to 8° (6MP)
Lens Options Thermal Image Sensor	43, 65, 135 mm (in 35 mm format), 45°, 25°, 17° horizontal angle of view
Sensitivity Mx Sensor Module	Color sensor (6MP): 0.1 Lux at 1/60 s, 0.005 Lux at 1 s Black&White sensor (6MP): 0.02 Lux at 1/60 s, 0.001 Lux at 1/1 s
Sensitivity Thermal Image Sensor	NETD typ. 50 mK, IR range 7.5 to 13.5 μm Range of temperature measuring: –40 to 550 °C/–40 to 1,022 °F Precision Sensor Module Thermal(-TR): ±10 K of the thermal radiation received at the sensor
Image Sensor Mx Sensor Module	1/1.8" CMOS, 6MP, progressive scan
Image Sensor Thermal Image Sensor	Uncooled microbolometer, 336x252 pixels
Max. Image Size Mx Sensor Module	Color: 3072x2048 (6MP), 6144x2048 (12MP) Black&White: 3072x2048 (6MP), 6144x2048 (12MP)
Max. Image Size Thermal Image Sensor	Can be scaled up to 3072x2048 (6MP), automatically scaled to size of Mx sensor module
Image Formats (Independent of type, Per-Sensor Setting)	3072x2048 (6MP), 2592x1944 (5MP), 2048x1536 (QXGA), 1920x1080 (Full-HD), 1280x960 (MEGA), 1280x720 (HD), 1024x768, 800x600, 768x576 (D1-PAL), 704x576 (TV-PAL), 640x480, 384x288, 320x240, 160x120, custom formats
Max. Frame Rate Mx sensor module	• MxPEG* (max): 42@HD (1280x720), 34@Full-HD, 24@QXGA, 15@5MP, 12@6MP, 6@2x6MP • M-JPEG* (max): 26@HD (1280x720), 13@Full-HD, 9@QXGA, 5@5MP, 4@6MP, 2@2x6MP • H.264 (max): 25@Full-HD, 20@QXGA *Single core use only
Max. Frame Rate Thermal Image Sensor	9 fps (when displaying an Mx sensor module and a thermal sensor module, the overall frame rate of the camera is reduced to 9 fps)
Image Compression	MxPEG, M-JPEG, JPEG, H.264
Internal DVR	MicroSD card pre-installed (SDHC)
External Video Ring Buffer	Directly on NAS or PC/Server, no additional recording software required
Software (Included)	MxManagementCenter video management software
Image Processing	Backlight compensation, automatic white balance, image distortion correction, panorama correction, video motion detection, MxActivitySensor
Virtual PTZ	Digital pan/tilt/zoom, continuous up to 8X

Alarm/Events	Video Motion detection, MxActivitySensor, external signals, temperature sensor, PIR, microphone, shock detector (with firmware version 5.0.1 and higher), notification via e-mail, FTP, IP telephony (VoIP, SIP), visual/sound alarms, pre- and post-alarm images
Microphone and Speaker	Microphone integrated in optical sensor modules and BlockFlexMount modules (except C5-Mount variants and SMA-S-6D/N/LS00); ext. microphone and ext. speaker can be connected
Audio Functions	Lip-synchronous audio, two-way communication, audio recording
Interfaces	Ethernet 100Base-T (patch or installation cable), MiniUSB, inputs/outputs and RS232 via accessories, ext microphone and ext. speaker
Video Telephony	VoIP/SIP, two-way communication, remote controlling using key codes, event notification
Security	User/group management, HTTPS/SSL, IP address filter, IEEE 802.1x, intrusion detection, digital image signature
Certifications	EN55022:2010; EN55024:2010; EN50121-4:2006, EN61000-6-1:2007; EN 61000-6-2:2005, EN61000-6-3:2007+A1:2011, EN61000-6-4:2007+A1:2011, AS/ NZS CISPR22:2009+A1:2010, CFR47 FCC part15B
Power Supply	Year-round Power-over-Ethernet (IEEE 802.3af); PoE class variable
Operating Conditions	IP66, –30 to 60°C/–22 to 140°F, air humidity up to 90–100% (according to EN 50155 Chap. 12.2.5)
Protection Against Mechanical Impact	Mx-S16 Body: IK06 (according to IEC 62262/EN 50102)
Power Consumption	Typ. 5 W, max. 7 W
Dimensions/Weight S16	Width x height x depth: 115 x 130 x 33,5 mm; weight: approx. 430 g (without sensor modules, see below)
Dimensions/Weights Sensor Modules	SMA-S-6D/N/L016: Ø x D: 43 x 45 mm (installation dim.), weight 85 g SMA-S-6D/N/L041/079: Ø x D: 43 x 57 mm (installation dim.), weight 111 g SMA-S-6D/N/L061/119/237: Ø x D: 43 x 60 mm (installation dim.), weight 122 g SMA-S-6D/N/LS00: Ø x D: 43 x 60 mm (installation dim.), weight 160 g
Dimensions/Weights Thermal Sensor Modules	See separate product documentation «Quick Install Sensor Module Thermal(-TR)»
Weight Connection Cable 2 m (per sensor module)	approx. 68 g/0.14 lb
Standard Delivery	Housing (high-resistance composite, PBT), white and base plate aluminum blue anodized, shock-resistant dome for SMA-S-6D/N/L016 sensor module, coated glass pane for all other sensor modules, protective Germanium cover for thermal image sensor, mounting supplies, mounting wrenches, 50 cm/20 in patch cable, software, MicroSD card (SDXC, SDHC installed)

Dimensions/Drilling Template

DualMount (accessory)   SurroundMount (accessory)   HaloMount (accessory)   SpeakerMount (accessory)   PTMount (accessory)

Manuals and drilling templates:
www.mobotix.com > Support > Manuals > IP Camera Systems > DualFlex S16